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ORIGINAL COMMUNICATIONS.

ANÆSTHETIC LEPROSY; WITH ESPECIAL REFERENCE TO ITS DIAGNOSIS AND TREATMENT IN THE EARLIER STAGES.

By J. N., M.A., M.D.

(Continued from Vol. II., page 291.)

B.—The Medical or Aceto-Carbolic Treatment.

Two points in my hypothesis of the pathology of the disease led me to adopt the following practice.—*First*, as to the particular tissues involved—they appeared to me to be the white fibrous or gelatinous. Casting about for an agent which should affect these structures to the exclusion of the albuminous, I determined to give at least a trial to acetic acid. *How* it would affect the diseased tissues, I could not of course venture to guess. And now that experience has shown that the experiment was a happy hit, I leave it to others to show what is the *modus operandi*. At first, dilute acetic acid was tried alone, and with very speedy effect in relieving the symptoms, especially the distressing sense of heat. *Secondly*, supposing the morbid agent to be a specific virus of the zymotic sort, it seemed advisable to employ a substance capable of destroying the vitality of low organisms, in short, an antiseptic or antizymotic. For this express purpose I sent for some sulphite of soda. But before it arrived I obtained a small quantity of pure, crystalline carbolic acid, which I used for a time in the treatment of abscesses, in accordance with the invaluable suggestion of Professor Lister. It now occurred to me that in carbolic acid I had the very thing which I wanted—an antizymotic of the greatest possible efficacy. But as I had never heard at that time of this substance being administered internally, I began cautiously with doses of one drop, largely diluted. Its ready solubility in acetic acid, which I had already begun to use, proved very convenient, rendering its administration both easy and elegant. Finding that the effects are uniformly beneficial, I have since increased the dose in some cases to two and even five minims. As for the sulphite of soda, I confess that I have never even tried it. The aceto-carbolic treatment has been so uniformly satisfactory that, when the sulphite arrived, I felt unwilling to make any change.

The following formulæ may be prescribed as soon as a diagnosis of simple, uncomplicated leprosy is satisfactorily made out. Although crystalline carbolic acid is to be preferred, it is by no means essential. For a long time past I have been compelled to use the impure acid of commerce.

No. 1—Aceto-Carbolic Solution.

℞ Acid. Carbolic	♏xlviii.
Acid. Acetic. (B. P.)	℥iii.
Quin. Sulph.	gr. xxx.
Spiritûs Sacchari	℥vi.
Syrupi, Simplicis	℥iii.
Aquæ,* ad	℥xxiv. M

Signa. ℥iss bis die, post cibum sumendæ.

N.B.—For a patient in an advanced stage, it is best to begin with a smaller proportion of acetic acid, say ℥i or ℥ii.

The rum used may be either that issued by the Commissariat, or what is manufactured at Simla and other European distilleries. Each dose should be diluted, when taken, with twice or thrice its own bulk of cold water; nor should it ever be taken on an empty stomach, unless in much smaller doses. The treacle sold in most bazars under the name of *shírá* is very cheap and very good as a substitute for syrup. Of the quinine it should be said that, although it is by no means an essential ingredient of the solution, it is yet well to add it to the first few bottles, and occasionally afterwards. It has a most excellent effect at the first start, in improving the digestion and appetite. The *dose* is most conveniently regulated in dispensary practice, by having on hand some hundreds of earthenware measures, of various capacities, such as ℥i, ℥iss, ℥ii, &c. These can be got of any *kumhár* at a trifling cost, and thus each patient may be furnished with a fresh one. For those whose caste will not permit them to drink out of any except metallic vessels, tin measures can be made for a pice or two a piece.

No. 2—Laxative Podophyllin Pills.

℞ Podophyllinæ	gr. viiss.
Extracti Aloes	
Extr. Taraxaci	
Pulv. Ipecacuanhæ, *aa*,	gr. xlv.
Ol. Cajaputi vel ol. Menth. pip.	♏xxx.

Liquoris Potassæ, q.s. ut fiat massa in pil., xxx. dividenda. *Signa.* Pilula i. nocte sumenda.

N.B.—No liquid should be employed other than the liquid potass, which again should be added rather *in excess*. The excessive fluidity of the pill-mass will disappear soon, if it is beaten thoroughly, for a minute or two, in a heavy iron mortar.

These pills afford the best cholagogue laxative for ordinary hepatic derangements, with which I am acquainted. It is on account of this property that they are so useful in the treatment

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* In case there is not on hand a sufficient supply of acetic acid, substitute vinegar (the stronger the better) for the water, and the words acid. acetic [illegible] being omitted [illegible] "aquæ [illegible] xxiv." This, however, is [illegible], for several reasons.

[illegible]

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* The same remark applies to the "acetic-carbolic" solution, for which a formula is given above. The very same formula, without carbolic acid, I have found most useful. There is no doubt that the acetic acid is the *chief* agent. At the same time I believe that the carbolic acid increases its value.

solid extract of chiretta* as a vehicle. However, it can matter but little what particular preparation of iron is used.

Cutaneous diseases are apt, as has already been said, to complicate leprosy. It is in cases of *this* kind, I suspect, that arsenic has achieved something of a reputation. Certainly nothing has, in my hands, proved more inefficient than arsenic for the removal of the genuine, essential symptoms of simple anæsthetic leprosy. If the *liquor potassæ arsenitis* be used, it is well to prescribe it with tincture of the perchloride of iron and syrup, so adjusted that it may be taken in ʒi or ʒii doses. I prefer the following formula, however, in all those skin diseases in which arsenic seems to be indicated. The arseniate of iron agrees well with the stomach. The black pepper is introduced in imitation of the Asiatic pill, and is thought to help the action of arsenic, as well as to render it more acceptable to the stomach. Finally, the madar certainly promotes diaphoresis, and has besides a reputation of its own in the treatment of the cutaneous affections of syphilis and leprosy. It may not be all that it is wanted to be, but it is cheap, and does no harm.

℞	Ferri Arseniatis	grs. iss.
	Extr. Madar †	grs. xv.
	Ferri reduct	ʒss.
	Pulv. Pip. nigr.	ʒi.
	Syrupi	q.s.

Fiant pil., xxx. Sumantur Pil., ii. bis die, post cibum.

Rheumatism and *Neuralgia* cannot always be distinguished from the pains of leprosy, although, no doubt, they often seriously complicate the latter. However, whenever pain is severe, I do not hesitate to give the patient the benefit of hypodermic injection. And this, notwithstanding the opinion of Mr. Charles Hunter, ought, I feel certain, to be as near the seat of pain as possible. The triple compound of alkaloids, recommended by Brown-Sequard as the best antagonist of pain, I have always found exceedingly satisfactory, and more lasting in its effects than morphia alone. I generally inject, by means of Wood's syringe, acetate of morphia, gr. $\frac{1}{4}$, and sulphate of atropia and of aconitia, gr. $\frac{1}{100}$, each, the solutions being so adjusted that each of the above doses is contained in four minims, making a total of only ♏xii in all.

We should be on the look out for true *scurvy*, and meet it, when detected, by ordering a suitable diet with lemon-juice, &c.

If *syphilis* co-exist with leprosy, as is often the case, the prognosis becomes very serious; and if, in addition to these evils, the patient have undergone a long course of salivation at the hands of a Baid, his case is well nigh hopeless. It is possible, however, that *after* a course of iodide of potassium with chalybeates and bark, the disease may prove amenable to the treatment that has been detailed in this paper, especially if the patient can afford to give himself the comforts demanded by hygiene.

It is right to mention, before concluding, that, in all, 65 cases of leprosy have come under the author's care within the last 14 months, *i. e.*, 35 cases were treated before the employment of the aceto-carbolic solution. With the exception of a very trifling benefit derived by a few of these from the use of nitrate of silver, all of the 35 cases were treated unsuccessfully. The remedy tried oftenest and longest was arsenic. Some of the patients persevered in the use of it for months, but, to the last, seemed no better in any respect, and at last gave it up in despair. Beside the nitrate of silver, iodide of potassium was tried in several cases. At last one patient persevered for a long time in taking pills of the nitrate of silver, and a solution of the hypophosphites of lime and of soda. In none of these cases was there any real benefit. The only result was that men affected with leprosy ceased to have any confidence in me, none of my old patients having returned for the new treatment. But for this great want of success at the outset, I should almost certainly have on hand more patients now.

In now taking leave of his subject, the author cannot refrain from expressing his earnest hope that some, at least, will be found willing to test, on a larger scale than he has been able to do, the plan of treatment here advocated. And if extended trials shall fail to establish the truth of his conjectures, he is perfectly content to have them forgotten, provided only that the profession in India will not rest until the pathology and treatment of leprosy shall have been placed at last on a sure scientific basis. On the former of these subjects, attractive though it is, I have thought it best at present to say nothing, feeling that as yet the data are insufficient for the construction of anything but crude hypotheses; and as to treatment, the suggestions here made are of recent date, and will almost certainly require to be modified, as their defects are revealed by time and a wider experience.

NOTES ON LADAK IN 1867.

BY ASSISTANT-SURGEON HENRY CAYLEY,

On special duty, Ladak

(Continued from Vol. II, No. 11, page 268.)

I propose now to give a short account of the diseases of the country, but would first observe that, on reaching Leh at the end of June, I at once established a dispensary, that is, I invited the attendance of all sick people, and treated all who came. At first numbers applied, then, owing to the obstruction secretly thrown in the way by the Cashmere officials, the attendance almost entirely ceased; but after a short time I managed to put a stop to all active opposition, and the attendance of sick of all classes, both from Leh and its neighbourhood, and from distant places, at once revived. I had with me a hospital compounder as an assistant, and a small supply of the most necessary medicines and instruments. Two of my small tents were soon converted into a hospital. A grove of poplar trees served as an operating theatre, and for surgical assistants numerous Ladaki amateurs were always at hand, who took great interest in the proceedings; and thus, in rather unpretending fashion, was opened the first hospital in Ladak.

At the same time, an opposition Dispensary was opened under the charge of a Hakim from Cashmere, and for a time the patients on their way to me were forcibly stopped and taken there for treatment; but as soon as this system was abandoned, the attendance at the Maharajah's Dispensary entirely ceased, for the people of Ladak do not believe that any good thing can come out of Cashmere.

There are a few indigenous "medicine men" who travel about with a few drugs in a wallet, and treat disease by the light of inspiration, or chance. They complain of the poverty of the land, and their unrequited services. They, too, experience the truth of the lines regarding the Doctor, that

> "When the cure complete, he seeks his fee;
> The Devil seems less terrible than he."

The following list shows the diseases which have come under treatment during July and August:—

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* This is a cheap and efficient substitute for extract of gentian, and may be made by boiling down the officinal *infusum chirettæ*, made at 120 Fahr.

† The extract of madar is made by evaporating a saturated acetated tincture of the rhizoma of *calotropis procera* (?). Roughly, grs. vi are about equivalent to grs. xx of the powder. Either this extract, or, still better, the tincture itself, is an excellent substitute for ipecacuanha, in dysentery. A couple of drachms of the tincture, with 20 minims of laudanum, and two or three drops of carbolic acid, is a mixture which the most irritable stomach is almost sure to retain with ease, all the happy effects of ipecacuanha being secured.

F[illegible]	65	Admissions.	S[illegible]	1	Admissions.
Ophthalmia	47	,,	F[illegible]	4	,,
Diarrhœa	2	,,	C[illegible]	1	,,
Dysentery	3	,,	P[illegible]	[illegible]	,,
Par[illegible]	1	,,	C[illegible]	[illegible]	,,
T[illegible]	2	,,	C[illegible]	2	,,
Lar[illegible]	[illegible]	,,	D[illegible]	1	,,
R[illegible]	[illegible]	,,	H[illegible]	1	,,
S[illegible]	[illegible]	,,	C[illegible]	[illegible]	,,
([illegible])	2	,,	[illegible]	1	,,
G[illegible]	[illegible]	,,	S[illegible]	1	,,
F[illegible]	1	,,	A[illegible]	1	,,
O[illegible]	[illegible]	,,	I[illegible]	1	,,
S[illegible]	7	,,	[illegible]	2	,,
S[illegible]	1	,,	I[illegible]	[illegible]	,,
A[illegible]	[illegible]	,,	[illegible]	[illegible]	,,
C[illegible]	[illegible]	,,	S[illegible]	1	,,
H[illegible]	2	,,	C[illegible]	1	,,
I[illegible]	1	,,	C[illegible]	[illegible]	,,
S[illegible]	1	,,	Fra[illegible]	1	,,
P[illegible]	4	,,	[illegible]	1	,,
Neuralgia	17	,,	Fr[illegible]	1	,,
C[illegible]	[illegible]	,,	Poisoning	1	,,
D[illegible]	[illegible]	,,	Other diseases	12	,,
Cataract	7	,,			
A[illegible]	1	,,	Total	[illegible]	Admissions.

The list is a long one, and shows, I think, pretty nearly all the varieties of disease occurring at the time. The majority of patients were of course from Leh and the surrounding villages, but many came from far.

I will here notice a little in detail some of the principal diseases in the list, at the same time remarking on some others conspicuous by their absence.

Fevers appear to form a larger proportion of the sickness, but the 65 cases were nearly all of a most trifling nature, the attack lasting only two or three days, and generally depending on indigestion, cold, exposure to the sun whilst at work, standing in cold water, and such like causes. Except in pilgrims and merchants, and others coming from the plains, I saw nothing approaching in character to malarious intermittent, and I hardly believe the disease to exist, in spite of the whole of the land in the villages being almost constantly under water and exposed to a powerful sun; nor have I seen anything like the continued and remittent fever of Europe. Most of the cases of fever seemed to be benefited by an emetic or brisk purge, constipation and disordered stomach being generally prominent symptoms.

Ophthalmia is very common, hardly ever appearing in the acute purulent form, but generally of a very chronic character—the result of a low form of muco-purulent inflammation of the conjunctiva—and lasting weeks, months, and even years; leading to great thickening and œdema of the lids, and extreme vascularity and roughness of their mucous membranes, causing an opacity of the cornea, and often producing entropion, of which affection I cured several cases by operation. I found that treatment by astringent lotions, the application of sulphate of copper to the inner surface of the lids, and nitrate of silver painted on outside, was often effectual; but in many cases the disease was too confirmed for any rapid relief to be obtained, and patients do not often continue to attend unless they quickly perceive the effects of the treatment. The disease appeared in many cases to have arisen from the glare of the snow whilst crossing mountain passes (as a protection from which the natives often wear snow spectacles made of plaited hair), in others, from exposure to the intense glare and constant heat of the sun, in the barren sandy deserts which extend over so much of Ladak.

Diarrhœa and *Dysentery* are almost unknown. The two cases of the first occurred in servants from Cashmere and Kulu, and of the three cases of dysentery, one occurred in a sepoy from Cashmere, and another seemed to depend on organic disease in the abdomen.

Cholera has not reached Ladak, though this year it has been raging in Cashmere, and came very close to the frontier, but it never surmounted the pass between the two countries; and as there was constant intercommunication, I can only suppose that the poison of the disease cannot produce its effects at an altitude of 10,000 feet above the sea. The cholera germ may be brought, but the other necessary condition for its spreading is very probably absent—the "capacitas morbi," as Professor Haughton calls it,—on the part of the person exposed to its influence.

Small-pox has several times ravaged Ladak. Ten years ago it spread through the whole country, and killed numbers; the whole population was inoculated in that year by the Lamas, and since then the disease has not occurred, excepting in a few cases last year. In former years the custom was to expose the patients with the disease out on the mountain sides, where the friends brought them food, &c., until they either died or got well. It was a somewhat cruel, but, at the same time, a laudable, plan for lessening the spread of the disease; and in this climate it would really be better for the sick to be out in the open air, than shut up in a close building. Since the general inoculation ten years ago, the dread of the disease has greatly diminished. Vaccination might, I believe, be introduced without difficulty.

The six cases of *Tonsillitis*, *Pharyngitis*, &c., were not severe, and were apparently caused by cold. Amongst the European travellers up here feverish colds and sore-throats are rather prevalent, judging from the liability to such attacks among the few English who have visited Leh this year. The cause I believe to be exposure to the cold air, which is felt on the very hottest day, and which often gives a sudden check to perspiration.

Rheumatism and *Neuralgia* are very common; the rheumatism usually affects the muscular and tendinous structures, and not the joints and ligaments; it is generally very chronic, and lasts for months and years, causing constant and severe pain. The neuralgia is of an allied character, but only a particular nerve, or a set of nerves, is affected, such as the sciatic, or the nerves of the face and scalp. In many cases there is a tendency to scurvy. I think that these diseases are in great measure to be attributed to the fact that people work day after day with their feet in cold water, whilst engaged in irrigating the fields; and, in addition to this, are insufficiently fed and clad, and, when away from home, frequently sleep out in the night air. The diseases are very obstinate, and very troublesome to treat. In many cases there was syphilitic history.

Venereal Diseases are very prevalent; 37 cases applied for relief in all. The syphilis was not of a very severe character, and the ulcers seldom took on a sloughing form, although fostered in the highest degree by dirt and neglect. The constitutional symptoms were chiefly ulcerations in the throat, mouth, and tongue; nocturnal pains in the bones; enlarged occipital glands, and often secondary eruptions on the genitals and other parts. In only two cases did I see any extensive destruction of tissue from sloughing, and never any dangerous complications. In my opinion this disease is, in spite of the dirty habits of the people, if not less prevalent, certainly less severe than in the plains of India or in Europe. May not the dryness and antiseptic properties of the air have something to do with this?

Gonorrhœa occurred chiefly among the sepoys. I treated three cases of orchitis by tapping the tunica albuginea with a trocar and canula during the acute stage, and then strapping the testicle; in each case the cure was almost immediate.

Leprosy.—Of this affection I did not see a single case; the two cases called "Leprosy" were skin diseases, not allied to the leprosy of Hindustan.

Scurvy, seven cases.—Besides these many of the sufferers from rheumatism and indigestion were more or less scorbutic. During the early part of the summer the majority of the sick showed some sponginess of the gums, owing, doubtless, to the absence of fresh vegetables and other anti-scorbutic elements in their diet. In the upper parts of Ladak and about Leh, where fruit is not plentiful, the food from October to June consists almost entirely of *[illegible]* and water, and a few dried herbs, and I certainly saw many more cases of spongy gums in June and July than later in the year, when wild herbs and common vegetables were plentiful. The prevalence of scurvy in this country proves that it can be produced by dirt alone, without the addition of crowding, confinement, and bad air; but none of the cases were as severe as those which one sees in jails, or among sailors or soldiers at sea.

With regard to parasitic diseases, I have only seen one case of itch, and that in a Cashmere sepoy; and I believe that intestinal worms are unknown. Goitre and cretinism, which one would expect to find so prevalent in a country where the people live so often in narrow confined valleys, and drink only snow water, are very rare. I have travelled through the greater part of Ladak, and have seen very few goitres, and those very small ones; and I have seen no cretins, and hardly an idiot; although in the lower Himalayan ranges, as at Kangra, Kullu, and about Simla, goitre is very prevalent, and cretins not uncommon. In Ladak the mountains are chiefly granite, clay, and mica slate, and metamorphic rocks; there is very little limestone. Has the absence of lime in the water anything to do with the absence of goitre? I may notice also that I have not heard of a single case of gravel or stone; and did the disease exist, it would certainly have been brought to my notice. The water, besides containing no lime, is almost everywhere more or less impregnated with soda salts; can this in any way prevent the formation of goitre and stone in the bladder?

Tumours.—Of the eight cases five were malignant, three of which I removed by operation; and three which I also removed were fatty. Cancer would thus seem to be rather prevalent.

Cataract is decidedly common in old people, and nearly all that I saw were cases of hard senile cataract. I have operated on the eyes of six patients with fair results. I operated by the linear incision, as recommended by Dr. Macnamara. The other eye diseases presented nothing remarkable.

Bronchitis and lung diseases are rare and of a mild nature. I have seen nothing resembling phthisis.

Dyspepsia, of a most obstinate and troublesome nature, may be called one of the chief diseases of the land, and I heard the same of Lahoul from the Moravian Missionaries there. The symptoms are generally constipation, weight and pain in the stomach, especially after eating, distention, and pain in the chest, headache, languor, and many other subjective symptoms,—all due to the same cause, and often lasting for years and causing very great distress. It is doubtless caused by bad diet,—the everlasting and unvarying *suttoo*. One sees a man with a lump of uncooked dough as big as his head, and this he swallows in large pellets, washing them down with cold water, and this constitutes his sole diet for days together. The mere sight conjures up in one's mind that bugbear of the conquerors of India—indigestion and all its attendant horrors.

The number of decayed teeth one meets with is remarkable. The sufferers allow them to be extracted without any hesitation. The people show very great fortitude in enduring pain. Boils, abscesses, sores, and skin diseases are all very infrequent, the last especially so. All wounds seem to heal rapidly, in spite of neglect.

Of the total number of 430 patients treated, 329 were males, 95 females, and only six children under 12 years of age. As I have before noticed, children do not abound; and as there never was the slightest objection made to bringing them before me, I can only conclude that they are remarkably free from disease. There has been a daily average attendance of 30 patients during the two months. I am not at present able to give any information on the subject of parturition and infantile mortality, nor on that of the birth and death rates of the people; and besides I have, I fear, already extended my notes far beyond reasonable limits.

September 14th, 1867.

STRAY NOTES ON CHLOROFORM.

By W. J. ELMSLIE, M.A., M.D.,

Medical Missionary, Kashmir.

I. *Evaporation of Chloroform.*—Quite recently I had occasion to enquire of a friend of mine, who had just come from the plains to spend the season in Kashmir, if he had any chloroform in his possession. He replied that he had, and immediately went off triumphantly to fetch his little portable medicine chest. Fancy his astonishment and disappointment when, on examining an eight-ounce bottle which he had caused to be filled with the invaluable anæsthetic before entering upon his journey to the hills, he found it completely empty, the chloroform having entirely volatilized. If either my friend, or the chemist who supplied the chloroform, had been acquainted with a little practical fact this expensive waste and vexatious disappointment would have been most effectually prevented. The specific gravity of chloroform is about 1·5, being therefore about one-half as heavy again as pure water. We can take advantage of this well-known fact to prevent the evaporation of my chloroform, by pouring a small quantity of pure water on the top of the chloroform, sufficient to cover the surface completely. The water being so much lighter than the anæsthetic, floats on its top, and thus effectually prevents its evaporation. By the adoption of this very simple contrivance, the saving in chloroform will be considerable. There is one objection, and only one, to the use of pure water for this purpose, and that is, that chloroform is slightly soluble in water. Professor Christison states that one part of chloroform is soluble in two thousand parts of water. This solubility is therefore so very slight that the objection to the employment of water for this purpose is altogether inconsiderable, especially when we remember that the quantity of water required to cover the surface of the chloroform is proportionately so small. It is advisable to employ the same water till it has evaporated, and consequently requires to be renewed, for the obvious reason that it is already saturated with chloroform; any water that may flow out of the bottle along with the chloroform should therefore be immediately returned. The adoption of this very simple contrivance in a hot climate, like that of India, will lead to no inconsiderable saving in the consumption of chloroform in dispensaries and hospitals, where much of this expensive and indispensable anæsthetic is annually consumed.

II. *Exhibition of chloroform in the dressing of wounds in children.*—Old and young in Kashmir are in the habit of carrying about with them, almost continually, portable earthenware braziers, which they call *kangris*. This custom gives rise in the adult to epithelioma, while in the very young severe and extensive burns are of frequent occurrence. A case of this nature happened some time ago. Several days since the mother of the little sufferer brought him to the Medical Mission Dispensary. The little fellow's right arm was united to his side from the shoulder to the elbow: chloroform was administered to him, and the binding cicatrix divided. So noisy, restless, and terrified is he whenever he is brought into the dispensary to have the wound dressed, that I deemed it advisable, both for his comfort and my own, to exhibit chloroform to him. We are thus enabled to dress the wound with more accuracy and comfort to ourselves, and with no pain to the little patient. I would strongly recommend this practice. It is noteworthy that the state of anæsthesia in such cases does not require to be so profound as when a surgical operation is about to be performed; so that comparatively little chloroform is needed.

III. *Chloroform in setting of fractures.*—I am at present attending another young patient in connection with the Medical Mission Dispensary, Srinugur. Two boys were, three weeks ago, on a mulberry tree eating the fruit. The branch on which they were sitting suddenly broke, and they fell from a consider-

[illegible]

IV. [illegible]

[illegible] A [illegible] were amply [illegible]

V. [illegible]—I have, on several [illegible] this invaluable [illegible] frequently accompany [illegible] fever. The [illegible] has been [illegible] and most agreeable to the patient.

VI. [illegible]—I decidedly prefer the [illegible] by Professor Sir J. Y. Simpson [illegible] Infirmary [illegible]. It is as follows:—

The [illegible] having been properly [illegible] and the clothes suitably [illegible] with [illegible] the chloroform [illegible] them. A [illegible] handkerchief [illegible] over the lower part of the [illegible] this quantity of chloroform [illegible] anæsthetic effect [illegible] which [illegible] 20 [illegible] little more is [illegible] and so [illegible] the patient [illegible] for the operation, whatever it may be. Sir J. Y. Simpson [illegible] always far more [illegible] his patients than about the pulse [illegible] Stertorous breathing, even [illegible] always to be looked upon [illegible] taken [illegible] of danger. The advantages [illegible] thirty [illegible] Dr. Simpson [illegible] being [illegible]

[illegible] are [illegible] ness of [illegible]

S[illegible] 1867.

A FEW PRACTICAL REMARKS ON THE TREATMENT OF GUINEA-WORM.

By M[illegible]

[illegible]

The prevalence of this parasite has been associated with the existence of [illegible]. It is met [illegible] Asia and Africa [illegible] elsewhere. In India it [illegible] in Madras, Bombay, and [illegible]

The guinea-worm [illegible] causes extensive [illegible] inflammation, accompanied by high [illegible] fever, it is sometimes attended by profuse [illegible] sloughing, or gangrene, and occasionally produces permanent contraction of the [illegible] or other parts, it very rarely indeed ends fatally. I have only seen one fatal case in [illegible] of twelve [illegible] treated by me in the Ajmere Dispensary. This case ended in exhaustion produced by the profuse discharge from an abscess in the [illegible]

It is more frequently met with amongst adults than among children, and among men than among women. The most frequent seat of the worms is the lower extremities. The issue of the worm from the umbilical cavity, scrotum, and [illegible] is very rare. The localization of the worm in the great [illegible] is very seldom observed. I have seen a patient who was confined to his bed for seven years, owing to the successive exit of the worms from different parts of the body. The length of the worms varies from 18 to 32 inches in general.

Sometimes the guinea-worm may shrivel and become calcified, and enveloped in areolar tissue. I have seen several calcified worms of long standing situated over the shoulder or on the trunk.

Asafœtida has been much esteemed by Natives as a prophylactic. In my opinion, [illegible] and pure water for drinking are the best prophylactics for this disease.

When the loop of the worm can be felt just under the skin, and is not imbedded deep among the muscles, the best plan of treatment is to cut down upon it, when by passing a probe underneath it, the extraction of the whole worm can be made, in a few minutes, with great facility. This avoids the delay attending its natural exit, and the risk of the worm being broken during its gradual extraction.

When the worm is located below the ankle or knee, or in the popliteal region, and at the same time imbedded in the substance of the muscles, and looped round the tendons, we should never attempt to extract it by incisions, otherwise it will surely break, and the consequent extravasation of its contents into the surrounding textures invariably produces considerable inflammation, ending in suppuration. In such cases the best plan is to wait for the natural process of expulsion; and when the usual bullæ have formed, and the worm begins to protrude, it should be gradually extracted, the [illegible] extracted portion being wound round a small [illegible] of [illegible]. At the same time, to [illegible] the exit of the worm, the surrounding parts should be well [illegible] with sweet oil.

Sometimes the worm breaks during its extraction. This is [illegible] when its structure has [illegible] by the [illegible] application of poultices, for which reason I prefer [illegible] plantain leaves to the part, so as to keep it cool and dry. To check the inflammation which follows the breaking of the worm I [illegible] an ointment composed of equal parts of red [illegible] and country soap. This application, in my practice, never failed to prevent the bad effects of [illegible]ation.

Should much inflammation and suppuration ensue, the case must be treated according to the general principles of surgery.

Agra, 13*th November*, 1867.

SUMMARY OF METEOROLOGICAL OBSERVATIONS TAKEN AT THE OFFICE OF THE CIVIL ASSISTANT SURGEON OF JESSORE FOR THE MONTH OF NOVEMBER, 1867.

By Kenneth McLeod, A.M., M.D.,

Civil Asst. Surgeon, Jessore.

I.—Thermometer (standard).—

	Max.	Min.	Med.
At sunrise	73·5	56·5	65·9
At 9-30 a.m...	80 0	69·5	75·2
At 4 p m	81·5	70·2	77·7
At 10 p.m.	79·5	63 0	69 6
General result	81·5	56 5	72·1
Minimum thermometer ..	71 0	54·0	62 9
Range of thermometer ..	27.5°		
II.—Sun's rays thermometer ..	146 5	90·5	133.5

III.—Barometer (Adie's, corrected and reduced to 32° F.

	Max	Min.	Med.
At sunrise	30 168	29 126	29 978
At 9-30 a.m...	30 258	29·599	30 079
At 4 p m.	30 176	29·738	29 988
At 10 p.m.	30 181	29 753	30 022
General result	30 258	29·126	30 016
Range of barometer	1 132 inch.		

IV.—Hygrometer (wet and dry bulb).

	Dry bulb.	Wet bulb.	Temp. of Dew point.	Elastic force of vapor.	Comp. Humidity. Sat 1000.
At sunrise..	65 8	64·8	63·8	·600	952
At 9-30 a.m.	75 8	70 6	67·5	·662	743
At 4 p m...	78·0	70 9	65·4	·633	661
At 10 p m	69 2	68 2	66 7	·661	919

Comparative humidity of month 813

V.—*Rain*—3·971 in. on the 1st; ·058 on the 2nd; ·187 on the 10th; ·005 on the 11th; ·009 on the 12th; ·067 on the 13th; ·353 on the 14th; ·003 on the 15th. Total, 4·651 inches.

VI.—*Wind*—1, General Direction, N., N.W., N.E., S., S.W., S.E., E.

2, Velocity and Force. Instrument broken.

Remarks

The weather succeeding the cyclone was very fine and warm, but about the 10th of the month a change occurred: the sky became overcast, and the air moist. Occasional showers of rain fell, and the atmosphere was damp and raw. This continued up to the 15th, and was followed to the end of the month by sustained fine weather.

Fevers have been very prevalent during this month, and cholera began to appear in various parts of the district towards the end of it.

Jessore, 16*th December*, 1867.

STATEMENT OF CONTRIBUTIONS TO THE MUSEUM OF THE MEDICAL COLLEGE, CALCUTTA, BY MEDICAL OFFICERS IN THE MOFUSSIL, FOR THE THREE MONTHS ENDING 31st DECEMBER, 1867.

By J. A. Purefoy Collis, M.D., *Assistant Surgeon,*

Officiating Curator.

Number.	Date of receipt.	Donor's name.	No. in temporary catalogue.	Short description of specimen.
1	1st October, 1867..	Assistant Surgeon R. Hervey, M.B., Bhurtpoor Political Agency ...	749	Skull of a girl of 13, showing extensive fractures and separations of the sutures.
2	23rd October ,, ..	Assistant Surgeon D. Wright, M.D., Residency Surgeon, Katmandoo ..	751	A collection of urinary calculi extracted from the prepuce of a middle-aged man by Native Doctor Narayan Dobey.
3	1st November ,, ..	Assistant Surgeon E. C. Bensley, Civil Surgeon, Midnapoor ..	761	Malignant tumours removed from the left clavicle and right forearm of a girl of 10.
4	11th December ,,	Assistant Surgeon J. F. N. Wise, M.D., Officiating Civil Surgeon, Dacca	757	Acute yellow atrophy of liver.
5	16th ,, ,, ...	Assistant Surgeon R. Brown, F.R.C.S.E., Civil Surgeon, Silhet	790	Large cystic tumour removed from eyebrow.
6	21st ,, ,, ..	Surgeon F. Ringer, M.D., M.R.C.P.L., 4th N. I., Banda	793	Four large calculi from the right kidney, and one from the left kidney.

Medical College, 1*st January*, 1868.

CASES FROM PRACTICE.

◆

CASE OF GUINEA-WORM, OR *NARUE* SUCCESSFULLY TREATED WITH CARBOLIC ACID.

By J. N., M.A., M.D.,

Medical Missionary.

As the guinea-worm, among other parasites, is said to abound in Abyssinia, the publication of the following case, at this time, may prove opportune.

A month ago, as I was halting for a few hours at the town of Gurhshankar, in the Hoshyarpoor District, the arrival of a Doctor Sahib was quickly noised abroad. In the midst of a crowd which flocked towards the tree under which I was sitting, came some one staggering under the weight of a full-grown man, shown by his uniform to be a policeman. I soon learnt that the cause of his lameness was a guinea-worm, from the presence of which he had been suffering for several weeks. The outer end was, as usual, wrapped tightly around a stick, and protruded from the skin just below the right knee, on the outer side of the leg. A probe penetrated easily two or three inches upwards and inwards, after which the channel became too tortuous to be followed, but could, by the patient himself, through the medium of sensation, be distinctly traced deep into the muscular tissues of the thigh. From the orifice, which was small, exuded a constant flow of somewhat ichorous pus. The worm itself was flat, like a slender tape, or strip of parchment, perhaps half a line in breadth: very thin, but seemingly tough. Every day the patient (whose name I forgot to record) had, by gently twisting the stick, succeeded in drawing forth an inch or two of the worm. The portion already on the stick was dry and black, and to all appearance utterly devoid of vitality; yet the patient dreaded nothing so much as that the worm might break. He had previously, he told me, enjoyed excellent health; yet at this time he looked extremely haggard and wretched. The pain, though not very acute, was constant and most irritating, robbing the patient of his rest, and inducing a sympathetic fever at night. He would allow no one but himself to make traction by twisting the stick. In short, had I not seen this case, I could not have believed that a cause, apparently so trifling, could produce such severe constitutional disturbance. Certainly this man's sufferings were very great; and what was even more important, he was a perfect cripple. This last, perhaps, was on account of the knee-joint being somewhat involved.

The *treatment* was very simple, and apparently successful.

I [illegible] was never [illegible] The [illegible] [illegible] the [illegible] [illegible] it at to [illegible] [illegible] it was [illegible] [illegible] shew it [illegible] [illegible] could [illegible] with a like [illegible] of [illegible] [illegible] I [illegible] [illegible] forming [illegible] to the worm.

On [illegible] afterwards, I [illegible] man [illegible] standing [illegible] at the gate of the [illegible], looking perfectly well [illegible] Having was free from all pain, and a fresh cicatrix mark[illegible] the site of the [illegible] from which the [illegible] had [illegible]. He told me that he had kept the ointment applied [illegible] he had [illegible] was drawing many inches of the worm, and that, formerly, on the first day from the [illegible] the last of the worm had been drawn, "making in four days" [illegible] "a total of 18 or 20 inches." He confessed that within this time [illegible] perfectly [illegible]

In [illegible] I [illegible] a [illegible] until the [illegible] removed [illegible] [illegible] sinus, [illegible] Again, weeks of suffering [illegible] [illegible] A [illegible] applying the [illegible] appears [illegible] still [illegible] I would suggest [illegible] [illegible] and [illegible] and Dr. H[illegible] (and [illegible] cases) certain all I [illegible] by [illegible]

December 5th, 1867.

OBSTETRIC CASES.

By A. A. Mantell, M.D.,

Civil Surgeon, Budaon.

1.—*Arm Presentation.*

On the 24th of May, [illegible] I was called to see a Mussulmanee, aged 30, in [illegible] with her sixth child. Labour pains had commenced [illegible] at 4 A. M. on the 24th the membranes [illegible] On reaching her house at 7 A. M., I found the [illegible] arm projecting, its dorsal aspect looking backwards.

Labour [illegible] I was able, after steady perseverance [illegible] and the woman was delivered of a full-grown [illegible] child, it was born dead. The placenta [illegible] afterwards, and the patient made a good recovery. Chloroform was not used.

2.—*Arm Presentation.*

On the 27th May, [illegible] I was called to see a Hindoo woman, aged 20, in labour [illegible] Her friends stated that her pains commenced at 5 A. M., the liquor amnii escaped at 3 P. M., and an arm came down immediately afterwards. She had reached the full period of gestation. I was sent for at 7 P. M., and found the child's right arm presenting its palmar aspect backwards; it was greatly swollen, and the skin had been peeled off by the rough treatment of the midwives. I endeavoured to turn without chloroform, but failed, as the uterus acted too powerfully. Under chloroform I succeeded in hooking a finger in the right arm, and turned. I could not reach either foot. The shoulders and head were soon born from the uterine action; but it was necessary to introduce the hand into the uterus to remove the placenta.

No hæmorrhage followed, and the patient did well.

3.—*Arm Presentation.*

On the 22nd of July, 1865, at 9 P. M., on my return from visiting a sub-division, I was called to attend a strong, healthy Eurasian, aged 26, the mother of two children. I learnt that she was taken in labour on the previous evening, and that the membranes had ruptured at 2 P. M. on the 22nd, an arm and the cord descending. From this time her pains ceased. Two midwives had been attending her; and on my arriving at the house, I found three Sub-Assistant Surgeons present, who had been called in during my absence from the station. The patient was in a very excited state, with a good but rapid pulse. The child's arm had been nearly severed at the shoulder by the traction of the midwives, and its humerus was fractured. One of the Sub-Assistant Surgeons had endeavoured to turn, but without success. I put the patient under the influence of chloroform, and also failed, as the fœtus was so firmly wedged in the pelvis. I delivered her of a small male child by evisceration. The placenta was expelled by the action of the uterus.

On the 24th I was hastily summoned to see her. I found her lying with her thighs drawn up, breathing with difficulty, and complaining of great abdominal pain; these symptoms were treated with leeches, hot fomentations, &c., and subsided in two days. From this time she progressed favorably.

4.—*Placental Presentation.*

At 12 o'clock on the night of October the 28th, 1865, I was called to see the wife of the Sub-Assistant Surgeon in charge of the Government Dispensary. Her age was 30, and she was in labour with her twelfth child, and had had hæmorrhage during the last few weeks of gestation, which made the Baboo suspect she was suffering from placental presentation. Labour pains commenced early in the evening, and every time that the uterus acted, large quantities of blood poured from the vagina. My visit was useless, as no persuasions on the Baboo's part or mine would induce her to allow me to examine her. I was consequently obliged to leave the house. This state of things continued until 11 A. M. on the 29th, by which time she was so much exhausted by loss of blood that the Baboo called me again. I found her in a very weak state; but in spite of this she resisted, as far as possible, my attempts at examination.

The membranes had ruptured, and the head was descending.

As without chloroform nothing could be done with her, it was administered. I turned without much difficulty, and a full-sized male child was born dead in about half an hour. The placenta was expelled with the head. No hæmorrhage occurred, but the patient died from exhaustion soon after delivery.

5.—*Transverse Presentation.*

On the 31st of October, 1865, I attended the wife of a railway employé, who was pregnant with her seventh child. On the morning of the previous day labour pains had commenced but not violently.

On the 31st, at 5 A. M., the pains set in severely, and increased during the day. Scarcely any progress was made, and the os uteri was not sufficiently dilated for me to make out the presentation. In the evening I commenced giving ergot of rye, and within three hours could detect the malposition of the child. Without delay, and under the influence of chloroform, I turned, but was some time in delivering, although the uterus acted well. A good deal of hæmorrhage ensued, and it was necessary to empty the uterus at once. The child was born dead; it weighed 9¼ lbs.

The patient's recovery was slow, as she had been in bad health for some months previous to her confinement.

6.—*Placental Presentation in a Primipara.*

On the evening of the 7th instant the wife of the Native,

---

* Somewhat [illegible] case of [illegible] *Lancet* of July [illegible]

Doctor of Rampoor Haut, aged nearly 15, was taken in labour with her first child. Three weeks previously she had had uterine hæmorrhage. Great care was taken of her, and there was no recurrence of the hæmorrhage until the accession of labour pains, when it was severe, and alarmed the Native Doctor. The vagina was plugged, and the patient brought to Burdwan without delay. During her transit she is reported to have lost much blood. I saw her at 9 A. M. on the 8th; she was anæmic, but had a fair pulse. On examination, I found the os uteri dilated to the size of a rupee, and the placenta was filling up the orifice. Turning, under chloroform, was easily effected, as the membranes were intact; but I had some difficulty in passing my hand through the brim of the pelvis, which was small. On this account considerable time elapsed before delivery. The head would not pass the brim, and it was necessary to perform craniotomy.

The placenta was retained in spite of vigorous uterine action. On removing it, I found it adherent to the anterior part of the uterus; it was of the battledore variety. Very little hæmorrhage occurred. The fœtus was of good size and well formed.

In the evening the patient had severe febrile symptoms, which lasted all night. Her pulse was 132. On the following day she complained of great pain and tenderness in the region of the uterus, which was much swollen. This condition was relieved by fomentations. Her fever, which came on nightly, was treated with salines and quinine, and she gradually improved. The Native Doctor was obliged to return to Rampore Haut on the fifth day after the operation, and, although against my wish, took his wife with him. I have since heard that she bore the journey well, and is fast recovering.

BURDWAN, *October 19th*, 1867.

NOTES OF A CASE OF TYPHOID FEVER.

By DAVID B. SMITH, M.D.,

In Medical Charge at Mussoorie.

I BELIEVE that there are very few physicians indeed of any experience in India who do not now believe that, in this country as in England, we meet with cases of genuine typhoid fever. Since Scriven, Ewart, and others wrote on the subject, it has frequently been recognized and described.

I have myself seen, at the Hill Sanitarium from which I now write (*Mussoorie*), a good many undoubted cases of this disease, occurring late in the year, running the long course usual in this complaint, and characterized by rose-coloured spots, by diarrhœa, and by a crisis about the 21st or 22nd day.

Until now, however, I have never had a fatal case.

The following notes refer to one lately under my care, not by any means so marked in its course as others which I have observed, and yet, looked at in its entirety, an unmistakeable instance of TYPHOID FEVER.

Lieutenant ——, 7½ years' service, (5 in India,) aged 26, of middle stature, rather slight built, fair, clear complexion, and red hair.

My first visit to him was on the 11th November. He had just arrived from Roorkee. Looked thin and weak, but had no actual fever. Said that he had been suffering slightly from intermittent fever before coming up, but that it was never very bad; that he had come up, *not* on medical certificate, but merely for a short change. I then told him that I thought he was very weak, and that it would probably be a couple of months before he could safely return to the plains. He was much distressed on hearing this. Two days afterwards he removed to a small house occupied by a few brother officers; of the latter two had arrived *very ill*, ten days before, from Roorkee, suffering from similar fever: they both recovered very slowly.

On arrival at Mussoorie, he appeared to be suffering from mere debility. He occasionally, however, complained of chills and feverishness; and he sat over the fire, or moved about feebly as if in discomfort, physical and mental. He was not confined to bed for any part of the day; and after a few days he was in the habit of going [illegible] to bring back books from the library, which [illegible] to read.

His *countenance* [illegible] *Skin* generally dry, [illegible] *Pulse* [illegible] *Breathing* rather [illegible] furred in centre, [illegible] dry. *Bowels* [illegible] and [illegible]. [illegible] No [illegible], no [illegible]; no hiccup. [illegible] enlarged. *Bowels* [illegible] of rather high colour, not very scanty. *No headache*, although he always presented a look of mental distress. No epistaxis. *Mind* quite clear. Wakeful at night.

He was put on good nourishing diet, and took quinine.

I had no actual anxiety as to his recovery at that time. Still he was in an unsatisfactory state. Instead of improving he complained more and more, and he became feverish and nervous.

On my visiting him, day by day, he used to say he did not *think* he had any fever, although occasionally he seemed to have been hot and restless, particularly at night. A low irregularly remittent fever was then on him. But it was not until the 26th November (fifteenth day) that this became really well marked. He had then unmistakeable fever, remitting twice in 24 hours. All his symptoms became aggravated. No eruption could be discovered on the abdomen or chest, although it was looked for on several occasions. (The back was not examined with this object.) The pulse became more frequent and more feeble, the tongue more *red, glazed*, and *dry*. Small ulcers appeared on the right margin of the tongue, of a tawny ash colour. His appetite decreased. Thirst became more troublesome, particularly at night. *Still* he had no vomiting. There was now slight tenderness and gurgling on pressure over the cæcum, but no actual pain. There was still no diarrhœa, a threatening of it only appeared about four days before death. There was no enlargement of the liver, and no jaundice. It was only shortly before death that the urine became scanty. It was then either retained or passed involuntarily, not suppressed. Quinine did not check the fever. Profuse sweating occurred, and was increased prostration. The lips became dry, and the pulse smaller and more rapid, there was greater tenderness over the cæcum, deafness supervened; the pupils were widely dilated, there was a bright pink spot on each cheek, and slight incoherence and muttering now occurred. There were also quick, nervous, "[illegible]" breathing, subsultus tendinum, and dorsal decubitus.

Shortly after this, active, noisy delirium set in. On one or two occasions, when his attendants were engaged, he got out of bed. He talked vivaciously of a number of friends having arrived, and of much gaiety about to occur around him. He also rambled a great deal on the subject of the Abyssinian Expedition, talking loudly about it. Latterly the delirium became more noisy, particularly at night. He called out aloud, and remonstrated violently, when nourishment was offered to him. Still he could be roused, and all along he took his nourishment and medicine. The urine was drawn off twice a day with a catheter, he resisted this being done. The urine was at this time scanty, and had a bloody tinge.

It was only four days before death that he had threatenings of diarrhœa, but it was never urgent. He had at most three or four small motions in 24 hours, and this only for a day or two. These were not yellow, or of a pea-soup colour, but dark like bird-lime.

During his entire illness he was most faithfully and conscientiously nursed by Sergeant Taylor, of the Bengal Sappers and Miners. Night and day his every want was attended to.

His nourishment consisted of strong soups, jellies, tea, milk, barley water, toast water, arrowroot, &c. He took port wine and water, moselle and brandy, latterly, in large quantities.

At first, in the way of *medical treatment*, he took quinine; afterwards strychnine, mineral acids, muriate of morphia, chloric æther, camphor, &c. Turpentine stupes and warm fomentations were from time to time applied over the abdomen. When delirium threatened, a blister was applied to the nape of the neck.

His symptoms, in spite of careful nursing, went on from bad to worse. Noisy delirium lapsed into stupor. He died quietly on the 5th December, 1867, at 7-30 P. M.

POST-MORTEM EXAMINATION.

Body somewhat emaciated, but not greatly so. Pink discoloration of the whole back of the body. No bed sores.

Head.—Membranes not unduly vascular. Dura mater very adherent to skull. Pacchionian bodies strongly marked. No excess of intra-cranial fluid. Brain healthy and firm. Punctated vascularity of cortical substance on section. Grey matter normal.

Thorax.—No pleuritic adhesions. Lungs soft and crepitant, of comparatively pale colour towards the apices, dark and hypostatically congested on the posterior aspects, especially on right side. No consolidation. No tubercle. On section the cut surface [illegible], and discharges a [illegible] light, yellow, and very [illegible].

Larynx and *trachea* not examined. Two or three deep [illegible] of small size [illegible] the right margin of the tongue.

[illegible] No [illegible].

[illegible] but not actually [illegible].

[illegible] rather pale. No [illegible] section. It was neither [illegible].

[illegible]

[illegible] rather firmer than [illegible], and slightly [illegible].

[illegible] section it was [illegible].

[illegible] slightly [illegible].

[illegible] in con[illegible] membrane [illegible].

[illegible] healthy. No congestion or softening of [illegible].

[illegible] healthy. No [illegible] vascularity.

[illegible] the c[illegible], [illegible] as also [illegible] present all the [illegible] lesion, and [illegible] of the c[illegible], [illegible] patches were [illegible] of the mesentery, with their [illegible] fat stage. They were elliptical [illegible]. Some of them were nearly an inch in length. [illegible] excavated. Within their edges was [illegible] a small tawny slough or a dirty green [illegible]. Some of them were larger than [illegible] extended as far as the [illegible]. *No perforation*, however, was discovered. The [illegible] to the size of a split pea, presenting [illegible] apex, with a [illegible] fringe of vas[illegible] were [illegible] and puckered, with softened [illegible] to the edge of the ulcer. [illegible] they were found in the lower [illegible] in the [illegible] inches of the [illegible] were also found in [illegible] the *descending colon*. The *sigmoid flexure* and [illegible] were [illegible].

The [illegible] was dark, and resembled bird lime. The [illegible] were considerably enlarged, and purple on section.

REMARKS.

There [illegible] very little doubt that [illegible] was a case of genuine typ[illegible] fever. [illegible] symptoms were [illegible]; indeed [illegible]. There were [illegible]. Yet [illegible] symptoms [illegible] glazed tongue, the [illegible] enlarged spleen [illegible] the abdominal [illegible] and the delirium, [illegible] all these with the [illegible] marked and [illegible] to the disease which we [illegible] here to [illegible].

It [illegible] of the fever [illegible]. They are [illegible].

Dr. [illegible] on [illegible] *Typhoid* [illegible] *Society of Medicine*, writes [illegible]

[illegible] menc[illegible] of [illegible] the sent symptoms of simple intermittent fever, or [illegible] their progress, intermittent, or at least remittent [illegible] which rendered the employment of quinine necessary [illegible] M. Trousseau (Clinique Médicale) [illegible] show that typhoid fever may simulate at first intermittent fever, and [illegible] an intermittent fever may assume at [illegible] the characters of typhoid fever (p. 247, 2nd edition). It is especially in countries where [illegible] fevers are endemic, and with individuals who [illegible] their own country, that we see typhoid fever [illegible], at its commencement, an intermittent type" (p. 2[illegible]).

A[illegible] we learn that "the [illegible] fever of the [illegible] is now [illegible] recognised as a typhoid malarious fever, in which the symptoms of typhoid fever, diarrhoea, [illegible] were [illegible] associated with those of intermittent fever. The typhoid symptoms occasionally predominated, and [illegible] lesions of Peyer's glands."

Here, then, we have cases such as those alluded to by Dr. [illegible] and Trousseau, [illegible] which, by those who served with the army of the [illegible], would certainly have been returned as [illegible], which Dr. Harley would probably class under the head [illegible].

It remains for future observers to determine, with greater exactness than has yet been [illegible], what is the precise pathological relation between paroxysmal fevers and typhoid, to what degree they may be due to similar exciting causes; how far they resemble, and how far they differ specifically from each other; and, lastly, to what degree the most severe remittent cases eventuate in those [illegible] lesions of the intestinal glands which characterise Pythogenic fever.

All such cases as the above, as throwing light on this subject, ought to be published.

FRACTURE BY OINTMENT.

BY E[illegible] W. SWITZER, F.R.C.S.I.,

Assistant Surgeon, 6th Punjab Infantry; Civil Surgeon, Kohat.

CURIOUS cases sometimes come across the Indian Medical Officer's path, and are worth recording. The following may not be unique to others, but to me it certainly is.

One morning, early in 1866, a little Hindoo boy, aged about four years, was brought to me by his mother for treatment. On examination, I found the right humerus to present a uniform enlargement, from about three inches below the head to within two inches of the condyles, tapering above and below. The tumour was perfectly solid and hard, not painful, but, from its weight, it had slightly curved the spine to the right side, and as the child stood erect, a perceptible arch was evident. He always kept his left hand supporting the right arm; and it seems never to have struck his stupid relations that a sling round his neck would have given him relief. The limb was greatly wasted; indeed the muscles of the arm, especially the *biceps* and *brachialis* [illegible], seemed to have been absorbed, and the attenuation was so great that there appeared to be nothing but integument over the tumour. The diagnosis was not difficult, for the history of the case was very simple. He had been running from something that frightened him, and fell heavily on his left arm, sustaining a bad comminuted simple fracture through the whole extent of the middle third of the bone. Living far from any surgical aid, his people simply let him alone, and this tumour was but nature's rough surgery. Doubtless, the poor little fellow moved the unset fragments, or was restless during the progress of the cure: the consequence was that this enormous amount of callus was developed, gluing the pieces together. No trace of crepitus remained; it was from head to condyles one solid bone. Such was his state some eight months after the accident.

I was rather at a loss how to come to his aid. Amputation was thought of, and dismissed. I then fancied that I might remove the enlarged shaft, leaving the periosteum; but in the end I temporised, and determined to improve his health by good food, &c. before doing anything; so, putting his arm in a sling, I let him run about.

He ran about so long that he got into good health, and the case became a stranger to me; but I feel it rather a reproach, as he [illegible] daily visits to see him; for I could not make up my mind what to do; others saw him also, and could suggest nothing.

For the sake of doing something, I ordered an ointment, containing 100 grains of iodide of potassium and 10 grains of iodine to an ounce of lard, to be rubbed into the tumour twice a day: he was also to take a grain of the iodide twice daily. I confess I did not expect much, but the result astonished me.

After treatment of this kind for about three weeks, he complained that the rubbing hurt him; and on examining the arm, I plainly detected *crepitus*, and found the tumour, like an iceberg in summer, rapidly breaking up in every direction. The tale is told. I persevered more carefully with unusual interest, and in the end re-absorbed almost all the callus, left the fragments moveable, and thus "*refractured the bone by ointment*." All medicine was then stopped, and the bone properly set in splints. He made a capital recovery, callus being again thrown out; and the fragments re-united in their proper places.

Have any of my brethren met a case in which the absorbent power of iodine has been so powerfully shown? I never had much faith in the disfiguration of a lady's neck by daubing iodine paint over it; nor can I say that many buboes, scrofulous glands, or enlarged livers have retreated before my brush; but for the future I will put more faith in the steady introduction of iodine into the system when I want absorption.

This treatment might be successful in partially removing one deformity, for which a surgeon is often unjustly blamed. It is one of the most difficult things I know of to keep a child quiet when the apparatus for a fractured clavicle has been applied. Consequently, an unsightly lump on the bone results, especially if the little patient be a girl, who must always have her biggest doll in bed with her. When the girl grows into the young lady, and wishes to wear low dresses in a ball room, the surgeon is blamed for the deformity which the childish restlessness caused. Without going to the length of refracturing, which would then be hardly possible—if advisable, the tumour might be sensibly reduced.

I am quite aware of the refracture of bones from blood diseases, but then we do not want it; when we do, it is more rare to be able to procure it.

November, 1867.

DISLOCATION BACKWARDS OF THE STERNAL END OF THE CLAVICLE.

BY ASST. SURGEON J. A. PUREFOY COLLES, M.D., L.R.C.S.I.,
Officiating Professor of Physiology in the Medical College of Bengal.

KHUDA-I-DOST KHAN, aged 40, a Ghilzai Pathán, of the Azárkhail tribe, was admitted into the 1st Surgeon's ward of the Medical College Hospital (of which I was temporarily in charge) on the night of the 13th-14th November, 1867. He is an itinerant "bazáz" (cloth merchant), and has but recently come to Calcutta. On the night of the 13th he was getting out of the way of a buggy which was bearing down upon him, when another buggy, coming up behind him, struck him on the back of the left shoulder, and rolled him over. He became insensible, but thinks that the buggy wheel passed over the front of the left shoulder, and thence across the chest; but his only reason for this belief is the fact that his left clavicle and some of his right ribs have suffered. He was picked up by the Police and brought to the Medical College Hospital.

Present state, 14th November.—A rather haggard man, with grizzled hair, looking older than his reputed age, and even dirtier than his countrymen usually are, both which conditions depend, probably, on the fact that his wordly affairs have not prospered lately. He has a superficial lacerated wound, or rather a deep excoriation, on each knuckle of the right hand, and another over the right malar bone; all evidently caused by his contact with the ground, when thrown over by the buggy. The lower lip is also slightly lacerated by the teeth. He complains of pain along the angles of the ribs below the right scapula; and on examination, fracture of the 5th and 6th right ribs, midway between their angles and their junction with the cartilages, is detected. There is no emphysema, and not the slightest bruise or excoriation on the front or sides of the chest, or of either shoulder; showing that the buggy could not have passed, as he supposes it to have done, across his thorax. On the upper and back part of the left shoulder, between the outer end of the clavicle and the root of the acromion, is a bruise about as large as the end of a buggy shaft, with some ruffling of the cuticle. There are several trifling bruises and excoriations on the back of the chest.

The patient complains chiefly of intense pain at the inner end of the left clavicle, and declares that the bone has been broken. No crepitus can be detected on passing the hand along the clavicle from without inwards; but on reaching the sternal origin of the sterno-mastoid, the clavicle can no longer be felt; and instead of its convex head, the finger encounters, on the upper angle of the sternum, a shallow cup-like cavity, which looks towards the left side, and slightly forwards and upwards. The right sterno-clavicular articulation is in a normal state, and presents a complete contrast to the left, showing a convex protuberance looking towards the mesial line, instead of a concavity looking away from it. There is no appreciable difference in the radial pulses, no numbness or coldness on the left hand, and no difficulty of respiration; indeed, considering that two of his ribs are broken, the patient is wonderfully free from distress. The distance from the acromion to the median line appears to be the same on both sides, but was not measured. There is great tenderness about the left sterno-clavicular joint, and the pain in it is so great as to engross the patient's attention; he barely alludes to that caused by the broken ribs. There is no especial tension of the left sterno-mastoid, and the end of the clavicle cannot be felt behind or through it.

The *reduction* of the dislocation was easily effected, without the aid of chloroform. The patient sitting up, I stood behind him, with my left foot on the bed, and fixed his thorax by placing my knee between his scapulæ; while with my left hand I grasped the dislocated clavicle, as near its sternal end as possible. Dr. Ewart, holding the patient's left wrist, extended the arm steadily backwards, outwards, and slightly downwards, until the dislocated bone was felt to move, when he lowered the arm sharply to the side, while I, at the same time, raised and pushed forward the clavicle, the sternal end of which slipped into its place with a sensible, and almost audible, "click." The reduction caused but little pain, and no difficulty was experienced from the resistance of any of the muscles. On letting go the arm, the clavicle showed no tendency to slip out of its proper place. A broad bandage was placed round the chest, and the left arm secured to the side by a second narrower one; and the patient was confined to the recumbent posture. The intense pain in the dislocated joint was at once relieved by the reduction; indeed, the patient cannot understand why his broken ribs and cut hand are not treated by us in the same off-hand and satisfactory manner.

The case has gone on well since, and the patient now (25th November) only complains of pain in the broken ribs. There is slight swelling, and a good deal of tenderness, over the dislocated joint, but no pain in it; and the clavicle has not shown any tendency to slip out of its proper place. He is discharged to-day, at his own request.

REMARKS.

Though not so rare as it was believed to be by Sir A. Cooper, this dislocation is still an uncommon one. As regards the absence of all difficulty of breathing or swallowing in the present case, this can easily be accounted for by the direction in which the force producing the dislocation acted. The man had evidently been struck by the buggy shaft on the left shoulder, and thrown over on his right side, thereby injuring his right hand, and breaking his right ribs. The force acted upon the clavicle by driving its outer end directly forwards, and also, probably, slightly upwards, and thereby forcing the sternal end of the bone backwards and slightly downwards, but not in the least inwards. I believe that the sternal end of the clavicle lay, in this case, directly behind and below the articulatory surface upon the sternum. Had the dislocation been caused by a force driving the shoulder inwards, instead of simply forwards, dyspnœa and dysphagia would doubtless have resulted.

LARGE FIBROUS TUMOUR OF ARM WITH DEPOSIT OF CANCER CELLS; AMPUTATION AT THE SHOULDER JOINT; RECOVERY.

BY KASSY KINCUR MITTER,
Sub-Assistant Surgeon.

INAYAT ULLAH, a Mahomedan boy, aged 12 years, a native of Jessore, was admitted in the Dr. Partridge's wards, into Me [illegible] 12 years [illegible] 22 [illegible] 18 [illegible]

[illegible] tip of the [illegible] process to the lower [illegible] and along the [illegible] from [illegible] or [illegible] of the axilla to the lower [illegible]

[illegible] was kept under observation for nearly a fortnight. [illegible] and more emaciated; the [illegible] troublesome, [illegible] Amputation at the shoulder-joint was [illegible] the only alternative which gave a fair chance [illegible] his life. The operation was accordingly performed [illegible] 23rd September, 1867. About six or eight [illegible] were lost. The glenoid cavity, coracoid process, [illegible] were healthy. Pulse [illegible] very low. After the operation [illegible] and water was ordered to be given frequently. [illegible] 128, somewhat stronger than in [illegible] He complains of much pain in the stump.

Diet.—Milk and [illegible], beef-tea [illegible], port wine 6 oz.; brandy [illegible]

Sept. [illegible] 24th.—Pulse 114; temperature 101; no bleeding. He took milk and [illegible] well.

Diet.—Milk [illegible], beef-tea, port wine 8 oz.; no brandy. [illegible] mixed with [illegible] oil (as [illegible]) in the proportion of 1 oz. of oil to [illegible]

[illegible] of much pain in the stump; pulse 118; [illegible]

[illegible] ... [illegible]

[illegible] ... ... [illegible]

Every [illegible] hours.

[illegible] 27th.—[illegible] somewhat increased; five [illegible] Medicine [illegible] 8 oz., [illegible], milk and [illegible]

[illegible] 128; temperature [illegible]; two more ligatures came [illegible]

[illegible] 118.

[illegible] 172; temperature 103 [illegible]

[illegible] 98.5 [illegible] stronger

[illegible] general

[illegible] began [illegible] November, 1867, stump [illegible]

[illegible] 1867 [illegible]

[illegible] College M[illegible] extracted [illegible]

"No. 7 [illegible] aged 12, [illegible] from a [illegible] 10 [illegible] was [illegible] and [illegible] the rapid [illegible] appearance, [illegible] The tumour [illegible] very [illegible] by the tense skin, [illegible] and [illegible] had the appearance of [illegible] health was [illegible] by [illegible] * * * The tumour is an [illegible] seven [illegible] No [illegible] free from [illegible] not in the least adherent to [illegible] the bone, but extends round the [illegible] of the limb. The [illegible] between it and the bone, and the [illegible] the patient [illegible] The [illegible] with [illegible] the tumour is [illegible] Most of [illegible] has been divided [illegible] Anteriorly the tumour was bound down [illegible] a portion of which, undivided, [illegible] its [illegible] position.

"The axillary vessels lie internal and anterior to the tumour. They [illegible] compression, and the [illegible] as [illegible]

"[illegible]—The tumour is of a firm consistence, white, and [illegible] transparent, but [illegible] no tendency to break down into cavities, or undergo softening. Its cut surface is somewhat [illegible] Under the [illegible] it shows a small quantity of fibrous stroma, and a great number of [illegible] cells, mostly caudate or pear-shaped."

REMARKS.

The case is remarkable as showing how a tumour, utterly [illegible] with a bone, may, when tightly bound down, completely simulate malignant disease of the bone. In this instance the disease must have commenced in the axilla, probably in one of the [illegible] Its rapid growth, and the consequent tension of the [illegible], fixed it so firmly against the humerus, that not the slightest degree of motion could be perceived between the two structures, and no one examining the patient before the operation would have hesitated to pronounce the case one of malignant disease of the head of that bone.

Publications Received.

General Report on the Administration of the Punjab Territories for the year 1866-67.

[illegible] Paper [illegible], W. H. PAYNON, *[illegible]* W. [illegible], *[illegible] to the [illegible]* H. H. RAJAH [illegible] SINGH [illegible]

Notices to Correspondents.

ASSISTANT SURGEON COSTELLO.—*Your case shall appear in our next.*

[illegible]

[illegible] PROSUNNO COOMAR [illegible], *[illegible] Dispensary.*

[illegible] R. W. CUNNINGHAM, *[illegible]*

[illegible]

[illegible] M.D., *Mussoori.*

The Indian Medical Gazette.

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

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HARE STREET,
January 1868.

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OURSELVES.

IN commencing the third year's issue of the *Indian Medical Gazette*, we cannot refrain from congratulating our readers and ourselves on the success which has hitherto attended our efforts. Although there are few, if any, countries in the world where more materials for a journal like this exist, yet it is a melancholy fact that Indian Medical Periodicals are seldom long-lived, and, however well supported at first, are apt to perish, from want rather of contributors than of subscribers, after a few years. As yet, we are glad to say, such has not been the case with this paper; indeed, we have been obliged to exclude many valuable contributions, and to retain others an unreasonable time before publishing them, owing to our not having sufficient space at our disposal. We only hope that the members of our profession throughout India will be as ready to give us the results of their experience this year as they have hitherto been. That so many cases and original communications have appeared in our columns is the best possible proof that a medical periodical, appearing at comparatively short intervals, in which isolated cases and detached observations can be preserved, is a desideratum in this country, the want of which is imperfectly supplied by comparatively large volumes appearing at longer intervals. No one can think more highly of such publications as the *Indian Annals*, or the *Madras Quarterly Journal of Medical Science*, than we do; yet we think that a periodical like this is not, in its own comparatively humble sphere, less useful than they are. We trust that our readers will continue to be of the same opinion.

THE PROPOSED ALTERATIONS IN THE MEDICAL COLLEGE HOSPITAL.

THE shortcomings of what, with all its faults, we must still call the splendid Medical College Hospital of Calcutta are unfortunately too familiar to our readers, and to the Medical Profession at large. Attention has so often been called to them in our pages that we feel an apology due to our readers for again broaching so trite, and we fear we must add, so *hopeless*, a subject. We have now before us the Report of the Committee which met in January and February to report upon, and to suggest remedies for, the defects of the building. In the beginning of the present year we congratulated the profession on the appointment of this Committee, from which we hoped for some speedy result. Ten months have passed since their report was sent in, and as yet nothing has been done; and, considering the nature of the alterations which they have recommended to be made in the hospital itself, we cannot say that we regret the delay. Had measures only been taken during the past summer to clear the ground to the south of the hospital, and to improve the drainage of Colootollah Street to the north, the past year would have been a profitably spent one, as far as the hospital is concerned, in spite of the building itself having been allowed to remain "with all its imperfections on its head."

For the benefit of such of our readers as have not seen the Report of the Committee, but are acquainted with the locality, and take an interest in the institution in which many of them were educated, or have held office, we give a brief outline of the alterations recommended:—

1. The hospital compound to be extended southwards to Nimoo Khansamah's Lane, as far as the first turn to the south made by that lane, and thence directly westward to meet a line drawn southward from the angle of Medical College Street.

This would add a considerable piece of ground to the south, not only of the hospital, but of the museum and dissecting room. On this ground it is proposed to erect an ophthalmic, a midwifery, and a cholera hospital. The three buildings to be separate, and built in echelon, facing southwards, but so placed as not to obstruct the ventilation of the hospital.

2. The addition at the east and west ends of the hospital, and in line with the northern face of each of the present wings, of a smaller wing (or rather tower, for it is proposed, according to the plan, to extend but a very little way to the south), with the same number of stories as the present building. In these additional wings the privies and lavatories are to be placed.

3. The addition, on the north face of the present entrance porch, of an operating theatre, the floor of which is to be on a level with that of the (native) wards on the first floor. The room under this theatre to be used for the reception of out-patients.

4. The "Council Room Ward" to revert to its original purpose as a place of meeting for the hospital staff. The present operating theatre and accident ward to be assigned to the nurses, whose quarters (or rather dens), and the staircase adjoining, should be cleared away, so as to leave a fourth ward in the western wing, like that in the eastern. The cholera ward to be used as the dispensary, for which it and the accident ward were originally intended.

5. The arches between the two middle wards (medical and surgical) in each wing to be built up, except one in the north end, in order to secure some amount of [illegible] of the sick.

The estimated cost of the above alterations, and of some minor ones, such as the erection of an enclosing wall and [illegible] lodges, and the extension of the [illegible]

[illegible] was [illegible] as the [illegible] of the [illegible] is Rs. 4,25[illegible] [illegible] comparatively little expense. [illegible] present head, [illegible] (Rs. 12,2[illegible]) [illegible] the present [illegible] have [illegible] between the two [illegible]. We do not think that the [illegible] at the plan which [illegible] Report, [illegible] the Committee [illegible] "drafting [illegible] expenditure." The [illegible] the opposite hand.

As [illegible] southward and westward of the hospital [illegible]. In this respect, as in many [illegible], the original design of the hospital has never yet been [illegible]. It was intended that a large space, extending as far [illegible] Road's Lane, should have [illegible] laid out as the hospital garden. That [illegible] is the more to be regretted, [illegible] land could then have been obtained at a far smaller price than it would now fetch. The carrying out of the original magnificent plan being now, we fear, out of the question, the Committee have wisely recommended the removal of the squalid houses and huts on the south and west of the college and hospital. The proposed clearances will add 9¾ beeghas (about 15,000 square yards) to the hospital compound, and will allow space for special wards for midwifery, cholera, and [illegible] main building, [illegible] and the other patients. The [illegible] of all that portion of Medical College [illegible] south-east to join [illegible] Lane. It is to be hoped that this will be [illegible] both these streets, the [illegible], until they meet at [illegible] college compound; [illegible] by houses. [illegible] be carried [illegible] Lane prolonged to [illegible] of Medical College Street [illegible] Bazar, one of the [illegible] out, and [illegible] Hospital [illegible].

[illegible] being improved, the [illegible]. [illegible] in the [illegible] spot in the [illegible] in wet weather [illegible] lanes, [illegible] from all the [illegible] two feet or [illegible] we [illegible] respect.

With [illegible] hospital [illegible], [illegible] Committee [illegible] either [illegible] be con[illegible] [illegible] have their value; and as a mere piece of architecture, the Medical College Hospital is certainly a noble structure, of which "the [illegible]" may well be proud. We would certainly object to see its fair proportions marred by patchwork additions, just sufficient to spoil its outline, but on too small a scale to remedy its internal defects. That such would be the case were the recommendations of the Committee carried out, there can be little doubt, supposing that the plan appended to their Report correctly expresses their views, as we presume it does. The proposed additions to the east and west wings are on far too small a scale to provide latrine and lavatory accommodation for more than (at most) two wards per floor; whereas it is intended that they shall suffice for four wards. As to appearance, they will, in comparison with the building to which they are to be attached, look as insignificant as do the staircase towers devoted to the use of bhisties and mehters, which flank the better class of private houses. It may certainly be said that, half a loaf being better than no bread, four wards, with latrine accommodation for two, are better than the present arrangement of four wards without any latrines at all. But reforms, to be lasting, should be sufficient; and if it is intended to improve the hospital to any practical extent, sufficient latrine and lavatory accommodation for all the wards must be provided. A much better plan than that recommended by the Committee, and one which, so far from disfiguring the building, would, if anything, improve its appearance, would be to prolong the existing wings 30 or 35 feet farther east and west respectively, retaining their full width from north to south. Space for these extensions exists already, the only building which stands in the way being the house on the west of the hospital, which is so low that it would not seriously affect the ventilation of the new western wing, of which it would overlap only a small portion at the north-east angle.

Whichever plan is adopted, there will remain the serious and irremediable defect that the latrines of all the four wards on each floor will be collected into one block, instead of each ward having its own placed close to it. This, however, is one of the radical faults of the original design and cannot be obviated by any subsequent alterations.

It may be objected that the proposed new wings would interfere with the ventilation of the wards by closing the present east and west verandahs. The verandahs in question, however, do not extend along the whole width of the building, as the angles of the latter, to a considerable distance back from each face, are occupied by staircases and closets. Moreover, only two wards out of eight on each floor would be affected by the change, and the loss in ventilation would be more than compensated for by the substitution of proper latrines, bath-rooms, and lavatories for the present very objectionable and *kutcha* arrangements.

The operating theatre, unfortunately, can hardly be placed in any position where it will be sufficiently isolated, without being more or less unsightly. But this will be of the less consequence, as it is proposed to place it on the north side of the hospital, so that the appearance of the south, or principal, facade will not be interfered with.

Only second in importance to the improvements in the hospital itself is the erection of proper quarters for the four Sub-Assistant Surgeons attached to the Surgeons' and Physicians' Wards. The duties which devolve upon these officers are quite onerous enough, without the additional fatigue of a long journey to and from hospital. The accommodation provided should be on a sufficiently liberal scale to enable the Sub-Assistant Surgeons to make the hospital their *home*, as well as their place of business. Until this is done, we cannot expect these officers to feel thoroughly contented with their very responsible and honorable position.

Better quarters for the House Surgeon, Apothecaries, and Purveyor, as well as a proper dead-house, and cook-houses, &c., are also wanted, but less urgently so than quarters for the Sub-Assistant Surgeon.

In taking leave of this subject, we must say a word in defence of the designers of the Medical College Hospital. It is unjust to make them responsible for all its defects. At the time when its erection was commenced (1848), our ideas of hospital architecture were very different from those which now prevail; but even had the case been otherwise, it must be remembered that both the funds and the space available were greatly limited in extent. To this cause, no doubt, we owe the objectionable manner in which the wards have been placed with their ends, instead of their sides, to the prevailing wind, and many other faults in the building. Moreover, we should not judge of the intended hospital by the existing one, which is really only a fragment of the original design. The latter included a spacious garden in front, and a range of out-buildings, cook-houses, &c.; but these important portions of the design have never been carried out. There certainly are omissions in the original design which cannot be defended on the plea of limited funds. Too much attention was paid to the outside of the building at the expense of the interior, and huge pillars, after those of the Temple of the Winds at Athens, with pediments and cornices to match, were lavished on the outside of the hospital, while it was considered unnecessary to provide such a trifling matter as a water-closet for any one of the 14 wards within!

THE NEW SANITARY INSPECTORS-GENERAL.

IT is now definitely settled that India is to have a staff of Sanitary Inspectors-General worthy of the country in which they will labour, and of the science which they represent. The huge area, which is vaguely spoken of as the "Bengal Presidency," but which, practically, includes also the Central Provinces and British Burmah, is no longer to be left to the supervision of a single Sanitary Commissioner. Lower Bengal, the North-West Provinces, the Punjab, and the Central Provinces (including Berar) are each to have an Inspector-General on a monthly salary of Rupees 1,500. Sanitary Inspectors-General for Oudh, Assam, and British Burmah are also to be appointed, but are to receive only Rupees 1,200 a month. Under this arrangement, it will really be possible to carry out hygienic reforms elsewhere than in barracks and cantonments. Hitherto this has not been the case. The extent of country over which the one Sanitary Commissioner for Bengal has till now been supposed to exercise supervision is so enormous, that the most which he and his Secretary could do has been to see that the troops were not exposed to any removeable cause of disease, and that, where cantonments adjoined large cities, no *very* flagrant breach of the laws of Hygiene should be permitted in the latter. But no effectual efforts could be made to better the sanitary condition of the country at large, or of those towns which do not adjoin military cantonments. In the latter case, the carrying out of sanitary reforms has hitherto been generally left to the municipalities,—bodies which, whether in England or in India, are notoriously more anxious to keep down expenditure than to remove nuisances, or to take measures calculated to diminish mortality. But people are now becoming alive to the fact that "the liberty of the subject" in such matters, which it has hitherto been the tendency of all legislation on this point to guard so jealously, generally means liberty to injure the health of the entire community in order to save the money of a few. This is the case in England, where all men having the least pretensions to education acknowledge, at any rate, that pure air and water, and clean soil, are desirable, even though they may grudge the requisite funds to pay for them. Still more is it the case in India, where the wealthy mercantile classes, which form so important an element in our municipalities, are generally utterly ignorant and careless of such matters. The classes here mentioned—the rich "Lalls," "Seths," and "Malls" of smaller towns—are generally conservative in their ideas, and, though often lavish of their money in such useful works as the construction of tanks, serais, and bazars (*apne nám ke wáste*), are peculiarly averse to the removal of time-honoured abuses, and especially to paying for such removal. In the case of towns without municipalities, and of villages, the carrying out of sanitary measures has hitherto devolved upon the Magistrate, an officer already over-burdened with work, and whose duties are increasing in number every day. The Civil Surgeon, also, who is supposed to be Ex-officio Health Officer of the District, has seldom sufficient leisure to explore it in that capacity; the fact that, in most cases, he is in sole charge of the jail, obliging him to spend all his time at the Suddur Station, except on the rare occasions when he is able to leave it for a few days, in order to inspect outlying "branch" dispensaries. Hence, from want of the proper machinery, there has really been no *permanent* sanitary supervision of the civil population of the country. When a great epidemic has carried off half the inhabitants of a district, a Special Commission is appointed to report upon the same, and to suggest means for preventing the recurrence of a similar calamity. The recommendations of such a Committee, as regards drainage, removal of decaying vegetable matter from tanks, clearing away jungle, &c., are (or are not?) carried out in the first instance; and for the time the disease is removed. But it being nobody's especial duty (or at least not the duty of any one with sufficient leisure) to see that the improvements so carried out are kept up, things soon relapse into their former condition; disease re-appears; and wiseacres shake their heads at what they are pleased to consider the uncertainty of hygienic measures, and the inefficiency of Medical Officers, or perhaps hint darkly that the original Commission, and any subsequent one which a return of the disease may have called for, are jobs to put money into the doctor's pocket! Unfortunately, we need not look far for an example of this state of things. It appears that the epidemic in the Hooghly and Burdwan districts, which was so much reduced in its severity by the measures recommended by the Committee appointed to report upon it in 1862, is now again raging violently, owing, doubtless, to the improvements then carried out not having been since maintained. Under the new system each local Government will have on its staff a Medical Officer whose [illegible] We [illegible] Would [illegible]

A[illegible] filling up [illegible] now [illegible] We can [illegible] the new [illegible] a year [illegible] It is [illegible] are to lead [illegible] that they [illegible] with such duties [illegible]

W[illegible] last year, to [illegible] a decided [illegible] of the [illegible] to what [illegible] of the Sanitary Commission, but [illegible] Sanitary Commissionership. [illegible] duties, we [illegible] should have been filled by a Medical [illegible] arrangements, however, which to a certain extent [illegible] the [illegible] of placing a competent [illegible] essentially medical appointment. With a Medical Officer as Sanitary Inspector in each Province, the duties [illegible] Sanitary Commissioner will be considerably modified, and [illegible] those of a Secretary to Government [illegible] of a Department composed of officers specially [illegible] profession for the duties assigned to them.

Official Documents.

◆ ◆ ◆

[illegible] the Proceedings of the Government of India, Home Department, [illegible] the [illegible]

Read [illegible] the correspondence with Her Majesty's Secretary of State, noted on the margin, regarding the establishment of a system for the supervision of the public health throughout India, and the proposed appointment of Medical Officers to be in charge of the [illegible].

Read [illegible] correspondence with the Military Department, noted on the margin, regarding the proposed reduction of one of the two Inspectors-General of Hospitals in the Bengal Presidency, and [illegible] of the proposed arrangements [illegible] throughout [illegible]

Read [illegible] from Her Majesty's Secretary of State, [illegible] of the [illegible] proposal [illegible] of the Government of India, No. 152, dated [illegible] public health [illegible]

Resolution.

[illegible]

[illegible] Sanitary Inspectors-General [illegible] N[illegible] W[illegible] Provinces, the [illegible] Central Provinces, [illegible] Hyderabad Assigned Districts [illegible] of these Sanitary [illegible] British [illegible] been [illegible]

Ordered, that a copy of this Resolution, together with [illegible] of the [illegible] Her Majesty's Secretary of State, No. 172, dated [illegible] 1867, be [illegible] Government [illegible] with [illegible] Central [illegible] Oudh, the Central Provinces, and British Burmah, with a request that they will [illegible] Governor-General in Council [illegible] appointment as Sanitary Inspector-General [illegible] Oudh, the Central Provinces, and Hyderabad Assigned Districts, and British Burmah.

Ordered, that a [illegible] be [illegible] to the Inspector-General of Hospitals, Indian Medical Service, Lower Provinces, to the Sanitary Commissioner for Bengal, and to the Financial Department.

Ordered, that a copy of this Resolution be sent to the Military Department, with reference to the correspondence with that Department above cited.

Meetings of the Bengal Branch of the British Medical Association.

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No meeting was held in October, the second Tuesday of that month falling within the Pooja holidays.

The usual monthly meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College, at [illegible], on Tuesday, 12th November, 1867. Dr. S. G. Chuckerbutty, President, in the Chair.

Dr. Ewart exhibited a heart and the aorta with [illegible] from the arch of that vessel, taken from a patient whose case he had brought before the Association at their meeting [illegible]. The patient [illegible] to receive some [illegible] administration of iodide of potassium, but this was [illegible] rest and proper food. Dr. Ewart [illegible] the [illegible] hopeless one from [illegible] had [illegible] rapidly in size, and [illegible] of being [illegible] with the [illegible] and [illegible] its use was [illegible] latterly, [illegible] of its [illegible] progress of the aneurism. After [illegible] the patient's [illegible] to the [illegible] 1st May [illegible] he had [illegible] upwards of [illegible] caused by [illegible] portion of the tumour on the lung [illegible] the left bronchus [illegible] recurrent laryngeal nerve were compressed between [illegible] and the descending aorta [illegible] left lung [illegible] portion of the [illegible] and was full of fibrinous clots, of which the [illegible] laminated, but the central [illegible] fatty [illegible] The external [illegible] by a large ragged [illegible] sternum, which had been [illegible] pressure of the aneurism [illegible] was filled with a soft red coagulum, containing [illegible] with fluid blood.

Dr. Ewart believed the coagulum to have been of very recent [illegible] and he considered that the [illegible] quantity of iodide of potassium which he [illegible] probably hastened the [illegible] of the [illegible] of the clot, by deteriorating the quality of the blood.

Dr. Ewart also exhibited some livers in which abscesses were undergoing natural cure. In one the pus had been converted into a creamy [illegible] mass [illegible] in another the cavity of the abscess [illegible] contracted. Dr. Ewart [illegible] that [illegible] in the liver [illegible] Dr. [illegible] exhibiting [illegible] "syphilitic gummatous tumour" found in the right optic thalamus of a patient who suffered from hemiplegia of the left side.

Dr. Colles, referring to the case of thoracic aneurism, doubted that the iodide of potassium had any effect in promoting the fatty degeneration of the clot, which would, he thought, have occurred, in any case, in the central portions of so large a mass. Recent researches had raised considerable doubts as to the received idea that the fibrin deposited from the blood, in these or any other cases, became organised, and rather led us to believe that the fibrin so deposited underwent degeneration and removal, before new tissue was formed. Dr. Colles also doubted that the clot in the external sac was of *post-mortem* formation, though evidently of recent origin.

The President here regretted that, as Dr. Ewart had just been obliged to leave, the meeting could not have the benefit of any further remarks from him on this particular case.

Dr. Charles considered the softening of the central part of so large a clot to be a perfectly natural process, quite independent of the influence of any drug.

With regard to the complete absorption of hepatic abscess, Dr. Charles was rather sceptical. Several years ago he had opportunities of examining the bodies of many soldiers who had suffered from hepatic abscess, and in some of them he had found an attempt at spontaneous absorption. In many cases the abscesses appeared to be in a dormant state, and Nature had taken steps towards effecting a cure, a thickened caseous condition of the pus, and some puckering of the sac of the abscess, being observable; but in no case that he had examined was more than the *attempt* at recovery in this way evident, the patient always dying before Nature had completed the work. The fact was the more striking when viewed in relation to the frequent cicatrices in the lungs, which were often very perfect, Nature succeeding in completely closing the cavities. As regards the star-shaped cicatrices found on the surface of the liver, it was not easy to decide, in all cases, whether they depended on syphilitic deposits or on abscesses. Syphilitic deposits were usually confined to the surface of the gland, whereas abscesses were not so. Hence when cicatrices were found in the substance, as well as on the surface, of the liver, we might safely attribute them to abscesses. Dr. Charles had seen three cases in which hepatic abscess had certainly existed, and in which it was supposed that it had been absorbed; but in such cases the abscess may have been small, and have burst into the intestines very high up, so that the pus, before being evacuated externally, had become so much altered as to prevent its recognition. In cases like that brought forward to-night by Dr. Ewart, and another laid before the Association three or four years ago, in which there were seven abscesses, the abscess was never found completely healed. If in these cases Nature attempted a cure in this way, she seemed unable to carry it out effectually.

Dr. Chuckerbutty, in reference to Dr. Ewart's case of aortic aneurism, said that it proved nothing against the use of iodide of potassium, but that the subject of the action of that salt in promoting or retarding the coagulation of the blood was still *sub judice*. Nelaton, Chomel, and other authorities had, at the same time with himself, found it do good in cases of aneurism. He thought it probable that, in Dr. Ewart's case, softening of the clot had begun before admission. Dr. Chuckerbutty doubted the frequency of absorption in cases of hepatic abscesses; he had never met with such cases, though he had found abscesses with thickened walls and creamy pus in the substance of the liver, as well as masses of areolar tissue, which perhaps marked the site of absorbed abscesses.

Dr. Chuckerbutty then showed a specimen of numerous minute deposits, apparently tuberculous, in the liver and kidney; the lungs in this case were infiltrated with grey tubercle.

The meeting adjourned at 10 P. M., with a vote of thanks to the Chair.

Reviews.

Nature, Treatment, and Prevention of Cholera. By EDWARD AMBROSE FITZGERALD, M.R.C.S.; Eng., Assistant Surgeon, 2nd Seikh Infantry.

MR. FITZGERALD, in this pamphlet, gives an account of his experience in the treatment of cholera at Dera Ghazi Khan, in June last. The total number of cases treated by him was only twelve, of which three, who were almost moribund when admitted, died. Of the remainder, all of whom recovered, five were "of a more or less suspicious nature," and only four were undoubted cases of cholera. Mr. FitzGerald's statistics, therefore, are on too small a scale to be of any great value, though encouraging so far as they go. He is an advocate of Dr. George Johnson's theories, but not of his practice, considering that Nature herself "eliminates" the poison efficiently; and that our object should be to check its multiplication in the system, which he proposes to do with quinine, giving the latter every hour or half hour in five-grain doses in effervescing draughts. He also gives acids (especially lime juice), on the principle that they "possibly cause the generation of electricity in the animal frame, just as an acid would in the cell of a galvanic battery," and thus remedy the "loss of that electrical balance which appertains to all healthy individuals." When there is rapid breathing, a sense of suffocation, and cessation of the discharges, he recommends venesection.

The results which have followed this mode of treatment are encouraging so far as they go; but we think that the author would have done well to give his plan a more extended trial before "rushing into print," the more so as we cannot see much originality in his mode of dealing with cholera. Quinine, acids, and the lancet have all been tried ere now, though not possibly in exactly the way in which Mr. FitzGerald recommends. The close similarity between cholera and the cold stage of intermittent fever is so familiar to all Medical Officers on the frontier, that we are rather surprised at the author, writing from Derajat, going as far as Holgelee for instances of it. A treatment which, used in four cases of genuine cholera (for we leave out the three fatal cases as having been moribund when admitted), is successful in all, is certainly worthy of further trial; but it must be remembered that as great success in the first instance has attended other systems of treatment, which, on further trial, have proved valueless, the "suspicious cases" should not be counted. "Choleraic diarrhoea," if only carefully watched, is not, as a rule, a difficult disease to manage. Mr. FitzGerald deserves credit for so honestly recording that more than half his cases were only "suspicious" ones; too many advocates of new modes of treatment, either carried away by enthusiasm, or from more dishonest motives, call every case of severe diarrhoea successfully treated by their plan, "incipient," or even "genuine," cholera. We hope that Mr. FitzGerald will give us the benefit of his experience in the treatment of cholera hereafter, when he has further tested the plan which he now advocates.

On the Laws of Health, considered with reference to the habits and peculiarities of the Natives of India. By BABOO KANHAY LALL DEY. Read before the Bengal Social Science Association on the 26th July, 1867.

LIKE the former pamphlet by the same author, (*Hindoo Social Laws and Habits viewed in relation to Health*, reviewed at page 349 of our first volume) this is mainly a protest, by an educated and enlightened Hindoo, against the habitual indifference to the laws of Hygiene shown by the better classes of his countrymen. In every country such laws are more or less ignored, too often almost necessarily, by the lower orders; but while in Europe the upper classes have long been aware of the importance of cleanliness and ventilation, the conservative tendencies of even highly educated Asiatics have hardly been at all affected on these points. The wealthy zemindar, while from his position free from the necessity of taking exercise in order to earn his bread, has not yet learnt to take it to preserve his health; and he still sleeps, from choice, in an ill-ventilated closet, which would not be considered good enough for a "condemned cell" in any modern jail. Against such time-honoured abuses Baboo Kanhay Lall Dey seems determined to carry on a crusade; and he deserves the more credit for doing so from his not being a slavish imitator of European fashions. In his former pamphlet he deprecated the substitution of our ungraceful and inconvenient dress for the modification (partly Muhammadan and partly Hindoo) of Indian costume now worn by Bengalee gentlemen; and in the present he maintains opinions upon the subject of food, which would find small favour with the European soldier, such as that a diet composed exclusively of rice and dall will enable an able-bodied person to undergo any amount of labour without injury to health.

Having been designed for a non-professional audience, the present pamphlet does not go as deeply into the subject as did the former one, which was read before the Bengal Medical Association, but it is not the less valuable on that account. We only hope that those to whom it was addressed will carry into practice the excellent lesson which it is intended to convey to them.

Local Correspondence.

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THE NEW SCALE OF PAY FOR UNCOVENANTED MEDICAL OFFICERS IN CIVIL MEDICAL CHARGE.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

SIR,—[illegible] from the [illegible] But the [illegible] when [illegible] No. [illegible], dated the 28th August last, from the Home [illegible] to the Secretary [illegible] it was stated that the period of their service for promotion is to be counted from the date of their permanent appointment to a civil medical charge, [illegible] of their enlistment in the service, can [illegible] reserved.

Now, if the Government did not consider it as just or expedient [illegible] the members of the Subordinate Medical Department [illegible] of this new scale of pay, which those Uncovenanted Medical Officers who have received their professional [illegible] have derived, then it would have been [illegible] as much in the first instance, instead of [illegible]. And it ought to have [illegible] that this new scale of pay, as modified by [illegible] question, is practically unattainable by those [illegible] years of their being eligible for [illegible] to a civil medical charge, before he has served in the subordinate position for 20, or at least 15, years; so that he would require [illegible] to a period of service of 30, if not 35 years, [illegible] may expect to get into the highest grade, which [illegible] very few [illegible] attaining.

So much for the Subordinate Medical Department. It still remains to be seen how the Government will act in the matter with regard to another class of Uncovenanted Medical Officers [illegible]. I allude to the Sub-Assistant Surgeons. [illegible] it may be stated here that, if their case be [illegible] in the same spirit which has been shown with regard to [illegible], the new scale of pay will be equally [illegible] for the reasons already given.

In [illegible] it will be considered with reference to a few points which have been brought forward in the second memorial which the Sub-Assistant Surgeons of Bengal submitted some time ago to the Supreme Government. In paragraph [illegible] of this memorial, it has been clearly shown, [illegible] as regards their professional skill, the Sub-Assistant Surgeons are by no means inferior to those Graduates of the Medical Institutions of the United Kingdom on whom [illegible] Uncovenanted Civil Surgeoncies are at present bestowed. [illegible] paragraph 10, the memorialists further show that, "at the present time no less [illegible] charges are held by Uncovenanted Medical Officers [illegible] to practice, whereas up to the present time two Sub-Assistant Surgeons only have been so [illegible], and even these are not on an equal footing with [illegible] Uncovenanted Medical Officers as regards [illegible] pay [illegible]." If so, [illegible] of the [illegible] Royal [illegible], 1867 [illegible] status [illegible] members of the Uncovenanted Medical Service? [illegible] of progress [illegible], when [illegible] Sir John Lawrence's government [illegible] at home [illegible] doing so much to advance the [illegible] of the Natives of this country in other departments [illegible], as it is [illegible] that [illegible] at present [illegible] Un-covenanted [illegible]

The [illegible] Sub-Assistant Surgeons [illegible] the other classes of Uncovenanted Medical Officers [illegible] charges [illegible] Resolution No. [illegible], dated [illegible] November, [illegible] to a former memorial which [illegible] had submitted in [illegible] of the same year, [illegible] with regard to [illegible] of service [illegible] from the date of [illegible] civil medical charge be not allowed, [illegible] granted to [illegible] of these [illegible] not be [illegible]. It [illegible] evident that, while the very few [illegible] at present in civil medical charge, and [illegible] that may be [illegible] will have very [illegible] attaining the emolument of the highest grade, the [illegible] of the class, who still hold the subordinate posts to which [illegible] has been hitherto confined, with the paltry salary of from 100 to 200 Rs., [illegible] when they see their [illegible] fellow-servants, whom they know to be not [illegible] their superiors as regards professional attainments, nor their seniors in the service, luxuriating on the handsome income of 550 or 700 Rs. per month.

I am, &c.,
ALOR. BARBADENSIS.

18th November, 1867.

Short Notices of Recent Books.

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The Microscope [illegible] By JABEZ HOGG, F.L.S., F.R.M.S. 6th Edition. Routledge and Sons. 1867.

This is an immensely enlarged issue of a work which has already gone through no less than five editions, and of which the author tells us that fifty thousand copies have been sold. The work is eminently a popular one, since its style is simple, and its descriptions of objects for the microscope embrace only those objects with which amateur microscopists usually deal. In bringing up the book to the present condition of microscopical science, Mr. Hogg has left hardly any subject untouched; and we find, in the pages of his treatise, an account of every improvement and advance which has been made during the past ten years. If there is any fault in the work, it lies in the fact that, in trying to effect so much, the author has, in occasional instances, displayed a want of clearness in his explanation of philosophical principles, which is highly perplexing to the earnest student. This remark is especially true of the optical part of the work. In his illustration of the mode in which lenses operate in causing rays of light to form images of objects, we fear that Mr. Hogg leads his reader to conclusions hardly warranted by experimental physics. In his description of the different forms of microscope in use at the present time, it seems to us that the author has leant, probably with the best intentions, a little too decidedly to the instruments of one manufacturer, and this idea of ours is further borne out by the fact that the only catalogue advertised within the covers of Mr. Hogg's volume is that of Mr. Baker. Now, Mr. Baker, though possessing a high reputation as an optician, can hardly be considered as entitled to so high a place as Messrs. Ross, Smith, and Beck, or Powell and Lealand. However, it must be admitted that an author has the right to allow any one he pleases to advertise his wares in the advertising portion of his work, and our only charge against the author is that of questionable taste. Perhaps, too, we might add that it tends to diminish the respect which the author's expressed judgment might otherwise meet with. As we have said so much in disparagement, we must add one word of praise. Mr. Hogg has left hardly any part of his subject untouched, and his sketch of the microspectroscope is well given. As to the illustrations, we can only say they are excellent and artistic. Some of them are colored with taste, and form very handsome objects. The volume extends over nearly seven hundred pages, and it contains a well compiled index. As a popular treatise on, and text-book to, the microscope, we know of no more simple or comprehensive book. If the author had submitted the volume to a more careful revision, it would be unmatched as a companion to the microscope.

Germinal matter and the contact theory. BY JAMES MORRIS M.D., 2nd Edition. London: Churchill. 1867.

Dr. Morris may be best described as an enthusiastic disciple of Dr. Lionel Beale. The King's College Professor may be regarded as the originator of the theory of "Germinal and formed matter," and Dr. Morris is his prophet. In this little work Dr. Morris sets before the reader the various facts in the history of zymotic diseases, which seem to point to the explanation of contagious affections, as lying in the theory that the poisons which float through the atmosphere are capable of reproduction when supplied with the necessary pabulum. Just as Dr. Beale would explain the development of a piece of connection tissue, Dr. Morris accounts for the spread of zymotic epidemics. Dr. Beale says that the minute nucleus accretes to it matter, and thus increases in bulk, and eventually divides, and thus the tissue is developed. So likewise, says Dr. Morris, is it the case with the poison of a spreading disease: a minute particle, which comes from some source of contagion, reaches the blood; it is, in fact, a piece of germinal matter, and it grows and divides, and thus increases itself. As regards the general principle on which the theory is based—the principle of the reproductiveness of some condition of matter—there cannot be the faintest doubt; but it has been demonstrated long before Dr. Morris came upon the field. For the rest, we confess that we have failed to realise the proofs which Dr. Morris urges in favor of the process by which this reproduction is effected. Dr. Beale's theory involves the difficult supposition that some of the tissues of the body, which exhibit the highest vital powers, are nothing more nor less than dead matter, or, as Dr. Beale terms it, "formed material." Dr. Morris furnishes us with a well-written and aptly-pointed discourse on the reproduction of the poisons of the spreading diseases. In doing this, he has achieved a great service, for there can be no doubt that his observations, if extensively read, (and they deserve to be widely known), must tend to awaken people's minds to the activity of the zymotic poisons, and to the necessity which exists in all communities for prompt and energetic measures for their destruction. In this way Dr. Morris paves the road to a perfect and universally appreciated system of hygiene; and for this he merits the praise of the profession. Beyond this we cannot say anything in favor of the verdict he asks us to bring in. As in the case of Scotch jurisprudence, the simplest verdict to record is that of "not proven."

Egypt and the Nile considered as a winter resort for pulmonary and other invalids. BY JOHN PATTERSON, M.D. London: Churchill. 1867.

We are so inundated with treatises on "Change of Climate," and the works from time to time issued have so much to say, and so little to tell us, that we are accustomed to look on all species of this class of literature with considerable suspicion. Dr. Patterson's little volume is in some respects, though not in many, an exception to the general rule. It is not diffuse; and it deals with its subject in an earnest, simple, straightforward manner. Books of this kind are necessarily dogmatic; and so we find that Dr. Patterson seldom gives a very satisfactory explanation of his reasons for stating that particular parts of Egypt have especial virtues in the influence of their climates over disease. It must, however, in justice, be said that it is by no means easy always to explain why particular climates have particular effects. Medical art, even in this century of advance, is still somewhat empiric. Dr. Morris advises invalids against uniting in parties to go up the Nile, and he seriously urges his patients to curtail the usual list of medicines, and especially the purgatives, cod-liver oil, and quinine. The Appendix contains numerous meteorological tables which may be useful for reference.

On Ringworm: an enquiry into the pathology, causes, and treatment of the [illegible] diseases to which this term has been applied. BY [illegible] SMITH, M.B. London: Hardwicke. 1867.

The signification of the term "ringworm," as currently accepted, has been ever [illegible] ambiguous that Mr. Smith has done well to go into the subject, and give some categorical arrangement of this class of diseases. Ringworm, which has been loosely understood to mean a species of cutaneous ring-shaped eruption caused by an animal parasite, has been variously described as twelve distinct diseases. Of these twelve affections, there are but two which are attributable to the presence of a fungus, or vegetable parasite. Mr. Smith therefore gives a brief account of these twelve varieties of ringworm under the following heads:—Scabies, Tinea tonsurans, Tinea decalvans, Tinea favosa, Herpes circinnatus, Herpes iris, Roseola annulata, Erythema circinnatum, Lichen circumscriptus, Eczema, Psoriasis circinnata. There is nothing novel in any of the chapters devoted to these affections, but the descriptive details are accompanied by cases and thus the book will be found useful for reference by the busy practitioner.

A Treatise on Human Physiology. BY JOHN C. DALTON, M.D., 4th Edition. Philadelphia: Lea. 1867.

In this edition of Dr. Dalton's highly popular and lucid treatise on general physiology, the author has been certainly remiss in his efforts to bring the book up to time. This is, in our opinion, greatly to be regretted; for, in its earlier issues, we know of no treatise which could be compared with Dr. Dalton's book either for clearness or comprehensiveness. In the volume before us, it must be admitted that little has been done to make the work *en rapport* with recent research. The chapter on Blood is particularly open to this charge of negligence; in it we find no mention of Hoppe-Seylers, or the other German investigation. The development of the blood corpuscle is most inaccurately given, and we find no allusion, even of the faintest kind, to Mr. Sorby's and Dr Stokes' wonderful discovery of the absorption-bands of hæmatin. Again, under the head of Circulation, M. Marey's first tracings with the sphygmograph are figured, but no account is given of the wonderful application of the instrument as a means of physiological research. We have selected these parts at random, but we believe readers will find that the same carelessness is displayed in the other chapters of the volume.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, November 18*th*, 1867.

THE most generally-discussed question in professional circles, at the present moment, is that of the work-house infirmaries. It is not much more than twelve months since attention was drawn to the condition of the hospitals of London Unions. The terrible revelations which were then brought under public notice by Mr. Ernest Hart led to the formation of the "Association for the Improvement of Work-house Infirmaries," whose labors have produced the Legislative Act of last session. It was but natural to suppose that the state of things in Provincial Unions would, if enquired into, be found to be quite as objectionable as that in the London work-houses. Acting on this supposition, the *Lancet* and the *British Medical Journal* have been instituting enquiries into the country work-houses, and the result has been the discovery of a system of management which, in all its horrible details, presents as loathsome a picture as that which was last year set before our eyes. An official enquiry is now taking place at the Farnham Work-house, and the evidence fully bears out the statements made in the medical journals. Among a few of the grievances, we may mention the following:—Bedridden patients washed in cold water, and dried in their own sheets,—absence of towels; chamber-pots employed as basins; floors unwashed; children kept in cold, tiled-floored nurseries,—absence of water-closets; supply of bad meat, arrangements being entered into between the master and the butcher equally satisfactory to both these individuals; cruelties practised by nurses; imperfect separation of contagious cases; absence of light and air; and, finally, starvation and mal-treatment of the vagrant poor. Indeed, the discoveries of the Commissioners of the two journals in question show us that, under the present scheme of management, it is impossible to expect a much better sanitary condition of paupers, it is thought that little reform can be achieved till a superior class of work-house masters is appointed. As it is, the "master" is in most cases very nearly as ignorant as the beadle.

A vigorous effort is being made to extend the provisions of the recent "Contagious Diseases Act" to the civil population. On Monday last, 11th, an important meeting was held, for the purpose of establishing an association whose aim is to be the carrying out of this project. Dr. J. E. Pollock, who took the chair, reviewed the labors of the Committee of the Harveian Society, and pointed out to the meeting what an amount of useful sanitary work remained to be accomplished. Observations were made by Mr. James Lane, Mr. Curgenven, Mr. Erasmus Wilson, Mr. Holmes Coote, Mr. Gascoyne, and others, and various resolutions were passed, establishing the society and defining the extent and character of its labors. Among several Vice-Presidents elected, were Sir Henry Thompson, Dr. Jenner, Mr. F. C. Skey, Sir E. Armitage, and Mr. Erasmus Wilson. Messrs. Berkeley, Hill, and Curgenven are Secretaries, and Mr. Spencer Smith is Treasurer. The society is to be styled "The

A[illegible] Dublin [illegible] second [illegible] can towns [illegible] the whole [illegible]

[illegible] M[illegible] W[illegible] The President has [illegible] Dr. Andrew W[illegible] M[illegible] Act" [illegible] Mr. [illegible] W[illegible], [illegible] the Council agree to give [illegible] the Council. The [illegible] this demand, [illegible] W[illegible] Mr. Gathorne Hardy, [illegible] State, [illegible] to be seen; but [illegible] about a settlement of the [illegible]

Y[illegible] Hardly had my last letter [illegible] when we received telegrams of the [illegible] a steamer from St. Thomas, [illegible] There have been over forty cases [illegible] and there were no less than six deaths on the [illegible] Three or four more of the soldiers died with [illegible] the vessel reached port. Owing to the [illegible] quarantine imposed by the authorities, there has [illegible] extension of the epidemic.

The [illegible] of the College of Surgeons will do something [illegible] more industrious. At all events, it will [illegible] more careful in preparing for [illegible] candidate in future rejected will [illegible] deposited; so that when a second time [illegible] examination, he will have to deposit a fee [illegible] This regulation is by no means unjust [illegible] rejected candidates is always very large; and it is [illegible] that the examiners should be subjected to [illegible] without receiving any compensation. As a [illegible] the newly-imposed fine, I may mention [illegible] held on the 26th of last month, out of [illegible] the primary test, no less than 134 were [illegible]

At [illegible] of the Social Science Association, Sir [illegible] called attention to the mortality of [illegible] lying-in hospitals, which he stated was [illegible] of those who were attended at their [illegible] a somewhat unpleasant discussion [illegible] Dr. Sinclair, formerly A[illegible] at the Rotunda Lying-in Hospital, and Mr. D. [illegible] Secretary to the Board of the Dublin Hospital. Mr. [illegible] formerly [illegible] of the *Dublin Quarterly Journal*, [illegible] the question of the relative [illegible] Dr. Sinclair defends the [illegible] to Mr. Phelan's [illegible] in favor of the Coombe Hospital. The [illegible] is doubtless the reason why the [illegible] of the *Dublin Quarterly Journal* declined to insert Dr. Sinclair's paper, and thus compelled him to publish it as a pamphlet.

Among recent appointments and resignations, I may notice the following:—Mr. H. Power, the Editor of the [illegible] of Dr. [illegible] Human Physiology, and author of a work on the [illegible] published, has been elected [illegible] Surgeon to St. George's Hospital. The appointment [illegible] Mr. [illegible] however, [illegible] for the Assistant Surgeoncy, [illegible] will be rendered vacant by the [illegible] Mr. [illegible], now Senior Surgeon, giving [illegible] I [illegible] mentioned, when writing [illegible] Sir W. [illegible] Sergeant-Surgeon to the Queen [illegible] in order to satisfy the [illegible] Mr. [illegible] office of Sergeant-Surgeon [illegible] to Her Majesty. Dr. George Hewitt has resigned [illegible] the [illegible] "British [illegible] Hospital" [illegible] has taken his place. Dr. W[illegible] have been [illegible] Honorary [illegible] Queen's College of Physicians [illegible] Dr. M[illegible] Editor, and late Editor of the *British Medical Journal*, [illegible] about to resign his appointment of Assistant P[illegible] St. Mary's Hospital; it is thought that the vacancy will be filled up by some one of the [illegible] on the Medical School.

The *Medical [illegible]* [illegible] based on a paper in the *Gazette H[illegible]* [illegible] which it asks "Is cancer [illegible]" The question is certainly a very fair one, [illegible] by some [illegible] working pathologists. [illegible] last century, the subject has [illegible] the attention of [illegible] pathologists and physicians, but the [illegible] expressed [illegible] have been [illegible] conflicting. More recently the matter has been investigated experimentally by a French [illegible], M. G[illegible], whose [illegible] to believe that both the elements of cancer [illegible] are capable of [illegible] But his experiments [illegible] to be confirmed before we base any general [illegible] of cancer [illegible] on them. The whole of the recent discussion of the matter has arisen out of an assertion made by M. Chauffard, in his late address on the question of the contagiousness of phthisis, that cancer was "known to be [illegible]"

The various improvements in the medical curriculum of students, consequent on the increasing severity of the examination of the licensing bodies, have certainly done much to make students industrious; it is generally remarked in this session that the members of the several classes are more regular in attendance, and more earnest in their attention to lectures, than usual. The tendency to make all medical examinations practical is the cause of this. The student now feels that he cannot rely solely on cramming for his examiner, and he therefore dissects industriously and listens to his lectures attentively. Talking about students reminds me that at St. Mary's one of your Indian Princes may be seen engaged in the serious prosecution of medical studies. He has regularly entered for the lectures and hospital practice, and proposes to return to Calcutta with a [illegible] of medical licenses. He is the Nawab Sayad Asgar Ali Khan Bahadoor, C.S.I., and he produces rather a sensation among the students.

In a letter to the *Medical Times* (16th), Dr. Druitt suggests that even the most perfect vaccination is not an absolute preventive of small-pox, but that it is a useful protection against the disease, over which it loses its efficacy after a time. He thinks, therefore, the extermination of small-pox in small secluded localities may be possible, [illegible] that in large communities, coming in contact with strangers, it is out of the question. This is nothing new. Dr. Druitt's [illegible] suggestion, however, is an [illegible] one. He asks "Why are not the [illegible] to the mighty [illegible] and, at all events, [illegible] disinfected [illegible]?"

Paris Correspondence.

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P[illegible], 18th November, 1867

THE third sitting ([illegible] of [illegible] 2[illegible] of August, was devoted to the [illegible] a very interesting [illegible] but [illegible] that anything [illegible] within the limits of a [illegible] I will therefore analyze, and that briefly, the most [illegible] features of this reunion.

M. Brunetti was the first to speak, to expose the advantages of his method for the preservation of anatomical specimens, as well as to let us into the secret of the different processes followed by him in the preparation of them. This gentleman was an Exhibitor at the Universal Exposition, and his glass-cases attracted the attention, and excited the curiosity, of numerous visitors. A great many anatomical specimens, beautifully preserved, were to be seen in it, but the secret of the operative process had been well kept up to this very evening. It is this secret which M. Brunetti made the world a present of before the Medical Congress, and I must therefore try to give you and your readers the benefit of it as clearly and as briefly as possible. The process consists of five successive operations, all very simple, but rather long of execution. The four first are injections of diverse substances, which are made to penetrate [illegible] the vessels or excretory ducts of the specimen to be preserved, and the fifth is [illegible] for desiccation.

The first operation is an injection of water, the object of which is to wash out all the blood, the casts, or other organic products contained in the vessels or ducts. The second is an injection of alcohol: this is to drive out all the water. The third is one of ether. This part of the process takes some time; the ether penetrates every part of the object operated on, and dissolves all its fatty matter. It is optional for the anatomist or pathologist to stop at this stage of preparation if he chooses. He has only to place the "pièce" in ether, and he can preserve it indefinitely. But if he wishes to proceed, he passes on to the fourth process, which is that of "tanning." M. Brunetti dissolves his tannin in boiling distilled water, and injects the solution in the same way as the other substances, previously driving out the ether by means of a current of distilled water. Then comes the fifth or last process, which is the "dessication." This is accomplished by means of hot air, (under a pressure of about two atmospheres) dried by chloride of lime. The operations are then finished; and specimens thus prepared remain supple and light, and preserve their volume, their natural bearings, and their solid histological elements, for of liquids no more exist. They can be handled without fear, and preserved indefinitely.

Certainly, this is an admirable discovery. It had already received a recompense, an exceptional one, at the Exhibition, and this one was crowned by the immense cheering with which the Congress received the author's communication. At the suggestion of Professor Lamble, of Karkoff, who was Vice-President at the time, M. Bouillaud addressed the thanks of the Congress to M. Brunetti, and took the opportunity of expressing his satisfaction and pride at hearing so many foreign medical celebrities speak such excellent French; and he hoped that this language would become the universal one for all future International Medical Congresses. Hereupon, an English Doctor, by name Deysdale, put in a claim in favor of English, which *he* hoped would become *the* language; but as, in a room containing some three hundred persons, all spoke or understood French, whereas probably not ten knew half a dozen words of English, his good wishes are not likely to be for our generation.

After M. Brunetti came M. Laskouski, who also presented some beautifully preserved specimens, which have the advantage of retaining the aspect, the suppleness, *the liquids*, and all the physical qualities of the normal tissues. He circulated two specimens,—one of a forearm, which was two years old; and it was not only admirable as a preparation, but free from any unpleasant smell. M. Laskouski, however, told us no more than that phenic acid was part of the liquid which he used for injecting the vessels. His communication was well received, but nothing like what his predecessor's had been.

At the fourth sitting of the Congress the question submitted to it was the following:—"Is it possible to propose to the different Governments some efficacious measures to restrain the propagation of venereal diseases?" A good many papers of great value were read at this sitting, amongst others, by Messrs. Jeannel, de Merie, Rollet, and Owre of Christiania; but the discussion was the most animated part of it; so much so, that the President had frequently to call the numerous orators to order. It is not possible for me to reproduce exactly what was said, but I will endeavour to give my readers a correct idea of the "ensemble" of the discussion, and of the principal opinions which it elicited. At the commencement of the sitting, Professor Béhier proposed the nomination of a Commission, which should discuss and propose the measures under notice to the respective Governments, and this motion was agreed to in principle. The different works read on this question (which contained very ample statistical documents) stated the ravages produced by the disease in the different countries in which their authors practised, enumerated the measures already adopted to check them, and submitted new ones, more or less severe, in the hope of arriving, if possible, at better results. All sorts of ideas, good or bad, admissible or inadmissible, but nevertheless all worthy of discussion, as being suitable, perhaps, to one locality, if unsuited to another, were expressed in these works; but one unanswerable fact appeared on the face of the statistical evidence, and that was, that *the greater the discipline*, called in French "surveillance," *the fewer the venereal accidents*. The difficulty of the thing appeared to consist solely in the manner in which this discipline was to be carried out. For the army and navy, composed of men bound by strict regulations, this discipline is easy enough; it is carried out on a large scale, and it has already considerably diminished the number of venereal complaints wherever it is rigidly enforced. Some of the speakers suggested that the same measures should be strictly applied to the merchant service; they were of opinion that when a shipowner was about to start his vessel, the whole crew should, previous to shipment, be subjected to a searching inspection. When any one was found to have syphilis, he should there and then be sent to a hospital, to be treated and cured. It was almost incredible, they said, how numerous were the venereal diseases kept up by the merchant services of different countries; and they maintained that shipowners themselves would be large gainers by causing the crews of their vessels to be carefully inspected; for it often happens that men ship concealing complaints, which unfit them for work when at sea, and then they have to be fed and paid for nothing; nay more, it has sometimes happened that a ship has had to put into some port to land her venereal cases. Here, then, is a first measure of safety of easy execution, and capable of yielding good results if properly carried out. The idea of it is due to Dr. Jeannel, of Bordeaux, and to another gentleman whose name I did not catch.

M. de Merie, of London, who also spoke at this sitting, read a report in the name of the Harveian Society, which was ably drawn up, and very well received. Its object was to establish stringent regulations on prostitution, to subject those who practised it to careful examination, and to introduce the said regulations into England, where prostitution was mostly entirely free. This gentleman then narrated an observation of his own private practice to show the advantages that had resulted to an establishment in London, the women of which were under his care, and inspected by him twice a week; but as he also told us that this establishment was one which only admitted a certain select set of customers, it evidently was not in the same condition as similar ones in France, Belgium, or Germany, open to all comers.

Other speakers were of opinion that sanitary visits should be performed on all populations!! Such a proceeding, which would be a serious infringement on the liberty of the subject, has but a small chance of success in any country. Others again wanted patients to inform against the person who had diseased them. This measure, which, it appears, was in practice for some time in the French army, had to be abandoned, as sentiments of hatred, jealously, spite, or revenge often tempted patients to make false accusations, which led to unpleasant results, without any advantages as a set-off to them. Many doctors practising in large cities dwell on the difficulty of checking clandestine prostitution, which is unfortunately on the increase in all crowded centres, where numbers of women are on the loose, over whom the police have little or no hold. The houses of prostitution, on the contrary, where discipline can be much better enforced, are unfortunately on the decline, clandestine debauch driving an opposition coach against which they cannot compete; so much so, that several of the speakers were for urging all Governments to keep up the authorized houses, the advantages of which are proved by irresistible statistics. M. Le Fort set forth the state of prostitution and of syphilis in Paris in a series of tables, from which I am enabled to give the following figures:—There are at present in this city 3,851 women on the police registers. Of these 2,545 are "filles isolèes," that is to say, they live in rooms of their own, and are only inspected once a fortnight, whilst 1,306 are told off in 155 houses, and inspected twice a week. Since this gentleman has been Surgeon of the Venereal Hospital, called the Midi, he has had 12,000 consulting patients, and has treated 1,500 in his wards, questioning these numerous patients as to the sources from which they derived their complaints. M. Le Fort has established that 58.3 per cent. of them contracted the same from "filles isolèes," and others who frequent public balls and such places of amusement; whereas only 18 per cent. of them did so from the women who live in houses called "maisons de femmes." Every one knows that a certain number of clandestine prostitutes are almost daily laid hold of by the police; and it would appear from M. Le Fort's tables that out of a total of 13,818 of this category, 3,720 were found on examination to be more or less diseased. There can be no manner of doubt that women who are not on the police books are infinitely more dangerous than those borne on them; and that of these, the least dangerous are those who live in houses and are inspected twice a week. Another point which goes, as it were deeper into the subject, is the manner in which discipline is enforced; the visits are very often almost illusory, on account of the paucity of doctors to the number of women to be visited. The examination is made with a rapidity which may almost frustrate its purpose, for a hasty glance at the external organs is of little avail, whereas a minute inspection of the vagina and neck of the uterus might reveal disease which otherwise must escape detection. It is now well known that chancres of the neck of the uterus are by no means rare; and as they are not easily discovered, they constitute a very frequent cause of venereal disease.

[illegible] of [illegible] the pro- [illegible] it was [illegible] between [illegible] suggested by P[illegible].

[illegible] was Dr. A[illegible], the [illegible] papers by [illegible] had [illegible] knows that [illegible] they [illegible] the dis- [illegible] nerves [illegible] by results [illegible] the proceeding was [illegible] experience [illegible] of cases, persons who [illegible] fit whatever [illegible] and that [illegible] by being [illegible] words, that [illegible] syphilis hereafter, on [illegible] ration. This is [illegible] out of the [illegible] scientific [illegible] M. R[illegible] well known to have [illegible] attacked M. Auzias-Turenne by asking him to furnish proof [illegible] of [illegible] syphilisation. This request was [illegible] with the [illegible] has [illegible] of the Congress, and by a declaration that scientific [illegible] He accused M. Ricord of [illegible] to oppose his views [illegible] against himself, to which M. Ricord [illegible] I bear [illegible] ill-will whatever to M. Auzias-Turenne [illegible] my request. I [illegible] the proof of your [illegible] You have [illegible] a great deal on [illegible] You say [illegible] by an [illegible] to [illegible] Jenner. [illegible] the con- [illegible] M. Auzias-Turenne having been made [illegible] was written in [illegible] M. B[illegible] said that M. Ricord had [illegible] that was [illegible] Desgenettes had given [illegible] the Academy [illegible] 1852 [illegible] M. Ricord him- [illegible] M. Auzias-Turenne's [illegible] gentleman was [illegible] of his [illegible] that he [illegible] M. R[illegible] lecture on syphilis [illegible] and common [illegible] M. Auzias-Turenne's turn to speak [illegible] with great [illegible] and fluency; [illegible] quotations and documents, [illegible] but in the face of the names of the [illegible] who had proved on themselves the [illegible] of [illegible] Dr. Auzias' [illegible] refusal of following their noble example, when it was well known that he had not hesitated in submitting others to what he would not himself undergo, left his audience very doubtful as to his own real faith in what he professed, whilst, at the same time, they [illegible] he was [illegible] and by [illegible] Dr. D[illegible]. In reply [illegible] Dr. A[illegible] M[illegible] [illegible] M. R[illegible] 725, [illegible] several deaths.

Dr. D[illegible] rights of [illegible] the system [illegible] and [illegible] whether [illegible] was less [illegible] good results [illegible] Before taking leave of [illegible] I must [illegible] which gave rise to [illegible] episodes. When the speakers were taking a wider [illegible] of the question, as submitted, M. Crocq, of Brussels, rose, recalled them to it by reading it out, [illegible] with reference to it, as set forth in the programme, [illegible] to propose the syphilisation [illegible] of Belgium. A [illegible] gentleman, Dr. Vi[illegible], [illegible] of the [illegible] of syphilisation [illegible] children [illegible] I have [illegible] married, and I am quite well." "W[illegible]," said M. Ricord, "[illegible] not Dr. Auzias-Turenne [illegible]?" "I have [illegible] married, but he has not," said M. Vilemure; to which M. Ricord, who is very fond of saying [illegible] that he was [illegible] wrong in having [illegible] marriage [illegible] disease, or communicating [illegible] syphilisation."

A supplementary sitting was [illegible] to terminate this discussion on syphilis, and the end of it was marked by a good deal of animation in voting the [illegible] of the commission, as suggested by Professor B[illegible]. The majority of the Congress, however, [illegible] by the Bureau, and peace was restored.

The day following these somewhat noisy proceedings, the members of the Congress met at a grand banquet, which [illegible] The greatest [illegible] prevailed at it [illegible] toasts were proposed [illegible] well received. The [illegible] were Messrs. Bouillaud, Paris [illegible], Jaccoud, Lepine, and Ricord. M. Bouillaud [illegible] very strongly, borrowing two lines from Corneille, told the Congress:—

"Messieurs [illegible]
[illegible]"

and M. Ricord [illegible] by a most appropriate sentiment in proposing "the prophylaxy of syphilis." This, he said, will have been the [illegible] result of the Congress. The end of the feast, however, was saddened by the news of the death of Velpeau, whose funeral [illegible] present resolved there and then to attend in a body, as representatives of the Congress.

The question relative to venereal diseases having taken up twice as much time as it ought to have done, and more than was allotted to it, the remaining ones on the programme were passed over somewhat hurriedly, and with very trifling discussions. The question which was to have occupied the fifth sitting was the following:—"On the acclimatisation of European races in hot countries." This important subject would hardly have attracted the attention of the Congress, had not M. Simonot, a distinguished anthropologist, risen to discuss it. After well defining the question, this speaker came to a first conclusion, namely, that the danger of hot countries for European races resides less in their high temperature than in certain atmospherical and telluric circumstances peculiar to them, and that malaria is for Europeans (who do not possess the immunity against it which dark races do),—an enemy which they must conquer by extirpating him, or they will be annihilated by him. Consequently the acclimatisation of Europeans in countries where malaria exists is impossible. On the contrary, in countries which are only hot, acclimation is easy enough, if certain hygienic conditions are fulfilled, which vary according to localities. M Lombard, of Geneva, also spoke on the subject of atmospherical influences on mortality in Europe. His conclusions were, that cold and misery are two powerful causes of death in Northern countries and that cold acts most prejudicially on the aged. He further remarks that malaria is also a powerful cause of mortality even in Europe, and that no means should be left unemployed to destroy it.

A few words now on Paris medical staff events. Another death has struck down a man full of hope and promise, Dr. Foucher, one of the Professors Agrégés at the Faculty. He died young, like Follin, and at the very moment that he was going to reap the reward of the position which, by dint of hard work, he had made for himself. However, there is no lack of men to take his place, which was a complimentary chair of "Ophthalmologie" at St. Louis' Hospital.

The chairs left vacant by the death of Velpean and by the resignation of Nelaton have been filled up, as I announced they would be, by the nomination to Clinical Professorships of Messrs. Jarjavay and Richet; the former succeeds M. Nelaton at the "Hospital des Cliniques," opposite the School of Medicine, and the latter takes the Clinical Chair of Surgery at the Pitié, *vice* Professor Gosselin, who exchanges to the Charité.

The Clinical Professors of Surgery, therefore, now in Paris are—

Messieurs. Jarjavay at the Hospital des Cliniques; Laugier, at the Hotel Dieu; Gosselin, at the Charité; and Richet, Pitié.

This leads me to say a few words of a remarkable case now in M. Richet's wards, which is giving physiologists a good deal of trouble to interpret.

A young woman employed in a cartridge manufactory fell in such a manner that her forearm, a little above the wrist, bore violently on the edge of a sheet of copper used in the process of fabrication. A transverse wound was the result of the accident. The skin, both arteries, (radial and ulnar) a tendon, and the median nerve were divided.

The divided surface of the nerve was not clean and regular, but both ends were separated; so much so, that one having been found, the other had to be sought for. Now, though the central end was exquisitely sensitive, the *peripheric end was sensitive*. The patient experienced tolerably severe pain when M. Richet cut a piece of it off in order to make it even, as well as to obtain a portion for microscopic examination. The central end was not touched, for the slightest movement of it produced excruciating pain. M. Richet, before bringing both ends of the wound together by a suture, examined the state of sensation and motion in all the parts to which the median nerve distributes itself below the wound. As to muscles, the median nerve animates those of the thenar eminence and the two first lumbricales. Voluntary motion appeared lost in them. The median nerve further presides over the sensibility of the skin of the thenar eminence of the middle palmar region, and of the palmar surface of the three first fingers, as well as of the outer half of the fourth. On all these points sensation appeared to have been retained, though blunted on the index finger, which was, however, covered by a thick epidermis.

The patient mentioned, without making a single mistake, each point as it was being touched with a piece of paper, whether the thumb, the palmar surface of the middle or the ring fingers, or the hand. She could distinguish perfectly the sensation of contact from that of pain, when pricked on those spots with a pin. Nay more, when a strongly-heated object was brought near them, she felt a sensation of burning.

After all these explorations, the two ends of the nerve were united, and fixed by a point of suture. This operation in no way modified the sensibility. Since then several medical men have seen this patient—Messrs Vangetti, of Padua; Clark, of London; Duchenne, of Boulogne; and others. The results they obtained were similar to those that had been observed before the re-union of the nerve. Since then, that is, 18 days, sensibility has appeared to become gradually more delicate, and since last week hyperesthaesia has been superadded to the prickings in thenar eminence, and then intermittent pains towards the fingers. On the eighth day M. Duchenne explored the electrical motility of the muscles of the thenar eminence. He was unable to make them contract by an energetic current passed through the skin.

Consequently, in this case, the section of a mixed nerve, the median, has not induced the abolition of all sensibility in the parts to which it distributed itself. Any doubt of the fact is impossible, for all chances of error were carefully avoided, and cross examinations, as it were, made by able men, who did not easily accept as true that which appeared to them incomprehensible.

(These facts are taken from a published report.)

The Progress of the Medical and Collateral Sciences.

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Microphyta and Microzoa in the human skin.—At a meeting of the French Academy, on October 16th, M. Lemaire read a very interesting memoir on this subject. He stated that the ordinary dirty matter which is thrown out over the skin by the sudoriparous glands is full of minute organisms, which may be readily detected on submitting a portion of the matter to examination with high magnifying powers. The microscope, says M. Lemaire, reveals to us the existence, upon the skin, of numerous spherical ovoid and cylindrical transparent bodies, such as are found in a confined atmosphere, of myriads of bacteria, vibrios, and of small specimens of *spirillum volutans*; and, finally, of ovoid monads. The matter which yielded these numerous bodies was found, on chemical examination, to redden litmus paper. It is a remarkable fact that some of these minute organisms were found in the cerumen. M. Lemaire states that he has not been able to discover any of these organisms in the mucus of nasal fossa, vagina, or urethra.

Action of boric acid on albuminous substances.—Herr Brucke continues his enquiries into the action of boric acid on albuminous substances. At one of the recent meetings of the Academy of Sciences of Vienna, he stated that a solution of this acid of only 2 per cent. strength does not prevent the coagulation of blood, does not curdle milk, and does not produce syntonine by its action on albumen. On the other hand, the borate of soda, like the carbonate of the same base, transforms ordinary albumen into precipitable albumen.

Experiments on artificial scurvy.—In conducting some observations upon the action of common salt on the blood-vessels of frogs, Herr Stricker has very nearly demonstrated that the peculiar ecchymoses of scurvy are produced by the action of chloride of sodium on the capillaries. His experiment was thus conducted. Having placed a frog's foot under the microscope, so as to distinctly perceive the circulation of the blood in the capillary net-work, he then injected a solution of salt beneath the animal's skin. He soon detected a change in the movement of the blood corpuscles. These bodies accumulated in great numbers in portions of the capillary net-work, and formed partial ecchymoses by reason of the stagnation of the blood-current which they produced. The result of this experiment led Herr Stricker to make further trials. In the course of his subsequent observations he discovered that when chloride of sodium was admitted in large quantity into the circulation of frogs, dogs, and other animals, the bodies, when submitted to *post-mortem* examination, exhibited numerous livid patches, which Herr Stricker considered to be genuine scurvy ecchymoses.

Employment of yeast in dyspepsia.—This old remedy, which has for some years fallen into disuse, has recently been revived by M. Bergeret, who states that he has found it effec, cures in obstinate cases which had resisted all other remedies.

How carbolic acid affects the tissues.—This subject is just now of considerable interest, from the fact that very conflicting accounts of the effect of carbolic acid in wounds are given by different English and Continental Surgeons. The researches which have recently been carried out by Herr Newmann, of Königsberg, throw some additional light on the question. They lead their author to conclude, *first*, that when concentrated, this acid acts as a powerful caustic; *second*, it gives transparency to the tissues, without causing them to swell up; *third*, it preserves, rather than corrodes, the tissues: but this preservation is that of mummification rather than anything else; *fourth*, it is extremely beneficial in both lupus and eczema.

[illegible]

Sulphuric acid in the saliva of a mollusk.—In one of [illegible] Signor Panceri [illegible] the saliva of the well-known M[illegible]. The further [illegible] the following [illegible]:—

Free sulphuric acid [illegible]	3·42
Chlorine [illegible]	0·2
[illegible]	0·58
[illegible] magnesia, soda, phosphate [illegible] and organic matter	1·8
Water	94·0
	100

Inaccuracy of the storm-glass.—Though the subject is hardly [illegible], yet we doubt not that many of our readers who are using the common storm-glass will be glad to hear that its accuracy has been very carefully tested by Mr. Charles Tomlinson of King's College, London. They will feel, however, [illegible] to know that, for all purposes of prediction, the storm-glass, known as the camphor one, is absolutely valueless. Mr. Tomlinson's experiments are published in the *[illegible]* of November 1st. His conclusion is as follows:—"The storm-glass is not affected either by light or by any electrical conditions, or by wind or rain, but is solely influenced by variations in temperature. It is, in fact, a rude sort of thermoscope, vastly inferior to the ordinary thermometer and having no meteorological value whatever."

Values of different specimens of jalap.—Mr. Southall, of Birmingham, has made an examination of an immense series of specimens of commercial jalap, and has demonstrated that the ordinary samples of the drug vary extremely in therapeutic value. The following 16 examples give evidence of this:—

	Description.	Resin.	Market price.
No. 1	Jalap tops	5 per cent.	0s. 4d. per lb.
" 2	"	12 " "	0s. 5d. "
" 3	Tampico	9½ " "	0s. 10d. "
" 4	"	10½ " "	1s. 0d. "
" 5	"	30½ " "	1s. [illegible] "
" 6	"	20 " "	1s. 6d. "
" 7	"	13½ " "	1s. 6d. "
" 8	"	[illegible] " "	2s. 0d. "
" 9	"	27 " "	2s. 0d. "
" 10	Vera Cruz	15½ " "	4s. 0d. "
" 11	"	17½ " "	4s. 0d. "
" 12	"	17 " "	4s. 0d. "
" 13	"	12½ " "	4s. 6d. "
" 14	"	23 " "	3s. 4d. "
" 15	"	20½ " "	1 6d. "
" 16	"	10½ " "	1 10d. "

Mr. Southall [illegible] somewhat [illegible] the Vera Cruz variety, and has a peculiar smell.

The nervi-nervorum.—At the meeting of the French Academy on the 11th of November, M. Sappey said that he had [illegible] in demonstrating the nerves which pass over the [illegible] of the [illegible]. Considering [illegible] the nerves of [illegible] membrane, he found that [illegible] spirals [illegible] between them and the nervous substance.

The Microspectroscope in medico-legal inquiries.—Mr. [illegible] istics certain.

The laticiferous vessels of plants.—Herr Schultz denies that M. Trécul has any claim to be the discoverer of the remarkable series of vessels which convey the juice known as latex. M. Trécul admits that M. Schultz is quite right, and that he, M. Trécul, never laid claim to the discovery which he says was made by Malpighi and Duhamel. M. Trécul claims only to have been the first to point out the relation of the latex vessels to the rest of the vascular system.

Absorption of carbonic acid by the roots of plants.—It is often stated in text books on botany that a great deal of carbonic acid is taken up by the roots of plants. In a paper which has been presented to the French Academy, (November 18th,) M. Corenwinder states that this absorption does not take place. Having submitted carbonic acid in various forms to the roots of plants, he found that the proportion of the acid taken up by roots is extremely small.

The affinities of the Mesotherium.—M. Serres has just concluded his series of memoirs on the anatomy and relations of the great extinct mesotherium. He states in his general conclusions that this animal approaches the rodents by the arrangement of its incisive teeth; by its general form it resembles the young pachydermes. It is related to the edentata by the form of the head and limbs, and the bifurcation of the last phalanx. Finally, its form of head and the position of the encephalon relate it to the cetacia, to which M. Senechal believes it to belong, looking at all the anatomical peculiarities. M. Serres thinks that the mesotherium should be ranked between the pachydermes and rodentia.

A new microscope stand.—Dr. L. W. Sedgwick has devised a form of stand for the microscope, which will, we should think, be found very useful by those engaged in histological studies at night. The stand is simply a mahogany tray placed on three rollers, and carrying on a vertical rod the lamp which lights the mirror. When the mirror is arranged, the worker has no further trouble. When preparing his specimen, he can push the stand away; and when the specimen is ready for observation, he can pull over the microscope, and use it without further change of focus in the mirror, or alteration of the position of the lamp.

Action of electricity on blood corpuscles.—In experimenting with strong induced currents on the white corpuscles of the blood, Professor Neumann found that the electric current caused the corpuscles to swell out and become transparent. This, in some measure, is in accordance with Dr. C. B. Radcliffe's theory of the action of muscles, viz., that the nervous or electric charge keeps the muscle on the stretch; but when the electricity is discharged, the natural elasticity of the tissue causes it to contract.

Effect of the constant electric current on the spinal cord.—In a paper recently published by Herr Ranke, it is stated that, in confirmation of [illegible] views, convulsions in an animal may be readily stopped by passing a constant current along the cord. Herr Ranke found that it was quite impossible to produce reflex actions in a frog during the time that a constant current was travelling along the spinal cord. It was found also that, though a strong current prevented the tetanus produced by strychnia, it did not prevent the death of the animal. A weaker current [illegible] tetanus. See *[illegible]*, November.

ORIGINAL COMMUNICATIONS.

FURTHER REMARKS ON THE SO-CALLED CONTAGIOUS FEVER OF OUR INDIAN JAILS.

By David B. Smith, M.D.,
In Medical Charge of Mussoorie.

(Continued from Vol. III., No. 2, page 32.)

From what I have already written, it will be seen that I am quite prepared to admit the truth of the following propositions regarding this fever of our jails:—

(A).—That it *is* contagious.

(B).—That, consequently, it *is* capable of being imported into a jail from without.

(C).—That quarantine ought *certainly* to be put in force where there appears to be any chance of such an occurrence.

But, again, there are other considerations, even more important still, upon which I would particularly insist. They are the following:—

(1).—That the disease described by Walker, Bateson, Gray, Wikeley, De Renzy, and others, and so frequently alluded to in the Bengal Sanitary Reports as "the peculiar contagious fever of our jails," is simply the relapsing fever of Great Britain.

(2).—That it is neither typhus, nor typhoid, nor yellow fever, nor malarious remittent, but a distinct and specific disease already known and recognized as such by the Medical Profession in every country.

(3).—That we have good reason for saying that it sometimes originates *within* our jails.

(4).—That conditions of general privation and want did exist, to a great degree, in Upper India, concurrently with, or shortly previous to, the appearance of this epidemic. That the famine of 1860-61, and the comparative destitution prevailing for some years after, are fully capable of accounting indirectly for the appearance of the fever in question.

(5).—That bad sanitary arrangements in matters of diet, space, ventilation, clothing, drainage, and the like, have much to say to its existence and spread; and that such insanitary conditions were not unknown in our jails at the time alluded to.

(6).—That the title given to this disease by the Bengal Sanitary Commision, *viz.*, "the peculiar fever of our Indian jails," is vague, unscientific, and, in one sense, incorrect.

(7).—That were the principles of nomenclature which have produced this title to be applied generally to the whole scope of medicine, we should very soon arrive at a stage of confusion in matters of scientific fact, so hopeless that even the most intellectual men of our profession could not easily undo the mischief thus effected.

First, then, as to this being specific relapsing fever. In my first paper I showed how exactly Dr. Walker's description of the disease, as observed at the Agra Jail in 1860, answered to that of relapsing fever, in its mode of invasion, the duration of the first paroxysm, the date and character of the relapse (or relapses), the symptoms and signs attending the crisis, and the very tedious convalescence. It may here be mentioned also that the complications and sequelæ of relapsing fever were accurately defined by Dr. Walker, *viz.*, jaundice, affections of the respiratory organs and of the bowels, congestion of internal organs, sudden syncope, haemorrhages, muscular and arthritic pains, &c., &c. But the feature of the disease, which of all others most distinguished it from typhus was the early crisis, and intermission of all febrile symptoms. The patient rapidly got worse about the fifth day. But suddenly, "within a couple of hours," "either on the fifth, seventh, or ninth day," all his symptoms improved; "his face became quiet, relaxed, and placid;" "beyond weakness and a feeling of being bruised all over, he declared himself well." Nothing could be more graphically true than this description, by Dr. Walker, of relapsing fever; and inasmuch as it is correct in this respect, insomuch does it fail to apply to typhus.

Let me now ask, how does Dr. Bateson describe the disease? Somewhat thus: "Shortly after a meal the patient's head began to swim and to ache; he had a three-blanket coldness," he had also distressing muscular pains, vomiting "of a green watery bile," (but never black vomit,) great epigastric tenderness, constipation, enlargement of the liver, but no eruption on the skin. He was "listless, yet perfectly clear in his head;" jaundice appeared about the fourth day. "On the fifth day a critical sweating, or, less frequently, a diarrhœa, ushers in the beginning of convalescence." The "pulse falls, appetite is astonishing." "He is convalescent; cheerful that he has got over it; he is doing capitally." "So soon as the crisis, as soon appetite, began to come back, rush back! Convalescents were positively ravenous." Instead of the old complaining about his muscles' pains or his joints' aches, it was '*bhookha, bhookha; bhook lagti, sahib.*' "*I am hungry now.*" Later he has a relapse, when his illness "differs not much from the one you thought he had got over. His convalescence is prolonged. He thrives slowly, running the gauntlet of either a sloughing cornea, or an all but uncompromising flux." From being "almost a skin skeleton," he gradually becomes "something like a human being again." "Three-fifths of the cases *relapsed*, 79 indeed became so well that they had been discharged to the convalescent's ward or yard, but came back again, about the twelfth day from original seizure, as bad as ever. Of the 79, 45 came back a third time; had two relapses. We had prisoners who were ill with this very fever in 1861, and who were also taken with the same sickness during this epidemic." "The fatal cases occurred generally between the 4th and 7th day, fatal cases from sequelæ of course excepted." "Men die suddenly that you do not expect to die." "Quinine as a preventive is of no use whatever." "As in the epidemic of 1864, so in the present one, I recognize no other disease than the relapsing fever of authors." "The best help to the doctor is the kitchen."

I have abridged this account from Bateson, and so, to a certain degree, have done injustice to his description, but what I have reproduced conveys an idea of the important points at issue.

The picture of the disease found in Dr. Gray's Report is even more minute in detail than Bateson's. From the first sudden giddiness and rigor, to the description, at last, of the general anatomical lesions observed after death, there is really *nothing* wanting to establish, beyond all doubt, the identity of true relapsing fever. The countenance, the pulse, the tongue, the skin, "the absence of all eruption," the thirst, the character of the respiratory movements, the state of the nervous and muscular systems, the condition of the internal organs, the occurrence of death from sudden collapse, the complications of pneumonia, enlarged liver and spleen, jaundice, epistaxis, diarrhœa, dysentery, post-febrile ophthalmia, glandular inflammation, partial paralysis, tedious convalescence, severe arthritic pains without effusion into the joints, and the absence of lesion of Peyer's patches, all establish the fact of the disease being relapsing fever with almost as great certainty as the early crisis itself, followed by a voracious appetite, the critical copious perspiration and intestinal flux, and the three or even four recurrences of relapse, "which were not to be warded off by quinine." Here is Dr. Gray's sketch of his patient about the sixth or seventh day:— "With the exception of a general feeling of weakness and pain in the limbs, joints, or muscles, the patient now expressed himself well; and if his appetite had gone, which was not invariably the case, it returned, and he was clamorous for food. In this state of apparent convalescence he would remain for several days (from four to eight or nine), when all the original symptoms [illegible] Ophthalmia [illegible] was [illegible] few [illegible]

Dr. De Renzy [illegible] Mr. [illegible] H[illegible] [illegible] and [illegible] He says, [illegible] was [illegible] of pre[illegible] six days." [illegible] The patient [illegible] were [illegible] marked symptoms [illegible] and [illegible] liver. This was the [illegible] sign of improvement. [illegible] the period [illegible] He [illegible] was [illegible] a day or two his [illegible] blood allowed [illegible] for a period ranging from [illegible] twelve days, when he was again seized with the same symptoms as at first, but in a milder form. This attack was [illegible] common [illegible] complications, of which [illegible] the most formidable. The second attack passed off, like the first, without any marked [illegible] even [illegible] On [illegible] diarrhœa [illegible] immense proportion [illegible] After the [illegible] diarrhœa was the immediate cause of death." The [illegible] condition of the patients was thus described:—"It was painful to look at the wretched objects. [illegible] skin, which [illegible] dry and harsh [illegible] with a [illegible] water [illegible] the skin with warm [illegible] seemed to afford great relief [illegible] retained consciousness almost to the last. Many of them ate heartily within half an hour of their death." Will any one say that this resembles the ordinary course of a case of typhus fever, such as [illegible] thousand times?

Dr. Dallas, the Inspector General of Prisons in the Punjab, has paid great attention to this subject. It may be well to enquire what he has to say regarding it. In his report to the Punjab Government, dated 20th August 1864, he writes as follows:—"From [illegible] and the same [illegible] the [illegible] Mooltan. In both was [illegible] symptoms noted. The symptoms which occurred in the course of the disease were almost identical in both jails. The anxious flushed face; the dry tongue; jaundiced [illegible] over the epigastrium, great [illegible] of the muscular and nervous systems; [illegible] of any kind; and [illegible] The lesions [illegible] after death were in both cases almost identical. The spleen was enlarged [illegible] liver was in all cases more or less [illegible] congested, in some cases were [illegible] the small intestines were in a [illegible] ulcerated. Dr. Gray was most careful in looking for this condition. Dr. De Renzy, too, looked for it. Dr. Pearcy also by himself, and with me, made numerous *post-mortem* examinations, expressly with the view to ascertain whether there was ulceration of the small intestines. [illegible] but in no case did either he or I find this condition. The symptoms detailed by Dr. Gray are clearly those of a continued fever attended by frequent relapses. So are those given by Dr. De Renzy."

Again, Dr. Dallas continues thus (further on in his Report):—"What is 'relapsing' or 'famine fever'? The symptoms of this disease are a sudden invasion marked by chilliness and shivering, a quick pulse, a white moist tongue becoming dry and brownish, tenderness at the epigastrium, vomiting, jaundice, enlarged liver and spleen, hot dry skin, constipation, high-coloured urine, severe headache, pains in the back and [illegible] a sudden cessation of these symptoms, and frequent relapses, after death no specific lesion, but usually enlargement of the spleen and liver. We have these symptoms given by Dr. De Renzy and Dr. Gray."

A little further on, Dr. Dallas, arguing on the meaning of the term 'famine fever,' thus writes:—"If it be [illegible] may be applied to a disease the [illegible] with health, [illegible] powerfully to depress the vital energies, [illegible] hesitate to take use of it; and [illegible] comparison of the phenomena [illegible] famine fever, and those [illegible] we have no alternative but [illegible] adopt this [illegible]."

The above was written in August, 1864. Has Dr. Dallas's opinion on this subject changed since then? In his last Report on the [illegible] in the P[illegible] for the year 1866, I find the following:—"Concerning this fever, the Honble the Lieutenant-Governor, in remarking on the Report for last year, instructed me to make enquiries. In consequence I addressed Medical Officers, and have obtained from some replies to my enquiries. The information as to the character of this fever contained in the replies I have received in no way varies from that already [illegible] It is [illegible] as a continued bilious fever, with [illegible] characteristic tendency to relapse." A few pages further on, in the same Report, Dr. Dallas thus writes:—"There is no doubt, in my mind, that several of these [illegible] their origin in great measure to [illegible] The disease [illegible] described by [illegible] Medical Officers [illegible] famine fevers [illegible]."

What [illegible] Judicial Commissioner of the Punjab [illegible] with the [illegible] of 1864 [illegible] him, concluded [illegible] In his [illegible] to the Secretary to the Government of the Punjab, dated 2nd September, 1864, he wrote as follows:—"I think it is impossible to read the Reports of Drs. Dallas, Gray, and De Renzy without being convinced that they rightly describe the epidemic as relapsing fever or famine fever, and that it was caused mainly by—

I. Intense cold.

II. The low state of the vitality of the prisoners arising from insufficient food.

III. Overcrowding.

"Of course it is not intended to be said that the prisoners in our jails have by any means been starved, but while the quantity of food was just sufficient, there was a want of variety, and the quantity was not such as to keep the convicts in a state of health which enabled them to withstand the other morbific influences which surround them."

Even in the Reports of the Sanitary Commission, we fin [illegible] proof that this disease is relapsing fever, and nothin else. At page 64 of the 2nd Bengal Sanitary Report, we ar informed that in 1860 both the Agra and Meerut Central Prison were attacked with a very malignant fever, in which relapse were common. At page 66 of the same Report, Dr. Kilkelly i reported to have observed in the Allygurh jail two or thre relapses in the same disease. Again, at page 92 of the sam Report, the Civil Surgeon of Umritsur describes two relapse of the same fever.

In the 3rd Sanitary Report (page 9) we find these words.— "The Ludwa Report says others got bad again after gettin better. Some had bleedings from the nose, some bled from th bowels." At page 10 of this Report, Dr. C. M. Smith, Civ Surgeon of Lahore, writing of the disease, says:—"Whe it attacked the lunatics, it at once assumed a relapsing form. At page 14 of the same Report, a severe epidemic of this diseas is said to have occurred at the Island of Reunion; we are furthe informed that it is there recognized as *la fievre recurrente*.

At page 16 of the same Report the Sanitary Commission write as follows :—" Because *the disease resembles the famine fever of Europe in many important particulars*, (the italics are mine) it by no means follows that it has been *originated* among the prisoners by insufficient food and other bad sanitary conditions." Shortly before this quotation we also find the following :—" Three years ago Dr. Gray, in describing the fever as it occurred among the prisoners of the Lahore jail, pointed out *its striking resemblance in many particulars* (the italics are again mine) to the 'relapsing' or 'famine fever' of Europe. In support of this view of the case nothing new has since been advanced." I am perfectly ready to allow the truth of this statement. *What more*, in the name of reason, is required? Was this malady that has been described by so many competent writers as relapsing fever really not the disease at all, but typhus or yellow fever, or malarious remittent, or typhoid, or something entirely different? It seems ludicrous to speculate further. I leave my readers to draw their own conclusions whether or not, in its symptoms, in its course, complications, sequelæ, morbid anatomy, and general history, it can reasonably be said that the disease above alluded to was other than true relapsing fever. Surely I have given above no conjectural or speculative evidence. I have purposely abstained from bringing forward any theory of my own. I have simply adduced, as far as lay in my power, from the writings of others, the irrefragable proofs of the truth of the opinion which I hold. Why, it may be asked, should the Sanitary Commission be so loath to allow that this is simply relapsing fever? Is it because the greatest authority, perhaps, on the subject writes :—" Relapsing fever is the appanage of poverty and destitution?" (*Murchison*). The Commission are not ready to allow that destitution is in any way an element or factor in the production of this disease. Hence, perhaps, their reluctance to admit its relapsing character. By the Commission the disease has already been set down as typhus, and this only two years ago. How, then, it may reasonably be asked, can it possibly, in so short a time, have become quite another disease? In the 2nd Bengal Sanitary Report it is authoritatively laid down that this is typhus, and consequently typhus it must remain to the end of the chapter. He who will say that it is relapsing fever will be met by the Stoical rebuke—" *Chrysippus non dicit idem.*" Under such circumstances, it has happily been remarked how natural and reasonable is it for us to say :—" We greatly esteem Chrysippus, yet we respectfully differ from him on this point." The medical logic of the present day is fortunately regulated by no Stoical maxims. It is amazing to me how the Sanitary Commission, or any impartial judges of the facts above cited, can for one moment hesitate to allow that here we have genuine relapsing fever. It is true that the reluctance displayed by some men to see things in their true light is sometimes marvellous. The reasonings, on this subject, of the Bengal Sanitary Commission instinctively remind one of the conduct of the modern disciples of Aristotle, when, from the top of the tower of Pisa, Galileo proved to demonstration (by the *simultaneous* fall of bodies of different weight falling on the pavement) that the rapidity of descent of such falling bodies is *not* in direct proportion to their weight. The Aristotelians could not but hear and see the proofs, yet were they unconvinced, because Aristotle, nearly 2,000 years before, had propounded a different doctrine. It has been forcibly said that "some men are dogmatical in the midst of ignorance, and often sceptical in the midst of knowledge." I only hope that this cannot fairly be asserted of the Bengal Sanitary Commission.

Secondly, I pass on to the proofs of this being a *specific* disease different from typhus, typhoid, yellow fever, and malarious remittent.

The low remittent fever of this country, however severe it may be in its attack, has never, so far as I know, been declared to be contagious, its remissions are short, and are, like its exacerbations, more or less regular diurnally. The *worst* paludal fever is the *least likely* to present us with a sudden and perfect intermission lasting several days; nor do we in such cases ever remark the other features of regular crisis and of regular relapse on distant yet determinate days. It is the opinion of the Sanitary Commission that this contagious fever of our jails is the same as the epidemic fever which has, of late years, been devastating the villages of Lower Bengal. I think a careful consideration of the true characters of the latter disease will at once entirely separate it from the relapsing fever of our jails. It may be remembered that in the beginning of 1864 His Honor the Lieutenant-Governor of Bengal deputed a Commission to proceed to the fever stricken districts to enquire into and to report on the causes of the epidemic, its course, and the best means of checking its further progress. This Commission consisted of men particularly well qualified for such an enquiry. Dr. F. Anderson, Deputy Inspector General of Hospitals, was the President, and the Members were Dr Charles Palmer, Presidency Surgeon; Dr. J. Elliot, Civil Assistant Surgeon; Mr. D. J. McNeile; and Baboo Degumber Mitter. No better selection of men could have been made by the Government for such an object. They went to the districts of Burdwan, Hooghly, Nuddea, and the 24-Pergunnahs; they visited and carefully inspected many villages in those districts. What did they discover? Did they report that they had come upon "a very peculiar contagious fever," dependent on an animal poison, like that so much dwelt on by the Sanitary Commission? On the contrary, they describe a deadly remittent prevailing "in the low, ill-ventilated villages lying along particular nullahs and half stagnant rivers, such as the Bheng Nuddee, the Upper Nobogunga, the Bheirab, and the Chitra." We are told that when the disease becomes chronic it assumes an intermittent type, and that, in almost all such cases, "enlargement of the spleen, anasarca, and a general anæmic and emaciated condition exist." It is said to be identical with the remittent fever of the inundated eastern districts. The disease reached its height in August, September, and October. "By the end of December, almost complete cessation has taken place." The tract of country suffering from the epidemic was a *most* malarious one, remarkable, during the worst fever months, for a soil saturated with moisture, and, at all times of the year, for deficient drainage. The infected villages were surrounded by the most dense foliage, through which the sun's rays scarcely penetrate; the atmosphere around is described as being perceptibly damp and heavy; the villages are surrounded by large holes in the ground (the result of excavations made for building purposes). There are also old neglected tanks around. From these filthy sources the people obtain their drinking water. Vegetable decomposition, however, is not the only abomination there met with. The Commission tell us that "in the Mahomedan quarters of villages the dead are constantly buried on the very borders of the tanks," and that in the case of the Hindoos, in times of prevalent disease, only a few bodies are effectually destroyed by cremation, the half-burnt remains being "simply thrown away, without funeral rites of any kind, into nullahs and rivers" Sometimes corpses are simply cast out in any direction, and thus, we are told, the air is poisoned for miles with the foulest effluvia. The disease attacked all classes, rich and poor, young and old, indiscriminately. The first and chief cause of the disease was found to be *miasm*, which in those districts arises on all sides from the vast accumulations of decaying vegetable matter which completely conceals the ground, and daily, but chiefly at night, emits the most deadly vapours. In point of fact, the Report of the Commission (which is minute and careful throughout) unequivocally establishes the fact that the epidemic fever of Lower Bengal was simply a "congestive remittent" caused by malaria, coupled, as might be expected, with many other insanitary conditions. We are told that in some rare instances children of fever-stricken mothers, delivered at the full time, were born with enlarged spleens! But the most [illegible] tenants. This fever of Bengal was found to be [illegible]. Equally [illegible] words of the Commission [illegible] report:—"Viewing [illegible] the widest meaning [illegible] attached to [illegible], we have [illegible] grounds for stating that [illegible] present fever. On the contrary, we have [illegible] of 1867 [illegible] of the residents of village [illegible] the anniversary of [illegible] festivals [illegible] to a distant village named [illegible], which [illegible]. Whilst there they all fell [illegible] fever; [illegible] went back to their [illegible] to have died [illegible]. The disease did [illegible], which [illegible], and is free from [illegible] vegetation, its tanks being comparatively clear and [illegible]." This [illegible] from the interesting Report of the [illegible] the opinion of the Sanitary Commission, that the fever is [illegible] with that which [illegible] our jails since 1860.

[illegible] Yellow fever [illegible]. It need scarcely enter into [illegible]. It is not a relapsing fever at all, but for the [illegible] both diseases, they are very dissimilar. Yellow fever attacks the same person but once, in the case of relapsing fever it is quite otherwise. It was [illegible] that several of our jails the prisoners suffered from the [illegible] in different epidemic years. Because a patient is yellow, and at the same time feverish, it may be simply absurd to declare that he is suffering from an attack of specific [illegible].

A [illegible]. It is almost [illegible] to note that in no case of relapsing fever in India has [illegible] of Peyer's patches and the solitary glands of the [illegible] been observed.

It may be [illegible] to say a little more regarding the differences between relapsing and *typhus* fever. The more is this necessary, inasmuch as the Sanitary Commission (whilst they have [illegible] many [illegible] of the late epidemic disease which [illegible] as so-called famine fever is known to [illegible] Europe) have concluded that it is genuine typhus. (*Vide* 1st Sanitary Report for Bengal, page 79.)

It was, I believe, Dr. Henderson, of Edinburgh, who first proved that these two diseases are as distinct pathologically as [illegible] symptoms and course. He showed that each is dependent on a special poison, the one infecting independently of the other, and in its attack affording no immunity from the influence of the other. Dr. Wardell, one of the greatest authorities on the subject, thus wrote in the [illegible] for November 17th, 1860:—"Of relapsing and typhus I can speak with much certainty. Sixteen years ago I maintained from very elaborate [illegible] essence, and such doctrine still holds good. In more than 3,200 cases I never saw typhus and relapsing blended. The [illegible] one fever never prevented the other. Like [illegible], in a multitude of instances." [illegible] non-identity of them [illegible] common-sense proof we have, and a practice [illegible] of the non-identity of small-pox and scarlet fever. Dr. Jenner, in the *Medico-Chirurgical Transactions*, *XXXIII*, 23, established the difference, in character and pathology, between these two fevers. Sir Thomas Watson writes very [illegible] on this point. He says:—"A third form of continued fever, called the *relapsing* fever, is [illegible] distinguishable by well marked features of its own, when once its separate existence has been realized." At another place he writes:—"Later research has established this to be, indeed, a *distinct*, but by no means a *new*, form of fever." Further on he dwells upon "the many points of diversity" which exist between them. He says:—"Dr. Jenner declares, and my own experience is in agreement with his, that he never saw jaundice in typhus or typhoid fever." Dr. Wood, of Pennsylvania, in his Practice of Medicine, thus writes of relapsing fever:—"It differs entir ly from both the above fevers in its course. The tendency t relapse, so characteristic of this, is wholly wanting in typhus." Dr. Murchison, than whom there is no greater authority on th subject, writes regarding it as follows:—"It is, in my opinio difficult to conceive how any person, who gives the evidenc [illegible] continued fevers, a fair con [illegible] other conclusion than that they ar as distinct as small-pox, measles, and scarlet fever." "In th clinical history, no two diseases can present a greater contra than relapsing [illegible] typhus." At another page he says "tha in their causes and symptoms the two diseases are as distin as can be [illegible]." At page 320 of his treatise on "Co tinued Fevers," he [illegible] the non-identity of these tw diseases was [illegible] established in 1843, "that the Manage of the Edinburgh Infirmary made a regulation that there shoul be separate wards for typhus and the short fever." Mr. [illegible] corroborates [illegible] opinion of Wardell th typhus invariably [illegible] typhus, and relapsing fever produ relapsing fever. Dr. Gray, in his Report previously alluded t writing of the epidemic that prevailed in the Lahore Centr Jail during the latter part of 18[illegible] and beginning of 1861, says:— "I had little difficulty in coming to the conclusion that typh was not the type of fever generally prevalent." "It will b asked was it typhoid or enteric fever? I am convinced it w not." "The symptoms and course of the disease convinced m that it had more in common with the continued 'relapsing' o 'famine fever' which has for some time been recognised [illegible] type of fever, quite distinct from typhus or typhoi and generally [illegible] with [illegible] epidemic [illegible]."

From the above, I think we may [illegible] it for granted that the are indeed great and specific differences between relapsing an typhus fever, and yet it would appear that in India there exi [illegible] of opinion which [illegible] of them [illegible] identified. In the late epidemic of our jails it is to be remembered that no measly eruption was discovered; that relapses, which are ver rare indeed in typhus, only one instance having [illegible] a thing out of 5,000 cases at the London Fever Hospital, consti tuted the [illegible] in the present epidemic; that jaundice, which, a we have seen, neither Dr. Jenner nor Sir Thomas Watson hav ever observed in typhus cases, very generally occurred in ou jails; that the [illegible] and [illegible] absent was much more common than in typhus; that the crisis, bot in date and character, differed entirely from that of typhus, an that the sudden invasion, the sudden falling of the pulse an temperature, and the profuse perspiration occurring on critica days, the strange voracity of appetite so frequently observed, th duration of the disease [illegible] as a whole, the enlargement of th liver and spleen, the pains of the muscles and of th joints, and the post-febrile ophthalmia, all point to the fact tha the disease so accurately described by Gray, Bateson, De Renzy Dallas, and others, was genuine relapsing, and not typhus, feve

I submit that it is of [illegible] importance that the Sanitar Commission should determine the precise nature of this fever Such a consideration has a significance far beyond its merel local interest. It is capable of throwing much valuable light o the general field of medicine. The "cropping out" of a diseas in India, or elsewhere, which has never before been there dis tinctly recognized, in a manner resembles the discovery of som great geological change which heretofore had remained un observed by philosophers. It is impossible to estimate the ful practical value of a simple observation of this sort. It i scarcely too much, however, to say that, like the careful des cription of a new "formation," it may illuminate a new page in the history of man. The stories of *S[illegible]* and of the Ol Red Sandstone, with all their curious characteristics, are no of more interest to the student of geology than are the records of famine fever in different countries to the philanthropist and the medical philosopher. Besides the abstract interest attaching to this subject, it is surely at all times of unquestionable importance to distinguish between the different species and varieties of disease; and this not even so much with the object of accurate diagnosis, as for the carrying out of a rational and successful mode of treatment.

In the face of all the facts which I have above alluded to, the Sanitary Commission, whilst they admit the similarity between famine fever and the epidemic of our jails, declare "it must also be borne in mind that there are also important differences, and among them the much more fatal character of the Indian fever is specially noticeable." The important differences thus alluded to are not even enumerated. This *hint* of their existence is all that has been thrown out by the Commission. The greater fatality attending a disease in one country as compared with another may indeed be called an "important difference," but it can by no means be fairly said, on that account, to alter the specific character of the disease, wherever it may prevail. The fatality resulting from dysentery, as it occurs at Dinapoor, is very much greater than the fatality attending dysentery as it is observed in Dublin; yet it would scarcely be logical to argue that the dysentery of the Irish Capital and of the Bengal Station is not specifically one and the same disease. During the year 1866, in the Jail Hospital at Chyebassa, the fatality of cholera amounted to 368·42 per 1,000 of average strength, whilst, during the same year, the mortality from cholera in the prison at Sooree was only 2·68 per 1,000; but who would for a moment dream of saying that, because the fatality was comparatively so very high at Chyebassa, it was caused by a cholera specifically different from that observed at Sooree? If comparative fatality is in any way to regulate the nomenclature of disease, the appellations accepted in medicine to-day might at any time reasonably be altered, *ad infinitum*, according to geographical position, season, temperature, and the like. It is further to be observed that the complication of *jaundice* is very generally met with in the relapsing fever of our jails, whilst it was present in a much smaller proportion of cases in the epidemics of Europe; and that, in 1843, Cormack, Craigie, and Alison considered *this complication as characteristic of the most malignant cases.* The excessive mortality that occurred at Lahore, Mooltan, and other places can also, to a great degree, be accounted for by collateral circumstances. We know that in the Central Prison at Lahore, immediately before the outbreak of relapsing fever, a very severe type of malarious fever had been prevailing, which had the general effect of greatly weakening the prisoners, and of rendering them obnoxious to attacks of any subsequent disease. Again, we have it on the authority of the Inspector General of Prisons of the Punjab that when this fever was about to appear at Mooltan, the jail there was (to use the exact words of Dr. Dallas) "ripe for the spread of epidemic disease; and it is quite a question for argument whether it was not in a condition to *generate an epidemic* as suggested by Dr. De Renzy."

I shall a little further on give a true picture of the Mooltan jail as it then existed. This may prove an instructive sketch, in relation to those conditions under which hundreds of prisoners laboured, who, not once, but frequently, have been described by Jail Superintendents as succumbing to relapsing fever, with the following words almost on their lips:—"*Bhookha, bhookha; bhook layta, sahib,*"—*I am hungry now.*

(To be continued.)

ON THE PATHOLOGY OF HEPATIC ABSCESS, RESULTING FROM DYSENTERY.

By JOHN F. FOSTER,

Assistant Surgeon, 36th Regiment.

IN applying the theory of thrombosis to the production, through the medium of the portal system, of liver-abscess, the first point that strikes one is the anatomical peculiarities of the hepatic circulation, which render any arguments by analogy to other parts totally inadmissible. All other secreting or excreting glands are at once nourished by, and draw their secretions from, the same system of vessels, but the liver possesses two sets of vessels conveying different qualities of blood,—the arterial for its nourishment alone, and the venous for its proper functional manipulation.

These two supplies unite in the capillary plexus surrounding the lobules, which consequently receive their blood from both artery and vein. "The precise mode in which the blood is poured into the veins (from the artery) has been a subject of great dispute, but I have many preparations which show that the blood is poured into the portal capillaries near the circumference of the lobule, as Kiernan long ago inferred, and not into those near the centre."[*]

If the circulation through the portal vein be arrested, the organ is in this condition: its *nourishment* is unimpaired, but its *function* is entirely suspended, and with this state analogies can readily be found in almost any portion of the body. Now, what is the result to a muscle if this state of things exists? It becomes *atrophied*, but never suppurates. Tie the *vas deferens*, and the testicle will rapidly dwindle away to a small and useless mass. Occlusion of a ureter produces atrophy of the kidney from which it arises. By analogy, therefore, the liver should become atrophied, but should *not suppurate*, and this is found to be the case.

Dr. Budd gives an instance in which the main trunk of the portal vein was occluded. Death did not occur for one month, and was caused by the constant intestinal hæmorrhage. The liver was then only the size of "two fists," and quite free from abscesses. Several other cases of a similar nature are recorded. In the same way, if branches of the vein are obliterated, the parts supplied by them become atrophied. Three such cases are given by Dr. Budd,[†] who remarks upon them: "It appears then that obliteration of branches of the portal vein causes *complete atrophy* of those parts of the liver which the obstructed branches supplied."

In cirrhosis, the effused lymph "in contracting compresses the portal veins, and impedes the passage of the blood to the secreting substance of the liver, diminishing its vascularity, and consequently its bulk. Many small branches of the portal vein it entirely obliterates, *and by so doing causes complete atrophy of the portions of the liver which these branches supplied.*"[‡] But "abscesses are never found in the *hob-nail* livers of the gin-drinking population of our large towns."[§]

It is therefore evident that a thrombus cannot produce an abscess in the liver by simply arresting the portal circulation through any number of its lobules. If embolism does cause suppuration, it must be by some other means, that is to say, the embolus must contain within itself septic or pus-producing properties. But if so, the abscess would originate at the point at which the vein was occluded. This is not the case, the small purulent depôts, consequent upon dysenteric ulceration of the bowels, when seen at an early stage of their development, are found to originate in the capillary plexus *within the lobules*,—a position which it would be utterly impossible for any clot to reach. For it must be remembered that peripheral venous thrombi, while travelling from small into larger vessels, will increase in size by the adhesion of other blood corpuscles; and when the channel becomes again narrowed, as in the portal veins, without the intervention of the disturbing power of the muscular cavities of the heart, (which, by causing a sudden rush of the

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[*] Beale on the "Microscope in its application to Practical Medicine," 2nd Ed., p. 205.

[†] Budd's "Diseases of the Liver," 3rd Ed., p. 182.

[‡] Ditto ditto, ditto, p. 144.

[§] Ditto ditto, ditto, p. 196.

[illegible] capillaries [illegible] distinct [illegible] of existing [illegible] general [illegible] in [illegible] blood [illegible] coat.

[illegible]

Mr. B[illegible] [illegible]

"[illegible] lately portal [illegible]

"The [illegible] numerous small abscesses of [illegible] sizes.

"[illegible] of considerable size, in the [illegible]"

The [illegible] from [illegible] forcible manner, the views I have expressed in former papers. We [illegible] with thrombi in [illegible]

[illegible] only.*

[illegible] veins was [illegible] when their walls were intact.

[illegible] experimental [illegible] have [illegible] and [illegible] hypothetical nature and the [illegible] they are expressed [illegible] which their argument and [illegible]

I [illegible] the views of Virchow and [illegible] I should be in the position of him who [illegible]

"[illegible] with [illegible]

[illegible] in a lament,"

a[illegible] only a bound to my own con-

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* Aitken on the "Science and Practice of Medicine," 2nd Ed., Vol. II, p. 867.

† Op. Cit., pp. 172 to 174.

* Op. Cit., p. 70.

fusion. In these days a man's opinions are not permitted to remain *in statu quo*: the teaching of one year is *antiquated* within a decade; and if one wishes to make or retain his professional reputation, he must either follow the rapid stream of novelty, or cut an equally new channel for himself.

While I acknowledge, then, the general correctness of these theories, I have ventured to deny their applicability to the causation of hepatic abscess as connected with dysentery; and by so doing I have imposed upon myself the task of finding some new and plausible explanation of their occurrence.

This is a point which I have had so much diffidence in approaching, that my previous writings have doubtless led to the idea that I entertained the old opinions with regard to the pathology of pyæmia. And herein lies my quandary—Which is better—to remain under the imputation of holding obsolete notions, or to advance a new hypothesis that may possibly be disproved or rejected as improbable? I have hesitated, but am now resolved to adopt the latter course, although my views are at present crude, and unsupported by any direct proof.

The "pustular form of dysentery" has been described by Murray, who believed that papules, afterwards becoming pustules, formed on the inner coat of the bowel. Whether he is right in supposing this to be an eruptive disease, I will not stop to enquire, as it is foreign to my subject. I believe that he is wrong; but I wish to draw attention to the fact of his having described the existence of collections of pus *beneath* the mucous membrane.

"After the formation of sub-mucous abscess" is an expression used by Dr. Aitken* when he describes the various causes that lead to dysenteric ulceration; and, further on, he remarks that "the colon presents prominent little masses about the size of a pea, which burst readily on pressure, and give forth fluid contents like pus." This form of lesion is especially notable in Indian dysentery, and it is with Indian dysentery that hepatic complications are most frequently observed.

I believe, therefore, that there are at least two methods by which pus-corpuscles may be readily conveyed into the circulation:—

Firstly, by the extension of ulceration upon the inner coat of the veins; and,

Secondly, and perhaps more commonly, by *the ejectment of purulent fluid by the elastic walls of the distended solitary glands*, when the small veins beneath them become corroded by disease.

In support of the second assertion, which will probably appear startling, I rely upon two facts constantly observed in the dead-house—so-called sub-mucous ulceration, and sub-mucous hæmorrhage.

The sub-mucous ulceration begins in the solitary glands, which are often enlarged to the size of split peas, and contain pus-cells.

The sub-mucous hæmorrhage proves that veins are opened before the inner surface of the bowel is destroyed.

If a vein is opened within a distended solitary gland, the elasticity of the walls of the gland, which is really a minute abscess, will have greater power at first than the flow of the blood, and its contents will consequently enter the vein, instead of the blood entering it. After the distension is relieved, the ordinary hæmorrhage will occur; but by that time the mischief will have been done. It will be very difficult to demonstrate this, perhaps impossible; but if I can do so, I will make it the subject of another communication.

And now, having expounded my *hypotheses*, this paper may fitly be brought to a conclusion.

ON A NEW CLASS AND DEMONSTRATING MICROSCOPE.

By Henry Lawson, M.D., M.R.C.P.E.,
Professor of Histology in St. Mary's Hospital, London.

Fig. 1.

The microscope whose two forms are represented in figures 1 and 2 is one which has recently been constructed, at my suggestion, by Mr. Charles Collins, the Optician of Great Titchfield Street; and may, I think, be found useful by those engaged in teaching microscopic anatomy. The old method of lecturing upon diagrams, and exhibiting specimens under the microscope after lecture, has these two serious objections: 1*st*, a large number of microscopes must be employed; and, 2*ndly*, the students, in clustering round the instrument, push and jostle each other, and thus earnest workers, anxious to observe, are prevented giving the necessary attention to the object under observation by the idle "black sheep" which, unfortunately, every class possesses. I find it necessary, therefore, to hand the microscope during lecture to the student nearest to me, who in his turn passes it to his neighbour, and thus, while I am describing a particular tissue, the students are enabled to follow the account which I give them. I find that, on the average, I exhibit eight or nine specimens in each lecture, and therefore the system of using hand microscopes seems to me to work very well, and to result in driving ideas into a greater number of heads than could be done on the old plan. This idea of using hand microscopes is by no means original, as far as I am concerned. It was tried some years since, and with success, by Dr. Lionel Beale. What I wish to convey to your readers is that I have devised a method by which the ordinary microscopes, which are employed in actual work in a medical school, may be easily converted into demonstrating microscopes. The instrument figured above may therefore fairly be styled a "convertible microscope." In figure 1 it is seen as used in research, and in figure 2 as employed in demonstrating to a class. Its peculiarity is this—the leg of the instrument, the part intervening between the stage and the solid circular foot, is really double, being composed of a solid brass stem which slides within a tube. This tube is fixed by a knuckle-joint to the circular foot, and carries the mirror. When the microscope is wanted for demonstrative purposes, it is simply drawn out from the tube, thus leaving the foot and mirror behind, and a tube bearing a small lamp filled with colza oil is slid over the leg. The microscope then has the form represented in figure 2. This instrument is supplied with two good objectives: an inch and a quarter inch, which are fixed in a double nose-piece; its coarse adjustment is telescopic, the fine adjustment being regulated by the usual screw. In this form, with plain stage and single eye-piece, it is sold by Mr. Collins at the extremely moderate price of four pounds ten shillings, and is, I think it will be admitted

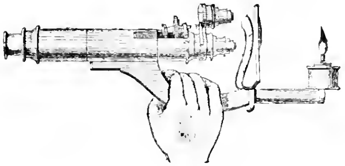

Fig. 2.

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* Aitken on the "Science and Practice of Medicine," 2nd Ed., Vol. I, p. 602.

by those who examine it, the cheapest microscope yet made. There is nothing of the toy about it; its magnifying powers are not above 300 diameters, and it is provided with but a single mirror; but it is, nevertheless, an instrument which may be used with advantage by the student, and which, in schools, may be made, like Goldsmith's chest of drawers, "a double debt to pay." We have several of them in use at St. Mary's. When not employed in the theatre, they are arranged as in figure 1, and are then used by the students in the Histological Laboratory.

ON THE DILUTION OF VACCINE LYMPH WITH GLYCERINE, AND THE MULTIPLICATION AND PRESERVATION OF THE VIRUS THEREBY.

By Robert Harvey, M.B.,

Assistant Surgeon, Bengal Army.

Medical science in India can point to few things capable of producing a more demonstrable result for good than vaccination. Small-pox, the poison of which, once introduced, finds in the unventilated air and general insanitary conditions of native dwellings the nature of soil in which it multiplies itself a hundred-fold, forces itself on the notice of the meanest villager, and by its ravages refuses to be ignored. There have been times when it has inspired such terror that thousands have fled before it. The memory of such visitations does not readily grow dim, and there is probably no disease, cholera is a doubtful exception, of which there is a greater dread in India.

Such being the case, it may appear matter of surprise that any difficulty should be made about the reception of vaccination, nor is it likely that there would be, were the people thoroughly convinced of its prophylactic power. The superstitious reverence of "Sitla," the deference to old custom, the dislike of innovation, the vested rights of ignorant and interested inoculators, and the other causes which now impede the work, would yield at once, especially during the prevalence of small-pox, if the people only actively believed, instead of passively ignoring, as they too often do now, the truth that in vaccination they have an almost unfailing remedy against their enemy, and one which, when it does not entirely prevent, never fails to rob it of half its dangers and terrors. It is encouraging to know, as is shown year by year in the various Vaccination reports, that old prejudices are gradually giving way, and the benefits of the prophylactic becoming more generally known and believed in; but much passive resistance is still met with, and there is as yet too little active power to make the people adopt the only means by which its benefits may be extended to all, that, namely, of spreading it among themselves, independently of the efforts of Government, which, at most, can afford protection to only a comparatively small number of the millions of India. It would be an interesting and somewhat delicate inquiry to discover to what extent and in what precise manner each of the opposing causes mentioned above has acted, and whether there may not be others in operation also. It is an open question whether doubtful and unsuccessful operations are not a fruitful source of distrust. The native [illegible] the distinction between a reliable vesicle and a sore produced by an aborted pock. An operation has been performed, thus much he knows. If small-pox follow, he is too ignorant to discriminate between the successful and the unsuccessful cases, and his faith (if he ever had any) in the protective power of vaccination, his belief in the statement made to him by the operator, receive a rude shock from which they may never recover, and which he is not unlikely to communicate to others. While every additional successful case gives vaccination a new hold upon the people, and each proof of its protective power [illegible] in the midst of an epidemic, leads them to believe in and appreciate it, it must be borne in mind that every doubtful or unsuccessful case upon which small-pox supervenes, tends to a directly opposite result. Keeping this in view, and having regard also to the fact already mentioned, that the vaccinating of any but a very small proportion of the population is impossible by the direct action of Government, it follows that the main object to be aimed at is not so much large numbers of operations as a high percentage of success—a percentage which shall reduce the failures to a *minimum*. What the attainable standard may be in the plains of India, it is difficult to say. "In England," says one of the latest and most experienced authorities on the subject, Mr. Marson, "with good lymph and the observance of all proper precautions, an experienced vaccinator should not fail of success in his attempts to vaccinate above once in 150 times."* It is not likely that such a standard will soon be reached in India, even in the hills. The frequent failures at the beginning and end of each season from atmospheric causes, the substitution in many cases of crusts for fresh lymph, the ignorance and carelessness of parents in allowing the vesicles to be rubbed and destroyed, the prevalence of skin diseases, the practice of applying drugs to the arms of those operated on, and occasionally the inexperience of the vaccinators themselves, or their operating on children who have previously been vaccinated, or had small-pox, from a desire to increase their returns, combine to swell the number of failures, and prevent a very high standard from being reached. There can be no reasonable doubt, however, that the *maximum* of success has not yet been attained, and as every suggestion which can contribute to increase it, or to render the practice of vaccination more successful, is of some value, I make no apology for offering to the profession some remarks on the subject which forms the title of this paper.

The idea of applying the well-known solvent and antiseptic properties of glycerine to the preservation of lymph is no new one. Several years ago Dr. Stillé, of Philadelphia, in his "Elements of Materia Medica and Therapeutics," quotes the authority of a writer in, I think, the "*American Journal of Medical Sciences*"† to the following effect. That not only may the fresh virus of eight days old be multiplied and preserved for use, but that the scabs formed by the pustules may be so by means of glycerine. More recently the subject has been taken up by M. Müller, Director of the Vaccine Institute of Berlin, and by Dr. Kipp, of Vienna. The results of their observations may be found in the *Medical Times and Gazette*,‡ and are briefly as follows.

By diluting the vaccine virus with a mixture of glycerine and distilled water, the lymph is increased in quantity, while its tendency to degeneration is prevented. The vesicles produced by the diluted virus are as large and as perfect, run the same course, and yield as much lymph as when the operations are performed with the purest matter. The vaccinating material may be multiplied ten or twenty-fold without deteriorating, thus enabling a large number of persons to be vaccinated on an emergency, when only a small quantity of the pure lymph may be available. The mode of procedure is very simple. The lymph from a vesicle or vesicles eight days old is collected on a camel's hair pencil, or between glasses, and is then mixed with a solution containing equal parts of glycerine and distilled water, after which it is ready for use, or to be stored between glasses or in capillary tubes [illegible] the better plan if the lymph

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* Medico-Chirurgical Transactions, Vol. XXXVI.

† I regret that I [illegible] reference to the passage, and that I cannot [illegible] copy of Dr. Stillé's book.

‡ May 18th, 1867, p. [illegible], and 21st September, 1867, pp. 225-6.

be intended for preservation. The diluted lymph, from its lessened viscidity, flows into the tubes more readily than the natural virus, and there is less chance of admixture with air, while that stored between glasses, instead of drying up in a few hours as does lymph collected in the ordinary way, and requiring to be moistened or mixed with water before it can be used, retains its fluidity unimpaired for months, thus saving much trouble and delay. This mode of storing the lymph between glass slips is that favoured by Dr. Kipp, who says that "it has been preserved for four months in a room, and yet proved quite as efficacious in producing pustules as natural lymph."* When fresh lymph is not available, a solution of the crusts in glycerine is found to answer well. This plan seems to be employed to some extent in America, where vaccination from the crust is much more common than in Europe. If crusts are to be used at all, it is a great improvement on the common plan of powdering a crust *pro re natâ*, and mixing it with water,—a proceeding that has to be continually renewed, and which is both dirty and troublesome. I have myself found a solution of fresh crusts, stored in a small stoppered bottle, to answer fairly well during the present season. It has not succeeded indeed in every instance, and will not bear comparison with fresh lymph, either pure or diluted, but it is quite as successful as the crusts alone, and has the advantage of them in cleanliness and facility of application.

It will be seen from the above summary that the practice has several advantages to recommend it to the notice of Indian Surgeons. One of the most manifest of these is the power of multiplying lymph at the beginning of the short season, in which alone operations can be successfully carried on in the plains, and where large numbers of operators have to be supplied within a few days of each other. Plentiful as are the supplies furnished by the establishments in the hills, there are probably many [illegible] who have experienced the inconvenience of an insufficiency of lymph at the commencement of the season. In the state of Bhurtpoor much valuable time was lost in November, 1866, owing to the failure of the first supplies, as ten or twelve days necessarily elapsed before more could be obtained, and a further delay ensued before this was sufficiently multiplied to start the work fairly at the ten centres from which operations were carried on. The same very nearly happened this season. A number of tubes and points received early in October from the [illegible] Vaccine Institution, as well as some crusts from the Superintendent of Rajpootana Dispensaries at Mount Aboo, failed in every instance from being used too early. Further supplies, chiefly crusts, received later in the month produced unsatisfactory results, for though vesicles were produced in many cases, which warranted their return as "successful," they were neither so good nor so regular as I could have wished. Early in November I received seven tubes from England. Three of these were used successfully in the ordinary way, [illegible] vaccinated. The contents of the remaining four were mixed in a watch glass with the diluted glycerine, and furnished [illegible] material for the vaccination of [illegible] children. Twenty-[illegible] of these cases were successful; in the other two [illegible] rubbed and destroyed. The vesicles were perfect in every way; large and full, with well-marked areolæ, and with lymph and crusts from them almost all the subsequent operations have been conducted. On two subsequent occasions I have repeated the experiment, and each time with success, when the diluent was not carried too far. In the *Medical Times and Gazette* [illegible] May, 1866, it is stated that "the results have been found [illegible] certain when diluted more than twenty times. [illegible] times, they are always certain." This must, I believe, be received with some reservation as regards India. It is difficult to measure the exact amount of the dilution; but it has seemed to me, from a good many experiments with different strengths of diluted lymph, that the amount of the diluent added should not exceed the quantity of lymph in a greater proportion than five to one. This refers chiefly, however, to lymph stored in tubes received from England, and at least two months old. With perfectly fresh lymph, a further dilution might very likely succeed, but I have not as yet been able to fill tubes with fresh lymph from the arm, as no facilities for doing so exist in bazaars and bylanes of native towns and villages. Latterly, too, I have almost abandoned the use of tubes, owing to objection having been taken to my emptying them by blowing through them. I now use glass slips, about an inch square, in the manner recommended by Dr. Kipp. Having punctured a selected vesicle, a small quantity of the lymph which exudes is taken off by lightly touching it with one of the glasses. A drop or two of the diluted glycerine is then added, and mixture effected by rubbing the glasses together for a few seconds. Lymph thus prepared will keep quite fresh and good for a long time. I have some seven weeks old which succeeded perfectly in a case vaccinated with it on the 4th instant, and is still to all appearance quite good. The glasses separate readily by sliding one over the other, and retain sufficient matter between them to vaccinate two or three children. This mode of collecting the virus seems to me to have many advantages over most others. It cannot compete with arm-to-arm vaccination, but when this is impossible, or when lymph has to be carried or sent to a distance, it is cleaner, more certain, and keeps fresh longer than crusts; and there is no difficulty in preparing it, as there often is in [illegible]; while it is quite free from all objection on the score of caste.

How long the virus thus prepared will retain its activity, I am not yet in a position to say; but, looking to the acknowledged preservative powers of glycerine, and to the fact that Dr. Kipp found it to produce perfect vesicles after it had been kept four months in a heated room, I have every hope that it will be found fresh and good after a long period. It would perhaps be too much to expect that it should be able to survive an Indian summer; but I purpose trying whether it cannot be preserved [illegible] and made available for the beginning of next season. I have, I confess, but small hopes of success, but the experiment is worth trying, as, should it succeed, an unlimited supply of lymph will hereafter always be available for the starting of vaccine operations. It is needless, however, to speculate further on what at present is purely hypothetical.

The fact remains that, though it may fail in serving the purpose just indicated, [illegible] lymph, as stored [illegible] glass, [illegible] when supplies of matter have to be [illegible] Crusts [illegible] trusted [illegible] in this state, and [illegible] merely [illegible] vaccination of [illegible] success. [illegible] 72·74 per cent [illegible] December 18[illegible] [illegible] when it reached [illegible] fresh lymph [illegible] points, and used either next morning or [illegible] far to show that the [illegible] extensive [illegible] well, I believe, be found [illegible] from [illegible] I have not [illegible] any exact comparison [illegible] of arm, I believe the slips will be found

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* *Medical Times and Gazette*, No. [illegible], 21st September, [illegible] [illegible] *Wochenschrift*, August 12th, 1867.

[illegible] to [illegible] with [illegible] the cases [illegible] times, and [illegible] separate [illegible] they [illegible]. No [illegible] fresh [illegible] kept [illegible] when [illegible]. I may [illegible] effectively [illegible] without [illegible].

[illegible] I [illegible] plan to [illegible] where the supply of lymph is [illegible] is having [illegible]. I [illegible] briefly, [illegible]

[illegible] of the available amount of [illegible] ten times, which [illegible] at any time when it may be required [illegible] as during an epidemic of [illegible].

A preservation of the virus for a period considerably ([illegible]) longer than it can be kept without such [illegible].

[illegible] a considerable amount of time and trouble. The [illegible] being taken off when the vesicles are inspected on the [illegible] day, the necessity of another visit to collect the [illegible] at each time [illegible] is obviated.

[illegible] and convenience, and a probably [illegible] success, than in vaccinating from crusts.

[illegible] these points are still *sub judice*, and require more [illegible] systematic investigation than I have as yet [illegible]. My apology for bringing the subject to the notice [illegible] in this incomplete [illegible] must be that I [illegible] the hope that, during the portion of the present season which yet remains, the matter may be taken up and experimented upon by other observers. I trust that some experiments may be [illegible] with a special view to the question whether the glycerinated lymph can be preserved under any considerations through the hot weather.

[illegible], *February* [illegible], 1868.

CASES FROM PRACTICE.

◆ ◆ ◆

SUSPECTED CRIMINAL POISONING BY DHATOORA IN THE PERSON OF A EUROPEAN. RECOVERY.

By David B. Smith, M.D.,

In Medical Charge of Mussoorie.

The following are notes of a case of suspected poisoning, the publication of which may prove instructive. The subject of the report is a Mr. ——, aged 42, a European of middle stature, and rather slight in figure.

Whilst the case was under Police investigation, the Magistrate desired me to furnish him with some notes of what I knew about the matter, in order to further, as much as possible, the object of the said investigation. The following is what I submitted:—

Memo.

I knew Mr. —— in 1864-65, and I have seen him continually during the past eight months. I believe him to be a man of very regular and temperate habits. For years he has been subject to bilious attacks, and he informed me that it was on that account that he came to the Hills four or five years ago. He suffers from what is technically called "irritative" or "phosphatic dyspepsia," a condition implying functional derangement of the digestive system, dependent on want of [illegible] secretion. [illegible] is a common result of either [illegible] or [illegible] and wear. It may, however, [illegible], such as shock or injury to [illegible]. Mr. —— [illegible] me this season on the 23rd [illegible] he has been to see me on [illegible]. He improved considerably [illegible] he was never actually [illegible] time.

On [illegible] November, between 10 and 11 A.M., I received a note from Mrs. ——, telling me that Mr. —— was [illegible] asking me to come and see him at once. [illegible] I was in attendance on a [illegible] leave her. I, however, [illegible] wrote to Mr. O'K——, [illegible] Apothecary, asking him to visit Mr. —— [illegible] which he did. Between 12 and 1 o'clock, [illegible] whom I was in attendance had been [illegible]. I [illegible] went and saw Mr. ——, and prescribed for him. At that time I had no suspicion regarding his case.

On the 4th November, I again saw him at his house, but still suspected nothing.

On the 5th of November I wrote a letter to Mr. ——, asking him to come and see me at my house, so that I might take down notes of his case, [illegible] him with a general statement of [illegible]. He came accordingly; and whilst he was with me, I wrote the said notes, which are now before me in original. From these, the following is a [illegible] extract:—

"Went to bed on evening of 1st November perfectly well. Got up at usual hour in morning with a sensation of extraordinary giddiness, and a sense of rolling motion. In trying to reach his clothes, which were on a chair close by, felt a reeling sensation. Put on his stockings, &c. On getting up to [illegible], felt himself swaying from side to side. Lower limbs and arms felt [illegible], and also the tongue. Could not speak properly. No pain in head or spine. No sickness at stomach. Could not see so as to write. Could see large objects, but not small ones, such as letters. Could neither see to write nor read. Any one approaching him seemed to have a white mist [illegible] over them. The face was puffy under the eyelids."

[illegible] the same notes I find the following:—

"*[illegible]* moist-looking; but complains of dryness of mouth and throat."

On the evening of 6th November I received a note from Mrs. ——, asking me to come and see her husband. I was at dinner at the time, and had guests at my table. I therefore wrote to Mr. O'K., desiring him again to go and see Mr. —— (the distance was short), and let me know at once how he was. This he did. I have not preserved Mr. O'K.'s note; but in it he told me, in general terms, how Mr. —— was when he went there; and he added that he left it to me to go and see him or not, as I should see fit after reading his report. I determined to go and see Mr. —— at a later hour, *i. e.*, before going to bed. Meanwhile, before my guests left me, I received an urgent verbal message from Mrs. ——, informing me that Mr. —— was insensible [illegible], and requesting me to come over without delay. I ordered my horse, and went as quickly as I could. On arrival at the house, I found Mrs. —— and Mr. —— in the verandah. Mrs. —— stepped forward and said "Mr. —— is asleep now." I was annoyed at this remark, and asked Mrs. —— how she could think of treating me in so unreasonable a manner. She said she could not help his going to sleep, and added: "I hope, at any rate, you will come in and see him, Doctor." I hesitated, and at first declined to do so, but afterwards, at her request, I went inside and found Mr. —— lying on a sofa, with some bedding over him. Mrs. —— roused him, and told him that the Doctor had come to see him. His pulse was then steady, and he answered some questions which I put to him. I did not consider him in any danger, and accordingly left him at once. I now remember that his pupils were at that time broadly dilated, and he was evidently drowsy. *Still* I had no suspicion of his having been unfairly dealt with.

On the following morning, *i. e.*, the morning of the 7th November, about 9 o'clock, I received a note from Mr. ——, which having answered, I partially tore up and threw it into my waste-paper basket. This note was afterwards recovered, and is now submitted, in original, in its torn condition.* It appears to me, *now* that this letter is very valuable in the way of evidence,

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* Sent to the Magistrate.

although I did not realize its importance in this respect when first I received it.

When the said note came to me, I was just preparing to go out and make some rather urgent professional visits. My diary shows that I did then go out, and that I paid five visits. On my return I found Mr. —— at my house, awaiting my return. He told me that Mr. —— had apparently lost his senses, and that he was wandering about in an unaccountable manner. I shortly went to see him, and found him in a very peculiar state. His face was somewhat purple in colour; the eyes were bright; the pupils were greatly dilated, and insensible to the action of light. His pulse was tolerably natural, as regards frequency and strength. He wandered about in a confused state, arching his eyebrows, rubbing his hands, and complaining of cold and numbness down the right side of his body. He went from room to room, and showed an inclination to wander outside. His daughter led him about, and prevented his going out of doors. In attempting to converse with me, he spoke incoherent nonsense. Looking out of the window, he suddenly remarked, with a pleased but startled expression, "See, Doctor, there is *snow* on the ground." I said "Oh no, Mr. ——, there is no snow there; it is sunlight you see." On which he replied with an air of confusion and disappointment, "Oh! sunlight, is it? I thought it was snow;" and immediately he rambled incoherently regarding other matters.

I went to an adjoining room to write a prescription for him, and to do so, I sat down at his writing table. He tried to follow me from the room where I had left him. I went up to him and said "Don't you come out of that room; it is too cold for you here." I thus hoped to induce him to keep quietly where he was; but almost immediately he re-appeared, led by his daughter; and he came up to the writing table where I was seated, and began touching various objects without any definite object. He looked towards the pigeon-holes above the writing table, where he had private papers: he fumbled in the direction of these, but took nothing out of them. His gait was peculiar, and he walked in a sort of stealthy manner, mumbling to himself. He appeared in a feeble and pitiable state. He was not the least violent.

I was considerably perplexed at his condition, and I now, for the first time, began to think there was something very peculiar indeed about him. Still I had no reason to suspect *foul play*; and whilst I felt that I did not comprehend his case, I was afraid that, from one cause or another, his symptoms might be premonitory of a paralytic attack. I accordingly came home and gave Mr. O K directions to go again in the evening and apply a blister to the nape of the neck, and to give a pill containing [illegible]th of a grain of strychnia three times a day.

I ought here to mention that now it was that my suspicions began, *very vaguely* to be aroused. Mr. ——, when he was with me on the morning of the 5th instant, had told me that Mrs. —— and he did *not live amicably together*; that he desired to be legally separated from her, but that he could not effect his wish in this respect; that he felt sure a sea voyage would cure him of his dyspeptic attacks, but that he could not go away and entrust Mrs. —— with the care of his children, and that THIS it was that caused him excessive mental anxiety which greatly aggravated, if it did not produce, his attacks of dyspepsia and depression.*

On my return from seeing Mr. —— on the 7th instant, I recovered his note from my waste-paper basket, and I thought anxiously over it.

As I returned from seeing Mr. —— that day (the 7th), I met Major ——, who asked me what was the matter with Mr. ——. I at first somewhat evaded the question. Major —— said, "Is it a sun-stroke he is suffering from?" I replied, still trying to be somewhat evasive, "Yes, something of that sort." He (Major ——), then probably detecting from my manner that I did not altogether mean what I said, explained to me that he took a friendly interest in Mr. ——, and that one of Mr. ——'s servants had just been telling him, Major ——, that he suspected Mr. —— had had some poison administered to him.

I then at once told Major —— that, under the circumstances, I was much obliged to him for mentioning the fact to me; that I did consider Mr. ——'s symptoms very peculiar; and that if any poison had been administered to him, it was probably *dhatoora*.

The following day, November 8th, I again went to see Mr. ——, and found him lying on a couch perfectly sensible, but weak, and still somewhat confused and unlike himself. I then prescribed a mixture to act on the kidneys, and directed that the strychnia pills should be discontinued.

On Sunday, the 10th, I received the note marked No. 2 from Mr. ——, in which he still complained of "dryness of the mouth and throat."

This note is herewith forwarded, in original. On the 13th November, Mr —— came to my house and talked the whole matter over. He then for the first time told me that he felt convinced he must have been poisoned. He stated that he believed there were four occasions on which he had reason to suspect that poison had been administered to him. He could not recall dates. But coupling his somewhat vague recollections of facts with notes in my diary regarding my visits to his house, I inferred that the first occasion was on the evening of the 1st November, in his tea; the 2nd on the evening of the 6th, in his soup; the 3rd on the morning of the 7th, in his cocoa; and the 4th occasion he was not so certain about. On Sunday, the 10th, however, he still experienced dryness of the mouth and throat, and otherwise felt peculiar sensations; but he stated that he could not be sure that on that day poison was administered to him. He said he thought it possible that his sensations then experienced were merely the after-effects of previous doses of poison.

Mr. —— told me that the tea and cocoa (which he drank on the evening of 1st, and the morning of the 7th respectively) had "*a heavy muddy flavour, like that of burnt milk*," and that he noted it and complained of this at the time.

He said that the soup he took (on the evening of the 6th) "*had a distinctly bitter taste*;" and that he also remarked this and complained of it at the time.

He told me that, shortly after taking both the soup (on the 6th) and the cocoa (on the morning of the 7th), he lost all recollection of what happened around him. Meanwhile, however, he experienced a feeling of intoxication and giddiness, difficulty in swallowing, a confusion of ideas, a coldness and numbness of the surface, a pricking sensation in the nose, and an irresistible inclination to rub the nose violently. He had also convulsive twitching of the legs after taking the soup. He had no fever and no vomiting, but considerable drowsiness.

When I saw him his most suspicious symptoms were: dryness of the tongue and throat; frequent coughing; attempts to hawk and spit; widely dilated pupils, insensible to light; indistinctness of vision; seeing imaginary objects (such as snow on the ground); haziness and confusion of objects, as if everything were badly focused; a sensation as if smoke or fog were rising around him; purple colour of face; puffiness under eyelids; cold surface; feeble, staggering gait; restlessness; inclination to roam from room to room, and to wander out of doors, as if in search of something.

The moment he touched any object, he at once went off in the same unaccountable manner towards some other object at a distance. Whilst he did this, he was mumbling to himself; and as he was supported and led about by his daughter, he looked the picture of feeble, nervous agitation.

After recovering himself to a certain degree, he still evinced a partially incoherent mental state; his vision still continued indistinct; the eyes were bright and glistening, and the pupils continued to be widely dilated. He also experienced a sense of very considerable exhaustion; walked about feebly; and was altogether sadly unlike himself, &c., &c.

Remarks.

I think few will doubt, after reading the above, that Mr. —— was powerfully under the influence of *dhatoora*, and that he had a very narrow escape. The case is interesting, as occurring in the person of a European. Most of us in India have seen many Natives in such a condition; but it is fortunately otherwise as regards our own countrymen. It is to be remarked that my suspicions might possibly have been aroused earlier, but that my patient was subject to nervous dyspepsia. We all know what Protæan forms this occasionally assumes. Again, my patient was a man of quiet and good disposition; kind to his servants and household; so that on this score there was, *à priori*, no reason to suspect that any of those around him were likely to be plotting against his life. Taking it for granted that an excessive quantity of *dhatoora* was administered in this case, it is not easy to determine with what specific object it was given; whether to kill at once, or to effect the same end by slow poisoning, or whether it was simply intended, by degrees, to stupefy and weaken the intellect. It is to be observed that the Natives do believe in the possibility of rendering a person fatuous by such means. (Mr. —— is in possession of a good deal of valuable property.)

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* This passage is published with Mr. ——'s consent.—D. B. S.

[illegible] Mr [illegible] very [illegible] which [illegible] was made [illegible] and [illegible]

I [illegible] must [illegible] We [illegible] some of [illegible] the steady and [illegible] breathing, the spontaneous [illegible] matter. But on the other hand, the [illegible] colo[illegible] the confusion of ideas, [illegible] and fixed pupils, afforded, under this head, some reasonable grounds for anxiety.

I [illegible] know that there is much more to be said in the way of comment on this case, except, indeed, that my patient is now perfectly well and [illegible].

CASE OF SEVERE LACERATION OF LEFT THUMB TREATED WITH COLD-WATER IRRIGATION.

By Assistant Surgeon W. Collis, R. H. A.

Pt. Davi[illegible] A[illegible], 7th Hussars, attached to F Battery, E Brigade, R. H. A., a strong, well-built man, 28 years of age, and of 10 years' service, [illegible] was admitted into the hospital on the 21st October in consequence of a very severe laceration of the left thumb, caused by the bite of a horse.

The thumb was completely torn away on the palmar surface, [illegible] the joint was freely exposed. The parts were much lacerated and bruised, and the extent of the wound was five inches. No bleeding of any consequence occurred. [illegible] was on [illegible] of the thumb, but the [illegible] owing to the [illegible] extent [illegible] were [illegible] and there being but [illegible] disturbance.

On the [illegible] day after the injury a portion of the wound had [illegible] by the first intention. On the 12th day the whole of the [illegible] the [illegible] The patient [illegible] before [illegible]

F[illegible], 30[illegible], 18[illegible].

A CASE OF RAPIDLY GROWING ENCEPHALOID CANCER OF THE FEMUR: AMPUTATION AT THE HIP-JOINT: DEATH FROM BRONCHITIS.

Reported by Kassy Kissore M[illegible], L. M. S.

Sub-[illegible] Surgeon.

H[illegible] C[illegible], [illegible] aged 14 years, was admitted into Mr. Partridge's Ward of the Medical College Hospital, on the 24th of [illegible], 1867, with a [illegible] tumour [illegible]

[illegible]

On the 27th [illegible]

w[illegible] swelling [illegible] the interos[illegible] [illegible] those of soft [illegible] epithe[illegible]

On [illegible] the patient was put completely [illegible] chloroform, and [illegible] Mr. Partridge [illegible] the anterior [illegible] of the [illegible] Through this a large quantity [illegible] possessed [illegible] anterior [illegible] part of the femur. [illegible] several irregularly-shaped [illegible] were removed. They [illegible] proved to be [illegible] of the fungating [illegible] others [illegible] inner [illegible] the case, [illegible] at the [illegible] as the only alternative, and was [illegible] by Mr. Partridge. There was not much [illegible] the whole [illegible] the flaps was [illegible] with [illegible] carbolic acid, and the wound was [illegible] with [illegible] sutures. The pulse became very weak after the operation. On the patient recovering his consciousness, tr. opii, ♏xx were given.

Brandy and water was ordered to be given frequently in small quantities, and milk and sago and beef-tea were given for his diet.

The stump was dressed with carbolic acid, diluted with linseed oil, ℥iv of oil to ʒj of the acid.

In the evening there was slight reaction; pulse 120, stronger than just after the operation, temperature 98°; no bleeding. The patient seemed much relieved by the operation, and declared himself to be free from pain. Opiate draught repeated at bedtime.

7th.—There was slight venous oozing from the stump; pulse 128; temperature 99°. He did not sleep well last night; appetite indifferent. Some sago food and some milk ordered, Port Wine [illegible] in 24 hours.

℞ S[illegible]
S[illegible] ♏xx.
A[illegible] ℥i
Every 3 hours.

8th.—Pulse 144; temperature 101°; complains of much pain in the stump; very slight appetite.

Repeat medicine and carbolic acid dressing.

9th.—Pulse 152, temperature 102°; appetite bad; some [illegible] along the edges of the flaps. A solution of carbolic acid (ʒ[illegible] to a pint of water) to be injected between the flaps.

℞ Tinct. Hyoscyami ʒss
Aq. camphor. ℥ss

To be taken at bedtime instead of the opiate draught.

10th.—Pulse 160; temperature 99°.5.

11th.—Pulse 144; temperature 101°; slept pretty fairly; tongue moist and clean; 25 ligatures came away, [illegible] yet.

12th.—Pulse 156; temperature 101°.5. He takes food better, and is getting stronger. Repeat mixture every four hours. [illegible] of port wine in 24 hours.

13th.—Pulse 144; temperature 102°. Two more ligatures came away. The discharge has somewhat increased, but is thick and laudable. The sutures have partly separated.

14th.—Pulse 144, temperature 102°; bowels loose; he has [illegible] stools this morning; 4 ligatures came away.

Spt. [illegible] mixture to be continued.

℞ Tinct. [illegible]
Tinct. [illegible]
Mist. [illegible] ℥ss
[illegible] after each stool.

15th.—[illegible] stools in 24 hours; pulse 144; temperature 10[illegible]; [illegible] ligatures came away.

17th.—Bowels [illegible] loose. Pulse 144, stronger; temperature [illegible]

[illegible] Wound [illegible] with [illegible]

[illegible] 144; temperature 10[illegible]·5; [illegible] ligature [illegible] come away; the wound is quite healthy; slight diarrhœa continues; has got some cough; no expectoration.

19th.—Pulse 136; temperature 100; cough rather troublesome; expectoration consists of scanty frothy mucus.

He complains of slight pain in the chest; mucus râles are audible in the larger bronchial tubes; no dulness on percussion; no dyspnœa; bowels quite regular. Omit Chalk Mixture.

℞ Vin. ipecac.	...	...	♏ viiss.
Tinct. scillæ	...	...	♏ viiss.
Tinct camph. co.		...	♏ xv.
Mucilaginis	...	...	ʒij.
Aquæ camph.	..	...	ʒij. ft. haust.

Given every 3 hours.

21st.—Pulse 136; temperature 99°. All the sutures were removed. Repeat draughts, carbolic acid dressing, and carbolic acid lotion injection.

23rd.—Cough very troublesome; expectoration consists chiefly of thick mucus; no dulness on percussion on any part of the chest; sonorous rhonchi audible all over the chest. He has some dyspnœa; pulse 144; temperature 100°; respiration 50. Repeat mixtures.

Cataplasma sinapis to the chest; to be repeated in the evening.

24th.—Pulse 124; temperature 100° 5′; respiration 48; dyspnœa and cough continue; appetite indifferent. He is becoming weaker; discharge from the stump not so healthy; granulations flabby.

25th.—Pulse 144; temperature 100°; has a good deal of dyspnœa; respiration 50.

He had seven stools in the last 24 hours, consisting of loose feculent matter; appetite bad; stump looks very flabby. He is becoming weaker. Omit medicine.

Sinapism to the chest.

℞ Sodæ carb.	...	...	gr. v.
Vin. ipecac.	...	...	♏ x.
Tinct. camph. co.	...	... 60	xv.
Tinct. catechu	...	...	♏ xx.
Spt. chloroformi	...	...	♏ viij.
Tinct. opii.	...	...	♏ iij.
Aquæ cinnamomi	...	...	℥j. ft. haust.

To be given every 2 hours.

℞ Spt ammon. arom.		
Spt. æther sulph. a a	...	♏ xxx.
Aquæ Camph. ...	...	ʒj. ft. haust.

Every 3 hours.

26th.—Pulse very feeble and small, scarcely to be counted. The patient is not inclined to take any food, and had four stools in 24 hours; dyspnœa very troublesome; cough frequent. He sank rapidly, and died at 5 p. m.

Remarks.

The body was taken away by the patient's father, and no *post-mortem* examination was allowed. The cause of death, however, was evidently the bronchitis and diarrhœa. The stump had all along been healthy, and doing remarkably well, until the strength of the patient began to fail, when it assumed an unhealthy aspect, owing simply to defective nutrition. The case may almost be considered a successful one, as far as the amputation was concerned; all the ligatures and sutures had come away, and death took place on the 20th day from causes unconnected with the operation. The relief afforded by the operation, and the improvement in the patient's general health for the first ten days, were very remarkable.

The limb, after removal, was sent to the College Museum, and its appearance is thus described by Dr. Colles:—

"No. 865.—The preparation consists of the thigh and knee, with a short portion of the leg. In front of the thigh is the exploratory incision made by Mr. Partridge. A perpendicular section has been made through the tumour, the internal condyle (from which it springs), and the patella, the knee being flexed. The tumour consists below of yellowish white, nearly homogeneous deposit, about the consistence of hard-boiled white of egg. Above it is much softer, is infiltrated with blood, and contains large lacunæ filled with coagula. It has been broken down in this portion, leaving a ragged cavity (which was opened by the exploratory incision) bounded inside by the diseased mass, and outside by the enlarged and roughened bone.

"*Microscopic Appearances.*—Sections from various parts of the mass showed no traces of stroma, but immense numbers of cells, mostly globular, but not unfrequently caudate, pyriform, or conjoined. The masses of germinal matter (nuclei) in all were very large, and, indeed, in many cases, constituted almost the entire cell, the surrounding formed material being distinguished with difficulty ('free nuclei'). Many of the nuclei contained nucleoli. In the upper (disintegrating) part of the tumour, oil globules and granules abounded, and the 'formed material' of the cells was in many cases almost wholly converted into fat. The tumour was one growing very rapidly, and disintegrating equally fast. The upper portion, had it made its way through the skin, would have been a typical specimen of 'fungus hæmatoides.'"

POISONING BY LUNAR CAUSTIC.

By G. C. Chatterjee, M.A., M.B.,

Sub-Assistant Surgeon, Azimgunj.

As poisoning by lunar caustic is very rare, and as the following case made a wonderful recovery, I think it is worth publishing in detail.

One day in September last, I prescribed for one of my patients (an old man who had been suffering for a long time from extensive sloughing of the scrotum, which was considerably hypertrophied) a nitrate of silver lotion (ʒj-℥j) for external use only. After writing the prescription, I told my patient, an ignorant old man, that the medicine which I had ordered was to be applied to his ulcer. In my prescription I had directed the phial containing the lotion to be labelled "poison." Accordingly it was sent from the dispensary at Baloochur to my patient, but he, without enquiring any further, fancied it to be a mixture, divided it into four parts, and took one dose (containing fifteen grains of nitrate of silver) at once, and two doses more within the next two hours. Fortunately, I went to see him at that very time. As soon as I entered the room, his wife told me, in great hurry and confusion, that her husband was almost dying from the baneful effects of the medicine which I had prescribed in the morning. I examined the phial and found that only two drachms of the lotion were left in it; that is to say, forty-five grains of nitrate of silver had been swallowed by the poor old man!!! When questioned, he told me in a faint voice that he felt a sort of indescribable burning sensation inside his stomach, and that he was *very, very unwell*. His eyes were red, and the forehead covered with perspiration. His pulse was accelerated, and his respiration hurried. The tongue was devoid of epithelium. His mind was quite clear, but he was unable to speak. I immediately made him swallow a large cupful of milk and a strong solution of common salt, and ordered that he should take as much milk as he could swallow. Eggs were also given him clandestinely in the shape of mixture, as he was highly prejudiced against them. Shortly after he began to vomit; thick tenacious mucus at first, and subsequently mucous casts of different forms streaked with blood. This state of things continued for about an hour, after which he felt much relieved, and the excruciating burning sensation abated somewhat. Nevertheless, I made him swallow as much milk as he could. The more he swallowed the more he vomited, and the greater was the relief he subsequently enjoyed. About three hours after, he felt comfortable and fell asleep.

Next morning I ordered him a good saline purge to clear out the bowels, and he went on improving steadily. On the third day he had rather a sharp attack of dysentery; but it was carefully treated, and my patient made a good recovery.

Considering the enormous dose of the poison (forty-five grains), the old age of the patient, and the cachectic state of his health from exhaustive discharges extending over a long time, the recovery was, at least to my mind, a wonderful one.

Azimgunj, *4th February*, 1868.

CASE OF HORN GROWING FROM THE HUMAN CHEST.

By Kenneth McLeod, A.M., M.D.,

Civil Assistant Surgeon, Jessore.

Gobind Chunder Raha, aged 35, a stout, well-conditioned man, presented himself at the Jessore Dispensary, on the [illegible] of January, 1868, with a horn growing from the skin of the chest to the right of the sternum.

History.—He states that about a year previous to his admission he observed a small wart-like growth about three inches above the right nipple. A few days after noticing it, he tied a piece of hair round the base of it, which caused it to drop off. In a few days he observed the growth re-appearing. A small phlegmon seems to have formed, which terminated in the discharge of pus in about three months. It now began to grow rapidly, and a horny elevation appeared, which gradually increased in all directions. This was accompanied with great pain at the base and in the surrounding integument. After having had a considerable portion of the point removed, and having tried various modes of native treatment, he presented himself to me, when visiting a branch dispensary, and at my advice came into Jessore to have the excrescence removed.

Symptoms on admission.—There is a horny mass of the shape of the frustum of a cone a little above the right nipple. It is nearly two inches long, and about two and one-eighth inches in diameter at the base. It has the colour of light horn, and is apparently composed of an aggregation of warts or columns. It is striated externally. Its base, which is exquisitely tender, is somewhat [illegible], and the surrounding surface unhealthy. The substance of the growth is quite [illegible], and it is evidently [illegible] not connected with any subcutaneous structure. He has a [illegible] on his left brow, and a copious crop of acne on his face. There is an eruption of acne on some parts of his body. His general health is excellent.

Removal, &c.—The horn was removed on the 11th by two semilunar incisions. A few small arteries bled actively, but were secured [illegible] by torsion. The edges of the wound were brought together by [illegible] sutures, and a single longitudinal [illegible] wound remained.

17th.—He has [illegible]. Part of the wound healed by the first intention, and the remainder is granulating kindly.

The horn was preserved in spirit, and presented to the Museum of the Medical College, Calcutta. Dr. [illegible] stripped [illegible] and found that it was a purely epithelial growth.

The accompanying sketch, from a photograph taken the day before the operation, gives a good idea of the site, form, and size of the excrescence.

This is the [illegible] case of horny growth which has been recorded in the *Indian Medical Gazette* (See Vol. I, pp. 152 and 357).

CASE OF HAIRY GROWTH IN THE SCROTUM.

By Sub-Assistant Surgeon Cowasji Pestonji, G.G.M.C.,

Bombay;

[illegible] Dispensary, [illegible] Tirr, South.

[illegible] May 1867, a Bania, named Narayan, [illegible] for an abscess in the right side of the scrotum [illegible] was opened and healed in some days [illegible]. This was split up, and [illegible]. Some time subsequently, another abscess [illegible] having a fistulous opening.

No pain [illegible] with this abnormal growth of hair [illegible] had frequent attacks of inflammation [illegible].

The [illegible] and inflammatory [illegible] to have increased slowly, and to be of very long standing.

A CASE OF ABSCESS OF THE LIVER.

By Gopaul Chunder Roy

Teacher, Nagpoor Medical School.

Much has been said of late regarding the pathology and treatment of hepatic abscess, and various one-side reasonings have been brought forward on the points in question. I lately treated a case of liver abscess in the Nagpoor City Hospital; and although the case itself presents no peculiarity in its symptoms, yet the [illegible] failure in its treatment has put me in possession of some facts which, I dare say, may be utilized by the enquiring profession.

Mohammad Ali, aged 26 years, a Munshi, native of Hyderabad, but a resident of Kamptee, was admitted on the 29th October, 1867, with a swelling in the region of the liver. He stated that four months ago he had [illegible] of an intermittent nature, which continued irregularly for two or three months, when it was followed by a dull pain in the region. The fever and pain continued for a month, when a swelling in the region of the liver became apparent. The inflammatory symptoms were aggravated, and were attended with shivering for some days, but they abated in severity afterwards, and latterly became so slight as not to be appreciable by the patient. After four or five months' suffering, he was led to seek for relief at the hospital. When admitted he was very weak, emaciated, and anæmic. He had no jaundice or ascites. Liver dulness was enlarged in area, and continuous downwards over a fluctuating swelling, situated under the costal cartilages at the upper and right side of abdomen while he was in a sitting posture, and extended close to the navel. The patient was very intemperate in his habits, and had been long in the habit of drinking ardent liquors and smoking hemp. He was kept under treatment till the 13th November, when, seeing him daily more and more exhausted by the hectic, and disliking the idea of allowing him to die, as I thought he would, without any measure taken for his relief, I thought of letting out the pus. There was no adhesion between the liver and the abdominal parietes, and a quantity of peritoneal fluid that had lately collected had evidently pushed the organ backwards and inwards from its former position, thus obscuring the seat of abscess. However, I pressed the skin back on the liver, and introduced a trocar and canula a little below the right costal cartilage. To my surprise, nothing but thin dark blood flowed from the canula! After some blood had been withdrawn, and pus did not appear, the canula was plugged, pressed back and bandaged *in situ*. The patient expressed some relief after operation. No peritonitis ensued, and he was at all events not in the least worse for the paracentesis. The plug was removed from the canula on the 15th December, and as no bleeding occurred, the canula was removed also. Some clear peritoneal fluid oozed out of the opening, which was closed with sticking plaister and bandaged. The patient died on the 16th December.

On *post-mortem* examination, the liver was found enormously enlarged. Its right lobe was occupied by a large abscess, bounded in front and behind by a thin wall of hepatic sub-

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* The tuft of hair has been presented to the Grant Medical College Museum.

stance. At the lower part the wall was rather thick, and it was there (a finger's breadth from the thinned parietes) that the canula had entered, but had not reached the cavity of the abscess, which was therefore not emptied. There was no peritonitis, and not a drop of blood in the abdomen. The great omentum was just adherent to the margin of the puncture.

Remarks

This instance of a case of liver abscess, the only one in the course of five long years in the city of Nagpoor, is worth recording; for, considering its topography, it must be inferred that Nagpoor bears a greater immunity from such hepatic derangements than most places situated in the torrid zone. True it is that a hot climate brings on torpidity of the liver, and add to this a sedentary habit, highly-spiced food, and the use of alcoholic drinks, and you complete the etiology of hepatic affections. When the liver is thus overworked with alcoholic stimulants, and its tissues barely nourished, it is not surprising that a slight inflammation should pass on to disintegration and suppuration of the organ. It is one to ten, therefore, that, in case of hepatic abscess, you find your patient a sober and temperate man.

In a paper read before the recent Medical Congress by Dr. Ramirey, it is stated by him that puncture of the hepatic parenchyma is quite innocuous. This opinion is criticized in your November number by your Paris correspondent (No. 1), who asserts that these punctures are so serious that they are rarely practised; and in illustration he quotes one case on record of a lad whose liver was thus punctured, and who died. I may quote here my case to show that, as far as the puncture was concerned, no mischief resulted beyond a slight hæmorrhage.

The existence of such a large superficial abscess, without a corresponding degree of inflammation sufficient to cause adhesion in the surrounding parts, is also an exceptional point.

As regards treatment, I may be allowed to remark that, when the liver is thus ineffectually punctured, the best treatment to follow is to retain the canula *in situ* and to plug it up; for, should there be no adhesion in the surrounding parts, the blood from such a vascular organ will continue to flow into the peritoneal cavity unchecked, and will cause death, either primarily by internal hæmorrhage, or secondarily by extensive peritonitis; whereas plugging the canula stops the bleeding effectually, and the irritation of the instrument excites adhesive inflammation around the puncture.

Publication Received.

The Journal of Cutaneous Medicine and Diseases of the Skin; edited by Erasmus Wilson, F R S, *for January*, 1868.

Domestic Occurrences.

BIRTH.

Johnson.—*At Moradabad, on the 9th instant, the wife of Surgeon* C. Johnson, *25th Punjab Infantry, of a daughter.*

MARRIAGES.

On November 26th, at Carrigaline Co., Cork, Ireland, by the Revd. J. W. Benn, *Rector of Carrigaline,* E. Hunt Condon, Esq., M.D, *21st N. B. Fusiliers, to* Mary Jane, *eldest daughter of the late* M. Roberts, Esq, J. P., *of Mount Rivers, Carrigaline.*

Cameron—Murphy.—*At St Thomas' Church, Middleton Row, by the* Revd. Father Shea, S. J., Charles Cameron, Esq., *Assistant Surgeon, H M.'s Indian Army, to* Alice Mary, *eldest daughter of* Mr. F. J. Murphy.

Beatson—Williams.—*On the 25th February, at Christ Church, Bankipoor, Patna, by the* Revd. Alfred Norrish, William Burns Beatson, M. D, *of H. M.'s Indian Army, Civil Surgeon of Nagpoor, Central India, to* Anne, *eldest daughter of the* Revd. T. Williams, Rector *of Llangwin, Pembrokeshire, South Wales.*

Notices to Correspondents.

A Medical Man.—*You are quite right. It was through an oversight on our part that the names appeared. We will be more careful in future.*

Communications have been received from

Sub-Assistant Surgeon Mir Ashraf Ali, *Agra.*
Assistant Surgeon B. W. Switzer, F.R.C.S.I, *6th P. I., Kohat.*
Surgeon A. M. Tippetts *H. M.'s 5th Fusiliers.*
Dr. G. D. McReddie, *Hardui, Oudh.*

The Indian Medical Gazette.

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only on one side *of each sheet of paper.*

Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, else delay must inevitably occur in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman Bros., and all professional communications to the Editor, direct.

Subscribers changing their address are requested to notify the same.

The Co-operation of the Profession throughout India is earnestly solicited.

Special Notice.—*Subscribers are particularly requested to notify any changes of address, as otherwise no responsibility for miscarriage of copies of this paper can be assumed by* Wyman Bros., *Publishers, Hare Street, Calcutta.*

Hare Street,
January, 1868.

WYMAN BROS.,
Proprietors.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

A MEDICAL DIRECTORY FOR INDIA.

We understand that Messrs. J. Corfield and Co. propose to publish, on the 1st October, a Medical Directory for India, similar to those for "the three kingdoms" which Messrs. Churchill and Sons issue yearly. The undertaking is one which, if properly conducted, will involve considerable labor, and the value of the results will of course mainly depend upon how far the profession throughout India second the efforts of the publishers, by giving them the required information accurately and without delay. In the absence of an official "Medical Register" (for which we are likely to wait a long time), or as a supplement to it, the proposed Directory cannot fail to be both useful and interesting. We trust that it will really include the names, qualifications, &c., of *all* medical practitioners, whatever be their rank, in India, from "Native Doctors" to "Inspectors General," and that no attempt will be made to recognise any *caste* distinctions whatever in the profession.

The idea of an Indian Medical Directory is not a new one. Seven or eight years ago the publication of one was attempted, in connection with the (now extinct) "Indian Lancet." Not being adequately supported, the scheme came to nothing. At that time, perhaps, it was rather premature; there were comparatively few practitioners unconnected with the army in India, and nearly all the information which the Directory was intended to convey could have been obtained from the Army List. Since that time, however, a large "uncovenanted" medical service has sprung up, and the number of private practitioners, both European and Native, has largely increased. A volume which would include all these various classes would be so obviously useful, that we have no doubt of its being generally appreciated. We hope that both the publishers and those to whom they must look for the necessary information and assistance, will do their best to secure a satisfactory result.

VERNACULAR EDUCATION IN MIDWIFERY.

T[illegible] In Calcutta, [illegible] has so far been [illegible] ly to the Obstetric Wards of the Medical College Hospital [illegible] has hitherto consisted of a well-conducted [illegible] Hospital, and in some cases Civil Surgeons have [illegible] getting up a class for the oral instruction of midwives. As [illegible] know, however, no effort has till very lately been made to carry out this object by female teachers, and it is therefore with great pleasure that we learn that this is now being done in the Punjab. At Amritsar a School of Midwifery, with a small Lying-in Hospital attached to it, has been established, under the superintendence of a lady who studied midwifery [illegible] of the most celebrated Obstetric Hospitals in the British Isles. The Municipal Committee of Amritsar have granted Rs. 100 monthly for the support of the institution. There is an out-door dispensary connected with the institution, at which, since it was opened (on 1st December, 1867), [illegible] patients have been treated. Of this number the majority [illegible] disease of some form or other. [illegible] studying midwifery. Of these [illegible] Christians. [illegible] supported. [illegible] to be increased to [illegible] certificate [illegible]

[illegible] many [illegible] cases. Few [illegible] destructive [illegible] by previous [illegible] and in many cases painted [illegible] more or less to the [illegible] We [illegible] the midwife, [illegible] The [illegible] which many women who are [illegible] objects to occupy [illegible] to the sick, without at all [illegible] Lady [illegible] nursing of the sick and [illegible] A very important [illegible] has been entered upon at Amritsar, namely, [illegible] education to those who [illegible] very long time to the [illegible] the majority of [illegible] instruction from [illegible] very grateful to the lady who has taken upon herself the onerous duty of educating them. She must expect to meet with much discouragement at first, and already we hear that the regular "dayes," so far from instructing her, [illegible] educated, they will probably [illegible] their own [illegible] We trust, however, that she will persevere in her efforts. Even should the influence of the school never extend beyond the walls, it may do a vast amount of good in such a city as Amritsar, the richest and most populous in Northern India.

Although the scheme under consideration has nothing directly missionary in its character, the lady who has taken charge of it is, we need hardly say, connected with a Christian Mission. At Delhi, where, as we announced last year, a female Medical Mission [illegible] is already at work, the establishment of a similar institution [illegible] However the religious [illegible] our readers may differ from those of these ladies, we are sure that every member of our profession will wish them God-speed in the prosecution of their work.

THE OOTERPARA INVESTIGATION.

On the morning of Saturday, the 23rd February, an investigation was held by Dr. [illegible], Civil Surgeon of Howrah, [illegible] the truth of certain charges brought against Baboo [illegible] Coomar Mookerjee, the Sub-Assistant Surgeon attached to the Ooterpara Branch Dispensary. The charges (which were drawn up in the form of a memorial to the Lieutenant Governor of Bengal, praying for the Baboo's removal, and signed by a great number of the residents of Ooterpara, Bally, [illegible], and the neighbouring villages) were two in number,—[illegible] especially in obstetric cases,—and [illegible] charging exorbitantly for medicines ordered for his private patients, and endeavouring to establish a monopoly of drugs in the [illegible] In support of the last charge the proprietor of the "Ooterpara [illegible] Hall" (from which the Sub-Assistant Surgeon some months ago withdrew his custom) [illegible] a file of prescriptions, and [illegible] books showing the commission [illegible] by him to the Sub-Assistant Surgeon on the purchase of drugs. Until these documents have been examined, and [illegible] published by Dr. [illegible], it would be unfair to offer any opinion as to the truth or falsehood of the second charge. The attempt to prove malpraxis failed utterly, the witnesses showing both prejudice against the Sub-Assistant Surgeon and a ludicrous degree of ignorance as to the objects and capabilities of treatment. A very strong point in the memorial was the Sub-Assistant Surgeon's ignorance of obstetrics. It was implied that for eight years he had never delivered a patient successfully, and a "sensational" story was told of a Native lady whom he had delivered with the assistance of a Goldsmith's forceps, and who died under his hands! This, however, was *the only case* of obstetric malpraxis which could be brought forward, and it was easily explained. The Sub-Assistant Surgeon was sent for when the lady had been for four days in labour; he found her moribund, with the head of the fœtus, which was putrid, firmly impacted. On his explaining that he required forceps which he would be obliged to procure from Calcutta, as he did not possess them, he was offered his choice from among a number of Goldsmith's tongs, which he of course declined to use. As might have been expected, the patient died undelivered, an attempt to turn having failed. The other cases which it was asserted that he had treated improperly were equally absurd. One man complained that he had failed to save the life of one of his female relatives, who had been attacked with cholera; another, that when suffering from fever, he took the medicine prescribed for him by the Sub-Assistant Surgeon, and was frequently purged and vomited during the night; nay, one of the petitioners *accused* the Baboo of having *successfully* treated him for "false polypus" of the nose. The long roll of signatures (upwards of a hundred we should think) appended to the memorial might seem to indicate that, rightly or wrongly, there was a widespread feeling of discontent against Baboo Soorjee Coomar Mookerjee. But the weight which might have been attached to these signatures was considerably lessened by the appearance of the petitioners. A large number of them were mere lads, and the rest either needy-looking old men, or servants. One of the latter class created much amusement, when asked who were the originators of the movement, by saying that "one of them was the Governor-General's durwan, and there were *several other* great men among them!" We can of course only speak of those who come forward to support their allegations, and cannot be blamed if we suppose that none of the very many Native gentlemen of respectable age and position who were present had any fault to find with the Sub-Assistant Surgeon. If they had, they should not have sat by silently, while schoolboys, servants, and garrulous (but not always venerable) old men made the whole investigation almost ridiculous by the nonsense which they talked. The fact that a large number of the accusers were either servants of the proprietor of the "Ooterpara Druggist's Hall," or were employed in the Calcutta Exchange, in which he holds an appointment, was, to say the least, a remarkable, if not a suspicious, circumstance. We do not attach very much weight to the fact that a number of letters were put in, signed by some of the memorialists, to the effect that, when they signed the memorial, they had no idea of its contents, and that they had been given to understand, by the persons who brought it to them for signature, that it would be the means of getting a second Sub-Assistant Surgeon appointed to Ooterpara, not that it was a petition for the removal of the officer already there.* As one of the most active of the Baboo's opponents said, a man who only knew enough English to sign his name, and not enough to understand the meaning of the printed paper to which he signed it, was probably quite as ignorant of the purport of the letter (signed by him, but avowedly written by another person,) in which he expressed his regret at having done so. Still, these letters, at any rate, showed how little value could be attached to mere signatures in the abstract. One person indeed wrote a letter denying that he had ever signed the memorial, although a signature purporting to be his appeared attached to it; but as he did not attend to substantiate the implied forgery of his name, no great weight can be given to his assertion. Granting, however, that all the signatures to the memorial *were bonâ fide* ones, and that the memorialists honestly believed every word which they said, the evidence given in support of the charges was so outrageously childish, and savoured so strongly of private spite and *zidd*, and there was, moreover, such a palpable community of interest among the principal accusers, that no unprejudiced mind could for a moment doubt that the case against Baboo Soorjee Coomar was altogether a made-up one. We speak of course of the evidence given at the public investigation. How far the documents produced by Baboo Dwarka Nath Chatterjee will, when examined by Dr. Bird, bear out the second charge, remains to be seen. As far as oral evidence went, that was as unsupported as the first had been.

It has been said by high authority that we should be able to find "good in everything;" and even from this disreputable attempt to blacken the character of a respectable public servant, Government may, we think, take one hint. The want of a forceps was made a peg whereon to hang one of the strongest charges of malpraxis. No doubt, had the Sub-Assistant Surgeon come provided with the entire armamentarium of Scultetus, some other excuse for finding fault with him would have been forthcoming. Still. we think that no Government Dispensary should be unprovided with a case of midwifery instruments. In this country no medical practitioner is likely to be called to a case of merely natural labour in a Native female. The fact that he is summoned presumes that the patient has been for hours, perhaps for days, in labour, and that Native midwives have done their best, or worst, for the case. The chances are, therefore, that by far the greater number of cases to which he is called require the application of instruments of some kind. It may be said that, in the present instance, the patient was a private one, and the Sub-Assistant Surgeon should have provided his own instruments. This, however, will not always be the case, and the authorities would not, at any rate, grudge their instruments to their medical officers for use in private practice, provided that they were always available for the public service. The diffusion of a rational system of obstetrics throughout this country is a most important object, and Government should facilitate it by providing all medical officers in their employ, who are not in a position to procure such luxuries for themselves, with the necessary appliances for treating difficult cases. If it is found that the "Doctor Sahib,"

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* It is with very great regret that we have heard the name of a Sub-Assistant Surgeon of good repute, and a contributor to our pages, mixed up with this most disreputable transaction. He was openly spoken of as an *ummedwar* for Soorjee Coomar Mookerjee's place, and one of the witnesses against the latter officer was reproached at the investigation by a by-stander, as having given false evidence with a view to promote his interests.—ED., *I. M. G.*

when he is at length set free, [illegible] for want of [illegible] the [illegible].

The Battle [illegible] Sunday [illegible] Medical [illegible] Colleges [illegible] their own [illegible] have [illegible].

"PROGRESS" IN JYEPOOR.

It [illegible] the Pundit, when the [illegible] "works [illegible]" [illegible] is, we have [illegible] connected with [illegible] and with the Medical [illegible] the present Residency Surgeon, Dr. Burr [illegible] the abolition of the Jyepoor Medical [illegible], which [illegible] was, we had [illegible]. We [illegible] that Dr. [illegible] high favour with His Highness, would have used his influence to prevent [illegible] retrogressive movement; and that the [illegible] of [illegible] "Medical" by the new "Royal Council at Jyepoor" [illegible] establishment was an [illegible] Medical School [illegible] Mayo [illegible] Institution [illegible] amount of patronage from the Raja. We believed that the hands of the Residency Surgeon would have [illegible] strengthened, instead of weakened, by the advent of [illegible] great influence with the "powers that be;" that the Medical School would have received a valuable accession to its strength in the shape of a second European Surgeon, who would have been but too glad to share the labour of teaching with Dr. Burr; and that the cause of medical education in the Jyepoor territories would have been more warmly supported than ever. We fear that we have been mistaken; the new Council, which was to have been the model for that of every independent state in India, allows, if it does not actually favour, the abolition of the Medical Institution, to make room for a *School of Art*, and no one who has influence with the Maha Raja speaks a word in their behalf. To suppose that such an act of barbarity (for such it is) could be tolerated, much less seriously contemplated, if the Political Agent were opposed to it, is utterly absurd. We have already (Vol. II, p. 155) stated our reasons for considering the endowment of a small number of Scholarships at the Calcutta Medical College to be held by subjects of the Jyepoor state, as an utterly inadequate substitute for the present Medical School, which it is proposed to abolish. The long distances and the necessary separation from home and family for three or four years, which Calcutta education would necessitate, would deter many from entering the profession who are willing enough to do so when they can obtain their education at home. In an overgrown and under-officered class, like the Hindustani or Bengali classes of the Calcutta Medical College, the small batch of students from Jyepoor would be to a great extent overlooked; and as they would be removed from the influence of any public opinion for which they would care, it seems but too probable that their time would to a great extent be wasted in idleness, rather than spent in study. Again, they would be necessarily [illegible] at great disadvantages, from their ignorance of [illegible] languages chiefly spoken in Calcutta—Hindustani and Bengali; and they would meet with diseases and types of [illegible] differing widely from those of [illegible]. They are supposed, at least [illegible] education. Lastly [illegible] a smaller number of students must be educated at Calcutta, for the service of the Jyepoor Raj, than now study in the [illegible] the expense of the latter would be far exceeded by [illegible] it was pro[illegible] the Jyepoor Medical School is [illegible] we [illegible] strongly recommend the students [illegible] be transferred to the [illegible] Calcutta.

As [illegible] the Medical Institution [illegible] would [illegible] Jyepoor than [illegible] Medical School [illegible] to a certain extent [illegible] education of Native Doctors [illegible]. But it is not to be supposed [illegible] of Jyepoor [illegible] consent to [illegible] months, [illegible] foreign [illegible] we know [illegible] would [illegible] the Medical [illegible] Jyepoor [illegible] the greatest [illegible] period, [illegible] North-Western [illegible] which [illegible] the [illegible] a rapid decrease in the [illegible].

And [illegible] two useful institutions to be thus ruthlessly sacrificed? Is the state of Jyepoor so hopelessly bankrupt that economy must be practised at all hazards, and that [illegible] a luxury for the [illegible] state of the Government? We believe, on the contrary, that [illegible] a more prosperous [illegible] wealthier [illegible] Rajpootana.

Nor [illegible] one we believe to be very [illegible] a School of Arts is to be established in their stead. A School of Arts is a very useful institution, and we [illegible] circumstances [illegible] glad to [illegible] had been established. But [illegible] instituted [illegible] the [illegible] of two Medical Schools which have been working well, in their own humble sphere, for years, we can only say that it deserves to fail, and will most probably do so. The Maha Raja will tire of this his new play thing, in due course, and it will be abolished in its turn, a dangerous precedent for doing so having been established in the present instance.

We learn that the following is the classification of Civil Stations in the Central Provinces:

1st *Class Stations.*—Nagpore, Jubbulpoor, and Raipoor.

2nd *Class Stations.*—Narsinghpoor, Hoshungabad, Nimar, Chindwara, Seonee, Bandwara, Chanda, Sironcha, and Sambalpoor.

3rd *Class Stations* (to be held by Uncovenanted or Subordinate Officers, or Sub-Assistant Surgeons).—Dumoh, Bitool, Wurdah, Mundla, and Bilaspoor.

The fate of Saugor is not yet decided.

Meeting of the Bengal Branch of the British Medical Association.

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The usual monthly meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College on Tuesday, January 14th, 1868, at 8-30 P. M. Dr. S. G. Chuckerbutty, President, in the Chair.

Proceedings of last meeting read and confirmed.

Proposed by Dr. Colles, seconded by Baboo Govind Chunder Chatterjee, that the Annual Meeting for the election of Officers and reception of the Secretaries and Treasurers' Report be held at 4 P. M. on Tuesday, the 21st instant.

Baboo Govind Chunder Chatterjee read a report of the case of a Native Christian woman, aged 50, who had been admitted into the Medical College Hospital, under Dr. Chuckerbutty, on the 19th November last with symptoms of hepatic abscess, and died on the 28th December. The duodenum, omentum, and hepatic flexure of the colon were found to be matted together by inflammation. The gall bladder was slightly distended and sacculated, and its coats thickened. An opening large enough to admit the little finger, led from its under-surface into the duodenum, close to the pylorus. Seventy-seven gall stones, mostly about the size of peas, but slightly polygonal from mutual pressure, were found; three or four in the duodenum, the rest in the gall bladder. From the hepatic flexure of the colon, another opening, large enough to admit the point of the little finger, led into a large cavity with ragged sloughing walls, bounded in front by the colon, the omentum, and the anterior abdominal wall, above by the diaphragm, below by the colon, and behind by the liver. There was a large ragged opening in the muscles forming the anterior wall of the cavity, but the skin was unaffected.

Dr. Chuckerbutty said that the question in this case was whether the large abscess between the colon, liver, and abdominal parietes was of idiopathic origin, or was the result of irritation caused by the passage of the gall stones into the duodenum.

A discussion on the case followed, in which Drs. Ewart and Chuckerbutty and Baboo Govind Chunder Chatterjee took part.

Dr. Ewart remarked upon the comparative frequency of cases of phthisis among Natives in the Medical College Hospital. It was generally laid down in books that the disease was a rare one among the Natives of India, but experience had shown the fallacy of this statement. He had found very few cases of it in Native Regiments; but among prisoners in jails, or the poorer classes who frequent the Calcutta Hospitals, the disease was very common. Many cases of it had lately occurred in his wards, and he was now engaged in arranging the memorials of this disease, with histories of the same, in the Pathological Museum of the College.

Dr. Chuckerbutty did not believe the disease to have increased in frequency of late years, but that many of the cases which, in his student days, were returned as diarrhœa, dyspepsia, &c., were now more carefully diagnosed, and recognised as phthisis.

Baboo Govind Chunder Chatterjee suggested that the greater frequency of phthisis, as far as Calcutta was concerned, might depend upon the changes which had taken place in the habits and circumstances of the lower orders, and especially to the substitution of brick-built houses for those with walls of mat or thatch, whereby ventilation was greatly impeded.

After some further discussion on this subject, the meeting adjourned at 10 P. M. with a vote of thanks to the Chair.

(Confirmed.)
S. G. Chuckerbutty, M. D.

Extract.

At the meeting of the Medical and Physical Society of Bombay, held on the 1st instant, Surgeon Sylvester was unanimously elected Secretary. A case was read by W. Grey, Esq., after which a paper was read by Dr. Sylvester upon "Iridectomy." The advantages of this operation were lucidly pointed out, and it was proved by cases that in many instances where the operation was performed merely with a view to relieve pain and prevent increase of disorganization, sight to a greater or less degree frequently resulted. Its effect in recurrent iritis was shown to be singularly curative. The failure of the operation in certain cases, and the necessity and advisability of its repetition, were acknowledged and explained, and a most valuable paper was listened to with evident satisfaction by all present. Dr. Arnott complimented the author upon his paper as containing a résumé of what was previously known upon the subject, as well as much original thought, strengthened by the results of a number of operations performed in the Ophthalmic Institution. Some discussion ensued relative to the effect of the operation on the power of accommodation by excision of a portion of the iris. The thanks of the meeting, proposed by Dr. Ward, being carried unanimously, the meeting adjourned.—*Bombay Gazette.*

Local Correspondence.

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METEOROLOGICAL OBSERVATIONS.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Dear Sir,—When I resolved to send a monthly summary of meteorological observations to the Gazette, I did so, as I remarked at the time, under the hope that other men who took an interest in the subject in other places would do so also. Jessore, as the reputed birthplace of cholera, and a place almost proverbially of bad repute in a sanitary sense, would, I thought, afford an excellent opportunity of studying meteorological conditions with special reference to the causation of disease, and constitute, even more than Calcutta, a type of the climate of the delta of the Ganges. Having, however, completed one year's operation, apparently without exciting any interest or effort on the part of any other reader or contributor, I have resolved to discontinue these reports. Now that a special Meteorological Department has been founded in Bengal, to which detailed observations are sent, the comparison and deductions which I desiderated can, with more profit and advantage, be made there, and the valuable space hitherto taken up by my summary devoted to something more acceptable to the majority of your readers, who perhaps do not see in the details of weather observations the interest and use which I, and others who may devote time and attention to the subject, do.

I remain,
Yours truly,
Kenneth McLeod.

Jessore, 15*th July*, 1868.

MR. FITZGERALD'S PAMPHLET ON CHOLERA.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Sir,—Allow me to thank you for the notice you have taken of my pamphlet on the "Nature, Treatment, and Prevention of Cholera" in your issue of the 1st January. While I feel grateful to you for what you have said in my praise, I do not demur against your right as an Editor in passing those remarks which savour of condemnation. When one commits himself to print, and more especially when, in so doing, he advocates opinions not generally popular, he must be prepared to bear with the censure critics may choose to administer him. I would, however, ask the favor of being permitted to offer a few brief remarks on two points contained in your review.

1*st.*—You say — "We think the author would have done well to give his plan a more extended trial before rushing into print." To this my answer is that I would have gladly waited for a more accumulated experience, could I have only calculated with any degree of certainty that the opportunity would have been afforded me of acquiring such increased experience. But cholera is not a disease in which any fixed calculations can be made. Outside of Calcutta its occurrence is of the most erratic nature. I felt that years might elapse before I would see another case; that possibly I might never again come in contact with the disease. I have known a surgeon of twenty years' service in India who never even witnessed an instance of cholera. Why might not the same happen to me in the future? Taking this into consideration, as well as the heavy mortality that usually attends epidemic outbreaks, it occurred to me that it would not be amiss to communicate to the public a mode of treatment which, in my hands, had proved very successful in a limited number of cases; so that, did further experience not fail to my but, there would at least [illegible]. H[illegible] my "rushing into print."

It seems I have some [illegible] the [illegible] of my [illegible] particularly [illegible] in the past, [illegible] what I have [illegible]. If it [illegible] I [illegible] any [illegible].

2nd.—Your further remark, "W[illegible] simultaneously [illegible] Quinine [illegible] and the [illegible] possibly in exactly the way [illegible] Mr. Fitzgerald [illegible]." I am aware [illegible] at one time, [illegible] another, and [illegible] of the practice [illegible] I fail to [illegible] with what I have proposed. If [illegible] physician [illegible] quinine with stimulants [illegible] his patient [illegible] stimulants, while [illegible] the three [illegible] the treatment pursued by [illegible] of them is the same as that which I have endeavoured to draw attention to in my paper; yet it is in the manner just stated that quinine [illegible] and [illegible] have been hitherto employed, [illegible] the same remedy may even at times be used, [illegible] in [illegible] administration, the most [illegible] results [illegible] obtained. Mercury affords a striking example of this. Thus if, for the same disease, to one case twenty grains [illegible] given at once, and to another half-grain doses every two or three hours, [illegible] it [illegible] well that the two patients have been treated quite differently, although the same drug has been given to both. It is in this way, and not as having brought forward a remedy previously unknown or unthought of, that I claim a [illegible] of originality for the plan of treatment which I have advocated.

I remain, Sir,
Your obedient servant,
L. A. FITZGERALD,
Asst. Surgeon, 2nd S[illegible].

DERA GHAZI KHAN, *16th February*, 1868.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

SIR,—Can you kindly answer me a question with reference to the recently published order of the Supreme Government on the subject of Jail Allowance?

Is it necessary for a Jail Superintendent to pass in the vernacular of his district in order to entitle him to the authorised allowance?

No allusion is made to the subject in the G. O., and I do not believe that any such condition is contemplated. In this Presidency, however, the language test is rigorously enforced, before the Jail Superintendent can draw his paltry pittance of 50 Rupees per mensem.

Faithfully yours,
JAILOR.

MADRAS PRESIDENCY, *30th January*, 1868.

The language test is not required in the Bengal Presidency.—ED., *I. M. G.*

THE JYEPOOR MEDICAL SCHOOL AND MATERNITY CHARITY.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

DEAR SIR,—I have read with regret that the above institutions were about to be abolished in Jyepoor, as the Maha Raja was now addressing himself to what he considered a more important educational object, being the establishment of a School of Art. The Maha Raja, though somewhat wayward, is at heart a liberal minded man, and it is much to be regretted that the persuasive [illegible] and tact of the Political Agent have not been brought into play, with a view to prevent what may be termed such a retrograde movement in the cause of civilization.

Any one interested in the advancement of philanthropic science, who, peradventure, may have visited Jyepoor, could hardly fail to be struck with the establishment of so many buildings, schools, &c., which have been erected through the energy and [illegible] of Dr. Burr, the Residency Surgeon and [illegible] Executive Engineer. [illegible] myself within the [illegible] sphere of your Journal, I will simply state what I saw when passing through Jyepoor some few years since. Dr. Burr [illegible] in Jyepoor about five years, and had [illegible] the Maha Raja [illegible] about two years, [illegible] a state of chaos. There were [illegible] no medical attendance [illegible] disregard of hygiene, [illegible] difficult of access by reason [illegible] almost [illegible] and [illegible] statistics [illegible] tests of [illegible]. Such was the [illegible] of things [illegible] Dr. Burr's [illegible] but of [illegible] he overcame every obstacle. [illegible] were [illegible] constructed by him. Dispensaries were established in the most crowded localities of the city, [illegible] visited and supervised by Dr. Burr. At first, like every [illegible] innovation [illegible] by a European, [illegible] the suspicions of the inhabitants; [illegible] and [illegible] of Dr. Burr [illegible] of the natives, [illegible] only in the city of Jyepoor itself, [illegible] throughout the surrounding country. The great success [illegible] which he met [illegible] him to suggest to the Maha Raja the advantage of establishing a Hospital and Medical School as well as a Maternity Charity. At the time of my visit [illegible] was well attended, [illegible] many of the patients had come [illegible] long distances to be operated upon. There were some twenty or thirty students, many of whom were very intelligent and [illegible] to be much interested in the [illegible] surgical [illegible] which Dr. Burr was delivering, [illegible] in Oordoo. Dr. Burr next devoted his attention to [illegible] and hygiene, and effected many reforms, [illegible] thereby causing many [illegible] to be done away with, to the advantage of the people generally, by affording [illegible]. The Maternity Charity has been Dr. Burr's greatest success, [illegible] point of view. Every [illegible] one or more well educated midwives have been turned out, and the cases of infanticide, if I remember rightly, decreased, after the first year of the establishment of this institution, to 25 per cent., and went on decreasing [illegible] progression. Such is a very imperfect outline of all the practical good resulting from Dr. Burr's unceasing efforts, and it seems to me a pity that the labors of years, at the very time when they would have borne the best fruits, should be entirely done away with, not, I suspect, because a School of Arts is being established, but because the advisers of the Maha Raja has not supported Dr. Burr's labors in the manner which their great importance deserves.

Yours faithfully,
OBSERVATOR.

P. S.—I should also mention that vaccination was well established, and that Dr. Burr contemplated giving to the students, during the summer session, a course of practical chemistry.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

DEAR SIR,—I shall be much obliged if you will give replies in your next issue to the following queries for the information of myself and others:—

1st.—What scale of pay will a Surgeon of the Indian Service, in charge of a Native Regiment, draw when proceeding on sick leave, under the Old Rules, to the Hills or to Kashmir?

2nd.—What, if on general leave?

3rd.—If in charge of the Civil Station, Police, Dispensary, and Lock Hospital, in addition to his Regiment, can he draw any money of the pay for the same during his absence on sick or general leave?

4th.—Can he obtain general leave after the expiration of privilege leave in the Hills?

5th.—When absent on privilege leave only, is the person acting for him entitled to draw any portion of the Military pay of the absentee, or of the Civil pay or allowances?

6th.—When a Sub-Assistant Surgeon acts for the Surgeon in charge of the Civil duties, while the latter is absent on privilege leave, is he entitled to draw any of the Civil pay, and how much?

7th.—If the Civil Surgeon's leave be general, to what portion of the pay is the Sub-Assistant Surgeon, if acting for him, entitled?

Yours faithfully,
A CONSTANT READER.

18th *J[illegible]*, 1868.

ANSWERS.

1. If under fifteen years' service, he would draw Rs. 794-9-6, *viz.*, unemployed pay Rs. 789-3-0, *plus* half the difference (Rs. 10-13-0) between that sum and his employed pay (Rs. 800), Rs. 5-6-6. (A Surgeon Major, or Surgeon of above fifteen years' standing, would draw unemployed pay, which is actually higher than that to which he is entitled when on duty with his Corps!)

2. On general leave he will be entitled to the same rate of pay (Rs. 794-9-6, or unemployed pay, according to his length of service) for the first six months, and after that to furlough pay.

3. No. These are *local* allowances, and are to be paid to the officer actually doing the duty.

4. Yes. All officers can obtain general leave (if taken in India) on the expiration of privilege leave.

5. A medical officer on privilege leave is entitled to the full pay and staff of his rank and (military) appointment; but before he can obtain privilege leave, he is supposed to have arranged with another medical officer for the discharge of his duties. *We* have generally understood that it was a point of honor among medical officers to discharge one another's duties *gratis* under these circumstances. According to the letter of the law, however, his *locum tenens* is entitled to *all civil* allowances.

6. In this case also, the Surgeon and the Sub-Assistant Surgeon must arrange matters privately. The latter cannot be compelled to take the duty, and may make his own terms.

7. A Sub-Assistant Surgeon of the 1st or 2nd class would be entitled to Rs. 150, and one of the 3rd class to Rs. 100, monthly, when in independent charge of a civil station. We presume it that the civil allowances equalled, or fell short of these sums, he would be entitled to the whole of them; if they exceeded the fixed allowance, he would, we think, only draw the latter.—Ed., *I. M. G.*

Short Notices of Recent Books.

On the Pathology and Treatment of Albuminuria. By W. H. Dickinson, M.D., Assistant Physician to St. George's Hospital. London: Longman. 1868.

The publication of medical works is so frequently connected with other objects than the advancement of knowledge, that the reviewer seldom meets with a book in which he can find really new matter, and to which he can give his entire approbation. The admirable monograph on our table is, however, an exception. In this essay the author has not only collected in a digestible form the views of modern English and Continental writers on the subject which he has taken in hand, but he has added to the labors of others a fine series of pathological researches, which have done much to clear away the mist in which our ideas of certain kidney affections have been heretofore enshrouded. Dr. Dickinson is a young and rising physician; but he is also a pathologist of no mean experience as the essay which he has just published adequately testifies. The works of Bright, Wilks, Johnson, Rayer, Goodfellow, Barham, Harley, and Grainger Stewart have done much towards elucidating the complex problems of renal pathology, and Dr. Dickinson appears in the field as no unworthy follower in the pursuit of truth. The book is divided into thirteen chapters, of which the following are the respective headings. Introductory, describing the general structure of the kidney, and giving a classification of renal disease; Albuminous urine and fibrinous casts; Pathology of Tubal Nephritis; Clinical history of Tubal Nephritis; Causes of Tubal Nephritis; Treatment of Tubal Nephritis, Pathology of Granular Degeneration; Subjects and causes of Granular Degeneration, Symptoms and effects of Granular Degeneration; Treatment of Granular Degeneration; Pathology of Depurative Infiltration; Symptoms and clinical history of the disease; Treatment of same; Comparison of the three forms of renal disease which are productive of Albuminuria; Changes of the blood in Albuminuria; Alcohol as a cause of renal disease; Climate in relation to renal disease. Of all the subject-matter in this valuable monograph, that relating to pathological changes is the most important, because the most novel. It is clearly too the feature for which the author intended the book to be pre-eminently remarkable. The plates and woodcuts alone would teach the student the whole pathology of the subject. The page-plates are ten in number, and are most of them sections of affected kidneys; some enlarged; others of natural size; and all executed in Messrs. Hanhart's and Tuffen West's best tyle. Some of them are chromo-lithographs, others are plain. The woodcuts interspersed through the text are remarkable for their fidelity, there being no attempt made to "clear up" structures which are naturally obscure, as is not unfrequently done in the preparation of microscopic drawings. Besides the original facts which the author publishes on the subject of pathology, there is another feature of his treatise to which we must direct attention. This is the information which has been collected from various sources touching the relation of kidney diseases to climate. Doubtless there is much in the chapter devoted to this question which comes within the province of unreliable hypothesis, and which can hardly be considered as established truth; but there is also a correlation of facts which is extremely suggestive. The tables from the Army Medical Reports are highly valuable, and the testimony which they give us leads to the conclusion that renal disease is much more frequent in temperate than in tropical climates. We have so far exceeded the usual limits of a "short notice," that we will only mention one more fact concerning this handsomely printed volume. To each paragraph is attached a marginal heading,—an expensive feature to the publisher, but one of great advantage to the busy practitioner. *Tout entier*, we say that Dr. Dickinson's monograph is a valuable addition to medical literature, and is not merely an ingenious contrivance for advertising the author's name,—a too frequent occurrence!

The three-fold nature of Health and Disease. By E. Haughton, M.D. London: Churchill.

This is one of those numerous pamphlets with which luckless reviewers are so often deluged, and which neither instruct their readers, nor reflect credit on the authors. It displays an assumption of knowledge which can deceive none but the uninformed.

Rain: how, when, where, and why it is measured. By G. J. Symons. London: Stanford. 1867.

Mr. Symons is the highest English authority on rainfall. In the volume just issued he has given an account of the reasons why rain should be measured, and of the best means of effecting its measurement. He describes the various varieties of gauges now in use, states the advantage of each, and gives the student of meteorology ample and plain directions for carrying out his operations. Meteorology is now becoming so important a branch of scientific medical investigation, that we commend Mr. Symons's little book to the favorable notice of our readers.

A treatise on Frictional Electricity. By Sir W. Snow Harris. Edited by Charles Tomlinson, F.R.S. London: Virtue & Co. 1867.

Mr. Tomlinson, of King's College, here gives us an edition of Sir Snow Harris's book on Electricity,—a book which the author was prevented by death from issuing with his own hand. The book embraces an account of the practice and theory of frictional electricity, but the author was so staunch a student of the old school of physics that, though Mr. Tomlinson has done his utmost to bring the book up to the present advanced condition of science, the result has been far from successful. We cannot speak in very favorable terms of the book. The Editor's memoir of the author is pleasantly written.

On the Ventilation of Dwelling-Houses and the Utilisation of Waste Heat from open Fire places. By Frederick Edwards. London: Hardwicke. 1868.

The best part of this volume is the series of plates illustrating the different contrivances employed for the purposes of heating and ventilating dwellings. The author writes clearly and forcibly; but though what he tells us is to a great extent the result of practical experience, it is stated in too dogmatic a fashion. The book has little claim to be considered scientific. The important labors of Parkes, Angus Smith, Galton, and others, recently made known, are entirely ignored, and there is an utter absence of anything like a scientific *raison d'etre* for Mr. Edwards's treatise. He tells us how to let in air into our dwellings; but he is unable to tell us how much air we should admit, or for what reason a definite quantity per head, per hour, should be allowed to enter. He would do well to give a little attention to the Blue-book of the Cubic-space Commission. It now appears that for rooms, such as the wards of hospitals, constantly occupied, the quantity of air required is a constant quantity, no matter how variable the space. This fact Mr. Edwards either does not know, or has not fully appreciated.

[illegible] By W[illegible], M.D., [illegible] Physician [illegible] Hospital. [illegible] 1868.

[illegible] where [illegible] than we [illegible] cases of [illegible] pleurisy, that the [illegible] stage. From [illegible] Dr. [illegible]'s work [illegible]. These [illegible] of [illegible] weakness, [illegible] and system, [illegible] curvature [illegible] and [illegible] of the [illegible] angular curvature of the spine. Dr. [illegible] has contributed a sound practical [illegible] from what we may [illegible]. His [illegible] that is the [illegible] figures [illegible] a very [illegible] character, and by no means [illegible] the necessities of the case.

The First Principles of Modern Chemistry. By U. J. KAY-SHUTTLEWORTH. London: Churchill and Sons. 1868.

The author of this work is an enthusiastic admirer of Frankland, Hofmann, and Crum Brown; and while he sees very clearly the difficulties of the [illegible] of nomenclature of these [illegible] chemists, he [illegible] the views of [illegible], and expresses them in language admirably calculated to stimulate the study of modern chemistry. Mr. Kay-Shuttleworth is one of the few [illegible] who [illegible] the [illegible] which meet the student of modern chemical notation, and consequently he has given us a little volume which is likely to do more to spread modern doctrines than any which we have yet seen. The chapter on Atomic Weights and Volumes is a remarkably clear [illegible] of this part of the [illegible], and we think that the young student will read it with much profit. The [illegible] which [illegible] of leading his reader on step by step, and [illegible] the [illegible] upon which the course of reasoning is based, seems to us highly commendable. If there is a fault in the book, it is a sin of omission. We think that organic chemistry has not received sufficient attention. Now it must be admitted that it is upon the organic department that chemistry must depend for its future advancement, and we trust therefore that in his next edition, the author will see to this point.

English Correspondence.

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[FROM OUR OWN CORRESPONDENT.]

London, January 18th, 1868.

THE end of the old year is always a busy time with the professional journalists and [illegible] to the general [illegible]. The reason of this is that [illegible] in each case [illegible] of [illegible] the volume to as high a mark of excellence as he can. The object of course is to tempt as many [illegible] as possible to enrol their names as subscribers. It is usual to [illegible] the first number of the new year [illegible] in the kingdom [illegible] another [illegible] "[illegible]" [illegible]. This year, however, the only journals [illegible] were the *Medical Times and Gazette* and the *British Medical Journal* [illegible] the former was [illegible] advance of the latter. Among the [illegible] in the former was one, the first of a series, by Dr. W[illegible] of Guy's [illegible] on the Diseases of the Nervous System. Now Dr. Wilks is not only one of our [illegible], but he is also a man of great [illegible] and [illegible] not only on the pathological, but also on the [illegible] of the subject, and has therefore given us quite a [illegible] insight [illegible] affection. I [illegible] he may be induced [illegible] and reprint these papers as a separate monograph, for it would be a pity not to place the views he has taken under the notice of all who are interested in the study of nervous diseases.

It is [illegible] most of our profession, and, I dare say, of [illegible], that the office of Coroner ought, in all cases, to [illegible] medical men. It is essentially a medical judgeship, and its duties cannot be satisfactorily discharged by a mere lawyer, who must, in nine instances out of ten, be completely at the mercy of the medical witnesses. You will be glad to learn, therefore, that the Coronership for Western Middlesex, salary £600 per annum, which is just vacant, is being competed for by various medical men. Indeed there is only one legal candidate in the field—the late Coroner's Deputy. Dr. B. W. Richardson of "local anæsthesia" celebrity, was thought to be a candidate, but he has declined to come forward. Of those already in the field, I may mention the following:—Dr. Whitmore, Medical Officer of Health for Marylebone, (whose Committee consists of Sir Thomas Watson, Sir Henry Thompson, Sir William Fergusson, Drs. Quain, Burrows, Jenner, Walsh, Murchison, and Messrs. Nunn and E. Wilson), Dr. William Hardwicke, Deputy Coroner for Central Middlesex, and who is supported by a Committee of local medical men, Mr. George Brown, one of the Medical Officers of Police in the district, Dr. Diplock, of Chelsea, another local practitioner, and finally Mr. Hand, Solicitor and Deputy to the late Coroner. Mr. Holt Dunn, who was also a candidate, has resigned in favor of Dr. Hardwicke; and it is doubtful whether Dr. Whitmore will proceed to the poll. The chance of the post is supposed to be between Dr. Hardwicke and Mr. Hand; but it is clear that, unless some arrangement is arrived at by the other medical candidates, the present division of the constituency will involve the overthrow of the medical, and the success of the legal candidate. This would be an objectionable result as a precedent; but, in a pecuniary sense, the office can hardly be regarded as a lucrative one, for though the gross income is £600, the expenses amount to considerably above £200, and the cost of electioneering operations would amount to about from £1,000 to £2,000.

The Medical Teachers' Association meets on Monday night next (20th), and some important questions will be discussed. To my mind, one of the gravest problems which the Society has laid down for solution is that relating to the employment of the out-patient department of the hospitals as a means of instruction for students. I cannot see how, under existing arrangements, this proposition is to be carried out. The assistant physicians to most of our hospitals are obliged to see and prescribe for from 150 to 200 patients on each day they visit the hospital. Now this amount of work, even under the most experienced hand in "polishing off" patients, occupies from two and a half to three hours. Suppose then that in addition to this the unhappy physician has to give a brief lecture on each case of interest, how can he possibly find time, or procure strength, for the discharge of so onerous a duty? It seems to me that if it be really desirable to carry out this scheme of supplementary instruction, the only alternative on the part of the hospital authorities will be to largely increase the staff of assistant physicians. But is it really necessary to utilize the out-patient department in this way? Surely students find as much as they can learn with advantage in the medical and surgical wards?

The Cantor lectures at the Society of Arts promise to be of some especial interest this time. They will be delivered by Dr. Letheby, the Medical Officer for the City of London, who has chosen for his subject "Food; its varieties, composition, function, preparation, adulteration," &c. If Dr. Letheby deals with the question of nutrition in the spirit of modern scientific teaching, I have no doubt he will do good service. The Government is most anxious to lay down a scheme of dietary on sound physiological principles, and I believe the authorities can only wait for some definitive and general expression of opinion on the part of scientific men as to the relative nutritive values of different elements of food.

Some time since, a lady, a member of the body known as the "Ladies' Sanitary Association," offered a prize of a hundred pounds for the best essay on the "Value of, and dangers resulting from, Vaccination." As might be expected, the competition for this premium was great. The premium, however, has just been won by Dr. Ballard, Medical Officer for Islington, whose essay bore the somewhat contradictory motto, "Is this truth doubtful?" The essays were examined by Dr. B. W. Richardson, F.R.S., Dr. F. C. Webb, and Mr. J. F. Marson, of the Smallpox Hospital. There is no reason to think that any but a most impartial determination was arrived at by the three judges.

Dr. G. Harley, F.R.S., who for the last two or three years has been suffering from a painful ophthalmic complaint which compelled him to relinquish practice and retire to the country, has, you will be glad to learn, returned to his professional labors, and is perfectly restored to health. There are few young medical men who have reaped so high a degree of friendship and respect as Dr. Harley, and few who in so short a time have risen to such scientific distinction as he has. His return has therefore been received with much pleasure by West-end practitioners.

An incident occurred the other day which showed me how little some even of our well informed physicians know of the recent advance in the therapeutics of electricity. I was speaking to a gentleman who is on the "Electrical Committee" of the Medico-Chirurgical Society, and in the course of conversation he said:—"It's all very well for them to talk of constant and interrupted currents, but what's to prevent my getting a continuous current if I turn the handle of my machine rapidly enough." I certainly was surprised, and I think those of your readers who have given any attention to the matter will be equally struck with this supremely ridiculous notion. Truly, a little learning is often a dangerous thing. Just conceive of the application of such a continuous current as this in certain nervous affections!

The Clinical Society is now fairly underway. On Friday week the Society met under the presidency of Sir Thomas Watson, and the meeting was attended, as the newspapers would say, by the *élite* of the profession. The President's address was very eloquent, though brief, and it dealt with the scope and duties of the Society. The most interesting feature of the evening was a spirited discussion on a case of ex-ophthalmic goitre brought under the notice of the Society by Dr. Morell Mackenzie. Observations were made by Mr. Ernest Hart and Mr. Bryant, and by Drs. Anstie, Handfield Jones, Greenhow, and Hyde Salter. The danger which threatens the young Society is that of being flooded with papers by members whose highest anxiety is to exhibit themselves rather than their patients, and who lose no opportunity of coming forward with observations which have often no real value whatever. I think the Council will have to exert decided styptic measures to meet the hæmorrhage which I anticipate. I believe some step of this kind is in contemplation.

The appointments of the month have not been of much interest. Dr. Henry Lawson has been all but elected Assistant Physician to St. Mary's Hospital in the room of Dr. Markham; in fact, he is the only candidate recommended for the office. Dr. Tilbury Fox has been appointed to the post of Physician for Skin Diseases to Charing Cross Hospital, and Dr. Prosser James, London Editor of the *Medical Press*, has been appointed Physician to St. John's Hospital for Skin Affections. I think I have told you of all the events of interest which have occurred during the month, and I may now lay down my pen till the next mail calls me into "active service" again.

The Progress of the Medical and Collateral Sciences.

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The Analysis of Water.—The estimation of the organic matter in water, which, up to the present time, has been attended by so many serious difficulties and sources of error, formed the subject of a lecture by Dr. Frankland at the Chemical Society of London, on the evening of January 16th. Dr. Frankland described quite a new process for the estimation of the organic carbon and nitrogen, which is not only free from sources of fallacy, but is precise to a degree quite unexpected. By this new method, as small a quantity as the fifteenth part of a milligramme may be estimated with the greatest ease. The objection to the new plan is its extreme complexity, which would render it a very difficult matter to carry out by any but a chemist of considerable experience and powers of manipulation. The process is briefly as follows:—To a litre of the water is added an aqueous solution of sulphurous acid, and the water is then evaporated to dryness. The sulphurous acid converts the carbonates into sulphites, drives off the carbonic anhydride, but does not decompose the nitrates as sulphuric acid would. The residue is then beaten up in a glass basin with chromate of lead, and is placed in a combustion-tube with oxide of copper and metallic copper, the open extremity of the combustion-tube being connected with a Sprengel's air-pump, so as to exhaust the air from the combustion-tube and from a large inverted syphon, which is also connected with the tube. The combustion being carried on in the usual way, the gases are collected in the tube, and are measured by absorption. The figures given as the results of Dr. Frankland's method seemed wonderfully precise, and appeared to give a more correct estimate of the quantity of organic matter present, than the mode adopted by Messrs. Wanklyn and Chapman, described some time since in their pages. In the discussion which followed the lecture, Mr. Abel, Dr. Voelcker, Mr. Dugald Campbell, Professor Wanklyn the Chairman, and others took part. The controversy between Dr. Frankland and Professor Wanklyn will, it is said, be continued at the next meeting.

M. Claude Bernard.—This distinguished French Physiologist was elected President of the French Academy of Sciences at the meeting of the Academy held on the 6th January; out of 49 votes, 41 were given for Bernard, 3 for De Quaterfiges, 1 for Decaisne, 1 for Dumas, 1 for Frémy, 1 for Longet, and 1 for St. Claire Deville.

Physiological action of Alkaline Silicates.—Herr Schwann, the veteran originator of the cell theory, has presented to the Academy of Sciences of Belgium a memoir describing a series of experiments recently carried out in M. Melson's laboratory by M. Husson. Herr Schwann comments at some length on the importance of M. Husson's views, and thus sums up the results of his observations:—The alkaline silicates, given in such small quantities that the contents of the stomach remain acid, are completely decomposed, even when in a state of very dilute solution. The intestinal juices are unable to re-dissolve the liberated silica. The alkaline silicates therefore cannot enter into the blood unless they are given in sufficient quantity to allow them to reach the small intestine. When allowed to enter the circulation, only traces of them are to be found. They cannot be detected in the brain, the bones, liver, or bile, but an appreciable quantity may be found in the muscles. The spleen, too, occasionally contains them. The great bulk of the silica is found in the urine, in which it forms a deposit of silica and silicates mixed with carbonates and phosphates.—Vide *L'Institut*, January 8th.

The development of the Cutis forms the subject of a paper read before the Academy of Sciences at Vienna by Herr Kusnetzoff, a Russian physiologist. His views may be thus expressed. All the fibres arise from the processes of the cells, which elongate and bifurcate, especially during the first period of their growth. Networks are formed by the juxtaposition and interlacement of these processes. The office of the intercellular substance is to unite the fibres. The process of differentiation goes on more rapidly in the upper than in the lower layers. The young capillary vessels, instead of making their way towards the surface of the cutis, take an inward course. The development of the elastic fibres takes place at a later period.

The chemistry of apple-leaves has been investigated by Herr Rochleder, of the University of Prague. These leaves, he says, contain a considerable proportion of a yellow crystalline substance, and also of a substance which crystallizes in colorless needles, and which decomposes readily into sugar and another substance under the influence of heat and acids. The percentage composition of this substance is the same as that of phloridzine, but the product of its decomposition differs from that of phloridzine in being soluble in ether.

What is Odontoma?—Odontoma is the name given by M. Paul Broca to a species of dental tumour which is constituted, in most instances, by a hypertrophy of the normal dental tissues. M. Broca's memoir on the subject enters into many points of interest in the histology and pathology of teeth, and is of interest equally to dentists and physiologists.—Vide *Comptes Rendus*, December 30th.

The heat produced by electric discharges.—This important problem in physics has been receiving the attention of one of the ablest of German physicists, Herr Poggendorff, who has thus formulated his conclusions.—(1) The direct discharges of the electrical machine are hotter at the positive than at the [illegible] these processes, [illegible] the pores of glands [illegible] other things being [illegible] to the vitality of the [illegible].

The development of tendons.—Herr [illegible], in a [illegible] to the Vienna Academy, expresses the following views. The [illegible] fibres of the tendon arise from the [illegible] of the [illegible] cells. New cells, he [illegible]. There is some [illegible] Herr [illegible], and we may [illegible] paper contains also [illegible] that is now [illegible].

The chemistry of brain-substance.—At one of the late meetings of the French Academy of Sciences, M. Wurtz [illegible] on the Synthesis of Neurine. In 1865, M. [illegible] separating from the brain a peculiar [illegible], to which he gave the name of Protagon. By [illegible] this with strong Baryta water, phosphoglyceric [illegible] and a base called neurine were obtained. Now it was recently demonstrated by M. Mayer that neurine is really a hydrate of oxethyl-trimethylammonium, "in which three atoms of hydrogen are replaced by three groups of methyl." Neurine is [illegible] hydrate of oxethylen-trimethyl-ammonium. This [illegible] rather [illegible] we come to the interesting [illegible]. M. Wurtz has been enabled, by treating hydrate of oxethyl-ammonium with [illegible] methyl, to obtain very pure crystals of [illegible]. In other words, M. Wurtz has succeeded in forming [illegible] by putting together, synthetically, the [illegible] of which it is composed. The crystals of the artificial and natural salts of neurine are identical in [illegible] different [illegible].

The estimation of nicotine in tobacco.—The relative quantities of nicotine and extractive in tobacco is a point of no mean interest to the smoker who wishes to procure a specimen which acts most on the nervous system, and least on the stomach. M. [illegible]'s new process for estimating the nicotine seems [illegible] in its simplicity. He exhausts the dry tobacco leaves with water acidulated with sulphuric acid, renewing the water three times, and evaporates the solution to the consistence of an extract. This extract is treated with an equal amount of alcohol, and is then filtered, the residue is finally washed. The filtrate contains all the nicotine in the form of sulphate.

A new parabolic reflector for the Microscope has been constructed by Mr. Charles Collins, of London, and will be found, we think, very useful by the working student. Of course, the great object in using a parabolic reflector is to get as fine a bundle of parallel rays as possible thrown on the plane [illegible]. This Mr. Collins's reflector effects admirably. The reflector itself is a large silvered [illegible] reflector, and which [illegible]. The advantage [illegible] is that, all the light of the lamp being thrown upon the mirror, the eye of the observer is protected from diffused light, and is thus permitted to work more agreeably than with the ordinary lamp, and with more advantage.

The Brownian molecular movements, so familiar to microscopists, [illegible] investigated by Herr [illegible], of Bonn, who has [illegible] a short paper on the subject of molecular movements [illegible]. He considers that the movement of the [illegible] due to [illegible] of liquids which carry the molecules along with them. The particles often move in a reverse [illegible] that of gravity.

The structure of the skin has had a monograph devoted to it by Herr [illegible]. The author's views [illegible] Huxley in [illegible] Kolliker's Human Histology. According to his observations, the [illegible] layer of the epidermis arises from [illegible], and strictly belongs to the [illegible] true skin. This conclusion supports Professor Huxley's theory of the *[illegible] line*. Herr [illegible]'s pathological conclusions are of considerable interest.

The Anatomy of Star-fishes is of interest, from the fact that much discrepancy exists in the opinions of zoologists and comparative anatomists as to the true position of echinoderms in the animal scale. The subject has quite recently been opened up in a paper by M. Jourdain. This savant finds that, as Milne-Edwards long ago pointed out, the general cavity of the body is completely closed. This cavity is filled with a limpid fluid charged with corpuscles of about the [illegible] of a millimetre in diameter. These globules are covered with cilia. M. Jourdain was not able to discover the wonderful circulatory apparatus described by so many writers on general zoology.

The Fibrine of Blood.—Herr Mayer, of Worms, has given to [illegible] of his experiments, recently carried [illegible] with a view to [illegible] the proportion of fibrine in blood, specially with regard to the quantity which separates from blood during coagulation. The blood examined was drawn fresh from the carotid artery of a dog by means of a fine canula. The clot having been washed and dried at a temperature of between 110° and 120° centigrade, was afterwards weighed in order to estimate the fibrine. The results obtained in this way were most discordant, and they have led Herr Mayer to at least a negative conclusion, viz., that we do not yet know what is the proportion of fibrine present in healthy blood.

Heart pulsations independent of nervous influence.—If we are to admit the conclusions of Herr Schenk, the contractions of the heart are not dependent upon any influence of the nervous system, either central or peripheral. His observations, which have just been published, were conducted on [illegible] three days old. He found that the heart, when removed from the body, continues its pulsations if exposed to a temperature of from 34° to 36° centigrade. Even if it be divided into minute portions, each of these will be found to contract and relax alternately. At this period the microscope fails to indicate the existence of any nervous structure, ganglionic or otherwise. From this fact Herr Schenk arrives at the conclusion that the heart's movements are simply contractions of the protoplasm under the influence of heat.

Liebig's Extract of Meat.—The Government has contracted with Liebig's Meat Company to supply a large quantity of this preparation for the use of the soldiers in the Abyssinian Expedition.

Detection of Salicine in Quinine.—A useful mode of detecting the presence of salicine in quinine has been suggested by M. Parrot. The new method is based on the reaction of chromic acid with salicine, and M. Parrot asserts that by this means as small a quantity as half per cent. may readily be detected. The suspected quinine being placed in a flask, 2 cubic centimetres of solution of sulphuric acid in water and 4 cubic centimetres of concentrated solution of chromic acid are added to it, heat is then applied. If salicine is present, it distils over as hydride of salicyl, and may be recognised by the violet color which it produces with a few drops of solution of perchloride of iron.

A filtering-tap for Water-cisterns.—Those who cannot [illegible] themselves with filters, might with advantage use the new filtering tap of the *[illegible]*. It would be found especially useful for the poor. It is an ordinary tap, enlarged in front of the [illegible]cock, and containing within this enlargement a quantity of the peculiar [illegible] mineral, of which the silicated carbon filters are composed. When it becomes dirty after long use, it can be cleaned by simply unscrewing the front end of the tap; by this means also preventing the escape of water.

Treatment of Snakebites.—An Algerian gymnast performing at Paris was bitten in the tongue by a viper, and was, after much suffering, restored to health by M. [illegible], who has published in the *[illegible] Revue* (Tome LXV, No. 27) an account of the mode of treatment he recommends for these cases. His method may be divided into three portions. (1) To prevent, as far as possible, the diffusion of the poison by ligature of the limb, suction of the wound, caustics, etc. (2) To combat the depression and torpor of the nervous system by means of alcohol, and diffusible and aromatic stimulants. (3) To facilitate the discharge of the altered blood by bleeding, cupping, leeches, and so forth. M. [illegible] totally denies the good effects of specifics in such cases.

ORIGINAL COMMUNICATIONS.

ON THE ACTION OF COBRA POISON.

By Charles R. Francis, M. B., Lond.,
Surgeon Major, Bengal Army.

The subject of cobra poison is now attracting a considerable amount of attention in the profession in India and Australia. It is one of the highest importance in a physiological sense, and popularly as terrifying as cholera. To discover an antidote to the effects of this poison, based on its pathology, is worthy of our best efforts, and I therefore venture to ask to be allowed to contribute my quota of enquiry, (so far as it has gone,) in this direction, in your columns. The public is much indebted to Dr. Shortt, of Madras, who was the first to offer a pecuniary reward for the discovery of a *real antidote*, which has led to the offer of still further rewards, the sum total now amounting to £175. This may prove to be a useful and successful stimulus in some quarters, though it would be well if the area for observation were more extended.

We are all aware that the natives of India, throughout the country, believe that there is one animal, *viz.*, the *ichneumon, vernacularly called a mungoose*, or "nyoura," which the poison of the cobra cannot harm. They believe that, if the mungoose be free after a contest with a cobra to go where it pleases, it will scamper off in search of some (unknown!) herb, and, eating it, become poison-proof. This is an obvious fallacy. It is difficult to conceive the existence of an antidote which is ubiquitous, and always available *at once* in the first place, and of such potency as to be able to overtake and neutralize the effects of the poison in the second, for some time must frequently elapse between the bite and the *discovery* of the antidote. No! The fact is that the mungoose, if fairly bitten, will die, and in the same way, *i. e.*, exhibiting the same set of symptoms, that other animals, dying from the effects of cobra poison, will. The truth is that, in its contests with a cobra, the mungoose escapes by its wonderful activity. It may be compared to a light infantry soldier, while the cobra is more like a heavy dragoon. I was for some years, however, a believer in the common idea, my belief being based upon the result of some experiments which I made when stationed at Banda, in 1851. By these it appeared that the mungoose *was* invulnerable, and I therefore endeavoured to make some preparation of this animal to experiment with as an antidote. The opportunity, however, for carrying on the enquiry soon passed away, and it was not till 1860, when I was quartered at Lucknow, that it occurred again; and I then became convinced that my former experiments must have contained sources of error. Major-General Sir R. Walpole urged me to repeat them, assuring me that the mungoose, if properly bitten, *would die*, adding that he and the late Col. Patrick Grant had proved this. I therefore collected, through the snake-charmers, as many cobras as possible, and in the course of a short time was able to muster seven fine lively specimens. These were kept in one of the verandas of my house, (which was well known as "Cobra Cottage," I myself being designated by the natives as the "Saump-wallah Sahib!") each in a deep earthen vessel, (*gurha*,) covered over with a loose lid. I gave them an airing morning and evening, taking one out at a time with a hooked stick, and offered them young frogs, birds, and milk for food; but they, with one exception, refused everything, and all died within from twenty days to a month of being caught, having lived quite long enough, however, to enable me to carry out the required experiments. These were performed in the presence of several witnesses, amongst others, of Deputy Inspector General Dr. J. Campbell Brown, C. B., and the results were published in a local journal, the *Oudh Gazette*. Before commencing an experiment, the cobra was *tested*, a supply of fowls and small birds being retained for the purpose. In each case the tested bird died shortly after being bitten in the usual away. It faltered in its gait, limped, sunk on the ground, became lethargic, and then fell into convulsions, in which it was carried off. Sufficient time was then allowed for a copious re-secretion of the poison, and the animal to be bitten was presented to the cobra. As a rule, the latter would not voluntarily bite its victim; and it became necessary to force the poison fangs into some fleshy part of the latter. In the case of the mungoose, the inner part of the thigh was selected. The operation was most successfully performed, in each case, by two snake-charmers, father and son. Three mungooses were operated upon, *and they all died* at intervals varying from fifteen minutes to six hours, each in precisely the same way. They were not allowed their liberty after being bitten, but were kept under observation. A dog, thus bitten, would, I believe, have succumbed likewise, but for the free exhibition of liq: ammoniæ. He foamed violently at the mouth, (one of the usual results of cobra poisoning,) and apparently evinced symptoms of approaching hydrophobia, which so alarmed the owner, that I believe he had the animal, which ran away, eventually destroyed. Three harmless snakes were then presented to three cobras in succession, and all died precisely as the fowls, mungooses, and little birds had died. In the experiment recently made by Dr. Fayrer in Calcutta, and recorded in the *Indian Medical Gazette* of the 2nd December, 1867, it would appear that a harmless snake was invulnerable; but, in the presence of the positive evidence of death occurring under the same circumstances, it would be well to have this part of the experiment repeated; and this it is, I believe, Dr. Fayrer's intention to do. It is probable, I think that an innocuous snake, when bitten by a cobra, *will die*. Such was the belief of the snake-charmer who witnessed Dr. Fayrer's experiment, and such, I know, is the belief amongst these men in Upper India. The *mode* of having the bite inflicted may be important. The snake-charmers at Lucknow maintained that, in the case of snakes, the ordinary method would not suffice; that it was necessary to bring the *jaws* of the two snakes into close union, and then, after locking them together, so to leave them. I therefore had this done. A slight contest ensued, during which it may be presumed the poison was emitted. It was thus that my harmless snakes were fastened upon; and they succumbed to the poison. *Two cobras* were now made to approach each other, the father and son, each holding a neck, with the thumb well pressed upon the back of the head. Neither liked this part of the experiments, as, had either cobra struggled and overshot the mark, its fangs might have been fastened into their hand. Happily, however, no accident occurred, and the jaws were well locked into each other. As might have been expected, neither cobra suffered. This experiment was conducted twice, each time with fresh cobras, and in both instances the cobras were alive and well a fortnight afterwards. Thus, then, it seems to be distinctly proved—(*a*) that the mungoose is no more proof against the poison of the cobra than other animals, although, possibly, it may take a longer time to die, in which case remedies, if early applied, would have a greater chance of success than in animals where death is more rapid; (*b*) that even snakes themselves, if innocuous, are no proof against it; but (*c*) that poisonous cobras are.

Now what is the pathology and morbid anatomy of cobra poisoning? For, upon an accurate knowledge of these should, if possible, be based our treatment. In the

British Medical Journal of the 26th Jan., 1867, some interesting investigations are recorded by Dr. Halford, Professor of Anatomy at Melbourne, which seem to indicate that, after a bite from a cobra, the blood of a human being becomes somewhat altered in character, from the formation of molecules of germinal matter,* which rapidly grow into cells, at the expense, Dr. Halford believes, of the oxygen of the blood absorbed during respiration.

These observations were partially confirmed by Dr. Fayrer, but the appearance of these cells, in the blood examined by him, was not uniform, *i. e.*, they were not seen in each case, when the blood was examined in this way; and yet the microscope employed was one with a very high power—a Powell and Leland's [illegible].

We have yet to learn whether this condition of the blood, which has been thus twice, but not uniformly, met with by careful observers in cases of cobra poisoning, exists in any other cases.† Alterations in the blood elements may be due to mere meteorological causes. Thus, Dr. Forbes Watson, in a paper read before the Society of Arts in 1855, and printed in their journal, states that, during the course of a series of observations made in India (in Bombay) on the direct influence of climate on the human body, he found that, after a period of continued rain, as during the monsoon, the blood became deteriorated in a remarkable and striking manner, the chief alteration being found to occur in the blood corpuscles,‡ as ascertained by the microscope, under every possible precaution for securing truthful results. The change presented itself in two ways; in the first, the red globules of the blood were found to vary, and that to a considerable extent, some of them being not larger than half the ordinary size; but the most striking feature was that the great majority of them, instead of presenting their usual smooth appearance, were found studded with small highly-refracting granules of a fatty nature. The blood cells had undergone, in short, *fatty degeneration.* I may dwell for a moment, *en passant*, on the cause of this condition, highly interesting as it is to the pathologist and practical physician.

As Dr. F. Watson observes, "an excessive amount of moisture in the air interferes materially with the functions of those two great filters—the lungs and the skin, and the result is that the vital conditions of the blood itself become altered, and ultimately the general health impaired." Hence the great importance of removing from the air a certain quantity of its moisture (in cases where this is excessive) when possible; or in one of removing the individual to a drier climate. This condition of the blood is worthy of further examination.

Although, doubtless, changes in the blood *are* induced by the poison of the cobra, and more frequently, as Dr. Fayrer believes, in those cases where the poison is acting slowly, it is, I am inclined to think with him, more probable that the true pathology of cobra poisoning is to be found in the shock and disorganization of the nervous system, and that therefore our treatment should be directed to it especially. Like other poisons which threaten to destroy the life of the patient in their progress, this will wear itself out *in time*, and the great object, therefore, should be to *prevent life from becoming extinct*, to keep the individual alive by various means, until the poison has passed away. A *ligature*, between the bitten part and the heart, to arrest, as much as may be, the introduction of the poison into the circulation and *suction*, to withdraw what may not have been taken up, is sound practice *to begin with*, and commends itself as well to barbarous as to civilized nations. *Stimulants* are invaluable, there being nothing of this description probably better than the popular *Eau de Luce*, of which Ammonia (the professional remedy) forms the basis. *Oxygen gas*, (when available), as recommended by a recent writer, would, I have no doubt, be of great value. I once had the satisfaction of aiding in the recovery of a patient almost dead from diphtheria, by the careful inhalation of oxygen; and I have ever since been much impressed with the advisability of using it in all cases of depressed nervous energy, with a view to rousing a patient, and enabling him to "tide over" his temporary depression. And if, as Dr. Halford believes, the enormous number of cells (containing germinal matter) in the blood, and destroying its vitality, are formed at the expense of the inspired oxygen of the air, another powerful reason is furnished for its use.

With regard to the vaunted remedies, so-called specifics, for snake-bite, the profession generally has no confidence in any of them. Mr. Hood, writing on the subject in the *Lancet* of February 15th, 1868, says that no antidote is required, all that is necessary being *continued* and *forced exertion*. To the value of this I can bear a very fair amount of testimony, having been called upon, in the course of a long service in India, to treat several cases of cobra poisoning. In all, where measures having for their object the prevention of lethargy were fully carried out, the result was eminently satisfactory, and the patient recovered.

There is one point in connection with this subject which I commend to the consideration of the homeopaths! If, as has been suggested by a recent writer, *a dose of the poison itself is the best of all remedies*, homoeopathy may see, in this fact, an illustration of the principle "similia similibus curantur," and say "why, if we have the poison of the 'trigonocephalus lachesis' (a species of rattlesnake common in Brazil) as a polychrest in our homoeopathic materia medica for the bite of the rattlesnake, why should we not have cobra poison as an antidote for the bite of the cobra?" But if, in all seriousness, it should occur to any gentleman, professing the doctrine of Hahnemann, to try this remedy, I would suggest, not the introduction of the poison by the mouth and stomach, which would probably be followed by vomiting and ejection of the antidote (?) but the hypodermic method.

"Fiat experimentum in corpore vili." Let him begin with a pariah dog.

ON THE ACTION OF THE COBRA POISON.

By J. Fayrer, M.D., F.R.C.S.E.,

[illegible] Professor of Surgery, [illegible] Medical College of Bengal.

(*Continued from Vol. II, No.* 12, *page* 294.)

SECOND SERIES.

Experiment No. 1.

On the 10th March, 1868, the following experiments were made in continuation of those reported in the *Indian Medical Gazette* of December 2nd, 1867.

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[*] [illegible] Dr. Halford [illegible]

[†] [illegible]

[‡] [illegible]

A full-grown ptyas mucosus, or rat snake *(dhamin)*, was bitten at 12-27 p. m. by a fresh cobra about two-thirds grown, and of a light brown color The cobra was made to close his jaws in three different places at about two feet from the head of the ptyas. The bitten snake was then placed in a large box, with a wire front. 12-33.—Ptyas moving about actively in the box and darting out his tongue frequently. 12-40.—Seems very restless and uneasy; strikes at everything that approaches the cage. 12-57.—Active as ever. 1-2 p m.—No change. 2-30.—No change.

There was no further change, and on the 13th the snake was quite well.*

The ptyas, *dhamin*, or rat snake, is very active and vigorons. The individual bitten must have been about eight feet in length. The cobra was about half the size.

Experiment No. 2.

A varanus flavescens, or *gohsámp*, about two-thirds grown, was bitten at 12-38 p. m. in two places,—one on the thorax behind the foreleg, and one on the inner side of the hindleg, by a powerful, full-grown, and fresh cobra, about six feet in length, of a lightish color, and distinctly marked with the spectacles on his hood. 12-42.—The lizard lies quiet in the cage. 12-46.—Crawling about in the cage; slightly drags his forelegs. 12-55.—Very quiet; looks sluggish; eyes partially closed. 1 p. m.—Very sluggish; was taken out of the cage and placed on the floor of the room, where he moves. The forelegs are dragged with the palmar surface of the feet turned upwards, but when much roused, he is able to use the forelegs. 2-30.—Appears a little less sluggish; looks about. 2-45.—Replaced in the cage; has moved about in the cage, but is sluggish. Hardly responds to stimulus when roused. He remained for the rest of the day in this state. 11th March, noon.—Sluggish, and can hardly be roused. 4 p. m.—He died quietly.

Experiment No. 3.

The cobra that bit the ptyas in experiment No. 1 of this series was bitten by another fresh cobra of a much darker color at 12-45. The snake was made to close his jaws in two places, and, as in the other experiment, not only could the fangs be heard to penetrate the scales, but the marks of the puncture were visible, and the poison was left on the surface of the part near the punctures. The snake, after being bitten, was returned in a cage like that of the ptyas in the 1st experiment. 1-2 p.m —Lying quiet, apparently unaffected. 1-15.—No change. 1-35.—No change. 2-30.—The only change is that the snake is on the alert, and keeps his head erect with hood spread.

No further change occurred after this, and on the following day the snake was well. It may be noted that this cobra was partially exfoliating his skin at the time when the experiment was made.

Experiment No. 4.

A ptyas mucosus, about six feet in length, was bitten by the large cobra at 12-54 Before closing the snake's jaws on the part the scales were scraped off. Blood was freely drawn by the snake's fangs from bites inflicted in two places. (This was the same cobra that bit the varanus). 1-8 p.m.—Appears sluggish; wound bleeding freely. 1-16.—Perfectly active, and moves about rapidly in the cage. 1-35.—No change.

There was no apparent change in the snake all that day or the next, except that it may have been little more sluggish. He died during the night of the 11th, being found dead on the morning of the 12th.

Experiment No. 5.

A very large bull-frog, "rana tigrina," was bitten severely in the inner side of the hindleg in two places, at 1-57 p.m., by the same large cobra that bit the ptyas and varanus. 2 p.m.—Frog walks about; bitten leg rather dragged. 2-5.—Seemed anxious to escape, and gave several cries as of pain or fear. But there was no further change; the frog remained quite well on the 13th

The blood of the ptyas and of the varanus was examined by Dr. Colles and me with a one-eight inch object-glass and the A eye piece. There was nothing suggested of any change in the corpuscles.

It is to be remembered that death in both these cases occurred very slowly, allowing abundance of time for any blood change to take place. Of course the appearances in reptilian might be expected to differ from those in mammalian blood; but I doubt if there be anything to indicate such changes as Dr. Halford describes in human blood after the cobra bite.

However, the matter is still *sub-judice*, and requires many experiments, and those often repeated, before any decided conclusion can be formed.

It is especially noticeable that the deaths took place very slowly, and that the effects of the bite, even of a very powerful cobra, were much more gradually manifested in the cold than in the warm blooded animals. The frog escaped altogether, but this may be owing to the cobra having been somewhat exhausted by biting two other animals. I can hardly imagine that it was so; for when the snake's mouth was opened to make it bite the frog, the poison dropped freely from the fangs. It is probable that the quality, rather than the quantity, may be affected by the rapid discharge of the fluid, and that the exhaustion is caused by the excitement of rage as well as by that of fear, to which, under the circumstances, the snake is naturally exposed. The experiments were carefully conducted, and the snakes were handled by the same old man who officiated on a former occasion. Dr. Jerdon and Dr. Colles were present with me during the experiments.

A BRIEF REPORT OF THE OUTBREAK OF CHOLERA AT AJMEER DURING THE RAINY SEASON OF 1867.

By T. Murray, M.D.,

Civil Surgeon.

As soon as it was known that cholera had broken out among the pilgrims at Hurdwar, all proper precautions were taken, and arrangements made by the Civil and Police Authorities of this district, to prevent pilgrims from passing through Ajmeer. These arrangements were successfully carried out; and I have been informed that very few pilgrims passed through this station. Those who were returning to Guzerat and the Deccan branched off between Jeypoor and Kishengurh, one party taking the road through Marwar, and the other that through Meywar.

Reports had reached us of the prevalence of cholera in various parts of Marwar for more than a month before the disease made its appearance in Ajmeer.

The first case occurred here on the 26th of June, the second case on the 28th; both terminated fatally in a few hours. They were treated in the dispensary, and I made every enquiry with a view to tracing the introduction of the disease to stray pilgrims from Hurdwar, but failed to do so. No fresh case occurred for ten days, until the 9th July, when three more cases occurred, of which two proved fatal, and one recovered. Again there was a lull until the 15th July, when there were two cases. Between the 15th and the 20th there were twenty-two cases. From the 1st August to the end of September, 218 cases occurred.

Although the epidemic continued in the city from the 9th July to the 30th September, only 247 persons were attacked, out of which number sixty-five died, or 26·31 per cent.

As there was no particular atmospheric disturbance when the

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* This snake died on the 17th, without any obvious cause.

[illegible]

[illegible] 17th August. [illegible]

[illegible] European [illegible]

[illegible] cholera [illegible] in the [illegible]

[illegible] strictly prohibited [illegible] had not come in contact [illegible]

[illegible] 29th of the month, there was [illegible]

[illegible]

[illegible] was given, and the [illegible]

[illegible]

[illegible] twenty or thirty [illegible]

[illegible] freely used [illegible] of the stomach, had the effect, of checking [illegible]

Secondary [illegible] was treated on [illegible]

[illegible] at the time. I found the [illegible]

[illegible] generally, [illegible]

A[illegible] R[illegible] 1867.

REMARKS ON THE DRY-EARTH SYSTEM OF CONSERVANCY.

By W. J. Moore, L.R.C.P.,
Surgeon, Rajpootana Political Agency.

No less an authority than Mr. Simon (*a*) has recorded his deliberate opinion that typhoid fever and malignant cholera belong to the great group of diseases which infect the ground. A scarcely less able sanitarian, Dr. Budd (*b*), has also stated precisely similar views. The name recently conferred on typhoid fever, now admittedly a common Indian malady, *viz.*, "pythogenic" fever, is indeed strongly suggestive of its origin. Murchison (*c*) unhesitatingly asserts that typhoid, pythogenic, or enteric fever, is often generated spontaneously by fæcal fermentation. Budd (*d*) also records his conclusions that in typhoid fever, as in small-pox, the *materies morbi* is excreted at the part where eruption occurs, and that, therefore, the secretions of the intestines contain the contagious matter, which may be conveyed to other parts in sewers, in night-soil, in water, &c. With regard to the propagation of cholera, the experiments on dogs, and even on human beings (*e*), elsewhere quoted, appear to demonstrate satisfactorily that the choleraic fæcal material introduced into the system will excite choleraic manifestations, notwithstanding the recent offer of himself for experiment by an enthusiastic and unbelieving Parisian.

The arguments and facts adduced by Theirsch, (*f*) of Vienna, and by Pettenkofer (*g*), are well known, and therefore do not need recapitulation here. These observers are of opinion that the cholera fæces during their decomposition develope a peculiar poisonous material, which will, if introduced into the human body, induce the disease again. Acland (*h*), Snow (*i*), Carpenter (*j*), Alison (*k*), Routh (*l*), Sutherland (*m*), Bidie (*n*), Budd (*o*), Simon (*p*), Gibb (*q*), Parkes (*r*), and some other authors of scarcely less weight, have arrived at almost similar views, the majority asserting that, like the fæcal matter of pythogenic fever, choleraic discharges do not require the putrefactive process to render them poisonous. As it is certain that cholera always follows the great lines of human intercourse, and is frequently checked by deserts and conveyed on rivers; and as there is no recorded evidence of its occurring in one locality before a person could have travelled from an infected place to such locality, so it is equally beyond doubt that, *if* communicable by other means, the most general *media* by which is it propagated are the choleraic evacuations.

Similarly, there are other maladies which affect the soil, and which are disseminated by fæcal material. The researches of Von Siebold of Munich, of Kuchenmeister of Zittau, and of Nelson of Birmingham, have proved that cystoid worms are transferred to the human alimentary canal by being eaten in uncooked or half-cooked flesh. But Kuchenmeister (*s*), Leuckart of Giessen, Humbert of Geneva, and more recently Dr. Cobbold (*a*), have with certainty traced the origin of some forms of entozoa to dogs and pigs. Thus the *cysticercus cellulosæ*, the embryo of the *tænia solium*, has been found in the structures of such animals. Kuchenmeister caused a condemned criminal to take cysticerci from the hog, which quickly developed into tape-worm, and Humbert of Geneva experimented on himself with like results. It is also proved that the *cœnurus* of sheep proceeds from ova—the first embryo of *tænia* found in the excreta of dogs. In every female entozoon there are myriads of ova. It is estimated that, in a female ascaris, there are sixty-four millions of eggs. The dirty habits of sheep, of swine, and even of cattle in India, are well known. They will all eat human or other ordure when not well fed and tended. From the millions of ova of entozoa which must be deposited on the ground, there is little wonder that some at least find a germinating nidus in the quadruped, to be afterwards transferred in butchers' meat, in the form of echinococci, cœnuri, or cysticerci, to the human, in whom they develope their third growth or transformation, becoming one or other variety of worm. The prevalence of tape-worm among the flesh-eating Mussulmans, and among Europeans, especially in Upper India, has been referred by more than one author (*b*, *c*,) to the dirty habits of sheep and cattle; and Cobbold (*d*) suggests that all excreta of animals or human beings, known to have worms, should be burnt. "If they are simply allowed to drop and lie on the ground, multitudes of embryo escape destruction, and are eaten by cattle."

There are then three diseases, *viz.*, typhoid fever, cholera, and worms, which we know to be disseminated by the medium of fæcal material. It is also probable that other maladies, such as dysentery, may spread in a somewhat similar manner. Hence arises a very grave question as to the advisability of the much vaunted dry-earth system of conservancy. It is a trite saying—"There is nothing new under the sun." It is certainly unquestionable that to the Revd. Mr. Moule belongs the credit of the presumed beneficial application of dry-earth for purposes of conservancy, as now practised. But that earth is a deodorizer was known and *noticed* long before that gentleman proposed his system (*e*). Every cemetery is indeed a proof of this quality in earth. Such properties have been known to the Italians, and acted upon in Italy, for ages (*f*). Whenever, in that country, night-soil is removed, it is customary to mix it thoroughly with dry-earth. A hole is dug in the immediate neighbourhood of the cesspool, and a hole drilled low down into the latter. As the ordure or "soak" flows, it is mixed with, and deodorized by, earth, and taken away without unpleasant effluvia being perceptible. But there is every difference between a mere *deodorizer* and a *disinfectant*. There is reason to believe that earth does not act with any great certainty in the latter capacity. It is well known that some soils, such as clay and alluvium, retain organic matter for a lengthened period in an undecomposed form. It is on record that, some few years ago, a body of prisoners were employed in making a road in the Goontoor district (Madras Presidency); and that in cutting away the soil, they came upon the remains of a number of persons who had died of cholera during the famine year of 1838; and that cholera immediately broke out among the workmen. Again, a party of coolies, employed on a railway-cutting near Salem, opened a spring of very clear water. Those who drank of it were seized in a few hours with cholera of a very severe type,

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(*a*) Disregard of the Laws of Health. The *Times*, June 17th, 1861.
(*b*) The *Lancet*, July 23rd, 1859.
(*c*) On the Continued Fevers of Great Britain.
(*d*) The *Lancet*, December 6th, 1856.
(*e*) The Author's "Health in the Tropics."
(*f*) *Thiersch Medical Times*, 1853.
(*g*) Pettenkofer, Mode de Propagation du Cholera.
(*h*) Acland's Memoir of Cholera.
(*i*) Snow on the mode of propagation of Cholera.
(*j*) Carpenter's Impure Water, a cause of disease. *Association Medical Journal*, 1854.
(*k*) Alison on Cholera. *Edinburgh Medical Journal*, 1854.
(*l*) Routh on Fermenting [illegible] Evacuations. *Sanitary Review*.
(*m*) Sutherland's Report on Cholera. *Blue Book*, 1855.
(*n*) Bidie's Etiology of Cholera. *Madras Medical Journal*, No. 1.
(*o*) Budd. The *Lancet*, July 23rd, 1859.
(*p*) Simon Op. Cit.
(*q*) Gibb, *Sanitary* [illegible], No. 2.
(*r*) Parkes on Hygiene, [illegible].
(*s*) [illegible]

(*a*) On Human Entozoa.
(*b*) Gordon. *Medical Times*, May, 1857.
(*c*) The Author's "Health in the Tropics." Article "Diet."
(*d*) Cobbold on Human Entozoa.
(*e*) The Author's "Health in the Tropics."
(*f*) [illegible] "on the Deodorizing [illegible] of Dry-earth," read before [illegible] of Medical Officers [illegible] January [illegible].

[illegible] As is well known [illegible] Dr. G[illegible] of small-pox [illegible] of small- [illegible] I have [illegible] of extreme [illegible] of one disease is equally [illegible] to the germs of cholera, typhoid fever, and [illegible] is every reason to believe that at least some [illegible] will exert a preservative tendency. And if [illegible], the wholesale burial of human ordure, [illegible] must necessarily be discussed now going on under [illegible] system of conservancy, is, most certainly, storing [illegible] which will probably be turned up hereafter.

A[illegible] Health Officer, Inspector-General Edward Hare, C.S.I., [illegible] provoked a discussion by reading a paper on [illegible] dry-earth conservancy system before the Metropolitan Association of Medical Officers of Health (c). From the [illegible] it would appear that there is a growing [illegible] to agricultural purposes [illegible] Dr. [illegible], who [illegible]—"It must [illegible] to agriculture [illegible]." Mr. [illegible] remarked [illegible] anything but grass, which [illegible] good hay." [illegible] In [illegible] we find [illegible] of vermin [illegible] fever [illegible] amount [illegible] the [illegible]

[illegible]

[illegible] to the use of the dry-earth system. The argument [illegible] in favour of the latter [illegible] plan which [illegible] disposal of [illegible] it was probably [illegible] only plan which would be [illegible] people. [illegible] consumed [illegible] even diseased [illegible] would [illegible] safer under ground than on the surface. The [illegible] away, and leave it behind, [illegible] to the [illegible] sickness, as has [illegible] have [illegible] with [illegible]. W[illegible] of the plan being carried [illegible] on the extensive [illegible] contemplated by the dry-earth sanitarians.

Admitting the grave objection above detailed to the present conservancy system, the question presents itself—Is there any better plan? Until we are certain that disinfectants will radically destroy the germs or spores of disease, and until we are assured that none but healthy excreta will ever be buried, I believe that burning all such material is the only safe plan, not only for ourselves, but for our successors. Thorough combustion, with or without previous disinfection, will effectually prevent the dissemination of disease by [illegible], which the present dry-earth conservancy certainly does not (a).

PATHOLOGY AND TREATMENT OF COUP-DE-SOLEIL OR INSOLATIO.

By Surgeon G. Barnard, M.R.C.S., Lon.,

H. M.'s 3rd R[illegible] Native Infantry[1].

Extremes of temperature, both high and low, interfere directly with the working of the delicate nerve-centres, the cerebro-spinal ganglia. The generators of all the power that is shown in the series of phenomena we [illegible] "life," *i.e.*, animal. Under certain conditions of functional derangement or of fatigue from overwork and length of exposure to an extreme of atmospheric temperature, the body loses its power of maintaining its own normal temperature. And the [illegible] range of temperature under which these [illegible] constituted central ganglia continue actively to generate nerve-force may readily be imagined to be not very [illegible] when we know how limited is the range of temperature at which certain other organic actions can proceed, as digestion, fermentation, budding and seeding of plants, and even the simplest chemical decompositions of organic matter. Moreover, the extraordinary, ample, and wonderful power the living body has, when all its functions are in proper working order, of maintaining its own proper temperature, under the greatest extremes of atmospheric vicissitudes, points to the necessity there is for this maintenance of their own proper temperature to preserve "life" or the generation of nerve-force.

In no disease is the loss or gain of animal heat found to be more than 9° or 10° above or below the normal standard;

(a) Dr. M[illegible] great [illegible] M[illegible] keeping [illegible] years, [illegible] at M[illegible] [illegible] Annual Meeting of the Bengal Branch [illegible] Medical Association.

and when the rise or fall approaches this small variation, there is serious danger to life. No wonder that the power of resisting external heat or cold being temporarily lost from some mere functional derangement perhaps, or from fatigue, that the gain or loss of temperature should affect so rapidly and fatally as it does the nerve-centres, for they, the most essential, are at the same time the most delicate structures in the body.

In coup-de-soleil or insolatio then, in its simple uncomplicated severe type form, the body having lost its power of resisting a rise of temperature from functional derangement or fatigue, we find the following sequence of events:—

1*st.*—Total paralysis of the entire system of cerebro-spinal nerves.

2*nd.*—Necessarily, immediate suffocation from loss of power to move the lung case.

3*rd.*—Stoppage of the heart's action in from three to five minutes.

Here we have profound coma, rapidly followed by apnœa, and this again by asphyxia and death. Cases as rapid as this have been seen and recorded; they are extreme, and for the most part occur in the direct rays of the sun; a more or less sudden check to the perspiratory action of the skin, probably, is the primary cause of the heat entering the body; the skin becomes dry, and the temperature rapidly rises in the fierce heat of a noonday sun to that point at which the nerve-machine can no longer do its work of generating the polar force "neuricity." Consequently all motion ceases, the heart, from its own inhibitory nerve power, being the last organ to succumb.

"A knowledge of extreme cases," says Sir Thomas Watson, "tends to throw light upon those that lie between the extremes." There are innumerable variations of degrees of severity, from the slight feeling of faintness, or sickness, or suffocation, which passes off with profuse perspiration or the use of a cold douche, or diffusable stimulant, to the sudden and complete paralysis, when, as Sir Ranald Martin says, "life does not seem to ebb or flow, but rushes torrent-like away." Many complications arise from intemperance in eating and drinking, especially from excess in spirit-drinking, in which the cases are so mixed up with the poisonous effect of alcohol, which has been very correctly described as death by slow apnœa, that it is difficult to define exactly in many cases whether the fatal effect was due to heat or alcohol, or how much to one, and how much to the other. Still in all cases the sequence of events is the same in the so-called vital organs; the nerve-machine suffers first, then the pneumatic, and lastly the hydraulic,

In some sudden cases, called by the American physicians "sun-syncope," it may possibly happen that the heart is stopped by the shock to the nervous system, and we have death by asthenia. This is an uncommon result, though abundant and undoubted evidence is nearly always obtained, in the results of *post-mortem* examinations, of death by suffocation in sunstroke; in fact, quite as often as in cases of suffocation from other causes.

When cases of insolatio are rife, there is always intense atmospheric heat, which is felt to be oppressive by nearly all who are exposed to it. There are no aerial currents. The atmosphere is still; no wind and breeze, however gentle, cool by passing over the moistened and sensitive skin, and causing evaporation to take place more rapidly. The slightest current arising in the heated air always relieves the oppressive feeling just in proportion with the strength of that current. It is, I believe, simply the stillness of highly-heated and rarefied atmospheres that causes this sense of oppression.

The time of day or night in which men fall victims to the effects of heat vary. If it happens in the day, it is generally from direct exposure to the heat of the sun; but it very commonly occurs amongst English soldiers and others in the night, or towards the early hours of the morning before sunrise. Now this is the very time in the four and twenty hours when the so-called vital energy is at its lowest point. I believe it has been shown that more deaths occur from all diseases between 2 and 3 A. M. than at any other hour in the four and twenty.

Moreover, it is often found that the nervous energy has been still further depressed in unavailing efforts to digest an intemperate supper of very indigestible aliment. One medical officer told me that, whilst at Mooltan in charge of a European regiment, he found this was invariably the case, and though men were brought to hospital in the middle of the night insensible with coma and stertorous breathing, they quickly recovered on the contents of the stomach being removed by the stomach-pump, and, with a glass of brandy-and-water as a stimulus, they were fit for duty in from two to three hours.

It is true, as a rule, that no irretrievable mischief is done to the nerve ganglia from the effects of heat. In one case only, out of many *post-mortem* examinations referred to by Sir Ranald Martin, was any organic lesion found, and in the cases given by some American physicians, who have paid particular attention to the natural history of insolatio, nothing to account for death was found in the brain or spinal cord. This being the case, how does death occur, and how can we "obviate the tendency to death?" I have shown the form of death in the sequence of events; and assuming that the mischief done to the centres is *not* irretrievable, and that with time, and reduction of temperature by the cold douche, particularly to the head and neck and upper part of the trunk, their activity and their life will return again with their normal temperature, provided always that the circulation of the blood has gone on meanwhile. In the slighter simple cases, the cold douche rapidly restores action before the circulatory system suffers materially; and though a man may have ceased to breathe, reflex action is excited by the cooling of the douches, and respiratory movements return. In many cases, however, the coma is more profound; no reflex action can be excited in time before the lungs have become congested, and the heart has ceased to beat. It is well ascertained that in all cases of complete suffocation (and complete insolatio is complete suffocation) the heart ceases to beat within four minutes and a half. Another minute only elapses before it is irrecoverably motionless, or can only be partially and temporarily recovered. In these severe cases then of coup-de-soleil with complete paralysis, we must supply for a time another power to take the place of the lost one. We must keep the circulation going at the same time that cold is applied, by performing artificially what the man himself has lost the power to do naturally, namely, to respire. This will give plenty of time for the cooling process to take place.

It is very well known that the circulation can be maintained for a length of time without the intervention of the cerebro-spinal system, and this physical truth has been taken advantage of in cases of poisoning by opium, and in suspension of nervous action from strokes by lightning, by the late Sir Benjamin Brodie with success; but I am not aware that it ever has been fully and publicly demonstrated to be necessary for the saving of life in insolatio, *i.e.*, in severe cases, when the cooling process cannot be carried out in time without it. I have three cases to relate,—one which I myself saved by keeping up the respiratory movements; one which was, and is still, looked upon in the light of a miracle; and one in which the victim's comrade was tried for murder.

CASE I.—SIMPLE SEVERE *TYPE*-FORM OF INSOLATIO OR COUP-DE-SOLEIL.

About 3 P. M. of an April day, whilst in camp in the North-West Provinces, a sepoy of the regiment, of which I had medical charge, was brought into the hospital tent, to all appearances a corpse.

[illegible] ... and ... his eyes, and ... jaw, ... again, ... again to ... breathing was again resorted ... then he began to ... asked for water, ... afterwards lying ... He ... fever for two days, when he was discharged ... weeks afterwards with- ... The temperature in the ... of the sun must ... considerably over 120° Fahrenheit; it was over 90 ... tents.

CASE II.—[illegible] SIMPLE *TYPE*-FORM OF INSOLATIO; TOTAL PARALYSIS, NOT IMMEDIATE, BUT FOLLOWING QUICKLY IN SEQUENCE IN NATURAL ORDER.

This case has often been quoted, but never understood: it is recorded in the fourth chapter of the Second Book of Kings, and was believed to have been a miracle, *i.e.*, supernatural, or beyond the power of man to understand. The Shunammite woman summoned Elisha in haste to attend her son, and Elisha came, sending his servant Gehazi on before to lay his staff on the child; and Gehazi found, *not death*, but "neither voice nor hearing;" and he went back to meet his master, and reported that "the child is not awaked." When Elisha came, the child "was dead, and laid upon his bed." And "he went in therefore, and shut the door upon them twain, and prayed unto the Lord. And he went up and lay upon the child, and put his mouth upon his mouth, and his eyes upon his eyes, and his hands upon his hands;" "and the child sneezed seven times, and the child opened his eyes." The staff was laid on the child probably in accordance with some custom, but was evidently of no effect, so far as any restorative power was concerned. The prayer was offered up to God, and then Elisha performed some positive physical acts—"he lay upon the child," and, from the position described, he not only induced an artificial respiration, but insufflation; he must necessarily breathe himself to maintain his own life. Thus he varied the pressure on the child's chest and abdomen with every breath he took; but the first sign of returning nerve-power is distinctly reflex, carried to the centres of respiration by the sensitive fibres of the fifth which supply the mucous membrane of nose and mouth and skin of face, for "the child sneezed seven times." As the motor nerves of respiration, from the [illegible] downwards to the last [illegible], were again restored to vigor- [illegible]

Far be it from me to wish for a moment to argue against the [illegible] Doubtless Elisha was inspired how to [illegible] probably [illegible] Divine Providence are [illegible] laws, [illegible] explained [illegible] the greatness and goodness of the Divine [illegible].

CASE III.—SIMPLE [illegible] TYPE-FORM OF INSOLATIO, [illegible] FROM INTERNAL CAUSES, AND [illegible]

(Casper's Forensic Medicine, New Sydenham Society, [illegible])

A [illegible], aged 40, was [illegible] by his fellow [illegible] who was [illegible] to have [illegible] dead. As [illegible] what [illegible] post-mortem examination was performed. We [illegible] hypostasis of the lungs (pulmonary [illegible]), of the [illegible] the heart, [illegible] with dark [illegible] fluid blood, reddish [illegible], which was [illegible] a brownish colour from putrescence; the cerebral vessels and sinuses were only moderately filled. Therefore, as there was no trace of any injury or other external violence to be found on the body, we were obliged to suppose that death had occurred by asphyxia from internal causes. In a purely medical point of view, it was certainly something [illegible] to see a powerful and [illegible] man die so suddenly by asphyxia ([illegible] presume) from [illegible] internal causes. Perhaps, the great heat of an August day, [illegible] with the violent bodily exertions of rowing and steering, aided perhaps by the free use of brandy, may have combined to produce this effect.

Though the last case is not illustrative of the use of artificial respiration positively, it is negatively; and I think no medical man who has been long in this country would doubt for a moment it being one of insolatio.

These complete cases are [illegible], and there is [illegible] little time to lose, that, I believe, short and plain directions of the mode of performing the most efficient artificial respiration (Dr. Silvester's) should be made generally known; so that every man of ordinary sense and intelligence would be able to keep [illegible] in the body of his friend or comrade until further assistance arrived.

In extreme cases it is an imperative measure; in incomplete forms, which are the most common, with incomplete partial paralysis, partial coma, and partial apnœa, each generally increasing the other, the first by loss of nerve-force, the second by allowing imperfectly aërated blood to circulate, slight aid to the respiratory movements will be found of great service. Finally, it must always be remembered that, whilst it is necessary to maintain the circulation, it is also essentially necessary to cool down the temperature of the body; the generation of nerve-force having been arrested by heat, (you never get any form of insolatio without heat, atmospheric heat,) will not be restored until the excess of heat is removed.

(To be continued.)

CHOLERA IN THE BUNNOO DISTRICT IN OCTOBER, 1867.

By [illegible] M. R. Deane,

Honorary Assistant Surgeon,

Late in Civil Medical Charge at Bunnoo.

The [illegible] well, [illegible] only [illegible] and of quarantine [illegible] of cholera; and, further, that [illegible] preventive measures [illegible] the propagation and the spread of the disease.

When it was known at Bunnoo that cholera had appeared in the adjoining district, a preventive line was established south of the Khattuk Hills on the 1st of June. The disease had threatened the Bunnoo district at a point Cis-Indus, even earlier in the season; but the Indus was not placed under quarantine until the 18th of July. Camps were organized in both directions, *viz.*, at Latummur, nineteen miles distant, and at Nowrung Serai, sixteen miles from the station. There was no sign of cholera in the former camp, but in the latter there were, on the 31st July, about 150 soldiers returned from furlough, and on that day two sepoys of the 3rd Regiment Punjab Infantry were there seized with cholera. On the following day a third man was attacked. The camp was then broken up, the men were dispersed in two directions, and no other cases occurred. Two of these three men survived, but the third died; he had been waiting on one of the other cases when he was himself attacked. All three were Dogr840s who had travelled together for fourteen days; they had come from the Kangra District, in which cholera had prevailed within sixteen koss of their homes, when they had started to rejoin their regiment. The deceased left his home on the 13th July, and met the other two on the 15th; they were joined by four others during the journey, and the party reached Nowrung on the 29th July, where the three men attacked occupied the same tent. None of this group of men had passed through any infected place. The inference is, therefore, that the morbific agent was carried by them for a period of eighteen days or more, and that it was fostered into activity in the close atmosphere of a tent filled with human beings, with bad water for an exciting cause. No evidence as to the origin of the infection at their homes could be educed. The contagious nature of cholera here receives an illustration in the incident of the man waiting upon his comrade having been *last* attacked; and the usefulness of prompt dispersion was also satisfactorily demonstrated. But the first subject of the disease had not been removed from the tent for several hours, and this delay engendered the succeeding cases.

On the 19th September a kahar of the 3rd Punjab Infantry, who had recently visited Nowrung Serai, died of cholera at Bunnoo. On the 20th a bheestie died in the city with very suspicious symptoms, but no connexion between these two men could be traced. In both instances every precaution was taken (to be detailed hereafter) to destroy all traces of the disease. Subsequently, another bheestie, in the same locality in the city, was attacked with choleraic diarrhœa, and survived. It is not improbable that the kahar, who had just returned from Nowrung Serai, had received infection on the site of the former quarantine camp, the Native Doctor in charge of which had neglected to have the *dejecta* buried. The circumstance of the two watermen being affected in the same locality, after the lapse of a fortnight, is suggestive on the one hand of local contamination, and on the other of the destruction of the morbific agent by adequate means, as no more seizures occurred in that quarter.

The preventive lines were perseveringly maintained by the authorities in both directions until the 1st October. And although the epidemic touched immediately upon both lines, the scourge was effectually kept back up to this period; but unfortunately the barrier was now prematurely removed on the Kohat side. The disease had raged in the Kohat district since June; it had spread into the Khattuk Hills bordering on Bunnoo, where it was *still prevalent* on the 1st October. The necessity for the *continuance* of strict quarantine on this side was therefore obvious. But the means of defence were no longer available in the opinion of the Deputy Commissioner, who also shared in the very mistaken idea that cholera is harmless in the cold weather!

The hindrance which had proved so effective for so long a period was thus unadvisedly set aside, and, as a natural consequence, cholera quickly glided over the border. The removal of quarantine, and the inroad of the disease, were clearly the cause and effect. There was nothing unusual or unseasonable in the weather at this period. From the Khattuk Hills towards the station of Bunnoo, on the river Koorm stretches a barren waste called the Thull. The sparseness of the inhabitants on this unfavorable tract *retarded* the approach of the pest; but, on the 2nd and 3rd October, a few suspicious cases were heard of on the edge of the Thull near the Koorm. On the 4th October was the Friday fair day at Bunnoo, and on this day two undoubted seizures were traced within six miles of cantonments. About noon the Assistant Commissioner was advised to prohibit the people from the tainted quarter coming to the gathering; which movement was attempted, but it was ineffective from the lateness of the hour. On this day Wazeerees from the Thull, and Khattuks from the Hills, rife with cholera, flocked to the fair after a long enforced absence. One hillman, who came to visit a brother in the 5th Punjab Infantry lines, and who also slept in the Police Barracks, died suddenly out in a field where he had been detained, to all appearances, by exhausting evacuations. The 5th Punjab Infantry and the Police each had a fatal case of cholera; and there was a case in the city on the 4th October, besides two deaths reported. And then it was apparent that the dreaded scourge was upon us in earnest. On the 5th and 6th there were fresh cases, after which the number increased daily until the 9th, and then decreased until the 11th, on which day the epidemic was extinguished in the city. There had been altogether, from 4th to 11th October, thirty-two seizures in the city, of whom twenty-eight died. But only 21 of these had been brought for treatment; the remainder had died untreated.

The disease had appeared simultaneously in scattered cases at all points in the cantonments, where it lingered later than in the city. The following Table exhibits all the cases treated in city and cantonments during this short-lived outbreak :—

CITY.			CANTONMENT.		
Date.	Number treated.	Number died.	Number treated.	Number died.	REMARKS.
October, 1867.					
,, 4	1	...	...	...	
,, 5	1	...	...	...	
,, 6	2	2	2	1	
,, 7	1	1	2	2	
,, 8	7	7	2	...	
,, 9	7	5	2	1	
,, 10	1	1	1	...	
,, 11	1	1	...	...	
,, 12	...	..	...	...	
,, 13	...	...	..	...	
,, 14	...	...	1	...	
,, 15	...	...	2	...	
,, 23	...	...	1	...	
Total ...	21	17	13	4	

A striking contrast will be observed in the ratio of mortality between the city and cantonment, but the reason was plain. The patients from the latter were received early for treatment, while those from the city were brought too late. Cholera is curable in the first stage, by which is meant before complete collapse; and this is why we hear of so many cures for cholera. The cantonment cases had, all but two, entered upon the collapsed stage on admission. The terrible nature of the malady was manifest, but there was absorptive power remaining, and consequently time for treatment. Whilst the city people, excepting a very few, were brought in a *hopeless state*, and were beyond the aid of medicine. But it was considered an important step to remove persons so affected out-

[illegible]

In five instances both remedies were given together with the happiest effect. The nitrate of silver pill is the favorite remedy of an old Indian Surgeon, Dr. Batson of Dinajpoor. When given in combination with the camphorated chloroform, the second or third pill was invariably retained, and I should in future trust to these united remedies with confidence. Sinapisms were applied early over the stomach and across the loins, and were repeated often in the latter region, until urine was secreted. Spoonfuls of acidulated water, or of dilute alcohol (1 part to 4), were freely supplied. Friction to the limbs was employed to assist the circulation, but cramp was never a prominent symptom, and needed little attention. A dose of castor oil finished the treatment in the surviving patients, who recovered without any secondary fever.

I may observe that, when the people fled from the city of Bunnoo, the infection was of course transported into the villages around; but, although it cropped up at several points, it prevailed *in force* only in one village on the outskirt of the district. There were forty-seven deaths recorded amongst the rural population at the end of October, and a few more in November. The lesson here learnt was anticipated, *viz.*, that dispersion is attended with much less danger to the mass of the population than if the inhabitants had remained shut up in the city to give intensity to the seizure. Lastly, the digging up of the floors is regarded by me as an important prophylactic action, from the belief that the materies morbi sinks *to the ground*. Perhaps like carbonic acid and other poisonous gases, the cholera poison is heavier than atmospheric air, and it may therefore abound in the lowest stratum of air. Although this theory is opposed to the known "law of the diffusion of gases" of different densities, yet the idea is based upon the practical observation that, in a tainted locality, the disease has attacked a person lying upon the ground, in preference to one raised upon a cot beside him. Perhaps, too, this hypothesis may account for the circumscribed prevalence of cholera in peculiar outbreaks confined to one barrack or one street.

STATEMENT OF CONTRIBUTIONS TO THE MUSEUM OF THE MEDICAL COLLEGE, CALCUTTA, BY MEDICAL OFFICERS IN THE MOFUSSIL, FOR THE THREE MONTHS ENDING 31st MARCH, 1868.

By Surgeon Joseph Ewart, M.D.,

Curator.

Number.	Date of receipt.	Donor's Name.	No. in temporary Catalogue.	Short Description of Specimen.
1	1st January, 1868	Assistant Surgeon W. P. Harris, M.D., Civil Surgeon, Shahjehanpoor	795	Monstrous (azygous) kidney, with double pelvis and two ureters.
2	10th ,, ,, ...	Assistant Surgeon K. McLeod, M.D., Civil Surgeon, Jessore	805	Horn removed from front of chest.—(*Indian Medical Gazette*, Vol. III, page 62.)
3	8th February ,, ...	G. D. McReddie, Esq., Civil Surgeon, Hurdui, Oudh ...	...	Portions of heart, showing sub-endocardial ecchymoses after arsenical poisoning (*Indian Medical Gazette*, Vol. III, page 84.)
4	18th ,, ,,	Sub-Assistant Surgeon Luckhun Narain Bose, L.M.S., North Suburban Hospital	819	Strangulation of ileum caused by its twisting upon itself.
5	4th March ,, ...	Mr. V. B. Stork, House Surgeon, Howrah Hospital . . .	823	Large abscess in kidney, with dilatation of pelvis and calyces.
6	17th ,, ,,	Dr. B. N. Hyatt, Civil Surgeon, Ranchi, Chota Nagpoor	826	Portion of spleen which protruded through a wound in the abdomen and was removed by ligature (*Indian Medical Gazette*, Vol. III, page 85.)
7	,, ,, ,,	,, ,, ,,	827	Forearm removed for necrosis.
8	20th ,, ,,	Assistant Surgeon J. McLeod Cameron, M.D., Civil Surgeon, Monghyr	829	Extensive rupture of right of ventricle from a railway injury.
9	18th March ,,	Assistant Surgeon R. T. Lyons, Civil Surgeon, Rawal Pindee	830	Diseased placenta.
10	,, ,, ,,	,, ,, ,, .	831	Gunshot wound of heart.

TREATMENT OF DYSENTERY BY NATIVE MEDICINES.

By Meer Ushruff Alli,

Lecturer on Practice of Medicine, Medical School, Agra.

In my professional career I have often observed the successful treatment of dysentery by the hakims of Upper India. They often cure the disease simply and effectually by means of aperients, mucilaginous drinks, and light farinaceous food.

This led me to find out the effects of those native medicines which are daily used for this intractable malady. Having collected with great difficulty several prescriptions of note, I commenced to administer them among the house patients of the Agra Thomason Hospital.

From my experience of the last seven years, and from experiment in upwards of three thousand cases of dysentery, I have at last succeeded in finding a plan of treatment by native medicines simpler than, and far superior to, any I knew of before.

Mode of Treatment.

When an aperient is required, the powder of aniseed and black myrobalan, commonly called [illegible] (*Terminalia chebula*), a dram each, to be given at once. Two such doses to be repeated after an interval of three hours, should the first dose fail to operate. Whenever there are much tormina and scanty stools, I have often mixed with the above powder twenty grains of *amla* (dried fruit of *Emblica officinalis*) and five grains of ginger. This acts as a mild laxative, diminishing griping, increasing intestinal secretion, and lessening the quantity of bloody mucus in the stool.

After the operation of the laxative, or in those cases where no preliminary aperient is indicated, I have given the following draught with much benefit.

Take of Bihi-dáná seed (*Cydonia vulgaris*—Quince), Rasha Kutmee (*Malva Sylvestris*—Marsh Mallow), each ninety grains; pure water six ounces. At first soak the above for an hour in water; afterwards rub the ingredients for half an hour, and strain. Add to this mucilaginous liquid Ispagool (*Plantago Ispaghula*), Rehan Seeds (*Ocymum Pilosum*), each forty-five grains, and Syrup of Banafsha (*Viola odorata*.) The syrup is prepared from its flower. Take violet flowers four ounces, sugar two pounds, water four pounds. Boil down to the consistence of syrup. This is a single dose given at once, and repeated, if necessary, twice a day. If there be blood in the stool, then add to the above mixture the infused water of forty grains of unjabar root (بيخ انجبار)—plenty is to be had in all the bazars of Hindustan. This plant grows on the banks of the Euphrates, and is used internally to check hæmorrhages.

In plethoric strong constitutions, the diet at the commencement

[illegible]

CASES FROM PRACTICE.

◆ ◆ ◆

STATE OF THE HEART IN ARSENICAL POISONING.

[illegible]

AMPUTATION OF THE PENIS.

[illegible]

CASE OF FATAL MELENA.

By Surgeon A. M. Tippetts,

1st Battalion, H. M.'s 5th Fusiliers.

As the subject of melena, and its relation to scorbutic taint, seems to be creating some interest just now, I send you the following case, which occurred last autumn in my regiment.

Mrs B., a healthy young Englishwoman, aged 21, arrived in India in December 1865. She suffered in September last from a slight attack of remittent fever. On the 5th of the month she had considerable diarrhœa, which, however, stopped towards evening. On visiting her in the evening of the 6th, I found her feverish and irritable, and recommended her (as she had a child to look after, and her husband was also ill) to go to the Female Hospital. She did so, and was seen by the Apothecary at 6 P.M., and also at 9 P.M., when she was free from fever, and expressed herself as being better than she had been for some time. At 1-30 A.M. on the morning of the 7th, the Apothecary was called to her, and found her, as he described to me, as if in collapse from cholera, and passing large quantities of dark-coloured blood. This continued till about 2 A.M., when she died. I may add that plenty of vegetables of all kinds had been served to the regiment for the whole year, and that the above patient had been living as nurse to a lady in the regiment for some months previous to her attack of fever, and that consequently her food had been of a better quality than it might have been in barracks.

Firozpoor, 15th February, 1868.

WOUND OF THE SPLEEN; REMOVAL OF PORTION; RECOVERY.

By B. N. Hyatt, M.R.C.S.E. & L.S.A.L.,

Civil Surgeon, Ranchee, Chota Nagpoor.

The case of which I am about to speak is in many respects one of considerable interest, and makes suggestions of a most important nature to my mind. It is as follows.

Moherpall Singh, a Rajpoot, aged 30 years, was brought to the Charitable Dispensary at Ranchee on the 10th December, 1867, having been wounded with a tulwar on the 9th over the region of the spleen.

On examining him at 1 p.m., I found a long incised wound, through which a portion of the spleen, about the size of one's hand, protruded. Around this, the wound had, to a measure, contracted, and it was impossible to return the protruded portion within the cavity of the abdomen; nor do I think that, had it been possible, I should have attempted it, feeling confident that there would be more chance of the patient's dying from peritonitis if I did so, than under the treatment which I resolved upon.

The appearance of the patient was anything but satisfactory, and precluded all hopes of a favorable prognosis with any degree of certainty, and I consequently suggested to the Magistrate the advisability of taking his deposition.

At the seat of the wound the patient did not complain of much pain when quite at rest; but he had an anxious expression of countenance, with hurried respiration. Pulse 100. There was a short hacking cough, increased on taking deep inspiration, evidently caused by diaphragmatic irritation, and which might at first have been supposed to be pneumonic, but the stethoscope made it tolerably clear that the lung was uninjured. There had been little or no hæmorrhage, and the protrusion of the spleen, to a certain extent, was a most fortunate result of the injury, inasmuch as it completely blocked up the opening, forming a plug which prevented the air entering the peritoneal cavity, and thereby lessening the chance of inflammation. As the patient had been a good deal upset by the shaking of the doolie, I deemed it advisable to get him a good night's rest, and ordered gr. ¼ of morphia to be given directly, and again at bedtime—and a mixture of liquor ammon. acet. ʒii; vini antimonial ʒss; spt. æther. sulph. ʒiss; aq. camphor ad. ℥viii; ℥j every four hours. Diet—milk and arrowroot.

December 11th, 7 a. m.—He has passed a tolerably good night; cough still troublesome; tenderness and pain over the umbilical region on pressure; pulse 100; tongue slightly furred, with red edges and tip; he is thirsty and rather feverish. Repeat mixture; morphia gr. ¼ statim. It now became a question what was to be done with the protruding mass of spleen. To remove it at once would be fatal from hæmorrhage. I therefore determined on ligaturing it by first passing a ligature tightly round, and then crucially over it. 6 p. m.—Repeat morphia gr. ¼, c hydrarg. Chlorid. grs. iss at bedtime.

12th, 7 a. m.—On the whole, the patient is better; pulse not so inflammatory, 95; edges of tongue less beefy; he has passed a good night; cough less since yesterday; not so much tenderness on pressure over the umbilical region; respiration 21; continue mixture and repeat calomel and morphia pill twice a day. As circulation was still going on in the protruding portion of spleen, I passed another crucial ligature over it, and dressed the wound with lint, dipped in a lotion of liquor potassæ permanganatis.

13th, 7 a.m.—Appearance around the wound healthy: patient weaker: pulse 100; he passed a good night; repeat mixture and pil ij. ut heri. A little soup to be given.

14th, 7 a. m.—Improving; bowels moved, repeat medicines. 5-30 p. m.—Has had fever during the day: complains of thirst; skin hot and dry: pulse 106: respiration 21; has slept during the day, and taken sago and milk; add spts. æther nit. ♏xv and antim. tart. gr. $\frac{1}{8}$ to each dose of mixture; repeat morphia pill at bedtime.

15th, 7-30 a. m.—Pulse 90; has passed a good night: fever less: skin and tongue moist; no pain, except on tightening the ligature. Repeat mixture and pill. Diet—soup, sago and milk.

16th.—Doing well; no bad symptoms; wound looking healthy.

17th, 7 a. m.—The ligatured part was offensive, and only attached by a small portion, which I divided with a scalpel. The portion of spleen thus removed weighed three and a half ounces. A branch of the splenic artery spouted out, and there was a little oozing of blood. The vessel was twisted, and the oozing stopped by the application of tinct. ferri sesquichloridi and slight pressure. The wound itself looks perfectly healthy, and adhesive inflammation has taken place between the wounded spleen and the sides of the wound opening the abdominal wall, which is a most favorable result. Bowels have been moved. Decoct. cinchonæ ℥j, spt. ammon. aromat ♏xx, spt. æther sulph. ♏x; ft. haust. ter die.

Repeat morphia pill (without calomel) twice a day; wound to be strapped.

18th, 7 a. m.—Has passed a tolerably good night, though the cough is somewhat troublesome and irritable; wound looks healthy; he has no special pain; pulse 100 (probably accelerated by my visit); tongue clean. Ordered a little rice with soup, milk and bread. Continue mixture and pil j.

19th.—Morphia gr. ¼, pulv. scillæ grs. ii, pulv. ipecac. grs. ii; m. ft. pil,—to be taken morning and evening. Add ʒi vin ipecac. to the mixture.

20th.—Decidedly improved since yesterday; pulse 80; respiration normal, and cough less; bowels moved. Repeat mixture and pil ii. Continue strapping the wound, which is healthy.

21st.—Progressing favorably; discontinue morphia pill in the morning.

22nd.—Healthy matter secreted on the surface of wound; continue strapping.

23rd.—Doing well; cough not quite so frequent. Omit mixture. Ol. jecoris aselli ʒj three times a day.

From this date there was no further alteration in the treatment, except applying cupri sulph., when necessary, to the wound, which was daily closing up. The man continued to improve in health, and the wound entirely healed. He remained in hospital till January 30th, when he was discharged [illegible] cured, and apparently none the worse for having lost a portion of his spleen. As the result of this case [illegible] hereafter, I shall continue to keep him under [illegible] some time.

The Native Doctor carried out all my directions most faithfully, especially as to the diet of the [illegible] keeping him perfectly quiet; and to this I must [illegible], attribute the successful result of the case.

[illegible]

Notices to Correspondents.

[illegible]

Domestic Occurrences.

[illegible]

DEATH.

[illegible]

The Indian Medical Gazette.

It is particularly requested that all contributions to the "Indian Medical Gazette" be written as legibly as possible, and only ON ONE SIDE *of each sheet of paper.*

Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

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HARE STREET, }
January, 1868. }

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"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

A BURMESE MEDICAL MISSIONARY.

IT will be welcome intelligence to those of our readers who are interested in the progress of Medical Missions in India, to be informed that a youth named Mowng Shaw Loo has recently returned from America, where he went, about ten years ago, to qualify himself as a Medical Missionary, with a view to practising his profession, and preaching Christianity, amongst his countrymen in Burmah. In 1858, young Loo, then a boy of 16, impelled by a love of knowledge and a desire to benefit his countrymen by true religious instruction, and stimulated by Mrs. Ingalls, left the little school in Calcutta where he was being educated, and embarked as a cabin-boy on board a vessel bound for America. There he took service as a gardener, educated himself at the University of Lewisberg in Pennsylvania, and finally, by the assistance of friends and the profits of some lectures on Burmah, took the degrees of B.A. and M.A. there. He subsequently graduated in Medicine at the Medical College of Cleveland, Ohio.

Dr. Loo lately landed in Calcutta from the *Nubia*, on board of which vessel he delivered one of his lectures, and where he so succeeded in securing the esteem of his fellow passengers, that, before landing they presented him with a purse of sovereigns, coupled with a testimonial conveying their appreciation of his conduct.

In placing on record this little episode in the history of Burmah, we would express our earnest hope that Dr. Loo's hitherto successful career, pursued in a genuine Christian spirit, is but the first fruits of the good seed sown, nearly forty years ago, by the pioneer [illegible] President [illegible] the King of Burmah, [illegible] their loins and do likewise. If he is to be taken as a sample of the Burmese, we should augur well of the nation; no better examples of perseverance and industry in attaining the object of an honourable ambition have been shown among the ranks of our own, or of any other, profession.

A PLEA FOR HAKEEMS.

ON perusing lately the census returns of the North-Western Provinces, we were deeply interested, and strongly impressed, by that part of the returns which give information as to the number of hakeems and baeds in the different districts of that Government. From this we gather that there are 7,000 practitioners of medicine and surgery in that division of the country, giving a proportion of one medical man to every 4,285 of the general population.

This is quite irrespective of Government employés, who are European Officers, supplemented and assisted by Sub-Assistant Surgeons and Native Doctors educated entirely on the European system. These, taken together, are, comparatively speaking, very few in number, and widely separated in their medical creed and practice from the baeds and hakeems, with whom they have the least possible intercourse and sympathy. The numbers of native, or, as they may be called, indigenous medical practitioners, are, according to the census, very unequally distributed among the different districts. This probably arises from the fact that many of the hakeems follow other occupations than the art of healing, and in some districts have chosen to be returned according to these different employments. In other districts again, the descendants of hakeems, though not practising at all, have sought to be returned under the distinctive title of hakeem or baed, and thereby swelled the list inordinately and incorrectly.

Be this as it may, the number of medical practitioners is large in every district, and they form an important body in the community among whom they live. Under native dynasties, past and present, members of the profession have occupied many of the highest positions, both social and political. In native society, all over the country, these men still hold their own, and are greatly respected, ministering as they do to the troubles of both body and mind of the people, and generally possessed of a superior education.

Under British rule, however, they have disappeared altogether from political life, and socially have little or no standing in European society, where they are virtually ignored.

To understand this difference in the estimation in which they are held by these two classes, it must be remembered that the European is brought up to have confidence in medical men, trained on what may be styled the scientific practice of medicine, and refuses to believe in the purely Asiatic system, which is a compound of traditionary practice with a large admixture of superstitious omens, lucky days, and religious ceremonies of a fantastic or idolatrous character. To the unenlightened portion of the community, which comprises all but a fraction of the population, these adjuncts to medical treatment are [illegible] essential, for without their employment there would not be [illegible] confidence in the skill of the practitioner which is now accorded. [illegible] as belief is nothing new or peculiar to [illegible] comparatively late years [illegible]

[illegible] [illegible] [illegible] we [illegible] [illegible] even [illegible].

[illegible] [illegible] of [illegible] [illegible], [illegible] other causes [illegible] the [illegible] to the Native practitioner. Both Hindu and Mahomedan [illegible] with blind obstinacy to the [illegible] of their ancient [illegible] and [illegible], for [illegible] language which they understand. These [illegible] and [illegible], do not require [illegible], any previous study of the [illegible] of medicine, such as anatomy, chemistry, physiology, [illegible] subjects which the Native practitioner has [illegible] opportunity of acquiring.

This state of things ought not to continue long, and cannot. The schoolmaster is at work among the masses, and elementary schools [illegible] opening up the young minds of the rising generation [illegible] the benefit of a practical and [illegible] education [illegible] with the teaching of a purer faith. This will necessitate an alteration in medical teaching and practice, for educated [illegible] cannot continue to be [illegible] or be fooled with incantations and charms when life and limb are in danger, and pain or sickness need urgent relief.

In this state of matters, then, is it best to leave the profession of medicine in India alone, till an educated demand on the part of the people for rational treatment requires a corresponding [illegible] in medical education, or, by influencing the existing [illegible], to attempt to anticipate the want by affording [illegible] of acquiring modern information, and by [illegible] action to promote the improvement of the medical [illegible]? There is no doubt a good deal to be said in favour of [illegible] alone view of the matter, particularly as it is [illegible] by the saving of trouble. Besides, "letting [illegible] alone" is most certainly the most agreeable course to those [illegible] personally interested, for few things are more distasteful to [illegible] than changes in customs and regulations, [illegible] when the new model is to be fashioned after a [illegible] type.

It may be said that, in our medical schools, Government [illegible] a class of men who, by [illegible] and [illegible] medical practice in India. This may be [illegible] time, though there is as yet little [illegible] of such an [illegible]. To understand this, it must be remembered that there [illegible] medical schools in the whole of this Presidency, [illegible] inhabitants, and two of these, with about [illegible] between them, are only of from ten to twelve years' [illegible]. [illegible] are not [illegible], [illegible] that they [illegible] the Government [illegible]. These [illegible] no way [illegible], [illegible] the [illegible] respect of the people [illegible]. According [illegible], they are [illegible] with [illegible] Government [illegible] them [illegible] limited in number [illegible] only a few [illegible] provinces, the [illegible] carry- [illegible] by Government. [illegible] commencement of [illegible] schemes [illegible] carried [illegible]. [illegible] neglect, however, it is found that the [illegible] not

[illegible] [illegible] as [illegible].

[illegible] want [illegible] of [illegible], their [illegible]. [illegible] language and [illegible].

[illegible] Government [illegible] and [illegible], and death, as [illegible].

A[illegible] that could be pursued is for [illegible] guilds, as has been done by [illegible] European nations. To these guilds the recognition of Government could be [illegible], as in Europe, by acknowledging their diplomas and giving certain privileges to members, which would induce the latter to join and foster these associations. Almost the only privilege granted in England, which would be [illegible] at present in India, is that of allowing members of these guilds (called Colleges of Physicians and Surgeons) to recover remuneration for medical attendance, through Courts of Law. This privilege is denied to all others who practise medicine without diplomas from these [illegible].

In India the [illegible] is [illegible]. The [illegible] Civil Court, by making the [illegible] friend before and [illegible] moiety of [illegible] the [illegible]. This is [illegible] the professional man [illegible]. At present, there is a written contract, the [illegible] may sue [illegible], and in [illegible] instances the Magistrate will listen [illegible] and award him reasonable [illegible]. [illegible] the Magistrate, and this is the [illegible] the Court at once, as [illegible] worthy to [illegible] keeps [illegible] the system above [illegible], and [illegible] resorting to the Civil Courts for redress. As [illegible] cases referred to the Law Court would no doubt be [illegible] very rare, but the fact that a member of [illegible] of being heard would [illegible] the establishment of such associations.

It would be wise to [illegible] whose [illegible] their [illegible] in each district, granting a [illegible] or [illegible]; and that general support [illegible] required or fee charged [illegible]. The only qualification needed should be that the man is recognised as a medical practitioner by the [illegible].

A[illegible] of the guild, it should be enacted that no [illegible] who could not pass an examination [illegible] approved of by the members of the [illegible]. These would practise among the people as now, and [illegible] with more knowledge and authority than at present. [illegible], who [illegible] to acquire a knowledge [illegible] medical science, the Civil Surgeon, or others appointed by Government, would preside at the examination, and sign the certificate of attainments. By this means, it is probable that a far superior race of young men, sons of hakeems, would come forward for local Government or Municipal employ, and an impetus be given to the *indigenous* practitioner to acquaint himself with European science. He would of course get this most effectually at the present Medical Colleges, which must be kept up, in any case, to supply the Government service as at present.

Some may think that, in thus encouraging native hakeems and baeds, assistance is being given to the propagation of error; but it cannot be said that our plan of leaving them unassisted for the last century has done anything to benefit them or the country. We have indeed attempted for medicine what has failed with the masses of the people, *viz.*, the giving a very high European education to a few, hoping thereby to reach the masses. This plan has miserably failed; and now that education is being extended to the masses, let us try some means by which the many thousands of hakeems may be reached and gradually benefited. European Surgeons would do well to acquaint themselves with the books used by the hakeems and baeds in their neighbourhood, for without a knowledge of these, they can with difficulty influence the native practitioner for good.

We may confidently predict that if something of the kind proposed is carried out, we may see much good as the result, and that, in place of the present double system of medicine practised in India, we will have Western science engrafted on Eastern customs and requirements, the fusion of the two being far more in accordance with the wants and wishes of the people than either system separately.

Space forbids our enlarging more on this deeply interesting subject, but we cannot resist recommending it to the consideration of Civil Surgeons and Civil Officers generally. In their hands lies the power of gradually effecting a vast reform in Indian medicine, and in time benefiting the world at large, by adding to its stores of medical science the experience of the acute observers of disease in India.

"AIDE-MEMOIRE," &c., FOR INDIA.

IN his recent "Report on the Jails of the Lower Provinces," Dr. F. J. Mouat has very judiciously suggested the annual preparation of an Indian Medical "Aide-Memoire" for the special use of medical officers fresh from Europe. He advises that it should be "similar in form and character to the annual volume published by the Director General of the Army Medical Department in England, but free from all extraneous matter, and as condensed as such a record can be rendered, without diminishing its practical value. It should exhibit every form and variety of tropical disease likely to be met with, as to locality, season of occurrence, type, mode of treatment, &c., &c. It should be illustrated by a carefully-prepared map, or disease-chart, showing clearly the habitats of different diseases, such as cholera localities, fever spots," &c.

The suggestion is an admirable one, and well worthy the attention of the Government. It is notorious that, at present, a young medical officer, recently arrived in India, goes forth to his duties in the country but very imperfectly acquainted with tropical disease. *Some* acquaintance will have been acquired by the Assistant Surgeon who has had the advantage of going through a course at Netley; but even *he* will only have been, *to a certain extent*, familiarized with the chronic forms of disease. Of acute disease he knows nothing; and yet it is with this that he is more frequently called to do battle. To the lamentable deficiencies of many who have been brought for the first time face to face with serious disease, how many of us who have lived long in India can testify. An Indian "Aide-Memoire" would undoubtedly help to inspire the new-comer with confidence; whilst, as an *annual* volume, and *illustrated annually*, as Dr. Mouat suggests, (to show the intensity or otherwise of disease in various years,) it would be a document of inestimable value to practical physicians, to sanitary reformers, and the public generally. To epidemiological societies, in whose hands it would receive its maximum of development, it would be a great boon, for there is probably no finer field for the study of epidemic and endemic disease than India. But, to ensure its success, the preparation of such a volume should be confided to a medical officer endowed with special aptitude for the work.

And here we take leave to remark, *en passant*, upon the vast importance of the Head of the Medical Department being furnished with every medical report, and every medical publication of State importance which issues from the press, not only in this country, but in others. Dr. Mouat alludes to the difficulty which he, the "head of a department in which sanitary questions are continually arising," had in obtaining a copy of the Bengal Sanitary Commissioner's Report for 1865, "which is already out of print!" It would be well if, in addition to every report and publication in India, (which should be sent to the Principal Inspector General's Office as a matter of course,) the authorities in England would cause to be sent to it also whatever of public interest was published at home or abroad. We would name, for example, the forthcoming works on the subject of "Army Hospital Transport" by Professor Longmore of Netley, and Professor Gurlt of Berlin, both being brought out under Government authority.

Before leaving the subject of the "Aide-Memoire," we would refer to the large relief map in use at Netley. On this map the different military sites in India are pourtrayed in relief, with the strength of the military force stationed at each. There are at present only two of these maps in existence,—one at the India Office, the other at Netley; and their cost is £50 each. Such a map (on which we would recommend the introduction of disease spots) is very useful for purposes of instruction; and we should be glad to see it introduced into the Medical Colleges in this country. Hereafter, the cost will, with increased experience in construction, and increased circulation, natarally be reduced.

But, after all, an "Aide-Memoire," however well illustrated, gives *book* knowledge only. What we should like to see introduced into our educational system is *clinical instruction* in one of our large metropolitan hospitals in India. In days gone by, a young medical officer had opportunities of becoming acquainted with tropical disease at the General Hospital, (to which he was often attached for a few weeks or more), in conformity with an old G. O. G. G. in C., dated 19th July, 1822, or whilst doing [illegible] with a E[illegible] [illegible] with the [illegible] Artillery at [illegible]-Dum. Th[illegible] [illegible] and the latter [illegible] which [illegible] longer exist. But [illegible], better [illegible] that at the General Hospital, [illegible] there is less variety in the cases under treatment [illegible] the Hospital attached to the Medical College. As [illegible] very few of its patients are, like the larger proportion of Natives, [illegible] brought under observation within a very few months, and the results of disease unchecked by treatment are [illegible] seen [illegible] of medical [illegible] which [illegible] through the negligence of many of these [illegible] resort to a hospital at the last moment, when [illegible] very are past. In this hospital ample materials are afforded for the study of *the natural history of disease*. We would venture to earnestly recommend that all young medical officers, fresh from Europe, should be required to study for a definite period at the Medical College Hospital. This would give them an opportunity, at the same time, of acquiring the native languages. We are aware that the paucity of properly qualified medical officers, and the exigencies of the service, would render such an arrangement very difficult of accomplishment, and we may be met with the argument that, under the circumstances, it is better to have an imperfectly educated doctor than none at all. The subject, however, is one which [illegible] commend itself to the authorities, and we shall cherish the hope that it will not be lost sight of.

SUBURBAN HOSPITALS.

We are sorry to [illegible] that the Chitpore Suburban Hospital, which recently [illegible] one of our editorials, is now on the verge of bankruptcy, and, [illegible] assisted by the authorities, or [illegible] supported by private subscriptions than has yet been the case, it must be closed, at latest, in a year. From the report submitted by the Secretary, Dr. Naylor, to the Committee at the special meeting held on Monday, the 23rd ultimo, it appears that the monthly expenditure exceeds the income derived from subscriptions by Rs. 2[illegible], which sum has to be met [illegible] originally intended as the nucleus of a building fund. This capital had, on the 1st March, [illegible] to Rs. [illegible], and will, at the present number of patients [illegible] with a twelve months, [illegible]. The monthly subscriptions [illegible] A[illegible] provide [illegible] of the [illegible] [illegible] This last [illegible] is [illegible] by the experience of the past twelve months, the monthly subscriptions having proved altogether insufficient to defray the current expenditure.

Dr. Naylor's proposal was not acceded to at the meeting on the [illegible], it being [illegible], we understand, to carry on the hospital on its present footing, and to appeal to the public for more liberal support. We certainly think that such an institution as the North Suburban Hospital, which is, with the exception of the Chitpore Dispensary, the only provision for the sick-poor of an extensive and populous district upwards of two miles distant from any other hospital, has a strong claim not only on the Suburban Municipality, but on that of Calcutta. It must naturally be apparent that, while the city and its suburbs extend eight or nine miles from north to south, the Chandney, the Medical College Hospital and the [illegible] Hospital, the only three institutions into which natives are admitted, are all situated within a mile of each other. The North Suburban Hospital, as far as it goes, tends to remedy the great want of accommodation for the sick in the outlying portions of the town, and we are therefore glad to hear that an effort is to be made to awaken public sympathy on its behalf, even though the result should only be such as to allow of its being maintained, on its present unsatisfactory footing, for a few months longer than would otherwise be possible. We trust, however, that, among the many wealthy native gentlemen who reside in the neighbourhood, a sufficiently large sum will be raised *at once* to justify the Committee in applying for a site, and in commencing the erection of a building suitable for the purposes of an hospital. As we have said before, nothing can be less so than the house now occupied. We are certain that, were the erection of the building once commenced in earnest, many subscribers would come forward cheerfully, who now keep aloof, feeling that their contributions cannot, in the bankrupt state of the present hospital, be allowed to accumulate as the nucleus of a building fund. Much, we fear, cannot be expected from either of the Municipalities; but if the private subscribers furnish funds for the erection of the building, they can claim, with even greater [illegible] than they can now, a right to have the current expenses of the institution borne, wholly or mainly, by the general [illegible].

But private munificence, however actively exercised, can hardly [illegible] supply the want of hospital accommodation in the suburbs of Calcutta. Fifty beds, the number which Dr. Naylor proposes to maintain in the new hospital, would be but a very small number, contrasted with the population of the surrounding district. An hospital on a scale equal to that at Howrah [illegible] we would [illegible], and even that [illegible] large enough for the demands likely to be made [illegible] of accommodation for the [illegible] of the poor, like the Seaman's Hospital. [illegible] for the sick in other parts of the [illegible], Bhowanipore, Cooly Bazar, and Kidderpore [illegible] want of hospital accommodation, and sick from [illegible] have to travel nearly three miles, sometimes [illegible] any hospital. A Southern Suburban Hospital [illegible] as a Northern one, [illegible] Cooly Bazar or Kidderpore [illegible], &c., [illegible] a second for the [illegible].

Meeting of the Bengal Branch of the British Medical Association.

◆

THE Fifth Annual Business Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College, at 4 P. M., on Wednesday, the 5th February, 1868. Dr. Chuckerbutty, President, in the Chair.

The Treasurer, Baboo Kanhay Lall Dey, proceeded to read the following Financial Statement:—

Financial Statement of Receipts and Disbursements of the Bengal Branch of the British Medical Association for 1867.

	Rs.	A.	P.	Rs.	A.	P.
Balance of last account brought forward ..	...	...		650	7	6
RECEIPTS.						
Received subscriptions for the Bengal Medical Association from Members and Fellows—						
For 1865 ... ... Rs. 32 As. 0 P. 0						
,, 1866 ... ... 118 0 0						
,, 1867 ... ... 318 0 0						
,, 1868 ... ... 6 0 0	474	0	0			
Received subscriptions for the British Medical Association from Members and Fellows—						
For 1865 ... Rs. 22 As. 0 P. 0						
,, 1866 ... 66 0 0						
,, 1867 ... ... 110 0 0						
,, 1868 ... ... 11 0 0	209	0	0			
				683	0	0
Total Rupees				1,333	7	6

No. of Members .. 88

CALCUTTA, 5th February, 1868. *Decrease since last year by deaths or retirements* 12

DISBURSEMENTS.	Rs.	A.	P	Rs.	A.	P.
Stationery.						
Amount paid for purchase of stationery ...	14	11	0			
Printing Charges.						
Amount paid for printing	233	8	0			
Lighting Charges.						
Amount paid for purchase of candles, &c. ...	102	1	3			
Postage.						
Amount paid for postage stamps	...	13	0			
Petty Contingencies.						
Amount paid for coolie hire and other petty charges	31	8	0			
Establishment Charges.						
Amount paid for salary to Establishment ...	276	0	0			
British Medical Association.						
Amount sent to England	209	0	0	870	9	3
By Balance.						
Cash in hand	...			462	14	3
Total Rupees ...	...			1,333	7	6

E. & O. E.

Adopted.
S. G. CHUCKERBUTTY, M.D.,
President.

KANHAY LALL DEY,
Honorary Treasurer.

Dr. Ewart asked whether the accounts had been audited, as it was decided, at the business meeting last year, that they should in future be. He thought that, were the accounts audited, the Treasurer would be absolved from a heavy and unnecessary responsibility.

Dr Chuckerbutty remarked that no audit of the accounts had been held.

Proposed by Dr Kenneth B. Stuart, seconded by Dr. Juggobundo Bose, and carried unanimously, that the Treasurer's Report for the year 1867-68 be passed, and that an Auditor for the year 1868-69 be appointed at this meeting.

The following gentlemen were elected unanimously as Office Bearers for 1868-69:—

President.—Dr. Norman Chevers, proposed by Dr. Ewart, seconded by Dr. Chuckerbutty.

Vice-Presidents.—Dr. Fayrer, proposed by Dr. Colles, seconded by Baboo Kanhay Lall Dey.

Dr. Ewart, proposed by Dr. Chuckerbutty, seconded by Dr. Juggobundo Bose.

Dr. Juggobundo Bose, proposed by Baboo Dwarka Nath Mookerjee, seconded by Baboo Kashi Kinker Mitter.

Secretaries.—Dr. Colles and Baboo Dwarka Nath Mookerjee, proposed by Dr. Chuckerbutty, seconded by Dr. Juggobundo Bose.

Treasurer.—Baboo Kanhay Lall Dey, proposed by Dr. Chuckerbutty, seconded by Dr. Chevers.

Council.—Dr. Kenneth B. Stuart, proposed by Dr. Chevers, seconded by Dr. Chuckerbutty.

Moulavi Tameez Khan, proposed by Dr. Juggobundo Bose, seconded by Dr. Chuckerbutty.

Dr. W. K. Waller, proposed by Dr. Chevers, seconded by Dr. Ewart.

Dr. T. E. Charles, proposed by Dr. Ewart, seconded by Dr. Colles.

Baboo Kashi Kinker Mitter, proposed by Baboo Kanhay Lall Dey, seconded by Baboo Lakhmi Narain Bose.

The President, the Ex-Presidents, and other Vice-Presidents, the Secretaries, and the Treasurer are *Ex-officio* Members of Council.

Proposed by Dr. Ewart, seconded by Dr. Chuckerbutty, and carried unanimously,—"That Dr. C. R. Francis, on his return to Calcutta, be requested to undertake the duty of Auditor for the year 1868-69."

Proposed by Dr. Chuckerbutty, seconded by Dr. K. B. Stuart, and carried unanimously,—"That the Secretaries be directed to prepare a new form of application for the payment of overdue subscriptions, and to submit the same to the Branch at its next meeting."

Dr. Ewart proposed the following addition to the Bye-laws of the Branch.—

"No paper on any abstract subject shall be read at any meeting of this Branch of the British Medical Association which has not been submitted to the Council at least fourteen days before such meeting; and it shall be the duty of the Secretaries to specify the subjects of such papers upon the notices of such meeting issued to members. Accounts of detached cases, and of recent pathological specimens, not to be subject to this rule."

The question whether the meeting was competent to enact fresh bye-laws, of which notice had not been given at a previous meeting, having been referred to the President, was decided by him in the affirmative, inasmuch as the Bye-law referred to the alteration or annulling of existing bye-laws, but not to the enactment of new ones.

Dr. Chevers having seconded Dr. Ewart's proposal, it was put to the vote, and carried unanimously.

The following gentlemen then agreed to read papers at the ensuing annual meeting.—

Dr. Ewart (Address in Medicine), Dr. Juggobundo Bose, and Baboo Dwarka Nath Mookerjee.

On the proposal of Dr. Ewart, seconded by Dr. Colles, Tuesday, the 10th March, 1868, was appointed as the day for the next annual meeting of the Branch.

Votes of thanks to the President and Office Bearers of the past year, and to the Editor of the *Indian Medical Gazette*, having been recorded, the meeting was closed at 5-30 P. M.

THE usual monthly meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College on Tuesday, the 11th February, 1868, at 8-30 P. M. Dr. S. G. Chuckerbutty, President, in the Chair.

Proceedings of last meeting read and confirmed.

Dr. Chevers asked whether, in the opinion of any of the members present at the last meeting, phthisis had really increased in frequency, in India, of late years. He himself thought that the inhabitants of pucka houses were the most frequent subjects of the disease.

Dr. Chuckerbutty considered that phthisis was only better known. It is most common in this country among the descendants of the early Portuguese settlers and among Native Christians generally; next among Hindoos and Eurasians, and last among Jews and Musalmans, who appeared to suffer comparatively less from it, or at least seldom sunk under it.

Dr. Juggobundo Bose said that, in his experience, phthisis was common among the descendants of the Portuguese colony at Goa.

Dr. Beatson believed that the increase of phthisis in India was more apparent than real. The course of the disease was not the same here as in Europe. In India death was caused rather by inanition than by destruction of the lung-structure

[illegible]

Local Correspondence.

THE [illegible] MEDICAL SCHOOL.

[illegible]

reason a most consistent introduction to many of the other very remarkable statements contained in his letter.*

I remain, yours truly,
Colin C. Valentine.

Camp Shickawatty, *March 20th.*

Review.

An Enquiry into the Suitableness of certain Articles of Army Hospital Equipment for India. By Surgeon-Major Charles R. Francis, M. B., Lond. *H.; M.'s Indian Army, Bengal.*

Important as the subject of transport for the wounded on field service is, especially in India, it is strange that no official measures were taken by the India Office at home to procure models of the most recent improvements in this department, while the International Exhibition was going on at Paris. Early in 1867 the Supreme Government applied to the Secretary of State, requesting that models or drawings of the best means of transport for wounded men might be sent out to India; but no attention whatever seems to have been paid to the application. The duty of collecting information on the subject for the use of the Supreme Government was voluntarily assumed by Dr. Francis, and the results of his observations are given in the pamphlet before us. In it the articles which Dr. Francis has considered capable of being advantageously used in Indian warfare are described in detail, and, with few exceptions, illustrated. The principal articles are an ambulance—a doolie, made considerably lighter than that now in use, and intended to be borne by only two, instead of by four, men—and a light stretcher, for use more immediately under fire. In addition to these, Dr. Francis recommends the introduction of Collineau's haversac and companion, as being lighter than those supplied to the British Army, and better suited for hill warfare.

The ambulance recommended by Dr. Francis is a modification of the Italian model, and is intended to carry fourteen wounded men, all seated, besides the driver and two attendants; and is provided with a sufficient stock of medicines, food, water, &c., to render the inmates independent of other accommodation for two or three days. The doolie is so reduced in width as not to weigh above 30 lbs., instead of nearly 60, the weight of those issued to the army of China in 1860. The roof has been simplified, and is arched, instead of being flat, and two light parallel poles, like those used in the Bareilly "dandi," are provided, instead of a single heavy one. Dr. Francis also advises the supplying, to each field hospital, of a number of "Shortell's wheels," a pair of which can be readily attached to a doolie or stretcher, so as to convert it into a wheelbarrow, capable of being managed by one person.

It is to be hoped that Government will not allow Dr. Francis's valuable suggestions to be simply shelved, but will appoint a Committee of Officers, having a practical knowledge of the subject, to report upon the models and drawings which he has had executed, and to decide what further modifications, if any, can be advantageously made in them. Dr. Francis himself has employed his furlough at home to good purpose by directing attention to this subject, in which India, (relying perhaps too much upon the universal doolie, which, where expense and the number of camp-followers are not considered, is certainly the very best conveyance for a wounded man) is so far behind the rest of the world.

Short Notices of Recent Books.

The Variation of Animals and Plants under Domestication. By Charles Darwin, M.A., F.R.S. 2 vols. London: Murray. 1868.

The latest sensation in the world of publications is Mr. Darwin's splendid work—the first instalment of a series—on the influence of Artificial Selection as an argument in favor of his theory of the "origin of species." We say splendid, because, whether our sympathies be with or against the advocates of evolution, we cannot but admire the patient perseverance of a philosopher who has accumulated so vast an array of facts as those in the volumes before us, and who has displayed so much calmness in laying down his opinions, and so much forbearance in replying to the bitter personalities in which his opponents have indulged. The two portions of the present work, though they are both branches of the evolution argument, are, nevertheless, somewhat distinct. In the first volume the author takes up the subject of domestic breeding, and shows that, in the case of cattle, dogs, cats, fowls, rabbits, pigeons, vegetables, fruits, and flowers, the principle of "artificial selection" has been employed to produce a great number of different groups of beings from individual species. He then points out the remarkable osteological and other structural features which separate these breeds from each other, and calls attention to the fact that, were the mode of origin of these breeds unknown, no naturalist would hesitate to class them as distinct species or even genera. There are strong points in his faver. In reply to the objection of his adversaries, that these breeds are fertile *inter se*, thus differing from true species, he says, though not in these words:—"I grant it; it is certainly an argument which I ought to get over, and which I hope to overthrow completely one of these days. Meanwhile, I would contend that domestication tends to diminish the sterility of wild animals, as shown by the fact that, though two original species are sterile *inter se*, their domestic descendants are quite fertile with each other." He adds also that there are certain peculiarities of the reproductive organs which may account for the sterility of natural, as distinguished from artificial, species. The subject of connecting links is another difficulty which has been already partly met by Professor Huxley, and which will be considered by Mr. Darwin in a future treatise. The second volume treats of, and endeavours to expose, the mysterious laws which control the tendency of animals to vary. In this Mr. Darwin seeks to support an hypothesis which he terms *pangenesis*, and which is very like the panspermy of old Bonnet, according to which the ovum or germ contains molecules which represent every portion of the body, and from which, accordingly, the various mechanisms which constitute the organism are subsequently developed. As we have already said, whatever way the reader's mind inclines, he will find Mr. Darwin's new work a veritable store-house of wonderful facts and biology; and whether he forms any conclusion as to the truth of the evolution doctrine or not, he, at all events, cannot fail to be benefited by examining the immense accumulation of truths which Mr. Darwin has here arranged together.

Chemical Notes for the Lecture Room. By Thomas Wood, Ph D., F.C.S. 2nd Edition. London: Longmans. 1868.

Mr Wood has just issued a second, and somewhat enlarged, edition of his modest little pamphlet, which, in its new form, takes the shape of a small handy and accurate manual for the beginner. The arrangement of the matter in paragraphs, with separate headings, is extremely convenient, and though the grouping of the subject is not in the sequential order which we should desire to see, it is in accordance with the mode commonly adopted. Mr. Wood does not follow the old school, at least not wholly, and we therefore find that the new notation and its accompanying terminology find places in his pages. It seems to us, however, that had he completely adopted either the old or the modern method exclusively, he would have done better for his readers than by the existing plan, in which both are somewhat combined. His definition of equivalence is by no means a bad one, and his explanations of the terms "univalent," "divalent," "trivalent," and "tetravalent" are remarkably clear. We do not think that the author should have so completely ignored the subject of organic chemistry as he has done. Indeed, we are at a loss to think how the modern method of notation can be fairly expounded, without much reference to the phenomena presented in the transformations undergone by organic substances. This is the greatest defect in Mr. Wood's excellent little book, and we trust that, in a future edition, he will express his conviction of the justice of our remarks, by introducing just so much organic chemistry as shall be essential to the explanation of the new notation.

The First Step in Chemistry. By Robert Galloway, F.C.S. 4th Edition. London: Churchill. 1868.

One would say that the fact of a book being in its fourth

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* We only learnt, after our last issue had been published, that the Maternity Institution was to be spared.

We are glad to learn that Dr. Valentine did "speak a word in favor" of the school. That he has done so unsuccessfully does not in the least alter our opinion as to the abolition of the school; it merely shows that he is *not* one of those "who has influence with the Maha Rajah" in the matter.—Ed., *I. M. G.*

[illegible] is [illegible] at least [illegible] It is [illegible] We [illegible] Medical [illegible] but we most certainly [illegible] In this book [illegible] has improved [illegible] system of notation [illegible] It is, however, [illegible] the 472 pages of which this book consists [illegible] Now few [illegible] can serve two masters, and [illegible] The [illegible] prepared by Mr. Galloway [illegible] in our opinion, most [illegible] and we [illegible] the more, because of the excellent and useful [illegible] treatises. We cannot [illegible] to our young readers, who [illegible] acquainted with [illegible] views and theories.

The Diseases of the Prostate, their Pathology and Treatment. By Sir Henry Thompson, F.R.C.S. 3rd Edition. London: Churchill. 1868.

This admirable essay, which received the Jacksonian prize in the year 1860, is now [illegible] as [illegible] and is in every way creditable both to its author and its publisher. As a special monograph on a disease of a most serious and by no means unfrequent character, it is unsurpassed, and [illegible] a well printed and handsomely illustrated book [illegible] what a medical publication ought to be. The changes which distinguish the present from the second edition, though not very numerous, are sufficiently important, while at the same time they have not involved an increase [illegible] of the work,—a matter of some satisfaction to the practitioner. Sir Henry Thompson, in preparing the present [illegible], has added here and there the results of his more recent experience in the treatment of [illegible], and the new matter which he has introduced he has allowed to take the place of old matter which he has expunged, [illegible] with later research. The preliminary chapter on the Structure of the Prostate will be [illegible] by physiologists, who, however, will be disposed to [illegible] the method of investigation recommended by the author, in which distilled water is employed [illegible] or any of the other [illegible] The [illegible] who at [illegible] knowledge of the subject, that [illegible] of equal value [illegible] and a [illegible] of becoming acquainted with the [illegible] disease.

Stone in the Bladder, [illegible] Treatment by Lithotrity. By Walter J. Coulson, F.R.C.S. London: Churchill. 1868.

The Surgeon to the [illegible] St. Peter's Hospital for Stone here gives [illegible] His aim is to show [illegible] With [illegible] M[illegible] and in [illegible]

G[illegible] By J. A. H[illegible], M.D. [illegible]

The [illegible] of [illegible] Dr.

H[illegible] with [illegible] ser- [illegible] experience of scientific and [illegible] who [illegible] show the [illegible] game [illegible] reading.

English Correspondence.

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[FROM OUR OWN CORRESPONDENT.]

London, February, 18[illegible], 1868.

[illegible] during the past month [illegible] medical world [illegible] has [illegible] a good deal of [illegible] controversy. The circumstances are briefly these:—Dr. Eastlake, a well known and respected Accoucheur, and Physician to the British Lying-in Hospital, has been called upon by the [illegible] Governors of that Institution to [illegible] resignation. [illegible] of this step, whether directly or indirectly it is [illegible], has been [illegible] by Dr. Eastlake [illegible] interfering with his patients, which was [illegible] by [illegible] women [illegible] with an institution known as the "Ladies' Medical College." It seems that some of these female students took it upon themselves, in Dr. Eastlake's absence, to attempt the delivery of a child by means of forceps, a step which Dr. Eastlake had previously opposed when suggested to him. The result of this attempt at instrumental delivery was that the position of the head of the child was changed, and the labour thereby considerably protracted, so much so, that at last craniotomy became necessary, and was performed. The case came before the Board, but the result was unfavorable to Dr. Eastlake. The question arises—Why? Dr. Eastlake thus answers it. Any one can become a member of the Board, and can forthwith vote on questions of administration, by giving [illegible] guineas [illegible] this fact was taken advantage of by the ladies of the Medical College, so [illegible] it was known that one of their pupils was placed in authority, [illegible] Dr. Eastlake, in the interval between the first and second meetings of the Board, received a letter from a Dr. Edmunds, the Manager of the "Ladies' Medical College," asking him whether he was favourable to the proposed admission of the Ladies' Medical College to the Hospital, and answered it in the negative. This, according to Dr. Eastlake's showing, was the [illegible] the cup of vengeance. A coalition was formed, Dr. Eastlake was called on to resign, and I believe he has been compelled to send in his resignation. Now, admitting that there have been faults on Dr. Eastlake's part, it seems to me that the treatment he has received deserves the censure of the profession; for, after all, it is not he who has neglected his duties. To my mind, I confess, the whole matter looks very much like a [illegible] of oppression, and a gross violation of the common [illegible] of justice.

The [illegible] Coronership for Western Middlesex is not [illegible], and I am sorry to say it is between two members of [illegible] profession, Drs. Diplock and Hardwicke, who are [illegible] "tooth and nail," in so far as a war can be waged by the [illegible] of Parliamentary agents, the [illegible] of enormous placards informing the [illegible] merits of the candidates [illegible] that Dr. Diplock has already expended [illegible] it is stated that Dr. H[illegible] Of course, by the [illegible] the seat will, in each [illegible] and yet all [illegible] with [illegible] that the [illegible] who have experience in such [illegible] has the longest purse [illegible] Dr. [illegible] the favorite, for he [illegible] the [illegible] of the duties, having lately [illegible] fortune. There is a moral to [illegible] take such appointments [illegible] the [illegible] of one [illegible] whose view [illegible] amount of [illegible]

It is currently reported that Inspector General Mouat intends to resign. The reason given is that he feels unable to take another tour of duty in India; it is said that he will be succeeded by Dr. Dane, the senior in the list of Deputy Inspectors General of Army Hospitals, and who is now at the Cape of Good Hope.

Professor Huxley has commenced a course of lectures at the Royal College of Surgeons, on the Anatomy and Physiology of the Invertebrate Animals, which is being well attended. It is so long since the School of Mines Professor gave a course of public lectures on this subject, that the expression of his views is looked forward to by biologists with no small amount of interest. The facility with which Mr Huxley devotes himself within short intervals to very different problems in natural science is not the least remarkable of his mental qualities. It was only on Friday night last that he gave a lecture to a most fashionable audience at the Royal Institution. His subject was "The Connecting Links between Reptiles and Birds," and his lecture was both attractive in delivery and startling in some of the analogies demonstrated by the lecturer. Taking the Iguanodon Comsognathus and Archœoptery as examples, he threw quite a new light on the restoration of the first and second, which he proved, as far as inductive proof could go, to be the unquestionable connecting links between birds and reptiles.

The appointments in Charing Cross Hospital have turned out as I think I anticipated in my last letter. Dr. Shaw has been elected to the chair of Physiology, and the post of Pathologist has been given to Dr. Henry Green, a distinguished pupil of Virchow and Kuhne. The office of Assistant Physician, vacant by the resignation of Dr. Chowne, will be given without opposition to Dr. Alexander Silvers. Dr. Henry Lawson has been elected to the Assistant Physicianship at St Mary's Hospital, which was recently vacated by Dr. Markham, whose duties as Poor-law Inspector are too numerous to admit of his holding an hospital appointment

There is at last a promise that the new nomenclature of diseases, which the Committee of the College of Physicians have been for ten years preparing, will soon be published. Let us hope that the news is true. The synonyms will be given in French, German, Italian, and Latin.

A number of enthusiastic hippophagists have been making a move to introduce horse-flesh into this country as an article of diet. A dinner was given at the Langham Hotel the other day, at which nearly a hundred and fifty guests sat down. All the dishes, *pièces de résistance*, *entrées*, soups, &c., were from the horse, and horse alone, and the result seemed to be eminently satisfactory to the majority. I doubt, nevertheless, that the custom is likely to become popular here; and in the event of its becoming popular, I doubt its advantage; for the demand for horse-flesh would soon raise the price, and it could never compete with that of the ox, which is more easily reared, and more rapidly fattened. The flesh is certainly not so palatable as even medium beef; but it is eatable, though it leaves a peculiarly harsh taste upon the mouth for hours after it has been eaten. However, *chacun a son gout*, and fashion is so capricious that the *gout* for horse-flesh *may* become general. *Credat Judæus Apella non ego.*

We have lost one of our most illustrious *savants*, a man whose name is known wherever science lives, and whose years were spent in the study and investigation of natural phenomena. Sir David Brewster has been gathered to his fathers, and physical science has lost its greatest luminary. Brewster's name is familiar to all as the inventor of two of our most interesting scientific toys—the kaleidoscope and the stereoscope. He may be said to have been one of the first to recognise the important principles upon which the spectroscope of Bunsen and Kirchoff is based; but the discovery of this important instrument of research cannot be attributed, as some of our daily papers have attributed it, to the Scotch physicist. Sir David's optical enquiries are among his oldest and most valuable researches, and his memoir on the structure of the crystalline lens had a high merit in its day. He had reached the ripe age of 87, and was originally intended by his parents for the Church. I have also, ere leaving my obituary, to announce to you the death of the elder Herapath, the Toxicologist, whose name your readers will remember in association with the Palmer trial; and also that of M. Serres, the great French Comparative Osteologist, whose memoirs on the extinct Megatherium have so elaborately detailed the character of that extraordinary fossil mammal.

Last, though not least, I must say a word about universities. The graduates of the London University are still divided as to the candidate whom they should support. One party is favorably disposed towards Mr. Lowe, and an equally large faction mean to support Sir John Lubbock. Both candidates are highly qualified as representatives of so distinguished a body of graduates as that of the London University, and the University is pretty much in the position of the gentleman in the "Beggar's Opera" (?) who could be so "happy with either were t'other dear charmer away." The question of the Irish Universities is *sub-judice*, but no one even guesses the result. There are three parties,—one in favor of a National University one in favor of a Roman Catholic University, and a third in favor of supporting the Queen's University. I don't envy this Government the task of selecting between the three.

The Progress of the Medical and Collateral Sciences.

A new Magneto-electric machine has been invented by Mr. Browning, of the Minories, London, which promises to be of some service in electro-therapeutics. Our readers are aware that the mode of obtaining an induction current from a revolving magnet is different from that in which the primary current is produced by a galvanic cell containing a pair of plates. In the first method the currents produced are being constantly reversed; in the second the currents are usually in one direction. The magnetic machine is, however, very frequently used by medical men in the treatment of lead palsy and other forms of paralysis, the reason for its use being its cleanliness, and the fact that the currents are produced by simply turning round the handle of the instrument. But since Remak and others have shown that the influence of constantly-reversed currents is different from that of a current constantly in one direction, the contrivance which Mr. Browning has devised promises to be of service. We hope to be able to describe the instrument in detail on a future occasion; but for the present we will confine ourselves to stating that but one bobbin is employed in the apparatus, the magnet being bent into a circle. Electricians will understand from this why the currents are always in the one direction.

The Microscope in Toxicology.—The last number of the *Microscopical Journal* contains a most valuable contribution to the science of medical jurisprudence by Dr. Guy, of King's College, London. The paper to which we refer is upon the subject of microscopic sublimates; and it shows how important is the assistance to be gained in medico-legal investigations by the employment of the microscope. Dr. Guy gives numerous illustrations drawn from photographs; so that the student need have no difficulty in "making up" the subject. The method of procedure is as follows:—Take, for instance, strychnine. The $\frac{1}{1000}$ part of a grain is placed on a clean porcelain slab, within a ring of glass about the eighth of an inch thick. Over this ring is placed the piece of glass which is to receive the sublimate, and the slab being then placed on a retort stand, and a lamp applied beneath it, everything is ready. As soon as the heat is applied, a fine white sublimate forms on the glass, and may then be examined; indeed, as many as six distinct specimens may be obtained in this way. The color test may now be tried with the sublimate; and it gives even better results than with the strychnine itself, but the most reliable re-agent is carbazotic acid,—a test which enables us to recognise distinctly the presence of so small a portion of the alkaloid as the $\frac{1}{2000}$ part of a grain. The sublimate being placed under the microscope, and a drop of carbazotic acid added, a very curious phenomenon presents itself. After a minute or two, a number of circular nucleated greenish-yellow spots appear, and grow rapidly into the most exquisite arborescent forms, or else form a number of peculiar claw-like bodies which are highly characteristic. It would occupy too much space to give further details, but sufficient has been said to show the value of the new method.

The development of the Spermatozoon has been recently investigated by M. Valette St. George, who also comments on the previous researches on this subject by Herr Schweigger-Siedel. M. St. George fully corroborates the view of Kolliker and other histologists, that the zoosperm is in great part a modified nucleus; but he points out a curious fact in regard to the

[illegible]

What [illegible] [illegible] Gerlach [illegible] [illegible] the finger [illegible] the difficulty [illegible] from bac-[illegible]

Entozoon-like bodies in the flesh of Mammals.—During [illegible] was [illegible] by Dr. [illegible] by Rainey, [illegible] which had died of [illegible] to place these bodies [illegible] gregarinæ. Professor [illegible] says that they enter the [illegible] similar to the cestoid and [illegible]

The termination of the Nerves.—This point is still one of [illegible] Dr. Beale seems to [illegible] elements of the [illegible] think other-[illegible] magnifying [illegible] of Geneva, [illegible] Doyère [illegible] novel in Pro-[illegible]

The preservation of the Syrup of Iodide of Iron.—At a [illegible] Society. The [illegible] this subject, [illegible] Mr. [illegible] The author [illegible] syrup [illegible] with them [illegible] another [illegible] to be [illegible]

[illegible] of Water-Analysis.—[illegible]

[illegible] Dr. Smith's [illegible]

Electricity. O[illegible] Epidemics.—[illegible] it is [illegible]

Respiration in Cattle.—In a communication presented to the French Academy [illegible] M. Reiset [illegible] calves [illegible] cattle [illegible] the air expired was the same [illegible] M. Reiset considers [illegible] complete [illegible] conclusion is that in all cases [illegible] very much more on the nature of the [illegible] position of the animal.

Impurities in Glycerine.—Glycerine is now so [illegible] that the [illegible] In a [illegible] 7th, Mr. [illegible] nitrate of silver [illegible] with this salt, it may be [illegible].

Simple test of the presence of organic impurity in Water.—[illegible] Dr. Arnold, [illegible] matter be present, water will [illegible].

Gallic Acid converted into Tannin.—It has recently been [illegible] converted [illegible] action by the [illegible] nitrate of silver [illegible].

New test for Ozone.—M. [illegible] quantity of ozone present [illegible]

Physiological effect of Quinine.—M. [illegible] arrests.

The properties of Vaccine Matter [illegible] M. [illegible]

The physiological action of Opium Alkaloids.—[illegible] Vienna Academy of Sciences [illegible] arrived at [illegible] rabbits [illegible]

ORIGINAL COMMUNICATIONS.

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A COURSE OF LECTURES ON THE PRINCIPLES AND PRACTICE OF MEDICINE, DELIVERED AT THE MEDICAL COLLEGE OF BENGAL.

By CHARLES R. FRANCIS, M.B.,
Late Officiating Professor of Medicine, &c., &c., &c.

PART OF AN INTRODUCTORY LECTURE.

MY YOUNG FRIENDS,—There is a portrait in this theatre which tells of a revolution in your country,—not one of those revolutionary periods which are too often marked by bloodshed and murder, but of an epoch pregnant with momentous blessings to India. It is an oft-told tale, but a tale which cannot be told too often, how your ancestor Baboo Modoosoodun Goopta, the pioneer of these blessings, in the courageous act by which he defied his country's scorn, established that firm basis of a sound medical education, which it is now your great privilege to enjoy. In the remote periods of time the science of medicine, in India, was of the rudest description. Heaven-born though by the Hindoos it was believed to be, and transmitted to mortals by Brahma in one of the sacred writings—the Ayur Veda,—it consisted of erroneous doctrines founded upon a most fanciful anatomy, physiology, and pathology. Much, indeed, could hardly be expected of a science based upon an anatomy which taught that the navel "constituted a centre from which a vascular system, including 40 principal vessels, emanated;" upon a physiology which declared that these vessels were destined to convey blood, air, bile, and phlegm to all parts of the body; and upon a pathology which maintained that disease depended either upon derangements of one or more of these humors, or upon the "influence of gods or evil spirits." An approximation only to a knowledge of the structure of the human frame was obtained by inspecting the bodies of the lower animals. And even these were not carefully dissected. A separation of the various organs and tissues was effected by long steeping in water, and by scrubbing the body with a "hard stiff brush made of bamboo or hair." The skin was thus rubbed off, and the subjacent parts exposed. But to obtain a correct knowledge, in this way, of structure, of muscles, nerves, and blood vessels, was of course impossible; and therefore, although your ancestors have received credit for knowing anatomy, it is evident that their knowledge could have extended very little beyond the bones.

Whilst the light, with which your forefathers were illumined in their exercise of the art of healing, was of the feeblest* and most uncertain description, its cultivators in another part of the East were making decided progress. The Greeks were acquainted with Hindoo learning, but they advanced beyond it. In their hands, the sciences of medicine and of surgery† rose steadily through the mists of fable, and attained considerable eminence under the guardianship of Chiron, Æsculapius, Machaon, and Podalirius. The resemblance of Æsculapius, (the reputed son of Apollo) and his two sons Machaon and Podalirius, to Daksha, the preceptor of the two Ashwins, the offspring of the sun, who, after receiving the Ayur Veda from their father, became the medical attendants of the gods, is very remarkable. It shows, too, how fabulous was the origin of medicine, both in India and in Greece! Then came philosophy, physics, metaphysics, and anatomy; Pythagoras, Plato, Aristotle. And with them came Hippocrates, that ancient master of our art, whose opinion was respected as the voice of an oracle, the Homer of his profession, and the devoted lover of his country; in the service of which he preferred to die rather than acquire distinction at the court of a foreigner.

Coming down to a later period, we find our science flourishing, after the destruction of the great Alexandrian school, in Arabia, in the hands of its eminent professors, Geber, Rhazes, Albucasis, Avicenna, and others. The doctrines of the Arabian school were introduced into India by her Mahometan conquerors; and these are the doctrines which, with those already promulgated in Hindoo writings in the Ayur Veda, and subsequently in the writings of Charaka, and Susruta the Galen of India, are taught by the Hakeems, and Baids or Koobirajes, of the present day. Later on, we find the art of healing practised by the hands of Romans and Greek slaves. These last, however, practised so clumsily that they were banished.

Then Celsus arose. And now we approach the period when the light of our science was beginning to burn with a brighter lustre than it had ever yet done. In the 14th century, schools of anatomy were founded in Italy, France, and Austria; at Bologna, Paris, Montpellier, and Vienna. The art of printing followed in the succeeding century, and then the cloud was gradually rolled back from east to west, and England shared in the glories of the advancing science. Let us pass over the days of barber surgeons, when one of the privileges accorded to a regimental surgeon was, in consideration of his small pay (something like three annas a day), that of being allowed to shave the regiment! Let us tell rather of John Hunter, of Sir Astley Cooper, of Sir Benjamin Brodie, of Trousseau, of Virchow, who, with many others, have, in these later years, led the van in throwing a flood of light upon the arts of medicine and surgery. Thirty-one years ago, Lord William Bentinck, the then Governor General of India, was anxious that *you* should share in the advance which these sciences had made in Europe; and the Medical College of Bengal was founded. Baboo Modoosoodun Goopta nobly stepped forward, and aided the good work by leading the way in the prosecution of anatomical studies in the dissecting room. There were many who, in those early days of our college, doubted the success in India (where caste and prejudice were so strong) of the experiment of a medical education, which was to be based on a sound anatomical foundation. Could such sceptics witness now the eagerness with which work is carried on in the three dissecting rooms by the students of all classes, English, Bengali, and Military, they would admit that the experiment had been eminently successful.

Your medical education, in the comprehensiveness of its details, is now equal to that of any student in Europe. The learning of the east has been reflected back with intensified lustre from the west. It has thus returned to the cradle of its birth, and is now, through the instrumentality of the alumni of this institution, being carried into the remotest corners of the empire. Calcutta, with its Medical College and its other seminaries of learning, is the Athens of India. May you, my young friends, acquire and maintain the reputation for knowledge, equity, and honorable dealing which the *best* of the Athenians possessed; and may no Justinian ever arise to suppress, as that Roman Emperor suppressed the schools of instruction in Athens, the philosophical and scientific (and I would add the *moral*) progress of our society!

As this is the only occasion on which, without interruption to the course, I can address to you a few words of advice, before giving back the chair, which I have the honor temporarily to hold, to my esteemed friend Dr. [illegible], I would now ask you to listen patiently to what I would wish to say to you. In

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* It must be conceded that ancient Hindoo medicine and surgery were very superior to what we find indigenous in the country now. Both sciences have undergone a great decline, which may doubtless be attributed to the fact of their not having been cultivated on a sound anatomical foundation.

† In those days, there was no distinction between the surgeon and the physician.

expression, so overpowering is their simplicity, that it argues an ordinary nerve to stand unshaken in their presence." You have, in your anatomical studies, been singing a perpetual hymn to the Deity. But the beautiful machine, which you have hitherto beheld in all its spotless elegance and purity, you must now contemplate under a far different aspect, an aspect which represents it defaced, injured, nay sometimes utterly destroyed, through the instrumentality of man himself. Man's intemperance, his follies, and his vices, too often cast a stain, which is perpetuated through generations, upon the exquisite fabric entrusted to his care. But it is not always so. The accidents of life, over which he has no control, may consign him to a bed of sickness and of suffering. By the mysterious decrees of Providence, a famine may spread over the land, and man be stricken down by disease, the result solely of want. In whatever way it be produced, human suffering must ever appeal to the best and purest feelings of our nature. Nor should it appeal in vain. To alleviate such suffering is surely the noblest achievement to which man can aspire. The power, to exercise this god-like function, it will be now your privilege to secure. Can there be any knowledge more precious, any acquisition which brings us—if we use it rightly—nearer to the Divine Benefactor of the Universe? And here I would urge you to recollect that the sick who come to us for relief are human beings, something more than mere *cases*. However convenient it may be to talk of their ailments as such amongst ourselves, in *their* presence we cannot be too careful. In our hospital, filled as it is with sufferers from every conceivable form of injury or disorder to which the human frame is liable, where the reaper Death is daily occupied in gathering in his victims, and where we have no means of shutting out from general view the harrowing sights incidental to all hospitals, there will be much to shock the feelings of those who, their senses rendered more acute by sickness, must remain exposed to it. Let us not *add* to their aversion, to remain, thus inevitably engendered. Let us be careful how we speak of our patient's disease in his presence; how, in the immediate hearing of the sick, we refer to a *post mortem* to be performed presently in the dead-house. Many a patient, to my knowledge, has been scared away from hospitals by thoughtlessness in this respect; and, whilst he has thus been deprived of the best professional skill, science has suffered, and the institution has lost a valuable opportunity for instruction. The advice which I give you now, applicable as it is in the performance of hospital duties, you will find of equal application in private practice. Patients are not *learned* in disease; and, by entering too minutely into the particulars of their ailments to themselves, you may create much unnecessary alarm. But I will not enter further into this last point. It requires great judgment to know how much you may disclose to the patient himself. Though it is right that his friends should know the worst, if a fatal result be expected, yet not all the friends, for all have not equal intelligence, or equal control of feeling. It is better to select one in a family, and acquaint him or her with the true state of the case. Experience will be a valuable guide in deciding you how to act,—the experience which constitutes the consummate physician. And here let me impress upon you the importance of cultivating a calm, quiet, courteous demeanour. The charm of it can only be appreciated by those who have been prostrated on a bed of sickness. Be kind to all. The outcasts of society will come to *you*, when all the world besides has closed its doors against them. Let these enlist your kindliest sympathies. God only knows the strength of the temptation under which they fell. Deal gently with them in the abyss into which they have fallen. *Your* kindness, coming like a ray of light from Heaven into the darkness to which the cold world has consigned them, may, with God's blessing, win them back to better modes of life. The mendicant pauper, who has come to be almost an institution in Calcutta, that poor wretched skeleton figure which, wasted by famine and disease, lies friendless in yonder cot, he requires our especial care. Tempted to the metropolis in search of employment denied to him in his own famine-stricken district, and which he has equally failed to secure here, he has at last succumbed to want and disease, and has been found perishing in one of the highways of the town. The Police have brought him to the great haven of refuge, the Medical College Hospital of Bengal. Poor destitute creature though he be, and beyond, doubtless, the reach of human remedy, we must not be too ready to cast him into other hands, because our own are so full.

"Rattle his bones over the stones,
He's only a pauper whom nobody owns"

is not the treatment which we should thoughtlessly bestow upon him. Send him away indeed we must to the hospital, which has been especially set aside for such cases as his, but let us do it kindly, and only after having fortified him, with a little food, rest, and stimulants, for the fatigues of the journey. We must not think of our noble calling in a narrow spirit. Practising it faithfully and zealously, we must extend its blessings as heartily to the poor as to the rich, remembering that charity is the noblest of all virtues, and the cultivation of which will bring peace to ourselves at the last.

(To be continued.)

THE TREATMENT OF CHOLERA.

By Charles R. Francis, M.B.

Considerable advance has been made in the treatment of cholera during the past twenty years, notably in withholding opium, and in not withholding water. I wish now to speak of the collapsed stage especially. Opium is admissible and beneficial in the earlier stages, but these are comparatively manageable: in collapse it is poison. Still there is a great want of uniformity of action in the treatment of cholera, doubtless owing to the absence of uniform efficiency in any of the thousand and one vaunted plans which have been given to the world. I do not pretend to say that my plan is infallible; at the same time, my sphere of observation has been a very wide one, and the class of cases which have come under treatment have been most unpromising, nearly all being in a state of extreme collapse; and the mortality has been so uniformly low under this treatment, considering the condition of the patients, that it seems, *primâ facie*, to be worthy of a trial. But, with the treatment must be associated an amount of care, nursing, and watching, that will test the patience of the most assiduous. Yet it is essential, for without it no treatment will avail. I would premise by saying that I do not offer to the profession what has not been tried by others; on the contrary, sceptical members of the profession in India have had recourse to it, and can testify to the efficacy of the system. Nor do I pretend to much originality in it. I am indebted for the calomel part of the treatment to my friend, Dr. D. B. Smith, late Officiating Professor of Midwifery at the Medical College in Calcutta, who had himself become a convert to it after witnessing its success in the hands of Surgeon Lithgow, of the 75th Highlanders; and to Mr. F. Webber, late Civil Surgeon in Assam, for his views on the subject of cantharides, the successful administration of which first drew my attention to the value of a diuretic in the treatment of cholera. The principles of treatment which I venture to advocate in this disease are as follows:—

1. Keep up the flagging action of the heart by diffusible stimulants. This I believe to be best effected by twenty minims of sp. æther. nitrosi, combined with the same quantity of sp. ammon. arom. and a little water. This draught should be frequently repeated every half-hour, or even every quarter of an hour, until the pulse is felt at the wrist. Then it may

[illegible] I am [illegible] what [illegible] in the course [illegible].

H[illegible] of pro[illegible] [illegible] patients [illegible] sense. It is [illegible] water in [illegible] prepared to destroy the [illegible] as may be, and to [illegible] integrity; and nothing [illegible] restoring the vital fluid to [illegible] existence, to begin with. So much is undoubtedly [illegible] pure water [illegible] that we cease to wonder [illegible] declare, and no [illegible] that they are right, that they [illegible].

Astringents.—A [illegible] resulting from astringents [illegible] the patient's very life [illegible] being barred [illegible] of his system in the form of proteine compounds, salts, etc., [illegible] surely teaches us to endeavour to arrest the discharge. As to whether the severity of the attack and the extent of the discharge stand in an inverse [illegible] other words, that the more evacuations a patient has, the more [illegible] encountered, and so much the less severe will the attack become, is a disputed question; [illegible] who have had [illegible] experience [illegible] can entertain [illegible] out by facts. [illegible] so far as my own experience goes, (and I have [illegible] some 2,000 cases), although I have certainly met with [illegible] above view, I will venture [illegible] the patient [illegible] astringents. I think [illegible] acid and [illegible] I [illegible]. Its sulphuric acid [illegible] with some warm [illegible] the dose.* It is [illegible] practice to [illegible] astringent after each purging. [illegible] before, [illegible] If [illegible] be preferred, give [illegible] doses of from two to three [illegible] and water. [illegible] lead and opium [illegible] so much [illegible] Dr. Graves, [illegible] the bowels may [illegible] at two [illegible] black [illegible] And [illegible] is regarded [illegible] It is [illegible] sense, for [illegible] astringents [illegible].

[illegible] with [illegible] cold water, I look [illegible] which most [illegible] sceptics, [illegible] gave [illegible] remains [illegible] the per[illegible] rapid [illegible] all my patients [illegible] in favour of the treatment. [illegible] however, [illegible] giving [illegible] I give [illegible] grains, [illegible] at every two, three, or more hours up to 150, 200, or 250 grains. In [illegible] I have seen [illegible] Dysentery [illegible] three days after the attack is over. I do not [illegible] principle. One great [illegible] almost sure to follow its exhibition [illegible] With the returning secretion of bile [illegible] very [illegible] should be given in powder. It is easily retained in most cases.

A [illegible] mentioned by Dr. Parkes in his work on cholera, and by Dr. [illegible] in his "[illegible] of the Army in India," which shows that the mortality from cholera [illegible] days [illegible] acquaintance with the disease, was much less than in [illegible] years. [illegible] accounts for the fact, but when it is remembered that in those days [illegible] much more used than it is now, we shall have, I think, [illegible] to the mystery. [illegible] from 25 to 35 per cent.

Diuretics.—[illegible] drawn to this [illegible] The [illegible] is that, there [illegible] to give [illegible] next [illegible] a source of [illegible] rather than [illegible] comparatively harmless [illegible] such [illegible] earthquakes? What [illegible] kidney [illegible] asked. [illegible] suggested, to act upon it [illegible] produce [illegible] inflammation, or [illegible]. What will be said when I state that I have [illegible] doses [illegible] between two and three drachms have been taken in from thirty-six to forty-eight hours, without a bad symptom? And only [illegible] has followed [illegible] without any affection of the kidney whatever. And in fatal cases I have never met with any [illegible] in this organ, such as it is [illegible] only seen in death from cholera. I observe that,

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[illegible] remedies, [illegible]

* [illegible] that the [illegible] should [illegible]

† Dr. [illegible] to think that the [illegible] days.

within the last year or two, diuretics have been advocated by more than one author, and I conceive that this is a step in the right direction. Few would venture upon so powerful a diuretic as this; but let me assure those who pause that they may do it with perfect safety. Mr. Webber, Civil Surgeon in Assam, has used it for a longer period than I have, and his experience of its efficacy and harmlessness is even greater than mine. It is well to combine a warm tincture with the tincture of cantharides, and a little tinct. lavand co. and sp. ammon. arom and ether: and, looking upon cholera as a disease of malarious origin, I have always added a few drops of liq potass. arsenitis to each dose, following it up, in convalescence, with quinine, with a view to avoiding all chance of a relapse; for relapses are occasionally not uncommon.

Frictions.—With regard to frictions, if agreeable to the patient, (and they often *are* in spasm), I would encourage them. As I said before, good nursing is a *sine quâ non.* So much may be expected from this, that a professional friend, well known in medical literature, once said to me that, if he were ill with cholera, he should like to be put under the care of some maniac (some one with peculiar views of his own), because such a one would be sure to surround him with all the comforts of a sick chamber, and himself see that his instructions were fully carried out!

Remarks.—It too frequently happens that patients, at these times, are merely made the receptacles for drugs In the crisis of an epidemic, "incoherent therapeutical experiments" are made with no result. We learn in sanitary science, but in the treatment—the medical treatment—of cholera we learn nothing. Some there are who deliberately *do* nothing when a patient is in extreme collapse. They say—"Oh, why worry him? let him die in peace!" Dr. Balfour, when advocating the use of strychnine in cholera, says:—"God help those who fall into the state of collapse!" Now it is just in this very condition that I have found the treatment above defined so successful.

It may be presumed that, in the course of a long residence in India, I have had opportunities of testing the efficacy of various so-called cures for cholera It is so; and I may safely say that, *in collapse* in cholera, I have found nothing equal to this plan of stimulants, water, calomel, and cantharides, and unwearied watching Cholera, *before collapse has set in,* may be combated in various ways, according to the nature of the epidemic, of the case, or of the constitution of the individual.

I would add, in conclusion, that great care must be taken, in these collapsed cases, to ascertain the condition of internal organs. Patients, when apparently recovering, will be dying, it may be, of pneumonia, without any external manifestation of the latent mischief. Natives are very fond of lying prostrate on their backs. This should be prevented; and attendants must be told to move them from side to side occasionally. Dysentery is a very common secondary disease, requiring early detection.

Recovery from collapse will depend very much upon the normal condition of the heart. If this organ be in any way diseased, it may be unequal to the occasion. Collapse in scrofulous patients, or in those suffering from any constitutional affection, is rarely, or with great difficulty, recovered from. But where there is nothing of this kind, and where all the organs are healthy, the chances are favorable. As this communication (which appeared, in part, in the *Medical Times and Gazette* of the 8th February last) is passing through the press, a professional friend,* in practice in Calcutta, is testing the efficacy of the treatment advocated, and informs me that he is abundantly satisfied with it. Will others follow his example, and favor the profession with the result in these columns?

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* Ten very bad cases were admitted into his hospital, and *nine* have recovered under the calomel plan.—ED., *I. M. G.*

FIELD SURGERY WITH OUR FRONTIER FORCE.

By BAMLET W. SWITZER, F.R.C.S.I.,
Assistant Surgeon, 6th Punjab Infantry; Civil Surgeon, Kohat.

THE Punjab Frontier Force is one that is necessarily kept always in a state of perfect efficiency, to meet the enemy at any moment. Cheek by jowl with their foes on our border, who are always turbulent and restless, the motto of my own regiment—*Ready, Aye Ready*—might well apply to the force in general. All our regimental and hospital establishments are kept up on a war footing, and a single regiment, a station garrison, or for that matter the whole force, could march at an hour's notice on the war trail.

This state of regular efficiency is highly conducive to perfect results, when the machinery so constantly looked after is required to move. The gear is always found to work smoothly; no screws are loose; no rust clogs the wheels. Information that a hill tribe is assembling for a raid, which may reach us day or night, does not necessitate the frantic rushing to and fro of Brigade Majors, excited Commissariat Officers, staff Adjutants, or Mounted Orderlies, but the troops, cavalry, artillery, or infantry, as may be required, fall in quietly, and are on their road to the threatened pass in half an hour; and if at night, in such silence that no one left behind knows anything of the move till morning, or the firing amongst the hills tells the news.

To such a force no doubt action is welcome, and fighting a pastime. Recruited in great part from the tribes, they go to fight the men glorying in their bravery and prowess; for it has often been the case in hill campaigns, notably in the Umbeyla one, as also in the fight I now relate, that their friends and relations amongst the enemy called out and taunted, by name, the individuals they recognised in our ranks.

Close to Kohat, amongst the border hills, the Beezootees lead their nomadic life, a tribe the wildest of the wild, without villages or cultivation in their country, who live in caves, under overhanging rocks, or anywhere, in fact, where shelter is, whose means of subsistence depend on the barter of grass and firewood in our plains for food and gunpowder. Unkempt savages, their daily life a struggle, their only joy a raid, very brave on their hills, but who only venture on our plains to sweep off cattle or women, the two items of local wealth to such a people, for the sex, with them, is only on a par with the beast of burden or a household chattel. Imbued with feelings of the most implacable but mercenary revenge, they, under a rude kind of bastard honor, exact the old Mosaic law of justice—"Eye for eye, tooth for tooth, hand for hand, foot for foot" (Ex. xxi. 24), or its value in silver, laying down codes by which the amount of blood-money is determined. Family and tribe feuds exist amongst them for generations; and, when not arranged satisfactorily in a pecuniary way, it is imperative that, supposing you and I were Beezootees, your grandfather having killed mine ages ago, I should kill you when I got the chance. With different tribes the money value varies, but a life is worth about Rs. 360, and the loss of a limb half that. And so these people live, brave to rashness often, but devoid of any trace of civilization, believers only in their *kismut*; and when a man is hit to death, if he can but struggle stradlegs on a ram, and thus let his soul depart, it wings its way to the Beezootee happy hunting grounds. Of course they disbelieve in our surgery, or at least prefer their *kismut* to seeking our aid. When they do, however, patronise a dispensary, they look for some sudden necromantic power to be displayed in the cure of a hideous deformity or neglected accident, and are ill-inclined to yield to the knife, or lie quiet under the healthfully slow process of granulation

Kohat, which is but four miles from the Beezootee tribe I [illegible] briefly but sufficiently described at page 26 of this volume [illegible] the garrison, as there given, remains the same, save, that the 3rd Punjab Infantry has relieved the 3rd Sikh Infantry. The cantonments [illegible] political authorities have had much trouble with this tribe, and their threatened raids have necessitated the moving of troops both in the day and night, to guard the Obeyni Pass through which they descend. This pass is flanked by two bourges, which are detached on our piquets, and they are supported by the Mahommed Zai outpost to the rear, garrisoned by the Kohat troops, the bourges or earth-work towers holding six to twelve men, being kept by the adjacent villagers subsidized for the purpose by Government. Matters in the Beezotee Foreign Office did not progress satisfactorily, for, unlike us, they believe rather in fighting than diplomacy, and some skirmishes took place as they exchanged shots with our subjects in the plains, though without much loss on either side. One severe gunshot wound, however, found its way to the Kohat Dispensary, the ball having struck the lower third of the right thigh, passing through in front of the femur, and taking a slice from the [illegible]. As the tribe would not come to our terms, a blockade was established, and no Beezotee was allowed to enter our territory. When a tribe becomes restive, this plan is the only one left us, short of going into their hilly country to chastise them, and that would involve a regular expedition, for no sooner is one tribe attacked, than, taking up petty differences, the whole unite against the common foe, the Feringhee, and we must be in force to meet them. Blockading them, however, is nearly equivalent to starving them out, for, if strictly done, they must fight or give in, and I suppose, not having had their courage cooled for them lately, they preferred the former.

On the 11th March, 1868, circumstances, of which I am not [illegible] the proper recorder, necessitated that a company of the 3rd Punjab Infantry, under Captain Rynd, should march out at day-break to the bourges; and, as the hours wore on, things did not look brighter, more troops were moved towards the Obeyni Pass, viz., eighty sabres of the 3rd Punjab Cavalry, two mountain guns of Royal Artillery, the 3rd Punjab Infantry, and the right wing of the 6th Punjab Infantry. Accompanying the former was Assistant Surgeon L. O. Tandy of the regiment, with the right wing of the 6th I was myself. This small force left the station shortly after noon, and halted four miles from cantonments on a [illegible] facing the gorge in the hills, which enters the Obeyni Pass, the 6th Punjab Infantry in the centre, 3rd Punjab Cavalry and Royal Artillery to the left, and the 3rd Punjab Infantry to the right rear. Upon our taking this position, the company under Captain Rynd moved from the front towards the pass mouth, and [illegible] when dropping shots from the hills [illegible] showed that they, with the local levies and police force [illegible] with the Deputy Commissioner further forward still, [illegible] The main force then slowly moved up a dry [illegible] towards the scene of action, which at that time was [illegible] at the base of a conical hill, from the crest [illegible] but their matchlocks could not [illegible] I may register our position there at 2 P.M., [illegible] Punjab Infantry, under Captain Ruxton, advancing [illegible] to the [illegible] the conical hill [illegible] towards the path. The 6th [illegible] Major [illegible], being to [illegible] for it was [illegible] the crest, and that few [illegible]

[illegible] was but a slight dip in the contour of the hills. Here Ruxton, their gallant leader, misunderstanding his orders it is supposed, went on to his own destruction to force the top of the further hill. I should have said Major Jones, 3rd Punjab Cavalry, commanded the force in the field, and had given orders that the conical hill only should be taken. The advance of the 3rd, however, and their coming under a sharp fire from the 'sungar'* on the top of the peak, required the recall of the 6th Punjab Infantry to support them on the left, and shortly after the red facings might have been seen mounting through a precipitous gully, and clambering like flies up sheer rock. Meanwhile Captain [illegible]'s two mountain guns were warming the sungur with both shot and shrapnel from a three-pounder and twelve-pound howitzer, and some of the latter burst very prettily right over it. Although the range for these toy guns was excessive, being 800 yards, they had to desist, however, as our men closed towards the summit. Up the brave lads swarmed until they were within forty yards of their enemy's muzzles. And the matchlock balls and stones, hurled down upon them, soon made the work hot. Our troops found they were stopped by perpendicular rocks, up which not even a chamois could climb, and that only a single file path led to the sungur on the immediate apex. Here many were shot down, for as a man attempted to mount the path, the enemy under cover turned their weapons on the spot he must pass, and when he appeared they fired. The men dropped fast, and on such ground could make no rush to grapple their foes. A man cannot charge up a rock, eighteen feet perpendicularly over his head, without a crevice even for his nails to cling to; and so, crouching for protection under these cliffs, it was soon seen the enemy's position was impregnable. Firing down on our men, and heaving stones, or rather small rocks, not at the men, but high into the air, that their impetus as they fell might be crushing, these savages, with a country-made 'Cronstadt' at their back, made their havoc of course. With whom it originated, or on whom the blame falls, I know not; but the advance on the sungur was a sad mistake, and led to the grievous loss I proceed to tell of. However, it was most bravely done, and I know not how soldiers care to lay down their lives more gloriously than with their face to the foe. Two or three attempts were made to storm the summit, but there was no path by which the men could reach it, save the narrow one I spoke of, with dozens of matchlocks turned on it. Here Captain Ruxton, leading his men, was shot, and Mackinnon, his Adjutant, also wounded.

The 3rd now fell back, and the enemy, seeing the men retire, came out of their sungur, and cut up poor Ruxton and one of his subadars, who fell beside him. To do this, however, they had to travel the small fatal path we had been trying to ascend, and of course to expose themselves. The volleys from our rifles now took up the game they had hitherto been playing so safely behind their rocks, and in a few minutes so many of them were knocked over, that they beat a hasty retreat back to their shelter. After this our troops retired in order, covered by skirmishers; the Beezotees did not dare to follow, and as night was coming on, the two regiments, bringing their killed and wounded, came back to the plain. Captain Ruxton's body, and that of his subadar, to our great regret, could not be brought. Both were known to have been killed, and to recover them at that time would have involved a frightful loss.

Such is an account of this day's fighting, as unfortunate as it was unexpected, for no one thought, when leaving cantonments in the morning, that night would see us returning with so sad news.

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* A 'sungar' is a natural or artificial fortification or barricade on the top of a hill. From within, the occupants, themselves under cover, fire on their advancing assailants.

When the 3rd Punjab Infantry advanced on the sungur, and the 6th Punjab Infantry mounted the gully to support them, it was pretty evident that I should have some work before long, and that it behoved me to open the capital case. The doolie, carrying instruments, bandages, and hospital appliances, with a native doctor and hospital staff, were brought up in readiness, and the dandies[*] sent up the hill for the wounded, who soon came down. As far as I can remember, those who were seriously hurt presented themselves in the following order :—

1. Sepoy struck by bullet on a button of his uniform opposite xiphoid cartilage ; it was a lucky button for him, as it turned the ball, which, passing into the abdominal parietes, a little to the right of the median line, coursed round in front of the liver, and lodged in the right side under the skin. The peritoneum was untouched, and as the ball could be readily distinguished, I cut down on it, and took it out on the spot. From the entrance to the artificial exit, it travelled six inches round the abdominal wall.

2. Jemadar shot through the left thigh, the ball passing in and out in front of the femur ; no hæmorrhage : a wet bandage sufficed for him.

3. Sepoy. Bullet through left arm two inches above elbow-joint ; no hæmorrhage ; bone not touched : wet bandage.

4. Sepoy. Severe bullet graze on left arm, two inches below shoulder on outside. The bullet had gouged a piece out. Wet bandage.

5. Sepoy. Bullet entered right cheek in centre of masseter muscle ; no hæmorrhage ; bullet lodged, and not to be felt near wound by long probe ; mouth not entered : compress of wet lint. I may anticipate, so far as to tell, that this bullet, which struck the *right* cheek, was felt next morning below the angle of the left scapula, where I cut it out. How it got there, it best knows itself.

6. Sepoy. Bullet through right arm to left of humerus, three inches above elbow, passing out behind ; no hæmorrhage ; bone not touched : wet bandage. This and No. 3 were very similar, but in different arms.

7. Major Hoste. Contused and lacerated wound on right temple from a stone which stunned and knocked him over, cutting a branch of temporal artery, and covering him with blood : edges of wound brought together, and wet lint.

8. Sepoy. Bullet entering the front of left shoulder, smashing head and neck of humerus, splintering shaft, opening joint, and passing out below angle of left scapula. Very smart hæmorrhage, most likely from posterior circumflex, as that vessel appeared to lie in the track of the bullet ; the little finger, as a probe (the best), found everything in smash. A few pieces of bone taken away with bullet forceps, and wound plugged deeply before and behind with long strip of wet lint. Arm put in sling, and, being a Sikh, a good stoup of brandy and water, for he had lost much blood ; plugging the wounds completely controlled the hæmorrhage.

9. Naick. Bullet entrance at right angle of lower jaw, passing deeply through thick muscles of back of neck, and out a little to left of mesian line, one inch below scalp ; bleeding pretty sharp, but easily controlled by plugging : bone not broken.

10. Sepoy (Zerein). Very badly chopped up ; he was first hit in the right calf, bullet passing through and breaking fibula about two inches from its head. This poor lad was one of the foremost at the sungur, and, when wounded, his rifle and bayonet dropped from him down the hill. At this time the enemy were coming on, and he could not get away ; as he lay on the ground, they came at him, and slashed him with their knives. His incised wounds were, *first*, one four inches in length across the vertex, deeply notching both parietals, but not penetrating ; *second*, a slash cutting off all the cartilaginous portion of nose and the upper lip, laying the right angle of mouth open deeply ; the nose and upper lip hung below his chin by a strip of the skin, the size of a goose quill ; *third*, a cut passing deeply through the nasal bones into the nose behind the last ; *fourth*, a shallow cut across the front of chin ; *fifth*, a deep cut into the upper third of left arm on the outside, going to the bone, three inches in length ; *sixth*, three separate slashes over the dorsum and fingers of left hand,— one opening the metacarpo-phalangeal articulation of third finger. His face was a horrid spectacle, with his nose and lip hanging down, and the cut had also sliced away the anterior half of the two front incisor teeth. I could at that time only replace the severed parts, and keep them as much as possible *in situ* with pledgets of wet lint and a roller, dressing his other wounds similarly, for evening was upon us, and we were moving towards cantonments. The other wounded of my regiment were not of sufficient interest to detail, being chiefly contusions from the stones hurled at them. In all, the right wing, 6th Punjab Infantry, which went into action 259 strong, lost two killed and twenty-one wounded.

The 3rd Punjab Infantry, who were double the strength and longer under fire, lost nine killed, two mortally wounded, nineteen wounded. The total list of casualties was therefore fifty-three.

Night had closed in before the wounded were housed in hospital, and then the field dressings were removed so far as necessary to give place to careful examination of the nature and extent of the lesions, that all might be rendered safe for the night. Zerein's nose and lip were sewn together with nine interrupted sutures, and I had some hopes of saving them ; the others were made comfortable, and what needful fresh dressings were required, applied.

As this ended the field surgery of the day, I may also end my paper, reserving to a future opportunity an account of the progress of the wounded, and a few observations on the points of surgical interest in relation to gunshot wounds which occurred.

KOHAT, *April*, 1868.

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[*] A dandy is a hammock slung from a pole, carried by two men, and used for the hills, where a doolie is useless.

A CASE OF SNAKE-BITE.

By W. J. MOORE, L.R.C.P.,

Surgeon, Rajpootana Political Agency.

As with most ailments not readily curable, empirical treatment and pseudo-specifics have been applied, to a very great extent, in the condition resulting from the bites of poisonous snakes. To enumerate all the substances which have from time to time been imposed on the credulity of mankind as remedies, would indeed be an endless task. The ancient physicians extolled preparations of the serpent itself. Both Seneca and Pliny inform us that human saliva was believed to be a powerful remedy. A great variety of vegetables have been celebrated, the principal one being the *naghaurilie ramentæ*, or *ophirrhiza mungos*, called by Sir William Jones *chandraca*. In Australia the root of the common male fern, *polypodium filix mas*, has long been used as a secret cure.[*] Waring[†] gives a list of fifty-five plants, of reputed efficacy in snake-bites. The famous Tanjore pill contains several vegetable materials, among others croton oil. The people of Scinde use a mixture of various vegetable substances, into the composition of which chopped onions enter largely. Among minerals, the oxides of metals have been especially reputed, under the idea that the poison of serpents acts upon the blood by attracting oxygen,

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[*] Underwood on "Snake-bite." Brathwaite's Retrospect, page 370, July, 1859.

[†] Waring on "Medical Plants of India." *Madras Medical Journal*, January 7th, 1862.

[illegible] which the variety of [illegible] [illegible] [illegible], [illegible] naturalist, [illegible] [illegible] [illegible] natives of [illegible]. Arsenic is a [illegible] part of the [illegible] pill [illegible].* This material has also been strongly recommended [illegible], or as the [illegible] "[illegible] solution."* [illegible] [illegible] [illegible]. The outward [illegible] [illegible] quantity of warm [illegible] taken [illegible], was [illegible] by [illegible] "[illegible]" effectual [illegible] of the [illegible] of venomous snakes. After the [illegible] [illegible] in the Zoological Gardens in [illegible] 1852, which [illegible] the subject [illegible], the result [illegible] [illegible] attentions, [illegible] the wound, [illegible] combined with every means to com[illegible] [illegible] the bases of treatment. More recently [illegible], such as the [illegible] cupping-glass, washing [illegible] with liquor ammoniæ, cauterization with nitrate [illegible] [illegible], or with [illegible], and the [illegible] administration of [illegible] and brandy, were the remedies recommended by Guthrie. It has also been [illegible] to maintain the flagging powers of the heart and circulating system by [illegible] exercise. It is stated that Dr. S[illegible], formerly Physician General, Calcutta, tried a man [illegible] by a snake [illegible], [illegible] the man run several [illegible]. The narrator remarks:—"This man's life was doubtless saved by [illegible], by [illegible] and forced exercise, [illegible] action of the heart and lungs, and thus preventing [illegible] of the poison on these organs, at [illegible] the skin to act so profusely as to make [illegible] channel for discharging the poison from the [illegible]." As in poisoning by opium, a certain amount of [illegible], not to fatigue, but to combat torpor, would appear [illegible]. Dr. H[illegible] [illegible]:—"So long as we maintain the [illegible] of the heart and lungs, the patient cannot die."

It will at once be admitted that none of the methods of treatment enumerated present anything really specific. And yet, [illegible] persons have recovered after all, as indeed after [illegible] various nostrums, thus affording the latter an undeserved reputation. And the explanation is that, from one or more [illegible] afterwards referred to, such patients did not receive [illegible] a fatal amount of the poison. But doubtless the [illegible] has been frequently stayed by action based on the [illegible] principles of treatment,—destruction or removal of [illegible] poison, support by stimulation, and prevention of torpor.

[illegible] the chances of recovery from snake-bite, notwithstanding the rapid absorption of the poison, will be materially [illegible] by the immediate application of some liquid escharotic [illegible] the wound. And the following case is a striking [illegible] of the above remark.

Some months back I was called up in the night to a case of [illegible], and, on returning, had put the candle out and [illegible], when the [illegible] or chokedar in the outer verandah [illegible] that he was bitten by a snake. The candle and matches [illegible] by the bedside. I was with the man in half a [illegible], only delaying to strike a match and light the candle. [illegible] the [illegible] table, my [illegible] a bottle of [illegible] nitric acid [illegible] the previous day [illegible]. [illegible] this [illegible], and by [illegible] to [illegible] into the wound within at least [illegible] after the injury. The [illegible] was [illegible] a venomous snake,* from one of which a little blood [illegible]. It appeared that the man, lying in the outer verandah, stretched his leg, and placed it upon the snake; on feeling which, he immediately struck at the reptile with his stick. The serpent, [illegible], was found close by, with broken back, and must have been thus injured at the very moment of [illegible] the [illegible]. On being bitten, the man had assumed the erect posture, but immediately sat down again. After applying the acid and a ligature above, the general condition was examined. Although so short a period had elapsed, the pulse was [illegible] and intermittent, the countenance anxious, and the whole appearance suggesting both syncope and fright. A glass of brandy was immediately administered, and in the course of five minutes [illegible]. During two hours, faintness, sickness, sighing respiration, [illegible] intermittent pulse, and [illegible] anxiety regarding the result, after which a satisfactory reaction occurred, but [illegible] days elapsed [illegible] the man thoroughly recovered. The [illegible] had a slight sore, which readily healed, but there was no swelling, tenderness, or discoloration, either about the part or in the neighbouring glands.

From the days of Virgil† it has been matter of observation that the same serpent possesses very different degrees of venomous power at various seasons of the year. It is also stated that snakes are more savage and dangerous in the hot part of the day.‡ The temperament, state of health, and [illegible] of the person bitten, and the question if the snake had shortly before bitten something else, are, moreover, all matters affecting the result. But as the man whose case is detailed was injured by a cobra, without the intervention of clothing, as he was of average strength, and in fair health, I think that it may be reasonably concluded that his life was saved by the immediate application of the nitric acid, [illegible] on the accident of this powerful agent being at hand. Professor Halford, of Melbourne, states as the result of recent investigations, that when a person is bitten by the cobra, molecules of living germinal matter are thrown into the wound, speedily grow into cells, and so rapidly multiply, that in the course of a few hours, millions upon millions are produced at the expense, as Dr. Halford believes, of the oxygen of the blood. Hence the gradual decrease and ultimate extinction of combustion and [illegible] in the various parts of the system, with the consequent coldness, sleepiness, and insensibility. However this may be, the immediate introduction into the wound of some escharotic, more searching and powerful than nitrate of silver, causing destruction of the poison before it can all be absorbed, is [illegible] the only "specific" treatment,—a fact which, to prevent recourse to worse than useless nostrums, cannot be too widely known. It would also appear essential that the agent applied should be a fluid which will easily gravitate to the bottom of the wound. Although Fontana has shown that a mixture of nitrate of silver and venom destroys the power of the latter, it does not follow that a similar effect would be produced by the application of caustic to a bitten part. However firmly applied, nitrate of silver only acts on the surface, and its [illegible] action, [illegible] with other escharotics, stays the flow of blood, it appears as likely to do harm by the latter action as to do service by its chemical power. And these remarks are equally applicable to all other solid escharotics, not excepting the actual cautery.§

[illegible]

* W[illegible] there [illegible] marks, it may be safely assumed that [illegible]

† Ge[illegible]

‡ [illegible], Reports of Punjab [illegible]

[illegible]

HINT FROM A HAKEEM.

By a Civil Surgeon.

It is too much the custom for the European physician to despise the teaching of the *Yunânis*. Although our medical science is so far in advance of Eastern practice, it is well to recollect, in the spirit of Newton, that the European is but "as a child playing on the sea-shore, while the immense ocean" of *science* "lays unexplored" before him.

And we might also recollect that the Yunani hakeem was *before* him on the "sea-shore" picking up pebbles, "as a child!" In illustration of my meaning, here is an old *pebble* that was picked up long ago which came accidentally into my keeping. Every Civil Surgeon knows how out-door dispensary patients grow impatient, and abruptly end their visits, when the nature of their malady requires protracted treatment. I was living in a malarious tract, a few years ago, where chronic spleen disease is very common. And a patient, who was disappointed at my unsuccessful treatment, suddenly disappeared. But, after a while, he re-appeared in my vicinity, and surprised me by his altered and improved condition. His spleen was reduced to the volume of a cricket ball, from having reached the umbilicus. On enquiry, I found that the sufferer had turned his back upon European science, and that he had appealed *successfully* to the Yunani hakeem! He had taken one drop of *gundhak ke tezab* (sulphuric acid) inside a *buttasha*, or sugar-bubble, every morning for a month, which he said had "cut away the congealed blood" in the organ. The man was virtually cured. And I have kept this *old pebble* in my pocket ever since, with satisfaction to myself and benefit to many an unhappy sufferer from spleen disease. It is necessary to be careful, *in administering the drop*, to cover the hole made in the *buttasha* with thick gum or flour paste. And I venture to say, that a more ingenious vehicle than this native Indian dodge cannot be found, at hand, to convey a drop of pure sulphuric acid into the human stomach. The sugar-bubble slowly melts in the stomach, and a trifling sense of heat is felt in the organ, without any *after* harm that I ever heard of. Now, if it be the case, that the altered condition of the blood, in chronic spleen disease, is analogous to the state of the blood in scurvy, here is a very choice bit of ancient pathology unearthed in the hakeem's practice—a *pebble*, in fact, thrown into our *new* glass house!

I may add that the biniodide of mercury ointment over the diseased organ is often combined with the acid treatment, but I have never found the *hidden virtue* of this ointment when trusted to alone. In some very obstinate cases, where the enlarged organ is reduced to the condition of an hypertrophied gland, I also add a pill, consisting of ferri iodidi gr. ij., potassii iodidi gr. ij., opii gr. i. But this is always given as an adjuvant to the acid, whose curative action is decided, but *slower* in the advanced stage of the disease.

SHEALKANTA OIL* AS AN EXTERNAL APPLICATION FOR ITCH.

By Kristodhun Ghose,

Sub-Assistant Surgeon in charge of Bhaugulpore Charitable Dispensary.

This plant (*Argemone Mexicana*) is well known throughout the country; it belongs to the natural order Papaveraceæ. All the parts of the plant are full of thorns. The flowers are of a bright yellow color. The capsules are of an elongated shape, and filled with seeds resembling black mustard; but these seeds, instead of being smooth, are rough at the surface. About this time of the year the seeds are collected, and oil of a pale yellow color is extracted. This oil is used for burning purposes by some people on account of its cheapness.

I tried this oil as an external application for itch with marked success. In twelve cases the oil was tried, and in every case recovery was effected within a week. I had the parts washed with soap before applying the oil. The recovery of twelve cases is no guarantee of its curative property, but I bring this before the readers of the journal to give them an opportunity of trying the efficacy of this oil.

The plant has a yellow oily juice of a disagreeable fishy smell. When this juice is applied over a fresh, small, unbroken pustule of scabies, the latter becomes enlarged and quite *distended* with pus. This action is rather peculiar, and suggested to me the idea that the oil has a direct influence upon the *acarus*. I once succeeded in getting a living itch-mite, and putting it under the microscope. I placed a small quantity of the juice mixed with water upon it, the creature died immediately. I never had the opportunity of trying the *oil* in the same manner, but I doubt not it has the same effect.

I have procured some oil with great difficulty, as the last year's produce is exhausted, but a fortnight hence the oil will be found in abundance. As soon as I get the oil I will try it on a more extensive scale, and lay the result before the public. In the meantime I would request my professional brethren to give the remedy a trial.

CASES FROM PRACTICE.

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CASE OF CARDIAC EMBOLISM.

By Surgeon J. R. Jackson, M.D.,

Superintendent of the Central Prison, Meerut.

Kuremut Ali, about twenty years of age, a strong, well-developed man, had been for three months in the Meerut Jail. About a month after admission, he began to complain of feeling fatigued at work, and was listless. Three weeks ago he was sent to the mills to grind wheat; he became suddenly faint, and changed color. He was sent to hospital, treated for fever, and in two days went to the convalescent gang. He was again admitted into hospital, suffering from fever, on the 2nd March. His case appeared a simple one, and did not attract particular attention. He was treated with cinchona alkaloid, and had a liberal dietary, with stimulants and rum.

On the 3rd March, at 3 p. m., he sat up in bed and took his dinner, after which he lay down, covering his head with a blanket. At 5 p. m. he was found dead, the warm body showing that he had died but a very short time before.

Post-Mortem 13 hours after death.

Body in good condition; by no means emaciated, muscular power well developed.

Lungs gorged with frothy mucus; lower posterior parts deeply congested (hypostatic congestion).

Other organs healthy, with the exception of the spleen, which was soft, pulpy, and in the usual state of malarious disintegration.

Heart. Right side contained a large embolus. This was of a tough consistence, and adhered closely to the fleshy bands and columnæ carneæ, and had to be torn from them in process of detachment. That portion of the embolus in contact with the substance of the heart was of a pale color, and closely resembled in texture and appearance half cooked veal. At its free end it merged, but not very gradually, into a tough, black clot. The right auricle was completely filled with the embolus, which formed a mould of it, with processes extending into the different blood-vessels. The left side of the heart was almost empty; but there was in the ventricle, and closely adherent to the columnæ carneæ, an embolic clot of a similar appearance to that observed in the right side.

On removing the liver, a long clot, the longitudinal half of it having the same fleshy appearance as the cardiac embolus, and

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* This oil has long been known to the Natives of India as a valuable remedy in skin diseases. It is also spoken of as being endowed with narcotic, emetic, and purgative properties, but these are very uncertain. If it be proved to possess the property of actually and speedily destroying the itch-mite, the oil will be a valuable addition to our indigenous *materia medica*.—Ed., *I. M. G.*

[illegible] held a thick currant jelly, was drawn out of the [illegible].

[illegible] of all [illegible] symptoms [illegible] would have [illegible] [illegible] have [illegible] which was [illegible] of an organised apparatus, [illegible] The history [illegible] But the [illegible] formation of the clot, which [illegible] must have [illegible] but a very short time. We know [illegible] death the [illegible] had [illegible] distressing symptoms [illegible] the clot would lead one to [illegible] the vessels leading to the lungs must have then been gradually closed, and the heart's power of propulsion greatly [illegible]. The [illegible] showed [illegible] with [illegible] so rapidly change the vital fluid, was of an inflammatory origin.

In the *Lancet* of November, 1867, is an interesting case, by Dr. R[illegible] [illegible] a young girl. The clot, [illegible] must have been similar to that in the present case. But [illegible] the clot was in the right auricle, [illegible] symptoms [illegible] death were very distressing.

In my [illegible] the [illegible] was [illegible] the heart [illegible] and there were not severe ante-mortem symptoms.

F[illegible] very much of its [illegible]. The line of demarcation between the [illegible] of the clot, which I presume was post-mortem, and the fleshy [illegible], is not now well defined. But, when recent, this distinction was very well marked.

A CASE OF HYDROPHOBIA SUCCESSFULLY TREATED BY SALIVATION.

By J. J. BARNES, APOTHECARY,

In Civil Medical Charge of Hoshungabad [illegible].

On the morning of the 7th April, a sweeper (servant to one of the civil officers) was admitted into hospital, suffering from severe symptoms of hydrophobia, the result of a scratch received on the hand from the teeth of a dog, about three days ago, while forcing open its mouth to administer medicine. This dog had been bitten by a mad dog, some three or four months previous to this.

On the evening previous to his admission, the man began to experience uneasy sensations, which he described to me as "a burning feeling at the epigastrium, and restlessness." The next morning, symptoms of hydrophobia fully set in.

On admission, the paroxysms were very violent and frequent, the least noise or touch bringing on the spasmodic attack. I had him [illegible] on to a cane-bottomed chair, surrounded him with blankets from the neck downwards, and placed under the chair a large vessel of hot water, and one drachm of mercury, rubbed up with the same quantity of sulphur, was also put under the chair in a piece of earthen chattee over a charcoal fire. Fifteen grains of calomel were given at once, and five grains repeated every hour afterwards. The mercurial vapour bath was kept up till the symptoms subsided.

In about [illegible] hours the patient was quite composed, and free from all [illegible] symptoms, but was profusely salivated. On the evening of the [illegible] [illegible] attack of fever. A [illegible] and [illegible] every three hours, with [illegible]. Diet, [illegible] sago, milk, and bread.

[illegible] fever, complains of [illegible] pain.

12th.—[illegible] very slight [illegible] of gum [illegible]. Continue [illegible].

AMPUTATION OF PENIS, ACUPRESSURE EMPLOYED TO PREVENT HEMORRHAGE.

By G. H[illegible], M.D.,

Civil Surgeon, [illegible]

Seeing a case of amputation of the penis recorded in the *Indian Medical Gazette* for April by Mr. [illegible], I think it [illegible] of interest to describe a mode of acupressure [illegible] which I have adopted in several amputations of this organ. I took to this method, in consequence of having seen a case [illegible] in which the hæmorrhage was most violent and difficult to stop.

My plan is this. I first introduce a large catheter to keep the [illegible]. I then pass three long needles through the [illegible] the catheter. Over each needle I twist a stout ligature after the manner of the harelip suture. These ligatures, without being very tightly secured, completely close all the vessels between the needles and the skin, and, on withdrawing the catheter, the organ may be removed by one sweep of a knife, just in front of the needles, without a drop of blood being lost. The needles may be removed after forty-eight hours.

April 7th, 1868.

ON THE TREATMENT OF GONORRHŒA BY BLISTERING.

By B. N. H[illegible], M.R.C.S.E. & L.S.A.L.,

[illegible]

I HAVE, for some time, been treating all cases of gonorrhœa by blistering with the best results. [illegible] the usual plan of treatment, in which [illegible] balsams [illegible].

In private practice, it is [illegible] three years, but in hospital practice, it is [illegible]. I have had several instances of [illegible], and in obstinate cases of long standing, which have resisted all ordinary treatment. In two instances [illegible] occur, and they have not failed to yield to a second application of the blisters.

As an accessory to the treatment, all that is necessary is at first an aperient, followed by salines and occasional injections of argent. nit. grs. ij, aq. ad ℥j.

To take an ordinary case in point. On the patient applying to the hospital, and presenting the usual appearances and symptoms, with glans penis swollen and tender, redness of lips of urethra, and abundant thick yellowish discharge, with scalding pain on passing urine, he is ordered two aperient pills or grs. xx of *Kaladana*, with grs. ij. of hyd. chlorid. and in four to six hours afterwards castor oil. Rest to be insured during the day, with low diet. In the evening a blister, two and a half to three inches square, is applied high up on the anterior and inner side of each thigh, to be kept on during the night, and the blistered surfaces to be dressed in the morning with simple dressing or *[illegible]*; the patient to take a draught containing magnes. carbon. soda carb. grs. x, antim. pot. tart. grs. ¼, pulv. [illegible], [illegible] tinct. hyoscyami ℳ xx, aq. camph. ad ℥ iss. Mft. Haust. A little lukewarm water to be injected once or twice during the day.

On the morning after the application of the blisters, and for the ensuing twenty-four hours, the symptoms will be somewhat aggravated, with an increase of discharge, and more pain on micturition, but these symptoms rapidly subside, and on the third morning of admission the patient will express himself altogether better. The discharge is observed to be much diminished, and there is less pain on micturition. The mixture now to be taken three times during the day. On the fourth day there will be very little discharge, which will have quite changed its character. The mixture is now discontinued, and an injection, twice a day, of argent. nitr. or zinci sulph. On the fifth day, scarcely any discharge perceptible, and that only by squeezing the penis. The injections are now [illegible] once a day, [illegible] on the sixth day, the blistered surfaces having completely [illegible] and no signs of running being visible, the patient is [illegible] fit for duty.

I consider the application of blisters to the thighs preferable to any other [illegible] counter-irritation, though, in some instances, I have applied a blister to the under surface of the [illegible].

My object in writing the foregoing is because I am inclined to think that this mode of treatment is not so generally used as it [illegible], and I [illegible] that, after giving it a fair trial, the [illegible] treatment by copaiba and cubebs will not be [illegible].

[illegible], 1868.

We can [illegible] to the efficacy of the above plan. In the case of the European [illegible], especially where a speedy restoration [illegible] of paramount importance, we have not hesitated to try it, and with marked [illegible] in the early stages of the disease. At the same time we are bound to admit that it is not always infallible.—ED., *I. M. G.*

FOUR CASES OF CHIONYPHE CARTERII (MUCEDINOUS OR FUNGUS DISEASE OF INDIA.)

By Honorary Assistant Surgeon P. A. Minas, G.M.C.B.,
Civil Surgeon, Hissar.

CASE I.—CHIONYPHE CARTERII AFFECTING THE RIGHT FOOT; AMPUTATION BELOW THE KNEE; OSTEOMYELITIS; RECOVERY.

During the past half-year very few operations were performed in the Government Charitable Dispensary at Hissar, owing to the prevalence of fever in the town, and in the villages near the canal. It is not my object, in the present paper, to enter fully into the question of the causes and effects of this fever. Suffice it to say that the loss of life caused by it was very great; that the sufferers were in many cases also affected by a serous diarrhœa, (a sort of "dysenteria incruenta,") or by dysentery; and that the survivors showed the effects of malarious influence in the shape of enlarged spleens.

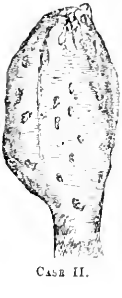
Rama, a Jau cultivator, aged twenty-eight, a resident of the Hissar district, was admitted into the Charitable Dispensary at Hissar, on the 17th October, 1867, suffering from the "fungus foot" disease, of ten years' duration. The affected foot (the right one) measured eleven inches in length, nine inches round the toes, fourteen round the instep, and sixteen round the heel and ankle.

The foot was covered with sinuous openings, giving exit to a black granular substance, imbedded in scanty mucilaginous discharge. These openings were to be seen on both the dorsal and plantar surfaces, but chiefly over the malleoli. The toes were shrivelled and contracted; the general health was good; there was no organic complication, except that he was greatly emaciated, and was in the habit of taking opium at night to allay the pain. As to the origin of the disease, no information could be obtained, except that an abscess had formed on the ball of the great toe, and had been lanced by a village barber; that the swelling began afterwards to increase; and that more abscesses had followed, and left these openings as relics.

Two days after admission the patient was attacked with fever, and remained under treatment for twenty-five days, when he had completely recovered; and at his earnest solicitation, on the morning of the 14th November, I amputated the right leg below the knee under chloroform. The arteries were well secured, but a great deal of venous blood was lost. Three weeks later, when all the ligatures had come away, and the stump was nearly healed, he was again attacked by fever, and symptoms of osteomyelitis supervened; he complained of sub-acute pain in the stump. The tibia protruded through the anterior flap; the discharge became profuse; he passed restless nights; slight bleeding took place from the inner side, where the stump opened out, but this was checked at once by the application of tannic acid Tonics, stimulants, anodynes, cod-liver oil were given internally. Ere the thought of a secondary amputation was entertained, the character of the season changed, the cold weather set in, and the patient began to improve. The protruded bone began to be covered with healthy granulations, fever entirely subsided, and a marked improvement took place in his general health. He is still (23rd March) in the hospital, but intends to leave this in a day or two.

CASE II.—CHIONYPHE CARTERII AFFECTING THE RIGHT FOOT; AMPUTATION; RECOVERY.

On the 6th October, 1866, a Gosain beggar named Kama, aged about twenty-five, an inhabitant of Tosur, in the Futtehpoor district, was admitted into the Hissar Dispensary.


Case II.

Previous history.—When in his thirteenth year, a hard swelling appeared in the middle of the right heel, which softened, suppurated, and burst, giving exit to a venous discharge which, he says, contained bluish colored granules, then swellings next appeared in the different parts of the sole of the foot, and gradually extended to the dorsum and its sides.

At *present* he looks emaciated, but with the exception of the extreme enlargement, (the largest I have ever seen), and pain in the diseased foot, he suffered from no organic complaint.

A drawing of the foot, herein annexed, will show the ravages of the disease much better than any description can convey.

The measurement of the foot was :—

Length	12¾ inches.
Round the toes	15 "
Do. instep	19 "
Do. heel and ankle	19½ "

I amputated the leg below the knee, under chloroform, by a single flap on the 24th October, 1866. No blood was lost, for the arteries were well secured by pressure in the popliteal space, but there was considerable oozing of venous blood, which ceased when the stump was dressed. The wound healed by the first intention, and the patient was discharged on the 4th December, 1866, forty-two days after the operation.

CASE III.—CHIONYPHE CARTERII AFFECTING THE RIGHT HAND; AMPUTATION THROUGH THE FOREARM; RECOVERY.

Khammanoo, aged thirty, a Bagree Jant, and a resident of Mahessur, in the Jyepore territory, was admitted into the Hissar Government Charitable Dispensary on the 10th April, 1866.


Case III.

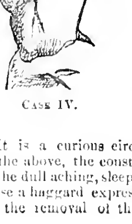
Previous history.—About three years ago, a blue spot was observed near the index finger of the right hand, on its palmar aspect. This spot continued in the same state for a year without interfering with his daily vocations. Afterwards, a fistula formed on the dorsal aspect of the finger, but within twelve months, before he presented himself here, other fistulæ formed; the size of the hand increased; and the pain became so agonising that he began to take opium to deaden it.

Present symptoms.—The right hand exhibits a dozen fistulous openings, through which ooze out the characteristic blue colored granules; the hand swollen; and below the wrist measured ten and a half inches The fingers are deformed, being shrivelled and small. There is severe pain, of which the patient complains most bitterly; his general state of constitution was perfectly good. As the state of the patient's health warranted an operation, the limb was amputated on the 11th April, 1866, through the middle of the forearm, under the influence of chloroform. He was discharged cured on 2nd June.

The accompanying sketch will convey a better idea of the state of the hand than any description can.

CASE IV.—CHIONYPHE CARTERII AFFECTING THE RIGHT HAND; AMPUTATION; RECOVERY.

Dharrah, aged fifty, a potter, a resident of Khetree, in the Jyepore district, was admitted into the Government Charitable Dispensary at Hissar on the 16th May, 1866.


Case IV.

Previous history.—About two years ago a small pimple was observed on the right ball of the thumb, which remained dormant for about a year; then several fistulous openings formed, and discharged a granular blue substance. The fingers contracted, and the pain began to disturb him. He therefore, as is usually the case, commenced taking opium. His general health being good, the limb was amputated on the 17th May, 1866, through the middle of the forearm.

The wound united by the first intention, and the patient was discharged cured on the 5th July, 1866. A sketch of the hand accompanies this.

Remarks.

It is a curious circumstance that, with such a diseased mass as the above, the constitution remained unaffected. On account of the dull aching, sleep is disturbed, and appetite impaired, which cause a haggard expression of countenance and emaciation; but on the removal of the part, the system rallies in a wonderful

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The Indian Medical Gazette.

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Notices to Correspondents.

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in the publication of many of their writings, and the curtailment to which others have been subjected. He can only say in palliation that when he received charge of the paper, it was on the condition that the limit originally proposed for each number (twenty-four pages), which had been almost always exceeded under his predecessor, should be strictly adhered to. This Procrustean rule has often obliged him to defer the publication of valuable papers, which were too long, or not long enough, and to publish others of less interest, which happened to fit the available space. For the same reason a rather merciless censorship had been found necessary in other instances, in order to bring the contents of each number exactly within the twenty-four pages.

The ex-Editor is but too well aware that these are not the only shortcomings with which he can be charged; but he will say no more on a subject which is probably of small interest to his readers, and which cannot be a gratifying one to himself. Before finally laying down his pen, however, he cannot but regret that comparatively so little use is made of the *Indian Medical Gazette* by the Medical Officers in other Presidencies, as a channel for publishing the results of their experience. That most of the contributors to its pages should belong to the Bengal Presidency is of course natural; but it has never been the object of the publishers to make the paper the organ of the profession in any one section of India (whether political or geographical) *par excellence*. Were the want of contributions from the sister Presidencies caused by the existence of similar papers in Madras and Bombay, it would be a subject of congratulation to all who are interested in the welfare of medical science. But this is not yet, neither are there, so far as we know, any grounds for hoping that it soon will be, the case; and until it is, until each Presidency can boast a monthly medical paper of its own, we hope that our pages will be made to show that this paper is not the *Bengal*, but, as it professes to be, the INDIAN *Medical Gazette*.

DISTRIBUTION OF PRIZES AT THE MEDICAL COLLEGE.

THE annual distribution of prizes at the Medical College of Bengal took place on the 23rd of April last, Sir Richard Temple, a fit representative of Anglo-Saxon energy and progress, occupying the chair. We confess that we do not envy those who can look on such a scene without emotion. Year after year the thrilling tale is told. Year after year the benevolent scheme expands, the project of the wise nobleman, who gave to India the liberal medical education which she now enjoys: who took the first step in providing a class of [illegible] native medical men, to whom the country [illegible] [illegible] the instruction of the humble, though most useful, practitioners in their own vernacular tongues. [illegible] the [illegible] of [illegible] Lord William Bentinck blessed. Could he now look upon these yearly [illegible] of his creation, could David Hare see the fruits of his labours, would they not gaze with admiring wonder upon what the devoted energy of a few [illegible] men has accomplished, while their hearts would be raised up in gratitude [illegible] to Him who has given [illegible] the increase?

Another day, which comes once a year to mark the educational industry of England's sons, on which [illegible] welcome intelligence that the State machinery, which [illegible] [illegible] sowing the seed of sound medical knowledge, is as active and efficient as ever, and which testifies to an increasing love, among the rising generations of the East, for the noblest occupation that can engage the mind of man; another day is added to those glorious anniversaries, when it is the privilege of our rulers to point with pride to what England is doing for India. It is in her *medical* colleges and schools that England is founding the bond of union between herself and her conquered subjects. It is through the alumni of these colleges and schools, who are being annually sent to take charge of dispensaries in remote regions, that this bond is being cemented.

England looks to her sons, who occupy professional chairs at these institutions, faithfully to discharge their trust. And the page of history tells us how well those, who have already taken their part in the great work, have fulfilled their country's expectations. These have passed away, but only to give room to other workers, who, animated by the same lofty spirit, and with *excelsior* for their motto, are "striving on, striving ever," to add to its perfection. We have had our Allan Webbs, our Mouats, our Martins, our O'Shaughnessys, our Jacksons, our Macphersons, and our Goodeves, &c., and as Sir Richard Temple told the assembly, "we have now our Fayrers, our Chevers, our Macnamaras our Charles, and a host of others." With such men at the helm, the good ship, which was launched three and thirty years ago, and whose progress was signalized last Thursday week, however much she may be occasionally endangered, compelled to sail close to the wind when it is adverse, or unhesitatingly to luff when it blows very hard, the good ship will never put back, nor pause in her career, but will eventually reach her destined haven, laden with the fruits of her journey, and ready then to yield to others the management of the course, on which she has been so successful a pioneer. The time is approaching when the entire education of the masses may safely be entrusted to the graduates, who have been taught at the Medical College.

Progress, vital progress, is stamped on every page of the Principal's (Dr. Chevers') able and interesting Report. There is one point, however, on which we venture to express a difference of opinion, *viz.*, the proposition to supply the vernacular classes with translations of European works,—to serve as manuals. We cannot help thinking that this would be a *retrograde measure*. With all the arguments adduced in favour of manuals we cordially agree; but to mere translations we must decidedly object. There are indeed some subjects which are common to all countries, which are not affected by heat and cold, and a knowledge of which may be conveyed unaltered as well in one language as another. Chemistry, for example, is a subject of this kind, but the practice of medicine, on the other hand, varies materially in each part of the world, and is very considerably influenced by climate. [illegible] diseases of India, *par excellence*, [illegible] are comparatively unknown in Europe, whilst [illegible] which have but a slender footing there, are [illegible]. The [illegible] of *correspondence* [illegible] the French [illegible] translation of an English work [illegible] to the mind of the native student, [illegible] which pass in review [illegible] He would fail to *realize* the diseases as he sees [illegible] Indian hospitals. It may be urged [illegible] [illegible] Bengali words [illegible]

[illegible] much labour, that [illegible] would [illegible] undertaken. [illegible] taking this [illegible] ground of argument, the saving would [illegible] of the [illegible]. But we would take higher ground. The [illegible] of all education everywhere is to develop thought. No course of instruction [illegible] Europe and schools is complete without mathematics, by which it is intended that students should learn to reason. Experience has taught us that the natives of India are capable of reasoning most accurately, and that they are frequently most original thinkers. Why then should we not avail ourselves of this qualification? Why not make use of the accomplishment which our educated Sub-Assistant Surgeons possess? To men, who compose courses of lectures, it would be no difficulty to compose a manual; and we maintain that a manual on the "Principles and Practice of Medicine" carefully composed by either a native teacher of that subject, or any well-informed graduate of the University who had kept himself *au courant* with the medical literature of the day, would be a far more valuable guide to the young native doctors, who at present leave our medical institutions without anything beyond the notes of their lectures, than the best translation of the best English book on the same subject. We confess to cherishing the hope that the day is not far distant when original manuals for our vernacular classes will issue from the press, worthy, in their way, to take rank with the manuals which are now common to our schools at home. Encouragement only is required. If this be offered, we have every reason to believe that there are those who will step forward and commence the undertaking. If we are not mistaken, a native graduate is, at this moment, engaged in preparing a vernacular treatise on the practice of medicine.

We have said that we believe the scheme of translations to be a backward movement. If it be thought desirable to give original manuals to the English class students, treatises on the several subjects of their educational course, which are intended to supersede the necessity of the young men burdening themselves with so many expensive monographs,—surely, if European professors can undertake to do this, as Dr. Charles Macnamara in Bengal, and Dr. G. Smith in Madras have done, and as others propose doing, it is not too much to expect the same from young graduates of Calcutta. The translation scheme [illegible] many years ago, both here and in Bombay, [illegible] proved to be a [illegible]. We trust [illegible] will be [illegible] the [illegible] treatises, before [illegible] is taken with a view to [illegible] the translation [illegible] works. Dr. [illegible] Madras Times [illegible] Review [illegible]. We [illegible] the [illegible] reports [illegible] have [illegible] climate like [illegible] great [illegible] of life [illegible] read [illegible] not [illegible] without [illegible].

(*To be continued.*)

GOOD SERVICE PENSIONS.

[illegible] Gazette of [illegible] April [illegible], the gratifying [illegible] the [illegible] administration of the Indian Government. Her Majesty has been pleased to [illegible] good service pension on Deputy Inspector-General of Hospitals John Campbell Brown, C.B., Bengal Medical Establishment. Dr. Brown is a worthy successor to the receipt of this pension, to Major General [illegible] of the Bengal Artillery, who will now enjoy the more coveted pecuniary reward of a long Military career—the Colonel's allowance or off-reckonings.

Agreeably to instructions contained in the despatch from the Secretary of State for India, the Military services of Dr. Brown have been duly specified in the *Gazette*. We congratulate our friend [illegible] upon the proud distinction thus accorded to him. His services [illegible] date from the Afghan campaign, in 1840, to the siege and capture of Lucknow in 1857, and well does he deserve this crowning mark of his sovereign's favor. He has for several years enjoyed the proud position of Honorary Surgeon to Her Majesty. He now receives, at her hands, a more substantial recognition of his services. We believe that an opinion obtains, in the profession, that this pension will be withdrawn, under any circumstances, on the recipient's retirement from the service; but this is an error. It is distinctly laid down, in the despatch referred to in the *Gazette* under notice, that "ordinarily the good service pension will be conferred upon officers of the effective list, *but officers who may have been placed on half-pay*, or who may *have retired** from the service on *full or half-pay* pension, *will also be considered eligible for them*"; and, in illustration of this, we would observe that there are several Medical Officers, of Her Majesty's British Forces, who were admitted to the receipt of the pension long after they had left the service. Whether a Medical Officer, who, as in the case of Dr. Brown, receives a good service pension whilst still on the effective list, would be compelled to give it up on retirement* *on the ground of his then becoming entitled to the highest rate of ordinary Government pension*, was a question which it was apparently deemed necessary to refer home for orders. Upon this reference the Secretary of State for India decided that, if a Medical Officer is entitled on retirement to the highest scale of pension from Government, or to the pension of an Inspector-General or Deputy Inspector-General of Hospitals under the new rules, enjoying, in each case, an income approaching the Colonel's allowance,—that then the good service pension must be relinquished. Dr. Brown's enjoyment, therefore, of his new honours ceases with his retirement.

MEDICAL SOCIETIES.

We beg to draw the attention of our readers to the very admirable opening address delivered by Dr. Chuckerbutty, when resigning the Chair, on the 10th March last, at the annual meeting of the Bengal Branch of the British Medical Association. Dr. Chuckerbutty ably pointed out the utility of such an Association, what opportunities of usefulness were brought [illegible], and how much not only the profession, but society generally, benefited by its operations. "Had such an association existed in the dawn of our profession, it is probable that we [illegible] should have had many more facts than we have, and far less conjecture." Dr. Chuckerbutty truly added that "if any substantial progress is to be made by these associations, they must be carefully nurtured and supported." And why, we venture to enquire, [illegible] society not more nurtured and supported than

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* The italics are ours.—Ed., *I. M. G.*

it is? It is not a mere friendly gathering at the dinner table, where professional discussion degenerates, when the cloth is removed, into a *post-prandial* desultory conversation of perhaps an hour's length, but the scene of real intellectual toil, where the faculties are brought unclouded into the arena of enquiry, and where the leading professional questions of the day are investigated with the zest of genuine students; where men meet, honestly solicitous to promote true scientific and philosophical research, and to raise the profession above the condition of mere drudgery,—a level to which the practice of quacks and charlatans tends to reduce it. It is the privilege of such associations to endeavour to raise the *tone* of the medical profession above that standard at which unhappily *the world* is too apt to estimate it. As a General is measured by the result of a great battle, so is a Doctor by that of his draught or his pill. But whilst the former gets credit in society for other than mere military accomplishments, it is very questionable whether the latter does so for anything beyond his physic! We believe that quackery is, to a great extent, the cause of this. There is no profession in which the pretender is so likely to thrive as in ours. Send, cries suffering Dives, send for "the Doctor"—a generic name, including many types, ranging from Hippocrates to Hahnemann. And the pretentious quack is often preferred by Dives to the skilled physician. It was necessary for that prince of charlatans, St. John Long, to kill more than one patient before the world every dreamed of his being a quack, and even then his popularity was not perceptibly lessened. When called to account for his successive murders, (for in truth they were nothing less,) he published a volume proclaiming himself a martyr in the cause of humanity! A monument, bearing an inscription testifying to his worth, was raised to the scoundrel's memory; and it is said that, even yet, there are to be found, in English society, intellectual women whose eyes become bright with tears at the very mention of his name. But then St. Long was endowed by nature with easy ingratiating manners and a persuasive tongue, an imposing carriage, and a musical voice; with personal advantages, in short, which too frequently constitute the principal stock-in-trade upon which their fortunate possessor depends, for advancing himself in the great race of life, whilst his far abler, but less graceful, compeers, who started with him, are left behind. The wealth of some of these fascinating sharks testifies to the readiness with which their pills and potions—the panacea for every human ill—are swallowed by a gullible, because uninformed, public. Of what avail are Medical Councils and "prosecutions under the Act?" Quacks find their way to the front so long as the public encourages them. And these men, with the unthinking masses, give a stamp to the profession Unhappily, too, the public have some grounds for refusing to give to the profession that status to which, were it composed only of those who ought to be allowed to enter its ranks, it should be entitled. A liberal education is not sufficiently insisted upon. A butcher once said to a London Surgeon.—"*My* father was a journeyman butcher, *I have* been a master butcher, and now I wish *my son* to be a gentleman butcher." We knew a medical practitioner who did not at all mind informing society that his father was a "atter!" Now we have not the slightest objection to the sons of "men of low degree" being admitted into our profession, but we do insist that the sons themselves shall be, not only professionally, but liberaily, well educated, and that they shall have some notion of the laws of good society. We do not require that the sons of Æsculapius should study in the school of Lord Chesterfield, (where, according to Dr. Johnson, they would acquire the manner of a dancing master, and the morals of a ——————) but in the practice of so noble a calling as ours, the paramount aim of which is to alleviate human suffering, it is of the utmost importance that its professors should be, in the truest meaning of the term, *gentlemen*.

But we are deviating somewhat from our subject. The society, whose claims to professional support were so ably advocated by Dr Chuckerbutty, is striving, whilst it informs the profession, to educate the public. Its task is only begun; and, so far as it has gone, it has done well, but help is urgently needed. Will not more of the several hundred medical officers scattered throughout India assist in the good cause? We beg to assure our friends that their labours will not be thrown away. The humblest acolyte in the temple of science, the youngest Sub-Assistant Surgeon toiling in one of the remotest outposts of India, may find his exploits or his investigations chronicled when and where he least expects them. The Bengal Branch of the British Medical Association has found a fitting place amongst the societies at home. Its operations are watched with solicitude by the parent whose name it bears. The honey which it collects is being indented upon by the working bees of the professional hive in England and on the Continent. In happy accord with the authorities of the Medical College Museum, it is a pathological and clinical society combined. All contributors may depend upon their contributions finding, as before stated, their appropriate corner in the Museum, whilst a brief history of all the cases is chronicled in the catalogue, an abstract of the most important of each being, moreover, from time to time, recorded in the *Gazette*. It is a matter of deep regret that the society is so little supported by the native practitioners of Calcutta. We were greatly in hopes that the *entente cordiale*, which it was expected would exist between different classes, would have grown with the growth of the association, and that thus the intentions of its founder would have been abundantly fulfilled. And we will still cherish the hope that our native friends will see the importance of rendering their aid in what should be a joint endeavour of the whole profession.

We cordially endorse all that Dr. Chuckerbutty has said on the subject of vernacular medical education. It is through this that the masses will be reached; but a higher kind of education will always be required. The Sub-Assistant Surgeon must still be created, and these undoubtedly are the men to whom India must look eventually for the education of her "country doctors." We should therefore, on this account also, like to see them taking a more active part in medical societies, joining their European *confrères* in the society which is now working, and creating others, themselves taking the lead, for the diffusion of practical knowledge amongst those who are sent forth to take the place of the kobirajes and hakeems of Bengal. And, under European and Native guidance combined, we cannot but believe that,—with increased activity in working out the hidden treasures of Eastern pathology and therapeuties, and in the encouragement of closer professional union among themselves, by the establishment of these institutions in "correspondence with the learned bodies of Europe and America"—the profession in India might readily achieve a degree of appreciation and influence which would render them the most fortunate

[illegible]

SYPHILIZATION.

[illegible] than cures [illegible]

[illegible] settled. Syphi- [illegible] of arriving at a [illegible] had been proved [illegible] measure, as its [illegible] would have [illegible] might have proved a boon, [illegible] However, the European [illegible] and it remains [illegible] the opinions upon which the [illegible]

In 1865 [illegible] patients in the Lock Hospital in London were, by permission of the governors, placed at the [illegible] of Dr. Boeck, of Christiania, with a view to his demonstrating to the profession in England the value of syphilization as a remedial agent, in the cure of constitutional syphilis. The result of Dr. Boeck's operations was reported by Messrs. J. R. Lane and Geo. G. Gascoyen, and this, together with a [illegible] of Dr. Boeck's opinion as to the manner in which "the [illegible] the syphilitic disease," was [illegible] by these gentlemen, at a meeting of the "Royal Medical and Chirurgical Society" held in July, 1865. [illegible] of *twenty-seven cases*, in which syphilization was [illegible] after hearing which [illegible] but one voice amongst the whole [illegible] *which would not be recommended* [illegible] Several members [illegible] their opinions [illegible] the treatment. Amongst them were Mr. Walton, [illegible] Dr. Murchison, Mr. Barwell, and Dr. [illegible] Mr. [illegible] that [illegible] *syphilization of* [illegible] Mr. G. [illegible]

[illegible]

Whilst [illegible] the [illegible] Professor (Dr. [illegible] this method [illegible] and being [illegible] advantages [illegible] being [illegible] the disease [illegible] England [illegible] the Governor General [illegible] of medical [illegible] Committee with instructions [illegible]

[illegible] is [illegible] though only [illegible] congratulating the Government upon the great good which is now likely to accrue from the introduction of so wise a measure. It is [illegible] to say that, even at home [illegible] the course of a very few years [illegible] in another [illegible], the law, which is now [illegible] tentative, will be one, in [illegible] of mistaken moralists, the [illegible] of even Christian England.

CAMPBELLPORE.

[illegible] Surgeon D. [illegible] very [illegible] written [illegible] He had been suffering [illegible] somewhat [illegible] event [illegible] Doctor [illegible] was [illegible] had earned the [illegible] by his genial [illegible] the respect and [illegible] by his gentle- [illegible] to attend to their [illegible] yesterday for [illegible] warmly [illegible] the fortunate [illegible] season at the hills.—*Pioneer*, [illegible] 1868.

[illegible]

Meeting of the Bengal Branch of the British Medical Association.

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The Fifth Annual Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College at 8 P. M. on Tuesday, the 10th March, 1868. Dr. S. G. Chuckerbutty, President, in the chair.

The proceedings of the business meeting held on the 5th February were read and confirmed. An abstract of the cases and papers read at the ordinary monthly meetings during the past year was also read by the Secretary.

Dr Chuckerbutty, in resigning the chair, said:—"It is now my duty to retire from the post of President, and to introduce a successor. In the gentleman whom you have elected you will have an able and energetic officer, who, I feel sure, will infuse a new life into all our operations, and compensate for the shortcomings of the past year.

The year which has just elapsed has not, however, been without results, as will be evident from the proceedings published in the *Indian Medical Gazette.* It is nearly five years since the Bengal Branch of the British Medical Association was established: and it is satisfactory to note that it has proved at least one thing, *i. e.*, that there is no insuperable difficulty to the success of such an Institution. If each member of the profession did his part towards it, there is no institution in the country which offers a greater opportunity for usefulness. Important medical questions concerning pyæmia, osteomyelitis, cholera, small-pox, fever, dysentery, syphilis, drainage, water-supply, hospital construction, the status of the medical profession, &c., which are continually forcing themselves upon the public, can be nowhere else discussed with equal advantage. Had such associations existed from the dawn of our profession, it is probable we should have had now many more valuable facts than we have, and far less confusion. It is only comparatively lately that the value of such associations has been understood, even in Europe and America. In this country they are scarcely yet in their infancy. But if any substantial progress is to be made, they must be carefully nurtured and supported. Considering their vast influence on civilisation, they are deserving of every encouragement. They are calculated not only to advance science, but also to lend important assistance to Government on many occasions. They excite an interest in the pursuit of the profession which would not be otherwise felt, and lead to investigations which would not be otherwise undertaken. That being the case, the wonder is that we have not got more than one such association. In Bengal alone there is room enough for three—an English, a Bengali, and an Urdu, for the three different classes of men educated in the Medical College. Up to the present there has been very little combined labor; and whatever there is, is obtained through the action of the Government Medical Department. That has its value; but it does not give us all that is wanted. In the nature of things, it is impossible that voluminous papers, even if sent in, could be all read in the midst of so many pressing duties, or published at the public expense; and besides there is no opportunity for discussing them, and so much of their value is lost. The combination that results from Medical Associations is far more satisfactory. Every one is allowed to express his opinions, and to publish his views to the world. The debates which follow create a warm interest on the subject, and every member returns from the meetings wiser and more instructed than he came. This, in itself, is a great boon, as it enables us to know each other more thoroughly than we otherwise should, and stirs up sympathies and friendships which would not otherwise exist. It is something to establish mutual goodwill and fellowship among persons who were strangers to each other before. It is something to learn the different views entertained on a subject by contemporaries in the same place. It is something to know the results of their practice. It is something to know their modes of treatment, favorite remedies, and interesting cases of pathology. And it is a great thing for society that the men whom it trusts with the lives and health of its members, are not the mere drudges of a trade, but the earnest promoters of true science and philosophy.

There is much work to be done in the collection of facts, and every new fact made out is a gain to civilization. Whether it relates to the natural history of disease, to the nature and actions of remedies, to pathology during life, to the morbid condition after death, to diagnosis, to new methods of cure, to new drugs, or to preventive medicine, its value is equally important; and there is no better way of promoting such enquiries than through the agency of an organized association. In the short time of its existence, our Association has already contributed something in this respect; and if it has failed to do more, it has shared the common fate of many older and more ambitious societies. We ought to be satisfied if we know only that we are humble workers, doing our part to the extent of our opportunities. We are but the sowers of the seed, the fruit of which will be gathered in due time by some future generation. Somebody must sow; and it is our turn to do it here. At the same time, we cannot do this, and discuss scientific questions, without immensely profiting ourselves. If we are only convinced that our skill and efficiency must be measured by the extent of our knowledge, we shall have achieved one great triumph over routine and the blindness of theory, and we shall have been made sufficiently unselfish to admit that we have all much to learn from each other. It is in this spirit that I would urge our members to review our past operations, and to give us their support for the future. It is not right that where there should be many, a few only should toil and labour. Our number is sufficiently large to do much good if the attendance at our meetings were larger; and our funds are encouraging, if not highly prosperous. In time we may hope to possess a proper location and a library of our own. As our members become more numerous and active, we may also be able to maintain a journal of our proceedings, which shall not be inferior to the one we had to discontinue last year.

As I have referred to the three classes of medical men, let me speak a few words regarding the relation between the Native Medical Profession and the Universities.

In one way the Universities hardly meet the medical wants of the country. As the nation is gradually awaking to the superiority of European medicine, the demand for medical men educated in our colleges is daily on the increase. The number of practitioners passed by the Universities is too small to keep pace with that demand, and their pretensions are too high to allow of their services being generally available to all classes of the community. The Universities aim at securing a high standard of education, and a class of English-speaking practitioners who shall not be inferior in attainments to the graduates in Arts, Law, and Civil Engineering. This is very good, for it secures a high place for the profession, the members of which should act as so many centres of civilization. But the very superiority of the education necessarily limits the admissions to this class, and the vast majority of them belong to the lowest grade, or Licentiates. Indeed it has been a frequent subject of surprise, how few seem to care to aspire to the higher medical degrees, and it has been questioned whether the institution of those degrees was not premature. I believe the proper way to get an answer to these questions is to ascertain the native feeling upon the subject. The difficulties of the examinations have nothing to say to it. There are many native medical practitioners who are competent to pass any examination, but who do not wish to be M. Ds, as they get on very well without any such title. In this country every medical man is called a "doctor," whether he be a surgeon, physician, or apothecary; and no precedence is allowed on the score of academic distinctions. This is the case here even with graduates of the British Universities. Consequently there is neither honor nor remuneration to be gained by the possession of the degree of M. D. In the public service no distinction is made between an M D and an L. M. S., and promotion goes by seniority. In private practice, experience and ability are preferred to rank and high fees, and many a man who has no University degrees, enjoys a popularity second to none. This it is to be hoped, will be remedied in time, but for the present it exercises a great influence upon the minds of many, who very naturally hang back from examinations which can confer on them no apparent advantages.

But the truth is that the growing demands of the country are not for M. Ds or M Bs, but for a large supply of practitioners of a lower class. There seems to be now a universal cry for more medical men, and every one who follows the profession of medicine finds employment enough to support himself with credit. As a necessary result of all this, more and more candidates are entering the profession every year. Our English and Vernacular classes are crowded with students anxious to qualify themselves in every branch of study, and to make themselves useful, not only as physicians and surgeons, but also [illegible] years. It is a [illegible] popularity, the success of which must be very gratifying to all friends of humanity. It brings scientific medicine within the reach of the humblest cottager, [illegible] arrangements for every village [illegible] apart from the institutions [illegible] the work [illegible] degree, [illegible] which I have [illegible] to speak. This is being done, [illegible] by the Universities, as by the Vernacular Medical Schools which have been established in [illegible] many parts of the country [illegible] Calcutta and other provincial [illegible]. It is [illegible] still further development [illegible] suppose that the medical wants of two hundred millions of human beings can be adequately met through the medium of a foreign language. The education should be complete in all its parts, as it is in that way alone that we can demonstrate the superiority of the European over the ancient systems of medicine of this country. For this purpose, surgical and midwifery operations command greater advantages than ordinary therapeutics; for, as they are obvious to the dullest comprehension, so they are also precisely the points in which the *Kobirajes* and *Hakeems* are most deficient. Up to this time the public have met with sad disappointment whenever they have applied to our native doctors for assistance in cases of difficult labor, and thus much discredit has been thrown upon the education of these practitioners. This is a defect which is about to be removed, and which, I trust, will never again occur. The Vernacular Medical Practitioners must, in the natural course of things, form the bulk of the profession, and therefore their professional education should be fully as sound and comprehensive as that of the English-speaking classes, if efficient medical aid is to be provided for all classes of the population. It is immaterial that they are not connected with the Universities. The great point is that they are the men for the people, and, whether in or out of the Government service, their importance to the country can never be exaggerated. Great additions must be made to this class, for taking the whole of our present and possible means of every description, and in all parts of the country, they form but a small portion of the number required, leaving large gaps to be filled up; and the sick sometimes have many miles to travel before they can reach the nearest doctor. There is therefore great room for improvement, and no time should be lost in securing a sufficient number of men. They may not be, in the first instance, of the very best description, but there are times when any kind of medical aid is thankfully welcomed. In moments of national exigency, as on the occurrence of war or epidemics, even England is glad to avail herself of the services of apothecaries' assistants and unpassed medical students, although at ordinary times she has a redundancy of qualified medical men. How much greater then is the necessity here of sending forth into the country qualified recruits to fill the ranks of the profession, since, even in times of peace, there is a great scarcity of them; and in seasons of war, famine, or epidemic visitations, which are here of such frequent occurrence, they cannot be improvised at all. (*Vide* Rev. J. Long's letter.)

The function of the Universities is to educate a class of gentlemen who will be the heads of the profession, and make [illegible] servants to the State.

The function of the Vernacular Schools is to create a class of working men for the people who will form the bulk of the medical profession, and occupy ground untouched by the University graduates. At the same time the Universities must exercise a certain influence over the Vernacular practitioners, who will have for their teachers and official superiors the University men.

I should like therefore to see the graduates of the Universities at once take their true position, which they can do by associating with this Association, and forming, under their [illegible] Branch [illegible] Vernacular Medical Societies wherever [illegible] there. This will come to pass some day, and it will be a happy day for India when it does. Meanwhile, every man, who cherishes any interest in the country by birthright or sojourn, has only to put his shoulders to the wheel, [illegible] he can [illegible] for himself, he also does something towards the cause of progress. If this were done, our Association would not be deficient in members, nor powerless for good. But I will detain you no longer on this topic, as time is precious, and there are several valuable papers to be read. So I [illegible] more, [illegible] the chair to my eminent friend, Dr. Norman Chevers, who is already well known to you as a former President."

Dr. Chevers, in assuming the chair, said that he regretted that it was his turn to succeed to so able a President as his friend Dr. Chuckerbutty. He, however, thanked the members heartily for the honor which they had done him in re-electing him to the Presidentship, a post which he had already occupied some years before. As there were many valuable papers to be brought forward, he would not inflict a speech upon the meeting, but would content himself with expressing the pleasure which it afforded him to see so many of the members. He then exhibited two interesting plaster casts, taken from moulds found in Pompeii, of two of the persons who had been overwhelmed by ashes before they could escape, and alluded to similar moulds which had been found at [illegible] and elsewhere.

Dr. Ewart then proceeded to read the address in medicine. The first subject which he discussed was that of scrofula and phthisis in India. Previous to 1840, phthisis had almost escaped notice in this country, owing, among other causes, to the difficulty of obtaining autopsies, the comparative neglect of auscultation, and the liability of the disease to be masked by abdominal affections. It became a recognised doctrine that tuberculous diseases were rarer among the inhabitants of tropical and sub-tropical climates than among those of temperate latitudes, and this was attributed to an idiosyncrasy among the natives of the former; to their open-air life, and the less amount of overcrowding among them; to the use of a large quantity of vegetables in their diet; to the greater activity of their cutaneous secretions, due to the warmth of the climate; and to a supposed antagonism between tuberculosis and malaria. In 1848, however, the late Dr. Allan Webb called attention to the fact that he had observed phthisis among the inhabitants of the lower Himalayas and of Burdwan, and that it had been noticed by Dr. W. A. Green, at Midnapoor and Howrah, in 1844-45, and by Dr. Goodeve, at Cawnpoor, in 1845. In 1854 Dr. J. W. Wilson had called attention to the frequency of "tubercular disease in the East," in the *Indian Annals of Medical Science*. From 1857 to 1867 the records of the Medical College Hospital showed that 454 Hindus and Mussalmans, and 351 Christians, had been admitted for phthisis, and that of these cases 285 and 139 respectively had died. From 1860 to 1867, 729 cases of phthisis had been treated as out-door patients of the same hospital.

There is reason to think that many natives of India, tainted with constitutional scrofula, die early from bowel complaints. Allowing for this source of fallacy, it must, however, be conceded that scrofula and phthisis, though more common than generally suspected, are somewhat rare in India, as compared with colder climates. The comparative rarity, in India, of strumous glandular enlargements or cicatrices was ascribed by Dr. Allan Webb to the greater frequency of bowel complaints, the glands of the intestines becoming the channel for the elimination of the tuberculous material.

Dr. Ewart then proceeded to review the specimens of tubercular disease contained in the College Museum, giving details of sixty preparations which illustrated his views. He said that phthisis and struma, though common enough among Hindus and Mussalmans, and still more so among Eurasians, were still rare in India as compared with Great Britain. His observations on the subject have extended over fourteen years, and had been made upon the Natives of Lower Bengal, Behar, Rajpootana, Marwar, Ahmedabad, and Surat in Western India, and Madras, and upon the aboriginal tribes of the Neilgiris. He had found traces of tuberculous disease, more or less extensive, in the lungs, mesentery, or intestinal follicles, in a very large number of those who died of bowel complaints, although there was nothing, *a priori*, in their history to rouse a suspicion of tuberculosis. Had these patients lived in temperate climates, the tubercular deposit would either have been absorbed or cretified, or would have increased in quantity, while degenerating in quality, and have thus set up fatal mischief in the affected organs. But, in India, the proclivity to bowel complaints favors the death of the patient from those affections before disorganization of the lung has had time to set in; while the coexistence of the tubercular diathesis renders the bowel complaint peculiarly uncontrollable. It was common to see young phthisical subjects, sent from England to India in hopes of checking the pulmonary affection, soon carried off by abdominal disease. Had the latter not intercurred, Dr. Ewart believed that the lung disease would not have been materially arrested. Where the lung disease appears to be postponed by a change from England to India, this is generally only due to the transference of the morbid action to the bowels, leading to frequent attacks of diarrhœa. Dr. Ewart believed that tubercular deposit in the lungs of Europeans were more seldom absorbed or cretified in India than in temperate climates, owing to the deteriorating effects of heat, moisture, malaria, animal food of poor quality, and the difficulty of taking proper exercise during many months of the year. These depressing causes more than counteracted any good effect likely to be derived from a warm climate in the abstract. Dr. Ewart summed up his experience on this subject in the following propositions:—

1st.—Phthisis occurs among all classes in India—imported Europeans, Hindus, Mussalmans, Jews, Armenians, Eurasians, East Indians, and others of mixed parentage.

2nd.—Fully developed phthisis, causing death by disorganization of the lungs and of the intestinal glands, is rarer in India than in Europe.

3rd.—Scrofula, without tubercles in the lungs or elsewhere, but causing fatal diarrhœa or dysentery, is much more frequent than is supposed in India, both among Natives and Europeans, and much more common there than in Europe.

4th.—Tubercular disease of Peyer's patches, or of the solitary glands of the large intestine, causing ulceration and death by asthenia, without any sign of deposit of tubercle in the lungs, is often met with in India.

5th.—Many scrofulous Europeans and Natives die in India from bowel complaints caused by the tubercular diathesis, after tubercle has been developed in the lungs, but before acute phthisical symptoms have appeared.

6th.—Tubercles are often found in the lungs of Natives who have died from cholera, fever, hepatic abscess, dysentery, or diarrhœa.

7th.—The advantage of sending Europeans, with an inherited phthisical diathesis, to India, or to any depressing and relaxing malarious climate, is very problematical.

8th.—The benefits hitherto believed to have been conferred on natives of Great Britain and other temperate climates, in whose lungs tubercle has already been deposited, by transfer to the plains of India, are not supported by modern experience on the spot.

9th.—Where disorganization has already begun in the lungs, even to a small extent, the change from temperate climates to India is positively and obviously injurious.

The next subject which Dr. Ewart brought forward was that of syphilitic "gummatous" tumours of which he exhibited three series of specimens from the College Museum,—one was about the size of a grape, and was found in the right optic thalamus of a Hindu, aged thirty, who had suffered from syphilis, was admitted into hospital with hemiplegia of the left side, and ultimately died comatose. The second case had occurred in the General Hospital under Dr Vans Best. The patient had suffered four years before from syphilis, for which he had salivated himself sixteen times. He was admitted into the General Hospital with chronic ulceration of the larynx, and died "from depression and failure of the heart's action," not from apnœa. In addition to extensive ulceration of the larynx, a gummatous tumour, as large as half a hen's egg, was found in front of the bodies of the second and third cervical vertebræ, springing apparently from the anterior common ligament. A similar tumour was attached to the inner face of some of the lower costal cartilages. In the third case a gummatous tumour, as large as a hazel-nut, was found in the left lung of a patient who died of pelvic cellulitis. The College Museum also contains a heart, in the right ventricle of which are two syphilitic gummata,—one about the size of a grape, the other as large as a hazel-nut. There is also contraction of the mitral orifice, and an aneurism of the left ventricle.

Lastly, Dr. Ewart brought forward two specimens of diphtheria which occurred during the past year in the Medical College Hospital, the subject of one being a child, that of the other a man of thirty-three. In both death supervened from asthenia, occasioned by the overwhelming influence of the poison, and not from the mechanical impediment to breathing.

(To be continued.)

THE Government of Madras has authorized the payment of the sum of Rs. 15,075 to the Registrar of the Madras University, being the amount of remuneration assigned to the Examiners in the Matriculation and First Arts Examinations in December, 1867, and the Bachelor of Arts and Bachelor of Law Examinations in February, 1868, in that Presidency.—*Madras Standard, April*, 1868.

Reviews.

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The Calcutta Journal of Medicine: Edited by MOHENDRO LALL SIRCAR, M. D.

IT has been said, and we fear with truth, that, as a rule, a Bengalee does not work after he leaves school. Under the influence of the stimulus of prizes, of University honors, or of a lucrative appointment, he labors with a zeal and a success which has created considerable astonishment in our Western Seminaries of learning; but the object of his industry once gained, he is too apt to degenerate and become lazy. There are, indeed, some honorable exceptions, and we could point to more than one notable instance where the national intellect is being vindicated from this reproach. Work, persistent work, with patient enquiry, and a careful uncolored chronicle of observed facts, will lead, in whatever line of study these are brought to bear, whether by Native or European, to useful if not to brilliant results. Hence, although we may decline to agree with him in the principles of his creed, we cannot but commend the spirit and perseverance which have induced Dr. Mohendro Loll Sircar, single-handed, to start a "Journal of Medicine" in Calcutta, a periodical in which, although the "*similia similibus curantur*" law, and the infinitesimal posology of Hahnemann will be recognized as the most advanced points yet reached in the domain of Therapeutics (in the utterance of which sentiments Dr. Sircar enunciates his disbelief in all that he was taught at his *alma mater*), still, as his professed "object is simply and solely the advancement of Medical Science, and the diffusion of sound knowledge of the laws and conditions of health," we will cherish the hope that our author will grow wiser as he penetrates deeper, and that we may yet be enabled to welcome him back to the ranks which he has, temporarily only let us hope, and not irrevocably, deserted.

But Dr. Sircar's Journal is not devoted, exclusively, to the discussion of homœopathic questions. It deals with the "principles of hospital construction," and advances original and suggestive opinions on what should be done with the Medical College Hospital; it places before the public the experiences of intelligent Native gentlemen with regard to malarious fevers occurring in their districts; it glances at the Medico-Political questions of the day;—the efforts made by Sub-Assistant Surgeons to secure for themselves an improved official and financial position in society; the appointments of Sanitary Inspectors General and their value; the reformation of jails, and the establishment of an aide-memoire for India; and last, not least, it proposes to "publish, in *deva-nagri* character, the most approved Hindoo works on medicine, with translations of them into English." This last proposition, if successfully carried out, will supply a great want. So much of these writings is to be met with only in manuscript, that they are as a sealed book. A good English translation, such as an educated *Bengalee* Sub-Assistant Surgeon could furnish, would be invaluable to pure *savants* as well as to professional men; and we doubt not that, if Dr. Sircar will apply in the proper quarter, he will meet with the assistance which he solicits in the purchase of "good old reliable manuscripts." In closing this brief notice of Dr. Mohendro Loll Sircar's Journal, we confess we should wish to see it prosper in exact proportion as it keeps within the limits of rational medicine, and if its author wishes his bantling to be more generally fostered by the public, we think he would do well to make its contents more general, and to curtail the extent of its homœopathic disquisitions. Dr. Sircar will pardon us for these remarks. We make them in no spirit of bigotry, but from regard for a former pupil of the Medical College—for one who has attained so high a position amongst the *alumni* of that noble institution, and whom we earnestly desire to see diffusing the blessings of orthodox European medicine throughout India.

"THE GREAT SULPHUR CURE."

On the Application of Sulphurous Acid, gaseous and liquid, to the prevention, limitation, and cure of disease. By JAMES DEWAR, M. D., KIRKCALDY. 7th Edition. Edinburgh: Edmonston and Douglas. 1868.

The great sulphur cure brought to the test and working of the new curative machine proposed for human lungs and windpipes. By ROBERT FAIRMAN, Surgeon, Biggar. [illegible] Edition. Edinburgh. Edmonston and Douglas.

The [illegible] treatment [illegible] fumes [illegible] [illegible] [illegible] [illegible] seen brought [illegible] sufficient reason for reviewing these pamphlets at some length. Dr. Dewar [illegible] his investigations and experiments in 1866, and his method has been given to the world for more than a year, [illegible] of Mr. Pairman's [illegible], that it [illegible] arresting the attention [illegible] world. [illegible] edition of Mr. Pairman's paper was published about the beginning of November last; the [illegible] within [illegible] weeks,—a fact which speaks [illegible] as to the attention which the subject is receiving [illegible]. On all hands we hear of nothing but the sulphurous acid, and the demand for the new fumigating apparatus is so great, that the instrument makers have difficulty in keeping up with it.

The acid is used in three ways: as fumes, as spray or vapour from its aqueous solution, by means of a modification of Richardson's spray-producer, and as a lotion for external use. The [illegible] of its action is simplicity itself. The power of the acid to destroy low organizations, to check vicious fermentation, and [illegible] acids, has long been matter of notoriety outside the profession, as well as within its ranks. By a simple analogical process, Dr. Dewar, believing cattle-plague to be of parasitic origin, was led to attempt its cure by sulphur fumes. The result, as he assures us, exceeded his most sanguine expectations. Byres or cow-sheds previously decimated, became at once healthy; and not only so, not only did fresh cases of the disease cease to appear, but other diseases coming accidentally, as it were, under the influence of the fumes, were greatly benefited. From rinderpest to other zymotic diseases, the transition was easy, the fact being presupposed that, however diverse in outward manifestations, "the grand essential point remains that *[illegible]*." If sulphurous acid can cure the one, it must be able to cure the others. The conclusion is undeniable, if the premises are sound.

Numerous experiments have accordingly been made; and if we are to credit the cases recorded in these papers, (and they bear the impress of truth upon the face of them,) the powers of the acid over disease, either as fumes, or in the form of spray, must be very great. Cases of croup and diphtheria, of common cold and hoarseness, seem to be cured as if by magic; phthisis is benefited, and pneumonia relieved, by a few whiffs from the atomizer; while contagious diseases are prevented from spreading by the neutralization of their noxious elements. But it is not in medical cases only, nor it would appear chiefly, that its uses are to be found. "Between sulphurous acid and pus there seems as great antagonism as between fire and vapour. The acid simply dries it up, and annihilates it." "In burns, chilblains, running ears, excoriated nipples, open sores of every kind, it is invaluable; as a hair wash for scurf it is admirable; as a wash for ulcers, its healing powers are great; as a dressing for recent flesh wounds it is perfectly wonderful altogether." Numerous cases of these, as also an interesting one of ulcerated and bleeding piles, are cited in support of this statement.

Such is a brief epitome of a process and theory, the future results of which will be enormous, or *nil*. Making all due allowance for enthusiasm, which is prone to make the inventors of "a new thing" overrate it, it seems clear that, judging from the cases published, and from the testimony of other observers appended to the pamphlets, there is much that is valuable in the results already attained, and considerable ground for hope that the method may not be found to fail on farther trial. It seems incredible, however, that it can accomplish all that is expected of it. If it does indeed prove "infallible in killing the poison of cattle-plague, pleuro-pneumonia, cholera, diphtheria, nearly all ulcerations of throat and windpipe, fever, asthma, asthmatic bronchitis, croup, perhaps consumption itself," and other diseases by the paragraph, it will go far to "regenerate the world." We begin, like Demetrius, to fear that "our craft is in danger to be set at nought;" and to cry out with Othello that our "occupation's gone." Seriously, however, the plan deserves an extended trial at the hands of the profession. It has been carefully worked out by its exponents. The theory on which it is based is at once simple, logical, and consistent. If true, the benefit which it will confer on mankind is incalculable. If false, the sooner the bubble is broken, and the delusion dispelled, the better.

Both pamphlets are most interesting, and we beg to recommend them to our readers. Of their literary merits, it were [illegible]. Dr. Dewar leaves little to be desired, and Mr. Pairman, [illegible] has somewhat quackish title-page, and [illegible] success, as intended "to make [illegible] read." It has answered [illegible] speaks well [illegible] as a painstaking and energetic worker.

The doctrine expressed in these papers—though in them given to the world as a complete whole traced to its fullest consequences for the first time—is not a new one, and we have had abundant evidence of it in practice, if not in theory, from the very earliest times. Ulysses, Sir Lyon Playfair tells us, used the fumes of sulphur to purify his house after the slaughter of Penelope's suitors. The Arabian physicians, Celsus tells us, gave sulphur extensively in phthisis, as did Galen, Sennertus, and others; and Lord Bacon bears testimony to its use in lung diseases in his time. How they gave it is uncertain; probably as an electuary. Its use in the treatment of consumption has just been reintroduced into America by Dr. Churchill, who claims for the [illegible] sulphites a peculiar control over the deposition of tubercle. The use of sulphur fumes in the way now recommended is certainly as old as the time of Celsus. "[illegible] vulva exulceratae [illegible]"* he says, a parallel case this to [illegible] [illegible] sulphur suffumigari debet;" and from his day downward we find sulphur constantly recommended in the treatment of disease. Quite lately the *modus operandi*, and general principles of the cure, have been to a great extent worked out by various independent observers. A few years ago Professor Polli, of Milan, enunciated the principle with great distinctness, substituting the sulphites for sulphurous acid itself, because of an objection by Claude Bernard that the latter, while destroying and nullifying the zymotic poison, would destroy and disorganize the blood also. Following him, and made in consequence of his experiments, Drs. de Ricci, of Dublin, and Pardon, of Belfast, pursued the subject, and with favourable results. In the late fever epidemic in the Mauritius, several observers seem to have found the sulphites of great use; and an interesting article in the *[illegible] Medical [illegible]* for October last informs us that Dr. [illegible] of Jamaica has found them very successful in the treatment of yellow fever. It does not appear that either Dr. Dewar or Mr. Pairman was at first aware of these experiments, and the former is certainly entitled to the credit of having worked out the subject independently and alone. Still it is well that the profession should recognize and remember the other workers, and that if the world is to be regenerated, they should share, and share alike, in the honor and glory of the discovery.

We now leave the question to the profession. The mere fact that so many distinct persons have directed attention to the plan would seem to indicate that whatever pretensions are put forward as to its value, must have at least some foundation in truth, although, *per contra*, the numerous occasions on which sulphur is recommended by the old writers appear to make against it, as it is not probable that such acute observers, as many of them were, should have repeatedly used the remedy without clearly recognising its great powers, if such they be. The question has still to be decided, and we trust some of our Indian Surgeons will avail themselves of their vast opportunities to test thoroughly the usefulness or otherwise of the plan, and let us know whether it is to be hailed as the greatest blessing of the age, or consigned to the limbo of forgotten quackeries.†

AUTHORITY having been received from the Supreme Government for the commencement of a new University building in Madras, the local Government wish that this work be taken in

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* De Medicina, lib. iv, Section xx.

† We should have been glad to chronicle the results of the reviewer's own experience in the application of this sulphurous acid, and we shall cherish the hope that he will take the hint, and, as opportunity offers, put the reputed virtues of this panacea (?) to the test. We would take this opportunity of suggesting to the profession the advisability of using sulphur for purposes of fumigation under circumstances where thorough cleansing and purification are required. Nothing, in our experience, answers the purpose better than a mixture of sulphur and nitre in small earthen chatties. An occasional conflagration, say twice a week, in the wards of such hospitals, (having first emptied them of the sick,) during the prevalence of cholera, will probably diminish the number of cases occurring in those buildings. The suggestion is not new, but we are apt to lose sight of [illegible].—ED., *I. M. G.*

hand without delay. The Syndicate of the University have been accordingly requested to place themselves in communication with Mr Chisholm, with a view to the preparation of a new plan conformable to the requirements of the University, and adapted to the position which the building is destined to occupy.—*Ibid.*

The question of raising the salaries, and of improving the position of the native doctors, dispensers, and other hospital assistants, appears to have now attracted the attention of the Government of India, and the Government of Bombay has made some observations on this important subject. Of all classes of public servants, this is the most poorly paid. With a view to induce young men of position and of sufficient intelligence to enter this department, the Bombay Government thinks it necessary that the condition of this class of servants should be at once improved, and their salaries augmented. The salary of the native doctors in the Civil Department ranges from Rs 15 to 20 and Rs. 30 to 40 a month when in independent charge of a dispensary In Bengal the pay of the ex-students of the Bengali class of the Medical College, who are also designated native doctors, commences at Rs. 20 a month. The salary of the native dispensers or compounders ranges from Rs 9 to 15 a month. This scale appears to have been fixed some thirty or forty years ago, and since then no revision in the salaries or improvement in the condition of those officials has been made.—*Pioneer, 15th April*, 1868.

Short Notices of Recent Books,

Review of the History of Medicine. By **Thomas A. Wise**, M.D., late Bengal Medical Service. London : Churchill. 1868

The author of these two volumes has undertaken an enormous task ; and if he has failed to accomplish the end in view successfully, it is rather because of the vast extent of his subject, than from any want of energy or industry on his part. He has attempted to treat of the history of the art of healing from the most ancient period up to the present century, and our readers need not be told that such an undertaking would involve more than the lifetime of a single individual. In the work before us, which has been printed in Cork, and whose type and paper are of most inferior quality, Dr. Wise treats of the history of medical science under five separate periods. These, too, are arranged not according to chronological sequence, but rather in their order of progress from the purely empirical to the rational method. We cannot but think that such a scheme possesses many disadvantages, but we, nevertheless, will lay the author's classification before our readers. They are as follows :—(1) The primitive oriental period, in which the efforts of the Aryan race are recorded (2) The ancient period, in which the second or western branch of the Aryan race cultivated the *ars medendi*. This period embraces the account of the Greek and Roman systems of medicine, and extends from the time of Thales and Pythagoras to the time of Sextus Empiricus, or towards the end of the second century. (3) The transition period. In this we find a sketch of the Egyptian and Jewish systems and of the decline of learning in Europe. (4) The restoration period, when learning began again to flourish in Europe, and the study of medicine was revived. At this date the sciences began to be studied by the ancient monks, and attention was given to the Arab translations of the classical writers. Finally (5), the philosophical period. This extends from the revival of literature and medicine in Europe, in the fifteenth, to the beginning of the nineteenth century. This is perhaps, of all the epochs, the most interesting to the student, since it was at this date that medicine travelled from the limits of rude empiricism, and assumed its foundation on the solid basis of anatomy and physiology. In dealing with the subject in each of these phases, our author is most interesting and introductive, and culls extracts from writers of all kinds. His strongest point, however, is evidently his acquaintance with Indian manuscripts, from which he frequently quotes. The testimony advanced from these sources is most attractive to the uninitiated ; but it remains to be seen whether, in some instances, the author's statements are not open to serious question. However, the Indian student will find Dr. Wise's pages full to overflowing of ancient Hindoo and Brahmin lore ; and though he will not learn much of the influences which operated in placing medicine in its present position, he cannot fail to profit by taking up the "History of Medicine" and scanning its pages.

The Stone Age by Sven Nilsson. Edited by **Sir John Lubbock**. London : Longmans. 1868.

Although this work is not properly related to medicine, it is on a subject in which so many of our readers must be interested, that we desire to bring it under their notice. It is really a double work, since it contains, in addition to the text of the author, an "introduction" by Sir John Lubbock, which embraces an epitomé of the modern views of geologists as to man's age in the world. The introduction shows us that, from the first appearance of man in the globe up to the era of Christianity, four distinct races of human beings have peopled Europe, there being, *first*, the men of the first Stone Age ; *second*, those of the second Stone Age ; *third*, those of the Bronze Age ; and *fourth*, those of the Iron Age. In the first, man was ignorant of the metals, and constructed weapons of unpolished stone. In the second he employed weapons of polished stone. In the third he used implements of bronze, and in the fourth he became conversant with the valuable properties of iron. Sir John describes each of these races, and gives a terse and lucid résumé of the evidence, geological and otherwise, on which the belief of our best archæologists is founded. Professor Nilsson's portion of the work constitutes the greater bulk of the volume, and is accompanied by numerous well-executed illustrations. The author takes up the men of the Stone Age in Sweden, and having described the rules they have left us of their habitations and industry, he compares these with the productions of savage races of the present day ; and he traces the traditions of the Sagas and Scalds back to the period of the "men of Stone." His conclusion is that, originally, Sweden was inhabited by a race which, in habits and craniological characters, were identical with the present Esquimaux : a conclusion now maintained by many excellent geologists who have investigated the relics of the French and Flemish bone-caverns.

On Chloroform. By **Charles Kidd**, M.D., &c. London : Renshaw. 1868.

Dr. Kidd is well known as an amusing and somewhat enthusiastic advocate of chloroform, and in the book now published, (an enlargement of a former treatise,) he has placed together all the conceivable arguments in support of the use of this anæsthetic. The work is divided into ten chapters, of which the following are the principal contents :—(1) The history of anæsthetics. (2) Æther, the earliest of modern anæsthetics. (3) Value of etherisation in lessening shock. (4) On some analogous hydro-carbons. (5) The discovery of chloroform. (6) The four stages of chloroform anæsthesia, and the operations adapted to each. (7) The contra-indications to the use of chloroform. (8) Local anæsthetics, and their benefit. (9) Use of anæsthetics in child-birth. (10) Fatal results of anæsthetics. We must do Dr. Kidd the justice to say that he certainly proves his case. We would indeed add that he over-proves it, and by the excessive zeal which he displays, and the tendency to special pleading which he evinces, may cause those who are themselves ignorant of the fact to look on his opinions with considerable suspicion. There is, too, a violence of style and a somewhat confusing mode of expression throughout the pages of the work, which are not creditable to the author. The condemnation of Richardson's method of local anæsthesia by the cold of ether spray is, as regards temperate climates, absolutely without foundation.

Vaccination impartially reviewed. By **F. E. Jencken**, M.D. London : Churchill. 1868.

The title of this brochure is one fairly and honestly given, since the author reviews, in a most straightforward and unprejudiced fashion, the arguments in favor of, and opposed to, vaccination. The question resolves itself into two, *viz.*, *first*, the actual value of vaccination as a prevention of small-pox, and the period through which the operation retains its beneficial influence ; and *second*, the dangers of vaccination from the possible introduction of other matters into the organism. So far as we can see, the evidence adduced and discussed by Dr. Jencken leads to the conclusion that vaccination is unquestionably a prevention. In regard to the period, he contends that, in average cases, the efficacy of the vaccine matter extends over from seven to twenty-one years ; but where the operation has been performed on both arms, and has produced four or five pustules, it may be regarded as a safeguard for life. Concerning

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English Correspondence.

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FROM OUR [illegible] CORRESPONDENT.

[illegible] 1868.

[illegible]

whatever to prove it. Take, for instance, the case of an abscess of the liver. Where did the germs come from to produce it? He considered all these changes in the animal body to be changes of oxidation, and that they required only oxygen and certain conditions of heat and moisture for their production. The same might be said of the purely mineral elements. These cannot be caused to combine with oxygen, except under certain conditions of temperature and moisture; but it would be equally fair, and equally absurd, to say that phosphorus was oxidised through the influence of *bacteria* or *vibriones*. Mr. Adams's paper has appeared in the two last numbers of the *Medical Times*.

Dr Jenner has been made a Baronet, and every one will admit that the honor has not fallen on unworthy shoulders. Sir W. Jenner is equally beloved as a man and respected as a physician, and I believe he is the youngest Medical Baronet on record. It is reported that the purple fever or cerebro-spinal meningitis is again making its appearance in Dublin, and is extending its ravages. This remarkable affection has, till lately, been very little understood, and on this account the able article which Mr. J. N. Radcliffe has written upon it, in the just-published second Vol. of "Reynolds' System of Medicine," is worthy the attention of those who wish to form an opinion on the point.

The "Sick Club question" is now attracting a good deal of notice in Birmingham and Manchester, and I should not be surprised if the movement just begun in these two "radical" towns would lead to a serious revolution in the system of medical remuneration. Some of our profession think that it is as absurd to expect a physician to give up his time gratuitously to the duties of an hospital, as to ask a lawyer to refuse a fee for a brief, or a rector to forego his annual income. But whether this view be correct or not, it is at all events a glaring evil that the privileges of the Sick Club should be abused by the admission of members who are in such comfortable circumstances that they can well afford to pay their own doctor, because it thus our poorer brethren in the country districts lose many valuable patients, and have to attend some thousands of people at a smaller remuneration than 2s. per head. What would become of London physicians if rich and poor alike crowded into the hospitals? And this is quite an analogous case.

Dr. Octavius Sturges has been appointed Assistant Physician to Westminster Hospital. He had a hard tussle with his opponent, Dr. Macauly.

Dr. Markham, in addition to the Poor Law Inspectorship, has been appointed Medical Adviser for the Metropolis to the Poor Law Board. I believe the post is a recently established one, and I am not quite sure that it is not a sinecure.

Sir Duncan Gibb does not seem to be very secure in his tenure of the Baronetcy. Indeed "Debrett" will not recognize him, and refuses to give him an insertion in his list. The question, however, is not yet settled.

The fusion of the two medical schools at Birmingham—the Queen's and Sydenham Colleges—has taken place, and there is some probability of the union being a successful one. At present, however, it would seem as if the staff of professors had the advantage, in point of numbers at least, over the students. The Catholic University in Ireland has not yet received its charter, nor is it likely to receive it as political affairs seem to turn.

The Progress of the Medical and Collateral Sciences.

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The Biliary Coloring Matters and Chlorophyll.—Recent researches with [illegible] have confirmed the opinion of chemists, that the green coloring matter of the bile is closely allied to the green coloring matter of leaves. This subject of the analogy between these two substances has recently been taken up for investigation by Dr. T. L. Phipson, who, in a pamphlet re-printed from the *Quarterly Journal of the Chemical Society*, has recorded the results of numerous experiments. His researches were especially carried out in regard to certain biliary concretions, and they led him to conclude that biliverdin differs from chlorophyll only by the elements of two equivalents of carbonic acid. It is [illegible] remarkable that the yellow coloring matter of leaves in autumn may be converted into a brilliant green by the addition simply of sulphuric acid. The yellow coloring substance of certain biliary concretions may likewise be converted into green by the addition of sulphuric acid, which possibly converts it into biliverdin.

How to preserve Anatomical Specimens.—As many of our readers may be desirous of preserving anatomical or pathological specimens, and may be unacquainted with the excellent process of [illegible] Brunetti, we here give them details of the operation. The specimen has to go through four separate stages, viz., washing, freeing from fat, tanning, and drying. *First*, water is made to traverse the vessels, and afterwards this is driven out with alcohol. *Second*, ether is employed in like manner, and allowed to remain for some time in order completely to remove the fat. *Third*, distilled water is injected into the vessels to expel the ethereous solution of fat, and solution of tannin in boiling distilled water is subsequently injected. *Fourth*, highly heated air, previously dried by being passed through chloride of calcium, is forced through the vessels until complete desiccation is produced. The specimen will now retain its normal characters, and may be exposed to ordinary conditions without fear of change.

Swallowing Needles.—So many different ideas prevail concerning the effects resulting from swallowing needles, that the following somewhat cruel experiment of Professor Zoja, of Pavia, are of importance. The Italian *savant* experimented on [illegible] animals by causing them to swallow needles, and he subsequently, and at various intervals, made *post-mortem* examinations. In some cases two or three, and in others as many as forty, needles, whole or broken, were administered, and with the following results:—(1) Of eighty with sharp points. The points of some were directed towards the mouth, and of others toward the pharynx, but none were retained in the alimentary canal, nor was there produced any disturbance of the system. (2) The animals which were kept alive were found to have evacuated the needles in from four to 150 hours of the date of the experiment. (3) Of the animals killed before the evacuation of the needles, only one had a needle in the small intestine (ileum); in all the others the needles were found in the large intestine. (4) Curiously enough, the pins took longer in being expelled than the needles, and evacuation took place more rapidly when the points were turned toward the pharynx. (5) The needles lost their brightness, but the lustre of the brass pins was improved.

An improved Clinical Thermometer has been devised and manufactured by M. Testre, one of the Parisian instrument makers. Its chief advantages are its strength, its very small size, its minute bore which enables one to estimate the changes of temperature rapidly, and an arrangement by means of which it is easily retained in the axilla, mouth, or rectum, when used to record temperature.

The Vaso-motor Nerves of the Brain.—In a recent number of *Virchow's Archives*, Herr Nothnagel publishes a paper on this subject, in which he points out that the facts originally stated by Séquard, Bernard, and others are in the main perfectly correct. His experiments were conducted on the brains of animals; and as the creatures were not narcotized in any manner they are on that account the more reliable. He especially observed the vessels of the piamater before and after section of the sympathetic nerve, and found that the immediate effect of the section was to produce dilatation of these vessels. On passing a galvanic current through the peripheral portion of the nerve, he caused the calibre of the vessels to diminish. He has indicated also another striking effect, *viz.*, that after section of the sympathetic irritation of the senses causes contraction of the vessels of the *piamater*. This he accounts for by supposing that some of the vaso-motor filaments are supplied by the cranial nerves, which anastomose with the carotid plexus in its course through the carotid canal.

Curious disease of the Hip-joint and its treatment form the subject of an important paper by Herr [illegible] in the [illegible] (No. 44 of 1867). The author gives a long table of cases, and dwells at some length on the remarkable differences, dependent on nutrition, which the affection presents in the rich and poor cases. These distinctions, [illegible] should always be borne in mind by the [illegible]

The Arsenic B[illegible]

The Alkaloid of the Cinchonas [illegible]

The Micro-Spectroscope in Pathology.—Dr. W. B[illegible]

The Methyl Compound of Morphia Strychnia [illegible]

V[illegible] Solutions [illegible]

A[illegible]

Ether Vapour in preservation of Tissues.—M. S[illegible]

The Anatomical Elements.—M. R[illegible]

The constant and interrupted electric current in Paralysis.—[illegible]

The origin of urinary elements has recently received [illegible]

Endosmose, Diffusion and Dialysis.—[illegible]

Action of Curare on Batrachians.—At the Academy of [illegible]

ORIGINAL COMMUNICATIONS.

◆

ON CHOLERA.

BY C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

Definition.—A disease which is capable of being generated at all seasons of the year in certain parts of India, and occasionally over vast tracts of Asia, Europe, and America; it shows a marked predilection for those living under insalutary conditions, or whose health has been impaired from disease, or depression of the nervine force; it is very apt to be developed among new comers to a locality in which the disease prevails. Cholera is generated indiscriminately among persons of both sexes and all ages. It is characterized by nausea, faintness, and a feeling of oppression in the præcordial region, griping pains in the abdomen, frequent purging, (the stools being alkaline when passed, and in appearance resembling rice-water,) constant vomiting, partial or complete suppression of urine, and profuse perspiration. The skin is inelastic, and that of the hands and feet shrivelled and dusky; the eyes are sunk, and the features pinched; cramps are felt in the limbs; there is difficulty of breathing, intense thirst, excessive restlessness, rapid and small pulse, and suppressed voice. The external temperature of the body is slightly below 90°, and a peculiar sweetish sickly odour (fishy) is exhaled from the body, breath, and dejections. If left to nature, about one-half of those attacked with cholera recover of themselves, reaction supervening, and often being accompanied with fever, and not unfrequently with suppression of urine and various other complications: or the disease may terminate, within a few hours from its commencement, in fatal collapse.

History.—The early Sanskrit writers are our most ancient authorities in the science of medicine. Of these Chararka is believed by the Hindus to have derived his knowledge from a mythological personage known as Dhawantari, coinciding in character with Esculapius. Chararka's works are incomplete; but in the Nidân of his disciple Susruta, we meet with the following description of a form of "Vishuka." The patient is attacked with "vomiting, purging, faintness, thirst, pain in the abdomen, yawning, forgetfulness, burning heat in the stomach, duskiness of the surface of the body, pain in the head and heart." The worst symptoms are "blueness of the gums, lips, and nails, diminution of the senses, coldness of the body, sunken eyes, suppressed voice, a feeling of complete lassitude," but "if burning of the palms of the hands and body, accompanied with sharp vomiting," occur, the patient is likely to recover; and should "he digest his food, all danger is passed," the patient obtaining immediate relief, the purging stops, and he is in comfort." If this description refers to cholera, the disease must have been in existence for many centuries, Susruta being mentioned in the Mahabarata, which was compiled before the Christian era.

These Hindu authorities lived and wrote in the North-Western Provinces of India, and it is remarkable that they describe Vishuka as being a sporadic disease,—a character it has retained up to the present time in the North-West, with the exception of waves of the disease which seem to pass over the country from time to time.

Hippocrates,[*] Galen, and Whang-shooho[†] are witnesses to the existence of cholera in their day, both in Europe and China, and they have been succeeded by a series of Grecian, Roman, and Arabian authors, bearing record to the fact of the presence of cholera in the various countries in which they lived up to the present time.[*]

The literature of the middle ages is singularly barren in original observations regarding the science of medicine. Men occupied themselves rather with the ancient terms of art than with actual observation, and, in their critical researches, overlooked the important events that were passing before their eyes;[†] and this is precisely what is now going on among Hindus and Muhammadans in India. The Baids and Hakims pore over their ancient works with the greatest avidity, but are utterly blind to the necessity of noticing what is passing around them. Consequently, we have but few records in Persian or any other Oriental language to enlighten us as to the history of the diseases of India.[‡] Otherwise there can be little doubt that we should have evidence of waves of epidemic cholera passing over the length and breadth of the country long prior to our occupying it.

The earliest record of the existence of cholera in Hindustan, from the pen of a European, occurs in the "Lendas da India" by Gaspar Correa. He says that, during the spring of the year 1503, 20,000 men had died in the army of Zamoryn, the enemy of the King of Cochin, and that the cause of this mortality was enhanced "by the current spring diseases, and also small-pox, *besides which there was another disease, sudden-like, which struck pain in the belly, so that a man did not last out eight hours' time.*"

The same author informs us that in the spring of 1543 he met with cholera in an epidemic form at Goa; that the natives called it *moradexy*, and that the mortality was so great that it was with difficulty the dead could be buried; "so grievous was the throe, and of so bad a sort, that the very worst portion seemed there (in the stomach) to take effect, as proved by vomiting, with draughts of water accompanying it, as if the stomach were parched up, and cramps that fixed the sinews of the joints and of the flat of the foot with pain so extreme, that the sufferer seemed at point of death; the eyes dimmed to sense, and the nails of the hands and feet black and arched."

In 1563, Dr. G. D'Orta,[§] another Portuguese, gives us a vivid description of cholera as he met with it at Goa. He says the Arabs called it *hackaiza* (*haiza*), the name it is known by throughout India to this day. He adds that the disease is always most severe in "June and July."

Linschot, a Dutchman, who resided at Goa for some few years prior to 1589, remarks that "the diseases which these changes of the season bring to the inhabitants of Goa are several, among which that commonly known as *mordexia* occurs, which comes on very suddenly to those subject to it, with swelling of the stomach and continual vomiting, till they fall into a faint. This disease is common, and proves deadly to many."[‖]

There seems, therefore, no reason to doubt that epidemic cholera existed in Goa, the only province in India known to Europeans during the sixteenth century, and that its phenomena, and the time of its principal visitations, were precisely similar to the disease as seen there at the present day.

In the seventeenth century we have evidence of the presence of epidemic cholera in Batavia[¶] (1629), in the province of

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[*] Hippocrates Coi, de morb, vul. lib. v, Sec. VII, fol. 1144, Ed. fol, Francofurti, A. D., 1624.

[†] Transactions of the Medical and Physical Society, Calcutta, Vol. I. p., 204.

[*] Celsus A. C. Celsi Medicina, lib. IV, Chap. XI.
De Cholera, Chap. 16, Alexandri Tralliani.
Aretæus, lib. II, Chap. V. Cœlius Aurelianus, lib. III, Chap. XX.
Avicenna, p. 492, Edit. Rome, 1593.

[†] Hacker on the Epidemics of the Middle Ages. Translated by Dr. Babington. London. 1846.

[‡] Contribution to Literature of Cholera. By G Gaskein, Medico-Chirurg. Review, 1867, p 217.

[§] Medico-Chirurg. Review, 1867, p. 217. Gaskein on the Literature of Cholera,

[‖] Quarterly Review, 1867, p. 32.

[¶] An account of the diseases of the East Indies, by T. Bontius Translated and published in London, p. 26.

[illegible] S.,* and in [illegible] of 1669.† In 1676 at Goa [illegible] Surat, when Thevenot, a Frenchman, was himself attacked with cholera some time prior to 1678.

In 1762 it raged [illegible] very extensively in Upper Hindustan, [illegible] Le Bègue de Presle, thirty [illegible] natives and [illegible] died.‡

The earliest account which I have found of the occurrence of cholera in India, in an English author, is that given by Dr. Paisley in a letter dated Madras, February, 1774, and quoted in Dr. Curtis's Work on the Diseases of India, published in Edinburgh in 1807. It is somewhat remarkable that this important communication should have been overlooked until after thirty-three years from the time it was written, particularly as, in the meantime, Dr. Girdlestone had published a work in London, in 1787, on the "Spasmodic Affections of India," under which heading he gives an excellent description of cholera. It is evident, therefore, that, [illegible] of Dr. Paisley's letter, neither Girdlestone nor the "general medical board at Madras" which held consultation in 1782, [illegible] the disease we now designate epidemic cholera as cholera.

I am anxious to bring this point somewhat prominently forward, not to impute either ignorance or neglect on the part of the authorities who made these reports, for they had a perfect right to call the disease what they thought fit, and class the attacks under the heading of spasmodic diseases if they pleased; but, supposing this were the case, we can hardly be surprised at failing to meet with a description of the disease as cholera among the writings of English physicians in India, during the latter part of the eighteenth and the beginning of the nineteenth centuries.

In 1774, Dr. Paisley, of Madras, writes §—"I am happy to hear you have persuaded the army to change its ground, for there can be no doubt, from the circumstances you have mentioned, that their situation contributed to the frequency and violence of the attack of this dangerous disease, which, as you have observed, is true cholera morbus, the same they had at Trinomalee." (In a foot note Dr. Curtis remarks that this must refer to some occasion long anterior to the war of 1782.) Dr. Paisley goes on to observe that it is often epidemic among the Blacks. "In the first campaign made in this country, the same disease was terribly fatal among them, and fifty Europeans of the line were seized with it. I have met with many single cases since." In 1770 cholera was endemic among the natives in the Ambore Valley in Arcot, and throughout the Travancore country.‖

In 1781 we find cholera prevalent during the month of March in the district of Ganjam. It attacked a division of some 5,000 Bengal troops marching through that province under Colonel Pearse. He reports that, besides those who died, no less than five hundred men were admitted into hospital on the 22nd of March. He adds:—"Death raged in the camp with horror not to be described, and all expected to be devoured by the pestilence. In vain I studied to discover the cause of our misfortune. I attributed it to a poison, but at length found that *there had been a [illegible] our first marches lay*, and that part of our camp was already drinking the [illegible] destruction." In the course of a few days 1,145 men were in hospital affected with this disease. On the 29th of March, however, the sick were reduced to 908, and on the 1st of the following month the force was able to march, leaving [illegible] men in the sick [illegible] behind. It will be observed that Colonel Pearse does not mention the disease as being cholera; he calls it a pestilence, and in the following quotation from a despatch of the Supreme Government to the Court of Directors, no mention is made of cholera. This document is dated 27th April, 1781, the occurrence of the disease is notified, and the destruction which it caused in this detachment mentioned in terms of the most general import.* After adverting to its progress in the Circars, the letter proceeds:—"The disease to which we allude has not been confined to the country of Ganjam; it afterwards found its way to this place (Calcutta), and after chiefly affecting the native inhabitants, so as to occasion a great mortality during the period of a fortnight, it is now generally abated, and pursuing its course to the northward." The progress of this epidemic has never been recorded, but we have, at any rate, evidence of epidemic cholera raging throughout the district of Ganjam in March and April, 1781, of its travelling northward to Calcutta, attacking the inhabitants of that city and the intervening country, and passing on in the same northerly direction. Here, unfortunately, a blank occurs in the history of its progress, but we find that in April, 1783, cholera burst out at Hurdwar, and in less than eight days is supposed to have cut off twenty thousand victims.

This is precisely the course, and about the same time which subsequent waves of cholera have taken when passing over India, and it seems to me that this fragmentary history is presumptive evidence that the epidemic was of a similar nature to that which occurred in 1817, and on subsequent occasions. This position is strengthened by the fact that Dr. Girdlestone says †—"Spasms was the first disease which appeared among the troops who arrived at Madras in October, 1782. More than fifty of these fresh men were killed by them within the first three days after they landed in that country, and in less than a month's time upwards of a thousand had suffered from attacks of these complaints." He goes on to describe the disease.—"Coldness of the surface of the body, especially of the hands, feebleness of the pulse, spasmodic contraction of the lower extremities, the hands and feet become sodden with cold sweats, nails livid, pulse more feeble, breath cold, thirst insatiable, vomiting incessant, which last, if not checked, soon terminates the existence of the patient." This is evidently an account of the disease we recognise as epidemic cholera. Fra Paolino da S. Bartolomeo, in a work published at Rome in 1796, gives a curious account of cholera.‡ He says:—"The disease is called *[illegible]*, or *[illegible]*, in the language of Malabar, *visucega* in Sanscrit, vulgarly *mordexim*, and not *morte de chien* as described by Sonnerat. It is an intestinal colic caused by the cold wind from the Ghattes, or from bathing in the cold mornings. This disease is frequent in Malabar in October, November, and December, when the wind comes from the Ghattes loaded with particles of nitre; it is as common on the Coromandel Coast in April and May, and often carries off thirty or forty persons in a village during one night; for, unless instantly relieved, it destroys life in the course of a few hours. *In 1782 the disease broke out with terrible ferocity, and destroyed an enormous number of people.*" In the month of May, 1782, cholera was raging in an epidemic form at Trincomale, and our fleet at anchor there was severely affected."§ M. Sonnerat, in his Travels in India, also mentions the existence of epidemic cholera along the Coromandel Coast from 1772 to 1781, so that we have independent evidence of the existence of this disease in an epidemic form in Bengal during March, 1781, in Madras, and, in fact, along the whole of the Eastern Coast of India in 1782, and at Hurdwar in the Punjab during the year 1783.

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* Quarterly Review, No. [illegible], p. [illegible]

† [illegible] 3rd Edition, p. 116.

‡ [illegible]

§ An Account of the Diseases of India, by C. Curtis, formerly Surgeon [illegible] Edinburgh, 1807, p. [illegible]

‖ Ibid., p. xvi.

* Report on the Epidemic Cholera Morbus as it visited the Territories subject to the Presidency of Bengal, by James Jameson. Calcutta, 1820.

† Essays on the Hepatitis and Spasmodic Affections in India, by J. Girdlestone, M.D. London, 1787.

‡ Viaggio alle Indie Orientali, p. [illegible]

§ See the Madras Reports on Epidemic Cholera, p. xii.

‖ See the Madras Reports, p. iv.

I conceive this, therefore, to be a history, though far from a detailed one, of the first wave of epidemic cholera which passed over India since the English occupied the country; and it seems that the reason for our not possessing clearer indications of the circumstances of the disease arises from the fact that it was hardly recognised as cholera. Moreover, it was not till 1786 that the Hospital Board was established in Bengal and Madras, before which period no returns of the sick were made. Mr. Scott adds, that the reports from that date up to 1802 were kept in no regular order. Our possessions in India also, prior to 1781, were surrounded by vast arrears of unsubjected country, beyond which the course of the epidemic could not possibly be traced; but the details above given are, nevertheless, important, as indicating the fact that, within twenty-four years of the battle of Plassey, we have evidence of a wave of epidemic cholera passing over a considerable portion of India.

During the month of October, 1787, epidemic cholera committed terrible ravages at Arcot and Vellore. With regard to this outbreak, Mr. Davis, a member of the Madras Hospital Board, remarks: —"I found in what was called the Epidemic Hospital, three different diseases, *viz.*, patients labouring under cholera morbus, an inflammatory fever, with universal cramps, and a spasmodic affection of the nervous system, distinct from cholera morbus. I understood, from the Regimental Surgeon, that the last disease had proved fatal to all who had been attacked with it, and that he had already lost twenty-seven men of the regiment in a few days. Five patients were then shown to me with scarce any circulation whatever to be discovered; with their eyes sunk within the orbit; jaws set, bodies cold, and extremities livid." They were being treated with castor-oil.*

During the year 1790 cholera was very prevalent again in Ganjam; in 1794 at Vellore, where it was described as the "Causis."

From the returns kept in the Office of the Bengal Medical Board during the early part of the present century, and which relate exclusively to the European troops, I find that in 1808 five cases of cholera are reported,—one at Meerut, one at Delhi, another at Muttra, and two in Calcutta. In 1809 three cases occurred, and in 1811, 1812, 1813 no less than seventy-nine cases of cholera are reported as having taken place at Chunar, but not a single one from any other station in the Presidency. During the year 1814 instances of cholera occurred at Cawnpoor, Nagpoor, Benares, Meerut, Dinapoor, and the Presidency; in all forty-six cases, and eleven deaths. These are the first deaths reported from this disease among our European troops in Bengal. In 1815 and 1816 there were no cases of cholera; and in this Presidency only two cases occurred among the troops at Benares in 1817, although the disease was raging throughout the whole of Bengal, showing that statistics, drawn simply from the reports of our European troops, are hardly to be relied upon as a criterion of the existence of cholera in India.

It appeared in a crowded barrack in Fort William, in 1814, among recruits just arrived from England,† and in an epidemic form at Jaulnah during the same year. With regard to this outbreak, Dr. Cruickshanks subsequently explained (in 1831) that "I entered these cases in the Hospital Returns as bowel complaint in 1814, because the matter ejected by vomiting and stool was of an aqueous or mucilaginous consistency, containing no bile." Mr. Scott observes with regard to this report:—"This paper of Mr. Cruickshanks is of great importance, inasmuch as it evinces that cholera did exist to an extent not hitherto suspected to have occurred at so recent a date, and also that, even under these circumstances, no trace of it is found in the public records; for, unless we had been guided by the incidental remark of Dr. Duncan, made five years after the occurrence, and had most fortunately been able to refer to Dr. Cruickshanks, the medical returns of the corps never could have led to the knowledge of it. Hence, as already observed, though cholera very rarely appears in the sick returns of former times, it is by no means to be thence inferred that it did not then exist."*

We are, I think, therefore justified in arriving at the conclusion that it was nothing new for cholera to spread over India in an epidemic form prior to 1817 and 1819. The nature of the disease was then fully recognised, and the country subjected to our rule, so that British Officers were for the first time in a position to report upon the cholera as it affected the natives of the country.†

(*To be continued.*)

EXPERIMENTS ON THE ACTION OF THE COBRA POISON.

By J. Fayrer, M.D., F.R.C.S.E.,

Surgeon, Bengal Army; Professor of Surgery in the Medical College of Bengal.

Third series.

Experiment No. 1.

12-45 *p. m.*—A fish, (ophiocephalus marulius,) about fourteen inches long, was bitten once near the tail by a large fat cobra at 12-50, and was put into water immediately.—1 p. m. Fish seems sluggish.—1-5 p. m. Jumped out of the jar of water.—1-8. Fish active; plunging about in the jar.—1-14. Plunging; broke the glass jar. Put into another vessel.—1-16. Seems sluggish; can be taken up by the tail.—1-22. Turning on his side; plunging; jumps out of the jar.—1-25. Exhibits convulsive movements; lying on its side. 1-30.—Nearly dead.—1-40. Dead. Another fish of the same size, not bitten, but kept for the same period in a similar jar, is alive.

Experiment No. 2.

22nd April.—A dog was bitten by a full-grown bungurus fasciatus at 1-13 in two places on the inner side of the left thigh.—1-16. No paralysis of leg such as is seen in cobra bite. Dog seems uneasy.—1-28. Dog seems unaffected.—1-36. Dog lying down; seems sluggish; nothing very striking in his appearance; breathing perhaps rather hurried.—1-55. Sluggish; struggles and drags the leg a little.—1-56. Vomiting a quantity of bilious fluid. Snorting; restless.—1-58. Seems very restless; lies down; is evidently nauseated, and tries to vomit.

2 *p. m.*—Respiration hurried and irregular, 112 in the minute.—2-15 p. m. Sluggish and nauseated; breathing quick.—2-30. Sluggish, but can be roused; makes efforts to vomit; breathing slightly oppressed.—4 p. m. Same state. Dog died on the afternoon of the 25th.

Experiment No. 3.

A young mungoose (herpestes malaccensis) was bitten two or three times by a full-grown cobra, at 1-24 p. m. on the 30th April, on the inside of the thigh, from which the hair was first removed. Blood was drawn by the bites.—1-27. Lies stretched out, and rigid from convulsion.—1-29. General

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* Scott's Report, p. xii.

† A Concise Narrative of Parts connected with the Disease which occurred in the District of Jessore, by R. Tytler: Calcutta, September, 1817. Printed by C. M. Pratt and Co.

* Scott's Report, p. xi.

† Prior to 1760 the Company's territories in India were confined to an area containing some 15,000 square miles. In 1765 the Company acquired command over Bengal, but not till 1775 over the zamindari of Benares. From 1792 to 1799 the Nizam's territory, the Carnatic, Gorakpoor, and Bareilly came under their rule; in 1801 Bundelkhund, in 1802 Kuttack and Balasore; the Duab, Delhi, and Ahmadnuggar in 1803; Gujrat in 1805, and Kumdon, Sagur, Huttiab, and Darwar in 1817.

convulsions, and twitchings of muscles.—1-30. Dead.—1-50. *Rigor mortis* strongly marked.

Experiment No. 4.

22nd April.—A [illegible] ([illegible]) was bitten freely in the mouth by a large cobra at 1-25 p. m.—1-45. Quite unaffected.—1-58. Active as usual.—2-15 p. m. Snake unaffected.—2-30. Perfectly well.—4 p. m. Seems well.

23rd.—Apparently well.

Experiment No. 5.

A large iguana was bitten three times on the body, and once between the fore-claws, by a full-grown cobra, of a light colour, between 12-55 and 1 p. m.—1-10 p. m. Snake unaffected.—1-10. No change.—2-40. Snake unaffected.—2-50. Snake unaffected. The next day at noon he was perfectly well.

Experiment No. 6.

30th April.—A cat was bitten by the same cobra that bit the pigeon at 1-27 p. m.—1-30. Cat uneasy; not paralysed.—1-33. Restless; breathing hurried.—1-40. Cat lying down, seems uneasy; muscular twitchings and hurried breathing.—1-55. Active when roused.

2-30. Appears rather distressed; has bitten its tongue, and lies with mouth half open, and tongue protruded.—2-50. Is now totally under the influence of the poison. Lies on one side; when placed on its feet, drops with its belly on the ground, and then falls over on one side; constant twitchings of the limbs, and frequent violent efforts made to rise, but quite in vain. Heart's action feeble, 108.—3 p. m. Dead. The blood, examined twenty minutes after death, showed no perceptible change.

Experiment No. 7.

A dog was bitten by a Bungarus fasciatus, about six feet long, on the inner side of the left thigh, at 1-27 p. m.—1-29. Dog restless; licking the wound; respiration hurried, probably from excitement.—1-35. No apparent change; no paralysis as in case of cobra bite.—1-50. Seems rather weak in the hind leg, but otherwise quite well and playful.—2-50. Dog seems well; lying down. The next day at noon the dog was quite well, and ate his food. He died a day or two later.

Experiment No. 8.

30th April.—A cat was bitten by a half-grown Bungarus fasciatus in the thigh, from which the hair had been previously removed at 1-48 p. m.—2-50. This cat from the first was sluggish, and apparently unwell, keeping its mouth open, and its tongue protruded. It had an abscess in one cheek. Within the last hour there has been little change; the animal is perhaps rather more sluggish. The noose round the neck being rather tight, was somewhat slackened, and at 3-40 p. m. the cat was found to have escaped.

May 1st. The cat found dead.

Experiment No. 9.

A mungoose was bitten in the inner side of the thigh by a large cobra at 1-44 p. m., and was put into a cage immediately at 1-48; apparently not affected. No paralysis of leg, very active in cage; trying to get out.—2 p. m. Mungoose eating vigorously some raw meat; seems quite unaffected. Was quite well next day.

Experiment No. 10.

2nd April.—A cobra was bitten by a large Bungarus fasciatus at 2-12 p. m. at a place where some of his scales had been first scraped off.—2-30. Seems quite well.—4 p. m. Seems well.—*23rd.*—Well.

Experiment No. 11.

A full-sized cobra bit another full sized cobra in the mouth. They were made to close their jaws respectively in each other's mouths at 1-38 p. m.—Both the cobras were then put into a wire cage. They were fresh and vigorous.—1-42. Both snakes very active and angry in the cage.—2-50. Both snakes unaffected, occasionally striking at each other. The next day at noon they were quite well.

Experiment No. 12.

A mungoose and a full-sized cobra were put into a large wire cage at 1 p. m. The snake struck at the mungoose, and they grappled with each other frequently, and apparently the mungoose must have been bitten, as the snake held on to it about the neck or head. At 1-15 p. m. there was no effect on the mungoose; both it and the snake were much excited and angry, the snake hissing violently.—2-30 p. m. No effect on the mungoose. The snake is bitten about the head, and shows the bleeding wounds.—1-51. They are both occasionally darting at each other, but the mungoose jumps over the snake, and tries to avoid it. Next day at noon both were well; the snake frequently struck at the mungoose, but did not appear to injure it; both seemed very savage, but the mungoose would not bite the snake; he jumped over it.

There had been two cobras in the cage with the mungoose during the night, both equally fierce, and striking each other and the mungoose; but the latter was uninjured. He was bitten once by the cobras rather severely on the head.

Experiment No. 13.

On Wednesday, 27th May, 1868, I made the following experiments; the idea having been suggested by a letter addressed to the Editor of *Engineering*, March 20th, 1868, by Mr. W. Clarke, C.E., who, relating his experiments on poisonous snakes in India, in 1854, mentions the extraordinary effect that creosote had in destroying them, and suggesting its use, or that of analogous chemical compounds, in the treatment of snake-bites. The effect of an analogous chemical compound, carbolic acid, on the snake itself I have as yet only ascertained. The therapeutic value remains to be determined, though, in anticipation, I express my doubt as to its being more beneficial than anything else, unless applied early enough to decompose the poison before absorption into the nervous circulation; and this we could seldom hope to effect. I am quite satisfied that the application of carbolic acid, or perhaps even of coal tar, to the walls and timbers, and apertures by which their entry into a house could be effected, would have a most beneficial effect in keeping snakes at a distance.

At 12-33 noon I put a few drops of carbolic acid into the mouth of a large and very vigorous cobra, and it seemed to produce almost immediate effect. The snake struggled violently, opened and closed the mouth, went rapidly into a state of convulsion, as evinced by a series of spasmodic peristaltic waves of the whole length of the body. In less than five minutes it was evidently powerless for evil, and unable to strike or even move from the spot, but was frequently convulsed. The convulsed movements continued getting fainter, and did not entirely cease for twenty minutes, when it was quite dead. This cobra was over four feet six inches in length, and peculiarly active and vicious.

Experiment No. 14.

I poured a few drops of carbolic acid on to the floor of a large wooden cage, with a wire front, in which there was a large bungarus fasciatus. The snake was not handled, and the carbolic acid could scarcely have got into the mouth, though it touched the head. The bungarus immediately withdrew his head from the spot where the acid fell, and became very much excited and convulsed, the tail being for a time quite rigid. It turned over on its back in about three minutes, and lay almost motionless for about five or six minutes more, during which slight convulsive movements occurred, as in the cobra, and in less than ten minutes it was quite dead. This snake was two feet long, and very powerful, sluggish as the bungarus always is, I believe, in the day time; but very active when roused.

Life in this snake was much more rapidly extinguished, and by a smaller dose of the poison, than in the smaller cobra. As they lay stretched out side by side, convulsive twitchings were apparent in the cobra for some minutes after the bungarus was quite dead. This would indicate that the bungarus is much more susceptible than the cobra, for it was apparently destroyed by the vapour, or, at all events, by the very small quantity that might have trickled down from the head into the mouth. After death, the mucous membrane of the mouth was natural; whereas in the cobra that had drops placed in the mouth, these had completely whitened the mucous membrane, and coagulated the poison which had exuded from the fangs.

I hope to test the merits of carbolic acid and other analogous chemical compounds as therapeutic agents in snake-bite on some future occasion. In the meantime, its use, as a preventive against the entry of snakes into houses and other places where they may prove dangerous, or as a means of getting rid of them where they have taken possession, is suggested, for there can be no doubt that the drug is most deadly and disagreeable to the reptiles.

ON SNAKE-POISON.

By Charles R. Francis, M.B.

During the past few weeks the subject of snake-poison has not been allowed to slumber. It has been taken up warmly by the Profession and by the Press, and it may fairly be expected that useful results will follow Dr. Mohendro Loll Sircar has commenced a series of interesting experiments with a view to testing the truth of Dr. Halford's statements. These he has been unable to confirm.* and additional negative evidence is therefore furnished in favor of the pathology of cobra poisoning consisting in *nervous*† *shock*. In Dr. Sircar's experiments, three fowls, a dog, a cat, a jackal, a fish, a young cobra, and a long slender snake, (coluber lineatus?) known locally as *kanore*.‡ were bitten by cobras. All died in the usual way, and even the young cobra felt the influence of the poison. It became lethargic, and the snake-charmer thought it would die; but in the course of half an hour it roused itself, and became as vigorous as ever.

It will be remembered by the readers of the *British Medical Journal*§ that, subsequently to his former experiments, Dr. Halford caused a cat, big with young, to be bitten by a cobra. The cat died, and the kittens in the uterus (there were four) were found dead on opening that organ. On examining the blood of the cat and of the kittens, the same appearances were found in each, *viz.*, an abundance of the "foreign cells." That the kittens were poisoned through the blood of the cat is perfectly clear, and the question arises, (setting aside for the present any enquiry as to the cause of the discrepancy, in the results of their investigation of the blood, between the observers in Calcutta and in Melbourne), can the young of any animal which has been bitten by a cobra be poisoned by *its milk* when swallowed and taken into the stomach? Physiology answers, no. That the poison, *once in the mother's blood*, will be reproduced in the secretions, we can readily understand; and, if milk so impregnated were applied to an abraded surface on the young, symptoms of poisoning would doubtless follow; but would they follow if that milk were presented to the stomach? It is well known that, as a rule, a poison which, if introduced into a *wound*, will rapidly produce a fatal result, may be *swallowed* with perfect impunity. I am not aware of any exception to this rule.

Professor Christison mentions, in his book on Poisons, that "a pupil of Professor Mangili swallowed at once the whole poison of four vipers without suffering any inconvenience, and that of six vipers was given to a blackbird, that of ten to a pigeon, and that of sixteen to a raven, with no other effect beyond slight and transient stupor." Such facts as these settle the point at once. The question then arises, can a poison, which, when presented to the stomach in all its original virility and entirety, is not absorbed by that organ, but which passes through the intestinal canal without doing any mischief, be taken up into the system when introduced into the stomach after having been secreted from the blood into the milk? Before answering this question, we must know in what shape the poison exists under the two circumstances. Is it the same in the milk as it is when swallowed into the stomach? or has the essence of the poison, as it were, been secreted in the former; and is the active principle thus brought into contact with the absorbents taken up by them when the original poison would be rejected? The readiness with which milk becomes impregnated with active principles is well known. Drugs given to the mother find their way through the milk of the former into the stomach of the child, and operate occasionally more energetically upon the one than upon the other. Some kinds of food, which have little or no effect upon the parent, act like poison upon the infant. To quote once more from Professor Christison. He tells us that at Aurillac, in France, the milk of certain cows caused violent vomiting, with other symptoms of cholera, in consequence, it was believed, of the cows having fed upon a particular herbage—the *euphorbia esula*, a species of *spurge*; that Professors Orfila and Marc were appointed by the Society of Medicine of Paris to report upon the accident; that they did not consider that any of the received explanations were at all satisfactory; *and that they were disposed to ascribe the poisonous alteration of the milk to new principles formed by a vital process.** Now what are we to understand by this last statement? It is not, I imagine, presumed that the poisonous alteration took place independently of any poisonous constituent in the blood. May it not have been that what was comparatively innocuous in the food, or even in the blood, became intensely deleterious in the milk? This, I am aware, is very like begging the question; and it may be urged "why go so far for an explanation when we see, and especially in India, how readily milk is vitiated in stormy weather in the rainy season, when the air is charged with electricity; and this quite irrespective of poisonous food?" True; but *in the first place* the milk so vitiated has first left the animal. It is *drawn milk*, milk left to stand, which becomes changed, not the milk as it

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* Dr. S. Weir Mitchell likewise failed to discover anything of the kind in the blood of those poisoned by rattle-snakes.—*Medical Times and Gazette*, 29th February, 1868.

† This view is quite sufficient to account for all the symptoms which result from the introduction of the poison of serpents into the blood: the slow and difficult respiration; the languid circulation of the attenuated blood, with the altered character of its elements; the dilatation of the pupils: the foaming at the mouth; and the general lethargy, followed by convulsions and death.

‡ This is not a poisonous snake. It is known also, in Bengal, as *Bet-achra*. The term *lineatus* has been suggested by Dr. Sircar, because of the resemblance of the snake to the one described under that name by Russel at page 32 of his book. The fact of its having succumbed to the poison of the cobra would appear to afford further proof that harmless snakes are not proof against those which are poisonous. This was one of the results, too, which was observed by Messrs. Twining and Breton in 1825. In the course of their experiments, they caused an innocuous water-snake, called *dhora*, to be bitten towards the tail by a cobra. It died in little more than two hours. These observers further proved that a poisonous snake is *apparently* unsusceptible of the poison of another species. A *boora*, known in Behar as the *amaiteh* or *[illegible] chunder*, (the *ketakee [illegible]* of Russel,) a snake with four poisonous fangs in the upper jaw, two on either side, and a cobra were made to bite each other, with no results whatever.

§ Of December 21st, 1867.

* There is no difficulty, of course, in understanding that a vegetable which poisons when eaten, will act deleteriously also when it has found its way into the milk. The question here is, will the active principle of a vegetable which will not poison when eaten, have that effect when taken into the milk?

[illegible] I [illegible] general [illegible] Chemistry. [illegible] it is [illegible] sometimes the [illegible] cattle which [illegible] we are left [illegible] any chemical phenomena [illegible] account for the [illegible] of the cases [illegible] March [illegible] I am [illegible] which was introduced into the blood through the [illegible], and that the *vital principle* of the [illegible] to the [illegible].* "Of what is snake-poison composed?" is a question which must be answered before we can determine the difference between its constitution when secreted from the poison-gland, and its constitution after it has passed through the blood into the milk. In the course of the experiments conducted by Dr. Fayrer, and recorded in the *Indian Medical Gazette* of February, 1867, the fresh poison appeared to be a viscid homogeneous fluid, displaying no distinctive characters when examined either by the naked eye or the microscope. Dr. Buckland examined fresh poison under the microscope, and was so startled by the magnificent appearance, marvellously gorgeous and resplendent, that he rushed into the mess-room to call his brother officers to come and see; but, when they arrived, the entire surface was changed, the beautiful appearance had vanished, nothing tangible being left. Dr. Mohendro Lall Sircar, on the other hand, tells us—see the *Calcutta Journal of Medicine* for April, 1868—that he found fresh snake-poison to consist of a fluid which he calls *liquor [illegible]*, and *contained cells*; and he argues very justly that, because these cells were not found in the blood of animals poisoned by cobras, therefore the active principle could not reside [illegible].

The question is at present involved in some obscurity, and it will be desirable to make further observations upon the constitution of snake-poison when fresh in the blood, and in milk after it has passed through the blood. That cobra poison will pass from the mother to the young has been proved by Dr. [illegible]'s experiment upon the cat, whose kittens were afterwards found dead in the uterus; and now whether the young of an animal impregnated with snake-poison will die after swallowing the parent's milk, can only be proved by a like direct experiment, which I propose to make on the first opportunity, and I hope others will be induced to do the same. A [illegible] will probably be the most satisfactory animal to make such experiments with. The [illegible] of a [illegible], [illegible] into [illegible] hairless [illegible] the [illegible] as [illegible] and the pups should [illegible] be allowed to suck from the mother. If any one of the pups should die with symptoms of snake-poisoning, the evidence will be clear that the poisonous [illegible] has passed from the mother to the young through the medium of the milk. The experiment is worth making, for if such a result should ensue, much light will be thrown upon the pathology of certain [illegible] cases which are [illegible] to be found [illegible].

[illegible] with [illegible] apparently [illegible], which I [illegible]. It is stated by two [illegible] gentlemen [illegible], whose word I [illegible], that a Hindoo mother was sleeping at night on a [illegible] which was slightly raised from the ground, with her two children, one being an infant at the breast. In the course of the night the elder child cried out that she had been bitten by a snake, and presently, in the confusion which ensued, the mother was bitten likewise on one of her hands. Both died under the influence of the poison, which was that of a cobra. And the infant, whom the mother had taken to her breast to pacify, (for it had begun to cry), died also with symptoms of poisoning. A source of fallacy exists in the possibility of the infant having been bitten too; but my informant assures me that it was not. The other case is that of a calf which [illegible] after sucking milk from its mother, who had been recently bitten by a snake. Here again we have the same source of fallacy, the probability being indeed greater in this case that *both* mother and young were bitten. The explanation given by my informant is this: the snake had (as is alleged to be the custom of such snakes) entwined itself round one of the hind legs of the cow, and sucked its milk; that the mother remained unaffected, but that the calf imbibed the poison which had been left upon the udder. This is evidently an error. The cow was doubtless, if poisoned at all, *bitten* by the snake. What gives a show of probability to the truth of the statement is that the calf was seen *foaming at the mouth*, which led to a suspicion of its being under the influence of snake-poison. It died shortly afterwards *convulsed*. The teller of the story adds that the cow was taken ill subsequently to the calf, and was found dead in the stall two or three hours afterwards.

I can only say in conclusion, as I said before, *fiat experimentum in corpore vili*.

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* [illegible], whose health is deranged, may be [illegible], but [illegible] the question.

A COURSE OF LECTURES ON THE PRINCIPLES AND PRACTICE OF MEDICINE DELIVERED AT THE MEDICAL COLLEGE OF BENGAL.

By Charles R. Francis, M.B.,

Late Officiating Professor of Medicine, &c., &c., &c.

PART OF AN INTRODUCTORY LECTURE.

(C[illegible] III, No. 5, [illegible] 99.)

Man's usefulness in life depends very much upon the moral training which he has had in youth, and upon the religious instruction which he [illegible] received from his relatives or friends. Many a native youth, I am [illegible] to think, goes forth into the world [illegible] of what is right. His conduct [illegible]. He is resolved to work for [illegible]. Consequently he attains, by the force of his own amiable [illegible] status and an influence in the society [illegible], becoming an instrument for great good, [illegible] respected by [illegible]. He takes an [illegible] in his immediate neighbourhood, and [illegible] with the [illegible] of European instruction and civilization. "A good dispensary," said one of our ablest chieftains, "is worth a [illegible] of infantry;" and let me add that very much of this value depends upon the efficiency of the Sub-Assistant Surgeon. What a proud distinction, my young friends, [illegible]! How much better to feel that, in your humble way, you are helping, by breaking up the antagonism [illegible], to cement the union between your countrymen and [illegible]; how much better this than, by leading indolent lives, and responding in a [illegible] or slovenly manner to the call of duty, bringing discredit upon your whole body. It sometimes happens that Sub-Assistant Surgeons are called upon to exercise their [illegible] in a somewhat irregular manner. For example, owing to a variety of causes, which it is not necessary to enquire into here, the *rank* of Sub-Assistant Surgeon is not always understood by Europeans. Many *educated* Europeans do not know the difference between a Sub-Assistant Surgeon and a Native Doctor; nay, in some instances, between him and a compounder. Consequently, the rank not being recognized, orders are given, it may be, to come and see a patient, when the patient should have been sent to the hospital, or, in the absence of any hospital, to the Sub-Assistant Surgeon's quarters. Now this is not the time to stand too much upon one's dignity. It *may* be an urgent case, and therefore, notwithstanding the irregularity, which it is very easy politely to point out, it is one's duty, in the cause of humanity, (in the *enthusiasm of humanity*,) to go and see the patient.

There are certain preliminary branches of instruction, with which you are expected to be familiar, before you commence your attendance on those which are final. You must know something of materia medica, chemistry, and botany, in addition to anatomy and physiology; for, without a knowledge of these several subjects, you cannot be accomplished physicians.

Materia Medica is so intimately associated with the practice of medicine, it has so direct a bearing upon the treatment of disease, that you require a more complete knowledge of it than of chemistry and botany. We live in an age when it is very much the fashion to depreciate the value of drugs Nature, the *vis medicatrix naturæ*, is everything now. Certain drugs have their value nevertheless. Indeed, as with other gifts, it is their abuse, and not their use, which has brought the riches of the pharmacopœia into disrepute. We have gone back to the days of our wise ancestors, and ascertained that we had got into the way of giving too much medicine. But then, not content with a medium course, we must needs maintain that, to give any medicine at all was a mistake. But you will see for yourselves that it is not a mistake to prescribe a sedative where rest is required, quinine or arsenic to counteract the effect of malaria, or iodine to dispel a bronchocele. Thanks to ipecacuanha, when prescribed in appropriate doses, the mortality from dysentery is everywhere much reduced. Nowhere is this so strikingly seen as in the Army. With this drug in his hand, the Army Surgeon is prepared to meet the foe in perfect confidence as to the result. It was not so in former days, before Surgeon Docker, of Her Majesty's 6th Foot, gave to the world his new mode of prescribing ipecacuanha in drachm doses, to be *repeated according to circumstances!** It is only within the last ten years that this system has worked such wonders. Prior to the commencement of the last *decade*, the mortality from dysentery in the European Army in India was above 11· per cent. It is now below 5· You must watch the effect of medicines very closely, and satisfy yourselves that the result which you see *is* the effect of the drug prescribed. There doubtless are some disorders of the system, not amounting to actual disease, which will *rights* themselves, and for which no medicine whatever, nothing beyond a little hygienic treatment, is required. Others again absolutely require the physician's aid. They, too, would after a time terminate without the intervention of remedial measures, but they may extinguish the patient's life in the process. There are other diseases and conditions which would never be cured without medicine.

A knowledge of materia medica raises you above the level of mere artizans. You know the history and all the interesting features, whatever they may be, of the tools which you are using.

Botany has never commended itself to the Native medical students of India. But, apart from its value as a means of mental cultivation, and as an elegant accomplishment, a knowledge of botany may be of great service to you when separated from your medical stores. You may be sent on duty, for instance, into the interior of the hills of India, your medicine chest may become exhausted, and you would then be glad to avail yourselves of the resources which surround you in the growing vegetation of the district. *Now*, if you are botanists, you may discover a fair substitute for quinine in the *berberis lycium* and *aristata* with which the Himalayas, at certain elevations, are covered; an efficacious astringent in the juice expressed from the bark of the *symplocos racemosa*; and a valuable anthelmintic in the powder covering the capsules of the *rottlera tinctoria*. All these and many more, to be found in different parts of the Himalayas, are valuable indigenous remedies. I have been glad to avail myself of them on more than one occasion similar to what I have instanced as not unlikely to befal any of yourselves.

With *chemistry* you will have made yourselves more or less familiar. It is probably the most fascinating pursuit which can engage the mind of man; and the danger is that medical students, who are required to know so many branches of study, may devote more than its proper share of time to chemistry. A physician, who is also a practical chemist, has undoubtedly a great advantage over one who knows the subject only theoretically. A Sub-Assistant Surgeon so qualified would be of incalculable benefit to society and the State when settled down in remote districts in medical charge of dispensaries, where he would have frequent opportunities of testing the reputed efficacy of certain bazar medicines, and of eliciting the true value of native drugs by scientific chemical processes. The time, I believe, is not far distant when the English class students at our colleges will, in addition to what they are taught already on this subject, go through a course of practical instruction for some months in the laboratories attached to our Medical Store Departments. This will give them a facility in analysis and pharmaceutical operations, which it is very desirable that Medical Officers so situated should possess. I am sorry to have to say it, but it is unhappily so, that Sub-Assistant Surgeons, when they are appointed to the charge of dispensaries, are apt to look down upon such operations as derogatory, fit only for the Native Doctor or Compounder, and to assume the *otium cum dignitate* before they have earned it. This is very wrong. In England medical practitioners have no hesitation in dispensing their own prescriptions, nor should Sub-Assistant Surgeons.* The result of their superciliousness, in this respect, is that they forfeit the respect of all right thinking people, and they do not maintain for themselves that status amongst the European portion of the community from whom we are so desirous that they should receive it. Indifference in one thing leads to *insouciance* or neglect in another, and the promising young student, from whom we expected so much when he left his *alma mater*, is spoken of as being above his work. Inspecting Officers report unfavorably of him in their *Inspection Reports*, and, in truth, the misguided youth is not fulfilling his mission. Gentlemen, take warning by what I say, and wipe out the reproach which many of your predecessors have brought upon the whole body.

In connection with other branches of study, qualifying for practical physicians, which you are required to know, is *Hygiene*. Now this is of far greater consequence than at first sight is apparent. The Professor of Hygiene has reported to me that the students pay very little attention to his lectures, and that

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* Mr. Docker has re-introduced large doses of this drug. Ipecacuanha was prescribed in *drachm* doses, in Spanish America, more than 150 years ago. His *application* of the drug is novel.

* This applies to emergencies.

[illegible] Examiners [illegible] Hygiene, [illegible] suggested questions, so [illegible] an application you must! [illegible] For a knowledge of [illegible] duty of a physician, [illegible] the guidance [illegible] by which [illegible] is now [illegible] of civilization. [illegible] this branch of education, we [illegible] various sources of disease which [illegible] ways. Many we can remove altogether, [illegible] The organic and mineral im[illegible] of the atmosphere, im[illegible] in the drinks, ill-[illegible] irregular habits of life, [illegible] startling array as sources of disease, [illegible] the last few years, have been, practically, [illegible] of hygiene are established in [illegible] Medical Schools of Europe and in India. A [illegible] disease, and the charlatan [illegible] with a "pain-killer" will [illegible] wealth than his "learned [illegible] of his danger, and, like the [illegible] Emperors, contrives to keep his patients [illegible] the laws of health, and strives to [illegible] the real friend of society. The [illegible] of a kind which, associated so [illegible] with the usages of the people—a people [illegible]—renders it exceedingly difficult to [illegible] is only when an educated native gentleman, [illegible] for example, like Baboo Kunaylall Dey, rises [illegible] the light of truth into the Cimmerian darkness, [illegible] against these time-honored (would that they were [illegible] breach) customs of native society in India, that [illegible] can be expected. But I will revert to this subject hereafter.

It is presumed that you have become thoroughly acquainted with anatomy, the very basis of all professional knowledge, and with its handmaid—physiology; that you know the intimate structure and functions of every organ in the body when in a state of health; and that you are therefore fully prepared to enter upon the study of their diseases. A knowledge of anatomy and physiology will help you to a knowledge of pathology and morbid anatomy. But you can never be good morbid anatomists unless you are good anatomists, nor, without an intimate acquaintance with physiology, can you hope to be correct interpreters of the pathology of disease. If you have been careful [illegible] with healthy structures in the dissecting [illegible] no difficulty in recognizing abnormal con[illegible] examination. You will not at first read [illegible] structure aright, but a frequent attendance [illegible] will shortly enable you to do so. And [illegible] of you who carefully watch the progress [illegible], and, in the event of a fatal issue, f[illegible], and there see the explanation (for, in [illegible] is afforded) of the symptoms [illegible], I repeat, who do this throughout the [illegible] practice in preference to cramming [illegible] with a view to University Scholar[illegible] practical, and [illegible] the most successful [illegible]. You will do well to constantly com[illegible] structure, both with the naked [illegible] of the microscope. The opportunity [illegible] afforded you. The revelations [illegible] are often invaluable, and assist in ex[illegible] what can only be roughly estimated with[illegible].

Our ignorance of the highest application of microscopic power for so many years is a wonderfully striking fact. Known, crudely it must be confessed, to the Greeks and Romans, to Aristophanes, Seneca, and Pliny, the application of the instrument to science was left to that fruitful period of discovery, 1660, from which time, from the days of Mr. Gray's water microscopes to the splendid achromatic lenses of our own era, the construction of this instrument has gradually progressed, until it has come to be, so to speak, one of the brightest crystallizations of the human intellect. By the aid of the microscope, the lover of natural history may add rich harvests to the ever-widening fields of science; the adulterator of man's food may no longer hope to escape its scrutinizing enquiries; and even human life may hang upon its verdict. All alike acknowledge its value: the lover of science, the chemist, and the medical jurist. And without it, in the present advancing state of medical knowledge, the physician's means of diagnosis cannot be said to be complete. To illustrate this with examples. A person who has hitherto enjoyed fair health, with the exception of occasional attacks of intermittent fever, is suddenly, under the influence of some strong mental emotion, prostrated with one of the attacks. There is no rallying, in spite of every effort to promote it, and death takes place in the cold stage. There has been no history of a fatty heart, not the slightest suspicion of its existence during life; but the experienced physician, nevertheless, expects to find it when he makes the *post-mortem* examination. A rough way of ascertaining the point is by pressing a piece of white paper upon a section of the organ, when, if fatty generation has taken place, spots of grease will appear. But this occurs only when there is much fat, when the degeneration is extensive. A more complete method consists in taking a small portion of one of the musculi papillares (to which the tendinous cords of the mitral valve are attached), and teasing it carefully into minute portions with very fine needles. If fat be present, it will be seen under the microscope in the form of oil globules, which, if the degeneration be excessive, will have quite usurped the place of the transverse striæ of the ultimate muscular fibre. Such a case actually occurred under my observation during the past season, and a specimen illustrating the fatty degeneration is now in the Museum. The result of the *post-mortem* examination was most satisfactory to the friends, in whose minds there existed a great doubt as to what the cause of such a sudden death could possibly be attributed. Fatty degeneration, unless recognized, is progressive; and doubtless it was so in the case under review. In previous paroxysms of the fever, the degeneration had not probably advanced so far as to interfere with the reactionary muscular vigor of the heart; in the present paroxysm—severer it was said by the relatives, than *any* previous ones, the result doubtless of the strong mental emotion—there was more fat than muscle, and there was not power sufficient to propel the accumulated blood forward. It stagnated, therefore, in the heart.

Take another case, one with which some of you will be familiar. I allude to one Levi, a German Jew, who was admitted on the 29th September complaining of cough and severe pain all over his chest. Two months previously he had been ill in a similar way under the care of my colleague in the adjoining ward, and had left the hospital relieved, after being under treatment for five weeks. Since then he had ailed again, and had been admitted into the General Hospital. He was discharged, somewhat relieved, at the end of a fortnight. He then, very shortly afterwards, came to the Medical College Hospital on my admitting day, and was received into my ward. In addition to the cough and pain, I found extreme superficial tenderness over the whole surface of the chest, with a pungent warmth, such as we see in cases of insolation. The percussion note in the right infra-clavicular region was dull, and there was large crepitation, almost amounting to gurgling, in this region, especially towards the sternum. Crepitation was diffused throughout the right lung. The respiration was coarse at the back of the left lung, above and below, and there was crepitation in the left axillary region extending downwards. He was admitted, remember, on the 29th. On the 30th he complained of a burning sensation all over his body, and he was very hot. He had been very restless the whole of the previous night. The urgent symptoms subsided under the [illegible] plan of treatment, and on the 2nd October, when going through the wards at 11 P. M., I found him sleeping quietly on his side, the respiration being *very slightly* hurried. The following morning, when sitting up on the side of the bed to wash his face, he suddenly showed an inclination to fall. He was immediately supported into a lying posture, and stimulants were given, but without benefit. He shortly became insensible, and died within an hour. At the *post-mortem* examination, we found more or less engorgement in both lungs, the left being more engorged than the right. Diffused through the former were rounded patches of congestion. Old strong pleuritic adhesions existed on both sides, being especially marked on the right. The heart weighed ten ounces, and had a weak, flabby appearance. The walls of the ventricles were much thinned. As in the last case, a microscopical examination revealed the real cause of death, *viz.*, fatty degeneration, which was here so extensive, that the oil globules had entirely displaced the transverse striæ in the part examined. The engorgement of the lungs, from which the poor man had suffered for some time, was a progressive condition dependent upon a heart being daily deprived of its ability to propel the blood through the different organs of the body. Death was caused by asthenia (a condition of which I shall have to speak when we come to discuss the various causes of death), death beginning at the heart.

The microscope is of especial value in assisting us in one diagnosis of disease of the kidney. A few years ago, a medical friend of mine, in England, asked me to examine the urin of his brother, a clergyman, who had died comatose some months previously. The medical practitioner, who had attended the patient, had been educated before the days of Bright's discovery, and he had terrified the widow into a belief that her husband had died of some disease of the brain, which might be transmitted to the children. I took the urine, which had been carefully preserved, to Dr. Lionel Beale, in whose laboratory I was working at the time, and we examined it together. It was clear, of a dark red color, acid, and contained some large crystals of uric acid. There was no albumen, but the microscope revealed the existence of fragmentary casts from the uriniferous tubes of the kidney. The patient had died of Bright's disease, and the coma was a purely secondary condition arising from the effete products of the blood circulating through the brain, instead of being eliminated by the kidneys. You will occasionally have opportunities of seeing this condition in the cholera ward. Where the suppression of urine has continued for two or three days, uræmia is almost sure to follow.

HIS HIGHNESS the Maharajah of Vizianagram lately endowed the Civil Dispensary at Vizagapatam with the sum of Rs. 20,000, and has since that offered Rs. 150 a month towards its support. At the request of the Committee, the Maharajah has granted a further sum of Rs. 550 to be used in procuring iron cots and suitable bedding for the patients.—*Madras Standard, April*, 1868.

CASES FROM PRACTICE.

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NOTES ON FOUR CASES OF POISONING BY CHLORODYNE, TREATED AT THE MEDICAL COLLEGE HOSPITAL, CALCUTTA, DURING 1867.

BY S. C. MACKENZIE, M.D.,

Officiating 2nd Assistant Surgeon, Presidency General Hospital.

THE following cases occurred during my tenure of office as House Surgeon to the Medical College Hospital, Calcutta. I think the publication of my notes may not prove uninteresting to the readers of the *Indian Medical Gazette*, as such cases have hitherto been of rare occurrence, and none have been reported in this country.

CASE I.

E. G., aged thirty-three, a Eurasian female, was admitted on the 4th June, 1867, at 7. A. M. During the early part of the morning she had quarrelled with her husband for having gone into the country the previous day against her wish, and, while in a fit of rage, she drank an ounce of chlorodyne which was kept in the house.

When admitted into hospital, she was perfectly comatose; her breathing was stertorous, and pupils contracted. The stomach was emptied by the stomach pump, and strong coffee and other stimulants were freely administered. As she could not be roused, galvanism was resorted to, and applied to her body, and mustard to her extremities. These remedies, however, proved of no avail. She gradually sank, and died at 2-30 P. M.

The autopsy was made by the Police Surgeon nineteen hours after death. The vessels of the brain were found to be much congested, and both cavities of the heart full of dark blood of the color and consistence of black currant jelly.

CASE II.

L. C., aged nineteen, a Eurasian female, was brought by her friends to the hospital at 9 o'clock on the morning of the 5th September, 1867.

The persons who accompanied her stated that, some short time before, her step-mother had found fault with her, which had preyed so much on her mind, that she resolved to commit suicide, and to effect that purpose she had swallowed the contents of a bottle of chlorodyne supposed to contain one ounce.

When admitted, she was quite sensible, but drowsy and stupid, her pupils were considerably contracted, and were not affected by light. An emetic was immediately administered, by which the stomach was emptied of a large quantity of semi-digested food impregnated with the odour of ether. Strong coffee was then given, and she was made to walk for about thirteen hours, when the narcotic symptoms passed off, and she was allowed to rest.

Two days after, namely, on the 7th September, she was discharged cured.

CASE III.

J. M., a police constable, aged fifty, but much older in appearance, and much emaciated, apparently through disease, was admitted into hospital, quite insensible, at 9. P. M., on the 13th September, 1867, with stertorous breathing, a cold clammy skin, and pupils contracted to the size of a pin's point. All endeavours to rouse him proved fruitless; he gradually sank, and died four hours after admission.

The autopsy on his body was made eighteen hours after death, when it was found that the vessels of the brain were congested, the heart full of dark blood, the whole intestinal canal much inflamed, with a few ulcers in the ileum.

From the story told by his relatives, it appears that he had been suffering from dysentery for some time, and had been in hospital, but losing patience, he had taken his discharge, and had returned home the day before, namely, on the 12th September. The following morning, however, he felt worse, and went, as advised by a friend, to a chemist's shop, and procured an ounce phial of chlorodyne. He began to take it in small doses; but finding it relieved the pain he was suffering from, he continued to take it until, by the afternoon he had finished the ounce. He was found by his wife, late in the evening, senseless, and was brought to the Medical College Hospital.

CASE IV.

T. G. W., aged sixty-[illegible], once a tea planter, [illegible] of [illegible], was admitted into hospital [illegible]

[illegible] than the symptoms of [illegible].

[illegible] took several [illegible]

[illegible] admission [illegible] was then [illegible]

[illegible] he had [illegible]

REMARKS.

[illegible] at page 21 [illegible]

[illegible] cases, it will be seen that [illegible] II, were [illegible] I, case III [illegible] and in case IV [illegible]

[illegible] of simple [illegible] II and IV, it [illegible] I and III [illegible] I [illegible] in case I had [illegible] have been [illegible] III [illegible] the fatigue of [illegible]

[illegible] appears to have very largely increased [illegible] to guard against [illegible] it would be as well, perhaps, [illegible] greater degree of caution in dis[illegible] metal, and much-used, but to some extent [illegible].

CASE OF CHRONIC DYSENTERY, WITH REMARKABLE LESION OF MUCOUS MEMBRANE OF STOMACH.

By KENNETH McLEOD, A.M., M.D., L.R.C.S.E.,

[illegible]

[illegible] a Hindu [illegible] years of age, [illegible] was admitted [illegible] Hospital [illegible] on the [illegible] 25th of February, 1868. He had [illegible] months before his [illegible]

[illegible] under acute [illegible] twenty [illegible] in the twenty-four [illegible] He [illegible] and strain[illegible] His spleen [illegible] attacks of fever came on [illegible] 2 P.M., [illegible] left him with [illegible] He was treated with [illegible] of ipecacuanha, [illegible] doses of quinine [illegible] days with great [illegible] improvement in [illegible] On [illegible] his feet [illegible] He [illegible] on the 2nd of March [illegible]

He was [illegible] of March, [illegible] He [illegible] being [illegible] was not [illegible]

[illegible] 10th of April [illegible] by a [illegible] of iron in [illegible] and a [illegible]

He [illegible] of fever without [illegible] he became [illegible] The dysentery [illegible] whole [illegible] examination, his strength [illegible]

A [illegible] A [illegible]

I [illegible]

II [illegible]

III [illegible] and [illegible]

[illegible] III [illegible] tip of [illegible] valve [illegible]

IV. A [illegible]

The [illegible] greater portion of [illegible] The [illegible] along the great curvature [illegible] The mucous membrane [illegible] The exc[illegible] mucous membrane, which was best marked along the small curvature of the stomach and over the [illegible] three-fourths of the remaining surface. This [illegible] thrown into [illegible], which [illegible] a bulbous outgrowth [illegible] the fungiform papillæ of the tongue. The mucous membrane was [illegible] a line and a half, [illegible] when viewed with a [illegible] A few [illegible] fissures, [illegible] stripped [illegible] mucous membrane, leaving an [illegible] surface. On examining it with a [illegible] out of focus, [illegible] and was seen, when more carefully [illegible] to consist of numerous small [illegible] of an oval shape, with distinct nuclei [illegible] Besides this, numerous fat globules [illegible] granules and [illegible] be seen; but [illegible] The club-shaped processes [illegible] out of glandular [illegible], small yellow points could be seen, [illegible] over the membrane, [illegible] grown or [illegible] to grow. Much pigment [illegible] mucous membrane [illegible] rounded, or [illegible] structure of these papillæ was [illegible] of the [illegible] mucous membrane. The glands along the smaller curvature of the stomach were enlarged and pigmented. The duodenum presented a [illegible] and [illegible] force the membrane was then [illegible] showed a pigmented [illegible] the villi. The small [illegible] a thin white [illegible] The jejunum was [illegible] pigmented, but, as it approached the ileum, [illegible] colour. The ileum was abnormally thin and [illegible] and Peyer's patches [illegible] The whole of the mucous membrane was apparently atrophied. [illegible] colon was extensively [illegible] the ascending colon and [illegible] pigmented. The pigment was darker [illegible] In the transverse colon [illegible] ulcers in process of healing could be seen. The sigmoid flexure and rectum were thick and contracted. The mucous membrane was covered with a brownish yellow exudation, about a line in thickness, which could be stripped off the surface of it, leaving an abraded looking membrane. This exudation had, under a low power, a perforated or honeycomb-looking appearance, and, under a high power, was seen to consist of cells and granules, with much fatty matter. On the folds of this portion of the intestine many transverse ulcers of various sizes appeared, which seemed to have been the seat of recent hæmorrhage. Small circular ulcers could also be observed in abundance over the membrane. The glands along the colon were enlarged and pigmented, the liver was enlarged, and congested,—the subject of fatty degeneration in a slight degree,—and biliary stasis. The spleen was much enlarged, hard engorged, and friable.

The kidneys were congested around the pyramids, and the cortical substance of both was undergoing degeneration.

Remarks.

I have not been able, in any of the works in my possession (including Aitken and Reynolds), to find any allusion to, or description of, the lesion of the stomach described above. Dr Morehead, in the second edition of his "Clinical Researches on Diseases in India," gives details of three cases (Nos. 46, 89, and 90, pp. 259 and 271.) in which lesions of the stomach were observed. These lesions consisted of "patches of injected vessels," "five or six patches of ulceration, one or two of them quite circular with dark, yellow, and brownish sloughs in the centre; the others larger and more or less irregular, also with central sloughs; a dark brown marked appearance without softening at the cardiac extremity," and "a thickened and somewhat softened condition of the mucous membrane, which presented here and there an ash-grey dotted red appearance, with marks of one or two small cicatrizing ulcers. These appearances, though evidencing the fact that the mucous membrane of the stomach is apt to participate in morbid changes more peculiar to the colon, do not seem to be the same in nature, and certainly fall short in extent of the phenomena disclosed by my autopsy. In this the pathological product is evidently an organized adventitious membrane, and the pathological process appears to have been one of abnormal development of the so-called peptic cells contained in the gastric follicles, and perhaps of the epithelium covering the membrane intervening between the glandular inflections. That the glands were principally the agents in this cellular outgrowth is, I think, pretty strongly indicated by the mammillated aspect of its surface, and still more so by the detached bulbous villi of the pyloric membrane, apparently the product of the larger compound follicles scattered over this part of the mucous surface of the organ. The physical characters of the exudation were so like those of the membrane covering some parts of the colon, that it is impossible to consider the stomach lesion different or differently produced. The case appears to be a typical example of one of the most common and easily-understood forms of metastasis, namely, the transference of morbid action from one part to another of a continuous membrane, and falls into the same category with similar phenomena in the course of eruptive fevers.

The gastric process seems, however, to have been more gradual and less intense than the colic. If such is the case, then the phenomena observed in the stomach seem to furnish the essence of the dysenteric process, an abnormal proliferation of normal epithelial and glandular cellular elements. It is in consonance with pathological analogy to suppose that, while a moderate amount of the poison supposed to cause the disease will simply produce this proliferation, a greater amount will cause such graver perversions of nutrition as interstitial infiltrations, denudations, ulcerations, &c.

The other pathological features disclosed by this *post-mortem* examination, the pigmentations and atrophy of the intestinal mucous membrane, the altered character of the blood, the serous infiltrations and effusions all common enough in cases of chronic dysentery, the mode in which this pigment originates, whether it is a deposit or degeneration, has not been as yet worked out. The atrophy of the ileum and its glands, in such cases, does not easily fit in with the character of the morbid process of the large intestine, which seems to be an excess of growth, though of a perverted kind. This man had not reached that time of life when there is a natural emptying and collapse of the sac-like glands of the ileum; and yet I have never seen, except in similar cases of chronic dysentery, a more complete atrophy of the mucous element of the membrane.

Jessore, 14*th April*, 1868.

A CASE OF APHASIA.*

By G. D. McReddie,

Civil Surgeon, Hurdui, Oudh.

With reference to M Broca's theory of the faculty of speech being located in the third frontal convolution of the left hemisphere of the brain, I beg to place on record the following singular case which lately came under my observation. Musa, Brahmin, aged forty-five, was admitted into the Hurdui Jail Hospital on the 9th January. On the 5th instant he had received a latti blow on his head. The only external injury visible was, however, only a slight contused wound on the left and anterior surface of the scalp. No depression of bone, or fracture of the skull, was detected He was quite sensible; limbs not paralysed; pulse fair, *but he had lost the power of speech*. He could utter no articulate sound whatever. When told to protrude his tongue, he was unable to do so, but tried to draw it out with his fingers A sharp purgative was at once administered, and he was placed under close observation. No change occurred in his symptoms until about eight days after the accident. He could now put out his tongue quite in the straight line, and uttered the words "Ram, Ram, Ram" pretty plainly; but an attempt at expressing any other word proved a failure. I might mention that, having been concerned in a riot, his injury, though it lessened the punishment to which he would otherwise have been sentenced, did not excuse him altogether. He got only two months' rigorous imprisonment On the 17th February, as being quite well in all other respects, he was discharged from the Jail Hospital, and set to some light labor.

He continued in Jail up to the 23rd March, on which date he was released. He had regained to a considerable degree the power of speech, but his utterance as yet was not quite distinct. He seemed not to have sufficient control over the movements of the tongue to regulate its action suitably for clear expression. He spoke as if drink had caused a temporary impediment in his speech.

13*th April*, 1868.

TWO CASES OF POISONING BY MAJOON OR MAJUM.

By P. Cullen, M.D.

Civil Surgeon, Hoshungabad, Central Provinces.

CASE I.

Mussamut Allarukee, aged thirty years, was brought to hospital, between 11 and 12 o'clock on the night of the 3rd of April, in a delirious state, caused, it was stated, by eating some sweetmeats about six hours previous to admission. Her friends had given her some tamarind syrup mixed with dhye, which had produced vomiting.

On admission, her symptoms were: pupils considerably dilated, but sensible to the light; pulse about 90, rather feeble; temperature of body rather lower than natural; could sit up, but not stand; talked incoherently, and kept picking at the bed clothes; when the light was held near her face, she would put out her hands as if to lay hold of it, but appeared unable to direct her movements properly, and, after various vain attempts, would make a sudden grab at it. A sulphate of zinc emetic was administered, but it was with the greatest difficulty she was got to swallow it, and cold was applied to the head, and she was made to occasionally inhale a little carbonate of ammonia. She vomited a little in about two hours' time, and then fell off to sleep. At 8 o'clock the next morning she was quite well.

CASE II.

Mussamut Buggeah, aged fourteen years, daughter of the above, (Mussamut Allarukee,) was brought to hospital with her mother, and was said to have partaken of some of the same sweetmeat, but had not had anything given to her, nor had she vomited.

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* This is not Aphasia, as generally understood in the Profession. The patient was simply dumb, for the time. Had he been able to write, he would, probably, have written clear answers to questions, although he could not give utterance to them. In genuine Aphasia, there is loss of the *memory* of words, or of the coordinating power necessary to express them, whether by speech or writing.—Ed., *I. M. G.*

[illegible] the meaning of the [illegible] was [illegible]

[illegible] of the cases, [illegible]

[illegible] I [illegible] gum is a good [illegible] for its [illegible] bottles, and is [illegible] in mats, and [illegible] with this milk; but [illegible] the milk is not [illegible] in the sweetmeats and in the [illegible]

In Dr. A[illegible] gum is given [illegible] "ganjah [illegible] apple, the [illegible] but I am [illegible] that it [illegible] that all these [illegible] are [illegible]. Ordinarily they are satisfied with the simple charge.

CASE OF SNAKE-BITE, CURED BY STIMULANTS.

By INDOO BHUSHUN MOOK[illegible],

Sub-Assistant Surgeon, H[illegible].

S[illegible], a female, aged about thirty years, the wife of a syce, [illegible] cutting grass [illegible] at [illegible] A.M. [illegible] the 2[illegible], was bitten on [illegible] finger by a snake, which, [illegible] the wound, immediately [illegible] so that the woman was [illegible] from which she received the bite. The [illegible] which resulted from [illegible] to [illegible], where she was treated [illegible] by the native [illegible] the symptoms [illegible] gradually [illegible] to have [illegible] and [illegible] brought [illegible] at 12 noon to the [illegible] under [illegible]

On admission, she was found partially [illegible], with pupils [illegible] by [illegible] and pulse [illegible]. The [illegible] was [illegible] with a [illegible] of blood, [illegible] a little

[illegible]

R[illegible]

[illegible]

LIST OF MEDICAL OFFICERS WHO PASSED AT THE LAST COMPETITIVE EXAMINATION FOR THE THREE PRESIDENCIES IN INDIA.

	[illegible]	Marks.
1.	A. S. [illegible], M.D.	[illegible]
2.	A. S[illegible], M.B.	[illegible]1
3.	J. H. N[illegible], M.D.	[illegible]
4.	H. [illegible]	[illegible]
	M[illegible]	
1.	J. J. [illegible] R[illegible], M.D.	[illegible]
2.	[illegible] A. [illegible]	[illegible]
3.	[illegible] A. H[illegible]	[illegible]
4.	W. H[illegible]	[illegible]
	[illegible]	
1.	W. R. G[illegible], M.B.	[illegible]
2.	J. D[illegible], M.B.	[illegible]
3.	A. S. J[illegible]	[illegible]1
4.	J. T. K[illegible], M.B.	[illegible]2

LIST OF BRITISH MEDICAL OFFICERS WHO PASSED AT THE LAST COMPETITIVE EXAMINATION FOR HER MAJESTY'S SERVICE.

1.	C[illegible]	[illegible]7
2.	W[illegible], M[illegible], F.[illegible] S., P[illegible]	[illegible]
3.	C[illegible] J. [illegible]	[illegible]
4.	M[illegible], H. K., [illegible]	[illegible]
5.	[illegible] C. T., D.	[illegible]
6.	S[illegible], R. J., [illegible]	[illegible]
7.	C[illegible], T. A. J., [illegible]	[illegible]
8.	M'E[illegible], D. W.	[illegible]
9.	M[illegible], R., D.	[illegible]
10.	S[illegible], G. F., [illegible]	[illegible]
11.	R[illegible], J. G., [illegible]	[illegible]
12.	C[illegible]son, R. A., [illegible]	[illegible]
13.	M'N[illegible], W. H., Cork [illegible]	[illegible]
14.	G[illegible], M. M., C[illegible]	[illegible]
15.	[illegible], F., Cork	[illegible]
16.	H[illegible], G., Cork	[illegible]
17.	S[illegible], S. J., E[illegible]	[illegible]
18.	G[illegible], J. D., B[illegible] Dublin	[illegible]
19.	C[illegible], F. H. M., D[illegible]	[illegible]
20.	Anthony, M., Cork [illegible]	[illegible]
21.	Leake, J. R., [illegible]	[illegible]
22.	R[illegible], J. R., D[illegible]	[illegible]
23.	Hunter, J. H., C[illegible]	[illegible]21
24.	W[illegible], W. D., D[illegible]	[illegible]
25.	Cotton, S. K., [illegible]	[illegible]
26.	B[illegible], G. W., [illegible]	[illegible]
27.	Barry, J., C[illegible]	[illegible]
28.	E[illegible], W. F., C[illegible]	[illegible]
29.	A[illegible], J. A., B[illegible]	[illegible]
30.	R[illegible], J. D.	[illegible]
31.	A[illegible], D. H. B., F[illegible]	[illegible]
32.	W[illegible], [illegible] H., [illegible]	[illegible]
33.	M[illegible], R., C[illegible]	[illegible]
34.	C[illegible], J. D., D[illegible]	[illegible]
35.	A[illegible], A. M. [illegible]	[illegible]
36.	F[illegible]gerald, [illegible] W. D., C[illegible]	[illegible]
37.	L[illegible], L. [illegible]	[illegible]
38.	P[illegible]ham, S., D.	[illegible]
39.	S[illegible], G. D.	[illegible]
40.	H[illegible], D. C. W., D.	[illegible]
41.	O'G[illegible], J. J., [illegible]	[illegible]
42.	M[illegible], R., C[illegible]	[illegible]
43.	M[illegible], R. [illegible], D.	[illegible]
44.	[illegible], J. A., [illegible]	[illegible]
45.	D[illegible], G. M[illegible]	[illegible]
46.	J[illegible], H., Dublin	[illegible]

THE S[illegible] *P[illegible]* [illegible] that [illegible] the European [illegible] of [illegible] hospitals [illegible] the *H[illegible] H[illegible]* maintains that [illegible] chronic [illegible] native doctors [illegible] chronic fevers, [illegible] good native [illegible]

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* [illegible]

each Mofussil hospital. By studying the *Yajurr Veda*, proper medicines may be found for all diseases."

In the *Education Gazette* there are given no fewer than four "tried" antidotes to snake-bite. The first method is to make a paste of the seed of the *croton* fruit, which, wherever the bite may be, must be plastered on the *eyes* of the patient, so that it may come well in contact with the pupils. We are not surprised to read that "when this medicine comes in contact with the pupils of the eyes, the patient will cry out that his eyes are gone." The writer concludes rather ambiguously:—"This medicine may be given to a dying man." The other antidotes seem to be quite as specific.—*Pioneer, 27th April*, 1868.

Mr. John Green, late a member of the Subordinate Medical Department of the Presidency of Madras, has been appointed Secretary by the Dewan to the Rajah of Vencatagherry, C. S. I. —*Madras Standard.* (*Pioneer, 24th April*, 1868.)

Notices to Correspondents.

AMPUTATION OF THE PENIS.

Assistant Surgeon Curran, *H. M.'s 88th Foot, has favored us with an account of three such operations which he performed in one week at Futtehgurh. There being nothing peculiar in the cases, we have not reproduced them in detail, but the fact of three such amputations being required in so short a time is worth recording, especially as the operation can but seldom come under the cognizance of a Military Surgeon, as no man likely to require it could possibly enter, or remain in, the army.* Mr. Curran's *patients were all natives of Ferrukhabad. Two were elderly persons,—one, a Hindu, suffered from epithelioma of the penis; the other, a Musulman, from encephaloid cancer of that organ, with enlargement of some of the inguinal glands, which were also removed.* The third case was that of a young Hindu suffering from elephantiasis of the prepuce. All the cases did well.*

Francis.—*As we are not aware that either Muhammad or the oppressed citizen whose piteous case is described by Livy had been deprived of their penes, we do not see how the virile powers of the one, or the squalor of the latter, throw any light on the subject.*

EXAMINATIONS IN NATIVE LANGUAGES.

Umbra *enquires whether a young medical officer who has not passed in the vernacular languages is entitled to staff allowance when temporarily in charge of a regiment, the medical officer of which is on* privilege leave. *The question of passing in the languages has nothing to say to the question. An officer going on privilege leave draws his full pay and allowances, and may make whatever* private arrangements *he pleases with his locum tenens; but the latter cannot claim anything for his services, which are rendered voluntarily. Government merely requires that an officer taking privilege leave shall find some one to undertake his duties, and leaves the parties to settle their own terms. A Medical Officer acting for another, who is absent on general leave, will draw the full allowances, without having passed the languages, if he entered the service before February,* 1867. *Officers who have entered the service since that date will, under no circumstances, draw more than their "unemployed pay" (para. 29, Secretary of State's Despatch No. 349, 7th November, 1864) until they have passed the "Lower Standard." Secretary of State's Despatch No. 255, 16th November, 1866, para. 7.)*

Sub-Medicus.—*Your Circular on the subject of the Widows' and Orphans' Fund arrived too late for notice in this issue of the Gazette. We will deal with the subject, however, at length, in the next number.*

Name Illegible, A Licentiate, *Bombay. Your contributions shall appear in the next issue.*

Communications have been received from

G. E. Pool, *Civil Assistant Surgeon, Goojerat.*

A. R. Hall, *Assistant Surgeon, Barrackpore.*

Dr. T. Murray, *Civil Surgeon, Ajmere, from whom we shall be glad to receive further contributions.*

P. Cullen, *Civil Surgeon, Hoshungabad.*

J. B. Hamilton, *Assistant Surgeon, 10th Brigade, Royal Artillery.*

C. M. Russell, *Supdt. of Pilgrim Hospital and Civil Surgeon, Gya.*

Domestic Occurrences.

DEATHS.

Ferris.—*At Calcutta, on the 21st May,* Josephus Frank, *infant son of Dr.* J. A. Ferris, *aged 5 months and 21 days.*

Brown.—*At Bakloh, near Dalhousie, on the 8th May,* Robert David, *son of Surgeon-Major* Brown, *4th Goorkha Regiment, aged nearly six months.*

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* Unpromising as this case looks, the results seem to have amply justified the operation. We should be glad to hear a further account of this patient, now that sufficient time has elapsed to allow of the disease re-appearing.—Ed., *I. M. G.*

The Indian Medical Gazette.

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only ON ONE SIDE *of each sheet of paper.*

The signatures should be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, else delay must inevitably occur in their publication.

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The Co-operation of the Profession throughout India is earnestly solicited.

Special Notice.—*Subscribers are particularly requested to notify any changes of address, as otherwise no responsibility for miscarriage of copies of the paper can be assumed by* Wyman Bros., *Publishers, Hare Street, Calcutta.*

Hare Street,
January, 1868.

Wyman Bros.,
Proprietors.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

DISTRIBUTION OF PRIZES AT THE MEDICAL COLLEGE.

(Concluded.)

In the course of the proceedings, Dr. Chevers announced a fact, the importance of which cannot be over-estimated in its relation to native medical provision for the people. In introducing to the Chairman a successful prize-man, and one of the *best* of the students who were leaving the College, he stated that the young man was contemplating a visit to England *with a view to competing for an Assistant Surgeoncy in the Indian Medical Service.*

There are now no restrictions which bar the door of entrance, into this hitherto exclusive preserve, to the natives of tropical climates. All may enter who can. Heartily do we congratulate the aspiring youth upon the result of his College career, and sincerely do we trust that he will attain the object of his journey home. *But the handwriting is on the wall.* He is not the first of the *best* men of the College who have considered the prospects held out to Sub-Assistant Surgeons in Bengal too poor to induce them to declare for Government service here. He is following in the steps of students who, having taken the highest honors attainable at the Calcutta University, are now studying in London and Edinburgh in the hope of one day being borne on the roll of the Bengal Medical Establishment, of becoming Medical Officers in charge of regiments, of Civil stations, (including that of lunatic asylums, dispensaries, and jails, invested, it may be, with Magisterial powers in the latter); of becoming professors in Colleges; of attaining, in short, to every advantage and every prize which, in days gone by, were reserved only for the favored few who had friends in the "house that John built."

It is a significant sign of the times. Let these homeward journeys, on the part of those who are expected to become

Sub-A[illegible] [illegible] an exp[illegible] [illegible] [illegible] [illegible] and we [illegible] [illegible] [illegible] the wri[illegible] [illegible] [illegible] Europe[illegible] [illegible] way, [illegible] that we [illegible] to say w[illegible] [illegible], and the Assistant Surgeon [illegible] [illegible] Physicians and [illegible]. Such a result w[illegible] [illegible] [illegible] [illegible], and by all who [illegible] [illegible]. We [illegible] [illegible] that the [illegible] [illegible] are not [illegible] from the [illegible] [illegible] proved themselves worthy to receive [illegible] [illegible] [illegible] [illegible] [illegible] practitioners, however well [illegible] [illegible] [illegible] [illegible] charges, and the Sub-A[illegible] [illegible] [illegible] Government, [illegible] [illegible] [illegible] where ladies [illegible] [illegible] [illegible] having been [illegible] [illegible] [illegible] [illegible] S[illegible] [illegible] present, [illegible] [illegible] will fail to [illegible] matter [illegible] [illegible] the Sub-Assistant Surgeon [illegible] [illegible] [illegible] will make all the [illegible] [illegible] [illegible] the same. Of course there is [illegible] [illegible] is one only of degree.

This, [illegible] [illegible] which we attach the [illegible] importance. We are [illegible] [illegible] [illegible] [illegible] [illegible] experience [illegible] [illegible] [illegible] question, it we[illegible] [illegible] [illegible] men [illegible], after leaving College, [illegible] parts of the country, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of their own, [illegible] [illegible] [illegible] [illegible], but when we know [illegible] [illegible] [illegible], wh[illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] Sub-Assistant Surgeons [illegible] [illegible] [illegible] to get back to Bengal [illegible] [illegible] Upper Provinces [illegible] [illegible] [illegible] [illegible] [illegible]. They m[illegible] [illegible] [illegible] [illegible] [illegible], as the Bengali [illegible] [illegible] would not [illegible] the r[illegible] [illegible] [illegible] [illegible], it [illegible] that [illegible] [illegible] [illegible] [illegible] placed in charge of [illegible] [illegible] in Calcutta. It is known th[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] important situations. [illegible] [illegible] [illegible] the state, and financial p[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] will [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] But, under

[illegible] [illegible] that the [illegible] [illegible] [illegible] [illegible] instance. We have not made [illegible] [illegible] [illegible] [illegible] must be employed [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] most, we [illegible] [illegible] to do so. W[illegible] [illegible] the native w[illegible] [illegible] [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] each of the present [illegible], [illegible] [illegible] [illegible] [illegible] "Native D[illegible]" [illegible] [illegible] at present [illegible] [illegible] is not, w[illegible], it is [illegible] [illegible] those who have [illegible] [illegible] the subject, have the effect of [illegible] Sub-Assistant Surgeons to declare for Government service and to [illegible] attached to it.

BENGAL MEDICAL RETIRING FUND.

We reproduce, among our extracts, a letter signed "Fiat Justitia," upon the subject of the Medical Retiring Fund in Bengal.

The writer complains of the Fund as a "source of incessant irritation to a great number of subscribers," and blames the Government for [illegible] on their behalf. He wishes the Fund to be formed anew, "in order that the fund may be placed upon a better footing." We must remind "Fiat Justitia" that the service was very fortunate in having the Fund "taken over" by the Government as it stood, for its financial position was at the time most unsatisfactory, nor would there have been any improvement. It is very true that the Government at home was to some extent responsible for this, as, owing to the diminished number of Assistant Surgeons who entered the service after the mutiny, the resources of the Fund were becoming seriously diminished at the time. But the Government have considered this fact in accepting the fund with its liabilities. Without Government aid we should probably have been compelled to reduce the number of our annuities even below seven; whereas now the seventh annuity is secured, and the Secretary of State for India has promised that, after the transfer has been formally made, he will take into consideration the eventual grant of an eighth. With the question as to whether the original principle of the Fund was or was not a good one, the Government have nothing to do. They have taken the Fund as it stood at the time of the transfer of India to the Crown, and merely guaranteed that the subscribers should experience no loss by the change. There is some discussion still going on as to the exact terms of the deed of transfer, but, practically, all the responsibilities have been assumed by the Secretary of State for India.

With regard to the unsatisfactory working of the Fund, we cordially agree in what the writer has urged. We were led to believe (on the day [illegible] we made our bow to the Chairman of the Honorable East India Company under the auspices of our [illegible] Mr. [illegible]) that an annuity would be available after seventeen years' [illegible] [illegible] in India, we found that the period would be [illegible] seven and twenty. Many subscribers

bers would of course gladly receive the amount of their subscriptions back, to wit, those who are not likely to become entitled to an annuity, to say nothing of the *non-receipt* of it for several years. Others again, those who have paid more than its half value, which, were the annuity available, would entitle them to receive it, would prefer waiting and realizing in due time this important addition to their income. Nowhere else would an investment to the same extent yield a like return.

There are these two distinct classes of subscribers, with conflicting interests. But with so slender a capital wherewith to supply the necessary number of promised annuities, it is not probable that the Government would reduce it still further by giving back any subscriptions to those who did *not* wish to remain and wait for them. It is indeed "a fact that men now-a-days are thirsting to leave the country." "Fiat Justitia" goes so far as to say that "their interest in it has gone; it stinks in their nostrils." This may be so; but other causes, of a far more potent nature than any gubernatorial disregard of our wishes with respect to the Retiring Fund, have combined to produce this unhappy and, so far as the welfare of the people of India is concerned, most unsatisfactory result.

SUBORDINATE MEDICAL DEPARTMENT.

AMONGST our extracts will be found a letter addressed by "Sub-Medicus" to the Editor of the *Pioneer*. The writer adopts a tone, with reference to this journal, which is very unbecoming, and which, moreover, conveys the idea that we do not sympathize sufficiently with the Department whose cause he pleads, and which we pleaded ourselves in a leading article published in March, 1866. The Subordinate Medical Department may rest assured that their cause is safe in our keeping; safer, shall we say, than in that of "Sub-Medicus," when he would have us publish a letter which could only tend to injure their prospects with the Government, whilst its singular mixture of raillery, pathos, and derision would certainly not secure for himself the sympathy which men are ever ready to extend to all who are *patient* in misfortune.

We subjoin an extract, and would then ask the members of the Department whether they consider that their interests would be advanced by the publication of such a letter in its entirety.

"How long, O tender and gracious Government, how long! How long are they (the much and sorely aggrieved members of the Subordinate Medical Department)to remain unheard, unheeded, unredressed their pressing grievances? In behalf of nearly 500 hard-worked and badly-paid servants of Her Britannic Majesty in India I ask this urgent question. But I sicken when I know I ask in vain for a reply. I might as well whistle a jig to a milestone, in view to eliciting a caper therefrom, as to expect to find this question answered, at least by any high functionary of this mighty and masterly inactive rule of ours. Our Government has a heart of adamant, and ears of some tougher, impenetrable substance still."

We cannot but express extreme surprise that "Sub-Medicus" should venture to think that the Editor of the *Indian Medical Gazette* would allow the journal, which he has the honor to conduct, to become a medium for the utterance of such sentiments. That much remains to be done for the Subordinate Medical Department, no one is more thoroughly aware than ourselves; but we would counsel its members to exercise patience yet a little longer, and to rest assured that their interests are not lost sight of by the Government. We are very happy to receive communications from all who are desirous of enlisting our services in their cause; but we must insist upon the communications being couched in suitable language, or, like the letter from "Sub-Medicus," they will not be published.

ON INSOLATION.

IN our April number we published the commencement of a paper, (to be continued hereafter,*) by Surgeon Barnard, on the "Pathology and Treatment of Coup-de-soleil or Insolatio;" and the subject has likewise come under discussion, at a meeting of the "Bengal Branch of the British Medical Association," in Calcutta.

The profession is under considerable obligation to Mr. Barnard for drawing attention to a mode of treatment, in heat asphyxia, which, we believe, has not, in that disorder, been adopted to the extent that it, perhaps, might have been: although we venture to think that the amount of success which the author predicts for it is hardly to be anticipated, *viz.*, recovery in nine cases out of ten. Mr. Barnard speaks of the condition, which he would treat in this way, under the synonymous terms "coup-de-soleil" or "insolatio;" but we take leave to designate it under, what we conceive to be, the more appropriate head of heat asphyxia.

The treatment of a disease should always, where possible, be based upon its pathology; and, although different causes may lead to the same results, requiring much the same treatment in the main, it is absolutely necessary that we should separate these causes clearly in our minds, as a due consideration of each may lead to more correct notions of their individual pathology. Asphyxia, for example, is a condition which may be produced in several ways: the lungs may become engorged from cobra, or like, poisoning; from drowning; under the influence of heat alone; or of heat *plus* drink or a vitiated atmosphere, &c., &c. It may be good practice to keep up artificial respiration in each of these cases, but, with reference to the agent which, immediately or remotely, has produced the asphyxiated condition, something more may be required, too. If it be a case of ardent fever, quinine in large doses may be absolutely called for. It strikes us that Mr. Barnard lays too much stress upon artificial respiration, *per se*. Were it not that we satisfied ourselves, at the discussion which took place at the meeting of the Medical Society, that the author of the paper quite intended to include, in his category, what is sometimes spoken of as "ardent fever" synonymously with insolation, we should have inferred, from a perusal of his paper, that he had not so intended; for, in none of the cases cited by him is the characteristic feature—the pathognomic sign of the disease—*viz.*, *pungent heat of the skin*, once mentioned. We are to understand, then, that artificial respiration would be the remedy on which Mr. Barnard would most rely in ardent fever, as much as he would in pure ictus solis, coup-de-soleil, or sunstroke, where the individual had been simply *struck down*, his nervous system prostrated under the influence of the shock, *but where there was no pungency of skin.*

This brings us to the question—What *is* insolation? We

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* We have reviewed Mr. Barnard's paper, without waiting for his final communication, which, we understood, does not affect the text.

have always [illegible] to be [illegible] sunstroke; [illegible]

[illegible] recently [illegible] that [illegible] was [illegible] the attention of [illegible] to the [illegible] was [illegible] was the result of [illegible] heat. Heat, [illegible] estimation, was [illegible] We have [illegible] space to enquire into the [illegible] against this [illegible], but we would [illegible] to ensure [illegible] during [illegible], unhappily, [illegible] cases may be expected, [illegible]

[illegible] pages of the *Indian Annals* [illegible] 1855, No. [illegible], *[illegible] G. Hill on [illegible]* [illegible] July 1859, No. XII, *Deputy Inspector [illegible]* [illegible] *ated Cases of* [illegible] *Report on the Outbreak of Insolation in the* [illegible] *Surgeon T. H. Butler.* [illegible] *October*, 1856, No. [illegible] *J. B. S*[illegible], [illegible] No. XX. [illegible] *Opinions* [illegible] *M*[illegible] *J. M*[illegible], *Surgeon, M*[illegible] Thomas [illegible] quotes Dr. N. Chevers as having remarked on the [illegible] of sudden attacks of heat [illegible] malaria in a concentrated form, [illegible]

It will be [illegible] that the [illegible] or ardent fever, rests upon very [illegible] it is by no means [illegible] Still, there is ample evidence to [illegible] something more than mere heat in the [illegible] from Mr. Barnard's own favourite [illegible] W[illegible] Sir Thomas does [illegible] Sir Benjamin Brodie's [illegible] apparently as the result of [illegible] there was no portal open for [illegible] was [illegible] perspiration. The [illegible] the prostrating effect of [illegible] perspiration being [illegible] ovens heated to a temperature [illegible] in the [illegible] Watson's [illegible], the [illegible] the proposition that something [illegible]

to a result [illegible] Whether [illegible] heat [illegible] stricken down [illegible] skin is dry, and [illegible] But it is [illegible] remarks [illegible] years [illegible] the autumn [illegible] of the [illegible] W[illegible] S[illegible] Thomas Watson [illegible] Mr. Barnard synonymous with mere [illegible] we are indebted to Dr. S[illegible], whose [illegible] fevers is simple, yet thoroughly practical, whilst it is [illegible], we believe, true.

Whilst then we thank Mr. Barnard for laying stress upon a remedy, (in cases of heat asphyxia, however produced,) which may not have had hitherto sufficient [illegible], we would [illegible] urge the younger members of the profession, of those who are practically unacquainted with tropical [illegible] too hasty an inference from his paper, that [illegible] fever of Dr. Scriven is mere sunstroke, and that artificial respiration is the one remedy [illegible] to be placed. Mr. Barnard [illegible], it is true, the cold [illegible] for reducing the temperature, which, he believes, is [illegible] the temporary paralysis of the cerebro-spinal [illegible] connected with respiration (though [illegible] paper, [illegible] enough, pungency of skin is omitted;—[illegible] from [illegible] of his cases, one would [illegible] shock to the system from [illegible] heat, [illegible] in short [illegible] at the same [illegible] (our author must [illegible] we are in error,) it would [illegible] that the remedy [illegible] in conjunction with [illegible] to rely, is put somewhat [illegible] background. [illegible] case which came under Mr. Barnard's observation, he does not appear to have used [illegible] at all.

We commend the [illegible] careful [illegible] of the [illegible]. We are not yet [illegible] on the [illegible] any more than [illegible] to be able to say, [illegible] sion, that malaria [illegible] to do with [illegible] certain disease [illegible], in penning this remark is to invite [illegible] whether malaria [illegible] here, [illegible] only [illegible] carefully [illegible]

[illegible]PORE.

[illegible] the 2nd [illegible]

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* [illegible] matter, [illegible]

March last, with reference to educational progress in Jeypore. The former takes exception to "Observator's" letter, and says that "most of the statements are exaggerations," whilst "many are not true." It is not true, for example, that the Maharajah considers the establishment of a school of arts more important than a medical school. We are heartily thankful to hear it. He goes on to say that he believes the day not far distant when a medical college will be again established in Jeypore, and "on such a system, too, as will redound to the credit of this State and all concerned." This is indeed a matter for rejoicing. Dispensaries are now being established, adds Lieutenant Jacob, for the first time, all over the State, and there is a Medical Hall in the city which can meet the demands, not only of its own dispensaries, but the wants of other States also. Hygiene and prison discipline are now being introduced. Lieutenant Jacob then wishes to do justice to an absent man, Colonel Price, to whom, says the writer, all the credit in road-making, and other engineering improvements, is entirely due. Dr. Burr is entitled to none of it. This is the substance of Lieutenant Jacob's letter. He concludes by regretting that we have not made the *amende honorable* to Dr. Valentine for the "unjust imputations" cast upon him in our article.

Dr. Valentine begins by thanking us for giving him an opportunity of "pointing out the groundless nature of these charges," and solicits another for informing the profession, who have been so grievously led astray by "Observator," of the real causes that led to the abolition of the school. From Dr. Valentine's statement, it would appear that a report of the working of the school was called for after it had been six years in existence, no report having been submitted during the whole of this time. It was drawn up and sent to the Government of India through the Inspector-General of the Medical Department. The Government of India forwarded it to the Governor-General's Agent, who was requested to explain certain obscure points in the report, and to give his opinion upon the working of the school. The Agent's opinion was unfavorable. He recommended that the school should be broken up, and the students be sent to Calcutta for instruction. The Maharajah was then addressed by the Government. It was suggested to him that he should place the school upon a more extended basis with a view to his original intentions being satisfactorily carried out; but that if he did not feel disposed to do this, he had then better break it up, and let the scholars be educated in Agra. His Highness became naturally desirous to know how it was that an institution which he had treated so liberally should have yielded so unsatisfactory a return; and he wished to be informed, moreover, of the nature of the facilities which would be afforded for the instruction of the students at Agra and in Calcutta, if it were decided to send them to either of these towns. Meanwhile, Dr. Burr made an effort to secure the continuance of the school, and the supreme Government consulted Dr John Murray. He, too, decided against it as being an incomplete establishment, with a defective system; and recommended Agra. Dr Ewart, the Officiating Principal of the Calcutta College, and Dr. Moore, of Aboo, strongly recommended that the school should be continued. The Maharajah and Council, however, considered that it had better be abolished. The fiat went forth. *Deleta est.* The medical school of Jeypore is no more.

Dr. Valentine then tells us that the Maternity Charity is an utterly worthless institution, and that nothing can be said in its favor. He condemns "Observator's" communication in strong terms, calling it a production "three-fourths of which have no foundation whatever in fact;" the remaining fourth requiring so many deductions, that scarcely a grain (!) of veracity is left.

So much for these communications. The editor of a journal is mostly dependent, for the information which appears in its pages, upon contributors who are kind enough to keep him *au courant* with all that is going on beyond the reach of his own "ken." He cannot always analyse the facts communicated to him; and if they are authenticated by the name of the writer, (further vouchers cannot be demanded,) he must be satisfied. He becomes a chronicler of passing events, and, when required, a commentator. The Editor of the *Indian Medical Gazette* offends no one willingly; and if any personal injustice is caused by his publications or remarks, no one regrets it more than himself. This journal is not intentionally a vehicle for the display of personal animosity or flattery.

The main fact in connection with this correspondence, which is interesting to all who have medical progress in India at heart, is the downfal of an institution which *might* have rivalled those of a like nature which are doing so much good in Calcutta, Lahore, and elsewhere. We have recorded our opinions on this subject, under another heading, in the present number; and we can only say here that we sincerely trust, with Lieutenant Jacob, that the day is not far distant when a Medical College, with hospital attached, will rear its head in Jeypore upon a foundatioo similar to that of like institutions in Calcutta, and from whence Sub-Assistant Surgeons shall be given to India of a type, as regards physique, superior to that of the Bengali, and willing to serve the State in any part of the country, (though destined for Rajpootana especially,) without being afflicted with those terrible attacks of *nostalgia*, or home sickness which so interfere with the efficiency of that otherwise most useful native medical officer.

MEDICAL ORDERS.

WITH the present number of the *Indian Medical Gazette* we have issued, in the Supplement, a reprint of all the recent Orders affecting the Indian Medical Service from the original Warrant dated May 16th, 1844, to the present time.

This will likewise be published in octavo size, and be available separately, in the form of a pamphlet, at 1 Rupee a copy.

We would recommend our medical friends to secure the present opportunity of possessing themselves of these several Orders, offered as they are in so compendious a shape.

AT an ordinary monthly meeting of the Medical and Physical Society of Bombay, held on the 4th instant, a paper contributed by Dr. Beatty, on the efficacy of large doses of nitre in curing fever, was read. The dose advocated is ten grains every second hour. Dr. Beatty states he has now lost all faith in quinine as a remedy for intermittent fever in the tropics, and, moreover, has almost abandoned its use as a febrifuge since he learnt the great efficacy of nitre used after the manner recommended by Dr. Sawyer, of New York. "It appears as though Nature herself," says Dr. Beatty, "intended this remedy to be used, as she has so bountifully supplied it in those countries (Sind for example) in which this particular form of fever is so prevalent." None of those present at the meeting had tried the remedy in question in large doses, or had any one lost faith in quinine. It was, however, resolved that a trial of nitre, as recommended, should be made.—*Times of India. (Pioneer, 20th April,* 1868.)

Meetings of the Bengal Branch of the British Medical Association.

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Bengal differed in no essential point from ordinary intermittent or remittent malarious fever, had been confirmed by his experience in this wider field now under observation. He would now redeem the promise made by him in 1866 to treat of the questions of malaria, of the pathological relation borne to the various organs by the diseases which it induced, and of the treatment of, and prophylaxis against, its effects. Malaria had never been isolated, but from the constancy with which it was generated wherever heat, moisture, and decaying vegetable matter were found together, and from the similarity in its effects on the system in all places, we were justified in attributing a distinct entity to it. It was generally supposed that malaria existed mainly as vapour, and entered the system through the lungs; but he was convinced that the entire dermo-intestinal system was as often the channel through which it was introduced. It was well known that water *absorbed* malaria, but it had not yet been proved to have *decomposed* it. Much grosser substances, such as metallic mercury finely divided, could enter the system through the intestines or the skin. Dr. Juggo Bundo Bose instanced two tanks in his own village, both of which were filled with vegetable *débris* by the cyclone of October 5th, 1864. One was immediately cleared out, and its water remained perfectly wholesome. The vegetable matter was left to rot in the second, which became so foul that the fish in it died, and no one could use the water for a month. When the people began to use this tank again, all who drank from it, or even bathed once in it, suffered from the fever. It is a question whether all the organs on which malaria exercises a deleterious influence are primarily affected, or whether some are only affected secondarily, owing to the disease set up in others. Dr. Juggo Bundo Bose thought that the blood was the part of the body mainly affected, (either primarily or through the action of malaria on the organs concerned in its formation and disintegration,) and that the altered state of the blood led to changes in other organs. He attributed the leucocythæmic state of venous blood less to increased formation of white corpuscles than to the decreased formation and the more rapid disintegration of the red ones.

The present epidemic is essentially a malarious one. It has lately spread to villages in the vicinity of Mamaree, Beichee, Tarkeshwar, &c., and is still rampant in Pandua and several of its old haunts. The duration of the epidemic in any district varies from one to eight years but averages three and a half years. The fever is generally intermittent, more rarely remittent, and always of a low and congestive, not asthenic and inflammatory, type. Periodicity and pertinacity are its two most striking characteristics. Each individual attack may consist of from one to twelve or thirteen paroxysms of fever, but these attacks continue to recur, at intervals varying from two to six weeks, for many months, or even for six or seven years. Even change of air does not at once remove the disease. In one case a stay of six hours in the malarious districts brought on a fever which continued to recur for eighteen months.

The disease only differed in a few points from ordinary intermittent or remittent fever. The first paroxysm was generally preceded only by slight chilliness, and the later ones by ague. Dr. Juggo Bundo Bose had, however, seen some alarming cases of ague with collapse preceding the first paroxysm, and he had heard of two such cases which ended fatally. The sweating stage and subsequent intermission are generally well marked. Sometimes there is only a slight remission, and sometimes the sweating stage is attended with formidable, or even fatal, collapse. The occurrence of this collapse seems to bear no relation to the duration or severity of the disease, or to the state of the solid viscera. The first invasion of the fever may be quite sudden, or it may be preceded by headache and languor, &c. The first paroxysm usually begins in the afternoon; the subsequent ones in the morning. The worst cases occur when first the disease visits a locality; it is then that head symptoms are most common. The approach of the latter is usually sudden. There has generally been only stupor during the cold and hot stages of the earlier paroxysms, which gives place, after three or four returns, to coma, the original congestion constantly recurring, leading at length to effusion. In other cases there is at first slight wandering, passing gradually into continuous delirium, and ending in a typhoid condition. Hepatic complications are also common; they may begin with nausea and pain at each paroxysm, followed by jaundice, and ending in hepatitis, abscess, or chronic enlargement. Sometimes jaundice sets in suddenly, and the patient dies delirious or comatose. In these cases the liver has probably become suddenly disorganised. All these inflammatory complications are of an asthenic type, and tend to become more so as they go on. The mortality is very great in this stage of the fever, which lasts for three or four months.

The next stage, lasting eight or nine months, is marked by the return of the febrile attacks, at intervals varying from a fortnight to six weeks, and by the gradual supervention of chronic changes in the solid viscera, such as chronic enlargement of the liver or spleen, Bright's disease, and dropsy, depending on spanæmia, kidney disease, or obstruction of the veins by a diseased liver. If the disease last for more than a month, the spleen is almost certain to be enlarged. It sometimes becomes enlarged from mere residence in a malarious district without the occurrence of fever. The mortality in this stage is comparatively small.

After eight or nine months, the disease enters on its third stage; the fever comes on at shorter intervals; at length it becomes quotidian, and ultimately continuous. Death takes place from the weakening effect of the fever, or from chronic visceral disease, and the mortality is much greater than in the second stage.

Death sometimes occurs in the cold stage of a paroxysm, owing probably to the right side of the heart becoming paralysed from its over-distension by venous blood.

As regards treatment, Dr. Juggo Bundo Bose did not believe in the theory of "change of type." He remembered the sensation caused in Calcutta by the first promulgation of Dr. Todd's views; and though no one would now advocate the use of brandy at the rate recommended by that author, there was certainly a great improvement in treatment since then. Treatment was now *conservative*, and the importance of husbanding the patient's strength was recognised. General bleeding was never wanted, and local bleeding should be very sparingly used in cases of local complications. General bleeding had been advised when death in the cold stage threatens, on the principle of relieving the distension of the heart; but the heart was not like a distended bladder which we could be certain of emptying. Any bleeding which would insure a diminution in the heart's contents would be too large to be safe. The general principles of treatment were the same as in any intermittent fever. Where there was local congestion, (as of the head or liver,) we should try to mitigate this by gentle antiphlogistic treatment (such as shaving the head, cold, small doses of calomel, and blisters in case of head symptoms) before giving quinine. We should not lose too much time waiting for a perfect intermission, which might not always occur; for the oftener the fever returns the worse does the local complication become. Nourishment, in the shape of milk, broths, and wine if necessary, should be given early. The occurrence of fatal prostration in the sweating stage should be looked out for, and met with stimulants and nourishment, &c. Iron, arsenic, and tonics should be given after the fever is checked.

As long as the fever recurs at intervals, quinine though sometimes failing, is still very valuable. But when, in the third stage, the fever becomes continuous, quinine is useless. Arsenic and strychnia are highly spoken of in this stage by Baboos Surji Coomar Sarbhadhikari and Kanhay Lall Dey. Dr. Juggo Bundo Bose, however, had not found any one medicine particularly valuable, but rather relied on tonics, careful regulation of clothing and diet, and, where possible, change of air. In cases of chronically enlarged spleen, animal broths should be given during the intermission, but when the fever returned, the diet should be reduced in quantity, rice being especially excluded on account of its bulk. Even more care was required where the liver was involved; all fatty matters, and sometimes even milk, should be excluded. Medicinally, splenic complications should be treated with iron, cod-liver oil, and tonics, and quinine, strychnia, or arsenic during the febrile attacks. Where the liver was engaged, the mineral acids and counter-irritation were indicated, with occasional gentle purgatives.

Of the two great remedies in this disease, quinine and change of air, the latter, in too many cases, was not practicable. After eight years' very extensive experience of it, Dr. Juggo Bundo Bose must say that his faith in quinine was somewhat shaken. It checked fever rapidly, but did not seem to obviate the tendency to its recurrence. The inhabitants of districts where the epidemic fever prevails maintain that quinine only checks its appearance without eradicating the poison from the system; that it induces a state of constitution favorable to return of the disease; and that its prolonged use is followed by a subfebrile state shown by the coming on in the evening of headache, lassitude, and burning of hands and feet, &c. Dr. Juggo Bundo Bose did not believe that quinine generated any proclivity for the occurrence of fever, but he did think that the cures effected by it were less permanent than those by strychnia, arsenic, or some native remedies; and he had also noticed the sub-

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Review.

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THE "CALCUTTA JOURNAL OF MEDICINE."

In the last [illegible] of this [illegible] there is a very interesting [illegible] of some experiments made by the [illegible] with snake-poison. [illegible] fowls, [illegible] a cat, [illegible] called Kraits.* [illegible] were bitten by [illegible] and all [illegible] in the usual way to the [illegible] of the poison. [illegible] were administered to the fowls, the dog, and the [illegible] without any satisfactory effect. The [illegible] ammonia [illegible], the fowl [illegible]. The [illegible] was given to the dog and to the [illegible]. The blood of two of the fowls, of the cat, and of the dog was examined after death, micro[illegible]. [illegible] were [illegible] of an inch. The changes [illegible] by Dr. Halford were not detected.

A [illegible] was bitten by a cobra. It appeared as if the poison had taken effect, as the reptile became very sluggish, [illegible] it would die. But it [illegible] the effect [illegible] hour, and was then as vigorous as before.

Dr. Stewart is doing valuable service in making these experiments. We should be glad if he would put frequently to the test the property of harmless, non-poisonous, snakes for resisting the influence of snake-poison. We might presume, *a priori*, that they would succumb to it, as all other animals do; and this presumption is fortified by the fact of the young cobra, in experiment No. 5, becoming evidently affected. It would also be interesting to know whether a poisonous snake of one species is proof against one of another, or whether similar poisons only [illegible] each other.

With reference to [illegible] of the poison of the cobra being the very best [illegible] by this reptile, we are [illegible] to say that Dr. Fayrer, who [illegible], [illegible] a writer in the *Lancet*, and not Dr. St[illegible].

We shall look forward with [illegible] to the result of Dr. S[illegible] experiments with reference to the [illegible].

Extracts.

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THE BENGAL MEDICAL RETIRING FUND AGAIN.

To the Editor of the "Pioneer."

Sir,—[illegible] Presidencies to whose [illegible] some [illegible] may I [illegible] your influence [illegible] satisfactorily settled, [illegible] A few years [illegible] I believe, sent [illegible] of the Fund, [illegible] degree, and was, [illegible] to a great [illegible] very paternal [illegible] that no change [illegible] have died [illegible] flame [illegible] procedure, [illegible] feeling. I [illegible] will [illegible] argument, [illegible] it totally [illegible] to its [illegible] percentage of [illegible] a very [illegible] A few years [illegible] Madras Fund [illegible] State [illegible] to reform. A [illegible] Government [illegible] that we should [illegible] to retire from the [illegible]. We [illegible] of two [illegible] the money [illegible] to be [illegible] interest, [illegible] value of the [illegible] share of an [illegible] we [illegible] that men now [illegible] to leave the country. [illegible] their interest [illegible]

[illegible] those who [illegible] a different [illegible] satisfactorily [illegible] signature [illegible]

[illegible] I [illegible] a very [illegible] parties, [illegible] but that [illegible] served his time and wishes to retire, he may [illegible] the amount [illegible] without [illegible] In short, [illegible] after seventeen or twenty-one years, &c., [illegible]

Yours, &c.,

FIAT JUSTITIA.

SUBORDINATE MEDICAL DEPARTMENT.

To the Editor of the "Pioneer."

Sir,—It is now [illegible] months since the Warrant Officers of the Ordnance, Commissariat, and Public Works Departments have been enjoying the advantages which the New Rules have conferred on them. Why the [illegible] the improvement of Medical Warrant Officers [illegible] have been promulgated in conjunction with the other Warrant Regulations, or why it is kept in abeyance, are mysteries beyond the circle of my conception. I am, however, satisfied that this unavoidable delay—"this putting off for the morrow what should be done to-day"—arises from [illegible] in connection with the [illegible] of the claims [illegible] by His Excellency the Governor General, but [illegible] from the circumstances that [illegible] has been [illegible] the [illegible] Secretary of State for India has been [illegible] by financial difficulties arising out of the Abyssinian Expedition. To [illegible] he is [illegible] must be [illegible] would be as false as it would be [illegible]. Sir Stafford Northcote sleeping at his post! No, [illegible] so unwarrantable an assertion. An experienced man [illegible] yawn from fatigue, might scratch his head from accidental circumstances, nay, he might occasionally close his eyes from long watching, but he won't [illegible] himself so far as to lie down to sleep so long as the ship [illegible] to and fro by the surging waves. With all the [illegible] delays which [illegible] about [illegible] improvements in the Subordinate Medical Department, I am as sanguine now as ever I was, that the time is not so distant as many weak minds imagine, before the halcyon day will arrive, which [illegible] will remove the burden of their [illegible] and [illegible]. But while [illegible] watching with [illegible] days, has it [illegible] that in the event of the [illegible] change being effected [illegible] some [illegible] of gratitude in accordance to the ancient [illegible]? Such a measure would not only portray their character towards their [illegible] commander, but [illegible] to him that Medical Warrant Officers in India are [illegible] better material than is generally acknowledged.

With these suggestions to the members of my service, I close this letter in the hope that you, Mr. Editor, will be so considerate as to give it room in the widely-circulated *Pioneer*.

Yours obediently,

WARRANT MEDICAL OFFICER.

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* [illegible]

SUBORDINATE MEDICAL DEPARTMENT.

To the Editor of the "Pioneer."

My dear Sir,—I would esteem it a great favor if you would permit me to address, through the medium of your valuable paper, a few words to the members of the Subordinate Medical Department. What I have to say to them would be to this effect. In the month of April last I addressed a letter to the Editor of the *Indian Medical Gazette*, embodying the grievances of the service I have the melancholy happiness to be a humble member of. I spoke of these grievances at length, and in very plain and open terms I showed most plainly that we were unfairly dealt with by the Government; that we deserved not the hard treatment we met with; and that the apathy and indifference displayed towards us and our sufferings, alike by the high officials in the parent service and the Supreme Government of India, partook of a criminal nature. It is the business of these our officials to heartily support us; and it seems surely the duty of the Government to maintain the just balance of justice among its servants. I pointed the strong finger of crimination at the head of our Department for the apathy displayed towards us, and I showed that the Government, by its many recent concessions to the collateral Warrant Services, (while we as a body have been apparently studiedly passed by) only withholds most unfairly from us every measure of justice. What then are we to do? A desperate disease needs a desperate remedy. I'll quote to you what the Editor of the *Indian Medical Gazette* has been pleased to say in reply to my letter:—

> "The subject shall not be overlooked, but your communication is hardly admissible as it is. The very heading, 'How long, O Lord, how long,' would, we fear, do injury to the cause which is really deserving of universal sympathy. Why not submit another memorial, temperately worded, drawing attention to the grievances complained of? And, by the way, why not agitate the question of another Widows' and Orphans' Fund? Much misery would be averted if such a Fund were re-established, though it should be on a firmer basis than the last."

Our hearts have grown sick and tired of waiting. In vain have we fed ourselves upon hope. We must act again. The Editor of the *Indian Medical Gazette* deemed my letter inadmissible. He has stated his reason, and it is a wofully trifling one, or perhaps my letter may have been too exhaustive, too lengthy. It was so in a measure. But I could not hide in a nutshell that lachrymose tale of our misfortunes which needs an ocean's flow.

"The subject shall not be overlooked." Let us watch how the leading Medical Journal of Bengal may speak of us.

In the meantime, I bring myself in some measure conspicuously to the front in this matter. I propose that another memorial be drawn up for laying before the Indian Council. I propose that, with a view to my being enabled to place myself in communication with a competent legal adviser in this matter, each member of the Subordinate Medical Establishment addresses me here to the effect that he is willing that I should so move in his interests, and that he is prepared to meet any trifling expense that the measure or movement may entail. May we prosper.

Yours truly,
SUB-MEDICUS.

Cawnpore, 8th May, 1868.

INSPECTOR-GENERAL MOUAT.

It is more than a fortnight since the *Gazette* contained the announcement that Inspector-General Mouat, at the head of the Army Medical Department in Ireland, had been placed upon half-pay. As Mr. Mouat has been nearly thirty full years in the service, of which no less than twenty-two years were passed abroad, it seemed to us that, whatever were the reasons for the announcement being made, they could not be of a nature to cause such a distinguished officer of the department any injury or annoyance. He might have sought for half-pay perhaps, although it seemed unlikely, placed as he was with regard to his retiring period on full service pension. We waited for an explanation of the *Gazette*; and if what we hear be true—if it be the whole truth connected with the case—it would appear that Mr. Mouat has been ill used, and has a right to appeal from the authorities to those who represent authoritatively the force of public opinion and the legal power of redress for the reversion of a harsh and unwarrantable sentence. Mr. Mouat, be it remembered, is no ordinary man, though if he were a mere office drudge who had gained all his distinctions by hard sitting on easy chairs, he would be entitled to redress for ill-treatment. He was in charge of the Field Hospital for the wounded in the Crimea. He was in China and in New Zealand during two wars, in which the Doctors had more to do than the Generals. He has won the Victoria Cross—a doubtful honour for a Surgeon, but not for a man, and Mr. Mouat may say he could not have helped doing what he did on the day of the Balaclava charge, if he be scolded for having such a decoration on his breast. He is a Companion of the Bath; but, what is more to the purpose, he is a very energetic, if somewhat "troublesome," Medical Officer. Now what has he done to be forced on half-pay? For forced he has been, in spite of his appeals, remonstrances, and reclamations. Some twenty months ago Mr. Mouat came home from New Zealand and was appointed to Aldershot. Thence he proceeded to Dublin, and he was not very long there when he was ordered to Calcutta to take charge of the Medical Department in India—a coveted post, for it is worth more than £3,000 a year hard cash, and is not very onerous. Mr. Mouat, fortified by the opinion of a Medical Board, asked for a respite; he begged for a few months more at home to recruit his health, on which three severe campaigns and tropical service had made inroads, which were augmented by a recent personal injury from an accidental fall. He offered to go to India if the officer next on the list for that post did not like to face the £3,000 a year and a Calcutta compound, with a bungalow at Darjeeling or Simla. He was refused, as we hear, any sort of consideration or delay. "Sail or half-pay" was all Dr. Logan had to say, and the Duke of Cambridge, with a laudable desire, we suppose, to strengthen the hands of the Inspector-General, although his Royal Highness must be acquainted personally with Mr. Mouat's services and character, approved of the decision. It seems to us in this view of the facts exceedingly unjust, and we look in vain for anything in the case to warrant such an arbitrary and almost vindictive proceeding. Dr. Logan has, we suppose, good warranty in the rules and regulations of the service, and he will have to show it, and even then the House of Commons may find that Mr. Mouat is a victim to a high-handedness of dealing which enforces the truth of the maxim *Summum jus summa injuria*. If Mr. Mouat made false positions and vexatious excuses, the punishment of compulsory half-pay and its consequent disgrace was very severe. If his pleas were valid, his treatment has been in the last degree discreditable to Dr. Logan.*—*Army and Navy Gazette.* (*Pioneer, 27th April,* 1868.)

Short Notices of Recent Books.

A System of Medicine. Edited By J. Russell Reynolds, M.D., F.R.C.P. London: Macmillan & Co. 1868. Vol. II.

In looking at this great work, it is at first somewhat difficult to say whether most praise is due to the Editor for the discrimination he has shown in gathering round him the very lights of the profession, or to the contributors for the care and industry they have displayed in bringing their labors up to the most recent advance of medical science; or, finally, to the publishers, who have displayed so much creditable enterprise in issuing a work, the publication of which must have been attended with so much anxiety and expense. However, we may safely thank all three for one of the best and most comprehensive treatises on medicine which have yet been attempted in any country. The volume before us deals with the whole series of nervous diseases, and with one department of the diseases of the digestive system. The Editor contributes an Introduction, and the articles on Epilepsy, Writer's Cramp, Hysteria, Muscular Anæsthesia, Torticollis, and, assisted by Dr. Bastian, the articles on Congestion of the Brain, Cerebritis, and Softening of the Brain, and Adventitious Product in the Brain; Dr. F. E. Anstie contributes articles on Alcoholism and Neuralgia; Dr. T. K. Chambers those on Ecstasy, Catalepsy, Somnambulism; Dr. T. Hughlings Jackson those on Convulsions and Apoplexy; Dr. C. B. Radcliffe those on Cholera, Locomotor Ataxy, and on all the

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* We should like to hear the other side of this case.—Ed., *I. M. G.*

Diseases of the Spinal Cord; Mr. J. Netten Radcliffe contributes the article on Epidemic Cerebro-Spinal Meningitis; Dr. Wilson Fox those on Diseases of the Stomach; Dr. J. Spence Ramskill those on Vertigo, Simple Meningitis, Chronic Hydrocephalus, Meningeal Hæmorrhage; Dr. W. C. Maclean contributes the article on Sunstroke; Dr. W. Roberts that on Wasting Palsy; Dr. W. Rutherford Sanders furnishes the articles on Paralysis Agitans and Metallic Tremor; Dr. S. Jones Gee the article on Tubercular Meningitis; Drs. Gull and Sutton contribute the article on Abscess of the Brain. Dr. J. Warburton Begbie is author of the articles on Neuritis and Neuroma, Local Paralyses from Nerve Disease, Local Spasms, and Local Anæsthesia; Dr. Maudsley has contributed the paper on Insanity; and, finally, the article on Hypochondriasis is the joint production of Drs. W. W. Gull and F. E. Anstie. We have just given all the authors' names in association with their respective subjects, in order to show our readers how vast a labor has been accomplished in the second volume of the "System of Medicine," and to enable those who have grumbled so much at the delay in publishing the work, to see for themselves how difficult a task the Editor had to encounter in taking charge of so many contributors. When we say further that the contents embrace a thousand pages of large octavo, some idea may be formed of the elaborate character of the work. To attempt anything like a criticism of this volume would really be out of place in the very limited space at our disposal, and we can therefore do little more than indicate our general opinion of the book. The articles, it must be admitted, are of unequal value. Some of them, such as those of the Editor, and of many of his *collaborateurs*, are of the highest value, both as well written, clearly arranged, and lucid expositions of the subject treated upon, and as elaborate stores from which the student desirous of reference may obtain a knowledge of all that has recently been achieved in the particular branch of knowledge in question. Others, though excellent in style and clearness of plan, are, we regret to think, very little more than may be found in treatises older than the "System of Medicine." Again, there are one or two contributions which are all that can be desired in point of facts and knowledge they display, but in which the material has been so very badly arranged, that to read them is a positively painful work. Take, for instance, Dr. Wilson Fox's article on Diseases of the Stomach; it is a contribution which, so far as its facts are concerned, is everything that could be desired, and which contains a series of elaborate foot notes to each page, which is after all a bad mode of imparting knowledge to the busy practitioner. But this article is really so difficult to read with anything approaching to profit, that we fear many will "skip" it altogether, and thus do the author an injustice. This is simply because its style is so diffuse, and its grammatical construction of sentences very peculiar. Who, for instance, on first perusal, can form any satisfactory idea from the following sentence which opens Dr. Fox's contribution?—"The disturbances in *its* physiological functions, which characterise disorders of the stomach, present but few characteristic features, by means of which those arising from other than organic diseases can be distinguished from those depending on anatomical alterations in its coats." Very different are the articles by Anstie on Alcoholism, or Radcliffe on Cholera, which are not only masterpieces as scientific essays, but are admirable specimens of clear, forcible, terse English composition. The most novel contribution in the volume is that by Mr. J. Netten Radcliffe on that strange Epidemic Cerebro-Spinal Meningitis. This should be carefully read by those who have any experience of this singular affection. We have been perfectly candid in our criticism, and can only say, in conclusion, that we trust our readers will be equally honest, and will draw their opinions from an examination of a book which cannot fail to be for years to come the book of books on practical and scientific medicine.

"*On Diseases of the Chest.*" By A. T. H. WATERS, M.D., F.R.C.P. London: Churchill. 1868.

Dr. Waters is a well-known and experienced provincial physician, and in the work under notice he comes forward as a perfectly independent observer, regardless of the doctrines or theories of schools, to express the opinions he has formed in the course of a life spent almost at the bed-side. In addition to his reputation as a practical physician, Dr. Waters is known as a careful investigator of the minute structure of the lung, and these two qualifications give him a claim to be listened to. To begin with the scientific facts adduced by him, we must confess our disappointment. The author gives us a number of illustrations of healthy and diseased lung structure; but, really, if we are to judge of his claims of a scientific observer on these specimens of his handiwork, our verdict would certainly be unfavorable. In none of the sketches is the magnifying power stated, and in all there is a roughness and want of regard for minute detail which, if they really indicate the author's microscopical observation, are very little to his credit. Passing over, therefore, the histological work which Dr. Waters has laid before us, let us see what his labors in the more purely practical division are. In this department we must accord the author our full and entire praise. He has given a very admirable history of the early symptoms, progress, and treatment of lung affections, and the cases he has appended show that his conclusions as to remedial measures are fairly warranted by his experience of these affections. The chapter on Pneumonia is especially valuable as a practical clinical commentary on a disease of common occurrence. In this the author proves that the generally-accepted axioms of "stimulants in pneumonia" must be qualified, for while stimulants are most valuable in the later stages of the disease, in the earlier ones they are equally prejudicial. Dr. Waters's volume is sound and practical.

The Journal of Cutaneous Medicine. Edited by ERASMUS WILSON, F.R.S., April, 1868. London: Churchill.

This periodical, which comes out quarterly, appeals in an especial manner to students of skin diseases, since its pages contain everything that is new, and something that is true, concerning dermal affections. The first article in the present number is a lecture by the Editor on the Pathology of the Skin. This is a paper of some importance, since it not only deals with the pathological anatomy of the skin, but it treats also of the methods of studying the pathological facts, so as to arrive at the soundest conclusions. "The Dermal Pathology of Hippocrates" is also from the Editor's pen, and is a most instructive summary, not less interesting to the classical student than the skin doctor. Dr. Morris's paper on Nutrition is a very lame argument in defence of the "germinal matter" doctrine. Dr. Beale's supporters are doing serious damage to his views. Dr. Purdon recommends the use of chromic acid in skin diseases by starts, in a somewhat Hibernian fashion, by telling us that it "cannot be brought into contact with organic matter." Dr. Morris Wilson has a good paper on Eczema, in which he urges the employment of sedatives to relieve the irritation which is so prominent a symptom.

English Correspondence.

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[FROM OUR OWN CORRESPONDENT.]

London, April 23rd, 1868.

THE most interesting news-item of the month is the whispered announcement of a new monthly medical journal. As yet no prospectus or advertisement of the project has been issued; but, as I am in the secret, I can tell you something of it. The new periodical is to be called "The Practitioner: a Monthly Journal of Therapeutics." Its publishers are Messrs. Macmillan & Co., and its Editors Dr. F. E. Anstie, of Westminster Hospital, and Dr. Henry Lawson, of St. Mary's. Its projectors consider that too little attention has been given of late to the diagnosis of disease, and too little to its treatment, and they propose to inaugurate a new era in the history of modern medicine. "The Practitioner" is to contain original articles on purely therapeutical questions by some of the first London physicians; it is to embrace reviews of all the important books, English and Foreign; is to supply for the benefit of the general practitioner a summary of the current views on therapeutics in the London hospitals; to contain extracts from continental journals; "notes and queries," and, finally, a bibliographical list for the month. The Editors are already quite full for the first issue, which is to appear in July.

The election of a President to the College of Physicians has come off, and, contrary to the expectations of some who even published their vaticinations in the medical journals, Dr. Alderson has been re-elected. It is, nevertheless, true that a very strong feeling exists against Dr. Alderson for his supposed depreciation of the labors and energy of some of the rising young Fellows, whose respect for conservative notions is not of the highest order.

A great deal of discussion is taking place relative to the advantages of protoxide of nitrogen as an anæsthetic. This gas,—laughing-gas,—known for so many years, and tried so often for the purpose of producing anæsthesia, has, thanks to the Editor of the medical journal, been creating quite a furore here. The method of employing it is different from that which used to be employed on former occasions. The patient is compelled to breathe the gas, and it only, and the consequence of this is said to be the absence of anything like delirium. It must not be denied that, in a great many instances, small operations, such as tooth-drawing, abscess-opening, tendon-cutting, and so forth, have been performed under its influence without pain to the patient; but there is one serious objection to its use, *viz.*, that it tends to produce asphyxia. In almost every case the face and skin, after a few inspirations, become completely livid. This has led most of our scientific men, experienced in the science of anæsthetics, (Dr. B. W. Richardson to wit,) to very gravely condemn its use. Mr. Paget, who has employed it in one or two cases, thinks that this lividity is a serious symptom, and that nothing can be said of its efficiency until observations have been made on several thousand cases.

The visit of the Prince and Princess of Wales to Ireland seems to have passed off very successfully, but we have not learnt whether any of the expected Knighthoods or Baronetcies have been conferred. The Dublin Medical Press warmly urged Mr. Adams' claims to recognition at the royal hands, but we have not heard that the distinguished President of the Irish College of Surgeons, and Surgeon in Ordinary to the Queen, has received the laurels which his countrymen were anxious to see conferred upon him. The royal party appears to have displayed an excess of enthusiasm in all that related to Cardinal Cullen and the Catholic University. But we believe that the Queen's University, an institution especially connected with the State, and established for the last eighteen years, was not taken any notice of. This appears to me to have been a little unfair, and can only be explained, I think, upon the ground of political expediency. The Queen's University now numbers nearly 1,000 graduates, while the Catholic Institution has none at all. *A propos* of the Queen's University, I may mention that the vacancy in the Senate caused by the death of the Earl of Rosse has been filled by the election of Dr. William MacCormac, of Belfast, a distinguished graduate, who is not only a scholar and physician, but is keenly interested in all that relates to Irish secular education. I may also mention that the petition of the University praying for representation in Parliament will very soon be laid before the House. It is already most nomerously signed.

I am glad to be able to contradict a report set afloat here by one of the medical journals, to the effect that Professor Huxley had resigned his Hunterian Professorship at the College of Surgeons. It is absolutely untrue. Professor Huxley has not been very well lately, and he went out of town to Wales for change of air. Hence doubtless the rumour, unless, indeed, the thought was fathered by the wish of some ill-disposed aspirant for the professor's gown.

The *British Medical Journal*, "seduced of" some jealous young chemist, is striving to drag Professor Frankland into a newspaper controversy on the subject of his recent discovery of an elaborate process of water-analysis. Dr. Frankland's colleague, Dr. Odling, has written an amusing letter to the journal, in which, after mildly chaffing the Editor for his assumption of a power of criticism which he (Dr. Odling) evidently denies to him, expresses his regret that he has not been lucky enough to meet with the approval of the Editor of the *British Medical Journal*. I think it will be admitted by impartial critics that the journal has displayed bad taste, and worse judgment, in allowing itself to be led away to gratify the malicious pique of some partizan.

Connected to some extent with this question of water-analysis is the problem of the distribution of cholera by water. This is exciting a good deal of debate at some of our societies. Dr. Letheby, a chemist of some note, stands almost alone in contending that water has nothing to do with the transmission and distribution of cholera. Mr. Netten Radcliffe, on the other hand, who holds strongly to the water theory, and who has published a most elaborate Report in the last Report of the Privy Council, has nearly the whole profession on his side. At a recent meeting of the "Association of Medical Officers for Health," the matter was talked out rather fully; and from a careful examination of the report, I am bound to confess that Mr. Netten Radcliffe had much the best of the argument.

The recent death of one or two of the prisoners at Coldbath-field Prison has once more opened up the question of the general treatment and punishment of criminals. There can be little doubt, from the evidence on the trials, that one at least of the prisoners met his death through phthisis brought on by starvation and over-work. It would seem that this sad result might have been avoided by a more vigilant exercise of power on the part of the Medical Superintendent. It is true that the victim in this case was most refractory, but then it ought to be borne in mind that, whether a prisoner be violent or not, his work and food should stand in a direct ratio, and not in an inverse one, as the authorities at Coldbath-fields seem to have considered.

The case of Dr. Stirling, who was lately sent home from the Cape by Commodore Randolph, has received the attention of the Press, and doubtless the result will be the reinstatement of this ill-used gentleman. The facts which have come to light show that the doctor was right, and the naval officer egregiously wrong. The Commodore had some sharp altercation with Dr. Stirling, because he was late in visiting a gouty officer, who should have been in hospital, and to attend to whom, under the circumstances, was a special act of courtesy on Dr. Stirling's part. Yet for this squabble he was sent off the station. Had he been simply a naval assistant surgeon, he might have demanded a court martial; but even this wretched resource was cut off. Really these cases are becoming much too frequent.

Mr. Sampson Gamgee is fighting in the Birmingham papers for the abolition of all unpaid medical services, and Birmingham is the cradle of reform.

It is not yet known on whom the honor of Principalship of the Edinburgh University will fall, but strenuous efforts are being made to obtain it for Sir James Simpson. Few more worthy, or better qualified candidates could be found.

The Progress of the Medical and Collateral Sciences.

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The Physiology of the Spinal Cord.—In a memoir sent in to the Belgian Academy of Sciences, M. Masius, of Liége, describes the results of some experiments which he recently conducted upon dogs, and which seem to prove that the spinal cord possesses a motor centre which has not hitherto been recognized by anatomists. This new centre, to which M. Masius gives the name of ano-spinal, is situate in the lower part of the lumbar portion of the cord, and presides over the tonicity and reflex contraction of the *sphincter ani* muscle. Of the importance of M. Masius's labors, we have the testimony of the Commissioners who examined his memoir. One of these, however, M. Poelman, questions the soundness of the author's conclusions, which he says are opposed to the well-known pathological fact that the *sphincter ani* does not always lose its power of contraction when the spinal cord is injured. M. Schwann, the originator of the cell-theory, thus pronounces his opinion on the subject. The experiments of the author prove incontestably that in dogs there exists, in the spinal cord, at the level of the intervertebral disc between the 6th and 7th lumbar vertebra, a clearly defined nervous centre which presides over the reflex movements of the *sphincter ani*, and that the centre which presides over the tonicity of that muscle is found in a similar position. But to assume the identity of these two centres would be unjustifiable on the evidence. M. Schwann suggests that further experiments should be made before definitive conclusions are drawn.

Grave Uterine Retroflexion.—M. Richelot applies the term "grave" to those cases which have been rebellious to all the usual methods of treatment, and which are associated with intense pain, which is either spontaneous, or is the consequence of fatigue. His mode of treatment consists in bringing about structural union between the neck of the uterus and the wall of the vagina. He states that this plan is easily carried out by the application of caustics, and that it is neither obstructive to conception nor to parturition.

Formation of Fat from Albumen.—Physiological chemistry in these days teaches us doctrines very different from those of a quarter of a century since. At that time we were taught to imagine that fats in the animal body could only be derived from

[illegible]

Deafness from Frost-bite.—At a recent meeting of the Academy of Sciences [illegible] M. [illegible] a curious [illegible] the presence of [illegible]. On [illegible] the sense of hearing was rapidly restored.

Subjective vision.—The *Chemical News* of April 6th [illegible] paper by M. H[illegible] on the [illegible] phenomena which he has been investigating. Every one knows that when the eye is struck violently, the person who has [illegible] that he sees a flash of fire. Now what M. H[illegible] has been investigating is the character of this flash when the pressure, instead of being sudden as in the case referred to, is gradual. On waking early in the morning, and before daylight, he presses his fingers upon his eyeball, and then carefully watches the effects. The first effect is the production of a number of [illegible] luminous nebulæ of blue and yellow, [illegible] figures which change in a sort of kaleidoscopic manner. [illegible] bright sparks appear to pass across the visual plane. [illegible] later these disappear, and give rise to a brilliant appearance of phosphorescence. This phosphorescence takes the shape of a luminous halo, in one part of which is a dark spot of a more or less distinct ovoid character. Finally, the halo becomes of a brilliant blue. "Now what," asks M. H[illegible], "is the cause of this last phenomenon?" *Firstly*, he believes that all the appearance of sparks, &c., is caused by pressure on the delicate retinal vessels, which interrupts their circulation. The halo is caused, he concludes, by the pressure exerted upon the sensitive *macula lutea*, the black spot within this being simply the indication of the *fovea centralis*.

The production of the sexes.—It is strange, from time to time, how some of our old physiological landmarks are removed by persevering research. One of the most striking statements contained in our physiological text books was that in which it was alleged, as one of the grave influences of food, that the sexes of bees depended upon the food supplied by nurses to the larvæ, and that a queen or female bee was actually manufactured by being supplied with a peculiar form of diet. This fact is no longer a fact, at least if the recent researches of M. André Sanson be correct. At the meeting of the French Academy on the 13th of April, M. Sanson presented an important paper, in which he demonstrates, from numerous observations, that the sexes can be easily distinguished in the eggs shortly after the latter have been laid. M. Sanson thus corroborates the opinion of old Huber, one of the most careful and conscientious observers of the older naturalists. M. Sanson exhibited to the Academy some bees' eggs, whose characters seemed to support his statements.

A still greater antiquity for man than that believed in by Lyell, and most of the English School of Palæontologists, is asserted by MM. Garrigou and [illegible] in a memoir recently published, though written in 1864. Not content with allotting to the human species an age of some two or three hundred thousand years, they contend that man was a contemporary of the animals of the *Miocene* period. In the deposits of this formation at Sansan, these geologists assert that they have found numerous bones split along their length in such a manner as to indicate the former presence of man who had split the bones, as do many modern savages, to extract the marrow from them. They further state that, in the Miocene rocks of France, they have also found flint-weapons, which were unquestionably chiselled out by human hands, and are not mere "freaks of nature." What an almost interminable controversy these new views of the French geologists will excite in scientific [illegible]!

The races of the Domestic Dog is the subject of a series of papers presented to the Austrian Academy of Sciences by Herr [illegible]. At a recent meeting the author presented the [illegible] part of his second memoir. In this he treats of the [illegible] as well as of certain savage races, [illegible] by the ancients. This part has [illegible] on the theory of the origin of species by natural selection.

The Fungus theory of disease finds a bitter opponent in the [illegible] *Journal of Cutaneous Medicine*, who, however, [illegible] diversities in the opinions of [illegible] with [illegible] ridicule upon [illegible]. In the number of this journal for April, the Editor, having alluded to Dr. Salisbury's recent discovery of a [illegible], makes the following comment:—"The last absurdity in the way of fungi comes to us from America, and the [illegible] of Hunter have acceded to them, to [illegible] his Greek, [illegible]. The whole thing is complete. We have heard of vegetations and [illegible] flower excrescences, but these are not the vegetables in question, but a fungus of surpassing beauty [illegible] the cellular tissue of the ulcerous chancre; the other the inmate of the epithelial cell of [illegible]. Contagion is a mere matter of the implantation of spores or [illegible]. How dull we have been all these years. We may soon be taught to comprehend how syphilis may be caught in the atmosphere of a ball-room from floating organic germs, or [illegible] from the suspicious intercourse of our [illegible] wash-[illegible]." So on, *ad nauseam*. Surely Mr. W[illegible] cannot imagine that mere ravings of this kind can have any weight with [illegible] men. Indeed, his remarks, if they have any [illegible], show the absence of any argument [illegible]. [illegible] to be as sceptical as he pleases, but the attitude [illegible] in the preceding passages is neither [illegible] nor dignified.

Hypochloride of Sulphur being used in skin affections, the following mode of preparation, which is given by a contemporary, may be useful to our readers. Hypochloride of sulphur is prepared by spreading washed and finely powdered sulphur thinly on the bottom of a wooden box or other closed chamber, and passing chlorine slowly over it till the chlorine ceases to be absorbed.

Termination of the nerves in the Tongue.—Selecting the tongue of the frog as a favourable object for examination, Herr [illegible] has been studying the mode of termination of the nerve fibres. He has published the results of his enquiries in a recent number of *Siebold and Kölliker's Zeitschrift*. He states that the fungiform papillæ contain three separate forms of epithelium cells, which he terms *calyx cells*, *cylinder cells*, and *forked cells*. The first are most external, and are also the largest; the second are [illegible] bodies, extending from "the deeper layer of the epithelium to the surface, passing between the interstices of the larger cells." Between the two are situate the third or forked cells. The author alleges that when the branch of the gustatory nerve enters the papilla, it divides and subdivides, and the ultimate filaments terminate in a sort of expansion, on which the central processes of the cylinder and forked cells rest. Beyond this, however, he does not seem to have made out much towards clearing up the problem of the termination of the nerves.

The Ciliary Muscle.—In *Max Schultze's Archiv für Mikros. Anat.*, Part IV, 1867, Herr F. E. Schultze publishes a paper on the ciliary muscle, in which he attempts to prove Helmholz's theory of the accommodation power of the eye. Neither his theory nor his facts are new, and moreover, he seems to confound Helmholz's opinions with those of other physicists. He considers that the accommodation is affected by the congestion of the iris, caused by the pressure of the muscle on the vessels. But this theory was long ago put forward by Dr. S. Fleming, of Birmingham, and was then disproved. Again, if we mistake not, both Helmholz and Donders would assign a muscular power to the crystalline lens, by which it should be able to alter its own form. In our opinion, a larger series of experiments is wanting to complete our knowledge of this important physiological point.

ORIGINAL COMMUNICATIONS.

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ON CHOLERA. No. II.

BY C. MACNAMARA,
Surgeon to the Calcutta Ophthalmic Hospital.

CORRIGENDUM.

First paragraph of former paper, read "98°" for "90°."

EARLY in March, 1817, a death from cholera occurred in Fort William, but, being an isolated case, no particular notice was taken of it. About the 11th of July we hear of the simultaneous outbreak of cholera in the districts of Patna, Mymensing, and Sylhet;* the former situated to the extreme west, and the latter to the east of the Province of Bengal. In August and the following months Calcutta was affected, 25,000 of its inhabitants having been under medical treatment for the disease. Of these 4,000 died; but it is worthy of notice that scarcely a case of cholera occurred among several thousand prisoners confined in the Allipore Jail.

Copies of some of the original reports, from which these details have been compiled, are still preserved among the M. S. Proceedings of the Bengal Medical Board, and are well worth studying; but they do not appear among the Office records in the order above indicated, no special reports on cholera having been called for, or received by the Board until the end of the year.

The Proceedings of the Medical Board, to which I shall frequently have to refer, consist of a series of day books in which entries have been made regarding the current work of the Office. These records are particularly valuable, therefore, in tracing the history of a disease such as we are now considering, because they give us the opinions entertained by the members of the Board at the time the events brought to their notice actually occurred,—ideas which might very probably have undergone considerable modification if recorded at a subsequent period, and reviewed by the light of further experience or knowledge of the matter in hand. This fact is well illustrated in reference to the correspondence regarding the outbreak of the cholera of 1817.

The first notice in "the Proceedings" of this epidemic is in a letter from Dr. Tytler, Civil Surgeon of Jessore, to the Judge of the district, dated August 23rd, 1817. He writes:—"An epidemic has broken out in the bazar, the disorder commencing with pain or uneasiness in different parts of the body, presently succeeded by giddiness of the head, sickness, vomiting, griping in the belly, and frequent stools. The countenance exhibits much anxiety, the body becomes emaciated, the pulse rapidly sinks, and the patient, if not speedily relieved with large doses of calomel, followed by one of opium, it carries him off within four and twenty hours."† As the disease was spreading rapidly, and the natives were panic-stricken, and rushing from the town, the Judge thought it advisable to close his Court, and immediately reported the circumstance to the Supreme Government, enclosing a copy of Dr. Tytler's letter. Upon receiving this communication, Mr. W. B. Bayley, the Secretary to Government, forwarded it to the Medical Board, urging them to give the matter their immediate attention, and to advise the Government on the subject. In their reply (the 6th of September, 1817.) the members of the Board remark "that the disease is the usual epidemic of this period of the year, increased perhaps in violence by the peculiarities of the present season, and not improbably by certain local causes affecting the health of the inhabitants of Jessore. It is understood that in certain quarters of Calcutta a similar epidemic prevails; and it is probable that there is no considerable town in the low and humid climate of Bengal that is at present entirely exempt from its operation. The obstruction to ventilation in native towns from rank and luxuriant vegetation powerfully aids the influence of the season, and as this cause may operate in a greater or less degree in different places, the prevalence and fatality of the epidemic will probably be increased or diminished.

"A great alarm seems to have spread itself among the natives of Jessore, which the suspension of public business by the Magistrate would not be calculated to check, though there is no doubt, however, that apprehension may aid as well the diffusion as violence of an epidemic; yet it is probable that the consequences arising from that cause may in the present instance have been beneficial, correcting the influence of an overcrowded population." I have quoted this letter at length, because it appears to me, not only an important document as bearing upon the history of cholera, but it also gives us an idea of the recognised views of the etiology of the disease held by medical authorities in India in 1817.

It will be observed that the members of the Board, who had probably served in this country some twenty years prior to the date of their letter, remark that the disease *is the usual epidemic of the season.* We may conclude, therefore, they were perfectly familiar with its phenomena; but throughout the original correspondence, neither the Government, the Medical Board nor Dr. Tytler mention the epidemic as cholera. Curiously enough, the first notice we have of this fact is in a letter from the Magistrate of Calcutta forwarded to Government on the 16th of September, 1817. He observes that "a disease is prevalent in the town and suburbs of the species of cholera morbus." This statement having been sent on to the Medical Board, they declare the disease to be cholera morbus, and that "it generally prevails to a greater or less degree at the present season of the year. It has, however, of late been far more fatal than at any former period within the recollection of the oldest inhabitants, running a course generally in a few hours and sometimes in a few minutes,"* phenomena which, nevertheless, had been ascribed to it, a century before, by the Portuguese at Goa, and in other localities.

I have already noticed the existence of cholera at Patna and Mymensing in July, 1817, and in Calcutta early in August. At this time it also appeared at Dacca and Naraingunge. On the 23rd of the month it was raging throughout Jessore, and in Chittagong, on the eastern side of the Bay of Bengal;† at the same moment it appeared in Rajshahye, a central district lying east of the Ganges, and afterwards in the high and distant tract of Bhaugulpore and Monghyr. By the middle of September the inhabitants of Purneah, Dinagepore, Balasore, and Cuttack were affected. On the 17th it had spread to Buxar, Chuprah, Ghazeepore, and, towards the end of the month, to Mozufferpore.‡

In October the districts of Bauleah, Berhampore, and Rungpore came under the influence of cholera; and, in fact, within three months from its appearance, the disease had been generated throughout the Province of Bengal, including some 195,935 square miles, and within this vast area the inhabitants of hardly a single village or town had escaped its deadly influence. There were some remarkable exceptions to this rule, as, for instance, in the enormous city of Moorshedabad, which appears, upon good authority, to have been entirely free from the disease

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* Report on the Epidemic Cholera Morbus as it visited the territories subject to the Presidency of Bengal in 1817, 1818, 1819; by J. Jameson, page 5, Calcutta, 1820.

† M. S. Proceeding of the Bengal Medical Board for 1817.

* M. S. Proceeding of the Bengal Medical Board, for 1817.

† Dr. Macrae, writing from Chittagong, November, 1818, states that he had constant opportunities of observing that it prevails in this district more or less every hot season."

‡ Jameson's Report, p. 11.

during the year 1817, [illegible] prevailed in every direction [illegible] Mr. [illegible] states that, so far as the epidemic was extended to the Province of Behar, it at [illegible] raged [illegible] only in [illegible], without displaying [illegible] constant more than [illegible] yet [illegible] and [illegible] its progress [illegible] Upper [illegible] almost to be [illegible] laws [illegible] not been [illegible] of [illegible] This [illegible] was the [illegible] violence in [illegible] the progress of its visitation [illegible] remarkable [illegible] and [illegible] which afterwards generally formed so con[illegible] of their revolutions.

Nor [illegible] town or tract of country, after having once fully undergone [illegible], yet congratulate itself on a probable immunity from further assaults. For although generally milder in form [illegible] in the latter period of its existence, it rarely altogether disappeared, but seemed rather to keep hovering in the vicinity, as if in mere expectancy of some fresh cause to [illegible] its attacks with increased vigour.

Early in November the cholera broke out in the district of Mirzapore. Towards the middle of the month it was at Rewah, but previously to this it had appeared in the Marquis of Hastings' camp on the banks of the river Sinde in Bundelcund. The first cases were reported as having occurred on the 7th and 8th of the month, it then burst out with irresistible fury among the troops and camp followers. "The whole camp put on the appearance of an hospital, the dead were left unburied, the natives deserted in flocks, and some of the Governor-General's servants dropped down dead behind his chair, [illegible] and the Marquis himself was apprehensive of dying here, so that he gave secret instructions, should the event occur, to be buried in his tent." *

The army was moved from its position on the 19th of November, from which time the disease became less virulent, and speedily disappeared. But it is not to be supposed that this terrible outbreak of cholera was confined to the camp of the Governor-General, on the contrary, it spread [illegible] Bundlecund, pursuing a south-westerly direction, and devastating almost every village and town in the province.

During the months of December, January, and February, there was a decided lull in the [illegible] as well as in the advance of the epidemic, but its [illegible] by no means entirely [illegible], for in the majority of the districts in which it had been generated, we hear of cases of cholera having occurred through the cold season.

During the year 1818 cholera was spread over the greater portion of India, invading [illegible] which it had previously escaped, and [illegible] was [illegible] in various directions, that it is somewhat difficult [illegible] to give an adequate idea of [illegible]. We may [illegible] advance.

1st. [illegible] the district of [illegible]

2nd. [illegible] Central India, north-west, west, and lastly southward [illegible] Deccan.

3rd. [illegible] eastern [illegible], and a considerable [illegible] the Peninsula.

[illegible] of 1817 [illegible] to have [illegible] M[illegible] 18[illegible]

extended northwards to Nepaul, and rapidly travelling [illegible] to the west. The disease was in full force at [illegible] towards the end of April the troops [illegible] the Governor-General's [illegible] Upper [illegible] in [illegible] at [illegible], but its attacks were [illegible] as had [illegible] with the [illegible] in the preceding autumn." *

The [illegible] were [illegible] the influence of the epidemic in April, and [illegible] severely [illegible] it. [illegible] the end of March it [illegible] at Allahabad, destroying 10,000 [illegible] troops were not attacked by the disease [illegible] July. Nevertheless, they were in [illegible] intercourse with the townspeople. Not a [illegible] within the precincts of the fort, although [illegible] were [illegible] within its walls, [illegible] walking in the streets of the infected city during the daytime.† On the 8th of April, Cawnpore, [illegible] and the [illegible] villages were affected, the disease remaining in full force for some fifteen days, it visited Furruckabad in May, but [illegible] to extend far in that direction. "Bareilly, Moradabad, and almost every other town in the [illegible] The town and district of [illegible] formed a remarkable exception to the general [illegible] of the Province of [illegible]. Here the disease appeared [illegible], and is reported to have killed upwards of [illegible] of its inhabitants." ‡

We may [illegible] the progress of the epidemic from Bundlecund, in which province it was reproduced in March and April, 1818. In May it had [illegible] in a north-westerly direction to Etawah, [illegible] isolated spots in the Doab. It was at Muttra [illegible] at Agra in July. On the 20th of the month it was [illegible] at Delhi, and on the 28th at Meerut, [illegible] over all the intermediate towns and villages, but [illegible] localities for a month or so, and then [illegible] disappearing. On the 2nd of July, a body of European and Native troops marched from Meerut to Hansi. They were perfectly free from disease, and passed through Delhi on the 23rd (the cholera being then at its height in the town), encamping outside its walls about a mile to the west. They continued their march to the north-west on the 30th, and on the [illegible] among them. On the 6th of August they joined the force at Hansi, and almost immediately afterwards cholera broke out among the entire brigade, and [illegible] Sirsa. It was [illegible] Medical Officers serving with this force that [illegible] from Delhi and brought the cholera with them, and [illegible] the general camp at Hansi.§ I shall examine the circumstances of this case more closely when considering the question of the contagiousness of cholera. I merely mention it here because it has been quoted on several occasions as an instance in favor of contagion, and pertaining therefore to the history of the disease at the period we are now considering. Another case of a similar nature occurred among the troops forming the centre division of this force. The army having crossed the Jumna on the 28th of October, left a body of troops to defend the bridge-of-boats. On the 29th cholera broke out among the men composing this guard. On the 9th of November the detachment joined the army at [illegible], and immediately afterwards the disease was first observed in camp, and in further proof of the communicativeness of the virus, it is

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* A Treatise [illegible] by F. Corbyn, Calcutta, 1832.

* [illegible] Report, p. 27.

† [illegible] *Lancet*, Vol. I, p. 112.

‡ [illegible] Report.

§ Jameson's Report on Cholera.

affirmed that the previous healthy villages around the camp got infected from the diseased army.*

Mr. Jameson traces the cholera on as far as Saharunpore, where, he says, the "high ridge of mountains, which in other quarters proved hostile to its propagation, here opposed its further progress, and saved the inhabitants of the hilly district from a scourge which, in their circumstances of poverty and nakedness, would probably have proved exceedingly fatal to them." This inference was of course drawn from the information at Mr. Jameson's command when he wrote his report; but it is to be observed that eighteen months later (in May, 1820), Moorcroft incidentally mentions the existence of cholera of a virulent type at Amb and Sauganpore to the north-west of Lahore,† which in all probability was a continuation of the invading cholera we have been tracing from Bundlecund into the North-Western Provinces of India and the Punjab, for Sir Richard Temple informs us that the Punjab was visited severely by the disease in the year 1820.‡

From Bundlecund the cholera invaded the districts of Saugor and Nagpore during the months of April and May, 1818, and may be traced westward to Bhilsa, Bhopal, and Ongeen, which it reached on the 9th of May. In June it appeared at Kotah, but does not appear to have crossed the Aravulli mountains. The epidemic extended from east to west along the valley of the Nerbudda and Tapty rivers. We find it early in April at Mundela, Hoshungabad, and Mooltan. On the 15th of May it was at Nagpore. In this quarter, it, as usual, gave evidence of its capricious nature; "it was not met with between Nagpore and Mooltan, a distance of 70 miles, and Bantool, a large town in the direct road from the river to Mooltan, was entirely exempt from its visitation."§ On the 3rd of July the disease was in full force at Jaulum. "In the Province of Candeish, where there is not sufficient population, and but little intercourse between the villages, its progress was slow; it appeared in the capital of the district in the middle of July, and at the end of August at Surat." Dr. Kennedy says the disease was imported from the former to the latter place by a body of prisoners. "At Punderpoor, to the south of Bombay, it happened to break out at the time of the great jatra, and was spread at once in all directions by the pilgrims returning to their homes. The poison would seem to have been more concentrated there from there being so many sources of production; the number of deaths in a few days was estimated at 3,000, and the patients were described as having been knocked down dead as if by lightning."‖ After visiting Aurungabad, Amednuggur, and Nassick, it reached Seroor on the 18th of July, and towards the end of the month it appeared at Poona. "On the 6th of August it broke out with great violence at Panwell, a considerable village on the main line of communication between Poona and Bombay, separated from the latter by an arm of the sea, and distant fifteen or twenty miles, but between which a pretty constant communication is kept up by means of boats. On the 9th or 10th of the same month the first case appeared on the Island of Bombay, and could be traced to a man who had arrived from Panwell the same day; it also spread north and south along the sea coast from the same place, and was imported to a village in the neighbourhood of Tannah, on the Island of Salsett, distant from Bombay about twenty miles, by a detachment of troops that escorted a State prisoner to that garrison from Panwell. The disease did not break out at Maloni on the extremity of the island, distant only five or six miles from the principal native town of Bombay, until it had been established in the latter; it then gradually spread over the Island of Salsett, through which the road from Bombay to Surat and the northern countries lies, and by which, during the south-west monsoon, is the principal line of communication."*

It will be observed that the cholera had extended itself steadily from east to west through the Presidency of Bombay; and Dr. Jukes remarks in July, 1818:—"It was hoped here (in Bombay) that as the disease had for some months been moving gradually south-west, borne along, as it were, by the north-east monsoon, that it might be checked by the violent south-west gales which blew on our Coast during that season."† In spite, however, of these opposing storms, the cholera marched forward, and having arrived at the Coast, spread through the Concan.

The following is a valuable record as affording us an idea of the mortality and number of cases of cholera which occurred among the civil population of the Island of Bombay during the year 1818:—‡

Abstract of Cases.

1818.	Cases.	Deaths.	Police.
August ..	4,400	.. 256	.. 409
September, ..	4,804	.. 287	.. 478
October ..	2,411	.. 146	.. 181
November ..	824	.. 44	.. 29
December ..	806	.. 64	.. 72
1819.			
January ..	889	.. 144	.. 125
February ..	517	.. 27	.. ..
	14,651	938	1,294

Proportion of deaths in these cases when medicine was administered, 6·4 per cent. The population of the island may amount to between 200 and 220,000, say 210,000. The number of ascertained cases, 15,945, which gives the proportion of attacks of the disease for the population 7½ per cent.

We must now return to Nagpore, where, as already observed, cholera had made its appearance among the inhabitants of the city and neighbouring villages in May.

Throughout the early part of the year 1818, a considerable body of Bengal and Madras troops had been engaged in the siege of Chundah, a town situated some seventy miles south of Nagpore. The men employed in the arduous operations of this siege escaped the cholera, notwithstanding the excessive heat and many privations they had to undergo. Their work having been accomplished, they were ordered to March to Nagpore, and on the 30th of May arrived at Gaongong, a village nine miles south of the city. "Here they had hardly learnt that the epidemic was raging in the vicinity, when they began themselves to experience its unwelcome visits. As usual, its first assaults were most severe. Many of those attacked, whilst loitering for water in the neighbouring rivulets, were brought in expiring; some dead. Of seventy cases admitted during that night and the succeeding day, about twenty died. On the 31st the instances of attack were equally numerous; but in these the exhaustion was not so sudden, and the subsequent symptoms were less severe. On the 1st of June, the division moved from Nagpore towards the Cantonments of Hoshungabad. The disease then gradually declined, and almost entirely disappeared on the 17th and 18th after some seasonable falls of rain."§

Early in June the cholera had reached Hingunghat, fifty miles to the south of Nagpore, and a few days later it spread to Chundah. The disease first appeared at Julnah on the 3rd of

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* Jameson's Report, page 140.

† Travels in the Himalayan Provinces of Hindustan and the Punjab, from 1819 to 1825; by W. Moorcroft, London.

‡ The Localities in India exempt from Cholera; by Surgeon Edward Balfour, p 78, Madras, 1856.

§ Jameson's Report.

‖ Report on the Epidemic Cholera of 1818. Published under authority of the Government of Bombay, 1819, p. 151.

* Bombay Cholera Report, page 9.

† Bombay Cholera Report, page 171.

‡ Bombay Cholera Report, page 13, Appendix.

§ Jameson's Report, p. 23.

[illegible]

[illegible] THE COBRA POISON.

[illegible]

[illegible] by another [illegible]

EXPERIMENT No. 2.

[illegible]

EXPERIMENT No. 3.

[illegible]

EXPERIMENT No. 4.

[illegible] which the Natives [illegible] of the vein.

[illegible] rather slug[illegible], but not much [illegible]

[illegible] paralysed, and [illegible]

[illegible], can be moved with difficulty [illegible] After this the Native [illegible] the following day he appeared better. On the 11th June, at 2 p.m., I found [illegible] in the cage. He was seen alive about [illegible]

EXPERIMENT No. 5.

At [illegible] fowl was inoculated [illegible] with four drops of cobra poison [illegible] day before. The poison was [illegible] syringe. The effect was almost [illegible] when placed on the ground, [illegible], and was dead at [illegible]. This experiment would appear to show that the poison loses very little of its power [illegible], and that its action [illegible] is much on [illegible]. The hypodermic [illegible], and was almost as rapid in [illegible] the full effect of the poison.

EXPERIMENT No. 6.

At 4-5 p.m., a very large Rana Tigrina was injected with [illegible] the same poison, with the same instrument as that used for the fowl. The axilla and the abdominal wall were the places selected for injection.

4-22.—Slightly convulsed, and then partially paralysed.

4-30.—Almost motionless; respiratory movements still apparent. 4-35.—Dead.

4-20.—He is beginning to be sluggish, but is very slightly affected.

This experiment points to the difference of the effect of the poison on cold and warm-blooded animals. With three times the amount of the poison as was used in the case of the fowl, it took seven times as long to kill the frog.

Experiment No. 7.

One drop of carbolic acid was administered to a full-grown, vigorous cobra at 4-14 p. m. In two minutes the snake was in convulsions, and powerless to strike, or even erect his hood.

4-34.—Still struggling; convulsed; mouth open, but unable to move or strike.

4-45.—Has gradually been recovering; looks still very weak, and the head trembles, and can be raised with difficulty. At 2 p. m. the following day the snake had recovered, but still seemed weak, and unable to dilate his hood perfectly.

A smaller cobra to which the same quantity, one drop, was administered, died in less than five minutes.

Experiment No. 8.

Two drops of carbolic acid were administered to a large frog, Rana Tigrina, at 4-15 p. m.

4-20 p. m.—Apparently not affected.

4-22.—Began to be sluggish.

4-24.—Very sluggish; reflex movements when the hind legs are irritated.

4-30.—No reflex movement; lies almost paralysed; respiratory movements going on slowly.

4-40.—Quite dead.

When dead, the body became quite collapsed and pinched in, whilst the frog killed by cobra poison was much distended.

The poison used for inoculating on this occasion had been taken from three cobras the day before. There was altogether about forty or fifty drops. It is a slightly viscid, somewhat opalescent fluid; clear when pressed out of the poison gland, but becoming slightly turbid afterwards, with a slightly acid reaction, and under the microscope presenting the appearance in the annexed sketch,* which I observed after very careful examination.

This poison used on the day after its abstraction had lost very little of its virulence; for, when injected through the hypodermic needle, it caused death very rapidly. Where it has appeared to fail, the apparent failure has probably been due to the mode of insertion. The hypodermic syringe is very like the poison fang, and it appeared to inject the poison just as efficaciously.

I may note that the experiments with cobras have been made with three varieties of the "Naga Tupudiana." They vary in color from black or prismatic dark-purple to a light brown or ash color. The snake-catchers describe three kinds: the *Goomun*, marked on the hood with spectacles; the *Keautie*, marked on the hood with one occellus, and generally of a light color; the *Kalsamp* or the black cobra.

The Bungarus Fasciatus they call *Sankni*.

The Daboia Russellii is called by them the *Bora*, and is regarded as a very poisonous snake. As yet I have had no opportunity of trying any experiments with this snake.

June 9th, 1868.

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* Owing to a delay, the sketches are postponed.—Ed., *I. M. G.*

ON FATTY DEGENERATION.

By Charles R. Francis, M.B.

Of all the morbid degenerations of the tissues in the human frame, there is probably none of such frequent occurrence, in this country, as *fatty degeneration*; no abnormal pathological condition which is so constantly the cause of death, and especially of sudden death, as this. The fact is well known to all who have treated disease in old residents, and more particularly in those who have been gross feeders, and intemperate worshippers of Bacchus. The physician, and especially the surgeon in charge of a European regiment, are familiar with it. It is a frequent cause of death too in comparatively young soldiers,—of young men who have lived but a short time in the country.

This form of degeneration has attracted considerable attention in Europe during the past quarter of a century,* and, as generally, when affecting the heart, defying the keenest investigation that can be brought to bear for its detection, has come to be regarded by the operating surgeon as his most formidable, because usually concealed, foe. There are indeed occasionally certain indications of this degeneration having taken place, such as an intermittent pulse, a feeble circulation with cold surface and extremities, an inexplicable *malaise*, a feeling of lethargy, imperfect digestion, sleepless nights, or sleep disturbed by dreams, and other symptoms which point to a debilitated constitution. But all these symptoms, whether taken together or separately, may proceed from other causes; they are not pathognomonic of fatty degeneration. But if, in addition to them, we are told of attacks of occasional giddiness, stupor, loss of memory, numbness of either the right or left arm, difficult articulation, palpitation, "oppression in the heart," inability to walk up hill; and, moreover, if, in the same individual (in one who has not yet reached the period of life when it is ordinarily developed,) we find the *arcus senilis*, *then* the collected symptoms may be accepted as a sign of this particular form of degradation of tissue. In an able article, in the XXIInd number of the *Indian Annals of Medical Science*, Dr. Fayrer has shown with what frequency patients succumb, in Calcutta, to this condition (when it affects the heart) after an operation. I have myself repeatedly pointed out to the students in my class how constant a cause of sudden, and unexpected death, this degeneration of the *heart* is found to be in persons who come more immediately under the care of the physician. And, in an admirable and highly-philosophical paper by Dr. C. N. Macnamara, in the Xth number of the *Indian Annals of Medical Science*, it is shown what a remarkably high rate of mortality, in the European army in India, is attributable to it. Dr. Macnamara even believed that it led to the changing of the entire regiment to which he was attached, (the 1st Fusiliers) once in ten years.

The ordinary supposed causes of fatty degeneration are, generally, well known. Indulgence in a rich diet, and alcoholic liquors, indolent habits, decline of life, bygone inflammation, defective nutrition and excretion, and what has been called the *retrograde metamorphosis of tissue*, are among the chief. Speaking of alcoholism as a cause, Handfield Jones says, in his exhaustive paper on the general subject of fatty degeneration, "the effects of spirit drinking * * illustrate extremely well the two principal conditions of the change. Impairment of excretory action, and pouring in of an hydro-carburet into the blood, cause it to be loaded with oil, while the debilitating action of the alcohol on the nervous system, and through it probably on all parts lowers their vital energies, and at length so enfeebles their organic life, that they can no longer maintain their healthy construction." Handfield Jones speaks of impairment of excre-

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* Laennec just noticed the existence of this degeneration, as having been observed by Haller and Vicq-d'Azyr. He had seen very little of it himself.

[illegible]

[illegible]

[illegible]

Dr. H. C. Cutcliffe, F.R.C.S., has been appointed Superintendent of the Government Press, and Chemical Examiner, N. W. P., during the absence, on deputation, of Dr. Walker.—*Pioneer.*

A SUGGESTION REGARDING POST-PARTUM HÆMORRHAGE.

By A. R. HALL,

Assistant Surgeon, Royal Artillery.

It has occurred to me that there is a possible cause of flooding during labor which has not been specially noticed by writers on midwifery. I allude to *the occasional tying of the umbilical cord before pulsation has ceased in it.* We are told, in works on Obstetrics, that if the child has cried or breathed, its communication with the mother is no longer necessary, and that the cord may be tied immediately. No notice is directed to be taken, whether the cord is pulsating or not. This proceeding involves perfect safety as regards the child; but may it not do harm to the mother?

Before considering what is the state of affairs directly after the expulsion of the child, let me quote some passages from a book by Dr. Lumley Earle, Obstetric Surgeon to the Queen's Hospital, Birmingham, entitled "Flooding after Delivery." At page 104, under the heading "Partial Separation of the not morbidly adherent placenta," he writes:—"After the birth of the infant, the uterus generally remains quiescent for a short time before it contracts to detach the placenta. Dr. Murphy has given to that condition of the uterus the very appropriate term of 'suspended action,' in contradistinction to that of true inertia. Now, a not uncommon cause of hæmorrhage is the *partial* detachment of the placenta before the uterus begins to contract. The only safeguards against flooding are either adhesion of the entire placenta, or firm contraction of the uterus, its cavity being perfectly empty. Both these points are wanting when hæmorrhage occurs from partial separation of the placenta during an uncontracted state of the uterus. The blood flows through the uterus unimpeded, and escapes out of the uterine sinuses lately covered by the detached portion of the placenta. The healthy afterbirth is so loosely connected to the uterine wall, that very slight disturbances may give rise to its partial detachment, *e.g.*, exertion of the patient; coughing; the application of strong or unequal pressure on the uterus during the absence of contraction; contraction of only a small portion of the uterus; and premature traction on the cord."

Now, as stated above, *a not uncommon cause of hæmorrhage is the partial detachment of the placenta before the uterus begins to contract.* What is the cause of this partial displacement? The uterus has not re-commenced to contract for the expulsion of the placenta. Its action is suspended. If the last contractions of the uterus to expel *the child* had produced it, blood would immediately begin to flow as soon as the child had entirely passed through the vulva. This sometimes does happen; but most of the cases of post-partum hæmorrhage met with occur after ligature of the cord; many of them almost directly after. If, then, the child has been born without any immediate flooding, and the uterus is quiet, what is the cause of the partial detachment of the placenta? I believe it may be explained as follows. Let us take an ordinary case of flooding. The child has been born; the blood is still circulating through the cord, the pulsations are distinctly felt; the child breathes, and a ligature is applied to the cord. What follows? The blood coming from the uterus into the placenta is suddenly stopped at the junction between the two; it cannot proceed, because of the blood in front having been brought to a stand-still by the ligature on the cord; *the healthy after-birth is very loosely connected to the uterine wall, and very slight disturbances may give rise to its partial detachment.* Blood is, I assume, poured out between the uterus and placenta, because that is the weakest part that the blood comes in contact with, and will first yield to the pressure from behind. A partial detachment of the placenta takes place, and consequently hæmorrhage into the cavity of the uterus. Can it be then that too hasty or too early application of the ligature to the pulsating cord, and consequent sudden separation of the placental attachment, are the real causes of certain cases of post-partum hæmorrhage? Such may be regarded as merely a suggestion on my part; but if there is any truth in it, the cause of flooding can be so easily avoided, that I have thought it worth while to draw attention to it. As a rule, there is seldom any necessity for haste in the division of the umbilical cord. If the child has not begun to breathe, it requires the blood which is circulating through the cord; for although out of the uterus, it is still drawing lifhe from te mother. If it is necessary to try and excite respiration, cold water can be dashed on it, or other direct stimulants can be applied, without entailing any risk to either mother or child. If, on the other hand, the child *has* breathed, the pulsation in the cord will become less frequent, and cease in a short time: no blood will then be flowing into the placenta, and the ligature may be applied without any chance of doing harm.

Dr. Earle, in the above quoted work, devotes a chapter to the "Preventive Treatment," and his suggestions are most practical. But he makes no allusion to the state of the cord when the ligature is about to be applied, whether it is pulsating or not. I have therefore been induced to put certain thoughts which have occurred to me on paper. I bring forward the subject as one based, of necessity, on a theory; and in doing so, I am fully aware how fallacious theories sometimes prove.

Still, as it has not been treated of in our standard works on Midwifery, these remarks may have the effect of drawing the attention of medical men to the subject; and if, as a rule, a ligature were not applied on the umbilical cord whilst it is pulsating, it is possible that cases of post-partum hæmorrhage might be less frequent than they now are.

Barrackpore, *May 18th*, 1868.

CASES FROM PRACTICE.

COMPOUND COMMINUTED GUN-SHOT FRACTURE OF BOTH BONES OF THE FOREARM; SECONDARY AMPUTATION; RECOVERY.

By Charles Martin Russell, M.D.,

Superintendent of Pilgrim Hospital, and Civil Surgeon, Gya.

Chamman, aged 55, Hindu by caste, and occupation teli, of Mouzah Tailhutta, Pergunnah Roh, in the sub-division of Nawada, physical constitution sound, was admitted into the Pilgrim Hospital, Gya, on 28th January, 1868, with compound comminuted fracture of both bones of the right forearm caused by gun-shot wound.

The history of the case is as follows:—He states that three days before his admission into hospital he was wounded by the accidental discharge of a shikari's matchlock; that upon receipt of the injury he fell down in a state of insensibility, and, on recovering his senses, was told that the matchlock was loaded with shot, and not with ball. He thinks he was distant some three or four baus from the weapon when it went off, but his statements are rather vague on this point. When sufficiently recovered from the primary effects of the injury, he was sent in to Gya by the native doctor under charge of the Police. The notes of the case kept by the Sub-Assistant Surgeon furnish the following particulars.

January 28th, 1868.—*Symptoms on admission.*—An ugly-looking lacerated and contused wound, three inches in length and breadth, at the middle of right forearm; both bones at this situation smashed into pieces: considerable swelling and tension of the parts above and below the seat of injury; patient complains of much pain and restlessness, but otherwise there is comparatively little constitutional disturbance, and no symptoms of collapse.

Injured forearm to be placed on a splint, and supported by a bandage. Milk diet. ʒi of solution of morphia, contain-

[illegible] a grain of the [illegible], to be given at [illegible] in cam- [illegible] mixture.

[illegible]—Amputation [illegible] Superintendent. [illegible] ligature. [illegible] bandage and cold water dressings [illegible]. [illegible] of morphia solution at [illegible].

[illegible]—[illegible] complains [illegible].

[illegible]—Bandages and dressings [illegible]. Stump looks clean, [illegible] not irritable. Diet [illegible] milk, beef-tea, country [illegible].

[illegible]—Bowels not opened yesterday; [illegible] ʒss. s. [illegible] before.

[illegible]—[illegible] discharge oozes [illegible] stump. Bowels [illegible] yesterday.

A [illegible] ℥ [illegible] to be freely used, [illegible] by means of two or [illegible] strips of common [illegible]. A [illegible] of the wound for [illegible] of discharge. Following [illegible] to be taken every [illegible] hours:—

℞	Ammon. [illegible]	...	gr. iii
	Tr. hyoscyami	...	♏ xx
	Aq. camphoræ	...	℥ i

[illegible]—sago [illegible] milk, [illegible] up, country rum ℥ vi.

[illegible]—Some sloughing along the margins of both flaps; discharge less offensive.

Patient complains of pain in the stump. Slept tolerably well last night. Pulse accelerated, but tongue clean and moist, and appetite good.

[illegible]

[illegible]—Slept well. Discharge diminished, and much less offensive.

[illegible]—Sloughing has ceased, and margins of flaps are looking healthy. No fever, nor constitutional disturbance.

[illegible]—Ligatures have all come away. Patient expresses himself as feeling very comfortable, and says he has no pain in the stump. Sleeps well, enjoys his food, and is now taking his [illegible] diet of dal and rice.

[illegible]—The character of the discharge has changed to that [illegible] healthy pus, and the healing process by granulation has set in.

12[illegible].—Patient doing well. From this time he progressed [illegible] with [illegible] an untoward symptom, and was discharged [illegible] 7th March with a well-shaped stump, and in robust health.

REMARKS.

This is an interesting case, as being of a kind not often met with in civil practice. The patient being of advanced age was [illegible] more liable to diseases of a low type, and to any one of the [illegible] which follow in the wake of gun-shot [illegible].

Amputation was imperative, for the injury was severe, and [illegible] contusion and laceration [illegible], muscle and nerve, to complete disorganization, with shattering of [illegible].

Inflammation [illegible] throughout the whole extent of the [illegible] was [illegible] with sloughing of the [illegible]. [illegible] circumstances, it was certain that any [illegible] inevitably followed by [illegible]. [illegible] operation, on [illegible] appeared to have [illegible] the [illegible].

A [illegible] myself and [illegible] removal, and [illegible] that [illegible] ball [illegible] was [illegible] not [illegible] was loaded [illegible] which [illegible] by cutting [illegible] in this district, [illegible] have met with [illegible] [illegible] the [illegible] [illegible] man.

THE TREATMENT OF GONORRHŒA AND OF SYPHILITIC WARTS.

By J. B. H[illegible], M.D., T.C.D., M.R.C.S.,

[illegible]

I have [illegible] your last [illegible] Dr. Hyatt's remarks [illegible] but [illegible] with [illegible] that [illegible] "[illegible]" [illegible]

I [illegible] Dr. H[illegible] [illegible] and I [illegible] is more [illegible] of [illegible] likely to [illegible].

[illegible] use of [illegible] [illegible] "[illegible]" [illegible] [illegible].

A [illegible] [illegible] [illegible]. [illegible] with [illegible] I am [illegible] six days, yet [illegible] most satisfactory [illegible] as [illegible] strictures, &c.

When [illegible] of jalap [illegible] the patient is [illegible] warm water, [illegible] passage, and immediately afterwards with [illegible] about the [illegible] [illegible] retained as long as possible by [illegible] preventing it [illegible].

The [illegible] wonderful. The starch seems to act as [illegible], and the [illegible] during [illegible] at once relieved. [illegible] starch may be [illegible] a little "vinum opii," or extract of [illegible] to act directly on the irritable [illegible] and after a day or two astringents, such as acetate of lead, alum, or sulphate of zinc, until the [illegible] can be employed without pain.

This treatment I supplement with the following electuary, a medicine [illegible], and much used in some of the [illegible] Hospitals:—

℞	P[illegible]	...	...	ʒi
	[illegible]	..	..	ʒi
	S[illegible]	..	..	ʒi
	Balsam [illegible]	...	...	[illegible] M. ft. Elect.

A [illegible] three times daily.

As this dose [illegible] wrapped in tissue or rice-paper, it can be taken without difficulty by the most delicate stomach.

When all the [illegible] symptoms have disappeared, and only [illegible] remains, the local application of [illegible]. I know [illegible] I am [illegible] far [illegible] at [illegible].

[illegible] I [illegible] warts, [illegible] great [illegible] to [illegible] and [illegible] warts [illegible] and if [illegible] to [illegible]

[illegible]

Dr. Hy[illegible]

ABSTRACT OF LITHOTOMY CASES PERFORMED IN THE GOVERNMENT CHARITABLE DISPENSARY AT GOOJERAT DURING THE PAST 27 MONTHS, FROM 8th DECEMBER 1865 TO 27th MARCH 1868.

By G. E. Pool,

Civil Assistant Surgeon.

Number.	Names.	Age	Caste.	Sex.	Date of operation.	Cured and Discharged.	Died.	Days under treatment.	Remarks.
1	Janee	22	Mussulman.	Male.	8-12-65	27-12-65	...	19	
2	Sahib Deen	30	Do.	Do.	27-12-65	29-1-66	...	33	
3	Mahundoo	6	Do.	Do.	27-12-65	29-1-66	...	33	
4	Kotub Deen	35	Do.	Do.	27-12-65	25-1-66	...	29	
5	Noor Deen	32	Do.	Do.	10-3-66	30-4-66	...	51	
6	Boodah	8	Do.	Do.	10-3-66	6-4-66	...	27	
7	Jalul	4	Do.	Do.	10-3-66	6-4-66	...	27	
8	Gohur	40	Do.	Do.	10-3-66	18-4-66	...	39	
9	Smail	9	Do.	Do.	12-3-66	11-4-66	...	30	
10	Karum Deen	11	Do.	Do.	22-3-66	10-4-66	...	19	
11	Tajoo	28	Do.	Do.	22-3-66	27-4-66	...	36	
12	Kamulah	40	Do	Do.	3-4-66	...	7-4-66	4	
13	Mahunda	34	Do	Do.	3-4-66	16-4-66	...	14	
14	Soohnoon	6	Hindoo.	Do.	16-4-66	30-4-66	...	15	
15	Karum Khan	7	Mussulman.	Do.	16-4-66	30-4-66	...	15	
16	Rumzan	8	Do.	Do.	16-4-66	3-5-66	...	18	
17	Alee Shah	8	Do.	Do.	16-4-66	4-5-66	...	20	
18	Mohemidbux	50	Do.	Do.	16-4-66	30-4-66	...	15	
19	Hatum	60	Do.	Do.	17-4-66	4-5-66	...	19	
20	Ahmid	25	Do.	Do.	17-4-66	28-4-66	...	12	
21	Rabeya Bebee	36	Do.	Female.	17-4-66	28-6-66	...	11	
22	Ulah Ditta	8	Do.	Male.	30-4-66	10-5-66	...	12	
23	Fakeera	26	Do.	Do.	28-5-66	25-6-66	...	28	
24	Noor Deen	7	Do.	Do.	6-6-66	22-6-66	...	17	
25	Oomurbux	45	Do.	Do.	8-6-66	5-8-66	...	69	
26	Rehmutbeg	3	Do.	Do.	9-6-66	22-6-66	...	14	
27	Alah Dad	19	Do.	Do.	9-6-66	8-7-66	...	29	
28	Karum Dad	13	Do.	Do.	16-6-66	3-7-66	...	17	
29	Noor Mahee	30	Do.	Do.	24-6-66	19-7-66	...	25	
30	Sodagur	52	Do.	Do.	24-6-66	8-7-66	...	14	
31	Mohemid Hyat	4	Do.	Do.	24-6-66	4-7-66	...	10	
32	Karumbux	70	Do.	Do.	1-7-66	17-7-66	...	16	
33	Salum	3	Do.	Do.	2-7-66	10-7-66	...	8	
34	Feshur	10	Hindoo.	Do.	4-7-66	27-7-66	...	23	
35	Janee	20	Mussulman.	Do.	11-7-66	6-8-66	...	26	
36	Noor Deen	22	Do.	Do.	28-7-66	...	30-7-66	2	
37	Deena	22	Do.	Do.	10-8-66	20-9-66	...	40	
38	Maung Shah	4	Do.	Do.	10-9-66	20-9-66	...	10	
39	Mohkoo	20	Do.	Do.	10-9-66	...	13-9-66	3	
40	Chundoo	14	Hindoo.	Do.	22-9-66	4-10-66	...	13	
41	Doulut	4	Mussulman.	Do.	16-10-66	31-10-66	...	15	Weight of the stones, from two drachms to eight ounces; the number extracted varying from one to ten, of different sizes, generally from 2 to 4, in the adult as well as in children.
42	Futteh Deen	8	Do.	Do.	10-11-66	28-12-66	...	48	
43	Jaduh	35	Do.	Do.	10-11-66	14-12-66	...	34	
44	Gokul	60	Hindoo.	Do.	19-11-66	12-12-66	...	23	
45	Bhagh	3	Do.	Do.	26-12-66	16-1-67	...	21	
46	Mohkum Deen	14	Mussulman.	Do.	26-12-66	18-1-67	...	23	
47	Jawahur	28	Do.	Do.	26-2-67	27-3-67	...	29	
48	Rokun Deen	35	Do.	Do.	26-2-67	21-3-67	...	23	
49	Ditta	2½	Do.	Do.	1-3-67	18-3-67	...	17	
50	Nehal Chund	7	Hindoo.	Do.	1-3-67	21-3-67	...	20	
51	Osman	4	Mussulman.	Do.	14-3-67	2-4-67	...	19	
52	Bhurree	7	Do.	Female.	15-3-67	19-3-67	...	4	
53	Nubbeebux	6	Do.	Male.	17-3-67	10-4-67	...	24	
54	Mohemid Deen	4	Do.	Do.	29-3-67	12-4-67	...	14	
55	Alahbux	50	Do.	Do.	29-3-67	17-4-67	...	19	
56	Jawahur	28	Do.	Do.	29-3-67	6-4-67	...	8	
57	Mohemid Khan	5	Do.	Do.	18-4-67	2-5-67	...	14	
58	Nanuk	12	Hindoo.	Do.	18-4-67	10-5-67	...	22	
59	Karum Singh	40	Do.	Do.	25-4-67	30-4-67	...	5	
60	Kadurbux	55	Mussulman.	Do.	25-4-67	14-5-67	...	19	
61	Ulah Ditta	9	Do.	Do.	5-5-67	20-5-67	...	15	
62	Makha	13	Do.	Do.	23-5-67	18-6-67	...	26	
63	Katub Deen	70	Do.	Do.	11-6-67	18-6-67	...	7	
64	Alah Deen	70	Do.	Do.	11-6-67	30-6-67	...	19	
65	Emam Deen	3	Do.	Do.	17-6-67	6-7-67	...	19	
66	Boodah	1	Do.	Do.	17-6-67	2-7-67	...	15	
67	Noor Deen	4	Do.	Do.	26-6-67	15-7-67	...	19	
68	Alum Shah	34	Do.	Do.	15-7-67	6-8-67	...	22	
69	Jeewun	25	Do.	Do.	22-7-67	13-8-67	...	21	
70	Mehr Alum	36	Do.	Do.	22-7-67	15-8-67	...	23	
71	Boodah	9	Do.	Do.	4-8-67	27-8-67	...	23	
72	Karum Alee	8	Do.	Do.	4-8-67	26-8-67	...	22	
73	Hussow Bebee	40	Do.	Female.	15-8-66	26-8-67	...	11	
74	Alah Dad	27	Do.	Male.	4-8-67	16-8-67	...	12	
75	Sadan	41	Do.	Female	27-8-67	30-8-67	...	3	
76	Emam Deen	7	Do.	Male.	28-11-67	22-12-67	...	24	
77	Ramgee	3	Hindoo.	Do.	28-11-67	22-12-67	...	24	
78	Basawa	45	Do.	Do.	14-3-68	16-4-68	...	33	
79	Noor Mohemid	40	Mussulman.	Do.	14-3-68	12-4-68	...	29	
80	Oomur Deen	4	Do.	Do.	14-3-68	27-3-68	...	13	
81	Dadoo	40	Do.	Do.	27-3-68	20-4-68	...	24	
82	Mahmood	8	Do.	Do.	27-3-68	16-4-68	...	20	
83	Mukhun	5	Do.	Do.	27-3-68	13-4-68	...	17	
84	Jeewun	3	Do.	Do.	27-3-68	19-4-68	...	23	
85	Ahmud	7	Do.	Do.	27-3-68	22-4-68	...	26	

Goojerat, 23rd *April*, 1868.

TWO CASES OF CALCULUS VESICÆ.

By P. C[illegible], M.D., [illegible]

[illegible]

CASE I.

M[illegible] K[illegible] [illegible] years, who [illegible] the [illegible] H[illegible] H[illegible] [illegible] years. [illegible] 1868. [illegible] On the [illegible] 27th February [illegible] the operation. [illegible] the stone on the [illegible] the point [illegible] I withdrew [illegible] introduced my [illegible] above [illegible] extract it. [illegible] mucus [illegible] shaped; measured [illegible] in length by one and [illegible] inch in breadth, and weighed [illegible] 252.5 grains avoirdupois, the outer layer being of [illegible]. There was a little bleeding for a couple of hours after the operation, which was checked by injecting [illegible]. A tube was then introduced, and patient put to bed. On the 8th of March the urine ceased to flow through the urethra, and on the 20th the patient was discharged cured. Not a single bad symptom occurred during the progress of the case.

CASE II.

D[illegible] H[illegible], aged [illegible] years, was admitted into hospital on the 28th February, 1868. His father stated he had been ailing with symptoms of stone for five years. He was in a bad state of health, and his penis, from his constant pulling at it, was much elongated, and [illegible] to an adult's. For five days attempts were made to allay the excessive irritation which he suffered [illegible] and suppositories, but his father being impatient to return home, I was forced to operate.

On the 5th March he was put under the influence of chloroform, and the lateral operation performed. The stone was seized at the first attempt, but it was necessary to [illegible] the opposite side of the prostate before it could be extracted. It weighed one ounce 192.5 grains avoirdupois, was irregularly triangular, and [illegible] three distinct [illegible] triple phosphate, [illegible] again triple phosphate. There was no hæmorrhage [illegible]. A tube was [illegible] bladder, and [illegible] asleep [illegible]. On awaking, he [illegible] out the tube, and [illegible] to be [illegible]. On the fourth day the urine began to pass by the urethra. As his father was very anxious to get home, [illegible] was allowed [illegible]. On the 18th March [illegible] the wound [illegible] and the boy was discharged. His [illegible].

I [illegible] two cases [illegible] boy [illegible] bad state [illegible].

A CASE OF LITHOTRITY.

By W[illegible]

[illegible]

[illegible] an operation was [illegible]

[illegible] a stone [illegible] it was decided to [illegible]

[illegible] Dr. C[illegible] S[illegible] [illegible]

[illegible] the patient was [illegible]

[illegible] On the 10th March [illegible] it was [illegible]

[illegible] H. M. [illegible] Staff Assistant Surgeon [illegible] several [illegible]

[illegible] the patient [illegible]

[illegible] and Cal[illegible] [illegible]

NYNEE TAL, [illegible] 1868.

WE [illegible] Dr. Mackenzie, [illegible] P[illegible] Gazette at K[illegible] recovered from his w[illegible] [illegible] knife [illegible] the liver, [illegible] depth. [illegible] been [illegible]

A MAN of the [illegible] Regiment [illegible] at the [illegible] fever [illegible] the 7th [illegible] M[illegible] [illegible] only at the [illegible]

Notices to Correspondents.

[illegible]

[illegible]

Dr. [illegible]

J. B. S[illegible]

Dr. A. [illegible]

H[illegible] M[illegible]

J. H. B[illegible]

Domestic Occurrences.

[illegible]

The Indian Medical Gazette.

It is part[illegible] requested [illegible] I[illegible] M[illegible] Gazette [illegible] written [illegible] paper, and only on one side of the sheet of paper.

To [illegible] expense [illegible] so distinctly that no possible mistake can be made in printing [illegible].

Names of places [illegible].

Communications [illegible] the month [illegible], else [illegible].

Business letters [illegible] Messrs. Wyman Bros., [illegible].

Subscribers [illegible] requested [illegible].

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

SPECIAL NOTICE.—*S[illegible] are particularly requested to notify any change of address [illegible] of this paper can be obtained of* WYMAN BROS., *Publishers, Hare Street, Calcutta.*

HARE STREET,
January, 18[illegible].

WYMAN BROS.,
Proprietors.

[illegible] —SIR BENJAMIN BRODIE.

"ONE YEAR MORE."

A[illegible] of the [illegible] of our serv[illegible] passed away another [illegible] has succumbed to the malaria of [illegible]. [illegible] Deputy Inspector-General of Hospitals at Agra, [illegible] his last. [illegible] year [illegible] and Dr. N[illegible] [illegible]

It is a [illegible] Deputy Inspector-General of Hospitals [illegible] per annum [illegible] Indian Medical Department [illegible] A Deputy Inspector [illegible]

[illegible] by the Secretary of State for India, goes for nothing. A period of six months, during which an [illegible] We would even go further than this. A [illegible] per annum [illegible] Deputy Inspector-General [illegible] Indian Medical [illegible] one year more [illegible]

MEDICAL SUBORDINATE [illegible] WIDOWS' AND ORPHANS' FUND.

T[illegible]

Department has long entertained, of an amelioration of its condition. On mentioning the subject to an old and experienced administrative medical officer, (whose interest in the Department was earnest and sincere), some nine years ago, he urged inaction for the present, on the ground that the position of the Apothecaries and Stewards of the service was about to be placed on a new footing. This has now been done; and, whilst the Department itself has received its reward, its widows have not been lost sight of. No notice has been taken of the orphans, however, and the provision for the widows is not so complete that more is not required. It should be accepted as a *nucleus*, round which the members of the Department might bring their own contributions, until the accumulated sum should allow of a very comfortable income being provided for *all* the "dear ones that are left,"—orphans as well as widows. We took great interest in the subject several years ago; and the present Editor of this journal was President of a Committee convened at Lucknow, for the purpose of taking it into consideration. The Committee proposed that Warrant Officers in all departments of the service should join the fund, and circulars were issued, inviting them to do so. The replies received were not uniformly in the affirmative, although the general feeling was in favor of the scheme. We should ourselves be strongly in favor of it still, were it not for the Government assistance now rendered. This, however, is a matter open to discussion. The families of Warrant Officers, in other departments, are frequently left more or less destitute, as those (barring a small pittance) of the Subordinate Medical Department were, and there is no more provision for the one, than, until the other day, there was, the widows excepted, for the other.

The following is a record of the proceedings of the Committee which was convened at Lucknow just eight years ago:—

At a meeting of Subordinate Medical Officers, (Dr. C. R. Francis, Surgeon, Her Majesty's 4th European Regiment, in the Chair), assembled at Lucknow, on the 1[illegible]th June, 1860, for the purpose of enquiring into the present state of the Widows' and Orphans' Fund, which was established at Ferozepore in 1851, it was resolved, *first*, that the following members should constitute a Committee, with power to add to their number:—

President ... Dr. C. R. Francis.
Members ... Mr. W. Bonner, Steward.
,, E. Davis, Apothecary.
,, I. H. A. Leach, Steward.
,, R. Pereira, Asst. Apothecary.
,, J. J. [illegible], ditto ditto.

Mr. Bonner kindly undertook to act as Secretary.

2nd. The President briefly stated the history of the Fund. It was originated at Ferozepore in 1851, under the auspices of the late Dr. J. C. Graham. Out of 274 subordinate medical officers, 175 subscribed to it. Rs. [illegible] were collected, and invested, *first*, in the Government Savings Bank, then in the Bank of Bengal, where the money at present is, and from which certain widows are enjoying pensions. A set of suitable rules were framed, and the late Court of Directors was prepared to place the Fund upon the same footing as the Bengal Uncovenanted Family Pension Fund, provided they were first furnished with the opinion of an actuary. [illegible] were voted from the collected subscriptions to secure the services of Mr. P. M. Tait, he having undertaken to furnish a report for [illegible], of which Rs. [illegible] were paid; and when matters had arrived at this stage, the mutiny broke out, since which the fund has, so far as [illegible] subscriptions go, come to a stand still. The President stated that he had written to Mr. Tait a few weeks ago about his report, and that his attorney (Mr. Tait being in England) had replied that it would be forthcoming on payment of the remaining Rs. [illegible].

3rd. This, then, is the present state of the Bengal Subordinate Widows' and Orphans' Fund. The money is lying to its credit in the Bank of Bengal, and the payment of the pensions is under the control of Mr. John M[illegible], Apothecary, attached to the Medical Depot at Sealkote, and Secretary to the fund under Dr. Graham.

4th. The Committee seeing the vast importance of putting the fund into active working order again as speedily as possible, unanimously agree as to the advisability of at once addressing every subordinate medical officer in the service, and inviting his earnest attention to the necessity of co-operation; and, further, with a view to increase the strength and the resources of the fund, the Committee resolve that every Warrant Officer in the various departments of the service should be invited to become a member of it, that he should be furnished with a copy of the present proceedings, and addressed by means of a short circular which the heads of departments should be requested kindly to convey to him. Referring to the superior [illegible] of the [illegible], the Committee determine that it will be unwise to proceed further for the present, until the sense of the service has been taken. It is resolved to proceed at once to prepare the subjoined circular, and to terminate the proceedings.

In accordance with the above resolutions, a circular was framed and forwarded, and, as before stated, a variety of replies were received.

Subsequently to this, a few of the subscribers to the fund agitated the question of reimbursement; and this was eventually carried out. The whole subject has been in abeyance ever since, and the point for consideration now is, shall anything be done or not? The department has delayed taking any further action, with a view to forming a new fund, until its position should be finally determined. There is now no reason for delaying any longer. A portion of Mr. Tait's report, (his final opinion was withheld in the absence of further information which he required, and, we believe, of further payment,) together with some preliminary tables for calculating the probable amount of mortality and number of annuitants, as prepared by Mr. Tait, are with us, and we shall be happy to render any assistance in our power for the purpose of bringing the matter to an issue. If the department is satisfied with the pension accorded by Government, there is no more to be said.

Since the foregoing was written, we have received communications from more than one member of the Subordinate Medical Service, by which it appears that some correspondence is taking place, and circulars are being issued, with a view to secure unity of action in raising a Widows' and Orphans' Fund in addition to the Government grant. All subscriptions, of which a graduated scale will be necessary, should be made [illegible], and we believe that Government would, under the circumstances of the failure of the former fund [illegible], and because the Court of Directors had promised it, take the fund under its own management. We shall be happy to receive a draft embodying the regulations of the new scheme. The Subordinate Medical Widows' and Orphans' Fund in the Madras Presidency should be taken for a guide. That fund is based on a solid foundation, and works admirably.

METEOROLOGICAL PHENOMENA IN INDIA.

Throughout the length and breadth of the great continent of India, from its lofty mountainous tracts to the mouths of its lordly rivers, in its skies and in its seas, the convulsions, and ordinary phenomena even, of nature either attain monstrous proportions, or are remarkable for their erratic tendencies.

There, famines sweep human beings from the surface of the earth, not in thousands, but in *millions*. The two greatest pestilences which the world ever saw find congenial soils in India, nay, it is alleged that the very *home* of one of them, cholera, is there. There, cyclones destroy the strongest and most elaborate works of men's hands, as if the construction was of reeds, and the foundations of sand; the Heavens discharge balls of ice,* in hail storms, larger than cricket balls; and rain falls, not in inches, but in feet.†

We are much indebted to Dr. Sutherland, Officiating Head of the Medical Department in this Presidency, for placing at our disposal, with a view to its publication in the *Indian Medical Gazette*, the following account, by Dr. Murray Thompson, of a very remarkable fall of muddy rain, which took place last year at Roorkee and at Nynee Tal in the Himalayas.

The following is a short account of this unusual phenomenon·—"On the 27th of June, 1867, both at Nynee Tal and Roorkee, previous to the fall of muddy rain, a dense yellowish red cloud was observed in the sky. Rain fell, but it was not muddy. On the following day, the 28th, the same peculiarly coloured cloud was seen as early as eight in the morning; later in the day it was observed to be moving from the south-west to the north-east, and at 5 P. M. it had wholly disappeared in the latter direction. At Roorkee I noticed that this cloud was very high. I saw numerous smaller clouds, sometimes of a darker, and sometimes of a paler hue, float under it. The contrast of these lower clouds against the upper yellow red one was very striking, both on account of their colours being different, and their outlines more defined. From eight in the morning till four in the afternoon, the rain fell in short showers, and the water collected from these was always muddy. As might have been expected from the frequent showers, the air was saturated with moisture. Several times throughout the day the dry and wet bulbs were seen to read alike. The barometer from the 26th, when it was above its average height for the month, fell somewhat suddenly on the 27th, and continued to fall on the 28th and 29th, and as suddenly rose to above its average height late in the morning of the 30th. I noticed the state of the barometer before and after the fall of muddy rain, but I do not think there is any connection between the two.

"A specimen of the mud from the rain was examined by the microscope at Nynee Tal by Dr. Hilson, and at Roorkee by myself It was found in both cases to be composed of inorganic particles, partly amorphous, but mixed with numerous crystals, having their edges much rounded off. Dr. J. A. P. Colles, of the Medical College, Calcutta, also very kindly examined the mud, and his opinion of it was the same as the above.

"The amount of mud contained in each cubic inch of rain was 12·42 grains, so that every inch of rain which fell deposited 149·1 grains per square foot of surface. The water which was filtered away from the mud was not at all like ordinary rain water, as it contained chlorides in marked, and sulphates in appreciable, quantity. Lime was detected in moderate amount, and magnesia in traces; but the most curious constituents detected were, in the first place, a salt of ammonia, most likely chloride; and, secondly, soluble organic matter, in such quantity as rapidly to discolor a solution of permanganate of potash.

"I could not determine more in the way of analysis than the above points. I should add that the rain water used for testing was collected in a clean porcelain basin, and fell in a place quite out of the reach of smoke or other organic impurity.

"The explanation of the occurrence of this shower of muddy rain must, I think, be that it was due to a dust-storm which had occurred at a great distance to the south-west, probably in the Bikaneer desert, in the northern part of Rajpootana; and that during this storm, the dust, instead of being, as it usually is, only lifted but a short way from the surface, had, by an air current of exceptional strength and upward direction, been swept aloft to a great altitude, at which it is not an uncommon thing to have a stratum of air moving in a direction quite different from that of a stratum on the earth's surface."

The above explanation by Dr. Thompson is doubtless correct. On the African side of the Atlantic, and especially in the neighbourhood of the Cape Verd Archipelago, a fine reddish dust, producing an impenetrable haze which occasionally amounts to a dangerous fog, is deposited on the spars and riggings of ships. Although this dust invariably prevails with a north-east, east, or south-east wind, and at seasons when the Harmattan is blowing, it has been concluded that it comes from Africa, near the Continent of which it is so systematically deposited, more especially because the coarser grains fall first. But the microscope reveals, in this dust, certain forms of infusorial life which, amongst others from Africa, are peculiar to *South America*. Lieutenant Maury imagines that these are blown up into the air with the whirlwinds, which prevail about the beds of the Amazon and Orinoco rivers, carried over the Equator northwards by upper currents of air, and eventually brought back by the north-east trade, and deposited on the surface over which it flows. A singular "tally on the winds" is thus brought into view by the microscope. It would have been interesting to compare the solid constituents in the mud, which fell at Nynee Tal, with those of the soil, and in the water in the northern part of Rajpootana. This might still be done if the mud be available, and in sufficient quantity.

"NEW EDITION OF DR. CHEVERS' MEDICAL JURISPRUDENCE FOR INDIA."

WE advise our readers, who are interested in the subject of Medical Jurisprudence in India, to avail themselves of the opportunity, which is now afforded, of securing a copy of Dr. Chevers' new edition of this standard work. The entire book will be—for the most part—re-written; and, as much new matter has been added, it will extend, altogether, over some 700 pages. To Civil Surgeons such a volume would be essential. Early application should be made to Messrs. Thacker, Spink, and Co., Calcutta. The price is 16 or 18 Rupees. We regret that want of space prevents our making a more extended allusion to this treatise. We shall hope to do so on a future occasion.

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* Falls of masses of ice have taken place in the west of India in the course of hail storms; and we ourselves were witnesses to the fall of large circular blocks which drove every one into their houses during the great hail storm by which Nynee Tal was visited in May, 1856. Some of these blocks weighed nearly 2 lbs., and measured more than 13 *inches* in circumference. The storm was preceded by a most remarkable noise in the Heavens, which has been very aptly compared by Professor Daniell to the emptying of innumerable bags of walnuts in the air. The blocks were made up of concentric layers, resembling onions.

† The station of Cherrapoonjee was abandoned as a sanatarium, on account of the immense quantity of rain which fell there during the rainy season. Lieutenant Yule, of the (then Bengal) Engineers, measured 600 inches or 50 feet in one season!

SUBORDINATE MEDICAL DEPARTMENT

At length [illegible] the Subordinate Medical Department [illegible]. We [illegible] transferred the [illegible]. It [illegible] found [illegible]. We [illegible] statement, showing the [illegible] pay [illegible] the present and under [illegible]. [illegible] We [illegible]. We [illegible], however, express [illegible] our extreme [illegible] that the [illegible] of the department has not been [illegible]. We [illegible] fifty [illegible] that, under the present system, an apprentice in the Presidency was practically receiving no instruction whatever; that, notwithstanding, valuable lives were entrusted [illegible] the [illegible] to whom the European [illegible] countrymen, looked [illegible] sympathy [illegible] was [illegible]. [illegible] has [illegible] in Madras, and even the [illegible] apprentice [illegible] medical officer, or [illegible] absolutely none. [illegible] system [illegible] to an end: the [illegible] of the Subordinate Medical Department are, under certain restrictions, to be educated at the Presidency Medical Colleges. But, in carrying out this intention, a little difficulty arises. Where are the students from this department to [illegible] by the wording of the Government order, it would appear that they are to have quarters at the colleges. [illegible] Medical College of Bengal, no quarters [illegible]. [illegible], these students were lodged at the Medical College in Calcutta. At that time they were [illegible] and the entire class was broken up. Owing to the great [illegible] which followed, of European troops, of all arms, into the country, and the paucity of medical officers and servants of every grade, the youths were permanently detained, and distributed for duty amongst the numerous European charges [illegible].

We have long privately advocated the removal of the "*Native* [illegible]" class from the Medical College to the school at Agra; and we believe that the subject will shortly be brought forward. If this plan could be carried out, (of course *time*, an *increase of the* [illegible] *to the present staff at the Agra school, and increased accommodation* would be required), then the quarters now occupied by the students of the "*Native* [illegible]" class, could be made over to those of the Subordinate Medical Department. We shall revert to the subject hereafter.

[illegible] of the Pay, Pensions, &c., of the various grades of the Subordinate Medical Department, at the present rates and at those now proposed.

Rank.	Monthly Pay (Full Batta). Present Rate	New Rate	Gain (+) or Loss (—) under New Rate	Annual Furlough Pay. Present Rate	New Rate	Gain (+) or Loss (—) under New Rate	Annual [illegible] Pension. Present Rate	New Rate	Gain (+) or Loss (—) under New Rate	Monthly Invalid Pension. Present Rate	New Rate	Gain (+) or Loss (—) under New Rate	Annual Widow's Pension. Present Rate	New Rate	Gain (+) or Loss (—) under New Rate
	Rs. A. P.	Rs. A. P.	Rs. A. P.	£ S. D.	£ S. D.	£ S. D.	£ S. D.	£ S. D.	£ S. D.	Rs. A. P.	Rs. A. P.	Rs. A. P.	£ S. D.	£ S. D.	£ S. D.
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]				[illegible]	[illegible]		4 0	4 0	Nil		[illegible]	
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]			[illegible]	[illegible]	Nil		[illegible]	
[illegible]	[illegible]		[illegible]	[illegible]							[illegible]				

[illegible] Subordinate Medical Department. [illegible]

[illegible]

SMALL-POX HOSPITAL FOR CALCUTTA.

Calcutta is at length to have its Small-Pox Hospital. The urgency has long been recognized; but various circumstances have hitherto combined to prevent its being satisfactorily met. Happily, the Government and the Municipality are now in complete accord as to the extreme necessity which exists for such an institution, and both are agreed as to its site, construction, and maintenance. The Government will build the hospital and keep it in repair, and the Municipality will defray the monthly cost of the medicines and of the establishment. The location of the hospital, now finally settled, is to be at Sealdah,—as open a situation probably as any that could have been chosen in the outskirts of Calcutta. An hospital of this description would be unacceptable in any neighbourhood, but there would be fewer objections to its being built at the contemplated point near the Eastern Bengal Railway station, and in the immediate neighbourhood of the *quondam* bazaar, now utilized as an hospital for paupers, than in any other part of the town. Its construction—the building being intended especially for the reception of natives—will be simple enough. A pucka floor; and pucka pillars,—the sides made of matting; the roof being thatched or tiled:—and the hospital is complete.—There will be four long wards, 92 feet × 42 feet,* for the accommodation of from 30 to 40 patients, each of whom will be supplied, the mean general height being 18 feet, and taking the higher number, with 1738 *cubic*, and 96 superficial square, feet, of space.

Four small rooms, each 10 feet × 8 feet, for cases requiring isolation, and for other purposes, will be attached to each ward, giving an aggregate of sixteen rooms of this description. The entire cost of the hospital will be about Rs. 35,000.

It was at one time intended to locate the building at Chitpore, and more than one site was selected and approved of. But serious objections were raised by some of the neighbours, (before making the final arrangements, the Lieutenant-Governor of Bengal wisely paused to ascertain this point); and, after some discussion, the idea was ultimately abandoned.

We shall reserve what more we have to say on the general subject to a future occasion.

INTRODUCTORY LECTURE AT THE MEDICAL COLLEGE.

The usual introductory address, delivered annually, at the commencement of the session, at the Medical College of Bengal, was given this year, on the 15th June, by the Professor of Obstetrics, Dr. T. Edmonstone Charles. The professor deviated from the ordinary groove, and plainly, yet kindly, told the students of their most prominent failings; and, whilst doing so, pointed out how they might shake off the lethargy so characteristic of native youth emerged from the zenana, and qualify at once, even in the early days of their studentship, for the active career of intelligent and zealous practitioners of medicine. But in the first place, asked the teacher, were they *prepared* to do this? Now that they had *seen* something of what they would have to go through before attaining the object of their wishes, could they make up their minds to encounter the hardships of the road? Was it too rough for them? If so, let them go back, and enter upon some other walk of life. Again, were their capacities equal to their desires? For it is one thing to *long* for knowledge, but quite another to acquire it. The native students of India are admirable learners, speaking generally; they succeed in accumulating knowledge *second-hand* in a way unsurpassed by any students in the world. Let them apply that ability, if they determined to remain, now; and *whet, by diligent application*, their *newly-acquired* appetite for study. Let them neglect no opportunities for improvement, nor, in various little ways, by giving a spoon, for example, when it was required, opening a shutter to let in more light, and *assisting* when necessary, (not only looking on at an operation,) for showing that they really took an interest in what was being done. It was not dishonorable to give help in this way. *Now* let them, by cultivating individual responsibility, begin to learn the duties of *men*. Too much importance should not be attached to payments for professional acts. It is a glorious patrimony which has been handed down from hoary antiquity, through the vista of many generations, to the professors of medicine, is the Godlike privilege of applying their skill for the benefit of the poor. Let them not be always thinking of remuneration, and of slender incomes. It is probable that if the matter of uniform and other expenses connected with his position were taken into account, the Assistant Surgeon would not be found to be so well off, in point of income, as the *Sub*-Assistant Surgeon. The orator then urged those who had passed through the years of their pupilage, and who were now about to elect a sphere for the practice of their acquirements, to enter the public service and visit different parts of India. Nothing so tended to develope the mind and to give liberal ideas as travel. They would be brought into contact with the indigenous practitioners of the country—the baids and koobirajas—to whom they should be especially kind. The time is approaching when their occupation will be gone. Let not the students of the Medical College, educated with a better light than they ever enjoyed, look down upon these simple fathers of the art of healing. Rather let them endeavour to show in a proper spirit the superiority of Western science, and to induce them to have their sons educated as they themselves had been, and not taught to walk in the light of ancient Mahometan and Hindoo medicine. The baids and koobirajas have begun to see that the competition is unequal, and Dr. Charles mentioned the case of a baid who had made over his practice to his son, who has become a Licentiate of the University of Calcutta.

The learned professor concluded a thoroughly practical and earnest discourse by offering, to each and all who had come there to *work*, a cordial welcome and hearty assistance both on his own part and on that of his colleagues. He hoped that they were prepared to recognize loftier elements in the cultivation of medical science than the principles which governed trade. Let them soar above pills and powders; and although teachers and pupils were not bound together by a common religion, the performance of noble acts always brought all right-thinking men together, and was, in itself, a sufficient passport into any worthy community. Trusting then that the *entente cordiale* would exist between them both now and in their professional journey through life, he once more bade them *welcome*.

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* Including verandahs. These are 10 feet in width.

Notes and Queries.

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FORT WILLIAM & CHISWICK

[illegible] HOSPITAL [illegible].

I

[illegible]

II

[illegible]

Meetings of the Bengal Branch of the British Medical Association.

(Continued from Vol. III, No. 6, p. 140.)

◆ ◆ ◆

Dr. Barnard then read a paper on the Pathology and Treatment of [illegible] or Insolation. He dwelt on the fact that, though animals, owing to the power of maintaining the [illegible] of their bodies at a fixed point, could bear exposure to a [illegible] extensive range of *external* temperature, yet that the range of [illegible] body temperature, within which vital functions could be exercised, was very limited. The animal functions, including the action of the nervous centres, in this respect resembled the [illegible] and seeding of plants, fermentation, and many other organic chemical actions, which were stopped by any extensive raising or lowering of temperature. [illegible] known [illegible] does the heat of the body vary [illegible] from the normal standard. When from fatigue [illegible] cause, the body becomes [illegible] to regulate its own heat, if that of the air should vary [illegible] from the normal standard of the body, the animal functions [illegible] the nervous centres, can no longer [illegible]. [illegible] complicated insolation, the body is [illegible] to resist a rise [illegible] of the cere- [illegible] of respiration from inability [illegible] of the heart's action [illegible] and lastly the [illegible] America, [illegible] nervous system causes death at [illegible] heart's action. Many [illegible] on the effect [illegible] because the [illegible] nervous system [illegible]. At this time, too, [illegible] by unavailing [illegible] organic lesion [illegible]. Hence it was [illegible] temperature by [illegible] cases, [illegible] the nervous [illegible] their function [illegible] by artificial respiration [illegible] normal [illegible] from strokes [illegible] Dr. Barnard did not [illegible] of acute [illegible] from his [illegible] apparently due [illegible]

[illegible]

[illegible] been exhibited at Paris last summer. [illegible] of the [illegible], [illegible] an improved [illegible], [illegible] carried by two men [illegible] now in use [illegible] capable [illegible], intended to supersede the present [illegible] separate [illegible].

Dr. [illegible] Dr. [illegible] whether he had observed [illegible] of the system, with [illegible] fever [illegible], and whether he had observed any relation between [illegible] and the phases of the [illegible] was popularly supposed to [illegible] accompanying [illegible].

Dr. [illegible] had generally seen the [illegible] intervals of from fourteen to twenty-one days [illegible].

On account of the lateness of the hour, the Chairman proposed that the meeting should be adjourned a second time, to allow of the papers [illegible] the two last evenings being discussed.

After some discussion, it was agreed to [illegible] to Tuesday, the 24th March, at 8 P. M. The meeting was accordingly adjourned at 10-[illegible] P. M., with a vote of thanks to the Chair.

The second adjourned Annual Meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College, at [illegible] P. M., on Tuesday, the 24th March, 1868. Dr. Chevers, President, in the Chair.

Dr. Chuckerbutty asked Dr. Barnard if he had satisfied himself that respiration failed in the collapsed stage of cholera. For his own part, he thought that circulation, not respiration, was [illegible], and that artificial respiration would not [illegible] but would only hasten death by [illegible]. [illegible] there was no obstruction to the entrance of [illegible], but the apnœa arose from the [illegible] on the nervous system, for which [illegible].

Dr. Farquhar [illegible] he had not heard Dr. Barnard's [illegible]. The [illegible] of the relation between insolation and [illegible] was a very interesting one. In the former there was high temperature, with marked fulness of the circulation, [illegible] of the arteries [illegible] by a [illegible] to the left side of the heart receiving [illegible] from the lungs. On the other hand, [illegible] is a contracted state of the arteries [illegible] of their temperature. In a paroxysm of intermittent fever, with well-marked cold and hot stages, the two classes of symptoms are combined. Ague is often so [illegible] from cholera; and, again, the hot stage of intermittent fever often passes into "ardent fever," or [illegible] cannot, in [illegible] fatal cases, be distinguished from it. He had seen cases of intermittent fever, and [illegible] symptoms, [illegible] fever and [illegible] hospital together, the two diseases having [illegible] from the [illegible]. In 1849 he was at [illegible] with H. M.'s 29th, when there was a sudden and [illegible]. The [illegible] had been [illegible] the rains had set in [illegible] down [illegible], [illegible] Punjab, where the heat was intense. [illegible] was admitted, and though [illegible] at once [illegible], twelve [illegible] were [illegible] of the [illegible]. [illegible] then the recognized treatment. [illegible] He had noticed that the presence of [illegible], of a peculiar fleecy kind, [illegible] totally [illegible]. Once, when at Peshawur, he [illegible] Artillery men, whom he was [illegible], [illegible] him at [illegible] that day [illegible] morning, [illegible]. Dr. Farquhar [illegible] that [illegible] recovered from intermittent [illegible] the hour when [illegible] of the fever was [illegible]. He had once found a patient [illegible] from insolation, [illegible] by the [illegible], as had been done [illegible]. At the [illegible] an insolation [illegible] an empty left ventricle, a distended right ventricle and pulmonary artery, and gorged lungs.

The indication seemed to be to check the extreme chemical action which was going on in all parts of the body by the cold douche. The blood would then cease to be loaded with effete matters, produced by this intense chemical action. The blood thus poisoned blunts, and eventually destroys sensation; and as the poison of insolation acts almost exclusively on the nervous centres, and passes off, like the hot stage of intermittent fever, in a few hours, we may hope, by artificial excitants, to rouse the brain, and thus enable life to be maintained till the danger is over. Rubefacients and vesicants do not fulfil this object, as the cold douche and the bastinado do. Artificial respiration, as suggested by Dr Barnard, would supply the brain with the fresh blood, without which it cannot live or act. All these means fulfil more or less the object in view, but we can never be certain of their success, having no means of estimating the amount of the poison by which the nervous system is effected, or of subduing its strength. All means should be tried perseveringly, for insolation, like the hot stage of fever, does not last long.

Dr. Barnard waived for the present the question of the relation between cholera and insolation. He did not believe in the existence of a special poison in the latter disease; but that from some cause the body became unable to keep its temperature so far below that of the air as to allow the cerebro-spinal nervous centres to act. These centres can only work within a certain range of temperature; above or below that they become inactive; respiration consequently stops, and the heart must cease to beat in between four and five minutes afterwards.

Dr. Chuckerbutty thought that in insolation some change took place in the nervous centres, which led to the rapid absorption of heat by the body; but that whether that change was the effect of high external temperature or not, remained to be proved. The cold douche might obviate this condition, but he did not see how artificial respiration would mend matters.

Dr. Francis confirmed Dr. Chuckerbutty's statement as to their being no obstruction to the entrance of air to the chest in cholera. Insolation was certainly common in Calcutta, where most persons already suffered from deficient nervous energy. He thought that most of those present had given a trial to atrificial respiration in this disease.

Dr. Chevers thought that insolation was good deal influenced by predisposing causes, among which were age, corpulence, drunkenness, malarious cachexia, on the approach of the period when an attack of intermittent fever was due. Where a company of soldiers made a hot march, it would generally be found that the men who succumbed to insolation were fat, among the oldest of the party, and more or less intemperate in their habits. Both Dr. Marcus Hill and he had observed a fatal case of insolation, in which the small intestines were full of rice-water stools, like those of cholera.

Dr. Farquhar had seen cases of death from "secondary fever" after cholera, with hot skin, &c., which he believed to have been cases of insolation supervening on the original disease. The effect of any depressing agent in predisposing to insolation, by lowering the vitality of the nervous centres, had been shown in the case of a European regiment, which, though marching at an early hour every morning, lost many men from this disease, until the Surgeon recommended that the men should breakfast before starting. After this was done, no more cases occurred.

Dr. Barnard included all depressing agencies among the predisposing causes of insolation. Among them were, on the one hand, prolonged fasting, and, on the other, the presence in the stomach of a heavy, undigested meal.

Dr. Ewart doubted whether artificial respiration would be of much use, except as a secondary adjunct in insolation, in which death began, not as in drowning at the lungs, but at the nervous centres. Cold is used on a different principle, and is a rational mode of treatment. With regard to the apparent connection pointed out by Dr. Farquhar between the supervention of insolation, and that of the hot stage of fever, Dr. Ewart observed that insolation is not most prevalent at the most malarious seasons. He thought that any periodicity which appeared in cases of insolation was due, not to the effects of malaria, but to the normal periodicity of our ordinary vital actions.

Dr. Francis said that, nevertheless, insolation and cholera very generally went together; insolation occurred here, in Calcutta, chiefly in the months when cholera was most prevalent[*].

After some further discussion, the meeting was closed at 11 P. M., with a vote of thanks to the Chair.

Norman Chevers, *Presdt.*

Review.

THE CALCUTTA JOURNAL OF MEDICINE.

We have received the fifth number of this journal, and are very sorry to learn that the Editor is still single-handed. We beg to assure Dr. Sircar that when we made use of the term *Sub-Assistant Surgeon*, we did not allude to him, as we were well aware of his being an independent practitioner. We regret very much to think that the title of Sub-Assistant Surgeon should convey "an everlasting reproach," as Dr. Sircar says it does. We do not despair of living to see it associated with all that is dignified, honorable, and lucrative. We shall have something to say about a portion of the contents of this number of the journal hereafter.

Local Correspondence.

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TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

Sir,—The Medical College at Calcutta had, up to the mutiny, classed the members of the Subordinate Medical Department among its numerous students; but I am sorry to say that, since that period, (one in which the department proved its usefulness) this, like a lot of other privileges, was most unceremoniously denied us. On what grounds I cannot say, but one thing was very evident. All the medical subordinates, that had the advantage of this boon, proved a credit, not only to themselves and Government, but a valuable and efficient help in cases of emergency.

Now may I ask why, or what is to prevent this privilege being again extended to us? Government get natives, Bengalis, and others educated there; further, schools are being raised for the education of native women in midwifery; and why don't those who have got influence (I mean the heads of the medical department in India) interest themselves so far as to get a limited number of hands from the Subordinate Medical Department admitted yearly into the College? Certainly we have as great a right to their consideration as the natives. Again, this medical education which would be bestowed on us would not be thrown away, for not only would it greatly benefit that much-spoken-of individual, the British soldier, but would remotely do good to Government; for, having got a medical education, and an insight into the profession, we would, as a matter of course, be more reluctant to part with it, and begin life a fresh in some other.

Not wishing to further intrude upon your valuable time, I conclude with a hope, that the *Bengal* Medical Subordinate will, in a short time, be again permitted to avail himself of all the advantages of a thorough, good, and sound professional education in that great goal[*] of science, and his former *alma mater*, the Calcutta Medical College.

A Bengal Sub-Medico.

Extracts.

SMALL CAUSE COURT,—26th May, 1868.

(*Before E. DaCosta, Esq.*)

Dr. A. J. Meyer *vs.* Mr. W. Westfield.

In this case plaintiff sought to recover Rs. 48, fees for professional visits paid to the defendant.

Mr. Dissent with the plaintiff.

Defendant had no pleader.

Mr. Dissent.—We sue in this case to recover Rs. 48 for three visits to defendant on the 8th and 9th April last. Two visits on the 8th, and one on the 9th. The visits are charged for at Rs. 16 each.

Defendant.—I admit the first and second visits on the 8th, but I do not admit the amount. I ignore the visit of the 9th. I admit Rs. 8 per visit for the two visits on the 8th. I do not admit more, because I believe Dr. Meyer's charges are Rs. 8 per visit, and not Rs. 16.

Dr. Meyer.—On the 8th April last, when I went to my office at No. 58, Bentinck Street, I was informed that a letter had

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[*] So in orig.—Ed., *I. M. G.*

[illegible] Mr. W[illegible] [illegible] suffering [illegible] I [illegible] I paid him [illegible] visit [illegible] he wanted [illegible] the next day. He [illegible] I [illegible] and [illegible] next day [illegible] visits.

The [illegible] Mr. W[illegible] Mr. Westfield [illegible] M[illegible] Rs. 16 [illegible] Rs. [illegible] times Rs. [illegible] I [illegible] Rs. 2[illegible] R[illegible] could not [illegible]

To Mr. W[illegible] I enquired [illegible] something [illegible] I [illegible] was.

Mr. We[illegible] — I [illegible] pills.

[illegible] I did write to Dr. Meyer [illegible] assistant [illegible] Dr. Meyer [illegible] a quarter to 11 A.M. [illegible] I was very much better [illegible] I [illegible] had [illegible] I [illegible] have been [illegible] I am [illegible] Dr. Meyer called again in the evening, and as I was so [illegible] I [illegible] told him I did not think it [illegible] call again, but I left it to him to call [illegible] next morning, as he pleased.

[illegible] Dr. Meyer did call [illegible] next morning, and [illegible] a box of [illegible] pills and a mixture. I did [illegible] the medicine first prescribed. But I [illegible] had Dr. Meyer made me aware that he would charge me Rs. 16 per visit, I would not have had a single visit [illegible] I was informed by Mr. Signell that Dr. Meyer [illegible] Rs. [illegible] per visit. I have offered Dr. Meyer Rs. 20 for [illegible] The answer to my letter was a summons from [illegible] Court. Dr. Meyer subsequently offered to waive half the [illegible] of the fee for the third visit. I know that some Doctors charge Rs. 16 per visit, but these are leading men in their profession, such as Dr. Brougham, or Dr. Fayrer, but not of Dr. Meyer's position. I never asked Dr. Meyer what his charge was.

Dr. Meyer recalled. I have always received Rs. 16 from [illegible] Mr. Westfield's position. I have received Rs. 10 per visit in this town. Mr. Dissent has paid me Rs. 16 per visit. With regard to what the defendant has said about Dr. Brougham, Dr. Fayrer, and myself, I wish it to be clearly understood that I do not consider myself in any way inferior to [illegible] I am an M. D., and have been for a very long time in the employ of Government.

The Judge said he would think over the matter, and deliver judgment. — *[illegible] Daily News.*

Accounts of a very distressing character from Dehra Ghazee Khan have been received. That [illegible] and mysterious disease, diphtheria, has, after showing itself amongst the native [illegible] of the town, seized on the European residents [illegible] Captain Sandeman, Deputy Commissioner, [illegible] his wife and [illegible] child at the station, [illegible] another of his children [illegible] the way from [illegible] and a lady who [illegible] Mr. Sandeman [illegible] a few days after. It is to be hoped [illegible] of the victims. — *[illegible]*

THE BENGAL MEDICAL RETIRING FUND.

To the Editor of the "Pioneer."

Sir, — I [illegible] of the 6th instant appeared a very able [illegible] Justitia, on the [illegible] question, the Bengal Medical [illegible] Fund. I [illegible] very [illegible] Justitia [illegible] and trust, Mr. Editor, you will [illegible] with your indulgence. I [illegible] Fund [illegible] to an [illegible] and [illegible] call [illegible] and [illegible] from [illegible] Secretary of State for India [illegible] I [illegible] to insist [illegible]

I [illegible] with Justitia that we [illegible] were still [illegible] would be a very [illegible] all parties.

[illegible] clearly show [illegible] had [illegible]

If an officer wishes to retire after seventeen years' service, he would have [illegible] amounting to about Rs. 12,42-3-1, [illegible] to the Fund which is nearly the [illegible] and, alas! has to wait ten years [illegible]

Yours, &c.,

5th May, 1868. PERSEVERE.

MEDICAL OFFICERS OF NATIVE REGIMENTS.

To the Editor of the "Pioneer."

[illegible] of the *[illegible]*, signing himself Harrass in Stoo [illegible] department very badly off, and [illegible] gets Rs. 800 when employed, and Rs. [illegible] This [illegible] could easily [illegible] Government [illegible] him, say, Rs. 400 unemployed, [illegible] which I think would be very [illegible] with Harrass in Stoo that a man should [illegible] doing nothing.

H[illegible] the pay of Medical Officers and Surgeons in [illegible] Native [illegible] He ought to bear in mind [illegible] Commandant has really something [illegible] to look after every little detail [illegible] and knowledge [illegible] commanding the Regiment, whereas the [illegible] of a Surgeon in medical charge of a Native Regiment [illegible] He has very little, if anything, to do. [illegible] Native Cavalry Regiment in a [illegible] in the hospital for months, the Medical Officer walks through his Hospital, which walk [illegible] him half an hour [illegible] for this he gets Rs. 800 and Rs. 1,000 per mensem. I [illegible] my dear Mr. Editor, that I had entered the Medical Service. I think they are the best paid, and [illegible] in the world, there [illegible] is always "more," [illegible] Harrass in Stoo will of course say "[illegible]!" I hold that Officers in the Artillery and [illegible] expended equally as much for them, and [illegible] well paid, especially the juniors.

Talking about being badly paid. Why, I know three Medical Officers personally, who, if they were out of the service, could hardly obtain their daily [illegible] I don't mean by this to run down the whole Medical Service, any more than I would call every lawyer a rogue, but I mean to say that there are many men in the Bengal Medical Service who, since their entry into the service, have scarcely opened a medical work, and have not sometimes even a medical work in their possession!

For my part, I think that every Medical Officer should, before he was given permanent charge of a Native Regiment, undergo some severe test as regards his fitness for the appointment.* I don't mean a paper examination only, but a practical surgical examination also.

[illegible], my dear Mr. Editor, the feelings of a combatant officer on being wounded [illegible] and [illegible] to call in the [illegible] to take off his leg, because he could not trust [illegible] of being bled to death! I read some time ago a very able article on this subject in some magazine — I forget which. The purport of it was that men who risked their lives [illegible] good of their country, had a right to demand from Government competent and skilful surgeons, so I beg to recommend that Government should, before they give men [illegible] pay to Medical Officers, see that they, the Medical Officers, are worth the extra money.

I am, yours faithfully,

1st June, 1868. ANTI-QUACK.

A PROTEST AGAINST QUACKERY OF ALL KINDS.

TO THE EDITOR OF THE "HINDOO PATRIOT."

Sir, — Allow me, through the medium of your much-esteemed paper, to offer some observations on a vice so widely prevalent in this country, without [illegible] any remarks from any quarter. In the present advanced state of society and of English medical practice, it is a matter of deep regret that no measures have hitherto been adopted by the learned body of medical practitioners to suppress quackery in its most baneful and un-

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* [illegible] Medical Officers in the service are in charge of [illegible] that it should be so, with a view, [illegible] in time of war. We may revert to this [illegible] hereafter. — Ed., *I. M. G.*

authorized forms. It is a vice productive of the most dreadful consequences, and the victims of which are chiefly to be found among those who, from poverty or ignorance, are least able to protect themselves from it. I do beseech the influential members of the medical body of this metropolis to do their best to induce the Legislature to adopt stringent measures against this growing evil. Can the public expect no remedy at the hands of such an august body as the Bengal Branch of the British Medical Association, whose main object is to fuse all discordant elements into one harmonious whole, and render them one in thought and action?

I ask every duly qualified *legal* medical practitioner whether he is not desirous that the public and the profession should be protected from such dishonest practices; whether he is not anxious to see the laws enforced against the open and unblushing *pretenders* to medical knowledge; whether he does not wish that the profession should be spared of unmerited* censure; and whether, as a member of a learned and useful profession, he is not willing to possess those rights to which he alone is justly entitled.

As the matter now stands, quackery knows no bounds in this country.

Firstly.—A class of men, (rather boys) mostly the unpromising students of the Medical College, who having failed successively for two or three years in the First Examination for Licentiate in Medicine, or who having been obliged to leave the College during the dissecting season after studying for *one summer* only, or who have been ignominiously expelled from the College for some misdemeanour, unhesitatingly open a medicine shop in some quarter, and giving a bare lie to the public, profess themselves to be passed students of the College, and thus establish as medical practitioners.

Secondly.—A class of men, a set of incompetent, unprincipled folks, having a smattering knowledge of the English, serve for some years in a dispensary, and having acquired a pretty fair knowledge of the art of compounding medicines, turn out as medical practitioners, quite competent to relieve their sick and ailing brethren.

Thirdly.—A class of medical *patriots*, (so called for their benevolent and patriotic ambition to cure the sick,) who proclaim that their healing science is very easy of comprehension, and can be mastered and practised by everybody knowing a little of English, without sacrificing in the least their own respective callings for livelihood. This *easy comprehension of science* has got good many followers, who, being quite unscientific, unlearned, and unprofessional, are making more *mischief* than good to the community. They doubtlessly volunteer their services, sometimes *most unceremoniously*, and their charges being no way expensive, many of our ignorant, stingy countrymen very easily fall a victim to the *less expensive, less troublesome*, and *safer* treatment of Homœopathy or *Homo-apathy*, or, in plain language, *apathy to man.*

Fourthly.—A class of ignorant, illiterate, and useless creatures, who, taking advantage of their grandfathers, fathers' uncles, or relatives, having been once renowned for being famous native *kobirages*, learn by rote a few verses or *slokes* from their ancestral *pooties* or manuscripts or the *nidan shastra*, and taking in their pockets a handful of *pills* and *powders* of the most heterogeneous composition, go about the streets from lane to lane, professing to be competent physicians.

Fifthly.—A class of up-countrymen and the followers of the prophet, who, like their brethren of the fourth class, know nothing of the science they profess, but call themselves *hakims*, and earn their livelihood by the pretext of knowing all that their learned ancestors knew of the science. Besides these, there are other classes of men who profess to cure diseases by inspirations, hallucinations, *montras*, &c., and by the administration of drugs or nostrums said to be received from saints, *fuquirs*, deities, godheads, &c.

Really it is very painful and heart-rending to witness such persons arrogantly tendering their services as medical practitioners, and most *cruelly* sporting with the lives of their fellow-brethren.

All these classes of unprofessional men, without any knowledge of the pathology and morbid anatomy of diseases, without any attempt to ascertain their causes, or to understand their various symptoms,* diagnostic, prognastic, or pathognosuduiee,* imprudently venture to take up the most serious cases, and, knowing the visease merely by its *name*, administer by turns all the medicines they have heard of in connection with the disease, without any idea of their *modus operandi*, or the system. I do heartily pity these unprofessional brethren who, from sheer selfish motives, deliberately act against the simple rules of justice and humanity. I do pity *more so* those rich and influential parties who knowingly encourage such illegal and vicious practice, and thus set a bad example to the ignorant public.

The deplorable results to the patient, and the unblushing effrontery of the quack, are facts daily witnessed and lamented by every intelligent member of the community. The injury sustained by the medical profession, and the baneful effects produced on society, are no less felt by all. I therefore entreat earnestly the members of the medical profession to give this subject their best and early consideration in their Association, and endeavour to root out an evil so detrimental to their prospects and reputation, and so infurious* to their suffering brethren.

I doubt not that the unanimous voice of the profession would cordially echo the sentiments I have thus expressed, and hope they will all join in maintaining their rights *firmly, constantly*, and *consistently*, and thereby confer inestimable benefits on the country at large.†

Yours faithfully,
Justitia.

Calcutta, 21st *March*, 1868.

With reference to Dr. Bhau Daji's remedy for leprosy, a Mr. Ruttomjee Nowrojee, C. M. S., writes:—

"I beg to inform you that I have, in the Christian settlement of Sharanpur, four poor beings who have for several years past been suffering from 'this loathsome and terrible disease.' On hearing of Dr. Bhau Daji's newly-discovered remedy, I applied to him for some, and I am happy to say that the generous doctor sent me at first a small supply for an experiment. I had not used his medicine for more than a fortnight, before I began to perceive a gradual change for the better in my patients. When the medicine was well nigh finished, I requested more, which has been sent to me with that promptitude and generosity which I shall remember with much gratitude. Out of the four patients there are two (both sisters) who are really objects of such wretchedness that death would be far more preferable than life, the terrible disease having broken out fearfully all over their bodies, and not only disfiguring them, but sending out a most disgustingly foul odour from their bodies. Such cases, I had feared, were too far gone out of the reach of any remedy, but I am thankful to say that they are all making a slow, but, I fully believe, a sure progress toward recovery; so much so, that I am bold to say that Dr. Bhau Daji's remedy is an effectual antidote of leprosy. It was not my intention to publish this information at such an early stage. I wished to have waited some months more, when I could show, as I hope to do, some very clear and unmistakeable proofs of recovery; but one or two remarks of the 'Inquirer,' and justice to the skill and laudable efforts of the excellent Dr. Bhau Daji, have prompted me to write."—*Pioneer.*

The results of Dr. Cayley's medical operations in Ladakh, says our contemporary, during the past year, have given great satisfaction to the Home Government. The doctor's laudable efforts have been, beyond a doubt, the means of relieving much suffering. Many of the merchants and others whom Dr. Cayley met in Ladakh have returned to their homes, feeling a lively gratitude for the benefits they have received. By such means—the Home Government remark—as testified on many previous occasions, by the medical officers of the Indian Government, the confidence of the people may be gained, even on the remotest outskirts of civilization. Sir Stafford Northcote will always learn with satisfaction that the medical science of officers employed on similar missions to distant countries, has been turned to such good account in the interests of humanity.—*Ibid.*

The *Central India Times* reports that the Conservatory at the Maharaj Bagh at Nagpore has been burnt down, and that plants to the value of Rs. 3,000 have been destroyed.

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* *Sic*, in orig.—Ed., *I. M. G.*

* *Sic* in orig.—Ed., *I. M. G.*

† We shall notice this subject in our next issue.—Ed., *I. M. G.*

[illegible] the place [illegible] on the N[illegible] whether the [illegible] so as to [illegible] ground, was a [illegible]. At the [illegible] Mr. Broughton, the [illegible] the scarcity of the [illegible] whether the [illegible] and other [illegible] preparations of Cinchona [illegible] be found in [illegible] of his enquiries [illegible] satisfactory. With [illegible] of sulphate [illegible] the districts [illegible] to expect [illegible] when the [illegible] of the alkaloids is [illegible] small scale, tentative [illegible] other pre[illegible] from the bark [illegible] that it [illegible]. A [illegible] prepara[illegible] Mr. Broughton has been tried [illegible] Mr. W[illegible] Apothecary, in [illegible]. The [illegible] well-marked cases [illegible] have effects [illegible] grains of quinine [illegible]. The [illegible] of this liquid [illegible] readily prepared [illegible] who have been [illegible] all the [illegible] of quinine and there is no expense of [illegible].

C[illegible] very alarming [illegible] the Deputy [illegible] W[illegible] N[illegible] to Jubbulpore [illegible] particular [illegible] were [illegible] F[illegible] to halt, and [illegible] time; and [illegible] the road, giving [illegible] having been un[illegible] were met by such [illegible]. The [illegible], we are told, [illegible] the road from one [illegible] means to [illegible] The [illegible] stations [illegible] N[illegible], and [illegible] K[illegible] and [illegible] and the M[illegible] have been kept [illegible] are being [illegible] with the [illegible] the Chief [illegible] something [illegible]

[illegible]—I[illegible]

The question as to the propriety or necessity of prohibiting the native [illegible] from practising in Calcutta, with the exception of those who hold certificates from the Council of the Calcutta Medical College, has, it appears, received the attention of several medical officers. At a recent meeting [illegible] the question was [illegible] were of opinion that [illegible] should be prohibited from practising. [illegible] was [illegible] to the measure [illegible] Calcutta, as well [illegible] private physicians [illegible] be a great [illegible] once prohibited from practising. —[illegible]

The latest advices from the Mauritius report that, in consequence of the very favourable weather which had followed the [illegible] sugar crop would [illegible] so large [illegible]. The fever was, however, still raging [illegible] in the month of February last [illegible] 2,22[illegible] in March to 2,817, and up to the 13th of April to 908. As the total population of the colony does not exceed 350,000, this gives a death-rate of over eighty per thousand [illegible] unless the disease is checked, or does not [illegible] in a few years would [illegible] the whole population [illegible]. A return of the number of lives lost, and houses blown down, or carried away during the hurricane, gives the following result:—[illegible], 13 women, and 17 children; [illegible] 12[illegible] sugar [illegible] blown down, 2[illegible]; [illegible] houses, 2[illegible] houses, 1,30[illegible] houses, [illegible]; [illegible], 20,188; bridges, [illegible]; boats destroyed, 85.—*Madras Standard.*

The 10th Hussars are badly accommodated, the accommodation for the married people being especially bad. The Warrant Medical Officers of that Corps, owing to there being no fitting accommodation for them at the hospital, are most unsuitably housed in the married quarters of H. M.'s 101st Regiment. It is a great disgrace to somebody to find these valuable servants treated in this unhandsome way. The dreaded months in which fell disease is wont to visit us are approaching. Should we (and God forbid it) be visited with epidemics, tell me what class of Government servants, in those dreaded hours, is of most value? Every commanding officer will reply with me—"the badly-treated medical subordinates."—*Ibid.*

About the early part of last month the Right Hon'ble the Governor of Madras recorded a minute on the necessity of establishing a public library in Madras in connection with the Government Central Museum there. New library premises are to be erected in the Museum compound, and the Director of Public Instruction will be permitted to make the collection of books and papers that are required for it. Rupees 250 per mensem are to be expended in the purchase of manuscripts. The following order was issued by Government on the subject on 21st April:—

"The Governor in Council directs that Mr. Chisholm be instructed to prepare a design for an addition to the present Museum [illegible], which should consist of two [illegible] manuscripts, two reading rooms, and [illegible] for the accommodation of librarians. [illegible] will be made from the Budget provision [illegible] Science, and Art, for [illegible] which, for the current year, will be fixed at Rupees [illegible] purchases will be made [illegible] Director of Public Instruction, until [illegible] librarian [illegible]."—*Ibid.*

C[illegible] the last three months, against [illegible] of Kishnaghur, B[illegible], H[illegible] 24-Pergunnahs, as well as in the [illegible] cattle attacked [illegible].—*Ibid.*

It has been ruled by the Government of India that Native Surgeon Jasudasen Pillay cannot count towards pension the time that he may serve as Collector of Municipal Taxes in Madras.—*Ibid.*

A sensible order has at last been issued on the subject of removing troops into camp on the appearance of cholera in an epidemic form. In the hot and rainy seasons the camp is to be the last resource, and only such buildings as have actually presented cases are to be vacated. If, for instance, the disease should appear in one building, the whole of the troops are not to be moved forthwith into camp. Only the inmates of that particular building are to be moved. Similarly, when a troop or company is attacked, it should be dealt with in the same way. The whole of the troops in a station are not to be moved into camp unless it is found that the measures already adopted are insufficient to stop the progress of the epidemic. If we mistake not, the terrible sufferings of the Buffs in camp near Meerut last year have had something to do with the promulgation of the order referred to.—*Ibid.*

We regret to learn of the death at Sundee, in Abyssinia, of Dr. Stewart, the medical officer in charge of the A. Battery mountain train, from heart disease. It is said that Dr. Peeble, Staff Surgeon in charge of the 2nd Depôt Hospital, is suffering from dysentery, and is dangerously ill.—*Ibid.*

Reports have been received from the Consular Agent at Djedda that the great pilgrimage to Mecca has passed off in a most quiet and satisfactory manner. The members of the Sanitary Commission at Mecca report that the health of the pilgrims has been excellent, although the numbers are said to have been considerably larger than that of last year. It is estimated that 85,000 persons visited the shrines. Fortunately the weather during the period of the greatest assemblage was comparatively cool, the thermometer ranging from 16 to 20 Reaumur. Up to the middle of April a very large number of pilgrims had reached Djedda on their return from Mecca.—*Englishman.*

Cholera is reported as having broken out amongst the pilgrims to the shrine of Joggernath. A considerable number is said to have perished. Medicines were being distributed gratis to the crowds demanding relief.—*Ibid.*

Epidemic fever having made its appearance in the Dooars of Bhootan, the Bhootea merchants have broken up their establishments, and left the plains for the hills.—*Ibid.*

The following list of casualties which have occurred amongst the British troops from the date of their landing in Abyssinia, in December, 1867, to 13th May, 1868, has been supplied by Dr. Currie, Principal Medical Officer with the Force. Seven officers and twenty-five men have died. Of the officers, two met violent deaths, Captain Benson having been drowned on the passage between Bombay and Aden, and Colonel Dunn accidentally shot at Senafe. Two of the men also met violent deaths. Sixty-five per cent. of the deaths resulted from dysentery. Dr. Currie has not yet been able to procure an accurate return of the total sickness.—*Pioneer.*

It appears that a gradual reduction has been made in the number of the Medical Staff in the Madras Presidency. Some time ago, in 1859, the number of Deputy Inspectors of Hospitals in that Presidency had been reduced from ten to eight, and again, by a further amalgamation, the number was reduced to six. The consequence was that, though the number of the high officials was gradually reduced, the office work increased, as only one establishment was allowed for the amalgamated offices. Since 1859 the Madras establishment has been twice reduced, while in Bombay and Bengal the reduction was made only on one occasion. The Inspector General, Indian Medical Department, has suggested to Government the advisability of having an establishment of not more than three clerks, whose salaries shall be Rs. 75, 50, and 35 respectively in the Madras and Bangalore Offices. It would appear that these clerks are not brought under the Uncovenanted Service Rules, they get no pension for any length of service. The duties which are conducted by the Deputy Inspector General of the amalgamated Presidency and Mysore Circles seem to be onerous, as the inspection of the division extends from Madras to Bezwarah, and even to Cuttack, * while the officer belonging to the Mysore Circle has to see to the establishments in Mysore and on the Western Coast, the Hills, Kurnool, Cuddapah, and other stations in that part of the Presidency.—*Madras Standard.*

The present Medical Staff at Port Blair will not be sufficient for the work that will devolve on them during the south-west monsoons. Hence two medical subordinates, a second apothecary, and a first dresser are to be sent to Port Blair from Madras by the first opportunity, as their services are very much required at that station.—*Ibid.*

Short Notices of Recent Books.

The Microscope and its Revelations. By W. B. Carpenter, M.D., F.R.S., &c. Fourth Edition. London: Churchill. 1868.

Dr. Carpenter's book is well known in every part of the world where a microscope is to be found. It is hardly necessary, therefore, to do more than announce the fact that a new edition has been published in order to make it sought for. In this the fourth edition, Dr. Carpenter has, it must be confessed, spared no pains to bring his book up to the mark of modern history, and the faults we have to find with him are few and trifling. Still they are faults at least in our eyes. For instance, we think the author has not shown his usual discrimination in his selection of instruments for description. We do mean to say that he has not given us an account of all the first-class microscopes, but we think that, in describing the instruments of some of the more modern makers, the author has been led not a little by prejudice. We think, for example, that his notice of "The Society of Arts" three-guinea microscope is much too laudatory, and that his omission of instruments, like Collins's class and dissecting microscope, is hardly to be forgiven. In regard to accessory apparatus, we find that the author has omitted nothing of any value which has been devised since the publication of his previous edition, and, as usual in all cases, his descriptions are of that graphic nature so characteristic of Dr. Carpenter. There is one exception to this statement, and that is to be found in the paragraph devoted to the subject of spectrum analysis. This, to our mind, is most unsatisfactory. The account of the apparatus is much too general, and the explanation of the various phenomena of spectrum analysis is of so meagre a character, that for all practical purposes this part of the book is valueless to the student. The addition of a number of page-plates on tinted paper renders the present a more handsome volume than its predecessors. In other respects, the difference between the last and the present edition is simply that of modification and detail. The book is, of all works on the microscope, the best companion for the earnest student. It may be a little difficult in parts, but it is always clear, and never inaccurate.

Visceral and Hereditary Syphilis, with special reference to measures of public Hygiene. By F. Oppert, M.D., M.R.C.P.L. London: Churchill. 1868.

Dr. Oppert here sounds a trumpet of warning to those who are opposing the proposed legislation for prostitution. He explains to his readers that syphilis is something more than a malady of the reproductive organs and the skin. That it attacks indeed nearly all the viscera, and that very many of those obscure cases styled cachexia, and which are so familiar to the dispensary doctor, are really cases of visceral syphilis. Dr. Oppert's original observations are valuable, though not numerous, but his abstract of Lancereaux's opinion is most interesting and important. The author has written his book not less for the practitioner than to draw the attention of the authorities with a view to bring about legislation in regard to public prostitution. Syphilis, he says, is still not only a national, but an international plague. Still it is not only amenable to

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* Cuttack belongs to Bengal.—Ed., *I. M. G.*

[illegible] ment, but its spread [illegible] and it may become [illegible] may not yet," [illegible] but we should [illegible] lowest [illegible] to the [illegible] and may often [illegible] the [illegible] mind. [illegible] with the following [illegible] of [illegible] Nervous [illegible] disease of the organs of [illegible] of the organs of digestion, [illegible] the [illegible] system, and of the generative system.

The London Student. Nos. I and II, April and May. Churchill and Sons. 1868.

This magazine, which has been issued under the editorship of Professor [illegible] and Dr. He[illegible], and which is supposed to be devoted to the interests of education, has made its appearance [illegible] numbers, and has we believe, not left a favorable impression [illegible]. It never could be a commercial success, save by completely altering its present character. There is an [illegible] in the very editorship, and [illegible] the class to which such a journal must appeal [illegible] an extremely [illegible]. The prospectus stated that it would be devoted to the consideration of educational problems, and that in great part it would be the organ of the University of London. But the articles which have already appeared are very far from fulfilling this promise. "Pre-Raphaelite poetry and painting" is a subject which could prove attractive enough to the readers of the *Cornhill Magazine*, but we fear the editorial discrimination which admits a paper on this point into a journal exclusively [illegible] is not likely to find itself rewarded by commercial success. Indeed, we cannot [illegible] that any cheap [illegible] magazine would find a sufficiently large number of supporters, but when such a periodical runs in exactly the same [illegible] as the *Fortnightly Review*, it enters into competition with a rival which has all the "odds" in its favor. Of the articles in the two numbers before us, we can especially commend two, that of Professor W[illegible] on "Experimental Science as the basis of General Education," and "a Discourse on Medical Education" by Dr. Headland.

The Journal of Anatomy and Physiology. Conducted by G. M. Humphry, M.D., F.R.S.; and W. Turner, M.B. Second Series, No. II. May, 1868.

While people have been speculating as to whether this journal could continue to exist, a new number has appeared, which, in bulk of matter, interest of articles, number of illustrations, surpasses all of the previous issues. We notice too in this number a new feature in the "Reports." Dr. Fraser has given a report on the progress of therapeutics, which is of the utmost [illegible] to scientific men and practitioners. The contents are as follows: Professor Cleland on an abnormal arrangement of the peritoneum, and on the development of the [illegible]; Mr. Dows[illegible] on the [illegible] of *[illegible]*; Drs. A. C. Brown and T. R. Fraser on the connection between chemical constitution and physiological action; Professor Huxley on [illegible]; Dr. W. Marcet on Osmosis, digestion, [illegible]; Dr. B[illegible] on [illegible] arrow poison; Dr. Davy on [illegible] deposition of [illegible]; Professor Humphry on the myology of Orycteropus and Phoca; Professor Turner on a [illegible] of the type of the structure of the [illegible]; Mr. Ba[illegible] on the functions of the lateral [illegible]. The plates are [illegible] in [illegible]. This is [illegible] scientific periodical.

[illegible] Answers to the [illegible] Galloway's First [illegible]. London: Churchill. 1868.

[illegible] addition to Galloway's [illegible] the young student to [illegible] he has worked out the chemical problems [illegible]. In the absence of a teacher, it is indispensable.

[illegible] Vaccination. *[illegible] and [illegible]*, [illegible] Edward Ballard, M.D. London: Longman. *A Hand[illegible] of Vaccination*, by [illegible] Seaton, [illegible]. *[illegible] Vaccination*, by [illegible] M.R.C.S. [illegible] the Ladies' Sanitary Association. *[illegible] and powers*, by [illegible], M.D., Lancet. *Vaccination [illegible] effects on health, [illegible]* by C. T. Pearce, M.D. [illegible]. *"Has [illegible] been [illegible]*, and what [illegible]" by W. J. Collins, M.D. London: [illegible].

All these works should be read or examined by those who wish to know what is to be said for and against Vaccination. [illegible] the prize offered by the Ladies' Sanitary Association for the best essay on the subject, and all [illegible] good. All of them, save the essays of Drs. Pearce and Collins, [illegible] the advantages of Vaccination, but the two [illegible] of Vaccination in a spirit of [illegible] most [illegible] of the [illegible]. [illegible] we believe the impartial reader [illegible] these anti-vaccination essays, [illegible] on the side of those [illegible] very shamefully facts are perverted to [illegible] particular [illegible].

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, May 22nd, 1868.

The laying of the foundation stone for the new St. Thomas' Hospital has [illegible] the event of the month. The ceremony was performed by the Queen, who attended in semi-state, and was witnessed by several thousand persons, the *élite* of [illegible]. Her Majesty was received with [illegible], and a similar [illegible] was given to the Prime Minister. The Archbishop of Canterbury said the usual prayers, and pronounced the benediction. [illegible] the national anthem, and an address was read by the [illegible] the affair, which was "the [illegible] of the day," [illegible] with much magnificence. The pavilion [illegible] and [illegible] in excellent taste, was computed to have held 3,000 persons, and places were sought [illegible] for some weeks previous to the occasion. Among the [illegible] profession who were present, I may mention the [illegible] of Dr. Paterson, Sir Thomas Watson, Sir Henry Holland, Sir Charles Locock, Sir William Jenner, Drs. Chambers and Sieveking, Mr. Hutton, Mr. Paget, Professor Huxley, Sir W. Fergusson, and Sir J. Ranald Martin.

In professional circles there is just now a good deal of discussion as to the proceedings of the Medical Council at its forthcoming meeting in July. It is beginning to strike practitioners generally that a very large amount of money is annually extracted from them [illegible], and very lavishly spent on doing very little. The [illegible] that over £40,000 have been expended in the [illegible] but one real result—the Pharmacopœia—[illegible] and suggests [illegible] some reform to be demanded. The journals [illegible] as this, but [illegible] that the [illegible] Parliament is a very expensive luxury, and [illegible] members [illegible] practically useless garrulous! They [illegible] Sir D. Corrigan and Dr. Wood, who sometimes [illegible] at a length, from twelve to fourteen times a day, [illegible] words, and give [illegible] action [illegible], and to remember that every minute of the Council's Session costs the medical body exactly 12s. 6d. It is not yet known what will certainly form the subject of discussion in the Council, but [illegible] that the result will be as heretofore—*[illegible]*.

Speaking [illegible] reminds me that in his speech to the [illegible] at St. Mary's Hospital on Wednesday (20th), the Right Hon. [illegible] Robert Lowe expressed [illegible], and [illegible] the possibility of Government taking [illegible] one of these days. Mr. Bruce [illegible] much [illegible] to the [illegible] University [illegible]. Mr. Lowe's speech was extremely [illegible], since it [illegible] of the present [illegible] of medical men. It was [illegible] said, to [illegible] others [illegible] this advantage was enjoyed to the [illegible]. He would [illegible] what the profane world [illegible] of the profession. He said, and very briefly, that in [illegible] the [illegible] of medical men was most admirable, but [illegible] the [illegible] foundation of a science which, [illegible] completely [illegible] the principles on which it had been acting for four centuries. The public were disposed to think with Moliere that God had enabled the human frame to bear up against its sufferings, but that the maladies, plus the remedies, were too much for mortals to sustain. Besides this good-natured chaff, Mr Lowe offered some very sound and practical observations. He considered that the present plan of competition among examining bodies was attended with most melancholy results to the profession. He considered too that at the present day education was becoming lamentably sordid. That knowledge was too often sought merely for the purpose of gaining prizes or scholarships, and not for what it really was,—a great good in itself. He urged upon his younger hearers to be tolerant as well as sceptical; to be laborious and observant; never to think they had arrived at the end of knowledge, but each one to bring his stone and cast it into the vast heap which was being raised for the benefit of mankind.

The elections of the Fellows of the Royal Society have taken place, and have given rise to some surprise, and a good deal of disappointment. Of the many well-known physicians up for the F.R.S., only four have been selected, and these, with two exceptions, the least distinguished in medicine. They are Dr. H. Charlton Bastian, Professor of Pathology in University College, and author of several fine memoirs on subjects in Human and Comparative Histology; Dr. J. Barnard Davis, author of Crania Britannica; Dr. P. Martin Duncan, distinguished for his papers on West Indian Geology; and Dr. J. Bell Pettigrew, late Assistant in the Museum of the College of Surgeons, and author of several memoirs on the Anatomy of the Heart, Stomach, and Bladder.

The question as to who shall be future Coroner for West Middlesex is still unsettled. Dr. Diplock holds the inquests, and retains the office. Dr. W. Hardwicke opposes him in Chancery, and has already obtained an order to compel Dr. Diplock to show *quo warranto* he holds the post. Doubtless the legal proceedings will be tedious and costly on both sides; but if the opinion of lawyers can be taken on any case in Chancery, Dr. Hardwicke, if he lives long enough, and should his case not rival the famous one of "Jarndyce *v.* Jarndyce," must succeed to the office now held by his opponent.

The long-accumulating fund for the testimonial to Dr. B. W. Richardson has at last been publicly made over to the inventor of the celebrated ether-spray apparatus for the production of local anæsthesia. On Wednesday (20th) a large and influential meeting was held at Willis's rooms to present Dr. Richardson with a testimonial in recognition of his labors in the cause of science. The chair was taken by Mr. Paget, and the gentlemen on the platform, comprising most of those who subscribed to the testimonial, numbered some of the most brilliant members of the profession. The amount of the sum raised by subscription was upwards of £1,100, and this amount was placed in Dr. Richardson's hands. A very handsome microscope, of Ross's best make, was also presented to Dr. Richardson as a memorial of the occasion. Few men have worked so earnestly, honestly, and successfully to promote the interests of medical science as Dr. Richardson, F.R.S.; and I am sure every one will be pleased to learn that even the small tribute I have mentioned has been offered to his worth.

Some of your readers who may be interested in Irish University education may wish to know the result of the proposals made to Government by the heads of the Catholic University in Ireland. The result has been an unequivocal refusal on the part of the Ministry. The following words, quoted from Lord Mayo's reply, will shew how little disposed the Irish Government is to do anything calculated to injure the interests of the Queen's University:—"The object of the Government was to create an institution which, although denominational in its character, would be thoroughly independent, self-governed, and free from any external influence, either political or religious. *The proposals* made in your letter would strike at the very root of these principles, and I am therefore, with extreme regret, obliged to inform you that the recommendations contained in that letter cannot be entertained."

At a recent meeting of the Pathological Society, Dr. H. C. Bastian brought under the notice of the members the very remarkable observation of Cohnheim, that when a frog's limb has been ligatured, and the foot is examined under the microscope, the white corpuscles may be seen performing amœboid movements, and also actually making their way through the coats of the delicate vessels. Dr. Bastian demonstrated the phenomenon to the Society, and the result has been that an immense deal of controversy has been going on as to who first pointed out this remarkable fact. Some say Waller was first in the field; others Wharton Jones, and others Dr. Beale. For my part, I am disposed to think that the observations of all three were limited to the fact of the amœba-like motion of the corpuscles. At all events, discussion has begun, and medical science cannot fail to be benefited by the results which are likely to arise from it. As a last item, I may mention that an energetic movement is being made to fuse our different Medical Societies together into an *Academy of Medicine.*

Progress of the Medical and Collateral Sciences.

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The tactile corpuscles.—Much as has been written concerning the relation of the several parts which enter into the constitution of the touch-corpuscles, the decision of this point in histology seems as far from realization as ever. In a memoir presented on the subject to the French Academy by M. Rouget, this Anatomist discusses the experience of the writers, and especially those of Kolliker and Meissner. After very carefully weighing the statements of these physiologists, M. Rouget observes:—"My researches lead me to reject Kolliker's opinion, and to accept the facts stated by Meissner and Wagner. He concludes, therefore, that the tactile-corpuscle is not simply a mass of connective tissue to which a nerve filament is attached, but that it is a special organ constituted by a special expansion of one of the coats of the nerve tubule which include within it a quantity of granular, ganglionic nervous matter.

Fat from Flesh.—The recent inquiries of Professors Voit and Pettenkofer, of Munich, are sufficient to startle those members of our profession who have for years been basing their treatment of phthisis on the hypothesis of the formation of fats from hydrocarbons alone. The researches of the Bavarian chemists prove beyond all question that fats can be as readily formed from purely albuminous substances as from hydrocarbons. Strange as it may seem at first, it is after all but an application to physiology of the well-known facts of the production of *adipocere* from flesh, and of fatty acids by the decomposition of albumen. In the course of these experiments, M. M. Pettenkofer and Voit submitted both herbivorous and carnivorous animals to a diet of pure albumen, and compared the results with those obtained by feeding animals upon hydrocarbons. The consequence was found to be that the first series fattened rapidly, whilst the second put up very little fat at all. If these conclusions be confirmed, they must seriously affect the existing mode of treating consumption.

Neurine obtained by synthesis.—In one of our late records we announced the fact that Herr Wartz had succeeded in producing neurine artificially by combining its elements together. Since then it has been objected that there was no proof of the identity of M. Wartz's neurine, and the neurine extracted from brain-substance. This objection has, however, been successfully met by Wartz, who, in an elaborate series of experiments, has demonstrated the identity of the two substances by showing that their chlorides crystallize in precisely the same geometrical forms.

The physiology of vomiting.—Herr Schiff's latest enquiries on this point, which were conducted on dogs, lead him to believe that during vomiting the muscular fibres of the longitudinal layer are those which undergo most contraction. During these movements the cardiac orifice, under the influence of the spinal accessory nerve, remains open.

The action of Veratrum Viride.—The tincture of *veratrum viride* being now a pharmacopœial medicine, it is of interest to report some recent experiments which have been made in Germany to determine its exact effects upon the system. The enquiries referred to have been carried on by Herr Oulmont. Having administered both *veratrum album* and *veratrum viride* to animals, he found that the action of the former is distinguished from that of the latter by the greater violence of its effects upon the digestive system, where it always produces inflammatory lesions, and by the greater rapidity of its action. He also investigated the effects of the alkaloid veratria, and he discovered the very remarkable fact that it is not the true active principle of veratrum. Herr Oulmont's general conclusion bears out the general experience of medical men that *veratrum viride* is a

[illegible]

Improvements in Artificial and Surgical Appliances.

[illegible]

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

By J. FAYRER, M.D.

(Continued.)

EXPERIMENT No. 1.

20th June, 1868.—Ten drops of Cobra poison, removed from the Cobra on the 9th of June, were injected, with the hypodermic syringe, under the mucous membrane of the mouth of a large rat-snake. It did not appear to affect the snake in the least at the time, or afterwards; and several days later it was quite well. It is possible that the poison may have lost some of its power in the course of 11 days, but it had not altered in appearance, and had been kept carefully closed from access of air. The effect on other animals proves that it had not become altogether inert.

EXPERIMENT No. 2.

At 5-7 p.m., an Ardeola Leucoptera (paddy-bird) was bitten by a Bungarus Fasciatus in the thigh.

5-10.—Stretching the bitten leg; breathing hurriedly.

5-11.—Tries to fly. The leg very weak.

5-13.—Sluggish. The leg dragged; there is a peculiar twitching of the throat. The mouth wide open.

5-15.—Tries to fly when roused; the leg is paralysed.

5-30.—Remains in much the same condition.

5-31.—Much weaker; staggers as it moves. The plumage has a disordered and draggled appearance. The bird now crouches on its breast; leg apparently unable to support its weight.

The mouth gaping.

The claws are contracted, and it is unable to walk.

There is a peculiar vibration of the feathers of the neck.

The bitten thigh is discoloured and much congested.

5-53.—Drooping and crouching on the ground.

6-12.—Crouching on the ground; accelerated breathing; eyes quite bright.

6-21.—If roused, it tries to move, but it immediately falls over: the claws are contracted.

6-25.—Tries to rise when roused, and to attack with its beak, but droops immediately after the excitement.

6-30.—Brightness of the eyes diminished; lies prone, resting the head on the point of the beak.

6-38.—Lies helpless and motionless on the ground; slow, feeble respiration.

6-40.—Dead.

After death, Dr. Stolitzca remarked that the blood from the wound was very thin and watery. The bitten leg was discolored, and, when pressed, a quantity of gas escaped in bubbles. Decomposition seemed to be setting in very rapidly.

The bird was bitten at 5-7 p. m., and died at 6-40 p. m.; *i. e.*, in one hour and thirty-three minutes. The dead bird was given to a Felis Chaus (wild cat); it was eaten with avidity, and no unfavourable result occurred to the cat.

This experiment, like others tried with the Bungarus Fasciatus, seems to prove that its poison, though deadly, is neither so fatal, nor so active as that of the Cobra. This may be due, not only to some difference in the activity of the poison itself, but also to the nature of the instrument with which it is inoculated. The Bungarus, though a large, powerful, and very vicious snake, is armed with very small fangs, and penetration, even under the most favourable circumstances, must be much less than in the case of the Cobra, or of the viperine snakes, which have much longer fangs. The difference in this respect is very striking between the poisonous colubrine and the viperine [illegible]. The fangs of the Cobra, Bungarus, and other colubrine [illegible] are much smaller than those of the viperine snakes. Of [illegible] latter, the Daboia is the only representative in Bengal [illegible] the Crotalidæ, or pit vipers, are represented in India [illegible] different species of Trimeresurus, some of which are als[illegible] formidable as the Crotalus horridus, or Rattlesnake of Am[illegible] but comparatively rare.

EXPERIMENT No. 3.

Another paddy-bird (Ardea Leucoptera) [illegible] 5-27 p. m., in the wing, with some of the same Cobra [illegible] 11 days old, that had been used for the Ptyas, a short time before. The puncture bled freely.

5-29.—The bird is apparently unaffected.

5-32.—Inoculated again with a quill-pen into a puncture [illegible] hind leg, as the first inoculation seems to have taken [illegible]

5-35.—Walks sluggishly. Feathers have a dis[illegible] pearance; some are erect; the bird shakes himself [illegible] seems very uneasy; vomited some shrimps recently eat[illegible]

5-40.—Staggers in walking; very weak in inoculated [illegible]

5-42.—Crouching; cannot balance itself when it tries [illegible] point of the beak resting on the ground.

5-44.—When roused, tries to walk, but falls over.

5-46.—Eyes closed; slight convulsions.

5-50.—Generally convulsed.

5-52.—Dead.

The dead bird was eaten by a dog without producing [illegible] result to that animal. In this instance, the poison [illegible] imperfectly inoculated into the wing, and apparently [illegible] any result after 5 minutes, when it was again inoculated [illegible] wing at 5-32 p.m.; death occurred at 5-52, or in 20 m[illegible]

It is worthy of remark that this poison was 11 days [illegible] was probably not very effectively inoculated, as the hyp[illegible] syringe was not used, the poison being inserted into the [illegible] with a quill, and yet the bird died in 20 minutes. W[illegible] similar bird, bitten by a fresh and vigorous Bungarus, [illegible] die for one hour and thirty-three minutes.

EXPERIMENTS WITH THE VIPER OF RUSSELL, "D[illegible] RUSSELLI," (VIPERA ELEGANS); BENGALI NAME "[illegible]

Having procured two full-grown snakes of this species, I [illegible] the following experiments.

The Daboia Russelli is very different from the [illegible] snakes; it belongs to the sub-order of viperine snakes, [illegible] Viperidæ. Of these, only two are known in British I[illegible] Daboia and Echis. The former only is found in Bengal, it is known as the "Bora," and is justly dreaded as a [illegible]

NOTE.—The most common of the colubrine [illegible] poisonous [illegible] in Bengal are:—

1st.—The Naja Tripudians, (Cobra di Capello, Bengalee name [illegible] Gokurrah or Keuteah—Kala Nag,) several varieties common [illegible]

2nd.—Bungarus Cæruleus, Bengali name Krait, not so [illegible] Calcutta.

3rd.—Bungarus Fasciatus, Bengali name Sunkni. Common.

4th.—Xenurelaps Bungaroides from Cherrapoonjee.

5th.—Ophiophagus, or Hamadryas Elaps, said to be found [illegible] Mutlah, Sunderbuns; doubtful?

Of the Viperine order—Crotalidæ.

6th.—Trimeresurus Carinatus } I don't know the native name
7th.— ,, Grammeus } are tree snakes.

Viperidæ.

8th.—Daboia Russelli, (Russell's viper, or Vipera Elegans, [illegible] name Bora.)

9th.—Echis Carinatus, but this probably not found in Bengal Proper.

The fresh water snakes, Homalopsidæ, are all innocent, I believe, but the Hydrophidæ, or salt water snakes of the Bay of Bengal, and salt water of the river, are all venomous.

venomous snake. It has various synonymes; the most familiar, perhaps, is that by which it is known in Ceylon, the Tic Polonga; it is also known in Southern India by the name of Cobra Manil. It is found in the Peninsula of Southern India, and even in the Himalayas, it is said, at a height of 5,500 feet, for it has been found at Almorah. It grows as long as 50 inches, and is a very powerful and dangerous snake; it is much thicker than the Cobra; its markings are very beautiful; a series of black, white-edged, rings ovate and circular, on a greyish brown ground, white belly with black spots. Its head is covered with scales, not shields; its nostril is very large; the head is broad and well defined from the neck, which is not extensible like that of the Cobra.

But the striking difference is in the poison fangs, which are very much larger than those of the Cobra. They are recurved, erectile, and very movable; so much so, that when the snake is angry, and about to strike, you can see the fangs erected and depressed quickly in a vibratable manner, totally different to the fixed and much smaller fangs of the Cobra and other poisonous colubrine snakes. (*Vide* sketch.)

There is only one species of Daboia, and that may be found about Calcutta. I have been informed that it is not uncommon in the Botanical Gardens, and that cattle, as well as men, have met with their deaths from its bite.

The two brought to me were nearly full-grown, and apparently active and vigorous. The snake-catchers who brought them, and who handled Cobras with the greatest ease and freedom, from fear would not attempt to seize the Daboia by the neck, as they said the risk was too great.* The snake did not appear at all more active than the Cobra, and, when seized by the tail, was not more capable of turning on his captor; but when the head was confined by compressing the neck with a stick against the ground, it struggled and made fierce attempts to bite, during which, the mouth being open, the gape of which is very wide, the erective and vibratile movements of the fangs that I have mentioned became visible. This snake is the only species of its genus known in India.

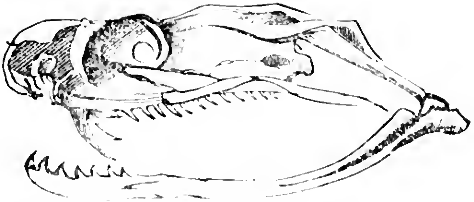
VIPER.

Daboia's poison fang.

Daboia Russelli.—Viperine snake with erectile fangs, short and mobile maxillary bone.

When the jaws are opened, the short maxillary bone with its fang is pushed forward, and the fang is erected.

COLUBER.



Naja Tripudians, or Cobra di Capello.—Colubrine venomous snake with fixed fangs, long maxillary bone not movable.

The maxillary bone does not move, as in the Daboia, and the fang is always erect.

COLUBER.

Poison fang and maxillary bone of Bungarus.

Bungarus Fasciatus. Fang developed like the Cobra's, and fixed; the fang similar to the Cobra's, only much smaller, less known than the Cobra, but I am inclined to regard it as almost as dangerous as that snake.

The above sketches represent the relative size of the fangs in the different snakes when full-grown.

The great difference that exists between the fangs of the venomous Colubrine and Viperine snakes has not, I think, been sufficiently dwelt on by any author with whom I am acquainted.

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* They did so on a future occasion.

It is not only in the greater length and size of the fang, but also in the anatomical arrangement, by which it can be erected or depressed at pleasure, that the Vipers are distinguished from the Colubrine snakes which have shorter and fixed fangs.* The structure of the fang itself is also characteristic. The Cobra's poison-tooth, for example, is like a leaf folded in closely, whilst the fang of the Daboia and other of the Viperidæ is a long perforated tube, and the fang of the Hydrophidæ is an open groove.

Experiment No. 4.

A pariah dog, full-grown, was bitten in the thigh, at 4-27 p. m. of 11th July, by a nearly full-grown, active Daboia. The dog whimpered when the snake's fangs penetrated. He was released, having been held while the snake bit him, and almost immediately, *i. e.*, at 4-28, fell over with a convulsive movement; became paralysed for the moment, and howled violently; as he lay on the ground, the bladder was emptied.

4-29.—In a state of violent tetanic spasm.

4-31.—Lies motionless; eyes bright; muscular system generally twitching.

4-35.—Lies apparently paralysed, but looks about him.

4-37.—Attempted to get up; staggered a few steps, and lay down again.

4-42.—Cannot walk. Lies paralysed; shews no sign of pain.

4-50.—Much in the same state.

5-35.—Lies paralysed, but breathing goes on.

Died a few minutes later.

Thorax opened. Lungs collapsed, not congested; heart natural; auricles and ventricles contained fluid blood.

It is noteworthy that this dog, after the first violent outcry when he fell over, one minute after being bitten, appeared to suffer no further pain; indeed, it seemed unconscious of anything. There was no convulsion. General paralysis, the sphincters included. Gradual sinking from exhaustion. The heart's action continued to the last, and, even after apparent death, the rythmical movements were observed.

The dog was bitten at 4-27 p. m., and died at about 5-40; nearly one hour and a quarter.

The first effects on the nervous system seemed much more violent than in the Cobra bite, and paralysis seemed to follow more quickly, but actual death was longer in taking place. A dog bitten by a Cobra died in about half an hour. The dog bitten by the Daboia died in an hour and a quarter. Possibly, the Cobra injected a larger quantity of poison than the Daboia; and indeed it struck me that there was not so great an effusion of poison from the Daboia as from the Cobra. There may have been something in the mode in which the bite was inflicted. The Cobra was held by the neck, his mouth almost forcibly opened, and his fangs made to imbed themselves in the bitten object; whilst, on the other hand, the Daboia was not so held or applied, for the snake-man was afraid to seize him by the neck, and could only fix him by compressing the neck on the ground with a stick, in which position the animal bitten was presented to the snake.

Experiment No. 5.

A full-grown male cat was bitten by the same snake, in the hind leg, at 4-18 p. m. The Daboia, being secured as before described, plunged his fangs, but not deeply, into the limb; no immediate paralysis of the limb followed, as in the Cobra bite, but the animal was almost immediately affected, and at 4-22, *i. e.*, in four minutes, was in convulsions, which did not last long, nor were attended by any outcry as in the dog bitten by the same snake. The general convulsions soon subsided, and were followed by general paralysis, the animal lying prone on the ground, with its breathing much accelerated, and with spasmodic twitchings of the muscles of the trunk and extremities.

4-30.—Lies perfectly powerless, breathing rapid; frothing at the mouth, and making efforts to vomit. Bladder and rectum emptied, voided sanguineous mucus.

4-31.—Made an effort to rise; staggered a few paces and fell.

4-35.—In the same state; muscular twitchings continue; cannot move.

4-45.—Still alive, and much in the same state.

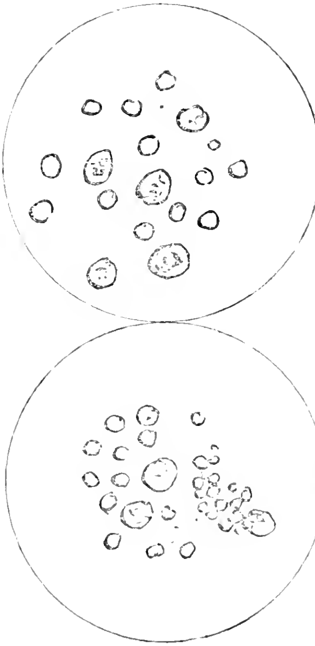
5 p. m.—Still alive; muscular twitchings continue, but fainter; breathing hardly perceptible.

5-15.—Quite dead.

The cat was bitten at 4-18 p. m., and died at 5-15 p. m., *i. e.*, in fifty-seven minutes. As in the case of the dog, the effects of the poison seemed to affect the nerve-centres more violently than the Cobra poison. Consciousness was probably earlier annihilated, but total death occurred later.

I examined the appearances after death, and found that, at 5-45 p. m., or in half an hour, the blood had not coagulated.

The lungs were not in the least congested; there were no clots in any of the cardiac cavities. Blood taken from the right auricle was dark and fluid, but speedily reddened on exposure to the air. Examined later, the power of coagulation appeared to have been perfectly destroyed. I took some away for microscopical examination, and it remained perfectly fluid.



Microscopical appearance of blood of a cat poisoned by Daboia Russelli.
Nachet, ⅛th object-glass, No. 3 eye-piece.

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* The fangs in all snakes are themselves fixed and anchylosed in the maxillary bone. In the Viperine snakes this bone moves freely, and with it the poison fangs.

[illegible] examined the clot most carefully, and repeatedly, under [illegible] with [illegible] and No. 3 eye-piece, [illegible] in the sketch; they [illegible] The only [illegible] was, that, in [illegible] regular con- [illegible] proportion [illegible] examination, [illegible] or ap- [illegible] creatures de- [illegible] though, that [illegible] aggregate in [illegible] The [illegible] the red [illegible] the dog, which was [illegible].

E[illegible] No. [illegible]

[illegible] a full grown kite [illegible] the second [illegible]

[illegible] but is easily [illegible]

[illegible]

[illegible] is otherwise un- [illegible]

[illegible] well [illegible] days after.

[illegible] the other two [illegible] probably, the [illegible] was not easily absorbed.

[illegible] to a certain extent, the bird [illegible].

E[illegible] No. 7.

[illegible] as the last, [illegible] The snake was [illegible] but when irritated, [illegible]

[illegible]

[illegible] ; it is [illegible] had.

[illegible] examined under [illegible] bitten.

E[illegible] No. [illegible]

[illegible] by a fresh [illegible] than once [illegible] ever; the [illegible] that the veno- [illegible] other, and [illegible] times; but [illegible] error, that [illegible] and I consider [illegible]

[illegible] Mr. S[illegible] were present at these [illegible]

E[illegible] No. [illegible]

A [illegible] by a Daboia [illegible] on the 2[illegible] July, [illegible] The snake struck twice, but did not seem to bite severely. This Daboia is one that was used in the last experiment on the 11th July, and has been in a cage since; it is not known whether it has eaten or not since the last experiment. It seemed vigorous and savage, striking at anything that was brought near it. The dog was held, and immediately after being bitten had a supposed antidote, of which I may have more to say on a future occasion, administered. As it took a minute or two to pour the drug down the dog's throat, it was impossible to say how far the struggles were due to fear, and how far to the poison.

12·54.—Released; ran across the room staggering, and dragging the hind legs.

12·55.—Walking about in the same manner, very restless; breathing hurried, and frothing at the mouth. The dog was kept walking about by one of the attendants.

12·56.—Sat down; [illegible] breathing very hurried; frothing at the mouth; [illegible] intelligent.

12·57.—Another dose of the drug administered.

12·58.—Has violent convulsions; cold water poured on the head gave relief; struggled and got up, but could not stand.

1 p.m.—Struggles violently; is paralysed in the hind quarters; constant spasmodic twitchings of the eyelids and other muscles. He [illegible] where he sits, and has the appearance of extreme intoxication.

Cold water constantly poured on the head, and efforts made to rouse the dog by trying to make him walk. The breathing is hurried, with a peculiar puffing of the cheeks, like that of an apoplectic person. He holds up his head, and is quite conscious, but can neither stand nor walk.

1·12.—Another dose of the drug administered, and more cold water poured on the head; fresh efforts made to rouse the dog.

1·17.—Made an effort to rise; succeeded in staggering away a few paces.

1·20.—Seems better; can walk a little, but staggers.

1·25.—More sluggish; again lies down. The same puffing of the cheeks, and deep breathing. Evacuations at first natural, becoming frequent, and consisting of bloody mucus. I should also note that he has made several efforts to vomit, but the drug does not appear to have been rejected.

1·3[illegible].—Puffing of the cheeks, frothing at the mouth, and deep breathing continue. The dog appears conscious, though intoxicated.

1·37.—Becoming weaker; lies on the floor paralysed. The puffing and flapping of the lips and cheeks continue.

1·45.—Much in the same condition; has just vomited a quantity of thick mucus, and has passed a quantity of sanguineous mucus.

Rose, and again staggered a few paces. Is able to raise his head, which he does when water is poured on it.

For the rest of the report I am indebted to Mr. S[illegible]eva, who was present after I was obliged to leave.

At 2·[illegible], the spasmodic movements of the body ceased for a few minutes, and the dog raised himself on his forelegs. He was then removed to another place, and, raising his body, gentle exercise was given by lifting him alternately by the shoulders and hips, rubbing and moving his legs. He seemed to improve again somewhat. He was punkahed, and cold water was dashed on his head, whilst he was again exercised as before; on leaving his body unsupported, he sunk upon his haunches, but immediately after raised himself without assistance, and attempted to walk. The convulsive movements again returned, with hurried respiration, and he remained in that state until he died at 3·49 p.m.

Bitten at 12·50, died at 3·49 p.m.; very nearly three hours.

The action of this snake's poison is evidently somewhat different to that of the Cobra. The dog was a very healthy and powerful animal, and the snake was not fresh, but still death occurred within three hours. In this case, the bitten limb was paralysed, as in the case of the dog bitten by the Cobra. The first shock to the nervous system was not so severe in this case as in that of the other dog bitten by the Daboia. This may have been due to the fact that in the former case the dog was smaller, and the snake was fresh. I do not at present offer any opinion on the so-called antidote, further than that, in this particular case, I believe it was altogether inert.

The effect of the poison in causing profuse mucous discharge from the stomach and blood and mucus from the bowels is worthy of notice. I examined the blood after death, and found the corpuscles shrivelled and collapsed, but not otherwise changed.

Experiment No. 10.

20th July, 1868.—A young, but very active and vigorous pig was bitten at 12-27, very slightly in the right thigh, by a fresh Cobra, but it was doubtful, at the time, whether the fangs had penetrated. The pig made his escape, and was caught and brought back in a few minutes apparently unaffected.

At 12-35, he was bitten again by a small, but vigorous Cobra of the spectacled variety, called by the natives "Gomuna" or "Goknrrah." This time the animal was really bitten in two places in the thigh.

12-36.—Struggled violently, and lay down; then got up and struggled violently to get loose from the cord by which he was secured

12-38.—Lies down and rises again; hurried breathing; is very restless; tries to run about; begins to stagger and falls; at 12-40 is unable to rise.

12-42.—Is convulsed.

12-43.—Lies paralysed, breathing deeply; muscular twitchings.

12-48.—Dead.

The pig was bitten at 12 35, and died at 12-48, that is, in thirteen minutes. This disposes of the question of the immunity of pigs from the poisonous effects of the venom of the Cobra.

Experiment No. 11.

A small Tropidonotus Quincunciatus (grass snake) was bitten by the spectacled Cobra that killed the pig, at 1-12 p. m.

1-16.—Very sluggish.

1-20.—Tosses its head about in a convulsive manner.

1-25.—Dead; died in 13 minutes.

Experiment No. 12.

Two innocuous snakes, Dendrophis Pictus, (tree snakes,) one about 3-4 inches long, the other rather smaller, both long delicate reptiles, bitten at 1-7 p. m. and 1-8 p. m. by the same Cobra that bit the Tropidonotus.

1-12 —Sluggish.

1-15.—The small snake dead.

1-16.—The larger one dead. They simply seemed to become sluggish and powerless; there were no convulsions, no writhings, or contortions. They became powerless and died.

After they appeared quite dead, for a moment or two, the tail of each moved slightly.

Large snake bitten at 1-7, died at 1-16.

Small snake bitten at 1-8, died at 1-15.

In one case death occurred in 9 minutes; in the other in 7 minutes.

The Cobra must have been much exhausted, for it had bitten several times before biting these snakes.

Experiment No. 13.

At 1-15 p. m., a Dhamin (Ptyas Mucosus) was bitten in three places by the same spectacled Cobra that bit several other animals.

1-30 p. m.—No apparent effect; the snake is as active as ever.

1-32 p. m.—Bitten again by the same Cobra in the mouth and body.

1-38.—No effect.

1-43.—No effect. Bitten again in the mouth and body by a Cobra that has been in one of the cages, and has not bitten for some time

2 10 p. m.—Is sluggish; when handled, does not try to get away, nor attempt to strike. It became more and more sluggish, and died at 8 p. m. The snake seemed, to me, gradually to become weaker and weaker. No convulsions or contortion of the body before death.

This experiment and the two preceding it prove that the non-venomous snakes are affected by the Cobra poison.

The Dhamin, bitten on the 11th June by a Cobra, did not die, and is alive on the 21st July.

Dr. Fayrer, and Mr. Seeva of the Indian Museum were present at these experiments.

Reaction acid; poison slightly viscid and opalescent.

Appearance of Cobra poison under microscope.*

Nachet, ¼ inch; eye-piece No. 3. Lamplight. 10th June, 1868.

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* This sketch is one of the two which should have appeared in the last number. The other sketch has been incorrectly engraved, and will not now appear at all. As a corresponding illustration appears, however, in this number, the mistake is of no consequence.—Ed., *I. M. G.*

ON CHOLERA.—No. III.

By C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

We may now [illegible] the [illegible] in which the cholera [illegible] was gradually [illegible] the Peninsula of India. [illegible] have already [illegible] the works of [illegible], Scott, and [illegible] Bartholomew [illegible] evident that cholera [illegible] disease among [illegible] of the Malabar and Coromandel coasts, as far back as [illegible]. Dr. MacRae, from personal [illegible] states this fact.* [illegible] the mortality from cholera was higher [illegible] 1782, when [illegible] Bar-[illegible] increased [illegible] As we proceed [illegible] cholera is apt [illegible] at all seasons, and [illegible] invading a community not [illegible] its influence, and [illegible] a more definite [illegible].†

In the district of Ganjam cholera, as usual, sprung up with [illegible] energy in March and April 1818; in May it appeared at Vizagapatam, and in July at Masulipatam. It was generated [illegible] villages of Nellore early in August, but did not reach the southern part of the district, a distance of [illegible] miles, until the 5th of October. Mr. Scot remarks that its progress southward from Ganjam to Nellore, against the south-west monsoon, was much slower than from the latter district to the remaining southern portion of the coast, after the wind had set in from the N. E.‡

On the 5th of October cases of cholera were met with in the town of Madras, "the disease appeared to be commonly more prevalent in all those situations where considerable humidity existed [illegible], and where the inhabitants, [illegible] bad clothing and lodging, were consequently much exposed to the influence of the weather. This may probably account for the greater sickness and mortality at some stations than at others, and while [illegible] the alternations of temperature, the degree of moisture, and purity of the air, [illegible] be considered as the principal sources from which the [illegible] of the primary and essential cause of the epidemic, or greater morbid susceptibility of the human body [illegible] supposed to originate." The disease was noticed among the inhabitants of Nagore about the [illegible] of November, [illegible] at Malacca on the [illegible] the month.

I have already noticed [illegible] appeared on the western coast at Surat, Bombay, and throughout the Concan during the latter end of August; it was at its height in [illegible] October, and at the same time Calicut, Quilon, [illegible] at Travancore in November. [illegible] study of [illegible] Bartholomew [illegible] would have led [illegible] the epidemic along the western [illegible] Peninsula, [illegible] years before, he had [illegible] along the Malabar coast [illegible] the year.

[illegible] history of the [illegible] I must [illegible] confined in its [illegible] simply [illegible] general bearings [illegible] the cholera ap-[illegible] but we have abundant [illegible] between August 1817 and December 1818, almost the entire people of this densely populated country were subjected to the influence of cholera. It is, nevertheless, remarkable that certain districts, as, for instance, Rohilcund and Bareilly, were exempt from its ravages; the inhabitants of some cities, as, for example, those of Moorshedabad, and localities, as the prisoners in the Alipore Jail, escaped almost entirely free from the epidemic which was raging around them; but these exceptions hardly invalidate the rule, that within a period of sixteen months cholera was generated throughout the length and breadth of Hindustan.

Before proceeding with the history of the disease from 1820 to 1830, it is advisable to examine any records of interest we may possess bearing upon the circumstances of cholera as it affected the crews of English vessels, either at sea or in port, prior to 1820. One of the first cases in port is to be found in Dr. Girdlestone's work.* He observes that the troops under the command of Sir J. Burgoyne, three days after landing at Madras, (October 1782) in perfect health, were attacked with cholera. Mr. Curtis, in medical charge of H. M. Frigate the "Seahorse," states that after the naval engagement between the English and French fleets south of Trincomalee, on the 12th April, 1782, his vessel was sent on service into the Bay of Bengal, but joined the fleet at Trincomalee on the 14th of May. He found the crews of the "Hero" and "Superb" suffering from cholera, but his own men, although employed on shore, remained free from the disease until the 21st of June, when two of them died from cholera; on the following day three more cases occurred; they all proved fatal. The vessel sailed for Negapatam on the 25th, after which date the disease entirely disappeared.† Dr. Corbyne describes a very remarkable outbreak of cholera on board the ship "Mangles." The vessel had experienced very bad weather in the Bay of Biscay, and at the Madeira Islands. He says the lascars were fed merely on rice and salt-herrings, with only half a pint of water per diem, and the sanitary arrangement of that part of the ship in which they lived was fearfully bad. During the month of January 1814, the disease in question commenced "being sudden in its attacks, and more so in its fatal termination; there were no premonitory symptoms. It at once began in all its terror and violence, and terminated in from 12 to 30 hours. The finest Malay men were the first to suffer, and generally fell victims to the disease.‡ It commenced with a swelling and hardness about the epigastric region, with a sense of constrictive pressure of the thorax; violent vomiting; the excretions from the intestinal canal were equally disordered, as exhibited by continual watery stools, coldness of the extremities, with a sense of numbness and cramp in some cases. The feet œdematous; pulse low, and sometimes hardly perceptible; the skin dry and cold, with a sense of burning heat in the bowels and stomach; the countenance soon became melancholy, sad, and fallen, but the most predominant and distressing symptom was general spasm; the extreme spasmodic rigidity of the abdominal muscles, and then of the neck and face, produced the most painful contortion of the mouth; a film seemed to cover the vision, and exhausted nature soon sank under such accumulated and dreadful suffering. During the short period of six weeks, sixty-five bodies were thrown overboard, and five men died ten minutes subsequent to each other, just as we had cast anchor in Table Bay." The vessel was cleaned and purified while at the Cape, and no more cases occurred. Dr. Corbyne had only one opportunity of making a post-mortem examination. He says:—"I found the stomach distended with air, as well as the intes-

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* M[illegible] Presid. Med. [illegible]

† [illegible] history and [illegible] Trans. [illegible] Medical Society, Vol. I, p. 2[illegible]. [illegible] Report [illegible] XL[illegible], Madras, 1824.

‡ [illegible] Report, p. 19.

* Essays on the Hepatic and Spasmodic Affections in India, by J. Girdlestone, London, 1787.

† An account of the Diseases of India, by C. Curtis, Edinburgh, 1807.

‡ Treatise on the late Epidemic as it appeared in the central division of the grand Army in the month of November, 1817, by F. Corbyne, 1818.

tines, but could discover no obstruction, or even fœces; the coronary arteries of the stomach were considerably distended with congested blood. The stomach, lateral convolutions of the ilium, and the liver had suffered inflammation."* The patient having been taken ill at 6 P.M., died within 36 hours.

Mr. Scott, in 1824, observes that this outbreak of disease on board the "Mangles" could not have been cholera, the œdema and swelling of the feet being symptoms unknown in this affection; but in 1832, Dr. Corbyne, who in the meantime had risen to considerable eminence in the Bengal Medical Service, again asserts:—"I was myself an eye-witness to the destructive operation of this disease (cholera) on board the ship "Mangles" in 1814, on which I embarked for India. We had been at sea about two months when it burst forth with awful violence."†

Surgeon J. Boyle, of H. M. Ship "Malabar," gives us the following history of cholera as it occurred on board a twenty-six-gun ship, while she lay in the harbour of Bombay:—Six of her officers went on shore for a spree; they remained there a day or two, and "had no sooner returned to the ship than three of them were seized with cholera;" they all three died.‡ A few days afterwards a part of the crew were allowed to land; no less than forty of them were attacked with cholera, and five died. Mr. Boyle goes on to observe that in April, 1819, although cholera was in the town of Bombay, the crew of the "Malabar" were healthy. The ship sailed for England, and on the second night after her departure, cholera made its appearance among the sailors, and continued its ravages for five days; in fact, until the vessel reached Cochin; during this time some 40 or 50 men were attacked, and 11 of them died.

Mr. Boyle relates another interesting case, that of H. M. Ship "Minden." "On the 5th of November, 1819, as she was on her passage to Bombay, between that place and Cochin, in precisely the same track as the former ships, she was visited with cholera, which continued with unrelenting violence till the 12th of the month. A few cases occurred after this period, but, generally speaking, they were of a mild and tractable nature; altogether there were 50 cases on board the 'Minden,' and of that number nine died. For some months previous to this the crew had been comparatively healthy; and from the circumstance *of having been for some time at sea*, had no evident opportunity of predisposing themselves by debauch; but on interrogating those affected with the complaint, it was generally observed that their bowels had been previously in a deranged state."§ The value of this history would have been greatly enhanced, had we been absolutely certain that no communication had taken place between the crew and the shore prior to the outbreak of cholera.

Cholera occurred among the shipping at Diamond Harbour in 1818, in its usual irregular manner; in fact, the only vessel that entirely escaped was the "General Hewett," "the men not being allowed to go on shore, and otherwise carefully protected from the sun and damp."

In 1819, the shipping again suffered severely; the instance of the "Carnatic" is somewhat peculiar. This ship anchored in Madras roads on the 5th of August, clean and with a healthy crew. She sailed for Calcutta on the 20th, but in the meantime six men had been seized with cholera, but they all recovered; seven days afterwards one of the crew was re-seized with the disease, and died on the [illegible], and within the three following days, six of the crew were attacked with cholera, and five of them died; subsequently there were six other cases, but they all recovered. The weather was extremely bad, and the ship close to land, being only 15 miles from the shore at Ganjam. "The disease had no appearance of contagion. It occurred only among the seamen, although between their condition and that of the soldiers on board, there was only this difference, that they slept on the gun and the soldiers on the orlop deck. Some were seized who had no communication with the sick; while others escaped who constantly sat on their hammocks."

It is not known what has been the earliest period, after reaching an anchorage, at which cholera has appeared on board-ship, but in the instance of the 41st Regiment, men were attacked on the very morning of their landing, which was the second day after their arrival in the Madras roads.†

Before leaving this part of our subject, we have still to consider a very important case which occurred during the period under review; I allude to the outbreak of the epidemic in the Mauritius in the year 1819. The circumstances of the case are briefly as follows, taken from the journal of the Surgeon in charge of the vessel:—"H. M. Ship 'Topaze' sailed from Trincomalee on the 9th of October, 1819, having fifty-seven men on the sick list; and immediately after leaving, cholera broke out and attacked seventeen men, four of whom died.

"On the arrival of the ship at the Mauritius, on the 29th of October, thirty-six men were taken on shore and accommodated in the Military Hospital, Port Louis; six of these men died, four from the sequelæ of cholera, with which disease they had been seized on board. Three weeks after the arrival of the ship at Port Louis, the cholera made its appearance among the inhabitants, and continued to carry off from fifty to sixty persons daily, chiefly slaves. It appeared immediately afterwards in other quarters of the island with equal fury."‡ Not a single case of cholera occurred on board the "Topaze" after her arrival in the Mauritius, although all the merchant vessels in the harbour were losing men by this disease.

Such is the unvarnished tale of the "Topaze," upon the consideration of which Sir Gilbert Blane lays down the law absolutely in favour of contagion, and with reference to this case exclaims: "can there be a doubt in the mind of any rational being that this disease, never before known in the Mauritius, was imported by this vessel?" There can be no doubt that this opinion of one of the most influential Physicians of the day, not only led the English Government, but the majority of medical men, to espouse the doctrines thus confidently promulgated. Sir G. Blane carries the history of the "Topaze" a step further than the Surgeon of the vessel has done; he informs us that the Governor of Bourbon, under the strong conviction that the disease was contagious, took measures, by proclamation, to bar all intercourse with the Isle of France; but in spite of this, a boat from the shore of Bourbon had clandestine communication with a small vessel from the Isle of France—probably about the 8th or 9th of January, for they left Port Louis on the 6th: after the usual interval, the disease showed itself in Bourbon, so as to leave no doubt of an infection traceable to the boat."§

But let us hear the other side of the question, and turn to the Report of the Commissioners assembled by Major-General Darling, commanding the Island of Mauritius, at Government House, on the 23rd of November, 1819. The English and French members assert that they are "unanimous in not supposing it (the disease) contagious, *or of foreign introduction*. From the disease pervading classes who have nothing in common but the

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* The Russian Medical Officers at Orenburgh, in 1829, made almost precisely the same remarks regarding the appearances of the intestines; they describe the inflamed state of the parts after death.—Die Asiatische Cholera in Russland, Berlin, [illegible].

† A Treatise on Epidemic Cholera, by F. Corbyne, Calcutta, 1832, p. 45.

‡ A Treatise on the Epidemic Cholera of India, by J. Boyle, London, 1821, p. 31.

§ A Treatise on Cholera, by J. Boyle, London, 1821, p. 23.

‖ Jameson's Report, p. [illegible].

* Jameson's Report, p. 321.

† Scott's Do., p. XLIV.

‡ *London Medical Gazette*, Vol. IX, p. 226.

§ Notes on Epidemic Cholera, by R. H. Kennedy, London, 1846, Second Edition, p. 256.

as they breathe, it can be believed that the cause may exist in the atmosphere."*

"The first well-marked case of the present disease occurred on the 6th of September last, and was treated by Mr. Trebuchet in Port Louis," (the "Topaze" did not reach the island until the 29th of October) "and there [illegible] on the cases which have presented themselves since the 18th and 19th instants, and which appeared to break out in several widely remote quarters of the town. Two cases of the disease are reported to have occurred yesterday on the side of the Ravine du Rempart, and two more at Moka among blacks, who have not had communication with Port Louis for three years.

"A similar disease prevailed in this island in 1775, which continued probably two months, and caused a great mortality, particularly among the blacks and people of colour."* Regarding this circumstance, Mr. Scot remarks: "while we have shown in the preceding pages the Indian continent suffered under cholera in 1775, the disease had then extended to the Mauritius; so far, therefore, from cholera never having been heard of in the Mauritius, we have evidence of an outbreak there in 1775, under very similar circumstances to that which occurred in 1819; and further a mixed commission of gentlemen residing on the spot, and at the very outset of the epidemic, mentions the occurrence of the disease in the island before the arrival of the "Topaze."

But to return to India: throughout the early months of the year 1820, cholera was still very prevalent among the inhabitants of Calcutta, especially during April; at the same time epidemic cholera broke out among the troops composing the Nerbudda field force. Special indents poured in upon the Board for Medicine and Native Doctors, required on account of the re-appearance of cholera in various localities during the month of May; as, for instance, from Moradabad, Almora, Meerut, Tipperah, Jessore, and Berhampore. From Madras we have similar evidence of reproduced cholera, more or less severe, over the whole Presidency, and here and there it was generated with great virulence.† At the close of the year 1820, we hear of the disease at Mhow,‡ a station north of the Vindhya Mountains, and well to the west of India.

The history of the cholera of 1821 points distinctly to the fact of its becoming more localized in its influence in India than it had been at any period subsequent to 1817; we hear of it being generated with considerable activity throughout its endemic area in Lower Bengal, Guzerat,§ Bombay, and, from time to time, at almost every station throughout the Madras Presidency, but the cases were by no means so numerous or severe as in 1820. The Nerbudda field force, however, again suffered severely from cholera, the disease evidently still retaining much of its former energy in the western part of the peninsula, for not only do we hear of it at Mhow and along the valley of the Nerbudda, but, as I have before remarked, at Bombay, where, from the 2nd to the 28th of May, 235 deaths occurred from cholera, and, as usual in this part of India, the disease "increased in severity during August and September."‖

It is important to keep these facts in mind, as they bear a direct relation to the spread of the disease into Persia in the following year. In the meantime, cholera had extended both southward and eastward of India, Ceylon, Aracan, and the Burmese empire being under its influence in 1819. During the following year the country of Siam was absolutely devastated by cholera; it appeared about the same time in Malacca and Singapore. It broke out with great violence in the Philippine Islands, principally at Manilla.*

We hear of it throughout the years 1820 and 1821 in China, Batavia, and Java, but it is impossible to trace the epidemic over this vast area, the information I have on the subject being principally derived from the "Calcutta Journal" and other local papers of the period; in these, frequent references are made to the fearful ravages cholera committed in these parts, but, in a scientific point of view, they are often silent as to the most important circumstances of the epidemic.

(To be continued.)

NOTES† ON CINCHONA CULTIVATION IN BRITISH SIKKIM (NEAR DARJEELING.)

By Joseph Ewart, M.D.,

Professor of Physiology, Medical College of Bengal.

Among the many substantial and enduring benefits conferred upon India by English rule, the introduction of the "quinine-yielding" cinchonas will not be considered by posterity the least important. Already the enterprise has passed beyond the boundary line of an experiment, and reached the goal of success. A few short years more, and it will take its stand as an imperishable monument of the benevolence, humanity, and forethought of Government. To have succeeded in materially contributing to the agricultural and commercial prosperity of the country by the development of our educational, telegraphic, and railway systems, steam navigation, tea cultivation, justice, the great principle of equality before the law, security to life and property—to have endeavoured to adapt the scientific knowledge of the day in conserving the health and morals of the people by carrying into execution the great principles of State Medicine, and the prophylaxis of contagious diseases by legislative enactment, are objects of supreme importance, and well worthy of the earnest attention of any Government. But the naturalization of the cinchona is inseparably [illegible] India, [illegible] generations [illegible] governing [illegible] the people [illegible] confidence held by the British Government in the [illegible] efficacy of medicine. With [illegible] it is impossible [illegible] that so much [illegible] would have been [illegible] the transplantation of the cinchona trees from South America to Indian soil. It [illegible] we have [illegible] experiment [illegible] undertaken, and prosecuted with a determination and vigour [illegible] not for the purpose of [illegible] an improvement [illegible] ordinary commercial products [illegible] to facilitate [illegible] communication and the exchange of ideas by [illegible] steam and electricity, but for the production of [illegible] for the amelioration and cure of the malarious fevers of [illegible] and other marshy countries; and [illegible] eventually [illegible] within the reach of the masses of the population. When it is remembered that the direct, and indirect, mortality [illegible] natives from malarious diseases [illegible] Madras—which

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[illegible]

[illegible]

undermines the health of the European inhabitants, and interposes one of the most formidable obstacles with which we are acquainted to the successful colonization of India by the Anglo-Saxon race, some idea may be formed of the vast benefits that must accrue from the extensive cultivation of the cinchonas, and the consequent cheapening of quinine—the antidote and prophylactic of malarious fevers—so that it may be equally available for the cure and prevention of the fevers of prince and peasant throughout the length and breadth of the land.

The practicability of cultivating the "quinine-yielding" cinchonas in this country was first pointed out by the late Dr. Royle. This idea, based on a careful inquiry into the respective floras of the slopes of the Himalayas, Cossiah Hills, and Neilgherries, and the cinchona districts of South America, was further elaborated by Drs. Falconer, Thomson, and Thomas Anderson, now Superintendent of the Royal Botanic Gardens at Calcutta, and of the cinchona plantations near Darjeeling. The conjoint representations of these distinguished botanists placed the question in a clear light before the Bengal Medical Board, and succeeded in inducing the Government of India to move the Honorable Court of Directors to take steps for the naturalization of the cinchonas in eligible localities in India. The Court of Directors, in conformity to the recommendations of the Medical Board, issued their Despatch of the 27th [illegible] 1852, [illegible] should be deputed from [illegible] to South America to procure an ample supply of seeds [illegible] of the best species of the "quinine-yielding" cinchonas, with a view to their introduction into India." The [illegible] the [illegible] were submitted to Dr. Royle for report. In [illegible] part of that report, dated 12th June, [illegible] he stated that "the probability of ultimate success in the cultivation of the cinchonas in India seems to admit of hardly [illegible], if ordinary care be applied in the selection of suitable localities." He continues, "I may [illegible] family of plants [illegible]. I [illegible] the [illegible] "quinine-yielding" cinchona has [illegible] the Neilgherries and the [illegible], [illegible] I [illegible] that the Chinchonas [illegible] the [illegible] Himalaya [illegible] the "plants yielding the most [illegible] had only been discovered" by Mr. Weddell, an English [illegible] the French [illegible] M. de Castelnau [illegible] Bolivia and Peru [illegible] the spot. It was [illegible] "quinine-yielding" cinchonas [illegible] Santa Fé de Bogota; [illegible] of Bolivia, [illegible] Lima, [illegible] 20 degrees of south latitude [illegible] these valuable plants along the Andes; [illegible] extend much [illegible]. The [illegible], therefore, [illegible] South America, from [illegible] into the interior to collect [illegible] plants [illegible] to the coast, for shipment to Europe or India.

Meanwhile, Dr. Royle, on 14th December, 1852, reported to the Court of Directors that it was desirable to obtain some plants from the [illegible] in Great Britain, which he knew had been raised from seeds collected by Dr. Weddell, the discoverer of the cinchona plant yielding the richest yellow bark. Plants were, therefore, despatched from the botanic gardens of Edinburgh and Kew, under the care of Mr. Fortune, who embarked by the mail of the 20th idem on his way to China by the overland route; and five of the plants reached Calcutta alive. Dr. Falconer found that the plants did not thrive in the Royal Botanic Gardens on the banks of the Hooghly. They were transferred to Darjeeling. [illegible] survived the transit. On the 14th May, 1855, Dr. Thomson reported, on information communicated by Dr. Campbell, the Superintendent of Darjeeling, that "the [illegible] were killed by the cold of last winter." He says, "I fully concur with Dr. Royle and Dr. Falconer in believing that the climate of the Eastern Himalayas will be found well-suited to the growth of cinchonas, and I do not think that the failure of the first attempt to introduce this valuable plant ought in the least to deter us from future trials." He concluded his letter by stating that he would "communicate the loss of the cinchona plants at Darjeeling by the first mail to Dr. Royle, for the information of the Honorable Court, in the hope that a further supply of young plants will be sent out as soon as possible to renew the experiment."

On the 9th June, 1855, the Medical Board [illegible] the Government of India the expediency of [illegible] by importing direct [illegible] Bolivia [illegible] plant, and by cultivating [illegible] in many parts [illegible]—especially in the Neilgherries, Sylhet, [illegible] Tenasserim Provinces, and in various localities in the vicinity of Darjeeling. The Board also drew attention to the fact that "early in the present year a valuable essay on the introduction of the cinchona trees into India had been drawn up [illegible] by Assistant Surgeon Thomas Anderson, M.D., F.R.C.S.E., [illegible] entirely [illegible] with those expressed on the subject by Drs. Royle, Falconer, and Thomson."

On the 31st March 1856, Dr. Royle again pressed upon the Court of Directors the necessity of trying the experiment [illegible] that his opinion [illegible] by [illegible] first [illegible] plants, and [illegible] the culture of these cinchonas in the [illegible] 20 years ago.

The [illegible] of India [illegible] the Court of Directors, the Board of Control, [illegible] Lords of the Privy Council, [illegible] of the experiment. Dr. Royle was [illegible] to take steps to find an eligible person to [illegible] a collection of "quinine-yielding" plants and seeds, but his [illegible] prevented the completion of the necessary arrangements. [illegible] on the 2nd December, 1858, [illegible] Dr. Royle's [illegible] who would [illegible] to carry out the instructions above alluded to [illegible] faithfully [illegible]."

On the 5th April, 1859, Mr. Clements Markham, [illegible] to Sir George Clerk, K.C.B., [illegible] South America [illegible]. On the [illegible] April 1859, Mr. Markham's proposals were considered well worthy of acceptance, [illegible] as that gentleman had stated that he [illegible] knowledge of the best cinchona [illegible], acquired during [illegible] in Peru and Bolivia, [illegible] knowledge of various species of the cinchona [illegible] acquaintance with the Spanish language and with the Quichua language of the Indians in the districts in question, and [illegible] with many of the [illegible] landowners on the eastern slopes of the Cordilleras, where the cinchonas abound.

Mr. Markham accordingly undertook the task of importing cinchona seeds and plants to India. He arrived, in due course, at the Port of Islay, Peru, on the 9th June, 1860, with 456 of the most valued species. On the 28th July, he reached Southampton, with the Wardian cases containing the collection of plants, which were, on the whole, in good condition. Upwards of 240 had begun to throw out shoots, and 53 more retained life, or

there are 400 *succirubras* varying from 8 to 16 feet in height. Many are possessed of sufficient expanse of foliage to shield one from the rays of the sun. Around this are 600 *succirubras*, which were planted in May 1866, and these reach from five to seven feet in height. Here I saw a robust tree from which a strip of three feet of bark, and comprising a breadth of half the circumference of the stem, had been peeled off in October last. The lost bark had been perfectly restored under mossing. Cow manure, as applied by the natives in some parts of India for a similar purpose, will, Dr. Anderson thinks, do equally as well as moss. Straw has already been employed by Dr. Anderson, and he considers this preferable to mossing, on account of its greater durability. The renewed bark is called *cascarillas renovadas*, and is of high commercial value on account of its great richness in the cinchona alkaloids. It is this process which renders barking apparently innocuous to the future growth of the cinchonas.

The *cinchona calisaya*, one of the most valuable of all the cinchonas, has also found a home on the Rungbee plantation. The first plants were put in the ground on 29th June, 1867. When planted, they were about six inches in height. At the end of May, they measured from 45½ to 29½ inches. There are also about 50 of the *cinchona calisaya* species at Rishap, and these promise to exceed even the extraordinary growth of the *succirubras* on this plantation. There are also 88 specimens progressing admirably at the Rayen plantation. Dr. Anderson possesses 4,658 stock plants of the *cinchona calisaya*. These yield, on an average, 2,500 cuttings *per mensem*. There are 15,000 robust plants in the nurseries, and planted out. I am particular in detailing these important facts, because I believe I am correct in stating, that nowhere in India has the *cinchona calisaya* found such a *congenial home* as in British Sikkim. According to Mr. Markham, (*vide* page 217, Cinchona Blue Book of 1866,) "*cinchona calisaya*, the most famous of all the American bark trees, and which in its native forests is alike the most beautiful and the richest in quinine, has not been a success in India. I was grieved to see the plants of this species only 5 feet 10 inches high, and 6¾ inches in girth, at an age of three years; while their stunted and shrubby appearance with dim coloured leaves is as different as possible from that of the glorious *calisaya* of the Caravayan forest. This lamentation may, doubtless, have been justified from an inspection of the *calisayas* on the Neilgherries, when visited by Mr. Markham. I can testify, from careful personal observation, that the cultivation of the most famous of all the *cinchona* barks—*cinchona calisaya*—has been a perfect success under the management of Dr. Anderson, both at the Rungbee, Rishap, and Rayen plantations. The rapidity with which the plants laid hold of the soil, and of their subsequent growth, coupled with the extreme cleanness of the bark of the stems and twigs, and the luxuriant rich green colour of the leaves, show plainly that Dr. Anderson has succeeded in discovering a home for this species, in no way differing, as to result, from "that of the glorious *calisaya* of the Caravayan forest." I earnestly trust that a similar display of judgment and scientific knowledge will yet succeed in finding an equally agreeable locality for the *calisaya*—the Queen of the *cinchonas*—on the spurs of the Neilgherries.

2nd.—Crossing over the Runjo, the Rishap plantation is entered. About 80 acres of this, more than a year old, is one of the finest sights anywhere to be seen. The plants average from three to five feet high, and there is not a single vacancy.

3rd.—Six miles further on is the Rayen plantation, also containing chiefly *succirubras*, about a year old, and in a most flourishing condition.

The extent of open air cultivation cannot be better demonstrated than by the figures submitted below :—

	No. of Plants.
Cinchona Succirubra	3,19,073
Cinchona Officinalis	1,91,419
Cinchona Micrantha	5,558
Cinchona Calisaya	229

(To be continued.)

INDIAN EXPERIENCE OF LITHOTRITY.

By Surgeon J. B Scriven,

Principal, Lahore Medical School.

The old lateral operation of lithotomy is so time-hallowed a proceeding, that new means of removing stone from the bladder have always met with more or less opposition from the profession. The central operation, however, for small stones, the suprapubic for very large ones, and Dr. Murray's modification of the lateral operation, have been found applicable to a considerable number of cases.

In children, the cutting operations are attended with so little mortality, that scarcely any other proceeding is required. All, however, who have had much to do for the relief of stone, must be aware, from their own experience, of the fact that, whatever be its reasons, the mortality after lithotomy is principally among patients above the age of puberty, and that it is still higher above forty.

Furthermore, they cannot fail to have noticed a direct relation, modified by circumstances, between the mortality and the size of the stone; and, as very large stones are not commonly met with in childhood, and are most frequent in the old, the influence of age and great size of the stone often combine to render a cutting operation dangerous. Lithotrity has now been practised for many years by isolated Surgeons, and has succeeded well in the hands of a few, but has not yet met with general favour, even in England, still less in this country; the reasons of which, I doubt not, are the following :—

First.—That the operation, in most cases, requires to be repeated, instead of being completed at one sitting; so that cutting is very often the more rapid mode of cure; and it has very generally been believed that the accumulated dangers of all the operations necessary for crushing a stone are greater than those of the single operation of lithotomy. See a paper by Mr. Holmes Coote on Lithotomy and Lithotrity in Braithwait's Retrospect, Vol. LI, page 229.

Second.—That very few surgeons have good instruments.

Third.—That sufficient care has seldom been observed in the selection of cases, and in the manipulations.

Fourth.—That a very general idea has been prevalent, as formerly also existed with reference to lithotomy, that the operation cannot be performed without a considerable quantity of water in the bladder, which is impossible in a very large proportion of stone cases.

Fifth.—Because lithotrity is considered by many to be applicable only to small stones, which are the very cases that are least dangerous for the cutting operation :—

Sixth.—As regards this country, because there exists a belief in the minds of some Surgeons, that lithotrity is less applicable to natives of India than to Europeans. This is insisted on strongly both by Dr Greenhow and Dr. Cunliffe, who lay down as a cause of the neglect of lithotrity in India, second only to the want of instruments, that the protraction of the treatment would be very distasteful to the natives. Many of these points have been fully argued by Sir Henry Thompson in the pages of the *Lancet*, as well as in his book on Practical Lithotomy and Lithotrity, that it might seem superfluous for me to touch upon them, were it not that my experience may be useful to those whose practice, like my own, is amongst Asiatics.

On [illegible], therefore, I wish now to offer a few [illegible].

1st. [illegible]

I answer [illegible] Sir Henry Thompson, who has [illegible] Vol. LIII.; [illegible] Vol. LV., p. 221. [illegible] In [illegible] Sir H. [illegible] year 1861 [illegible] 1864, I [illegible] 26 were [illegible] during that [illegible] in England in 1865 and 1866, five [illegible] by Drs. Brown and Henderson, which [illegible] for me in my [illegible] and since my return in 1867, I [illegible] eleven. This makes a total of 56, of whom [illegible] males and [illegible] females. Not one of the [illegible] went [illegible] before the cure was completed, [illegible]. Of the [illegible] 25 males, [illegible] one did well [illegible] state from fever [illegible] after the operation, and has not been heard [illegible]. Therefore, [illegible] as well as the one that died in [illegible] even though not [illegible]. The case that was afterwards [illegible] singly as [illegible]. Thus we have 25 male cases [illegible] with two deaths and one failure. Twelve of these [illegible] operated on from 1861 to 1864 with very inefficient instruments [illegible] which I shall allude presently more particularly.)

When it is considered that all the 25 were adults, and some of [illegible], I think it must be allowed that the mortality was not greater than might have been expected in an equal number of [illegible] cases treated by lithotomy. All the female cases did well, but one left before the cure was complete. [illegible] that [illegible] *Surgeons have* [illegible] *instruments*. Some Surgeons in England, at all events [illegible] 1866, when I was at home, still operated with Brodie's Lithotrite, which I know, from my own experience, is a most [illegible] instrument [illegible] in this country, the main reason [illegible] lithotrity [illegible] little known, as [illegible] stated by Dr. [illegible] Government has not provided instruments [illegible] Indian Annals of Medical Science, No. XXII., page [illegible] very few Surgeons [illegible] the [illegible] Indian Annals, No. XXIII., page [illegible].

Up to 1865, I [illegible] with L'Estrange's and Brodie's [illegible] the 12 cases above [illegible] were [illegible] on with one or other of these [illegible] L'Estrange's Lithotrite, [illegible] blades [illegible] entirely separate [illegible] to be [illegible]. The latter [illegible] and to [illegible] was necessary to [illegible] and [illegible] sliding and [illegible] the blades [illegible] of the instrument [illegible] Brodie's [illegible] the screwing apparatus was [illegible], but, as they worked quite [illegible], it was necessary to move the screw down, even [illegible] before it began to crush, and to withdraw it again before the blades could be separated by the sliding movement.

Both of these instruments had the disadvantage of having [illegible] only [illegible] for breaking the stone into [illegible] fragments, not for grinding it into sand, which is the [illegible] operation.

Moreover, it was [illegible] to withdraw any portion of the stone [illegible], and, from the clumsy formation of the [illegible], there was considerable danger of injuring the coats of the bladder. When attempting to describe Sir H. [illegible] I had the advantage of [illegible] 1865 and 1866. I [illegible] screwing [illegible] but [illegible] by a simple movement of the thumb. The stone, [illegible] when caught by the sliding [illegible] which [illegible] is required to crush a stone [illegible]. As [illegible] for hard large stones, [illegible] cases, in [illegible] of soft stone [illegible] be used, and the [illegible] Both the [illegible] instructed, that any [illegible]

[illegible] It must be granted [illegible] very large stones. I [illegible] to which it is [illegible] cannot [illegible] that, with the old instruments, it was impossible, except [illegible] or three [illegible]. No [illegible] because it has been tried [illegible] very large stones, [illegible] because it has [illegible] cases in which the [illegible]. Also, I doubt not, it has [illegible] instrument with the [illegible] the bladder, [illegible] the coats, and from [illegible] which it was, of course, [illegible] to avoid [illegible] clumsy instruments before [illegible].

[illegible] *required in the bladder* [illegible] because it has [illegible] more than [illegible] old instruments this was [illegible] in many cases [illegible] impossible, even when the [illegible].

[illegible] endeavouring to [illegible] four [illegible] into a bladder [illegible] more, thus rendering it [illegible] excessive desire to [illegible]. Successful [illegible] considered [illegible] 1866, [illegible] an eminent [illegible] Surgeon [illegible] ingenious Lithotrite, with a [illegible] in the centre, [illegible] and the crushing might [illegible] instrument. This I saw him [illegible]. It is well known, however, [illegible] of the [illegible] not [illegible] injurious. It [illegible] not been [illegible] the treatment of any of my patients in the medical [illegible] hospital.

[illegible] *Lithotrity* [illegible] *only to small stones.* Previous to the [illegible] when I operated with the old Lithotrites, I had some stones of considerable size to deal with, but, as these instruments were not graduated, I had no very ready means of recording their sizes accurately. In the year 1867, the stones that I crushed were not of very large size. I had then just begun to work with Sir H. Thompson's instruments, and, being anxious to avoid failure at the commencement, I adopted the crushing operation only in those cases in which success seemed tolerably certain. This year, having acquired some experience from the five cases treated in 1867, and having attained a certain amount of dexterity in the manipulation, I determined to try the operation upon something larger, as soon as a suitable case should present itself. Sir H. Thompson says in the *Lancet* of October 26th, 1867, p. 512:—"Supposing that a uric acid stone of about 1½ inch in the long diameter is met with, and all the conditions are tolerably favourable, there is no doubt that lithotrity may be performed with a good chance of success." He allows that a stone of two inches may be crushed, but, as a rule, he thinks lithotomy the safer operation of the two. Again, he says in the *Lancet* of April 25th, 1868, p. 522,—"A stone which is two inches in diameter, either phosphatic or uric acid, had perhaps better be cut. No doubt, a rather large phosphatic stone may be crushed."

The three following cases are interesting, inasmuch as it will appear that the first was a phosphatic stone of 2½ inches in its long diameter, and the second and third were uric acid stones of two inches in their long diameters. Of the accuracy of the measurements, as I am about to give them in the detail of the cases, there can be no doubt, for the Lithotrites are graduated up to an inch and a half, divided into eighths. For measurements beyond an inch and a half, I was, of course, guided by my eyes only, which was not difficult, as I had the graduated part for comparison. Here I may remark that the graduation of the instrument up to an inch and a half obviously implies that it is not likely that an attempt would be made to crush a stone beyond this diameter. The measurements were taken down, each time, by my clinical assistants, at the bedside, from my dictation, each time the stone was caught; and, as an evidence of correctness, or for verification of the facts, I give references to my case books in the hospital, where the notes will be found.

CASE I.

Jaga, (Hospital Register No 5, p. 519,) a Mahomedan male, aged 30, stone phosphatic. The stone was first caught on January 11th, 1868, with the flat bladed Lithotrite. The first diameter noted was ¾ inch. In this it was crushed, and found soft. Another piece was instantly caught, 1¼ inch in diameter, and a third piece, also 1¼ inch. That was all for this sitting. It will be observed that the first diameter was smaller than the two others. The explanation of this, I think, is, that the stone was first caught in its small diameter, then broken into two, and that the two pieces of the same size, afterwards caught, were the two halves in their long diameter, the sum of which is 2½ inches. This man was operated upon six times, at intervals varying from five to ten days. The last operation was on the *14th of February*. He was detained in hospital until March 4th, in consequence of an attack of orchitis, and some remaining catarrhal inflammation of the bladder. At the time of his discharge, the bladder remained slightly irritable, but he was very carefully examined several times, and no remaining fragment of stone could be detected. Moreover, he could run, jump, and perform any active exercise without the least inconvenience. He showed himself again at the hospital on the 11th, and reported himself well.

CASE II.

Natha, aged 35, a Mahomedan male, (Hospital Register No. 11, page 17). This man's stone was a uric acid one, ascertained by the acid condition of the urine, and a deposit in it of uric acid crystals. The first crushing was on March 1st, by means of the fenestrated Lithotrite. The first diameter, in which the stone was caught, was two inches, probably the longest, as it had been measured on a previous occasion, and found to be of smaller size than this. It was considered desirable to catch it in a shorter diameter for the crushing. It was therefore seized a second time, and one inch and a half was the diameter noted. It was crushed four times at this sitting. This man was operated upon 17 times, the last operation being on May 22nd. He was discharged on May 31st. So great was the hardness of this man's stone, that one of Weiss's best instruments was slightly bent in crushing it. At the time of his discharge, no remaining stone could be detected, nor was there any irritability of the bladder. He could run, jump, and perform any active exercise without inconvenience. With the exception of slight attacks of fever, this man had no unfavourable symptoms during the whole time of the treatment.

CASE III.

Malawa, aged 35, (Hospital Register No. 11, page 86.) A Hindoo male. The stone was uric acid, ascertained, as in the last case, by the acid reaction of the urine, and a deposit in it of uric acid crystals. The first crushing was on March [illegible], 1868, by means of the fenestrated instrument. The stone was caught, and diameter of two inches noted on the instrument. It was released from the grasp of the Lithotrite in the hope of catching it in a smaller diameter. The next diameter, however, was only slightly smaller, 1⅞ inch. In this it was crushed, and two more pieces were also crushed at this sitting, each ⅞ inch. This man was operated upon 15 times, the last operation being on May 29th. He was kept in hospital until June 6th, in order to be sure that no stone remained, but, during this period, after the most careful examination, none was found. On his discharge, he had still very slight pain in making water, but only did so about four times a day. He had no inconvenience, whatever, in walking about, but was not quite strong enough for the test of running or jumping. From the hardness of this man's calculus, it was found necessary to use the fenestrated Lithotrite six times out of the [illegible] operations.

Here, then, we have three cases, in succession, of which the calculi certainly come within the category of large stones, successfully treated by the crushing operation. I think it will be found, by any Surgeon in this country, who has a large practice in lithotomy, that a great proportion of the stones extracted from adults exceed, in their long diameter, an inch and a half; but that those exceeding two inches are exceptional. Hence it follows that, to make lithotrity extensively useful, it should be made applicable to stones of about two inches, as well as to smaller ones. There is a great tendency amongst the natives of India to neglect the early symptoms, and to try all kinds of empirical remedies for years, until the disease becomes unbearable, when, at last, they present themselves at the hospital. I imagine many years will elapse before the benefit of crushing a stone in its early stage is generally appreciated.

I am perfectly aware that no very important deductions can be drawn from three cases, but still they are sufficient to prove that lithotrity is sometimes applicable to large stones, and to encourage the hope that the dangers of a cutting operation may, as crushing becomes more generally understood, be avoided in the vast majority of cases.

This brings me to the sixth and last objection, *Lithotrity less applicable to the natives of India than to Europeans, the protraction of the treatment distasteful to them.* To the first part of this objection, "Lithotrity less applicable," &c., &c., no positive answer can yet be given, although it is obvious, from the foregoing facts, that lithotrity is useful in many instances. Should further experience prove that lithotrity habitually succeeds in this country in cases such as those just related, this would show a somewhat greater tolerance of the manipulation amongst natives of India than amongst Europeans. As [illegible] I can only say that [illegible] at Lahore, [illegible] my patients, [illegible] I think there [illegible] as well as of [illegible] which they [illegible] modes of [illegible] adoption of [illegible] they are [illegible] to prove fatal. [illegible]

Lahore, [illegible] 1868.

CHOLERA.

By Charles R. Francis, M.B.

[illegible] of the *Indian Medical Gazette* I ventured to suggest a certain plan of treatment in *collapse* from cholera, which I had found eminently successful in reducing the mortality during that condition. At the close of my letter, I mentioned that a professional friend had adopted [illegible] in a few [illegible] cases, and that he, too, was highly gratified with his success.

I am happy now to be able to place on record, with his permission, the results of the experience of another professional friend, Dr. Charles Macnamara. He had an opportunity, during the late epidemic [illegible] months, of testing the value of calomel, in large doses, with cantharides, prescribed in the way that I recommended; and, I believe, I am justified in stating that he considers it the most effectual treatment of collapse in cholera with which the profession is acquainted. Many of the cases were in an advanced stage before he was called upon to see them. I would here take leave to say again what I have urged before, that the success met with is *uniform*. There are some remedies which are effective in some epidemics, or at one period of an epidemic, whilst in other epidemics, or at some other period of the epidemic in which they were once so successful, they are quite inoperative. But those who test this system, must do it *thoroughly* and *boldly*. One may say "I should be afraid of its (speaking of calomel) producing dysentery;" and another, "violent salivation would be sure to follow." Truly, no doubt, both sequelæ would result, if measures were not taken to remove the calomel from the intestinal canal, after it had done its work. It is a matter of fact that, in the hands of those who have used the mineral in this guarded way, there has been no dysentery of any consequence; and what salivation has occurred has, in the exceptional instances, been slight, and yielded readily to treatment; and even, if more or less excessive salivation *did* always ensue, it is a better alternative on the one hand, than almost certain death on the other. Dr. Macnamara is in the habit of giving chloroform freely and repeatedly by inhalation. He says, that it conserves the vital power, and prevents that restlessness so distressing to witness which assists in wearing the patient out. In his hands it certainly appears to be eminently successful.

He bears testimony to the excellent effects of cantharides which completely *drains* the vessels of the kidney of their contents, and stimulates them to increased action, without doing any injury to the organ.

Table of Recoveries.

No.	European or Native.	Date of Admission.	Number of Hours under Treatment.	Result.	Treatment.	Remarks.
[illegible]	European	[illegible] May, 1868		Recovered	That recommended by me in my letter to the Editor of the *Indian Medical Gazette* on the 1st April 1868, with the addition of chloroform by inhalation, in some cases.	It will be observed that 40 cases in all were brought under treatment, and that, out of these, 26 recovered, and 14 died, giving [illegible] per cent. of recoveries and [illegible] per cent. of deaths. This includes every case, even those which were brought almost moribund, and those who died within a few hours. Excluding the cases in which death took place in less than six hours, the mortality was a little under 25 per cent. If we go still further, and exclude those who died in less than twelve hours, it would be reduced to [illegible] per cent. I am willing, however, to accept and to base the calculation upon the entire number, which [illegible] and the [illegible]. I think it will be admitted that the evidence is strongly in favour of the treatment. Not a single case of [illegible] or of salivation occurred.
[illegible]	Native	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	3rd ,, ,,		Ditto		
[illegible]	Ditto	7th ,, ,,		Ditto		
[illegible]	Ditto	2[illegible] ,, ,,		Ditto		
[illegible]	Ditto	2[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	1[illegible] ,, ,,		Ditto		
[illegible]	European	[illegible] ,, ,,		Ditto		
[illegible]	Native	20th ,, ,,		Ditto		
[illegible]	Ditto	2[illegible] ,, ,,		Ditto		
[illegible]	Ditto	2[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	European			Ditto		
[illegible]	Native	[illegible] June, 1868		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	1[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	Ditto	[illegible] ,, ,,		Ditto		
[illegible]	European	[illegible] ,, ,,		Ditto		
[illegible]	Native			Ditto		
[illegible]	European			Ditto		
[illegible]	Ditto			Ditto		
[illegible]	Native	23rd April, 1868		Ditto		

Table of Deaths.

No.	European or Native.	Date of Admission.	Number of Hours under Treatment.	Result.	Treatment.	Remarks.
[illegible]	European	[illegible] April, 1868	12	Died		
[illegible]	Ditto	[illegible] ,, ,,	4	Ditto		
[illegible]	Native	[illegible] May, ,,	6	Ditto		
[illegible]	Ditto	[illegible] ,, ,,	6	Ditto		
[illegible]	European	[illegible] ,, ,,	8	Ditto		
[illegible]	Native	[illegible] ,, ,,	12	Ditto		
[illegible]	Ditto	[illegible] ,, ,,	14	Ditto		
[illegible]	Ditto	[illegible] ,, ,,	1[illegible]	Ditto		
[illegible]	European	[illegible] ,, ,,	2[illegible]	Ditto		
10	Native	2[illegible] June, ,,	2	Ditto		
[illegible]	European	[illegible]	It [illegible] be [illegible] that the [illegible] were admitted [illegible] hours [illegible] the [illegible] treated.	Ditto		
[illegible]	Native	[illegible]		Ditto		
[illegible]	Ditto	[illegible]	2	Ditto		
[illegible]	Ditto	[illegible]	[illegible]	Ditto		

POISON IN MILK.

By Charles R. Francis, M.B.

In the *Indian Medical Gazette* of the 1st June last, I raised the question whether, although the poison of serpents might be *swallowed* into the *stomach* with impunity,—the *milk* of an animal that had been bitten would be equally innocuous? I adduced the evidence of two intelligent, trustworthy natives of Calcutta, which appeared to shew that *such milk* could *not* be *swallowed* with impunity. An instance in support of the truth of this view has recently occurred in the family of a European gentleman residing at a station in Eastern Bengal. The facts, which have been kindly placed at my disposal by my friend Dr. Fayrer, are as follows:—

Early in the present month, (July), at 7 A. M., a fine "up-country" goat, belonging to the family, was milked by the gentleman's wife. It had been observed that the udder and teats of the goat were unusually distended, and that the servant who attempted to draw the milk did not do it well. The lady, therefore, drew it herself. The milk from one teat flowed *thicker* than that drawn from the other. This was attributed to the fact of the kid having, probably, been kept away too long from the mother. The general health of the goat appeared to be very good.

The whole of this milk was set aside for the family breakfast, being intended especially to be mixed with the *tea*. Boiled cow's milk was also set aside for the coffee. At 8-30 A. M. the family breakfasted. The party consisted of the gentleman, his wife, and two children, another gentleman—a friend aged 23—being added to it. At the commencement of breakfast, the lady gave the eldest of the two children—a boy three years old—a cup full of the *goat's* milk. At 9-15 A. M., or three-quarters of an hour afterwards, the child vomited, and brought up, apparently, the whole of his breakfast. Presently, he lay down, and now the vomiting was very violent, and continuous. In the intervals between the attacks, the poor little fellow lay very quiet, and, in another hour, his appearance had changed greatly,—dark rings having formed around the eyes, which were rolled up under the upper-lids, the complexion becoming very yellow, and the expression anxious. The vomiting was persistent throughout the morning, and at 2 P. M. *diarrhœa* supervened, the evacuations being *very* thin and of a black colour. Both the vomiting and diarrhœa continued till 4 P. M., when they subsided. The former returned at night, and continued for [illegible] hours. The child was more or less ill for upwards of 96 hours altogether, when the symptoms subsided entirely, and he was ravenous for food!

The lady and the friend drank both coffee and tea, *each therefore* partaking of the *goat's milk*. At 9-45 A. M., whilst she was attending upon her sick child, the former experienced a sensation of nausea, and, in a few minute's afterwards, vomited, felt very ill, and lay down. The vomiting appears to have continued, more or less, throughout the morning, and was followed, as in the case of the child, by diarrhœa of the same nature. The vomiting was very severe; so much so, that at length she brought up a considerable quantity of pure blood. There was no change in the countenance, as in that of the little boy; and at 4 P. M. (just when the child's symptoms subsided) the diarrhœa ceased; but the vomiting continued through the night. The lady recovered in 96 hours.

The friend went out on horseback immediately after breakfast, but returned at 10-15 A. M., saying that he felt very ill, and immediately afterwards vomited. The same train of symptoms appeared in this case likewise,—continuous vomiting, and the supervention of diarrhœa at 2 P. M., continuing till 4 P. M. The friend recovered in 48 hours.

The *gentleman* himself drank only coffee, and therefore *no goat's* milk at breakfast: *and remained well.*

The other child had no goat's milk, and *he* was unaffected.

When the friend returned from his ride complaining of illness,—thus making a third who had complained and suffered in the same way,—a suspicion naturally arose that there had been something wrong with the milk drawn from the goat. Prior to this, cholera had been suspected. The goat was, therefore, examined; and the mark of a bite, like that from the poison fangs of a snake, was found on one of the teats close to its extremity. The udder was much inflamed. At this time, (about 10-30 A. M.,) the animal seemed to be very ill, and rapidly became worse. At *noon* a frothy foam exuded from her mouth, and at 2 P. M. she died.

The goat had evidently been bitten by a poisonous serpent, and its milk poisoned all who partook of it. The entire history points to this fact. I am not aware that anything of the kind is on record; though, *now*, confirmed as the statement of my native friends has been by other independent witnesses, I have no doubt that similar instances *have occurred*. So pathologically important (as well as simply interesting) is the fact of milk into which the essence—as it were—of a serpent's venom has been, by a vital process, secreted, being capable of poisoning when swallowed into a healthy stomach, whilst the venom itself may be swallowed, freely, with impunity, that I trust more observers will give to the profession the benefit of their experience,—and that professional men (or others) will carry out the experiments which I suggested in the June number of the *Indian Medical Gazette*.

In the case which is here recorded, there is apparently no source of fallacy *whatever*. The goat was evidently poisoned by a venomous serpent, as the mark of the fangs was seen, and the animal died in a way that results from such a cause. Then, those only who drank the goat's milk suffered; and with all the symptoms, too, of snake poisoning. The poison of venomous serpents is allied to the acrid vegetables, (which produce vomiting and purging, in their action. The more remote effect—*viz.*, that on the centre of the nervous system, which is seen after a bite from the venomous serpents of hot climates, the cobra for example, was observed in the child, who was *inclined to be lethargic* besides. Again, the individual who took the most milk was the principal sufferer. In the face of this sequence of events, it seems idle to talk of the possibility of the milk becoming deteriorated from "*standing*" at this season of the year, or of the possibility of there being abrasions in each of the stomachs of those who swallowed it. The fact must, I think, be admitted; and it remains, therefore, to elicit instruction from the lesson which it teaches.

(1.) Milk is consumed in every house; and the animals from whom we derive it are often exposed to the bites of venomous serpents. When out at pasture, of course, it would be difficult to adopt any sufficiently efficacious measures for the purpose of keeping these reptiles at a distance, beyond grazing the kids or cows as much in open ground as possible. But it may be well to use *carbolic acid* in our *homesteads*, in the immediate neighbourhood of the cattle stalls or sheds, sprinkling it about freely. Mr. Clerk's and Dr. Fayrer's experiments have satisfactorily proved the deadly effect which this agent has upon these reptiles. They shun either it or creasote, and will not go where these compounds exist.

(2.) We have now before us further evidence of the fact that animal (human) milk may be a vehicle for the conveyance of the most virulent poison oftener than we are aware of. Should we not then be, more than ever, particular in selecting the *dhyes*[*] whom we employ to nurse our children? Themselves impregnated, it may be, with the unseen and unsuspected taint of *leprosy*, the milk which is intended to nourish may carry with it the germs of that loathsome malady, to be developed in after years, a melancholy testimony of our want of foresight and care. As [illegible] [illegible],

---

[*] Wetnurses.

[illegible]

SNOW-BLINDNESS AND SNOW OPHTHALMIA

[illegible]

[illegible] employed, [illegible] stations, and a [illegible] water dropped [illegible] with a wet bandage [illegible] minutes, followed by great [illegible]

[illegible]

[illegible] Ladak, June 12th, 1868.

AT the recommendation of the Secretary of State, the Madras Government have deputed Dr. Day, F.L.S., F.Z.S., to institute practical enquiries, before and after the freshes, with a view to ascertaining definitely the extent of the influence, if any, exerted by anicuts on fresh-water fish in the Madras rivers. It has been apprehended by naturalists that those insurmountable obstructions to the progress of the young fish from the sea up the rivers must needs militate against reproduction, and as this is a question bearing on the food products of India, Sir Stafford Northcote has deemed it worthy of careful examination. Dr. Day will temporarily vacate the Medical Stores, and afford Dr. Bidie—who is rather boring the public with his unduly protracted investigation into the nature and habits of the coffee-borer—a good excuse for returning without delay to Madras.—*Pioneer.*

QUARANTINE regulations have been very properly put in force in the Jubbulpore district, as well as in the districts of Mundlah and Nursingpore. Temporary hospitals, under the charge of Native Doctors, have been established on the several roads leading to Jubbulpore, and travellers among whom cholera has made its appearance are detained for observation and treatment, if necessary.—*Ibid.*

DR. STOLITZCA, Palæotonlogist of the Geological Survey, and Mr. V. Ball, also of the same department, have been both appointed Joint Officiating Curators of the Indian Museum in Calcutta, in the place of Dr. Colles, resigned. The salary of the abovementioned officers has been fixed at Rs. 500 for the former, and Rs. 250 for the latter, Dr. Stolitzca being the responsible Curator.—*Ibid.*

AT the recent fair near Manikgunj, in the Dacca district, the corpses of many persons who had died of cholera were thrown into the tank which supplies the inhabitants with the whole of their drinking water. The Commissioner cites this fact as illustrative of the "apathy and indifference" of the natives in the most ordinary matters of hygiene and conservancy: but the Lieutenant-Governor of Bengal retorts that it seems to him quite as illustrative of the "apathy and indifference" *of the Police* and Civil Officers of Government.—*Ibid.*

Notices to Correspondents.

Apothecary JUDD *writes to us suggesting, as a means of preventing all chances of contagion after sexual intercourse, that the glans penis should, in the absence of water, be well washed with the* renal secretion, *which, he says, can be made to flow at will immediately after the act. We do not publish his letter* in extenso.

ENQUIRER *writes:—I am a Surgeon in charge of a second class civil station, and drawing the authorized allowance of* Rs. 750 *per mensem. But the Military pay of my rank is* Rs. 780 *per mensem. The question is, therefore, am I entitled to draw the Military pay of my rank in lieu of the Civil salary?*

I ought to mention that I am also in administrative charge of the Jail at my Station, and for this I draw Rs. 100 *a month. Of course, if the Jail allowance is added to the salary for medical charge of the station, the total will amount to more than my pay of rank.*

Answer.—In the 28 *para. of the Secretary of State's Despatch of the 7th November,* 1861, *published with G.O.G.G. No.* 1060 *of* 1861, *on* 23*rd December, it is written, "Officers now in the Indian service will receive the pay due to their rank as laid down in para.* 10 *of my Despatch No.* 152 *of* 16*th May* 1861, *when such pay is in excess of the consolidated salaries above mentioned." This had reference to the pay of* Regimental charges. *G. O. G. G. No.* 370 *of* 1867, *published in the Gazette of 6th April* 1867, *which contained the details of the allowances for* Civil charges, *was distinctly defined as being in* continuation *of G. O. G. G. No.* 1060 *of* 23*rd December* 1861, *and therefore we should say the above rule would be considered as legitimately applicable in the one case as in the other. We are not aware, however, of the question having been brought to a test.*

We have received communications from—

Surgeon A. M. CALDEN.
I. [illegible]KEBSON.
SUB-MEDICUS.
Apothecary KELLY.
Assistant-Surgeon NEWTON.
ONE ANXIOUS TO RETIRE AFTER 17 YEARS' SERVICE.
DR HARVEY, *Bhurtpore.*
Sub-Assistant Surgeon KALI TO DASS GHOSE.

Domestic Occurrence.

BIRTH.

FRANCIS—*At Rochester, the wife of Surgeon-Major* C. R. FRANCIS, *of a son.*

The Indian Medical Gazette.

NOTICE.

All subscriptions will in future be acknowledged in the INDIAN MEDICAL GAZETTE, *instead of by letter post.*

Subscribers who have not remitted payment for 1868 *are solicited to do so.*

HARE STREET, *Calcutta.* WYMAN BROS., *Proprietors.*

SPECIAL NOTICE.

It is particularly requested that Subscribers to the INDIAN MEDICAL GAZETTE *will notify to us* EVERY CHANGE OF ADDRESS.

HARE STREET, *Calcutta.* WYMAN BROS., *Proprietors.*

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only ON ONE SIDE *of each sheet of paper.*

Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, or else delay must inevitably occur in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman Bros., and all professional communications to the Editor, direct.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

HARE STREET, *January,* 1868. WYMAN BROS., *Proprietors.*

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

OURSELVES.

IN conformity with our published intention to rectify any alterations in, or to make any additions to, the lists of Civil Stations previously noted, we have, in our present Supplement, specified the several stations and sub-divisions which were omitted in a former Supplement, and in the pamphlet; and must trust to the generosity of our readers to overlook these shortcomings.

We regret to say that we have received an ungracious communication from a Civil Surgeon, at whose suggestion these lists were published. We have not leisure to argue with our correspondent, but we beg to assure him that we endeavour to do our best, and that we are much indebted to him as to all who will *kindly* point out our deficiencies. When the lists were drawn up, all the *Local Gazettes* were not at our disposal, and we depended chiefly upon the *General Orders.* However, the lists are at length, we hope, complete; and we trust that our "*special correspondent*" will now be satisfied.

No more *Supplements*, however, will be issued. When their publication was announced, it was believed that they would form an attractive feature in the periodical, which, by increasing the number of subscribers, would more than compensate for the additional outlay. This expectation has not, after a considerable interval, which has given an abundant opportunity for more subscribers to come forward, been realized.

[illegible]

[illegible] We have [illegible] often [illegible] because a [illegible] and [illegible] as to publish [illegible] of August!

[illegible] to our readers that the "New Furlough [illegible]" will be added to the other matter in the "Yellow [illegible]" of which it is proposed to publish [illegible] from [illegible]

TO THE NEILGHERRIES AND BACK.

[illegible]

rejoicing, for he had dreaded the "fiat" to go home. He was recommended to go to the *Neilgherries*, no particular station being specified, probably because the distinctive characteristics of each were unknown, and he selected the most fashionable and the coldest—Ootacamund. Fortunately, he met on board the steamer with an old Madras Presidency Surgeon, who succeeded in dissuading him from carrying out his unwise intention. Nay, he further advised him to return immediately to Calcutta, and proceed round the Cape to England. The young officer decided, however, after a residence of a few days in Madras, and contrary to further medical advice, to go to Bangalore, and thence to the Shervaroy hills. It was on these hills that we found him. After a short sojourn, he appeared to improve in health; the diarrhœa, which had succeeded the dysentery, seemed disposed to subside altogether: and he was even contemplating an ascent to a higher elevation. But the improvement was only temporary. Dysentery recurred under the influence of variations of temperature,—warm days followed by chilly evenings and cold nights,—and it became absolutely necessary that he should leave the hills at once, which he did, and proceeded to Madras *viâ* Bangalore. He was sent, eventually, to England.

It is remarkable that Dr. Baikie, a very careful observer, and whose experience of the Neilgherries extended over three years, writes in favour of invalids suffering from dysentery resorting to these hills. It is true that he limits his recommendation to the "mildest forms," in which, it seems, he does not consider that a preparatory sea voyage is necessary; and he wisely advocates a previous residence at Dimhutty, (a locality now abandoned as a residence for Europeans, near Kotegherry,) or Koonoor,—both warm situations,—until the disease should be fairly subdued, and the patient acclimatized, when he may be transferred to the more bracing climate of Ootacamund. In the severer forms of the disease, with or without hepatic complication, Dr. Baikie advocates a preliminary sea voyage, but, even in these cases, he sees no objection to a residence in the hills subsequently. We have lived much in hill climates in India, and held medical charge of a sanatarium in the Himalayas for two years; and our experience justifies us in thinking that in every form of dysentery, whether mild or severe, with or without hepatic complication, present or passed away, there is great risk in following Dr. Baikie's recommendations. A new-comer (in the youth of life) to India may indeed contract a dysentery which may necessitate a long sea voyage and a return to Europe, but from which he may eventually so completely recover that, *cæteris paribus*, he will have become, in manhood, a perfectly healthy subject. Such a case does not come within the meaning of a "weak point," though care should be especially enjoined. It is persons who have so suffered in recent cases whose residence in the hills should be interdicted. The same remarks apply to hepatic disease as to dysentery. A sad case, in illustration, came under our observation two years ago. A husband accompanied an invalid wife to Ootacamund in the month of May. He was, apparently, in perfect health; but—a fact which was unknown to the family physician—he had been *twice to Europe, on account of dysentery, during the previous five years.* Shortly after his arrival at Ootacamund, he became uneasy in his right side, and dyspeptic. Diarrhœa shortly followed, and was regarded as a favorable sign. It was believed that an engorged liver had resulted in an increased flow of bile, and that thus the balance of the circulation would be restored. The patient did not, however, get well. He returned, in the course of a few weeks, to the plains, and, within a month afterwards, was sent to England, very ill with abscess of the liver, (of which he eventually died),—the diarrhœa still continuing. It is very probable that, in the course of one or other of the two attacks of dysentery, the liver had become involved, though there was no evidence on this point.

Before leaving this part of the subject, we would observe that more accurate information is required upon the subject of hill stations, generally, in all parts of India. Medical reports upon the sanataria where Europeans are quartered have, indeed, been submitted to Government, and a "blue book" gives a condensed account of all where European troops are quartered; but something more is needed. The nature of every hill station, as far as possible, should be made public. This is the more necessary now, there being so many medical officers attached to Her Majesty's British forces, to whom such information would be most acceptable. A most useful guide might be prepared from the records in the public medical offices, and supplied to each military and civil medical officer in the country. Under the present system, medical officers are very much in the dark as to the characters of the hill stations, even in their own presidency; and the choice is often left to the patient himself. This will depend upon circumstances. If he be fond of gaiety, or desirous of living under the eye of authority, with a view to ulterior advantages, he may select Mussoorie or Simla; whereas, possibly, the warmer climate and the lower elevation of Almora would suit his constitution (and, may be, his pocket too,) far better.

During the past few years we have enjoyed the opportunity of becoming acquainted with some of the hill stations in the Madras Presidency usually resorted to by invalids; and, as these are so accessible from Calcutta, and much frequented by residents in Bengal, we have thought it might be of service to give a sketch of each. We will preface our account by a few preliminary remarks on the *sea* part of the journey.

(To be continued.)

VACCINATION.

It affords us unmixed satisfaction to observe that Mr. John Strachey—one of the representatives of enlightened progress in India—has obtained permission to introduce a "Bill to make inoculation in Kumaon and Gurhwal penal." Fifteen years ago "Mahamurree," the local plague of those districts, which for many years previously had led to the decimation of the people and to diminution of revenue, at length became so virulent, and so continuous, that the Government of the N. W. P. determined to, if possible, eradicate, or, at any rate, mitigate the severity of the disease. Two medical officers were appointed to investigate the true character of "Mahamurree," and to suggest remedial measures. They had been preceded in the enquiry by the then Superintending Surgeon of the Meerut Circle, Dr. Renny, who—although differing with them as to the name of the pestilence—recognized, as they did, the paramount necessity for introducing sanitary reform throughout the length and breadth of the entire hill country in those regions. The two medical officers were engaged for two years in the investigation, and in carrying out the measures of sanitation which had been sanctioned [illegible] in the course of it. Dr. Pearson (one of the medical officers) had been engaged as a volunteer prior to this, and, from his powers of locomotion and untiring energy, was well-fitted to take part in the inauguration of such radical changes as the introduction of sanitary reform, for the first time, amongst an ignorant and stubborn Himalayan population, involved.

In the progress of the enquiry, the Government of the North-West Provinces availed itself of the machinery at its disposal to introduce vaccination. For many years the Bhootiyahs, or traders between Bhot, the country bordering upon Thibet, (not Bhootan,) and the lower hills had petitioned the Government to send them vaccine. They knew the value of it. These enterprising men would carry the products of Thibet not only to the lower hills, but to the large cities and towns in the plains, were it not for their dread of small-pox. The opportunity was most favorable. The Bhootiyahs accepted the gift with joy. The inhabitants of the middle and lower hills—offering here and there some opposition at first—eventually, in part, accepted it too. The sons of inoculators of small-pox became vaccinators. Books, instructing these neophytes in their duty, and telling to the people the story of the prophylactic in the form of a tale, were published and became text books in the village schools. With a suitable climate and a willing population, the success and consequent spread of vaccination became a matter of certainty. The medical officers soon saw the wisdom of *disseminating* the virus in the hope of ultimately establishing a vaccine depôt in Kamaon and Gurhwal. They did not vaccinate all the population off at once, with a view to shewing a long roll of successful operations, but they set to work cautiously, and vaccinated sparsely, at stated and well considered intervals. Their most sanguine expectations have been realized. The vaccine of these hills—we say it advisedly—is the best in India. An excellent lymph is, indeed, imported now from England; but it will not vie with that from these districts. So, at any rate, think the medical officers who have tried both.

This being the case, inoculation with small-pox may fairly be made penal. Until an effective substitute could be depended upon, Government would not have been justified in stopping the old time-honored custom.

But now the day has arrived, and Mr. Strachey, we earnestly hope, will succeed in his endeavours to do away with a pest which is worse almost than cholera, or the plague. In no other way *than* by making "inoculation for small-pox" a punishable offence, shall we ever succeed in India in getting rid of it, and for thus compelling the inoculators to practise vaccination. The operators will be *forced* to practise with the new prophylactic. Nor will they suffer any hardship. The people who now pay them homage and money for their present work amongst them will, the more and more they are convinced of the efficacy of *our* system, pay them the same when they become vaccinators. This is no chimerical fancy. The day is fast approaching when the Government may venture to make inoculation penal throughout the land. Let it do it carefully *now* by all means, limiting the "Act" to those districts where vaccine lymph may be depended upon, as Bengal and the hills in question; but let it at the same time strain every effort to *absorb the inoculators*,—encouraging them not only to take up the new system themselves, but to send their children to our colleges and schools to be educated for the medical profession,—for a calling which will take them out of the *Bapdadake dustoor** groove. It is well when the civil authorities and medical men are of one mind in matters of this sort. It will happen, occasionally, that a Magistrate is unwilling to adopt the recommendation of the Civil Surgeon, because he thinks the measure recommended will be oppressive. For some time past, the local authorities in Kumaon and Gurhwal have been unwilling to continue the prohibition to inoculate for small-pox, (which had been put in force), believing it to be illegal,—and knowing also that many of the people (for it must be admitted that, in some parts of those districts, there is still great opposition to vaccination,) objected to it. In consequence of this, instructions were issued not to prosecute those who disobeyed the orders not to inoculate for small-pox. What was the result? An attempt to re-introduce it generally!

An excellent reason for now passing an Act, as adduced by Dr. Pearson, the Superintendent General of Vaccination in the North-Western Provinces, is that those hills are the *seed beds* from which these Provinces and other parts of India are supplied with good vaccine virus; and it is therefore urgently necessary to keep them untainted, and to exclude the possibility of the virus being injured by the admixture of small-pox.

In inexorable resolution, and severe wisdom, Mr. John Strachey is the Lycurgus of India.

INDIGENOUS DRUGS.

We are glad to observe that the fame of our native *Collaborateur* Baboo Kanny Lall Dey has found its way to the far-famed North of our boasted Western land of learning. A record of his labours, in developing the value of indigenous drugs in India, will be found in the pages of the *Edinburgh Medical Journal* for June last. Kanny Lall Dey requires no stimulus of this kind to pursue with zeal the honorable career of professional investigation. He is an indefatigable worker already. But we take this opportunity of saying once more what we have urged again and again to our idle Native friends, that their labours, if they will but work, will not become the prey of ruthless insects, as might have been the case in days gone by,—but that they individually may attain an enviable celebrity, not only here amongst their own *confrères*, but amongst the shining lights which are illuminating the world on the other side of the globe.

Extracts.

* * *

Lord Napier stated at the Anniversary of the Madras Medical College, held on the 1st instant, that the Madras Government have proposed for the consideration of the Government of India the erection of a new Female Civil Hospital, a Lock Hospital, a new Lunatic Asylum, an establishment for the instruction of skilled Female Nurses, a Sanitary establishment at [illegible] in lieu of the obsolete one at Poonamallee, and the organization of a Sanitary establishment throughout the Presidency. His Lordship remarked that he must not be misunderstood as saying that all these schemes had received sanction, for "the Government of Madras proposes, and the Government of India disposes."—*Madras Times*.

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* Ancestral.

WARRANT MEDICAL OFFICERS' WIDOWS' AND ORPHANS' FUND.

To the Members of the
Bengal Subordinate Medical Department.
(Through the Editor of the Pioneer.)

Dear Sirs,—I have made some progress in the matter undertaken by me for our mutual benefit, having for its basis provisions for our families. Of the total number of appeals sent out by me among the *Warrant* members of the service with *enclosures* for return to me, up to date I am in receipt of *dissentient* votes from about *half* the number of Warrant Officers addressed by me.

A considerable number of my appeals have come back to me through the "Dead Letter" Office. On some, I find "refused;" on some, "not found;" on some, "dead;" on some, "declined;" on others, "England." From one Warrant Medical Officer it is my boast to record that I have received a note of a rich and a rare order. He tells me he is too old in the horns to be duped: that he is too ancient a bird to be caught by chaff.—thereby insinuating that my present project is to endeavour to make a *nice thing* out of my brother officers, forsooth! But I am quite philosopher enough to know that in all our shifts and walks through life we must expect to find the road strewn *here* with flowers, and *there* with thorns.

The Editor of the *Indian Medical Gazette* (a gentleman holding high official position, and who has always greatly interested himself in the interests of our Department) writes in his *Gazette* for June.—

"The Department has delayed taking action for the re-organization of a Widows' and Orphans' Fund, until its *position* should be finally determined. There is now no reason for delaying any longer. A portion of Mr. Tait's report, (his final opinion was withheld in the absence of further information which he required, and, we believe, of further payment,) together with some preliminary tables for calculating the probable amount of mortality and number of annuities, as prepared by Mr. Tait, (an actuary engaged in drawing up the rules for the Fund of eight years ago,) are with us, and we shall be happy to render any assistance in our power for the purpose of bringing the matter to an issue."

And again he writes:—"All subscriptions, of which a graduated scale will be necessary, should be made *compulsory*; AND WE BELIEVE THE GOVERNMENT WOULD—under the circumstances of the *failure* of the former fund, *for want of Government support*, and because THE COURT OF DIRECTORS HAD PROMISED IT—take the Fund under its own management. We shall be glad to receive a draft embodying the regulations of the new scheme." The Editor of the *Indian Medical Gazette* further on again writes.—"The Subordinate Medical Widows' and Orphans' Fund in the Madras Presidency works well, and it should be taken for a guide." I have addressed the Secretary to that Institution, begging he would do me the favor to furnish me with the latest Audit Report of that Fund, and the most recently published pamphlet regarding its working, and the details thereof. Aided by such information, I hope to experience no difficulty in framing a rough draft of a scheme for the organization of our Fund, which I shall transmit to the Editor of the *Indian Medical Gazette* for publication or review.

That the Editor of the *Indian Medical Gazette* plainly thinks, as I do myself, that we *ought* to have among our body a Widows' and Orphans' Fund you may see from what he here says.—"The cause of the widows and orphans of the Subordinate Medical Department has our liveliest sympathy. It was with great grief that we saw, a few years ago, what might have been the nucleus of a valuable *new* Fund legislated away to those who remained of the subscribers to the old one."

True, Government in its new Warrant for our service gives to our *Widows* a small pension, and indeed I regret to have to write that some of my Department have addressed me to the effect that they thought it sufficient! Government, in drawing up the scale, never did consider themselves, I am certain, that the allowance to be given to widows of our service would, *of itself, be ample and sufficient to meet all purposes*.

You may urge that you have your money in Banks, or that you are a member of a Life Insurance Company. The one may any day go to "eternal smash"—the other, I will let this quotation speak for:—

Provision made for a member or members of one family in a Pension Fund is not so heavy a tax on one's resources as that made by keeping up a Policy on one's life, where a large sum must be insured, the interest whereof is intended to constitute an income, and which shall yield the amount of the required provision.

[illegible] to reason, [illegible] Life Assurance Tables [illegible] certain that, sooner or later, the Policy [illegible] insured is sure to die at some time; whereas [illegible] Pension [illegible] allow for the chances, according to the law of mortality, [illegible] the person [illegible] time [illegible] latter [illegible] described [illegible] that provision had [illegible] secured, [illegible] obtained, [illegible], the [illegible] which had been taken [illegible] to grudge the expenses incurred, [illegible] saved—[illegible] the advantage that would [illegible] which none could speculate.

[illegible] Policy on one's life, the trouble in obtaining [illegible]—Trust [illegible] of which every one [illegible] relatives [illegible]—the Trustees, [illegible] very [illegible] after oneself; and at last no [illegible] representative [illegible] to the ultimate [illegible] Fund. In a Pension Fund, however, the Fund itself [illegible] for the [illegible] subscribed for, and all obligations to [illegible] friends [illegible] needless.

This letter has gone over more space than I intended. [illegible] my last appeal to you on a subject that ought to be dear to your hearts. If you unanimously join me, I shall succeed; if you do not, it is but left for me to [illegible] failed to establish among us a Fund for the relief of our [illegible] and our orphans.

I am, Dear Sirs,
Yours very truly,
SUB-MEDICUS.

Short Notices of Recent Books.

Irritability: Popular and Practical Sketches of Common Morbid States, etc. By JAMES MORRIS, M.D. London: Churchill, 18[illegible].

With the aid of a well-stored "commonplace book" and a tolerably fluent pen, Dr. Morris has compiled a little book on a subject which not all the philosophy of the age can fathom to its lowest depths. The matter of irritability and its immediate cause are two of the most complex problems in the whole range of physiology. Why it is that certain portions of the frame are more irritable than others can hardly be explained, as Dr. Morris fairly admits, by any hypothesis of "nervous supply." Nor is it by any means an easy task to correlate into its proper condition that general irritability of the body which we not unfrequently find without any apparent lesion. Dr. Morris does not attempt to lay a scientific analysis before his readers, and we are therefore hardly called upon to criticise the opinions which he very sketchily puts forward. His book will be found a pleasant companion by both professional and lay readers. To the former it will supply old ideas more systematically arranged than is the case in most popular works, whilst to the latter it will give ideas of an entirely new order. The labour, if not of a *student*, or at least a scholar, it is vigorous in style, and fertile in apt quotation.

Thoughts of a Physician: being the second series of Evening Thoughts. VAN VOORST. London, 1868.

A member of our profession has put together a number of moral essays which are of the emotional rather than the philosophic school, and which appeal to the *eye* of inner consciousness rather than to the material inferences which the contemplation of what metaphysicians call the [illegible] would tend to develope. "A physician" is nothing if not a man of high mind and gentle Christian bearing, and whatever bias his readers may have, whether they be Comtists or Evangelicals, they cannot fail to profit by his sound good sense and his honest, homely, kindly way of putting the every-day things of life before them. We commend this little book to the notice of our readers, young and old. They cannot read it without having some of the rough varnish of worldliness rubbed off, and a little of their softer nature exposed.

The Action, Use, and Value of Oxygen in the treatment of various Diseases, etc. By S. B. BIRCH, M.D. London: Churchill. 1868. 2nd Edition.

Those who have faith in a panacea will find a treat in Dr. Birch's pages. The author has a profound faith in the ad-

[illegible] We [illegible] As [illegible] argument [illegible] Dr. [illegible] On the [illegible] to the value [illegible] of potass[illegible] which are [illegible] states of the [illegible] a great deal to be said for and [illegible] A [illegible] can be advanced in favour of the use of oxygen [illegible] in Dr. [illegible]'s book, and [illegible] But we should hesitate to accept [illegible] otherwise than with the proverbial grain [illegible], which is such a valuable preventive of prejudice and [illegible].

The Medical Profession and its Educational and Licensing Bodies. By J. D. Mapother, M.D., Queen's University, Professor of Anatomy in the Royal College of Surgeons, Ireland. Dublin: Fannin, 1868.

This is the essay which gained the first prize of £100 established by the will of the late J. W. Carmichael. It is the essay which caused too much bitter controversy in the London Medical journals, the reason of the controversy being that Dr. Mapother was himself one of the Council whose duty it was to adjudicate on the prizes. *Prima facie*, it seems an ugly affair, but really it is not so. Dr. Mapother took no share in the election of the sub-committee to whom the essays were sent in; he carefully abstained from attending the meetings; he informed no one of his intended competition, and he forwarded his essay in print. The book is a pleasant sketch of the profession and its institutions, and is totally in accordance with the condition of Mr. Carmichael's legacy. Naturally, it deals more fully with Irish medical affairs than with others, and for this reason, while it does some slight injustice of omission to the Profession in England, it will delight the hearts of old Dublin men by its pleasant-running commentaries on the men and the schools which were once so dear to them. Dr. Mapother is inexhaustible in his support of facts, and he displays an aptness at quotation which shows no mean literary knowledge.

Hoarseness, Loss of Voice, and Stridulous Breathing, in relation to Nervo-muscular Affections of the Larynx. By Morell Mackenzie, M.D. 2nd Edition. London: Churchill, 1868.

There is little to notice in this edition of Dr. Mackenzie's book, beyond the fact that it is a considerable enlargement of the first issue. The method of applying the electric current is exceedingly ingenious, and will, we should think, be found very useful in practice. We must, however, object to the strange ambiguity with which the author expresses himself in reference to the form of electricity he employs. The reader is left completely in the dark as to whether Dr. Mackenzie employs the galvanic current pure and simple, or the induced current of the magneto-electric machine—in other words, whether galvanisation, as the Germans say, or Faradisation, has been employed. Indeed we are dumb-founded [illegible] at reading the declaration at the end of the author's [illegible] "The source of electricity is not a matter of any importance. I find equally good effects follow whether a battery or electro-magnetic machine is employed." S[illegible] listen to that. What would Duchenne, or R[illegible] say to so bold an assertion. We trust some of our [illegible] may one day give us their opinion on the respective [illegible] from [illegible] currents. Dr. Mackenzie says nothing about interrupted currents.

A Manual of Materia Medica and Therapeutics. By J. Forbes Royle, M.D., F.R.S., and Frederick W. Headland, M.D. Fifth Edition. London: Churchill, 1868.

Like most of Mr. Churchill's [illegible] this new edition of Drs. Royle and Headland's [illegible]. Still we must confess that it has always been a puzzle to us why it has been so largely employed as a treatise on therapeutics. As a matter of fact the matter devoted to the action of drugs, although [illegible], is of the most [illegible] to the [illegible] whole text. In [illegible] Materia Medica the work is [illegible] indeed, as regards [illegible] of drugs, and their characters, Dr. Royle's [illegible] our language possesses. But in [illegible] regard to their actions, or the actions [illegible] drugs in the treatment of disease, it is [illegible] as we know of. That we may not be [illegible] prejudice, let us take a fair example of the author's mode of dealing with therapeutics. Bromide of potassium is admittedly one of the most valuable drugs in the pharmacopœia, yet this is all we find about its uses:—"[illegible] *Bromide of Potassium*. It has a special power of [illegible] of the nervous system, and is [illegible] in cases of sexual excitement or hysteria. Is much used in epilepsy. In large doses acts [illegible] as a narcotic." Again, nothing is said as to the therapeutic advantage of either electricity or hypodermic injection. Assuredly, at a time when both these aids are so largely used in medicine, the student ought to learn something of the mode of [illegible]. Another feature to which we would call attention is this: the doses in most cases are much larger than it would be safe to employ them in. Who would like, for instance, to administer "much more" than a grain of a good extract of *Cannabis Indica*. Surely it is not safe practice to put down the minimum dose of *Resin of Podophyllum* at ½ a grain; we think most practitioners would put it down at no more than ¼ grain. As a Materia Medica, this book excels; as a treatise on therapeutics, it is at least very meagre and elementary.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, 19th June, 1868.

WITH the closure of the various Societies, the medical world begins to fall into its usual summer inactivity. The General Council has not yet held its session; it will meet on Wednesday next, and there is really very little of interest for your correspondent to note. The Edmunds and Eastlake affair is the only little bit of scandal afloat; but even of that I can tell you nothing till my next despatch. There are two actions, one by Miss Firth, a midwife, against Dr. Eastlake; and another by Dr. Eastlake against Dr. Edmunds, the defender of the Ladies' Medical College. It is thought that a good deal of evidence of a savoury character will be produced. One of the cases was to have been heard yesterday, but as no report has been published, I take it that the delay is owing to press of records. There has certainly been a good deal of strong language employed on both sides, and as Dr. Eastlake is an accoucheur of very high standing and repute, he is thought to have been seriously affected by some of the reports which have been flying about.

The labours of the "Association for the Improvement of Workhouse Infirmaries" have not been devoid of fruits. Already a good deal has been done in the way of reforming the Unions, and of providing better medical attendance and more perfect hygienic arrangements. But a further step is now about to be taken in the proposed appointment of six or seven new Medical Inspectors. The new posts will be worth from £800 to [illegible] a year, but will, of course, be given away to the friends of politicians whose Parliamentary career is one of "feathering their own nests" in the most perfect manner.

The *British Medical Journal* deserves some credit for being the first in this country to call attention, amid a good deal of opposition, to the great importance of protoxide of nitrogen as an anæsthetic. There can now be little doubt that, for the smaller class of operations, as abscess-opening, tooth-drawing, &c., it is one of the safest, if not the safest of anæsthetic agents. It seems to act by producing asphyxia without giving rise to any convulsive movements. One of the most alarming effects which it gives rise to in every case is the intense purple congestion of the head and face. This it was that in the first instance deterred practitioners from employing the protoxide. The symptom, however, though ugly in appearance, is really not of a formidable character.

It is said that Mr. Gladstone will be made Chancellor of the University of Edinburgh. At all events, by many of the graduates his election would be regarded as an event of the greatest advantage to the University. Dr. Lyon Playfair has been mentioned as the future representative of the Scottish Universities. It will strike your readers, therefore, with no little surprise, to learn that Dr. Prosser James has "acceded to a request to come forward as a candidate." Dr. James is a graduate of St. Andrew's, and is one of the Physicians to the St. John's Hospital for diseases of the skin. I believe he is also London Editor of the *Medical Press and Circular*, a journal which is remarkable for its great vitality.

The "Chemical Society" has completed its first session, and I think I may say a session of usefulness. It has not, however, turned out as its warmest projectors anticipated. It has been but a counterpart of the "Medical Society of London," rather than an association for the advancement of therapeutics. It is therefore greatly to be hoped that, in its next session, the members will make some effort to carry out the plan originally projected, and institute committees for the examination of cases of interest, and the investigation of the action of drugs. The committees of the "Medical and Chirurgical Society" move along at a snail's pace. The committee appointed to inquire into a report upon the condition of Electro-Therapeutics, though for some years at work, has not yet published any of its proceedings; and from what I heard the other day, is not likely to do so for a long time to come.

The *Queen's University in Ireland* is making a bold stand for representation in Parliament. On Monday last, a deputation of the graduates waited upon Mr. Disraeli and urged their views upon his attention. The deputation was introduced by the Bishop of Killaloe, and among the distinguished graduates was Dr. Mapother, the Professor of Anatomy and Physiology in the Royal College of Surgeons, Ireland. Mr. Disraeli gave the usual stereotyped reply, which it is the fate of so many deputations to receive. The matter was brought before the House of Commons last night by Mr. Chichester Fortescue, who proposed that, in future, the graduates of the Queen's University, nearly 1,000 in number, should be permitted to vote in the elections of the members for Trinity College. The motion gave rise to a spirited debate, but was negatived on division: 173 voting for, and 183 against. But the defeat has this advantage, it shews how large a body of legislators is in favor of extending suffrage to the Secular University.

The *Lancet* of the week before last, in an article of much ability, condemned the principle upon which the election of Fellows takes place at the College of Physicians. It concluded by regarding the Council as a Tory Club of most Bœotian type. Perhaps the language of the *Lancet* has been a little too violent. It must, however, be admitted that the minds of the Councillors, if guiltless of partiality, are not beyond the suspicion of bias. There cannot be the least doubt that young and undistinguished men are often elevated to the place of honour over the heads of earnest and eminent laborers in the field of science, whom the Council, for reasons best known to itself, persistently and determinedly ignore. The *British Medical Journal* takes the part of the College authorities, and in a leader, which if not dispassionate, is at least pungently satirical and epigrammatic, smiles at the somewhat excessive comments of its contemporary.

University College has just established a department for sick children. This is certainly a step in the right direction, and one which we should like to see imitated by similar institutions. The front of the north wing, which was formerly tenantable by the nurses and sisters, has been appropriated for the children. The beds have been divided as follows:—Dr. Harley, eight beds; Sir Henry Thompson, six; Mr. Berkeley Hill, four; and Dr. Hillier, two.

All the large provincial towns in England are taking into consideration the advisability of utilizing the provisions of the "Contagious Diseases Act." Birmingham especially is making a most energetic move in this direction. What is more surprising is that, in many localities, the clergy are giving the proposed scheme their warm support. This looks well, for it argues against the religious objections which have really been the most formidable stumbling blocks in the way of efficient legislation. A meeting of the friends and members of the "Association for extending the Contagious Diseases Act to the civil population" will be held on this day week, and as the chair will be taken by Sir Thomas Watson, we may expect a large attendance of the leading stars of our profession.

The *Lancet* of Saturday contains a very able letter from Dr. Hughes Bennett, of Edinburgh, on the subject now so much discussed—medical education. Dr. Bennett quite agrees with the opinions expressed by Dr. Parkes in his recently published pamphlet. He thinks that the practical should in all cases precede the systematic method of instruction. He disagrees with Dr. Parkes about remuneration, considering that teachers ought to be well remunerated for their services, and that so important an office as that of lecturer on a scientific subject should not be merely honorary. On the whole, he concurs in Dr. Parkes's opinion.

Progress of the Medical and Collateral Sciences.

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The Cholera Fungus.—At a meeting of the Royal Microscopical Society of London on the 10th of June, Dr. Thudichum read a very important paper on the cholera fungus of Professor Hallier. He endeavoured to prove by chemical and spectroscopical researches that cholera is solely due to certain changes of a chemical character which occur in the blood, and have no relation, save that of coincidence, with the fungi found in the discharges of cholera patients. It would be impossible to deal with Dr. Thudichum's arguments till his paper is published, as he promises it shall be, in a separate form. It is worthy of note, however, that a reaction is taking place among scientific men in England, and that the fungus theory is not likely to have it all its own way. In a series of replies to Dr. Gavin Milroy, the Rev. J. M. Berkeley, the highest authority on fungi in Europe, states that he has no faith in the theory of a cholera fungus. His answers were published in the *Gardener's Chronicle*, and through that circumstance have escaped the attention of medical men. The following is Mr. Berkeley's reply to one of Dr. Milroy's queries:—"I do not believe in Hallier's views of the connection of cholera with parasites on rice. I am taking great pains to ascertain what are the rice parasites. I believe Hallier's notions to be entirely theoretical. That some cutaneous disorders arise from fungi is pretty certain; but there is nothing to shew that fevers, or other contagious or infectious disorders, arise from the same cause. It was supposed that diphtheria depended on a fungus; but I have examined diphtheria membranes in which there was no fungus."

The Physiological Action of "Substitution Compounds."—It is a fact in organic chemistry that in certain substances an organic radical may be substituted for an equivalent of hydrogen without altering the fundamental chemical properties of this substance. But it has been recently shown by Drs. Fraser and Crum Brown of Edinburgh, that though the chemical constitution of the substance may not be materially altered, its physiological action is seriously changed. We have before referred to the remarkable series of researches in which those chemists demonstrated that, by substituting methyl for an hydrogen equivalent in the alkaloids morphia, brucia, strychnia, etc., they obtained compounds which, in doses containing a large quantity of the alkaloid, were nevertheless almost completely inert. Singularly enough, the same subject has been taken up by, and have given similar results to, MM. Jolyet and Cahours. The substance examined by these *savants* was *aniline*. Now aniline itself is known to be a powerful nervine medicine, having a very distinct stimulating action on the spinal cord, and which in large doses produces convulsions. By adding (by substitution) to the aniline radicals, as methyl, ethyl, and amyl, the French chemists obtained substances which were not only not productive of convulsions, but were powerful narcotics or paralysants. MM. Jolyet's and Cahours' paper was brought before the French Academy on the first of June.

Relative Actions of Theine and Caffeine.—In the [illegible] for June, M. Leven, who has before written on the subject of theine, publishes some notes, in which he states that, contrary to the general supposition, caffeine and theine have not the same physiological action. Firstly, he says, caffeine is at least twice as strong as theine. Theine, he says, produces convulsive movements of the limbs, which have not been noticed with caffeine. Both alkaloids excite the heart, and the respira-

[illegible]

Digitalis in heart disease. [illegible] that [illegible] the sys- [illegible] Pro- [illegible] College, [illegible] which appeared [illegible] May [illegible]. Dr. M[illegible] high authorities, and [illegible] how the [illegible] action of digitalis is, to a large extent, [illegible] He would not recommend its use in fatty degeneration, or

[illegible] Navarre in b[illegible]

Subcutaneous Injection of Morphia in Asthenia.—[illegible] the patient.

Prize-Therapeutics.—[illegible] Academy [illegible] essay [illegible] Secretary [illegible]

The Structure of the Liver.—Herr [illegible] of Zurich [illegible] physiologists.

The Cavity [illegible] of Man.—[illegible]

Cure of [illegible].—Dr. K[illegible], in the *[illegible] Medical* [illegible] he has found the following [illegible] sulphide of carbon are [illegible] plug of cotton wool, which [illegible] pressed closely [illegible] behind the ear, and kept there [illegible] smarting and redness, [illegible] the headache.

Eczema associated with Varicose Veins.—In the *Journal [illegible]* [illegible] M. Bourguignon gives high praise to M. [illegible] treatment for this affection. Even in [illegible] several years [illegible] found the effect [illegible] starch, [illegible] is then covered with a starch [illegible] The bandage may [illegible] fourth or fifth day.

The Tactile Corpuscles in Man.—M. Charles Rouget has a paper in the *Comptes Rendus*, April 27th, in which he asserts that in the [illegible] corpuscles, such as those seen in the skin of the [illegible], the nerve [illegible] unquestionably runs up and [illegible] the corpuscle. Some of the filaments penetrate [illegible]. He says this will be clear to any one who follows his method of manipulation. He first soaks the tissue in slightly acidulated water; then he adds strong nitric acid. This does not stain the corpuscle, but it brings out the nerves most distinctly, and of a markedly yellow colour.

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE POISON OF SNAKES.

By J. Fayrer, M.D.

Present Dr. Fayrer, Dr. F. Stoliczka and Mr. V. Ball, Curators of the Indian Museum, and Mr. Seeva.

Experiment No. 1

August 6th, 1868.—At 12-13 p.m. a Cobra was bitten in two places, about six inches from the head, where the scales had been previously scraped off, and in the mouth, by a very large and powerful light-colored spectacled cobra, 5 feet 6 inches in length. The bitten snake was then put into a separate box with a wire gauze front, for observation. There could be no doubt in this case that the bites were severe, and that the poison was inoculated. At 2-30, when I left, the snake seemed to be unaffected. At 9 p.m. Mr. Seeva reports that the bitten Cobra does not seem to be much affected.

2-30 p.m., 8th August, about 50 hours afterwards, this snake is apparently unaffected.

Experiment No. 2.

6th August.—A Bungarus Fasciatus, nearly full grown, was bitten by the same Cobra at 12-22 p.m., at about eight inches from the head. The snake was bitten twice: the Cobra took firm hold, and implanted the fangs deeply.

At 2-30, when I left, there was no change; the Bungarus seemed unaffected. The Bungarus died at 7-30 p.m. of the 7th, about 29 hours after being bitten. At 1 p.m of the 7th, he still seemed well.

Experiment No. 3.

At 12-27 p.m., 6th August, an innocuous snake, Dendrophis, long and delicate, beautifully marked with red spots along the spine, was bitten by the same Cobra, about the middle of the body.

12-30.—Appears slightly affected and is sluggish. It does not try to make its escape so vigorously as it did.

12-53.—Sluggish, but, apparently, very slightly affected. The Cobra is apparently partially exhausted, as it had been made to bite two other snakes in two places, and in this forced biting much of the poison is lost.

12-54.—Bitten again, near the same spot, by a fresh and large black Cobra. It soon became very sluggish, but made no convulsive movements. It simply seemed to become paralyzed, and was dead at 1-8 p.m. Death occurred in 14 minutes after the second bite, in 41 minutes after the first bite. The effect of the poison on the harmless snakes seems, from this experiment, to be comparatively feeble and slow. The bitten snake was small and delicate, the Cobra was fresh and very powerful, and at least 5½ feet long.

Experiment No. 4.

A Dryophis, (green tree snake,) about 3½ feet long, was bitten by the first mentioned large, light-coloured Cobra, in the middle of its body, at 12-28 p.m.

12-52.—Slightly affected, rather sluggish; but it is combative, and attacks if approached. At 12-55 it was bitten again by the large black Cobra mentioned in Experiment No. 3. It rapidly became affected. Became very apathetic and sluggish. At 1-3 p.m. apparently nearly dead. At 1-4 dead.

This experiment, like No. 3, shews the effect of the Cobra poison on the innocuous snake. The Dryophis died in nine minutes after the second bite, in 36 minutes after the first bite. The first Cobra was evidently exhausted. The second was fresh and vigorous, having only once bitten the Dendrophis. I believe that, had it bitten a warm-blooded animal, of about the same strength as the Dendrophis, death would have occurred more quickly. The Dryophis was twice the size of the Dendrophis, and, although it was bitten after it, died in a much shorter time. It was either more susceptible, or more deeply bitten.

Experiment No. 5.

A pariah dog was bitten in the thigh by a large and fresh black Cobra, at 12-37 p.m. Immediately afterwards, about 20 drops of a solution of strychnia, (of the strength of gr. 1 to ʒi,) equal to ⅓rd of a grain, were injected with a hypodermic syringe into the same thigh.

12-39.—Tetanic twitchings of the limbs commenced, and gradually continued, becoming more intense, till, at 12-42, the animal was in a state of general tetanic spasm of all the muscles of the body. The ears were erected, the pupils dilated to excess, the body rigid, and the limbs extended in an intense state of tetanic convulsion.

12-43.—Dead. Spasm relaxed just before death.

In this case death occurred in six minutes, and was due entirely to tetanus. There was neither time nor opportunity for any manifestation of the effects of the snake-poison.

Experiment No. 6.

A pariah dog was bitten in the thigh by a powerful and fresh black Cobra, at 12-45. Immediately afterwards, about 15 drops of the strychnia solution were injected with the hypodermic syringe into the same thigh.

12-46.—Bitten leg partially paralyzed, and dragged. The dog ran across the room, the legs twitching violently.

At 12-47 it fell over in a state of rigid tetanic spasm.

12-48.—Every muscle in the body in a state of rigid spasm. But it was remarked that the bitten leg was not so much affected by spasm as the other leg. The paralyzing action of the snake-poison, apparently, so far counteracts the action of the strychnia.

12-50.—Spasm relaxed.

12-51.—Dead.

Death occurred, evidently from tetanus, in six minutes.

Experiment No. 7.

A full-grown male cat was bitten in the thigh, at 1-20 p.m., by a Daboia Russelli, about two-thirds grown, and, apparently, quite fresh and vigorous. Ten drops of a solution of strychnia, of the strength of gr. 1 to ʒi, that is, ⅙th of a grain, were injected at 1-23 p.m.

1-24.—The bitten leg is partially paralyzed. The cat lies quietly, looking about it.

1-25.—Spasmodic twitchings began.

1-26.—Stretched out in a violent tetanic spasm. Pupils very widely dilated.

1-27.—Spasm relaxed. Dead. In this case the strychnia seemed rather to accelerate death than to improve the animal's condition. The action of the snake-poison had clearly commenced, but it was at once obscured by the symptoms of poisoning by strychnia, and the cat died in a state of complete tetanus. The strychnia was suggested as an antidote to snake-poison. These experiments do not support this theory.

Experiment No. 8.

A large Dhamin (Ptyas Mucosus) was bitten by a fresh and powerful Cobra, at 12-53 p.m., about eight inches from the head, the scales having been previously scraped off, to ensure the penetration of the Cobra's fangs. Bitten also in the mouth, at 12-54, by the same Cobra.

At [illegible] p.m. still active.

1-10.—Appears slightly sluggish.

1-30.—The same.

At 2-30, when I left, it was in the same state.

On the 8th August I learnt that the Python died at 3-20 p.m., rather less than 26 hours after being bitten. It appeared to have partially recovered from its lethargy during the day, but relapsed and died. As it had been in the cage for some time, and was well and active, there can be no doubt, I think, that its death was due to the Cobra bite.

EXPERIMENT No. 9.

A very large and powerful Cobra, the same that bit in experiments 1, 2, 3, 4, had about 25 drops of the solution of strychnia (gr. i to ʒi) injected into the anterior part of its body on the ventral aspect, at 1 p.m.

At 1-2 p.m. muscular twitchings began. The hood seemed to be shrivelled up and contracted. The head was erect, and longitudinal folds formed in its skin.

At 1-4 p.m., in a state of violent tetanic spasm. The body set in short waves, as though it had been petrified in that condition, and the whole curved rigidly to one side.

1-6.—Continues in the same state, rigid as stone.

1-10.—Spasm relaxing; twitchings generally throughout the body and the head.

1-12.—The only sign of life, an occasional twitch.

Dead. 1-14.—Spasm relaxed.

EXPERIMENT No. 10.

A Cobra, about 4 feet long, was injected with 15 drops of Cobra poison, partly taken from another Cobra, partly from itself, at 1-56 p.m., at about 4 inches from the head.

At 1-58, twitching of head and neck when erect. Hood began to shrivel.

At 1-59, twisted itself up into a rigid series of coils, like a snake cast in metal, in which state I lifted it up with a stick and rolled it on the floor.

It remained in this condition, the head twitching.

At 2-25 the coils were unfolded, and it was quite dead.

The symptoms of poisoning here were more those of strychnia than snake-poison; and I cannot help thinking that such may possibly have been the fact. The same hypodermic syringe was used as in the other experiments, but, as it had been most carefully washed several times before the experiment, it is difficult to conceive how such can have been the case, unless a very small quantity had been left imbibed by the packing of the piston. As the result was so different to that of other inoculations of Cobras by Cobra poison, I cannot help suspecting this may have been the case, and it is sufficient to throw a doubt on the validity of the experiment. It would, however, prove the extreme susceptibility of the snake to the action of strychnia.

EXPERIMENT No. 11.

At 2 p.m., a large Cobra had about 15 drops of his own poison injected with the hypodermic syringe, at about 8 inches from the head. The needle was inserted in the ventral surface, and it is probable the lung may have been penetrated.

At 2-5 p.m. the snake was moving about, apparently unaffected.

2-10.—He was [illegible] [illegible] rather [illegible].

2-30.—Apparently [illegible] [illegible].

At 9 p.m. it was reported by Mr. Seeva that the Cobra was very sluggish, and likely to die.

At 12-30, 8th August, the Cobra still alive, and apparently not affected, nearly two days after the experiment.

EXPERIMENT No. 12.

At 2 p.m., a large Cobra had about 12 drops of poison, partly his own, partly from another Cobra, injected about 8 inches from the head. No effect was apparent when I left at 2-30 p.m. But at 9 p.m. of the same date, Mr. Seeva reported that it died at 7-40 p.m. It became more and more sluggish and lethargic, until it was quite dead, but there was no convulsive movement and tetanic spasm.

It appears probable, to say the least of it, that death in this case was caused by the poison. It is possible that the needle may have penetrated the lung, or some large internal vessel, and that it caused death either by hemorrhage or embolism. I had not an opportunity of examining the snake after death, and I cannot, therefore, regard the experiment as conclusive.

The Cobras used in these experiments were remarkably large and vigorous.

PRESENT.—Dr. Fayrer, Dr. J. Ewart, Professor of Physiology, and Mr. Seeva, of the Indian Museum.

EXPERIMENT No. 13.

August 8th, 1868.—A full-grown Cobra had about 25 drops of fresh Cobra poison, taken from another snake immediately before the experiment was performed, injected by means of the hypodermic syringe into the body, at about 8 inches from the head.

At 12-50 the snake appeared unaffected in strength and activity, striking at anything that approached it; but it voided a large quantity of light brown fluid *per anum*.

On the 12th August it was still quite well.

At 2-30, when I left, it was as well as ever.

EXPERIMENT No. 14.

A half grown fowl was bitten in the thigh by a Daboia Russellii at 1 p.m.

It fell over in violent convulsions, as it was placed on the ground, and in less than 90 seconds it was completely dead. This is the most rapid action of snake-poison I have yet seen.

EXPERIMENT No. 15.

About half a drop of venom was with difficulty obtained from the same Daboia. These snakes, with their long mobile fangs, do not shed their poison into a shell or spoon covered with a leaf so readily as do the Cobras. This very small quantity of the venom was injected, by means of the hypodermic syringe, into the thigh of a half-grown fowl. At 12-2 p.m., when placed on the ground, it walked a few steps, as though nothing had happened. In about 80 seconds it suddenly fell backwards, and rolled over in violent convulsions. At 12-4-10, that is, in 130 seconds, it was dead. These two experiments shew the terribly deadly nature of the Daboia's poison, and also the difference of its mode of action from that of the Cobra. In the one case death being preceded by violent convulsions, in the other by paralysis and lethargy.

The quantity of the poison inoculated must have been very small in both cases, for the snake did not [illegible] [illegible] a very large amount of poison, and in the second experiment, where the quantity was certainly not more than half a drop, part of that must have been absorbed by the packing of the piston, and a small part lost by adhering to the syringe, or by escape, owing to the piston not being absolutely air-tight. It is also worthy of notice that this is the same snake that had been used in former experiments, and that it has been in confinement now for some weeks. It appears that it and its companion have eaten some small frogs lately.

EXPERIMENT No. 16.

One drop of poison, taken from a [illegible] Cobra, was injected, at 1-14 p.m., by means of the hypodermic syringe, into a fowl's thigh.

In fifty seconds it was walking about with that leg partially paralyzed. At 1-16 it was pecking at the punctured part; wings drooping. At 1-19 it sat down, head hanging, and supporting itself with the point of the beak resting on the ground, growing gradually more comatose, and generally paralyzed.

At 1-22 in the same state. One drop of the strychnia solution, about $\frac{1}{20}$th of a grain, was injected into the thigh. At 1-23½ it appeared quite paralyzed. When thrown from the hands to the ground, the wings involuntarily performed the movements of flying, and it alighted gently, but lay there perfectly motionless. At 1-25 tetanic twitchings of muscular system were apparent. At 1-26 general muscular quivering, and slight spasmodic extension of the legs. At 1-27½ dead. The contents of the cloaca were evacuated just before death. The action of the strychnia was apparent, but it did not in any way seem to ameliorate the condition induced by the Cobra poison.

The fowl was larger and stronger than those in the preceding experiments, and a full drop of poison was injected. Death did not occur for 13½ minutes, and the symptoms differed from those in the birds poisoned by the Daboia, whose more rapid death was preceded by violent convulsions.

Experiment No. 17.

A large pale-colored Cobra had 10 or 12 drops of freshly extracted Cobra poison injected into the anterior ventral aspect of the body, about 8 inches from the head, at 1-43 p.m.

At 2-30 the snake seemed unaffected. On the 12th August, at 5 p.m, the snake remained perfectly well.

Experiment No. 18.

A large pale-colored Cobra had ten drops, equal to $\frac{1}{6}$th of a grain, of a solution of strychnia injected into the anterior part of its body, near the head. at 1-50 p.m. At 10-52 tetanic twitchings commenced. At 10-53 it became rigidly fixed in undulating curves, with a general lateral curve of its entire length. The hood completely shrivelled up, and the head twisted to one side. In this spastic condition the snake was as rigid as a bar of wood. In 7½ minutes after the strychnia had been injected, the Cobra was quite dead; muscular twitchings had passed away just before death; rigidity remained for a short time after it.

The snake, notwithstanding its cold blood, is very susceptible to the poisonous effects of strychnia. The object of the experiment was not only to test the action of strychnia on the snake, but also to shew that the method of injecting the poison was an effective one, and that as the snake-poison was injected in precisely the same way, failure in its action could not be attributed to the mode of administration.

Experiment No. 19.

At 2-6 p.m. a full-grown Cobra had six drops of fresh Cobra poison injected under the skin with the hypodermic syringe, about 8 inches from the head.

Seven minutes after voided a quantity of dark-colored fluid from the cloaca.

2-30.—Unaffected.

On the 12th, at 5 p m., still quite well.

In these three experiments, 13, 17, 19, the Cobra poison, though fresh and thoroughly well injected into the Cobra, had no effect. Four days after the experiment, the snakes injected were unaffected. I am, however, still not satisfied that the Cobra may not be poisoned to death by the venom of its own species, and shall make further experiments before recording any decided opinion.

Experiment No. 20.

Ten drops of carbolic acid were injected, at 2-9 p.m., by means of the hypodermic syringe, into a Cobra, at about 8 or 10 inches from the head.

In half a minute it was affected with muscular twitchings and tremor; the anterior 12 inches of the snake affected with paralysis agitans.

Vermicular movements throughout the body.

2-12.—Universal paralysis.

2-14.—Dead.

The snake is evidently very susceptible to this poison, as it also is to the strychnia. No warm-blooded animal could be more so. This, I think, seems to shew that, apart from any immunity peculiar to the reptilian circulation, it has a special toleration of the poison of its own species; for it certainly is not easily, if at all, affected by it, as the majority of the experiments hitherto performed tend to shew that neither by inoculation of the poison by the syringe, nor by biting, is any deadly effect produced.

In my last report, in alluding to the poison fangs of different snakes, I described them simply as they appear, and not according to their development. But as this may be misunderstood, I would here remark that, thong different in form and size, they are all developed on, and are modifications of, the same plan. The fang is a long tooth, consisting of dentine and pulp. This is folded on itself, and thus forms the poison duct, constituting a conical tube. The canal thus formed lies on the convex side of the fang, which is recurved, and is in front of the pulp. The poison canal is, in fact, enclosed in a circular canal of dentine, the fibres of which are arranged vertically around the duct.

This inflection or involution is more or less perfect according to the age of the tooth, or according to the genus of the snake. In some, as in the Hydrophidæ, the inflection is never completed, and the canal remains an open groove.

In the Elapidæ, as in the Naja and Bungarus—the involution is sufficient to close the canal, but the vertical line of union, as well as the triangular opening at the base, and that of exit near the apex, can be seen: whilst in the Viperidæ and Crotalidæ the involution is so complete, that the tooth presents the appearance of a perforated tube, and the inflection or involution of the margins is not seen.

These poison fangs, which are connected with the maxillary bones, are anchylosed to them when they are in working order. The supplementary fangs, of which there is always a good supply in different stages of growth, are loose, and lie covered by the fold of mucous membrane and gum which envelopes the poison fangs, and protects them when not in use. A second, or even third, fang may be anchylosed with the principal one to the maxillary bone; and I have before me a skull of a Daboia, for which I am indebted to Mr. Seeva, in which this is the case; and where there are five well developed poison fangs on each side, of which on one side *two* are anchylosed to the maxillary bone. The muscular apparatus by which the fangs are moved, the jaws opened, and the poison gland made to shed its contents through the hollowed tooth, are very complex and beautiful. I hope, on a future occasion, to give some account of this, as well as of the osseous details concerned in the movements by which the deadly wound is inflicted.

ON CHOLERA.—No IV.

By C. Macnamara,

Surgeon to the Calcutta Ophthalmic Hospital.

We may now briefly consider the circumstances of rather an important epoch in the history of cholera, noticing its appearance in Persia in 1821. I have already shewn that we have ample evidence to prove the existence of epidemic cholera on the western border of India throughout the years 1819 and 1820. In place, however, of supposing that the influence [illegible] Persia [illegible] 2 years, [illegible] results in [illegible] in several [illegible] as follows: "[illegible] disease was brought to [illegible] M[illegible] a large, in a [illegible] the rivers and routes most frequently [illegible] Let us, however, [illegible] recorded by an [illegible]

Mr. [illegible] M[illegible] on the 8th of July, 1821, and [illegible] the convoy, "he [illegible] had been [illegible] of the [illegible] said Muscat which had committed [illegible] that he had [illegible] that Muscat [illegible] extended over the greater part of Oman." "It broke out simultaneously, first at R[illegible], [illegible] miles from Mattra, without any known means by which contagion could have been conveyed. A ship with [illegible] from Zanzibar, which had lost [illegible] on the passage, had [illegible] to Muscat, but [illegible] had any [illegible] there." "On the 18th of July we [illegible] at Kishm, where epidemic cholera was raging. Many of the [illegible] had fled to Meenab, to [illegible] The first case that [illegible] was [illegible] house of the Sheikh, who [illegible] had [illegible] communication with anyone [illegible] The disease had by this time also reached [illegible] and Bahrein, but no communication had taken place [illegible] either with these places or Meenab." On the 20th of August the epidemic broke out at Busheer,‡ [illegible] at Kazeroon and Shiraz, in which [illegible] in the Prince's Harem. The disease [illegible] and our author's companion, Mr. [illegible]

Mr. [illegible] the disease until he [illegible] 1822. He [illegible] observes that it is [illegible] epidemic cholera [illegible] to have travelled from [illegible] Hamadan and Senna, and [illegible] could be obtained [illegible] appeared [illegible] at Sultaniah" [illegible] August, 1821, the [illegible] had [illegible] Bagdad, [illegible] it was not [illegible] observed, that it [illegible] It [illegible] terrible havoc [illegible] Aleppo [illegible] was generated [illegible] M[illegible]

[illegible] situated on the [illegible] places it [illegible] generated [illegible] the [illegible] and in [illegible] 1823, cholera [illegible] and Antioch, [illegible] Mediterranean, and [illegible] of the [illegible]

[illegible] exists [illegible] these [illegible] 1829.

It [illegible] that [illegible] should have been [illegible]

From [illegible] Bengal Medical Board [illegible] we learn that cholera was [illegible] in the year 1821 [illegible] 1817. [illegible] very [illegible] with [illegible] Presidency [illegible] we [illegible] the disease.

[illegible] almost [illegible] the great outbreak which had arisen in 1817, [illegible] Asia [illegible] the three [illegible] The disease was still [illegible] regular periods of increase and diminution [illegible] its endemic [illegible] over the [illegible] Chittagong and the Delta of the Ganges, [illegible] subsequently discovered, [illegible] A [illegible] death-rate [illegible] the years 1818 [illegible] the Returns of the Madras Army. In 1818 [illegible] 416 men [illegible] but in 1822, the force having increased to [illegible] 839 deaths are recorded from the disease. In examining these Returns, we are struck with the marked difference which exists between the death-rate from cholera among our European and Native troops in India, amounting to 21 per 1000 in the former, and to 10 per 1000 among the latter. We shall subsequently [illegible] Bengal.

[illegible] the year 1827, [illegible] was very [illegible] Cuttack, [illegible] and the Madras [illegible] very [illegible] during May [illegible] "the greater number of cases [illegible] with [illegible] evidence of epidemic cholera in [illegible] Ganges.

[illegible] Madras Presidency [illegible] stations were [illegible] here and [illegible] the 58th Regiment, which was encamped at the [illegible] of volunteering for [illegible] [illegible] the 58th Regiment [illegible] received [illegible] disease was [illegible] cases [illegible] other places of [illegible] there. [illegible] mixed up together. The 53rd Regiment shortly after underwent their volunteering in the same neighbourhood and under the same circumstances with the 34th—of exposure to heat in camp and intoxication—yet escaped the disease. The 53rd had but two months before undergone a severe visitation, induced by marching and atmospheric influences, by which its susceptibility was exhausted, and the causes which proved so fatal to us were insufficient to reproduce it in them."*

In 1824 cholera was only generated to a slight extent beyond its endemic area. It broke out with considerable violence among the European Artillery and men of the 15th Regiment N. I. at Mhow, "the patients being attacked with vomiting and purging of a whitish-coloured watery fluid, the most awful collapse of the system ensuing, leaving but little time for the employment of remedies; there was nothing like reaction. The vital powers seemed completely exhausted by the first stroke. There were only three cases where anything like spasms appeared."† Concerning this outbreak of cholera, the Superintending Surgeon remarks—"The only troops of this division that have suffered from cholera were the 15th Native Infantry and European Artillery, which unfortunately passed on their route through the crowded and filthy cities of Indore and Oujein, while the dire disease was raging with great violence; whereas in Mhow, the station they had left, though only 12 miles distant from Indore, not a single case had occurred."‡

In the Jubbulpore district there was rather a severe, but short, outbreak of cholera in July; it did not affect the troops.

During the early months of the year 1825 we have a repetition of the old story—Cholera in Calcutta; the pilgrims at Pooree suffering severely, and the Government urgently called on to exert themselves in favour of these poor creatures. In April, May, and June reports were received from various districts in the Delta of the Ganges as to an increase in the number of cholera cases; from Ganjam and along the eastern seaboard a similar cry was raised, and later in the year from the western side of the peninsula at Mhow. Among the inhabitants of Calcutta and the city of Dacca, cholera was very prevalent again in August and September. Nevertheless, on the whole, India was comparatively free from the disease.

The following twelve months are of special interest with regard to the history of cholera, and I am almost entirely indebted for the information I have gained regarding this period to the reports and returns contained in the "Proceedings of the Medical Board." From these we shall find that the great epidemic, which spread over Europe and extended to America in 1830-31-32, arose in Bengal in 1826. This point has never, so far as I am aware, been insisted on. The cholera of 1830-31 is usually described as having originated in Astrachan, as follows:—"In 1823 it passed the Caspian Sea, and in the month of September showed itself in Astrachan. It made no further progress, however, in Europe until the year 1830. In that year, having appeared again at Astrachan in June and July, it extended rapidly through the eastern part of Europe."§ This account gives us but a very meagre idea of the origin of the great wave of epidemic cholera, upon the study of which we must now enter.

During the first quarter of 1826, cholera was evidently on the increase throughout the whole of Lower Bengal. Among the troops in the Presidency Circle, no less than 76 cases occurred in April, of these 38 died; but what is of more importance to notice is, that H. M.'s 31st Regiment at Dinapore was attacked by cholera in April, 1826, fifty-seven men having been seized with the disease, of these 23 died; and, at the same time, in the Regiment at Buxar, forty-nine men were affected with cholera, and twenty-nine died. From Dinapore, Dr. Dickson writes on the 4th of April 1826—"I am very sorry to report that cholera has again commenced its ravages at this station: the surrounding districts are, likewise, most severely affected."* The Superintending Surgeon at Benares, on the 13th of May, 1826, reports—"that, in the city of Benares, two or three hundred persons were daily carried off by cholera, and yet the troops and prisoners in the Jail remained entirely exempt from the disease, which, nevertheless, was most severe all over the Benares division." In the Cawnpore Circle, during the month of June, 64 European and 108 Native soldiers were attacked by the disease. We have clear evidence, therefore, of a most severe outburst of epidemic cholera, commencing early in 1826, throughout the whole of Lower Bengal, and gradually extending towards the north-west as far as the Cawnpore division, during the first six months of the year. Beyond this area, we hear of nothing approaching to an epidemic outbreak of cholera. The Saugor, Agra, Meerut, Kurnaul, and Nusseerabad divisions were absolutely free from the disease, with the exception of the usual sporadic cases which occurred there every season. Before the month of August cholera had subsided, but by no means disappeared, from Cawnpore eastward.

In November, 1826, we notice the first muttering of the storm from the west. The Superintending Surgeon of the Nusseerabad Division writes as follows:—"In the stations on the right banks of the Jumna, *viz.*, Delhi, Muttra, and Agra, the returns show that the Corps there have experienced, during the month, a slight *invasion* of cholera."

The above details are sufficient to give us an idea of the invading cholera of 1826; its steady advance from east to north-west as far as a line drawn about half-way between Cawnpore and Agra; its halting precisely as it had done in 1817, but apparently not invading Bundlecund (in the Nagpore Subsidiary Force the ratio of admissions to strength per 1000 for cholera was, in 1827, 0·605; in 1828, 1·120; in 1829, 1·517; and in 1830 there were no admissions at all); in other respects the phenomenon of the cholera of 1826 was an exact counterpart to that of 1817, and in all probability of 1783.

I would draw special attention to the observation of the Superintending Surgeon of the Nusseerabad Division as to the slight invasion of certain cities by cholera on the right bank of the Jumna, towards the close of the year 1826; the skirmishers, as it were, thrown forward by the invading power; the evidence of the potential force exercised by the disease in these localities.

Sir J. R. Martin remarks:† "I served in the General Hospital Calcutta, in March, 1827, the time referred to by Mr. Twining, when the house was filled with cholera patients, and when all of us, Europeans and Natives, were exhausted with the labours of attending on the sick, but none of us suffered from the disease." Maulmain, Arracan, Chittagong, and the whole Delta of the Ganges were, during the first quarter of the year, under the influence of a severe outburst of cholera.

In May, 1827, Dr. Taylor writes to the Board from Agra, reporting that cholera "has prevailed, in an epidemic form, in all the villages within several miles round Agra; an immense number have fallen victims to its destructive influence." Dr. Shipton, from the same place, remarks that 23 cases of cholera

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[*] Essays on the Epidemic Cholera of India, by R. Orton.

[†] Report by Assistant-Surgeon A. M. Clark. M. S. Proceedings of the Bengal Medical Board for [illegible]

[‡] M. S. Proceedings of the Medical Board.

[§] Reports on Epidemic Cholera, drawn up at the desire of the Cholera Committee of the College of Physicians, by Drs. W. Baly and W. Gull, London, 1854, p. [illegible].

[*] See also Dempster's account of this epidemic in the Transactions of the Medical and Physical Society of Calcutta, Vol. III., p. [illegible].

[†] The Influence of Tropical Climates on the European Constitution, by J. R. Martin, a new edition, 1856, p. [illegible].

[illegible]

a tendency to subside more speedily than its predecessor of 1817-18. During the year 1826, some 503 cases of cholera occurred among the European troops, and in the General Hospital of this Presidency, in 1827 three were 812 cases, in 1828, 691, in 1829, 632, and in 1830, 277 cases.

(To be continued.)

NOTES ON CINCHONA CULTIVATION IN BRITISH SIKKIM (NEAR DARJEELING.)

(Continued from Vol. III, No. 8, page 179.)

BY JOSEPH EWART, M.D.,
Professor of Physiology, Medical College of Bengal.

Seeds have already been procured from the *cinchona succirubra* and *cinchona officinalis*, and from these seeds excellent plants have been reared. The prosperity of the plantations is such that Dr. Anderson hopes to dispense with the present expensive system of artificial propagation by cuttings, and to extend the cultivation, to almost any extent, by means of seeds in 1869 for *cinchona officinalis*, and 1870 for *cinchona succirubra*. That this will be perfectly feasible, is manifest from the ease with which all the *cinchonas* under cultivation take root and grow, and also from the great productiveness of their fructification. Howard's analysis of the bark sent from Darjeeling further stamps the plantations as a complete success, as may be observed from the subjoined statement.

No. I

Oldest *succirubra* bark from a tree cut down thirty-one months after planting.

DARJEELING.		OOTACAMUND.	
Quinine, crystallizing freely as oxalate	3·20	Quinine, specimen of white sulph. sent	3·14
Cinchonidine, a little quinine .	2·27	... ...	2·06
Cinchonine	0·61	... ...	0·80
	6·10		6·

This is a satisfactory return, and shews that the bark of *cinchona succirubra*, as cultivated at Darjeeling, is richer in the important alkaloids than that of a corresponding age grown on the Neilgherry plantations.

The estimated produce of bark for this year is 300lbs; that for 1869 not less than 3,000lbs. In September next there will be planted out from 700 to 800 acres, and by the end of 1870 the whole of the forest land cleared for cinchona cultivation, amounting to a total area of 1,500 or 2,000 acres, will be planted out.

The simplicity of cultivating cinchonas, as carried on at Darjeeling, is very striking. Propagation by cuttings from stock plants is effected with great rapidity. When the plants have been subjected to the hardening process, all that is needful is to place them in the soil by hand, no preliminary preparation being needed, excepting the marking out of the situation of each plant on the ground, from which the jungle has been thoroughly cleared and burnt, and the digging up of the soil to a depth of a foot or eighteen inches, and over a diameter of about 9 inches. The weather being favorable, a hole is made with the hand, the root of the plant placed in the same, and then surrounded with soil. No further precaution whatever is needed. There is no such thing as trenching—no surrounding of the young plants with bamboo or grass frameworks to protect them from frost and storms, and extreme sunshine, no stripping of the plants of all but their top leaves, to enable them to withstand the violence of the winds, as are found essentially necessary at the Neilgherry plantations. Neither is there any danger from wild animals. In fact, the only care is to see that the plants, after having been properly hardened, are carried out from the nurseries in dull, cloudy weather with slight showers. Heavy and prolonged rain, or much sunshine, is prejudicial to the plants newly put in the soil.

Labour is abundant—mainly derived from Nepaul. Men are procurable in almost any number at Rupees 6, women at Rupees 5, and boys at Rupees 4 *per mensem*.

The *Lomong Cinchona Association* is situated on the left bank of the Runghee. One hundred and twenty acres are planted out with *cinchona succirubra*, and this looks very promising. The plants have not been in the open much more than a year, and they range from two to four feet in height. Mr. Munro is the Superintendent. He had no previous training, a fact which plainly shews that the propagation and cultivation of the cinchonas need very little of the cunning of the expert, as Mr. McIvor would induce us to believe. By the end of September, Mr. Munro will have a hundred and twenty acres more planted, making a total of 240 acres. Mr. Southby, the Manager of the *Selim Tea Association*, has 10,000 very thriving *succirubra* plants, a year old, on various parts of the estates. They vary from two to four feet in height. Mr. Graham, of *Tukvar*, is also successfully prosecuting the cultivation of the cinchonas. When Dr. Anderson is able to distribute abundance of seed, and this he will be in a position to do in a year or two, then the cinchonas may be extended, in favorable localities and climates, in this country, with as much ease as potatoes or oats. Once in the ground congenial to them, the cinchonas are extremely tenacious of life. They bear mutilation with impunity, and, under mossing, they repair severe injuries with great rapidity by granulation and cicatrization. Nay, when cut down to the ground, they spring up as quickly and vigorously as willows.

The existing mode of rearing and propagating cinchonas, now rendered necessary owing to the dearth of seeds, is described as follows in Dr. Anderson's Report from 1st April 1865 to 31st March 1866.—

"The progress of the open air plantation has been secured by separating a large number of plants of each species, as the stock from which the plants to form the plantation are procured. The cuttings of *cinchona succirubra* and *cinchona officinalis* now obtained, are grown solely for the purpose of planting in the open ground, and no cuttings are made from them. Thus, as healthy and vigorous plants are obtained as can ever be yielded by artificial propagation. The progress of the cultivation and advances made during the year will be understood by an account of the stages through which the plants pass before they are finally disposed of by planting in the permanent open air plantations. From the stock plants of each species which are planted in the soil in low, glazed wooden frames, a crop of cuttings is obtained monthly during the cold and dry periods of the year, and twice a month from May to October.

"These cuttings, prepared by a European gardener assisted by trained natives, are planted in shallow, well-drained wooden boxes in coarse sand; 150 cuttings are placed in each box. These boxes fit closely into a wooden frame with glazed lights, in every respect like a cucumber frame; while in these frames, the cuttings are carefully sheltered by thin cloth nailed lightly over the glazed sashes, and also by mats which are placed over the sashes during the day. Great attention is given to the watering of the cuttings during the first month, as the slightest excess of moisture causes their decay. Water is given sparingly, and only by means of a garden syringe provided with a very finely pierced nose. In two or three days the drooping cuttings begin to look fresh and living, and by the end of three weeks, most of them have become provided with one or two delicate roots, and in three weeks more at the furthest, the process of hardening the young plants commences. This is effected by removing the boxes, with the cuttings still undisturbed, to other glazed frames (principally old cutting frames, where sashes from use and exposure do not fit tightly), into which air is admitted more and more daily, while the use of mats, as a protection against the sun, is dispensed with. After a fortnight of this treatment, the cuttings, now two months since they were taken from their parent plants, are placed, still undisturbed, in the boxes on terraced beds, protected from the sun and rain by a low roofing of mats [illegible] April till [illegible]

[illegible] Cuttings taken [illegible] by the strongest [illegible] abundant [illegible] existing and [illegible] withstood the [illegible] vicissitudes of the [illegible] require to be [illegible] the plant [illegible] restored to a [illegible] condition. When this state is attained the growth in [illegible] of the vegetation which prevails [illegible] The plants remain at a standstill during the cold weather, [illegible] the return of spring, which varies according to the [illegible] again begin to grow. In [illegible] depending upon the date of the periodical [illegible] considerable rise in temperature, the [illegible] In the four rainy [illegible]

[illegible] far distant [illegible] will have to be [illegible] completed and [illegible]

[illegible] physiology [illegible] Dr. [illegible] — [illegible]

[illegible] will be available [illegible] plantations in British Sikkim, [illegible] important that the [illegible] back in its [illegible] declares [illegible] more readily [illegible] partly [illegible] rendered [illegible] obtain the alkaloids [illegible]

All the [illegible] for the separation of the cinchona alkaloids [illegible] Dapoling, [illegible] from streams [illegible] the petrifactions [illegible] It is originally contained in solution in the water [illegible] an excess of carbonic acid. When the water [illegible] the ground into the open air, the excess of [illegible] acid escapes, and the carbonate of lime is precipitated in the beds along which these springs [illegible] flow. The [illegible] used for the building of houses [illegible] Darjeeling has been derived from this source. [illegible] anywhere in the Darjeeling [illegible] such may exist [illegible] portion of the sub-Himalayas, and it is [illegible] that the springs [illegible] Salt abounds [illegible]

ON THE USE OF STRYCHNIA IN SOME DISEASES.

[illegible]

supersecretion of bile. In Reynolds' System of Medicine, Dr. E Goodeve's exhaustive article, and a proper division of diarrhœa, will be found. I have nothing to say about the biliary forms; but a little consideration of abiliary diarrhœa, or that attended with a deficient secretion of bile, may do us no harm. Dr Goodeve (in addition to the other varieties) well describes one form of diarrhœa, *viz.*, the *chronic or cachectic, or white flux*. He does not think deficient secretion of bile is the exciting cause of the disease, but "that the liver derangement is merely a part of the great general disease which gave rise to blood changes." In the true *cachectic diarrhœa or white flux*, or in most of its forms, this is undoubtedly the case; and particularly so if amyloid degeneration of the villi and glands of the intestine is associated with it. Now and then, however, I think, we meet with cases of diarrhœa which are evidently caused by irregular action of the liver, and deficient secretion of bile. If, in a physiological point of view, we consider the changes that *then* take place in the alimentary canal, we need not wonder at diarrhœa supervening. In the present state of our knowledge of the action and uses of bile, these changes may briefly be summed up as follows:—(*a*). Fermentation proceeds unchecked, owing to the absence of bile in, or its non-admixture with, fermenting substances.

(*b*). The acidity of the gastric juice not being neutralized, acts as an irritant on the mucous membrane.

(*c*). Destructive changes in the composition of the chyme are not checked, and the very fœtid odour of the discharges is increased.

(*d*). The capability of absorbing oleaginous matters is diminished.

(*e*). There is a decrease in the excitability of the muscular fibre of the villi, and a consequent retardation of the flow of chyle through the lacteals.

In the form of abiliary diarrhœa under consideration, there are white chylous stools; or these may be slightly feculent or pultaceous, or of a *chalk and water* like variety. The looseness of the bowels generally occurs in the morning and early part of the day. This state of health may go on for some time, and then anœmia and prostration of strength set in; and when they do, we have the cachectic diarrhœa or *white flux* as described by Dr. Goodeve; in fact, there is no difference in the symptoms of the diseases, and they may be the same affection, but one form arises from deficient secretion of bile *per se*, while the other forms of *white flux* are dependent on other causes, and are merely associated with biliary derangement in common with other morbid states of the system. The disease is very common in Ireland, and is sometimes attendant on epidemics of continued fever. The symptoms are aggravated by preparations of opium and astringents, but strychnia cures it quickly; and this drug was successfully employed by Drs. Duncan and Graves, of Dublin, and others. It is also recommended by Dr. Goodeve. For the last six years I have always used it in this form of diarrhœa. Under its use the stools change and contain bile; they become feculent; diminish in frequency, and the general health soon improves. The remedy in reduced doses, with preparations of iron, and a nourishing non-irritating diet, now complete the cure. The preparation I now always use is the liquor strychnia of the pharmacopœia, sometimes in combination with the tincture of sesquichloride of iron, and sometimes with nitro-muriatic acid. That the diarrhœa depends on sluggish action of the liver, and deficient secretion of bile, is, I think, proved by the action of the remedy. Strychnia increases the biliary secretion, exalts the sensibility, and imparts tone to the nerves and muscles. Dr. Ingram Spence says strychnia acts through the blood; and that its effects are not due to the deterioration of that fluid by rendering it incapable of absorbing oxygen.

Icterus.—There are two chief varieties of jaundice, *viz.*, that which arises from suppression, and that from obstruction. According to Dr. Harley, "some of the constituents of the bile are generated in the liver itself," while "others exist preformed in the blood * * * * * In jaundice from obstruction, all the elements of the bile will be re-absorbed into the circulation; while in that from suppression, there will only be an accumulation in the blood of the coloring matter of bile and cholesterine, no bile acids being present, since none have been formed." (*Tanner's Practice of Medicine*). In all cases of jaundice it is most important to determine whether there is suppression of bile or obstruction. We do this in order that we may employ the most appropriate remedies. In *Tanner's Practice of Medicine*, the following directions are given for this purpose. "Add gently to about two fluid drachms of urine half a drachm of strong sulphuric acid, and a fragment of loaf-sugar, the size of a pea. If at the line of contact of the two liquids a purple or scarlet colour is produced, it proves that the acids of the bile are present, and the jaundice is due to obstruction; but if merely a browning of the sugar be produced, the case is probably one of suppression." It is about jaundice from suppression I wish to speak, as its treatment is of course altogether different from that from obstruction. In the former there is no remedy like strychnia. In a bad case of jaundice in the Jail Hospital in 1867, I tried many of those remedies that are so highly recommended for promoting the secretion of bile, but without success; the disease not only showed no sign of abatement, but even got worse; and in despair I nearly gave up my patient, that is, all hopes of saving him. At this stage of the case a "happy thought" occurred to me—if strychnia cures *abiliary* diarrhœa by promoting the secretion of bile, why should it not cure jaundice when it arises from suppression, or non-secretion? The drug was at once prescribed, and the man was well in a few days. Since then I never use any other remedy in jaundice from suppression.

Intermittent and Remittent Fevers.—Dr. Hall, in the pages of the *Indian Medical Gazette* recommended strychnia in these diseases. In Mymensing, in 1866, I treated for some months many private patients, and nearly all of my fever cases in the Jail and Police Hospitals with liquor strychnia. The conclusions I arrived at are as follows:—

(*a*). In ordinary quotidian, tertian, or quartan ague, it is a valuable remedy, inferior to quinine, but superior to arsenic and native drugs.

(*b*). In remittent fevers it is too slow in its action, and consequently dangerous.

(*c*). In chronic intermittent fevers it is inferior to arsenic, that is, the latter drug is more likely than strychnia to cure an intermittent fever as quartan, extending over many weeks or months. This I experienced in my own person, although neither cured my fever.

(*d*). In convalescence after fevers, strychnia, in combination with the tincture of sesquichloride of iron, is a valuable tonic.

(*e*). I never found it, in from $\frac{1}{16}$ to $\frac{1}{10}$ of a grain doses thrice daily, to produce poisonous symptoms. One case (in Buxar) of a peculiar idiosyncrasy has, however, been recorded.

The action of strychnia on many nervous diseases is well known.

Dr. George Balfour recommends the administration of strychnia in cholera. (*Lancet* Vol. I, 1867, page 8).

Dr Charles Hunter recommends strychnia to be administered hypodermically in paralytic affections (*Med. Chir. Rev.*, Vol. XLI. page 115), and perhaps, if administered in this way in other diseases also, its action might be more apparent.

Dr. Chevers' case of poisoning by strychnia (in the Calcutta Medical College Hospital) goes to show that tobacco can be used with effect as an antidote. He administered the remedy as an infusion.

RAJSHAHYE, *June*, 1868.

NOTE.—The reader is referred to "Waring on Therapeutics" for much valuable information on the actions and uses of these drugs.—ED., *I. M. G.*

[illegible] OF THE [illegible] IN INDIA

[illegible]

[illegible] will [illegible]

[illegible] Died from rupture [illegible] spleen.

[illegible] MACKENZIE, M.D.,

[illegible]ALITY AMONGST OPIUM CULTIVATORS

By J. G. P[illegible]

J. G. P[illegible], Esq.

R. N. [illegible], Esq.

[illegible] but, from the [illegible] September and October [illegible] them to be more trustworthy [illegible] through any [illegible]

[illegible] at the time of [illegible] from [illegible] of disease [illegible] of death, and [illegible] have crept in, [illegible] reason to doubt their [illegible]

4,000 of the particular caste,) above alluded to, must also be taken into consideration.

7. The original of Statement A was necessarily prepared *in vernacular*, and is so recorded in this office. I have not, however, thought it requisite to trouble you with all the details which it involves, and therefore submit the return [illegible].

8. You will perceive, in column 16 of Statement B, two casualties recorded between the ages of 95 and 100. I made special enquiries in their cases; and, as far as I could [illegible] represented correctly.

I have, &c.,

ALLYGUNGE SUB-DEPUTY OPIUM AGENCY,
The 1st February, 1861.

J. G. P[illegible],
Officiating Sub-Deputy [illegible]

(True copy)

W. MASTERS,
Sub-Deputy [illegible]

The 30th August, 1861.

Statement shewing the number of Deaths amongst the several Castes of Opium Cultivators in the Sub-Deputy Opium Agency of Allygunge during the Opium Year 1859-60.

1	NAME OF CASTE.															17	18	19	20
NAME OF *KOTHEE*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total number of deaths during 1859-60 in each *kothee*	Total number of *assamees* as per settlements of 1859-60 in each *kothee*	Percentage of mortality in each *kothee* as per columns 17 and 18.	REMARKS.
	Koeree.	Moosulman.	Aheer.	Koormee.	Rajpoot.	Brahmin.	Chamar.	Doosad.	Kundoo.	Telee.	Goure.	Bheehar.	Soonah.	Lohar.	Various Castes.				
Gopalgunge	82	30	39	11	12	41	11	8	5	5	12	3	6	4	48	317	20,961	1·51	
Sewan	168	53	33	55	6	11	14	13	18	12	12	5	10	12	44	466	14,032	3·32	
Jhirpah	27	23	13	10	21	19	7	8	9	9	2	9	3	2	38	200	13,276	1·51	
Total number of deaths	277	106	85	76	39	71	32	29	32	26	26	17	19	18	130	983	48,269		
Total number of *assamees* belonging to each caste in this subdivision	10,247	5,363	5,140	3,485	3,460	3,200	2,245	1,619	1,534	1,112	1,074	1,008	994	919	6,522	...	...		
Percentage of mortality amongst each caste in the whole division ..	2·70	1·98	1·65	2·18	1·13	2·22	1·43	1·79	2·09	2·34	2·42	1·69	1·91	1·96	1·99	...	...	2·04	[illegible]

Statement shewing the various Causes of Death, Number of Casualties, and Ages of Deceased, amongst the Opium Cultivators of the Allygunge Sub-Deputy Opium Agency, during the Opium Year 1859-60.

1	AGES OF DECEASED.															17	18
NATURE OF DISEASE.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Grand Total.	REMARKS.
	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	95 to 100		
Fever, and Fever and Ague	29	23	85	41	158	26	108	9	105	29	41	5	2	...	1	662	I have [illegible] fever and fever [illegible] of dysentery and [illegible] as also of rheumatism [illegible] gout, but, considering [illegible] probability of [illegible] mistake [illegible] having [illegible] I have kept [illegible] together.
Cholera	14	13	16	10	11	4	31	6	22	5	1	.			..	133	
Dropsy ..	1	2	7	2	13	5	6	3	10	1	3	2		...		55	
Dysentery and Diarrhœa	2	1	2	1	4		2	3	5	...		...	.		1	21	
Asthma ...	1	1	..	1	...	1	1	2	2	.	2	...	...	...	...	11	
Rheumatism and Gout		1	2	1	3	.	..	1			2			..		10	
Wounds ...	.	.	...	...	2	...	3	.		1	..				...	6	
Colic	1	.	1	2	1		1	...		.		...			..	6	
Syphilis ...		1	1	1	...	1			...			...	..	.		4	
Leprosy ...	.	...	1	...	1			..	1		...	...		...	.	3	
Jaundice .	.		1	1	1				.							3	
Snakebite	..	.	.	...	...		...				1	...		...	..	1	
Apoplexy .	..	..		...	..	.	.	.		1						1	
Paralysis	..		...		1	...						.				1	
Total .	48	42	116	60	228	37	152	21	145	37	53	7	2		2	983	

ALLYGUNGE SUB-DEPUTY OPIUM AGENCY,
The 1st February, 1861.

(True Copy)
W. MASTERS,
Sub-Deputy Opium Agent.

J. G. P[illegible],
Officiating Sub-Deputy [illegible]

The above return is valuable, because it is *reliable*. Do the cultivators [illegible] treatment [illegible] or, if they are treated [illegible] way? As the *Indian Medical Gazette* is read by [illegible] who are [illegible] familiar with Hindustani, [illegible] a translation of the local terms would be acceptable.—ED., *I. M. G.*

A RETURN OF MEDICAL OFFICERS ADMITTED INTO THE THREE PRESIDENCIES OF INDIA FROM 17[illegible] TO 1868, WITH A STATEMENT OF THEIR FINAL DESTINATIONS.

Compiled from Dodwell & Miles' List by C. R. FRANCIS, M.B.

	BENGAL. Number admitted, [illegible]. Died.										MADRAS. Number admitted, [illegible]. Died.										BOMBAY. Number admitted, 426. Died.									
	After 1 year's service.	Do. 2 years' service.	Do. 3 years' service.	Do. 4 years' service.	Do. 5 years' service.	Between 5 and 15 years' service.	Between 15 and 25 years' service.	Between 25 and 35 years' service.	Between 35 and 45 years' service.	Total.	After 1 year's service.	Do. 2 years' service.	Do. 3 years' service.	Do. 4 years' service.	Do. 5 years' service.	Between 5 and 15 years' service.	Between 15 and 25 years' service.	Between 25 and 35 years' service.	Between 35 and 45 years' service.	Total.	After 1 year's service.	Do. 2 years' service.	Do. 3 years' service.	Do. 4 years' service.	Do. 5 years' service.	Between 5 and 15 years' service.	Between 15 and 25 years' service.	Between 25 and 35 years' service.	Between 35 and 45 years' service.	Total.
	2	2[illegible]	[illegible]	7[illegible]	[illegible]7	[illegible]	[illegible]7	1[illegible]	[illegible]	[illegible]	2	2[illegible]	1[illegible]	1[illegible]	[illegible]	[illegible]	4	2		[illegible]11	17	25	9	9	11	31	21	6	0	185

	Bengal Total.	Madras Total.	Bombay Total.
[illegible]	13	[illegible]4	1[illegible]
[illegible]	3	2	1
[illegible]	3	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	3
[illegible]	[illegible]	1[illegible]	14
[illegible]	5	9	3
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	26	[illegible]	5
[illegible]	4	1	[illegible]
[illegible]	[illegible]	1	[illegible]
[illegible]	1	1	2
[illegible]	1	2	5
[illegible]	2[illegible]	[illegible]	1
[illegible]	[illegible]	4	1
[illegible]	12	[illegible]	[illegible]
[illegible]	[illegible]	1	[illegible]
[illegible]	2	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible] having [illegible] exceeded [illegible] furlough	1	[illegible]	[illegible]
A[illegible] Lieutenant [illegible] Infantry	2	[illegible]	[illegible]
A[illegible] Lieutenant Fireworker [illegible]	1	[illegible]	[illegible]
[illegible]	2	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
A[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	172
Total	1,[illegible]67	[illegible]	426

[illegible] 2,140 Medical [illegible] service between 17[illegible]4 and 1868, [illegible] 7[illegible] years, [illegible] had already died, making a [illegible] Presidencies, [illegible] had died in Bengal, [illegible] per cent. in Madras, and 45[illegible] per cent. in Bombay. [illegible] 276 had retired. Besides these, 92 [illegible] struck off, cashiered, removed, or pensioned; 12[illegible] had been lost sight of; 19 were lost [illegible] 7 were killed; and 5 drowned. It is notable that, out of 21 who gave up promotion, 20 were in Bengal, 1 only in Bombay, and [illegible] Madras.

One lived [illegible] 46 years', one 45 years', one 44 years', two 42 years', and two 41 years' service.*

TABLE OF ANNUAL MONTHLY RAINFALL IN BERHAMPORE FROM 1857 TO 1867, AND TO THE END OF JUNE 1868.

By A. FLEMING, M.D.,

Surgeon Major; Civil Surgeon Moorshedabad.

MONTHS.	1857	1858	1859	1860	1861	1862	1863	1864	1865	1866	1867	Mean [illegible]	1868	REMARKS.
January		[illegible]			[illegible]	0·20				[illegible]	[illegible]	[illegible]		The rain-gauge is placed on the ground, and stands about three feet high.
February		[illegible]					[illegible]	[illegible]	2[illegible]	2·12	[illegible]	[illegible]	1[illegible]	
March	1[illegible]					[illegible]		[illegible]	2[illegible]	1	[illegible]	[illegible]	[illegible]	
April	2[illegible]	1		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2[illegible]	7[illegible]	[illegible]	2[illegible]	1·[illegible]	
May	2[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	4[illegible]	[illegible]	[illegible]	2[illegible]	2[illegible]	[illegible]	[illegible]	
June		[illegible]			[illegible]	[illegible]	1[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	
July	[illegible]	[illegible]				[illegible]	7[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1[illegible]		
August	[illegible]					[illegible]	11[illegible]	[illegible]			[illegible]	[illegible]		
September	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	7[illegible]	[illegible]	[illegible]		
October	[illegible]	[illegible]	[illegible]			[illegible]	1[illegible]	6[illegible]		2[illegible]	2[illegible]			
November		[illegible]					0·19	1·67			2[illegible]	[illegible]		
December												[illegible]		
Total		[illegible]				[illegible]	[illegible]	[illegible]			[illegible]	[illegible]		

[illegible] Dr. A. W[illegible], [illegible] Drs. W[illegible] and Guise, in 1859, 1860, and 1861 [illegible] and from 18[illegible] to 1868 by Dr. Fleming.

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* [illegible] of the Overland route, [illegible] but as there are points of difference, and [illegible] of the Gazette, I have allowed the returns to remain.—C. R. F.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT PERFORMED IN THE JAIL HOSPITAL.

By Kenneth McLeod, A.M., M.D., F.R.C.S.E.,
Civil Assistant Surgeon of Jessore.

I.—Weight of the most important organs, and their relation to body weight.

The examinations which form the subject of the following notes were all, with two or three exceptions, performed by myself, and the facts in each case were noted at the time of performance. The summary will possess a peculiar ethnological and pathological value, from the circumstance that all the subjects examined were natives of this district. So many cases of individuals, whose life and ancestry are confined within so small an area, can only be obtained amongst a people of stationary propensities, and not possessing facilities or inclination to migrate. In them we possess indications not only of the pathological effects of the circumstances of life peculiar to the area in question, as regards individuals, but also as regards race; for the conditions which produce changes in the individual, so violent as to come under the domain of pathology, must also produce changes of a physiological kind in the succession of generations, which will constitute peculiarities of conformation of the race. The time when such records can be easily collected is rapidly passing away. Education and enlightenment, combined with increased facilties for migrating, will eventually break down the barriers which now separate races, and geographical distribution and classification of the animal; man will become more and more a thing of the past. Now is the time to gather statistics of this kind with ease and accuracy. Large questions, such as this, require large inductions, and many simultaneously labouring; and were data collected on a plan somewhat similar to that of the following article in every district in India,—and there is no difficulty whatever in doing so,—the information gained would be of the utmost value. As now we are able to map out the country, as regards its physical and meteorological features, so we might be able to map out its inhabitants, as regards their physical conformation, physiological peculiarities, and pathological tendencies. I coincide with Dr. Francis in his remark on this subject, in an article on "Fatty Degeneration," (*Indian Medical Gazette*, Vol. III., p. 150,) most thoroughly; only I would have the investigation conducted on the broadest basis, and on some uniform system. With these remarks I shall place my observations on record without further comment. The serial number attached to each case in Table No. I. will be preserved strictly as indicating the cases throughout the discussion.

1. *Scale and weights employed.*—The same scale and weights were used for all the cases. The scale is English, and the weights, which I have carefully tested, are the "bazaar weights" of 80 tolahs to the seer, and 40 seers to the maund. The bodies were weighed without clothes on an accurate balance, showing bazaar weights supplied for the purpose of weighing prisoners. The weights are thus thoroughly uniform, and capable of easy reduction to English weights.

2. *Body weight.*—The average weight of the 50 bodies, all males, is 40 s. 4·7 ch. (82 73 lbs. avoir.) This is considerably below the weight of the bodies of living males of this district. The average weight of 4,439 persons belonging to the Jessore district, mostly males and adults, admitted into the Jessore Jail during the years 1862 to 67, I find to be 1 md. 11s. 9·6 ch. (105 91 lbs. avoir) I also found the body weight of 30 males, aged from 18 to 55 years, whom I selected as healthy adults, to be 1 md. 12 s. 10 2 ch. (118 08 lbs. avoir.) The average height of these persons was 5 feet 3·5 inches. From these data, 1 md. 12 s. (106·77 lbs. avoir., or 7·6 stones) may be taken as a fair average of the weight of adult males of this district. This gives a deficit of 11 s. 11·3 ch. (24 lbs. nearly) to be debited to the effect of sickness and the wasting of tissue, which, in the large majority of cases, precedes the fatal issue. As this wasting must detract from the net body weight a much larger proportion than from the weight of the several organs, the relation of the several organs to body weight must be considerably under-stated, by taking the average body weight from the dead. Another difficulty in adjudging the true proportion of the weight of organs to body weight,—and I take this to be the correct index of the real weight for purposes of comparison,—consists in the circumstance that many of the organs which go to constitute the average in each case are in morbid condition. The problem to be solved, therefore, is a more complex one than at first appears. It is, *first*, to ascertain the correct average weight of the organs in a state of health in the adult; and, *secondly*, to compare these with a true body weight got from a large number of cases. The first of these objects can only be attained after the influence of age, disease, and morbid condition is eliminated. This will form the subject of analysis in a future communication. The second point has been already determined.

3. *Brain weight.*—The average weight of the whole brain mass is 1 s. 5·9 ch. (44·95 oz.) The range is from 1 s. 11 ch. (55·42 oz.) to 1 s. ½ ch. (33·87 oz.): mean 1 s. 5 7 ch., which comes very near the average. The number 1 s. 5 ch. occurs oftener than any other. The relation of the average weight of the brain mass to the average body weight is 1 to 30, and to the corrected body weight (1 s. 12 ch.) 1 to 38. This relation fluctuates between 1 to 42 and 1 to 16.

The *cerebrum* gives an average weight of 1 s. 3·07 ch. (39·0 oz.): 1 s. 2 ch. (36 9 oz.) is the most frequently occurring number. The range is from 1 s. 8 ch. (50·26 oz.) down to 14½ ch. (29·76 oz.): mean 1 seer 3·2 ch. (39 41 oz.). The proportion to average body weight is 1 to 33 8, and to corrected body weight 1 to 43 7. The proportion to body weight ranges from 1 to 59 to 1 to 19.

The *hemispheres* average each 9½ ch. (19·42 oz.). They are equal in weight, except in two instances, in which the left hemisphere has the advantage.

The *cerebellum* averages 2·3 ch. (4·71 oz.) Its weight ranges from 3 ch. (6·15 oz.) down to 1½ ch. (3 07 oz.). mean 2·25 ch. The average proportion to the weight of the cerebrum is 1 to 8 2, and to that of the whole body 1 to 280. Taking the corrected number for body weight, the proportion is 1 to 361.

The *medulla oblongata* and *pons varolii* together give an average weight of ½ ch. (1·02 oz.); a proportion of 1·38 to the cerebrum, and 1 to 1289 to the average body weight, or 1 to 1664 to corrected body weight.

I have no record of the weight of the spinal cord. These facts may be taken to express the normal weight of the brain and its divisions; for, as we shall hereafter find, these organs were sound in nearly every case.

4. *The lungs.*—The right lung gives a greater average weight than the left, of 2 4 ch. (4 92 oz). The average weight of the organ is 10·7 ch. (21·95. oz.). The range is from 2 s. 2 ch. (69 8 oz.) to 4 ch. (8·21 oz.): mean 1 s. 3 ch. (23oz.); 6, 7, 8, and 9 ch. are the most occurring numbers. The proportion to body weight is 1 to 64 or 1 to 77 of corrected body weight. The range is from 1 to 197 to 1 to 20. This betokens a great fluctuation in condition.

The left lung averages 8·3 ch. (17·02 oz). The weight ranges from 1 s. 6½ ch. (46·18 oz.) to 4 ch. (8 21 oz.): mean 13¼ ch. (27·09 oz.) The most frequently recurring figures are 5, 6, and 7, and fractions of them. The proportion to body weight is 1 to 77, or 1 to 100 of healthy body weight. The proportion varies from 1 to 150 to 1 to 22.

5. The *heart* gives an average of 3·8 ch. (7·79 oz.), and varies from 7¾ ch. (15·79 oz.) to 2 ch. (4 10 oz.). mean 1·87 ch

TABLE No. 1.

[illegible]

CASES FROM PRACTICE.

A CASE OF HERMAPHRODITISM.

By JOHN MURRAY, M.D.,

Civil Surgeon, Madura.

THE following curious case of hermaphroditism, so-called, which occurred lately in the District Jail at this station, may possibly be thought worthy of some notice. The individual whose peculiarities I am about to describe was sentenced to rigorous imprisonment for six months, and was mentioned as a *female* in the Magistrate's warrant. To avoid confusion, therefore, while I relate the history of the case, I shall take it for granted that the assumption of the Magistrate is correct.

My attention was first directed to the case last January by the Jailor, who informed me that he had some misgivings as to the real sex of a convict who was at present confined among the female prisoners.

According to his statement, this *person* had attempted to take improper liberties with one of the females on the previous night. On this circumstance being reported to him, he had examined the accused woman, and observed, much to his surprise, that she had a *penis*, which he described to me as being of "a *pretty good length*," and altogether he seemed to think that he had a very doubtful person to deal with.

On proceeding to inspect the woman, I was greatly struck with her thoroughly masculine appearance. She seemed about 30 years of age, and about 5 feet 4 inches in height. She had broad square shoulders, and the muscles of both chest and limbs were strongly developed. The mammæ were altogether absent, and she had a low-pitched and harsh voice.

On examining the organs of generation, a very much enlarged clitoris was observed protruding from the upper part of the labial fissure. It was more than an inch in length, and exactly resembled a small penis. There was no orifice in the glans. At the root of the clitoris there was a cutaneous pouch, which contained *one* testicle about the size of an olive.

On fully separating the labia, the meatus urinarius was observed occupying pretty much its usual situation, but there was no other opening or canal of any kind, and not a trace of a vagina. I ought also to mention that there was no hair on any part of the face.

The woman positively asserted that she menstruated every two months, and that the secretion escaped by the urethral orifice. This statement, however, is unsupported by evidence of any kind. She stated that she had never in her life experienced sexual desire, and utterly denied ever having taken liberties with any of the female prisoners. She considered herself to be a woman, and had never doubted the fact for a moment. She appeared to possess considerable intelligence, and was rather ashamed of her physical peculiarities. From what I have mentioned, her claims to be considered a female may be thought somewhat questionable; but on this point I refrain from offering an opinion, merely remarking that she cannot be said, strictly speaking, to belong to either sex, as the malformations I have described must almost certainly have occurred through an arrest of development at that early period of fœtal existence when the organs of generation in both sexes are the same.

2nd June, 1868.

CASE OF HEMIPLEGIA OCCURRING AFTER COLD AND DAMP, SUCCESSFULLY TREATED BY STRYCHNIA AND GALVANISM.

By R. D. [illegible],

Civil Surgeon, Purtabgurh.

THE following case came under my observation during the winter of 1867:—

Miss O., a healthy, robust looking girl, of florid complexion, with dark brown hair, aged 14, born and brought up in the hills, was attacked with hemiplegia of the right side of the body on the 5th February, after exposure to a heavy rain storm, while out for an airing the evening before.

I first saw my patient on the morning of the 8th, and learnt the following history of her case from her mother, who informed me that her daughter was caught in a heavy shower of rain on the evening previous to the attack, which wet her through; that the girl remained for some time in her wet under-garments without changing; she slept uneasily that night, and in the morning, when she rose from her bed, her mother observed that the right side of her body was powerless. On examining the girl, I observed the following symptoms:—The arm and leg of the affected side lie as if lifeless, all power of motion in them being destroyed; the arm hangs by her side, and is drawn a little backwards; she can walk, but only with a staggering gait, as if she were going to fall every moment, and drags the affected leg after her with difficulty; [illegible] of twitching in both limbs, especially so in the arm, mouth drawn a little to the opposite side; when asked to put out the tongue, the patient does so with difficulty; when put out, the point of it was turned to the affected side; can shut and open both eyes well; deglutition unimpaired; voice thick and indistinct; when making efforts to articulate, ends with the constant use and repetition of some unmeaning phrase, and becomes irritated at finding she is unable to express herself at once. There is partial anæsthesia of the parts affected; when pinched, feels more in the leg than in the arm; temperature on both sides of the body alike. Mental faculties unimpaired; temperament excitable; has no headache; and, as far as I could learn, has never suffered from chorea, hysteria, or epilepsy. Appetite impaired, bowels constipated. Tongue clean, pulse slow and irregular. After the most minute examination, I failed to detect any injury of the brain or spinal cord; and the only thing I could elicit from the girl's mother, was that five years previously the girl had a severe fall, which laid her up for a time, but from which she made a rapid recovery, and had been in excellent health and spirits ever since, taking horse exercise almost every evening. I also learnt that the girl had never menstruated. This, I imagined at the time, might in some way be connected with, or account for, the symptoms above described. The bowels at the same time being constipated, and my patient complaining of occasional headache, led me in the first instance to adopt the following plan of treatment, which I subsequently changed for strychnia and the use of the galvanic battery daily, with happy results, as the sequel proved.

℞ Pil aloes C. myrrhœa, grs. iij,
every night going to bed.

9th February.—No change this morning; bowels acted on once during the night; slept well; tongue clean; tries to articulate, but cannot, and feels annoyed that she cannot lift her hand to her head to comb her hair, which she had made several unsuccessful efforts to accomplish. Continue pill as last night.

10th.—Much the same as yesterday; complains of pain at the back of head, and appears frightful; bowels open; appetite good; pulse small and irregular.

Continue pill at night; apply a small blister to nape of neck.

After continuing the aloetic and myrrhœa pill for more than a fortnight without inducing the monthly molimen, or producing any change in the symptoms, I prescribed strychnia to be taken every morning and evening in very minute doses at first, and directed the aloes and myrrhœa to be given every other night. In a week after my patient commenced taking the strychnia, a decided improvement in the symptoms became manifest, but as the twitching of the arm and leg increased, I had to reduce the dose of strychnia from [illegible]th to [illegible]th of a grain twice a day, which was now steadily continued in connection with the use of the galvanic battery once daily for a month, at the end of which time a marked improvement was observed in my patient, who, with great satisfaction when I visited her one morning, told me that she could very nearly comb her own hair again. The aloes and myrrhœa pill was now discontinued, and an occasional slight purge given instead; this, with another blister to the nape, completed the cure, my patient being well enough at the end of two months to ride on horseback again. The leg, I would remark, was the longest in recovering its full power.

REMARKS.—As I have never seen or read of a case of [illegible] occurring after cold and damp,* to what, I would ask, may the symptoms above detailed be attributed, which appears the more remarkable from succumbing so readily to treatment?

PURTABGURH, *19th June*, 1868.

Notices to Cor[illegible]ondents.

We have received [illegible] from

Dr. John Newton, M.A., *Nagpore.*
Dr. [illegible].
A Civil Surgeon, [illegible]
[illegible]
A Civil Surgeon, *[illegible].*
Dr. D. B. Smith.

Dr. Christison, *E[illegible]*
Dr. [illegible]
Mr. C. [illegible], *[illegible].*
Mr. G. [illegible] McKibbin, [illegible]
[illegible], *[illegible].*

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* We insert this case, it being, what must be [illegible] case in our contributor's professional experience [illegible] with many more instances [illegible]. We hope he will always have reason to be [illegible] the same satisfactory result.—ED., *I. M. G.*

The Indian Medical Gazette.

NOTICE.

All subscriptions will in future be acknowledged in the INDIAN MEDICAL GAZETTE, *instead of by letter receipt.*

Subscribers who have not remitted payment for 1868 *are solicited to do so.*

HARE STREET, }
Calcutta. }

WYMAN BROS.,
Proprietors.

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WYMAN BROS.,
Proprietors.

It is particularly requested that all communications for the "Indian Medical Gazette" be written legibly, and only ON ONE SIDE *of each sheet of paper.*

[illegible] write their names [illegible] that no possible mistake can be made in printing them.

[illegible] anonymous [illegible].

Contributions [illegible] in the month if possible, else delay must occur in their publication.

Business letters [illegible] the Publishers, Messrs. Wyman Bros.; [illegible] the Editor, [illegible].

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY INVITED.

HARE STREET, }
January, 1868. }

WYMAN BROS.,
Proprietors.

"We have [illegible] the path, not of [illegible] Among [illegible] departments [illegible] and I will not [illegible] you who [illegible] which [illegible]."—SIR BENJAMIN BRODIE.

"THE EIGHTH ANNUITY."

THANKS to the skilful and steady pilotage of Dr. Partridge, who has so ably superintended the affairs of the Bengal Medical Retiring Fund, during the period when he officiated as Secretary to that institution, the Secretary of State for India has sanctioned the issue of [illegible] announced below.

We have received several letters from comparatively junior members of the Medical Service who have, from time to time, paid their subscriptions of the Fund, saying that, for them, it is an [illegible]. We are [illegible] of the truth of the statement, [illegible]. It is [illegible] to the notice of Government [illegible] will be to [illegible] community [illegible] he has been [illegible] have, [illegible] considerable [illegible].

Another plan has been thought of, which, however, we fancy—upon the principle of "the burnt child dreading the fire"—would not find much favour with those who have already paid so much. This idea is for the juniors to *create another fund*; a fund entirely of their own. The notion *seems* scarcely absurd at first sight. We leave it for the consideration of our dissatisfied correspondents.

MILITARY DEPARTMENT, FORT WILLIAM, THE 30TH JULY, 1868.

From the Right Hon'ble the Secretary of State for India, to His Excellency the Right Hon'ble the Governor-General of India in Council, (No. [illegible]), dated India Office, London, the 11th June, 1868.

With reference to Lord Cranborne's despatch of the 15th November, 1867, stating that, upon the completion of the transfer of the assets and liabilities of the Bengal Medical Retiring Fund to the Secretary of State for India in Council, a further report should be called for from an Actuary as to what would have been the position and prospects of that Fund, had no change occurred in the constitution of the Bengal Medical Establishment, I have now to inform you that a report from Mr. Brown has been received, and I am thus enabled to deal with the question as to the number of Annuities to be granted to subscribers to the Fund, raised by you in your military letter dated 15th July last, No. 199.

Mr. Brown has stated in his report that, "considering all the circumstances of the Fund, and making allowance for the difficulty of estimating what changes may occur in the rate of mortality in future years, either amongst the subscribers or annuitants, it seems to me a reasonable conclusion that 7½ annuities per annum, or an eighth annuity given off every two years, in addition to the seven now awarded annually, would meet the justice of the case, and satisfy the fair expectations of the members."

I am therefore prepared to concede the issue of an eighth annuity every two years to the subscribers of the Bengal Medical Retiring Fund. The issue of the eighth annuity may be dated from the time of closing the fund to new admissions in 1861; consequently the three annuities for the six years to 1867 may be considered as arrears, and the next issue of an eighth annuity may be made in 1869. I request that you will take the necessary steps to carry out this decision.

"UNLICENSED PRACTITIONERS."

QUACKERY is as rife in India as in England. It flourishes in all communities where the public is ignorant of the constitution and physiology of the human frame; and, until courses of study, involving a knowledge of these subjects, are introduced into our university and school *curricula*, men will ever fall a prey to the charlatan and the rogue. The crass ignorance which an otherwise highly educated man frequently displays when conversing about the "house he lives in," is a painful exhibition to the benevolent physician. Such a man enables the advertiser of pills and ointments (useful in a degree, but not *panaceas* for every ill on earth) to slay in fashionable equipages, whilst their wives love to excite (with the splendid robes of velvet, in which they display, at gorgeous assemblies, the profits of "ill-gotten wealth") the admiration and envy of their female beholders. If it be so with the upper ten of the [illegible] of society, *a fortiori* will quackery thrive in the humbler walks of life. We cannot, therefore, be surprised when we learn of the natives of Calcutta being fleeced by those who represent themselves as qualified practitioners, when they are nothing of the kind. We believe that it is no uncommon thing for a native, [illegible] of the subject, calls himself a passed student of the Medical College in Calcutta, to practise the profession of medicine as if he were one of the regularly-qualified practitioners of the town, whose means of livelihood he there-[illegible], and interferes with. We believe there are many such pretenders, and we understand that several amongst them *were*, at one time, students at the College, but that they were either unable to pass the examination at the end of their studies, or that they left the institution after having completed only one or two terms there. Now, this is a crying evil; and it is said that the law cannot touch these deceivers. We venture to doubt this. That singularly comprehensive and elastic book of law, the *Penal Code*, has an Act No. XLV. of 1860, Section 415, headed "*Cheating*," in which a man, who pretends to be what he is not, renders himself liable to punishment.

The best remedy undoubtedly would be, as suggested at a meeting of the Bengal Branch of the British Medical Association, to extend to Calcutta the English "Medical Act," which, by the way, has not done all the good it might, even in London, have done, *although* the *séances* of the Council have cost the public 12s. 6*d.* a minute! But, pending this, we would strongly advise that the capabilities of the Penal Code be tested. We doubt not that it will be found sufficiently effective for the purpose. Some one possessed of sufficient public spirit, energy, and leisure must come forward and prosecute.

SUBORDINATE MEDICAL DEPARTMENT.

We have received several enquiries on the subject of the new rules for the Subordinate Medical Department, with reference, more especially, to the *training* of youths. We would say, in reply, that there are many *moot* points which, being difficult of solution, have, we understand, been referred to the Government. In the course of a few weeks, we may be able to reply satisfactorily to our correspondents. With regard to the Widows' and Orphans' Fund, we may state that we are in correspondence with a senior member of the Department, to whom we have communicated whatever information we were in possession of, and to whom we have likewise suggested a course of action which seems likely to lead to a satisfactory result. But our friends must not be too impatient. *Fund Managements* and *Boards*, and such like ponderous machines, are naturally endowed with *tortoise* habits. It is not in their constitution to move at railway speed, as some of our correspondents seem to expect them to do.

THE PROPOSED MEDICAL SCHOOL AT RANGOON.

The supply of native doctors for service in British Burmah from the resources of the Bengal Medical Department has long been a matter of considerable difficulty, and this notwithstanding the fact, that the pay, when a native doctor is ordered to Burmah, is increased to the extent of 50 per cent. They almost invariably object to serve in that country, and when they are pushed hard to comply with orders, they—if of greater length of service than seven years—with few exceptions claim the privilege of discharge from the service, rather than undertake employment which is equally distasteful and unprofitable. The climate, it is alleged, is inimical to the natives of Bengal. The expenses of living are barely covered by the increased pay. There are almost insuperable obstacles to the transport of native doctors' families. Illness ensues there, and experience proves that, after a limited residence, characterized by unwillingness and discontent, they are compelled to return to Bengal wrecked in health.

Under such circumstances as these, Dr. W. A Green, the Inspector General, Medical Department, Lower Provinces, suggested the advisability of having the Subordinate Medical Department in Burmah recruited from the Madras Medical College, under the impression that the natives of that Presidency were less obnoxious to the climate of British Burmah than the Hindoostanees. He, however, pointed out the probable inability of the Medical authorities of that Presidency to meet the requirements of the Subordinate Medical Service in Burmah. And such really appears to be the case. For the Inspector General of the Indian Medical Department, Madras, observes that the Principal of the Medical College is unable to receive more than 33 pupils each session, and the passed men out of this number are already found inadequate to meet the ordinary requirements of the Army and Civil Departments of the Madras Presidency. Moreover, subordinates go to Burmah, when ordered, *unwillingly*, in consequence of the much greater cost of living there, to meet which they have no increase of pay granted to them like the native doctors furnished from Bengal; and it would seem that the climate of Burmah is not less inimical to the natives of the Madras Presidency, than to those of Bengal.

Dr. Green points out two methods by which the difficulty in question may be surmounted. The *first* is, that Government should authorize a sufficient increase of subordinate servants on the Madras medical establishment, to enable it to meet the demands of the Chief Commissioner; or, 2*ndly*, that a school should be established, if practicable, for the education of native doctors at Rangoon, upon the model of those at Agra and Nagpore. It would now appear that the Madras Government are disposed to adopt the first alternative. The learned Principal of the Medical College has been requested to explain the reason why only 33 pupils could be received into the Junior Department in 1868, and to indicate the arrangements which might be necessary in order to increase by about twenty the number of pupils either from the Presidency, or from Burmah, if natives of that country, capable of receiving instruction in the English language, are willing to come to the Medical College at Madras. We apprehend the reason is plain enough—want of accommodation for shelter, and the maintenance of discipline in obedience to the Articles of War. If, therefore, it be the case that considerable expense will have to be incurred before the additional twenty students can be accommodated, it becomes a question whether, in view of all the circumstances of the case, it is desirable, expedient, or prudent, to incur any outlay in this direction for the accomplishment of the object in view.

Should the supply of subordinate medical servants for Burmah be chiefly met direct from Madras, in the manner seemingly contemplated by the local Government, the ill effects of the climate upon the natives of Madras, and the great expense of living, still remain as barriers to the success of the scheme. An increase of 50 per cent. has not succeeded in reconciling the rice eating Bengal native doctors to take willing service in the country. Is it probable that a similar increase to the pay of the hospital assistants of Madras will prove more successful? That an adequate number of educated Burmese will be tempted to go to Madras, [illegible] up to the qualification of a medical subordinate may be regarded as problematical. But the scheme of the Madras Government is one which [illegible] the East. West [illegible] carried [illegible] Burmah, and [illegible]

The second alternative proposed by Dr. G[illegible] is that which [illegible] Madras [illegible] to the suggestion [illegible] urge that the Chief Commissioner of British Burmah should be requested to take the necessary steps for the establishment of a Medical School at Rangoon, to meet the requirements of the [illegible] Burmah has now a Director of Public Instruction and a staff of Inspectors superintending and controlling an elaborate system of general education among the inhabitants, and must by this time be ripe for the formation of a medical school to be organized at [illegible] according to the [illegible] for the instruction of medical subordinates at Agra and Nagpore. The medical necessities of the province, now prominently brought to light by the heads of the Medical Department in Bengal and Madras, clearly indicate that an opportunity has presented itself to the Chief Commissioner for the bestowal of an everlasting blessing upon the important province under his management, by laying the foundation of a Medical School at Rangoon. What Lord William Bentinck did for Bengal in 1835, Thomason for the North-West Provinces in 1854, Sir John Lawrence for the Punjab in 1863, and Sir Richard Temple for the Central Provinces in 1867, Colonel Fytche possesses the power, if he chooses to exercise it, of accomplishing for British Burmah in 18[illegible].

That the Burmese are apt at receiving general and medical education, we know to be the fact. Dr. Loo, a graduate in medicine at one of the American Universities, is a Burmese. We saw him on his return to [illegible], and we were highly pleased with his general and [illegible] medical attainments. But the education he obtained was secured after travelling half-way round the globe. What we want now to see is an opportunity for the development and growth of a sound medical education on the spot at Rangoon. Let medical instruction be conveyed to the Burmese in their own country. In short we are anxious to see young Burmah taught medicine in a medical school of [illegible] own. When this much has been accomplished, the demand for medical aid from Bengal or Madras will cease. Not only [illegible] the Rangoon Medical School supply all the wants of the [illegible] public services, but the surplus will be utilized in the [illegible] of the European system of medicine among the civil population of the country, and thus the greatest good to the [illegible] will be effected, [illegible] medicine [illegible] philosophy, politics, and political economy.*

It is now, we understand, thoroughly settled that a Medical [illegible] is to be established in Burmah [illegible] that its operations, [illegible] the days of its infancy, are to be limited to the instruction [illegible] class which is to be taught up to the "Native Doctor" [illegible] simply. The time will come when the higher class of [illegible] "Native Surgeon" must be created, but the creation [illegible] premature at present.

[illegible] course being determined upon, the next point for consideration is,—"in what *language* are the students to receive instruction?" Upon this subject we hold a very strong opinion. *The language ought unquestionably to be English.* Quite enough English has been taught in Burmah, even up to the present time, to justify the authorities in insisting upon this qualification. The students need not be "admirable Crichtons;" all that is required is a sufficient acquaintance with the language to enable them to *understand the lectures*, and to *write and read prescriptions*. Of course, more than a mere smattering is necessary to enable them to do this; but with the requisite attainments we believe that the educated youth of Burmah are sufficiently familiar. It must not be supposed that we are too stringent in our demands. The era is progressive, and the time has arrived when the Government has a right to expect superior qualifications to those with which native doctors have hitherto been wont to pass for competent first class men. It is no uncommon thing for such to mistake *Calamine, Cerate,* for *Calomel!*

Prior to the admission of students into the Medical Institution at Rangoon, we would urge that they should have been required to pass two or three years in a civil or regimental hospital, under the observation of the European Medical Officer. This is the Madras system, and it is found to answer very well.

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* [illegible] calling, in [illegible] *I. M. G.*

VACCINATION.

It has been suggested to us that the remarks which we made last month on the subject of "inoculation being made penal" may lead careless readers to suppose that we advocate this measure *at all hazards*. We regret that our meaning should have appeared at all obscure, but, to do away with any misconception on this subject, we would state at once that we only advocate a penalty being put upon the practice of inoculation for small-pox in those localities where the efficacy of the vaccine prophylactic may be *thoroughly depended upon*, and where the system of supervision is complete. Otherwise, we would not oppose a well-ordered system of inoculation,—one in which the name of each inoculator was registered, and his work superintended. But *we would push vaccination wherever possible, provided our vaccine was reliable.* To secure such a virus, and to promote the absorption of inoculators, are objects at which we should systematically and zealously aim. We are aware that, in the former respect, Dr. Charles, the Superintendent General of Vaccination in Calcutta, has been eminently successful; and it is interesting and encouraging to know that of the 26 vaccinators employed during the past vaccinating season in the Darjeeling circle, 12 were *quondam inoculators*. In the Hazareebagh circle, where inoculators for small-pox have, for the past ten years, given up so inoculating, the practice has been adopted by the *Sindoornah*, or vermilion seller, three of whom are now vaccinators.

"*Mot à mot on fait les gros livres.*"

TO THE NEILGHERRIES AND BACK.

(*Continued from page 187, Vol. III.*)

Between Calcutta and Madras there is not much "sea" journey to speak of. At the same time there is quite sufficient to bring plenty of *désagrémens* with it to those who are indifferent sailors; therefore, a good vessel and a favorable season (where these are left a matter of choice) should be among the first considerations. The trip being made frequently during the hot season, or about the time of the *Doorga Pooja* holidays,—in the autumn in fact,—it is of paramount importance that a vessel of some size should, if possible, be selected. In the height of the S.W. monsoon, (always an adverse wind,) with an adverse sea, although the passage may, even under these circumstances, not occupy more than five or six days, it will often happen that the passengers, and especially the lady portion, are driven below; when, if the saloon and cabins be small, an amount of misery must be endured, which those only who have gone through, and survived it, can appreciate. For the same reason, it is well to fix upon a steamer which can "carry her ports open" in rough weather. Four or five years ago, the English P. & O. Company fitted up three or four of their vessels with a few *upper-deck* cabins for passengers, situated at the stern. Now, these have all been done away with; and, we venture to think, a very serious mistake has been committed. Most undoubtedly, the existence of such accommodation for invalids was an incalculable boon. Conceive the poor victim of hepatic abscess, suffering at the same time from diarrhœa, one to whom *air* is everything, and who has been "got off" to sea as quickly as possible to secure it: conceive such an one compelled to leave the deck every half-hour or so, and descend below in obedience to urgent calls! Of what benefit will the sea air be to him? We have witnessed such a case, one of very many; and we have no hesitation in saying that the sufferer's end was hastened in consequence of the debility and irritation resulting from these repeated descents. Had an upper-deck cabin been available, or had the cabin which he occupied been constructed on the principle which the cabins in the P. and O. vessels ought to be, the patient would have been placed under the *most favorable* circumstances possible, instead of the *worst*, and he would certainly have been ensured, so far, a *peaceful* passage.

How many of those who are passengers on these vessels are more or less ill in various ways! We are confident that the confinement below frequently neutralizes the advantages of the sea trip to many such. It is urged that these upper-deck cabins interfere with the symmetry of the vessel. But who cares about symmetry in sickness? We cannot think that the Directors of the P. and O. Company would for one moment allow such an objection to have any weight, if it were represented to them that the advantages of such cabins were really very decided. No one, on the other hand, we believe, denies the advantages; but it is, further, argued, that there is always so much jealousy and such heart-burnings on the part of those who have not been fortunate enough to secure them! This we understand to be the real reason why the cabins have been done away with. There is no nautical objection to them, we imagine? But, surely, the step was unnecessarily precipitate. Could no arrangement have been made by which the really very sick, and they alone, should occupy such cabins? The other passengers would never grudge them if they saw that no partiality was shewn. The selection, we should think, could very readily be made under the superintendence of the Medical Superintendent and the Surgeon of the ship. Has this ever been tried? Such cabins should be known as *Invalid Cabins*, and no attempt should be made to appropriate them for any other purpose.

We write strongly upon this point, having frequently made passages on the P. and O. steamers, and having as frequently witnessed the great discomfort to which invalids are subjected in the absence of upper-deck cabins, or of *habitable* cabins below. In this respect, sailing ships possess great advantages over steamers so constructed. It is not so on the Cunard line of Steamers, or in the West India Mail Packets, which ply, the one between England and America, and the other between England and the West Indies. In the former vessels there are, we believe, several cabins of the kind which we advocate,—a kind of poop-cabin; and if they succeed—as we understand they do—with one Company, surely they might with another? The cabins in the West India Mail Packets, where the decks are flush, are very large. It is singular that, in the portion of the passage between England and India, where there should be the greatest space and the freest ventilation provided for passengers, *viz.*, between the Indian port and Suez, there are actually the least. The P. and O. steamers (in the Mediterranean) of *both* Companies, French as well as English, are magnificent. Is there any good nautical reason why these steamers* should not take the place of the vessels in which we are now condemned to live some three-fourths of the passage on this side of Suez? Is "draught of water" in the Hooghly the difficulty? And if so, is it irremediable?

A residence of two or three weeks on board a P. and O. steamer, on the Indian side of Suez, is not enviable, except for those who have risen high in the P. and O. service. These vessels do not exactly represent *Elysium*. We have no doubt whatever that, if the public were more intimately acquainted with the internal economy of these P. and O. vessels, it would not be so ready to jump into them, even though the exit should be from Calcutta. It will, of course, happen sometimes that a choice of two evils presents itself—risk of life in India, or a P. and O. steamer for a few weeks. The selection is evident. But should the public be driven to this extremity?

At the best, a voyage in one of these vessels is *a period of endurance*: and the only consolation a passenger experiences is, that it will soon come to an end. If it be so for those in health, *à fortiori* for the invalid it must be a season, very frequently, of misery and torture. The confinement in a small ill-ventilated cabin, the uncertain food, and the repeated changes from one conveyance to another, between the Indian and the English port, are all very trying; and, so far from the invalid deriving benefit from the voyage, it would be a matter for surprise if a positive increase of the malady, for which he was sent to sea, was not the result. We are inclined to think that all these *désagréments* are often lost sight of when a patient is hurried off to sea in a P. and O. steamer. Undoubtedly the sea air will sometimes act like a charm, and so soon render the invalid a "new man," that he will be able to encounter all the discomforts without being prostrated by them.

But, in the case of a delicate lady, or where there is but little stamina in the system, we fear that too much is expected from this all-powerful agent. In these cases, a well found, 1st class sailing-ship possesses far greater advantages. Of course, where *time* is a *paramount* object, the Overland route must be adopted *coûte qui coûte*: but, where the

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* Even in these steamers the cabins might be larger than they are, although they considerably exceed, in size, those on the Indian side. The saloons, however, make up for these shortcomings.—ED., *I. M. G.*

[illegible] especially in cases where a [illegible] or even where a [illegible] exodus [illegible] would be attended with risk, [illegible] A few years ago the passage [illegible] or a *sailing* [illegible] "that sports," of which we shall [illegible] hereafter, the latter alone are available. We can [illegible] recollect the time when it took a sailing [illegible] Captains [illegible] now-a-days the journey is not [illegible].

[illegible] this part of our subject, which, by the way, [illegible] of the Neilgherries (!) we would say [illegible] who decide upon the Cape route for England, [illegible] They may be cheaper, and comparatively [illegible] accommodation [illegible] a larger cabin,—to wit, a [illegible] may be available; but these advantages do not [illegible] effects of indifferent food, and occasionally, [illegible] We would rather advise the selection of a first [illegible] Indiaman, where the Captain is a genial companion, [illegible] of the sailor with the grace of the [illegible]. To those who sail with him we would say, [illegible] his temporary sovereignty, conform to the rules [illegible] ship, and the chances are that all will feel more like members of a large private party, and be sorry when it [illegible] than as inmates of a tavern, (to which these vessels [illegible] compared), where the welcome closes [illegible] and where intimacy and the *entente cordiale* are [illegible].

(To be [illegible].)

Review.

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R[illegible] C[illegible] D[illegible] of Cattle in Lower B[illegible]. By K[illegible] McLeod, A.M., M.D.

[illegible] Bengal Government Gazette of 11th M[illegible] Dr. McLeod [illegible] on the [illegible] of the subject can [illegible] W[illegible] staple, on [illegible] be threatened, [illegible] to human [illegible] full measure [illegible] devoted to [illegible] has early [illegible].

[illegible] we think, existing [illegible] contribution to [illegible] all that may [illegible] have, since the [illegible] by the Govern[illegible].

[illegible]

[illegible] concerning them so far as [illegible] are necessarily [illegible] and [illegible] classification of the [illegible].

[illegible] Dr. McLeod distinguishes [illegible] the latter [illegible] treats [illegible] of the [illegible] Dr. Parkes, [illegible] 1864, [illegible].

Of the [illegible] popularly known as [illegible] affections of minor im[illegible] head.

[illegible] of epizootics appears to be [illegible] although [illegible] certain dis[illegible] This [illegible] it would be useful to draw comparison [illegible] of weather, [illegible] well-known [illegible] and [illegible].

[illegible] of epizootics, we are [illegible] information derived from close and [illegible] of the several observers who pre[illegible] Dr. McLeod [illegible] work which is shown by his arrangement [illegible] identical with, [illegible] follow; for ready comparison [illegible] by Dr. Aitken.

[illegible] devoted to [illegible] Dr. McLeod [illegible] the information is necessarily [illegible] The [illegible] distinction of pre[illegible] and [illegible] is adopted. Of the former, season is said to [illegible] which we [illegible] the varieties of period, however, [illegible] so numerous, that they appear to us [illegible] seasonal prevalence. More[illegible] in our judgment, be better [illegible] of exact enquiry, until meteor[illegible] have [illegible] some more definite significance [illegible] conveys. The remark has application only [illegible] If Dr. McLeod's [illegible] concurrent prevalence of epi[illegible] must be clearly established, there will be indi[illegible] which require [illegible] important.

The [illegible] author notices the correspon[illegible] before long [illegible] that he has [illegible] extended [illegible] of the same [illegible] Dr. M[illegible] cholera, namely, [illegible] months [illegible] wet months [illegible] Presid[illegible] Dr. [illegible] marked by [illegible] and [illegible] broke out violently in the [illegible] to Backergunge [illegible] sight, perhaps, [illegible] of the [illegible] certainly [illegible] the habitual use of [illegible], &c., [illegible] danger of [illegible] there is nothing [illegible] logical in the observation that the men and the cattle of a district are simultaneously affected by some prevalent morbid influence; but seen by the light of recent investigation, the fact suggests relations of cause and effect which a very few years ago were unheard of. The tendency of modern enquiry is to resolve into their real component elements all etiological agents. The microscope and the test-tube have done much to render us intolerant of words which are extended and indefinite. In cholera and fevers, specific media of communication, and perhaps of origin, have been demonstrated, where before the term *contagion* would have been accepted as a sufficient guide, and it is indispensable that in such an enquiry as that now before us all possibilities of cause should be examined to the full extent of means and opportunities. To learn that there exists a close relation between outbreaks of cattle disease and human epidemics in Bengal, is at once to be reminded of the phenomena noticed in Germany in 1863, where the consumption of trichinous meat "was found to be at the root of local epidemics, which of old would doubtless have been confounded with fever." So says the Medical Officer to the Privy Council in his Seventh Report; and though there are, in the habits of the people of Bengal, such differences as render them comparatively little liable to direct parasitic infection by consumption of flesh, there are not wanting to them abundant channels through which parasites infesting stock would find their way to man.

And if the pursuit of this subject should result in the discovery, or in the belief, that the spread of disease takes place through parasites, or through still lower forms of organic life, there will naturally arise the question of how far such agents are concerned in the general causation of these diseases. That a sick beast is seen to be infested with vermin is, of course, no proof that the vermin have caused the sickness, but it calls for close enquiry into the exact relation between the phenomena, and there are scattered through Dr. McLeod's report facts which render such a relation far from improbable. The *foot and mouth disease*, from the mere parts which it attacks is suggestive of direct communication from the ground the animal treads on, and the vegetation it crops; and in the severer maladies, the symptoms, some of them corresponding with those of trichinous disease, and others with the known results of algoid or fungoid development, forbid us to regard any investigation of cattle disease as complete, or even as fairly advanced, which does not go fully into the question of parasitic origin.

Further, an enquirer of Dr. McLeod's capabilities, once attracted by such a subject, would, if he met with positive results, soon be carried lower down in the scale of creation in his pursuit of causes. Each link of the chain which he would unravel would lead him to seek for another, and to look

πρό τε τῆς ἀρχῆς ἄλλη ἀεὶ φαίνεται ἀρχή, μέτα τε τὴν τελευτὴν ἑτέρα ὑπολειπομένη τελευτή. There would be for him no such thing as an original fact, so long as the means of further penetration existed. Having followed an organic cause of disease from animal to vegetable life, he would next enquire to what abnormal condition of the vegetable creation itself the cause might owe its appearance; and another vast field of enquiry would lie open to him in the whole subject of epiphytic diseases, until, step by step, he would approach some primal change of organic matter, beyond which his means of research would fail to carry him. But by this time he would have developed facts and laws serving or tending to combine into one intelligible and consistent course of natural operations the isolated fragments of knowledge which, as time advances, a multitude of observers will have gathered for us in bewildering number and variety of form. With this portion of the report, which suggests these reflections, the work of the reviewer must for the present cease. The subsequent sections contain detailed [illegible] of the [illegible] characters and treatment of the several diseases as far as observation and experience have hitherto gone. They are necessary, and very useful to the student of the subject, but, being as yet [illegible], offer no material for criticism. Under the head of *Symptoms*, however, some very interesting and important comparisons are drawn between diseases of cattle and the human race, to which we would direct attention in connexion with the foregoing remarks on the relation between epizootic and epidemic diseases.

The arrangement of the matter in the report is throughout such as to make its information clear and easy of acquisition. Here and there, however, amid great general exactness of language and reasoning, we find a certain laxity of expression, which is to be regretted. Thus, (page 22), speaking of the poisons which may produce the diseases, the author says, "From the rapidity of the disease, we infer that they are very subtle and diffusible, and most probably *capable of being conveyed by atmospheric influences*." The words italicized are of uncertain meaning. They may indicate that material agents are carried mechanically by the air in motion, or point to some change in the atmosphere itself, its gaseous constitution, or its polar state. Also, though for somewhat different reasons, we feel positively rebellious against such terms as a "painstaking enquiry." (Page 33).

Short Notices of Recent Books.

Education and Training considered as a subject for State Legislation, etc. By A Physician. London: Churchill. 1868.

This is not a medical work, nor does it refer, more than incidentally, to medical training; but it is an essay on the subject of State education, and is written by one who, while he thoroughly understands the problem before him, offers as an excuse for undertaking it, that no man is more familiar than is the physician with the sad results of want of education. He compares ignorance to some brute force stored up within the bowels of the earth, and which goes on accumulating till at last it bursts forth in fury, and engulphs a whole city, or destroys a nation. Let us, he says, control this force, let us find an engine through which, and we may direct it to useful purposes. The engine he believes to exist in "the superior force of truth." Plato asked "What is truth?" and a sceptic in our days might reply to "A Physician's" proposition by a similar query. But the broad fact remains the same, that education is a great controller of at least the coarser kinds of vice. Therefore the author urges upon the Government to take some means to make education compulsory. We think we can recognize a brilliant and distinguished member of our profession in the opinion laid down, and the vigorous character of the arguments. Still we cannot agree with him that a system of education, similar to that which exists in Prussia, would ever be tolerated in a country where the liberty of the subject is so much vaunted as in England.

[illegible] of Organic Life. London: Hardwicke. 1868.

Here is a book, just published anonymously, but written, we believe, by a medical man in a very large practice. The title entirely misrepresents the character of the work, by leading to the suggestion that the subject-matter relates to general biology; the fact being that the whole of the author's aim is to show that the reason why man is provided with a considerable length of intestine is that Nature intended him to feed on the foul gases which proceed from the rotten fæcal matter, which, if it were immediately thrown out of the body, would be so much valuable material lost. The grand climax in the author's startling hypothesis is that the colon is what he calls a manure organ, and that the difference between a plant and an animal is that the former grows where it can find manure, while the animal forms his own manure (lives on it also), and carries it about with him. Read this piece of scientific sensationalism:—"As, however, the gaseous matters from the manure of the soil are absorbed by the vegetation, and as plants do not possess organs for storing them, they are immediately used and disposed of. Not so with animals, for no animal which eats, digests, and absorbs is free from the defecating process which is the natural result; and hence we see a storing organ provided for the purpose, and, being provided, we cannot say that there is only a reservoir, or its contents useless, awaiting the animal's convenience to get rid of it. It is much more than this. It answers to, and corresponds with, what the earth and its manure do for vegetation, and no other philosophy can exist on the subject than that the animal is compelled to carry its own manure about with it, the gases from which are just as necessary and useful to its existence as the gases from manure are to vegetation," etc., etc., *ad nauseam*. What filthy philosophy! What dirty dogmatism! Can the author be in his senses? We should have thought an ounce of common intelligence would have prevented such a display of ignorance as is found in the volume before us. The author, whoever he may be, is shamefully ignorant of modern science, or he would never have established an analogy such as that referred to above, for as he, in great part, bases his *à priori* reasoning upon the coincidence between the manure of plants and animals, his argument falls at once to the ground. Liebig has long since shown in the most incontestable manner, that the gases [illegible] nutrition of [illegible] materials [illegible] from the [illegible] way in [illegible] gases [illegible] physiology, [illegible] conditions [illegible] the genuine form [illegible] of matter. [illegible] of animals, [illegible] an analogous [illegible] quality of [illegible] and the reasoning is quite plausible [illegible] there is hardly [illegible] and none of [illegible] common [illegible] comments on the formation of gases [illegible]. The book is not only [illegible].

A Manual of the Pathology and Treatment of Ulcers and Cutaneous Diseases. By J. K. Spender, M.B. London: Churchill. 1868.

Mr. Spender is Surgeon to the Bath Mineral Water Hospital, and is one of those celebrated gentlemen to whom we are indebted for much of our knowledge of the natural treatment of ulcers. In this volume the author treats of the history, diagnosis, prognosis, and treatment of each of the four ulcers—the scrofulous, varicose, syphilitic, and traumatic ulcers. His chapter on the general principles of treatment is certainly by far the best part of his "Ulcers." It contains nothing that even borders on empiricism, and while it expresses the author's belief that in most cases constitutional treatment is to be especially relied upon, it [illegible] everything that is to be said on the subject of local applications." Now that the long-received views as to the relation of ulcers to obstructed circulation are being [illegible] questioned by certain well-known authorities, it is well to know what can be said on the affirmative side. This aspect is [illegible] by Mr. Spender, who argues strongly in support of the doctrine that retarded venous currents are [illegible] sources of ulcers of the legs. His chapter on cutaneous diseases is not so good, nor so comprehensive, as that on treatment of ulcers, but it will give many a useful hint to the practitioner. Speaking of eczema, he refers to the [illegible] ointment, which he believes excels all other local applications in efficiency. By this ointment he does not mean the [illegible] of the Bath "Pharmacopœia," but that compound [illegible] with a large quantity of chalk ointment and zinc ointment, [illegible] and astringency. He gives very high [illegible] to this preparation. Mr. Spender's work should be read [illegible] by Surgeons and general Practitioners.

"*The Practitioner:" A Monthly Journal of Therapeutics.* Edited by F. E. Anstie, M.D., and H. Lawson, M.D. London. Macmillan & Co., No. 1, July.

The [illegible] journal has just appeared, and its contents [illegible] drawn [illegible] by the Editors. It deals [illegible] of the word, that is to say, [illegible] treatment, whether [illegible]. The first article [illegible] M. M[illegible] "H[illegible] treatment of [illegible]." [illegible] drawn [illegible], and [illegible] Dr. R[illegible] would [illegible] "Rationale of Poisoning," [illegible] M[illegible] R[illegible] H[illegible] made by [illegible] Street, London [illegible] remains [illegible] from the [illegible] Dr. R[illegible] [illegible] in which [illegible] instructions for the use of this instrument, [illegible] and dose of morphia, and strychnia, [illegible] Dr. Anstie [illegible] a large and interesting [illegible]. These articles are followed by Reviews of [illegible] and English books, a Chronique of the Month, Extracts from British and Foreign Journals, "Notes and Queries," and lastly a Bibliography. It will, doubtless, prove a great success.

"*The Journal of Cutaneous Medicine.*" July. Churchill.

Contains an important paper on pleurodynia by Dr. Handfield Jones, F.R.S.

English Correspondence.

[FROM OUR OWN CORRESPONDENT.]

London, July 23rd, 1868.

THE Medical Council has closed its session, and, as usual, all we find in the shape of result is *vox et præterea nihil.* Were the Council a society established to promote the discussion of questions relating to medicine, and supported by those who compose its members, this would be a matter of little consequence. But it must be remembered that it is a terribly costly institution, existing upon the taxes levied on an overworked and under-paid profession. This is no exaggerated statement. What did our "circumlocution office" cost us for its operations during the session just concluded? Not less than £4,897-2-6. But this is not the worst feature of the case. Not only has an extravagantly large sum been expended without anything of practical utility to set-off against it, but the money spent is actually in excess of the annual income by somewhere about £20. The time, I think, has come when some steps should be taken in Parliament to remodel the Council, which, as it is now constituted, is a useless body, or, at least, a corporation whose labors are of little benefit either to the profession or to the public, and yet are paid for at a rate a thousand times higher than their real value. What has been achieved this year by the Council? The Lunacy Acts, in so far as they prevent a medical man giving a certificate of lunacy of a patient not residing in his part of the United Kingdom, were brought under consideration of a Committee, and a letter was drawn up and addressed to the Home Secretary, requesting an alteration of the Statute. A letter was read from the Medical Department of the Privy Council, in which it was urged that the importance of vaccination should be recognized by the Council and all licensing Boards, and that students should be submitted to practical examination on the subject. Dr. Storrar firmly supported this view, but as yet no action has been taken. Dr. Acland spoke of the great importance to medicine of a knowledge of therapeutics, and proposed that a grant of £100 should be given to Dr. Richardson to work out the question of anæsthetics, but he was quickly silenced. Here, I think that, in point of expediency, Dr. Acland was right, but it must be confessed that the laws embodying the Council give it no powers such as those Dr. Acland desired to exercise. It is, indeed, much to be regretted. What might not have been achieved for practical medicine, had the large sums of money expended by the Council been devoted to therapeutical investigation! How long is this gross scandal to continue? How long is this terrible "old man of the sea" to remain on the shoulders of our brethren?

What is to be done with the out-patient department of our large hospitals? This question assumes a considerable importance just now, as a memorial, initiated by that nearly effete body, the *Medical Teachers' Association*, has been addressed to the Medical Committees of some of the hospitals, and what is styled a reform is [illegible]. The change proposed is this: to utilize the out-patient department for the purposes of teaching. Now, anyone who knows anything of this department in London hospitals, is aware that an unhappy assistant physician is [illegible] to examine, and prescribe for about 150 or 200 patients every [illegible]. The duties as they are discharged are, I need hardly say, the merest farce, for it would be an absolute impossibility to [illegible] properly to even 150 persons in the course of three hours. If we suppose, then, that the new proposal comes into operation, we shall have the assistant physician [illegible] giving a clinique on, about 150 patients [illegible]. The thing is, *prima facie*, [illegible]. The [illegible] of the scheme has been apparent to some of tho reformers, and so they have bolstered up their plan by suggesting that all the commoner cases shall be visited at their homes by the students. a compromise which is even more objectionable than the original idea. Why, there is no hospital in London that would tolerate such a mode of dealing with patients: *firstly*, because it would be opposed to the interests of the charity; *secondly*, because it would lead to serious mistakes on the parts of the students, and would involve the Governors in serious broils with the legal authorities and the public; and, *thirdly*, because it would be an extension of a very improper practice, which, I am sorry to think, holds good even now, *viz.*, handing over the patients to be treated for grave ailments by young men often without either experience or intelligence, and invariably without a legal qualification. An attempt is being made to carry out this idea at St. Mary's Hospital, but I may tell you that the Board of Governors is totally opposed to it, and that, should the scheme be approved by the Medical Officers; it will be as certainly rejected by the real supporters of the hospital, and, if I may add my opinion, very properly so.

You may remember that I some time since spoke of the injustice of the King's College officials to one of their most active and distinguished teachers, Dr. John Harley, in compelling him to resign his post of Assistant Physician to the Hospital. It is in a corresponding degree gratifying to know that at least Dr. Harley's friends and pupils were not of the same opinion as the authorities. On the 17th instant, his former pupils met, and presented him with a testimonial, in the form of a beautiful copy in silver of the Cellini Vase, in token of their sincere regard, esteem and regret on the occasion of his retirement from King's College, London. The address, which accompanied the testimonial, was suitably engrossed on vellum.

The meeting of the *St. Andrew's Medical Graduates Association* on Monday (20th) last was of more than ordinary interest, since the discussions related almost entirely to Dr. Richardson's candidature for the representation of the United Universities. The Report of the Council expressed the opinion that the representative of the University ought to be a medical man, and that the members of the Association should be asked to support Dr. Richardson in his candidature. Dr. Richardson then addressed the meeting, and, having explained that he had no ambition to become a Parliamentary man, would, nevertheless, stand as a candidate, if supported. But inasmuch as a man who goes into Parliament honestly undertakes hard work, he would not undertake to pay a penny, nor would he countenance any expenses but those which were absolutely necessary. As to politics, he would enter Parliament as a member, independent of all party, and would support those measures which he thought good, from whomsoever they might come. He considered old foundations which had been proved good, better than new ones which had not been proved. Dr. Prosser James said that he was also a candidate, and begged that the members would accord him their support, but no one seems to have responded to his appeal. It was curious to see how general politics and polemics got mixed up in the matter. Dr. Drysdale declared he would support no one who would not vote for the disestablishment of the Irish Church, and Dr. Martin declared himself as equally decided in the opposite direction. Dr. Richardson's opinions tend towards conservatism, and he is quite opposed to the disestablishment of the Irish Church. In all probability, Dr. Richardson will leave the field to Professor Lyon Playfair, who seems at present to have the largest and most influential support.

It was some time since proposed to the Comitia of the College of Physicians that a certain number of registered medical practitioners, of mature age and good standing, should be allowed to obtain the Licentiate without passing the examination. The Comitia met on Tuesday last (21st), and I am sorry to find that the proposal was withdrawn. The grounds on which the Comitia declines to adopt the proposal are those which have ever been opposed to every reform from time immemorial. They formulate two objections: (1) that a number of persons might be admitted over whom they would have insufficient control; (2) that it would injure the standing of several old Licentiates, who have, at great pains and in their ripe old age, submitted to be questioned by the Examiners. Could any objections be more puerile than these? Why should the condition of the newly-conferred license be to place the bearer (at risk of cancelling his diploma) under the control of the College? And what change for the better was ever thoroughly retrospective? The Council of the College is reduced to a lamentable state of "old fogeyism," when arguments such as these can influence their minds.

The British Medical Association, under the presidency of Dr. Stokes, of the University of Dublin, will hold its meeting at Oxford on the 4th, 5th, 6th, and 7th of August next. The section of Medicine will be presided over by Sir W. Jenner, that of Physiology by Professor Rolleston, that of Surgery by Mr. Paget, that of Midwifery by Sir C. Locock, and that of Public Medicine by Mr. Simon. Several interesting papers are promised. Mr. Paget is to read a paper on Stammering with other organs than those of speech. Dr. Russell Reynolds will read a paper on certain Affections of the Vaso-Motor Nerves. Dr. King Chambers will read a paper inquiring "How shall we make our daily experience advance science?" This last is most important, and I shall be glad to know how Dr. Chambers proposes to answer the query.

Progress of the Medical and Collateral Sciences.

The Syphilitic Affections of the Nervous System.—On the subject of a memoir recently sent in to the French Academy by M. Lagneau, M. Cloquet, who presented the work, said that it contained an immense deal of original matter, and was of a very high value. M. Lagneau has given a very comprehensive clinical history of the extension of syphilis to the different divisions of the nervous system; and he states, among other conclusions, that syphilis may give rise to all the neuroses, and especially to epilepsy, change of sensibility, and paralysis.

Use of Ergot in Hæmoptysis.—In the *British Medical Journal* for June 27th, Dr. Horace Dobell advises the employment of ergot in cases where other remedies have failed, in doses of twenty minims every three hours. He administers it in combination with digitalis, gallic acid, and various other substances. He states that he has seen wonderful results from this practice.

Caffeine used subcutaneously.—In an article on "Hypodermic Injection" in the July No. of *The Practitioner*, Dr. F. E. Anstie gives his experience of the value of caffeine in neuralgia and insomnia from chronic alcoholism. He especially records two cases, the dose employed in each being a grain. In one instance of severe neuralgia of the superficial branches of the circumflex in the shoulder, two successive injections of caffeine over the biceps appeared to cut short the malady altogether. In a case of dorso-intercostal neuralgia attending shingles, the patient was injected daily for five or six days, with the effect of notably mitigating the pain on each occasion. In a woman who had drunk to excess for years, without ever having had distinct delirium tremens, but who could not sleep at all, and was a prey to distressing visual hallucinations, a notable improvement was effected by caffeine. She was injected twice a week for three weeks, and on each occasion got great temporary relief. These cases of Dr Anstie's are of the highest interest, for they show of how much benefit subcutaneous injection may be even in cases heretofore considered out of its sphere.

Hair as a Character of Race.—M. Pruner, whose "Researches on Anthropology" are already well known to our readers, has just published his more recent "Researches on the Race Characters of Hair." His memoir contains several drawings of sections of hair as seen under different microscopic powers, and it must doubtless be in many respects, and for a long time, the work of reference on this subject. The author considers that more is to be learnt from transverse section than from any other preparations, for in this way, he says, one is able to ascertain the size of the hair, a point of great import in diagnosis. He states that he has established the fact that the hair of the negress is not always black, but that, on the contrary, it is sometimes red, and is occasionally met with of an ashy color. Among two hundred specimens of hair from natives of India, only one occurred of a straw color, and this, he says, might have been of foreign origin. In his opinion, the hair of every race south of the Himalayas is jet black. M. Bey establishes a remarkable distinction between the Semetic and Aryan races. The latter show a regular oval out-turn in the transverse section of the hair, while the out-turn of the hair in the former is angular.

A new Microscope Condenser with a Blue-tinted Field Lens.—*The Quarterly Journal of Microscopical Science* for July

[illegible]

Effect of [illegible] the Nerve in Epilepsy. [illegible] M. R[illegible] [illegible] the pa[illegible] [illegible] *Med*[illegible]

Action of Pure Phosphorus on the Tissues. [illegible] M. P[illegible] [illegible] phosphorus, wh[illegible] [illegible] substances [illegible] He [illegible] that animals [illegible] three weeks, [illegible] kidneys showed [illegible] Yet the phosphorus was [illegible] of volume, and [illegible] appearance of anything [illegible] *M*[illegible], July.

[illegible] **treated by Phosphorus.** M. [illegible] continuous case of this kind [illegible] for ten years. [illegible] malignant [illegible], in the form [illegible]

[illegible] Matteucci. [illegible] distinguished [illegible] physici[illegible] [illegible] passed from among us. He [illegible] a very short illness. He [illegible] considerable [illegible] Institute [illegible] Academy [illegible] Society [illegible] investigation [illegible] passed the [illegible] Telegraphy [illegible] Lectures [illegible]

[illegible] Hybrids. M. [illegible] the reproduct[illegible] [illegible] fertile by [illegible] point [illegible] reproduc[illegible]

[illegible] **of Cantharidin.** [illegible] described [illegible] cantha[illegible] [illegible]

The Ophthalmoscope in Diagnosis of Nervous Diseases.—[illegible] M. Bouchut [illegible] diseases. [illegible] (2) [illegible] papillary [illegible] affections of the [illegible] This association is [illegible] with the brain [illegible] W[illegible] obstruct[illegible] [illegible] chronic [illegible] optic [illegible] by reason of [illegible] the level of the two [illegible] hyperæmia and [illegible] (7) Optic neuritis [illegible] of the nervous system [illegible] (8) In lesions of the [illegible] generally [illegible] which is most grave [illegible] always [illegible] *R*[illegible], No. 23, [illegible]

Experiments on the Nerves of Invertebrates. M. J. [illegible] of experiments to determine [illegible] nerves in the higher molluscs, [illegible] species of the cuttle-fish group [illegible] He [illegible] the great visceral nerve and [illegible] mouth in these molluscs have [illegible] of the great visceral nerve, w[illegible] [illegible] the action of the heart [illegible] end of these nerves arrests [illegible] heart in [illegible] of the central end of the [illegible] system of the movements of [illegible] A current of great force, [illegible] of contraction. If, on opening the [illegible] at the lower part, one divides the [illegible] gives rise to loss of sensation and [illegible] the same side, the chromatophores [illegible] and one side of the body [illegible] If [illegible] be applied to the peripheral [illegible] are temporarily restored, and the [illegible] by [illegible] restore the normal color to the [illegible]

Anæsthetics in the Treatment of Hepatic Colic. At [illegible] Academy, M. A. Trip[illegible] [illegible] He [illegible] that, whatever may be the [illegible] opinion, quite certain that we [illegible] the expulsion of biliary calculi. The [illegible] the observations of M. [illegible] and the well-known phenomena of [illegible] He says, point to the one fact, that [illegible] is to remove the [illegible] influence of the brain. For this [illegible] inhalation of chloroform [illegible] of biliary calculi.

The Characters of M[illegible].—Those who are interested in [illegible] should take up the last number [illegible] and read Mr. E. Wilson's [illegible] M[illegible] so as to present itself [illegible] of skin affections. Mr. Wilson [illegible] and quotes the following as the [illegible] of the malady. The general [illegible] skin which is white, more or less [illegible] circumscribed, and permanent. The [illegible] the absence of pigment in the [illegible] of capillary circulation, and [illegible] a white substance in the affected [illegible] white material, probably a state [illegible] fibrous tissue, sometimes associated [illegible] there may co-exist one or two [illegible] an accumulation of pigment. [illegible] remarkable, that it has been [illegible] to point to the skin of a dead [illegible] whiteness is the most striking [illegible] *Journal of Cutaneous Medicine*, July.

ORIGINAL COMMUNICATIONS.

◆

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

By J. Fayrer, M.D.

Present: Dr. Fayrer, Dr. Ewart, Professor of Physiology, and Mr. Seeva, of the Indian Museum.

August 15th, 1868.—The object of these experiments was to make careful observations of the symptoms during the action of the poison, to note the pathological changes during life and after death, and the microscopical appearances of the blood of a mammal in the healthy state, immediately before submitting it to the influence of the snake-poison, and to compare these appearances with those of the blood of the same animal after death from the snake-poison.

The examination was made with the greatest care by Professor Ewart and myself with two microscopes, the power used being $\frac{1}{4}$-$\frac{1}{6}$ of an inch, and they were repeated many times.

Experiment No. 1.

At 11-59 a.m., a small pariah dog was bitten in the left hind-leg, just above the carpal joint, by a Daboia, the same snake that had been used in former experiments. The dog was put near the snake, which, though excited and hissing loudly, appeared disinclined to bite; on being irritated, it struck the dog in the leg as described; the wound bled freely.

It was nearly five minutes before the dog shewed signs of the effects of the poison. He then began to stagger and seemed weak, and as if unable to co-ordinate the muscular movements of the limbs.

At 12-6 he lay down, breathing heavily; at 12-7 he rose and staggered a few steps and vomited.

12-9.—Gradually subsided on to his left hind-quarter; looks vacantly about him, but intelligent when spoken to. There is no indication of any suffering.

12-11.—Walks about when led, but very sluggish, and wants to lie down; weak in the bitten leg.

12-18.—Is walking slowly, staggering in the hind-quarters; has his head depressed, with the neck stretched out. Cold water dashed over the head seemed to rouse him partially.

12-22.—Lies down, weak and exhausted; no convulsions. Looks as though he were going to sleep. Takes no notice when spoken to.

12-42.—Lying down sluggish, and disinclined to move; can walk a little when roused.

12-46.—Respiration deep. Lying on the right side; appears generally paralyzed.

12-57.—Insensible; catching respiration.

1-5 p.m.—Dead.

Died in 66 minutes.

Post-mortem, soon after death. Part above the ankle-joint, where the animal was bitten, ecchymosed to an extent of 2 inches, and discolored by dark bloody fluid.

Decomposition commencing.

A coagulum corresponded to the points at which the fang had penetrated.

Blood in femoral vein fluid.

Thorax opened. Lungs pale and bloodless; completely collapsed when the thorax was opened.

Heart's right cavities contained fluid blood. The blood pressed out of the heart and from the great vessels in the thorax was fluid, with no tendency to coagulate. The left side of the heart empty.

The liver healthy. Spleen enlarged. Stomach contained a quantity of food. Kidneys healthy.

Brain taken out and carefully examined: it was healthy looking and firm, perhaps more anæmic than quite natural. The blood was kept until next day, and there was no coagulation.

Up to 1-54 p.m., no *rigor mortis*.

The blood was most carefully examined before the dog was bitten, during the operation of the poison and after death. There was nothing suggestive of the changes described by Professor Halford. The red corpuscles remained altogether unaltered. In one of the examinations after death, a few more of the white corpuscles were seen than we had observed in other specimens, but there was no peculiarity about them: and after most careful and repeated examinations, we could detect nothing that confirmed Dr. Halford's observation.

Experiment No. 2.

A healthy medium-sized dog was bitten, at 12-10, in the left hind-leg by the Daboia Russelli. It was not certain that the fangs penetrated. The mouth of the snake was also brought in contact with the right thigh and the lower part of the abdomen, and the fangs were struck lightly into the parts. The snake was one that had been used on former occasions, and was weak, and probably almost exhausted of poison.

1-20 p.m.—Lies down; looks depressed; evidently affected by the poison.

2-3 p.m.—There has been very little change during the last 40 minutes. Lies down quietly. There are abdominal contractions, as of irregular action of the diaphragm.

5 p.m.—When roused moves about, but is sluggish and weak. Steps irregularly with a staggering gait, crossing the hind-legs, at other times keeping them wide apart. After walking a little, the steps became more regular and steady. The dog having usually been fed at this time, food was offered, but he refused it.

6-30.—Quiet; no symptoms of pain or convulsions; perfectly conscious; when spoken to, responds readily by raising his head and wagging his tail. Is insensible to pain if irritated in any part of the body.

In some of the former experiments it seemed as though anæsthesia were produced on the limb that had been bitten.

The dog gradually drooped, without any sign of pain; no spasm. Died at 8-15 p.m.

Bitten at 12-4.

Died at 8-15.

Eight hours and eleven minutes after being bitten.

In this case death was very slow and painless. It seemed more like a gentle lethargy stealing over the animal, and gradually increasing until death. There was no sign of pain; no convulsions; just before death the defecation was of a muco-sanguinolent character, having been perfectly natural before being bitten. The body was examined soon after death.

On raising the integument, it was found that the deepest wounds from the snake's fangs had been received in the middle of the lower part of the abdomen, but they had not penetrated deeper than the adipose tissue.

Several small punctures (4 or 5) were found in the side of the abdomen and in the inner part of the thigh.

The *post-mortem* appearances of the thoracic and abdominal cavities were exactly the same as in the former case, except that the spleen was healthy in this case.

The blood was watched for [illegible] hours, and it did not coagulate; and being carefully examined under the microscope presented no change from the normal condition.

The results of these experiments, which were conducted with great care and every precaution to exclude sources of error [illegible] slowly [illegible] difference [illegible] poison admin[illegible]

EXPERIMENT No. 3.

[illegible] 1868. [illegible] pig [illegible] [illegible] readily [illegible] before, had [illegible] not eat [illegible] to be weak and [illegible] indisposed [illegible] when [illegible] off, and [illegible] down [illegible] appeared very [illegible] also appeared [illegible] by the pig and [illegible] were severely injured.

[illegible] snake or [illegible] The snake [illegible] 11-55 [illegible] the bitten leg was [illegible]

[illegible] the bitten leg [illegible] twitching [illegible]

12 [illegible] The bitten leg always [illegible] as though [illegible] mouth [illegible]

[illegible]

[illegible] now [illegible]

[illegible] 1-10 [illegible]

2-7 [illegible]

[illegible] that [illegible]

2-15 [illegible]

[illegible] stage [illegible]

2-25 [illegible] when [illegible] first [illegible] considerable [illegible] of the fore and hind legs.

2-40 [illegible] gasping [illegible] immediately [illegible]

[illegible] at 11-55 [illegible]

[illegible]

as if he had been roused from a state of overpowering nervous oppression. Breathes slowly and imperfectly; does not half-fill his lungs.

Bitten at 12·53.

Died at 1·14 p m.

Dead in 21 minutes.

This is further proof of the deadly action of the poison on innocuous snakes.

Experiment No. 5.

At 12·55 p.m., a large Cobra was bitten by a full-grown, freshly-caught Cobra; they were both of one variety, that marked with one ocellus in the hood, the *Keauteah* of the snake-catchers.

The scales were scraped off, and the snake was made to imbed his fangs deeply in two different places about 10 inches from the head. There could be no doubt of the penetration, or of the injection, of a large quantity of poison.

At 12·59 five drops of Cobra-poison, taken from the snake, were injected, by means of the hypodermic syringe, into the muscles of the Cobra's back.

1·30.—No effect produced; the Cobra is as lively as ever.

1·45.—Still unaffected.

4·30.—Still unaffected.

18*th August*, 5 *p.m.* The snake is as well as ever.

This experiment goes far to prove the immunity of the Cobra from the noxious effects of the poison of its own species.

Experiment No. 6.

1·20 p m.—Civet cat (Viverra Malaccensis) bitten by a Daboia. The snake struck in more than one place.

1·25.—Appears paralyzed.

1·26.—Appears almost dead.

1·30.—Still breathing imperfectly; stretches his legs as if from spasms.

1·32.—Got up on his fore-legs and vomited; lying down exhausted.

1·37.—When roused, he seized a stick, but is evidently half paralyzed in the hind-quarter; lies down again on left side.

1·40.—Gets up again when irritated, breathes hurriedly, and lies down at once. Evidently very drowsy and much exhausted.

1·47.—Tries to get up of his own accord; finds he cannot; rolls over on other side; right hind-leg paralyzed. Continues restless and endeavouring to move, and has again succeeded in changing his position.

1·57.—Lying flat on side with all his legs stretched out. Can be roused, but his hinder extremities still paralyzed, and he does not give fight as before. Is uneasy and restless.

2·12.—Roused; walks about much better, but his right hind-leg is very weak; quite paralyzed. Put into his cage; gave much more fight.

2·30.—Seems reviving, but he is restless and manifestly uncomfortable; lying down, and at full stretch, on side.

4·15.—Purged freely; very low; evidently at the point of death.

4·25.—Convulsive movements for two or three minutes; stretching the limbs, &c.

4·36.—Dead.

Body examined, showed the animal to have been bitten on the nose, on the side of the head (in the temporal muscle), and in the thigh.

The *post-mortem* appearances of the viscera were like those in other animals.

This viper was the same that had been frequently used in other experiments before described, and must have been considerably weakened. The deadly nature of the snake is manifest from this continued power of inflicting mortal wounds, and it is probable that it has the power of rapidly secreting fresh poison. It is regarded with great dread by the snake-catchers, and evidently with good reason.

ON CHOLERA.—No. V.

By C. Macnamara,

Surgeon to the Calcutta Ophthalmic Hospital.

M. Sawas, a member of the Cholera Conference assembled at Constantinople in 1866, thus describes the origin of the European cholera of 1830-31 "In 1829 it broke out at Orenburg, which maintained extensive commercial transactions with Bokhara. From Orenburg it passed to Kiakhta, a town on the frontier of the Russian empire, and the seat of a great fair. From Kiakhta the disease was communicated to Cabul in 1829, after the fair, and thence it passed progressively to Herat and Meshed, and broke out in the following year in Teheran."* From the evidence, however, which I have already adduced, I trust I have made it clear that the Bombay Presidency, Scinde, and the Punjab, were under the influence of an invading cholera from the east, during the year 1827, which had reached Khiva† and Herat in 1829; and I shall now endeavour to trace the continuation of the epidemic from India, through Europe, to America.

On the 26th of August, 1829, the disease broke out in the city of Orenburg; it was not, however, until the "10th of September that its true nature occurred to the physicians of the place."‡ Between the 9th and 25th of the month, 57 cases had been reported, and before the 21st of October, 747 people were attacked by the disease. By the 20th of November, the epidemic had entirely disappeared from the city, into which, in the first instance, it was said to have been imported by caravans from Bokhara.§

About the 23rd of September, cases of cholera began to appear in other parts of the Orenburg Government; and the first place in which it was known to exist was in the fortress of Rasusna, sixty miles west of Orenburg; and, between the 3rd and 4th of October, it appeared in various villages and forts to the west and south-west of the district. The epidemic influence extended about two hundred miles to the north and north-west of Orenburg, and about sixty miles to the westward; this space it traversed between the 26th of August and the 6th of February, but the greater part of it was visited by cholera before the middle of November. On the 23rd of February the disease had well nigh disappeared,‖ though it still cropped up here and there, being generated, for instance, at a few advance posts beyond the sanitary cordon round the infected localities.

We witness, therefore, in this, the first detailed invasion of cholera into Europe, phenomena precisely similar to those I have described as occurring in India the invading cholera progressing forward from east to west, and north-west, after a time almost entirely subsiding over the invaded area, but only to burst out again in these localities, and simultaneously to be engendered over a vast tract of country to the west and north-west of its former limits.

We must pause for an instance to notice the progress of the epidemic from India directly westward into Persia. I have already quoted a passage from the *Government Gazette* as to

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* Proceedings of the International Conference at Constantinople, 1866. Calcutta, 1868, pp. 313 and 439.

† The Edinburgh Medical and Surgical Journal, Vol. 36, p. 122.

‡ Idem.

§ Proceedings of International Sanitary Conference at Constantinople, 1866, Calcutta, p 395.

‖ Medico-Chirurgical Review, Vol. 161, new series, p. 163.

Hamburgh. "The persons first attacked in the port resided on the quay, and were exposed to intercourse with the shipping. No communication, however, was satisfactorily traced between these persons and the particular ships referred to, nor were any of these ships known to have persons sick with cholera on board."* Whether it is more probable that these non-infected ships should have introduced cholera into England, or that it should have been generated there in obedience to that mighty force which had caused it to move onwards from Bengal to the west of Europe, I leave it for the reader to judge; of one thing we are quite certain, and that is, the inhabitants of the populous village of Debtford, close to the Ayres quay, "where the disease was very prevalent and fatal," escaped its influence; as did the agricultural villages in the immediate neighbourhood of Sunderland.† The truth is, that cases of cholera had in reality occurred in Sunderland as far back as the 5th, 14th, and 27th of August—two months before the declared importation of the disease.‡ Cholera subsequently appeared at Newcastle, Gateshead, Edinburgh, and in London in February. The number of deaths in England amounted to 97 in November, 282 in December, January 614, February 708, March 1,519, April 1,401.§

The influence of the invading cholera of 1831 having failed to pass beyond Germany, France remained absolutely free from the epidemic until the following year. On the 24th of March, however, cholera burst out in the very centre of the country at Paris. According to M. Gendrin, on the third day of the appearance of cholera, he received patients from every district of Paris into the Hotel Dieu. The patients' distant residence, and opposite professions, preclude the probability of their having derived their disease from human contact. Of the first ninety-eight cases admitted into the hospital, no less than ninety-six died.‖ Within the first week of the disease, the mortality reached 500 per diem, and the cases to four times that amount: in eighteen days no less than 7,000 persons had died of cholera in Paris. M. Meurthe observes that the Luxembourg quarter contained about 20,000 inhabitants, and of these 7,532 were indigent people, and 13,330 of the better classes. Among the former, no less than 4,500 suffered from cholera, and only 2,500 of the latter.¶ The village of Issy, situated on the road from Paris to Versailles, totally escaped, although surrounded by other hamlets—Vanores, Vangirara, Beau, Grenelle, which were all cruelly ravaged by the disease. M. Gendrin remarks that all other diseases participated in the general features of the epidemic, exhibiting abnormal epiphenomena of a choleraic kind. This tendency was observed by almost every physician of eminence throughout Europe during the years 1830-31-32.

At the time of the advent of the epidemic into France, it was also generated in Ireland, and spread over many of the principal towns in that island. The disease was re-produced in England, and, before the end of August, had visited Hull, York, Leeds, and several other large towns; the total number of cases in England, however, amounted only to 14,796, and of these 5,132 died.

The progress of the invading cholera from east to west was not destined to be limited by the Atlantic. On the 8th of June, 1832, it broke out among the inhabitants of the city of Quebec, and on the 10th at Montreal. On the 23rd of the month cholera appeared in New York, and on the 5th of July in Philadelphia. It spread over nearly the whole extent of the United States before the end of the year. The epidemic still continued its original course, attacking, for instance, the towns and villages along the banks of the St. Lawrence, then following the borders of Lake Ontario, until it entered lake Erie, visiting Detroit and Amerstbergh on the 6th of July.

It will be observed that as yet we have heard little or nothing of cholera in Spain or Portugal. These countries appear to have escaped the influence of the epidemic until 1833.

The disease was said at the time to have been imported into Portugal. "The London merchant steamer sailed from England to Oporto on the 25th of December, 1832, and arrived at the mouth of the Duro on the 1st of January, 1833, having lost seven men on the passage by cholera. The troops which she took out with General Solignac landed immediately at Foz, about ten miles west of Oporto."* Cholera appeared at Foz on the road to, and in Oporto before the 15th of January, and spread to Coimbra and Gallicia. The circumstances of this case were reported on the 8th of May, 1833, by Mr. Lardner, and in a subsequent number of the *Lancet* (November 22nd, 1834) he gives a more detailed account of the phenomena of the disease. In the first paragraph of his second letter to the *Lancet*, he remarks, "I know that the *Rainbow* frigate in Vigo Bay, while at anchor alongside the *Dona Maria*, was severely attacked with cholera in its most malignant form, while in the latter (although free and constant communication existed between the two vessels) the disease never made its appearance." It appears, moreover, that the sick men landed from the *London* were at once confined in the Foz hospital, "which was well calculated, by its locality, to hinder any communication from being made between the patients and Oporto." Very shortly afterwards, however, the disease appeared in the very heart of the city. A month afterwards Aveiro was affected with cholera. There was every reason to suppose there was little, if any, communication between the cities, Aveiro being in the hands of the Miguelites. The disease did not appear in Lisbon till June; but it is most difficult to gain any precise information on these points, or as to the history of the epidemic in the interior. The press was gagged, and the circumstances of the disease not allowed to be discussed.

In Spain quarantine was most rigorously enforced. Every traveller from an infected district was subjected to the performance of quarantine; and if he entered Spain without having gone through the formality, he was liable to be punished with death, his apparel burnt, and goods seized; the same punishment being extended to those who received him.† In spite of all these precautions, cholera raged with great violence in many of the provinces of Spain during the summer of 1833‡ and 1834.

The disease broke out on the 26th of February, 1833, in Havanah, and continued to the 20th of April. During this period no less than 8,253 persons were destroyed in a population of 65,000 souls.§ Later in the year the epidemic was generated with frightful virulence in Mexico; before August no less than 15,000 individuals are said to have perished from it.‖

Throughout the year 1833 we hear of cholera being reproduced over almost the entire area through which we have traced it during the preceding years. Cases occurred in the majority of the large towns of Europe and America. Ne

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* Drs. Baly and Gull's Reports on Cholera, p. 21. And Cholera as it recently appeared at Newcastle and Gateshead. By T. M. Greenhow, p. 104.

† Cyclopædia of Practical Medicine. Edited by Drs. J. Forbes, Tweedie, and Conolly. Vol. I, p. 400. London, 1833.

‡ Quarantine. By Gavin Melroy, M.D. London, 1847, p. 30.

§ Report on the Mortality from Cholera in England, 1848-49. By Mr. W. Farr.

‖ Monographie de Cholera Morbus Epidemique de Paris. Par A. M. Gendrin, Paris, 1832.

¶ Histoire du Cholera Morbus dans le quarter Luxembourg. Par M. H. Boulay de la Meurthe. Paris, 1832.

* London Medical Gazette, Vol. xii, p. 123.

† Idem, p. 60.

‡ Lancet, October 5th, 1833.

§ Idem, for 1834-35, p. 325.

‖ Idem, p. 596.

[illegible]

[illegible] the latter, we should naturally look [illegible] so far as we have yet gone into [illegible] by cholera. [illegible] we have [illegible] complete [illegible] of the [illegible] East explanatory of the above [illegible]

[illegible] the history of a vast outbreak [illegible] over the Madras Presidency [illegible] the valley of the Nerbudda, [illegible] In 185[illegible] the Hedjaz* was under the [illegible] of cholera, and I have given evidence of its subsequent [illegible] the basin of the Mediterranean [illegible] same time at its being widely scattered over Europe. [illegible] of cholera, when viewed by the [illegible] 1865-66, is certainly very suggestive, [illegible] will yet [illegible] by those interested in these [illegible] and [illegible] documents and [illegible]

W[illegible] in the history of cholera [illegible] two of the most [illegible] against the [illegible] on this [illegible] commenced [illegible] Europe, and has waged with [illegible]

In [illegible] was probably never [illegible] Governments of Europe [illegible] from their dominions by quarantine [illegible] cholera of 1850-51 [illegible] 1853 an infringe[illegible] In our own [illegible] issued by the Board of Health [illegible] will give us an idea of the [illegible] in October, 1831, to stay the progress [illegible] "Immediately separate the sick [illegible] infected houses," [illegible] to be burnt," "dead [illegible] the houses selected for cholera patients [illegible] about the sick, including the [illegible] from the rest of the community [illegible] be placed in front of infected houses, and [illegible] the family after the person [illegible]," "all intercourse with an [illegible] country to be prevented," [illegible] to be drawn around infected [illegible] inhabitants from all intercourse with the country."†

[illegible] the strictest possible [illegible] in excluding cholera. That [illegible] attempts at land quarantine by [illegible] parts of Europe, accustomed to [illegible] of apparent [illegible] quarantine [illegible] very [illegible] and weak [illegible] Russia, Austria, and Prussia, [illegible] troops, and the [illegible] nature [illegible] advantages for the establishment [illegible] the sanitary lines have been every-

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* [illegible] International Sanitary Conference of Constantinople [illegible]

† [illegible] Vol. XVI, p. 267.

where overstepped by the disease again and again, after it had reached the more civilized parts of Europe.* As, for instance, in the case of Debrenzyn, in Hungary, which suffered more than any other town in the country, although guarded by a triple cordon †

The greatest efforts were made to keep the cholera out of the Russian capital, by means of quarantine; but, as usual, these having signally failed, a strong double cordon of troops were still maintained around Larcozels and Peterhoff, to which the court and nobility, with their attendants, in all 10,000 persons, retired, and resided in seclusion (among them, I am sorry to say, were two English physicians.) In the beginning of October, the restrictions were withdrawn; and it was accurately ascertained that not a single instance of the disease had occurred within the enclosure, though it raged in all quarters around in the close vicinity of the lines.‡

"Kristofsky, situated in the middle of the populous islands of Petersburg and which communicates with them by ten magnificent bridges, and with the town by a thousand barges, which bring every day, and especially Sundays, very many people, who go to walk in the beautiful island, we say, has been completely preserved from cholera; there has not been a single patient in the three villages which it contains. During the cholera, most of the French players retired to Kristofsky, and not a single patient was found among them; while out of the small number of their companions who remained in town, many either died from the disease, or were seized with its most violent form."§

"On the St. Lawrence, immediately opposite to Montreal, and within a very short distance of the city, is a small island called St. Helena. Immediately upon the breaking out of cholera at Montreal, the authorities removed the military to "St. Helena." The people from the island went every morning to the city to make their bazaar, and mixed with the inhabitants of the infected city; but, notwithstanding this daily constant communication, there was never one case of cholera in the island during the whole time."‖

Colonel Tulloch states that, "Cases of cholera were first noticed in Quebec on the 8th of June, 1832, among a party of emigrants who landed there on their way to Montreal, in consequence of the steamboat in which they had embarked being overcrowded. On the following day a person belonging to the same party, but who had proceeded by vessel to Montreal, was attacked shortly after his arrival there, and within a few days the disease became general in the town.'¶ Dr. S. Jackson, however, the consulting Medical Officer of Philadelphia, distinctly affirms that, although the emigrants were at first supposed to have transmitted the epidemic across the Atlantic, "a more close investigation into the facts connected with the commencement of the disease in these cities, served to destroy this supposition. It could not be traced to importation."

The Brig *Amelia* left New York, when cholera prevailed, on the 19th of October, 1832, with one hundred and odd passengers on board, from stress of weather they were confined below. After being at sea six days, cholera broke out among them. On the 31st of October the vessel was wrecked on Folly Island. Up to this period twenty-four persons had died of cholera, and several remained sick.

A boat's crew of wreckers was sent from Charlestown to save a part of the cargo, and immediately after returning to the city one of them was seized with cholera and died. The patient resided in a most filthy part of the town, and was visited by "hundreds of curious people," but the cholera did not spread in Charlestown. The remainder of the wreckers were sent back to Folly Island, and during the passage two of them fell sick with cholera and died; they are described as of exceedingly intemperate and dissolute habits. The crew of the vessel had from the very first been placed under strict quarantine on the island. Of four negroes, the only persons left on the island by the proprietor, three died, one a child and two adults. Of the wreckers eight died; of the guard employed to perform the duty of a cordon sanitaire, and who were stationed about 120 yards from the sick, nine were reported severely ill, and one died. The three physicians in constant attendance escaped, but a nurse employed on the first wrecker, who died, fell a victim to the disease a week afterwards.*

The first case of cholera observed in the village of Moor-Monkton, six miles from York, occurred on the 28th December, 1832. The disease did not exist at the time in the neighbourhood, or in any place within 30 miles. John Barnes, a labourer, had been suffering for two days from diarrhœa and cramp, when on the 28th December he was taken ill with all the symptoms of cholera, and died the next day. Barnes' wife and two other persons, who visited the sick man, were seized with cholera, but recovered. The son of the deceased man arrived. He had been apprentice to his uncle, a shoemaker, in Leeds; his aunt had died of cholera fifteen days before, and her effects were sent to J. Barnes without having been washed. The trunk containing the things had been opened by J. Barnes in the evening, and the next day he fell ill. This case is cited by the Cholera Commissioner of Constantinople in proof of the transmissibility of cholera by articles tainted with cholera, or soiled by their dejections.†

(*To be continued.*)

DIFFICULT CASES IN MIDWIFERY, OCCURRING AMONG NATIVE WOMEN.

By T. Murray, M.D.,

Civil Surgeon, Ajmere.

"The positive advantage we obtain from embryotomy is the safety of a large proportion of the mothers, who, in addition to the children, must have perished, had no aid been afforded. The children, of course, are all lost."—*Churchill.*

The following cases from my note-book may help to disprove the idea, very generally prevalent, that native women are less subject to the accidents and chances attendant on child-bearing than women in European countries.

I have found that flooding after delivery, retained placenta, and puerperal fever, are by no means uncommon among native women; and I am informed that, in villages and hamlets far away in the interior of the country, women often die *undelivered.* Obstetric medicine is certainly at a very low ebb among the natives in this part of India.

UNNATURAL LABOUR, MAL-POSITION AND MAL-PRESENTATIONS OF THE CHILD; EVISCERATION.

CASE I.

P., Brahminee, aged 40; fourth labour.

This woman was the wife of a respectable Brahmin of this city, and had been in labour for about twenty-six hours before

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* Edinburgh Medical Journal, No. 37, p. 199.

† Liverpool Medical Gazette, Vol. I, p. 277.

‡ Official Reports on Cholera by Drs. Russel and Barry, p. 58, London, 1832. Idem, p. 203.

§ Observations Sur le Choléra Morbus. Par l'Ambassade de France in Russia. Paris, October, 1831.

‖ Report of the Committee on the Mauritius Cholera, 1856, p. 156.

¶ Report on the Sickness and Mortality amongst the troops in British America p. 306.

* American Journal of Medical Science, Vol. XIV, p. 37[illegible].

† Proceedings of the Sanitary Conference at Constantinople, Calcutta [illegible] p. 93.

I saw her. I was [illegible] to see her [illegible] at 7 o'clock on the [illegible] of the [illegible] February, 1861. The substance of the [illegible] made to me by my Native Doctor was, that there was [illegible] presentation, and that several midwives had been with [illegible], and had been using great force in trying [illegible] away by one of its arms; not succeeding, [illegible] left her, and the patient was now in a very [illegible]. The liquor amnii had escaped shortly [illegible]. On my arrival at the patient's house soon [illegible] 7 [illegible], I found her [illegible] writhing in great agony. I found the left arm protruding from the vulva [illegible] as far as the axilla, and the umbilical cord compressed [illegible] pubic arch. The protruded arm was very cold and [illegible] blood. I relieved the cord from pressure, but [illegible] pulsation in it, neither could any pulsation be felt [illegible] heart. This satisfied me that the child was dead.

The patient continued in great agony, the pains were strong, [illegible] she was using violent expulsive efforts, throwing herself [illegible] exhausting her strength to no purpose. The vessels of her head and neck were greatly swollen and congested, the [illegible] rolled in great beads from her forehead, and every [illegible] her body was bent double; the muscles were fixed and rigid, and the hands tightly clenched, as though the patient was in a paroxysm of tetanic convulsions. I administered a soothing draught at once, and soon after placed the patient [illegible] under the influence of chloroform. I next [illegible] found this was impossible. I sat [illegible] for a few minutes, but, notwithstanding [illegible] the patient, the fœtus remained firmly [illegible] slightest movement forward was perceptible. After two ineffectual attempts at turning, I determined to eviscerate.

Operation.—The woman lying on her back, her hips resting [illegible] edge of the bed, and an assistant steadying each knee, I [illegible] perforator with great care, guided by the fingers [illegible], and, having felt the fœtal scapula, passed [illegible] thorax through one of the intercostal [illegible]. Having made a free opening, I brought away the [illegible] thorax. I next inserted the crotchet in the [illegible] way [illegible] I had introduced the perforator, carefully [illegible] of the mother. In a few moments the [illegible], the pains coming on strong, [illegible] difficulty.

I [illegible] cold water over [illegible] the uterus.

[illegible] experienced, [illegible] her anxiety [illegible]

[illegible] household

CASE II.

[illegible] and in the ha-[illegible]

[illegible] on the 9th [illegible] almost every [illegible] labour. [illegible]

increase considerably in violence, from the child being unable, from its faulty position, to yield to the expulsive efforts of nature. Drained of its liquor amnii, the uterus remains in its state of contraction even during the intervals of the pains; the consequence of this general and continued pressure is, that the child is destroyed from the circulation in the placenta being interrupted, the mother becomes exhausted, and inflammation, or rupture of the uterus and vagina, are the almost unavoidable results."

Churchill says, "If the uterine action be very intense, *turning* may be impossible without risk of rupturing the uterus."

And again, "Should version be impracticable, we must open the chest of the child, and eviscerate; after which it may be extracted by the crotchet."

Spontaneous evolution, according to the testimony of Dr. Douglas, does not occur above once in ten thousand labours.

POWERLESS AND OBSTRUCTED LABOUR; CRANIOTOMY.

CASE I.

S., Hindnee, aged [illegible], [illegible] labour.

I was called to see this woman about 10 o'clock on the night of the 17th November, 1862. She had been in labour from dawn of the previous day (about 29 hours). I found her much exhausted, with a quick intermitting pulse, and a countenance expressive of fear and anxiety. The child's head was greatly swollen and enlarged—hydrocephalic in fact; and delivery by forceps being impracticable, I performed the operation of craniotomy in the usual manner. The mother was quite well on the twelfth day.

CASE II.

M., Mussulmanee, [illegible], age 41, eighth labour.

I was called to see this woman on the afternoon of the 26th February, 1867. She had been in labour two days. I found her very weak and exhausted; pulse quick and feeble; pains had ceased for about two hours. She was moving her head from side to side, moaning and praying for help. On examination, I found the child's head enormously enlarged; the child was dead; and, as it was not a case for forceps, I at once had recourse to craniotomy. Everything went on favourably for the first four days, when puerperal fever set in, and the patient died on the ninth day. I think, if she had had assistance at an earlier period of her labour, the case might have terminated differently. One curious feature in this case was, that the woman had been labouring under paralysis of the lower extremities for three years.

In contrast to the foregoing cases, I may add the following, showing the advantage of seeing the patient at an early period of labour.

At [illegible] on the 20th May, 1867, I received a hurriedly written note requesting me to see Mrs. ——, who was in labour. I had just returned from one of our Municipal Committees, and was about to sit down to breakfast, when the note was handed to me. As the horse had not been taken out of the buggy, I was with the patient in a few minutes. She had that morning come in, a distance of fifteen miles, for change of air, having been suffering for some time past from a low form of intermittent fever. She looked pale and weak, and said she had been a good deal fatigued by the journey. She arrived here at about 7 o'clock, and between 8 and 9 was seized with labour pains. This was her third pregnancy, but she was only in, or about, the seventh month. The pains were strong and characteristic of true labour pains. On examination, I detected a transverse presentation, and lost no time in [illegible], converting a shoulder presentation into a *footling*. The child was still-born, and appeared to be a seven months' child. It looked as if it had been dead some hours. The mother, notwithstanding her previous illness, made a very good recovery.

INDIAN EXPERIENCES OF LITHOTRITY.—No. II.

By Surgeon J. B. Scriven,

Principal of the Lahore Medical School.

(Continued from Vol. III., No. 8, page 182.)

Having, in the last number of the *Indian Medical Gazette*, laid before the public a few remarks on Lithotrity in India, it seems to me desirable now to give a brief history of the cases on which the former observations were based. This I do in the present communication, placing them in chronological order.

It will be remembered that, in the last paper, I stated that there had been thirty-six cases in the Medical School Hospital. I now find, on careful examination of the case books, that Kootha, No. 5 upon the list, and Emam Deen, No. 21, were each three times in hospital, and that, in the daily register, the former has been put down three times, and the latter twice, as a fresh case. These two cases, therefore, appear as *five*, so that the number 36 must be reduced by 3, making the correct number 33.

In the former paper, I have fallen into a slight error in saying that injections, previous to lithotrity, had not been used in *any* of my cases. The detailed account now given shows that, once in each of the three cases, No. 1, No. 2, and No. 17, the bladder was injected. However, as this was only done thrice out of the 157 times that I have executed the manipulation of lithotrity, and two of the occasions were in my first two cases, so long ago as the year 1861, I may, perhaps, be excused for having forgotten it.

I add to the detail of cases a tabular statement, for ready reference, which shows twenty-nine male cases and four female. Of the twenty-nine male cases, nineteen were cured, one of them having undergone the operation of lithotomy. Of the remaining ten, seven left the hospital of their own accord, four of them being relieved, and three no better; one was discharged, relieved; one was lithotomised, and left the hospital suffering from liver disease; and one only died in the hospital. Of the four female cases, in one, No. 20, lithectasy was performed after lithotrity; one, No. 28, left the hospital before I wished her to do so, but in all the cure eventually was complete.

CASE I.

Bhobany, male, aged 40, (Hospital Register No. 1, page 130), a stout, healthy looking man, had had symptoms of stone for one year. This man was operated on with L'Estrange's lithotrite on July 12th, 1861. The urine was held for 2 hours; but, as the bladder was supposed not to be sufficiently full, some tepid water was injected by means of a syringe and catheter. The bladder was also washed out after the operation, and a few small fragments brought away. This man was operated on a second time on July 20th, and a third time on the 27th. On the second occasion chloroform was given.

The quantity of calculous matter that was collected in this case was 232 grains, which was found to consist mainly of uric acid. This man was discharged on the 29th of July, apparently quite well.

CASE II.

Monawar Shah, male, aged 50, (Hospital Register No. 1, page 152). Symptoms of stone for three years. Much emaciated. Urine albuminous.

Bladder injected, and stone crushed on July 20th, 1861. This man's bladder became very irritable after the operation. A few grains only of calculous matter came away, which was found to consist mainly of urate of ammonia. He was discharged, at his own request, on the 26th July.

CASE III.

Doonah, aged 21, male, (Hospital Register No. 1, page 278.) Symptoms of stone three or four years.

Crushed with L'Estrange's instrument on January 14th, 1862. Bladder washed out with tepid water morning and evening. He was again operated on on February 1st. On the 7th February the symptoms of stone had disappeared, and no stone could be detected on sounding. Discharged cured. This man passed altogether about 270 grains of calculous matter, the nature of which is not noted, but from the readiness with which the stone was crushed, and brought away, it was doubtless phosphatic.

CASE IV.

Bala, aged 36, male, (Hospital Register No. 1, page 282). Symptoms of stone for one year. Was first operated on with L'Estrange's lithotrite on February 6th, 1862, and again on the 15th. The bladder was washed out twice a day with tepid water. Altogether this man passed 122 grains of calculous matter, which consisted principally of phosphate of lime. He was carefully sounded after this, and no calculous detected. He was discharged cured on February 19th.

CASE V.

Kootha, aged 30, a stout, healthy male, (Hospital Register No. 1, page 292). Symptoms of stone of 18 months' standing; operated on first on March 16th, 1862. He continued to pass calculous matter up to the 29th, and remained in hospital till April 5th. He had now passed altogether 52 grains of detritus, and the symptoms of stone had quite disappeared, at least so he said; and he was returned "cured" in my annual report; but, as he went away without leave, I had not the opportunity of satisfying myself on this point. On the 29th of June, 1863, he presented himself again, saying that he had been greatly relieved by the former treatment; that for a whole year, in fact, he had enjoyed tolerable health, though the symptoms of stone were not altogether absent. During three months previous to his second admission, he had suffered from very frequent and painful micturition. There appeared to be more than one calculus.

Lithotrity was performed on July 2nd, 8th, 21st, 29th, and on the 13th August. On the 31st of August he again got tired of the treatment and absconded. This time he passed 162 grains of stone. A third time he appeared at the hospital on October 5th, but would not stop. Some remaining fragments were therefore crushed, and he went away. On the 14th of October he came again as an out-patient, and submitted to another crushing. On the 22nd he was sounded, and no stone felt. He said that he had now no pain in making water, though a straining effort was necessary for it. He had kept the detritus that had come away since October 5th, which was found to weigh 30 grains. On the 3rd December of the same year, 1863, this man was again admitted as an in-patient, suffering severely from frequent and painful micturition. He had intermittent fever also; the urine was opaque, alkaline, and albuminous. Lithotrity was performed on the 9th of December, under chloroform, and the bladder was washed out twice a day with tepid water. From the 9th to the 15th he continued to pass calculous matter, in all 35 grains. The urine became clearer, and on the 16th I find the following note:— "Lithotrite passed to-day under chloroform, but no stone felt. Has now no pain or inconvenience in micturition. Makes water about three times a day."

After this he began to suffer from orchitis; this kept him in hospital till the 12th of January, 1864, on which day he was discharged, well.

CASE VI.

Jassaye, female, aged 20, (Hospital Register No. 1, page 104). Symptoms of stone of somewhat less than one year's standing.

This woman was first operated on on the 23rd of June, 18-

1¼ inch in diameter, as caught by the lithotrite. The operation was repeated on the 29th. He went away on the 13th of August, saying that he had lost all symptoms, though a small fragment could still be felt in the bladder. He passed altogether about 89 grains of calculus.

CASE XVII.

Soobhan, aged 60, male, (Hospital Register No. 3, page 245). Symptoms of stone for seven years. Urine contained crystals of triple phosphate and pus. Lithotrity first performed on the 14th of December, 1864. Stone found to be about an inch in diameter. The lithotrite bent in crushing it, and was removed with difficulty, bringing with it a small fragment of stone. The operation was repeated on the 21st and 30th, the second time after injecting. After this the man's bladder became very irritable, and further treatment was interrupted by his getting an attack of dysentery. Not having patience to wait till he recovered from this, he left the hospital on January 4th, 1865. He passed altogether 38 grains of stone. This was a case in which, I make no doubt, I should have succeeded, had I had Sir H. Thompson's instruments. The bladder was an irritable one, and required to be very carefully operated on; whereas several unfortunate accidents occurred. In the first operation the instrument bent, entangling an angular fragment of stone, and, as this could not be disengaged, it was dragged along the whole course of the urethra, between the distorted blades of the lithotrite; and, in two of the three operations, I find it recorded that a small piece of the mucous membrane of the bladder was brought away with the instrument.

CASE XVIII.

Wuzeera, aged 60, male, (Hospital Register No. 3, page 252). Symptoms of stone for two years. Urine acid. No crystalline deposit. Stone first crushed on the 31st December, 1864. On the 3rd January, 1865, I find it noted that the urine, examined again, was found to contain crystals of uric acid. The operation was repeated on January 9th, 14th, and 22nd, and on February 3rd and 10th. He continued to pass calculous matter up to the 24th. He was kept in hospital a month longer, in consequence of some remaining irritability of the bladder, during which time he was carefully examined both with the sound and lithotrite, but no remaining fragment of stone could be detected. He was discharged, cured, on March 29th, having passed altogether 74 grains of calculous matter.

The following four cases occurred during my absence in England, and were operated on by Drs. Brown and Henderson.

CASE XIX.

Sazawar.—This is the same man (case 15) that was under my treatment in April, May, and June, 1864. He was re-admitted on September 29th, 1865, operated on on the 20th of October, and discharged on the 15th November. He is put down in the monthly register "Relieved."

This man's re-admission on September 29th, 1865, be it observed, was fifteen months after his discharge on July 1st, 1864. It seems fair to put him down as a fresh case; for, if I had overlooked any fragment of stone in 1864, it is most probable that the symptoms would have been continuous, and that he would have applied earlier. Now we know that he had a marked lithic diathesis; on his first admission he informed us that he had been accustomed to pass sand and gravel for fifteen or twenty years, and on his discharge in July, 1864, he was carefully examined and no stone found. I think, therefore, there is sufficient ground for believing that, in 1865, he was suffering from a second calculus, and not from any remnant of the former one. I had not the opportunity of inquiring into this point myself as I was in England at the time, and I do not find any remarks upon it in the case-book.

CASE XX.

Emam Beebee, a female child, aged 5, (Hospital Register No. 6, page 51). This case is put down as one of lithotrity; but the stone seems to have been crushed only once on November 1st, 1865, in order to diminish its size, and was afterwards removed by lithectasy. The case did well, and was discharged on the 18th November.

CASE XXI.

Emam Deen, aged 30, male, (Hospital Register No. 9, page 58). Stone first crushed on the 16th of March, 1866, and again on the 28th. This man was discharged on April 30th, re-admitted on the 30th of May, and discharged on the 3rd of June; of this second admission I find no record in the case-book; but a third time he became an in-patient on the 19th of November of the same year, 1866. On this occasion he was lithotritised on the 20th and 24th. On the 27th no stone could be felt, and he was discharged, cured. The quantity of detritus is not noted.

CASE XXII.

Kamon, female, aged 10, (Hospital Register No. 7, page 136). Symptoms of renal calculus of 2 years; of stone in the bladder only a short time (not recorded exactly) before admission; stone crushed first on November 24th, 1866, and again on the 27th, 30th, and on the 4th of December. On each occasion, except the last, chloroform was administered. The patient was discharged, cured, on December 11th. One hundred and eighteen grains of stone were collected.

This brings us to 1867, in January of which year I returned from England with Sir H. Thompson's instruments, with which I operated on five cases during the year 1867.

CASE XXIII.

Nazar, aged 60, male, (Hospital Register No. 4, page 304). Symptoms of stone for four years. Was first operated on on the 15th of February, 1867, and six times afterwards, at intervals of from four to six days. On 17th March he left the hospital of his own accord, much relieved, but with some small fragments still in the bladder. He had passed 70 grains of calculous matter.

He returned on August 1st, and was operated on four times, at intervals of from four to seven days, and went away a second time of his own accord, on the 24th, having passed 39 grains of detritus, and saying he was well. Not being quite satisfied about him, I went to his village: I did not find the man himself, but his friends reported him well.

The sequel of the case, however, is remarkable.

Some time after this, I met him, and asked how he was, to which he replied, that he was *not* quite well; indeed, that he had not been so since he left, and that he believed there was a fragment of stone remaining. I told him to come again, but he did not obey the summons till the month of May, this year, 1868. The disease had now become unbearable, the pain in making water excessive, and its frequency so great, that he described it as continual dribbling. In this condition he presented himself to me on May 10th, 1868.

At first sight, it appeared hopeless to attempt lithotrity on [illegible] irritable a bladder; but I was very unwilling to cut so old a man: for, though he gave his age last year as 60, he now gave it as 70; and, on more close inquiry, he told us he believed he was 75, which was about what his appearance indicated. Moreover, the man himself was averse to being cut, and both he and I remembered how tolerant he had been of the lithotrite on two occasions before. After two days' rest in bed, I found the irritability of the bladder somewhat diminished, so that he could retain his urine for 55 minutes; and the quantity passed at a time was nine fluid drachms and a half. On May 12th I made him pass it before me. I now waited 25 minutes in order that a little more might be secreted, with [illegible] distend [illegible]. This succeeded perfectly; the stone was [illegible] was [illegible] the last [illegible] the side of the lithotrite, [illegible] He had a good deal of [illegible] relieved by fomentations [illegible] The stone was [illegible] diameter.

[illegible] successfully on the [illegible] and 25th.

[illegible] symptoms [illegible] very much [illegible]. He [illegible] water [illegible] a day, and [illegible] walk about [illegible]. He was [illegible] stone felt. He declared himself well, and was allowed to go, promising to return and let me know how he was, [illegible] a week after his discharge. I sounded and [illegible] found nothing; but he came again on the [illegible] of June, and I detected a small fragment [illegible], which was [illegible] crushed. Again he showed himself on the 25th. He said that he had passed a good deal of sand, and that, since the last crushing, he had entirely lost the pain that he had suffered from in the glans penis, though he still felt a little smarting, after micturition, about the neck of the bladder. He said that he made water [illegible] times in 24 hours. I sounded him, and found nothing.

This man, while in hospital, experienced great relief from washing out of the bladder, as the passage of the fragments irritated him a good deal. This was a most interesting case to me, for it taught me the possibility of lithotritising when the irritability of the bladder was extreme; and I also learn that it was not impossible when the bladder was empty; for on [illegible] this man completely emptied his bladder and I [illegible] I [illegible] the straining effort was [illegible] without any [illegible] the bladder. I believe he is at last cured, as he [illegible] have been in 1867, if he had had sufficient patience. However I shall doubtless see him again, as he has now learnt the folly of keeping so long out of my sight.

CASE XXIV.

[illegible], male, aged [illegible], Hospital Register No. 4, [illegible] Symptoms of [illegible] dated from the [illegible] March, 1867. [illegible] Was first operated [illegible] June [illegible], 1867, and [illegible] times afterwards at intervals of [illegible] matter, [illegible] discharged, cured, on [illegible] June, having lost [illegible] examination [illegible]

CASE XXV.

[illegible], male, aged [illegible], Hospital Register No. 6, [illegible] Stone phosphatic. Symptoms of one year's standing. He was first operated on on the 22nd of August, 1867, and [illegible] afterwards, at intervals of [illegible] six days. He was discharged, cured, on the [illegible] of October, still suffering [illegible] could be [illegible] collected from [illegible] was [illegible]

CASE XXVI.

[illegible], male, aged 30, Hospital Register No. 6, page [illegible] stone. He was operated on [illegible] September [illegible] 1867 and [illegible] and he was discharged, cured, on the [illegible]

CASE XXVII.

[illegible], male, aged 40, Hospital Register No. 10, page [illegible] Had [illegible] a year ago, which was extracted by a Native Surgeon. [illegible] symptoms of [illegible] years' standing. Stone [illegible] in diameter. Was first operated on November [illegible], 1867, and [illegible] 1868. He was discharged, cured, on December [illegible]. Only [illegible] grains of [illegible] matter were collected.

CASE XXVIII.

[illegible] Hospital Register No. 6, [illegible] A [illegible] woman [illegible] Had [illegible] stone for [illegible] months. Had prolapse of the uterus in consequence. The [illegible] was [illegible] and the prolapse relieved under [illegible] she would not allow anything to be done without [illegible] The stone was readily felt. She was kept in bed for a couple of days, and the uterus did not come down again. On the 9th of January, 1868, chloroform was administered, and the stone crushed with the flat-bladed lithotrite. It was [illegible] inch in diameter. Some sand was withdrawn between the blades of the instrument, and she passed a little with the urine, altogether about [illegible] grains. On the 13th of January I had the following note:

"She has passed three large pieces of stone. Each of them is rounded on one side, and rather flattened or angular on the other. The edges of all three are somewhat water-worn. On putting the three pieces together, they evidently form nearly the whole of the calculus, which is oval in shape, 1 inch in its longest diameter, [illegible] inch in the next, and [illegible] in the smallest; there is a slight deficiency in the middle, which is nearly accounted for by the fragments passed before." The three pieces weighed 92 grains. Having passed the calculus, this woman was determined to go at once, without any further examination. Her son, however, a grown-up man, who had attended on her in the hospital, called on the 18th, on which day I had the following note:—

"Her son reports her free from all pain and irritation, and perfectly well. She [illegible] to walk about, and has no prolapse of the uterus. The urine is said to be clear and free from sand, and she passes water two or three times a day only."

CASE XXIX.

[illegible], aged [illegible], male, Hospital Register No. 5, page 510. Stone [illegible] inches in long diameter [illegible] crushed with the flat-bladed lithotrite on January 11, 1868, and five times afterwards. He was discharged, cured, on March [illegible]

CASE XXX.

[illegible], male, aged 35, Hospital Register No. 11, page 17. Stone [illegible] in long diameter. It was first crushed with the fenestrated lithotrite on March 1st, 1868, and [illegible] times afterwards with the [illegible] one, as related in my last paper. He was discharged, cured, on May [illegible] The man came [illegible] on June 27th, and reported himself [illegible] well. Altogether [illegible] passed 295 grains of calculous matter.

CASE XXXI.

[illegible], aged [illegible], male, Hospital Register No. 11, page [illegible] Symptoms of [illegible] three years. Had [illegible] previous to this. Frequency of micturition great, but he could, by an effort, hold the urine for two hours. [illegible] acid, and deposited crystals of uric acid. Stone was first crushed on the [illegible] of March, 1868, with the fenestrated lithotrite. The first diameter in which it was caught was [illegible] inch; it was then released from the grasp of the instrument and caught in a slightly smaller diameter, [illegible] inch, and crushed. He was somewhat relieved after the first operation, and the crushing was repeated, with the fenestrated lithotrite, on the 9th and 18th. The patient suffered a good deal after the 2nd and 3rd operations; he became weak and low-spirited, his bladder was excessively irritable, his bowels costive, and he could not sleep, so that we proposed to *cut* the stone on the 23rd March.

As I knew the stone to be rather large, and that now it consisted of several fragments that would be difficult to seize, I determined to adopt Sir William Fergusson's mode of operating by means of a semilunar incision for the external parts, the deep incision into the prostate, being the same as in the ordinary lateral method. (See *Lancet*, January 4th, 1868, page 1).

This certainly facilitated the operation, by enabling me to reach the fundus of the bladder more easily with the forefinger of the left hand. There was some free bleeding after the operation, but it was not more difficult to stop, by means of a well-padded tube in the wound, than in the ordinary lateral incision. This man, for some days, appeared to do well, the urine flowed freely through the wound, which became red, granular, and healthy; he began again, however, to be troubled by costiveness, the bowels were opened with the greatest difficulty by strong purgatives and enemata, and the fœces were white and scybalous; there appeared to be no secretion of bile, yet he did not become jaundiced. The urine continued to flow through the wound, which never lost its red, granular aspect, but the patient became weak and emaciated, in which state, of course, repair could not proceed. On the 7th of April he left the hospital, at his own request, which I did not oppose, as medicine did not seem to benefit him, and there was some hope from change of air. I have had no tidings of him since. This man passed about 21 grains of calculous matter before he was lithotomised, and, when the stone was removed, it was found to weigh 599 grains. In all, therefore, it was about 620 grains.

CASE XXXII.

Milava, aged 35, male, (Hospital Register No. XI, page 86). Stone uric acid, diameter two inches. It was crushed first, with the fenestrated instrument, on March 31st, 1868, and fourteen times afterwards, nine of the operations, only, being with the flat-bladed instrument (*see* the former paper). This man was discharged, cured, on June 6th. Altogether 387 grains of calculous matter were collected.

CASE XXXIII.

Nathoo, aged 45, male, (Hospital Register No. 13, page 8). Symptoms of stone of ten months' standing. Urine acid, depositing crystals of uric acid; could hold his water three hours, at the end of which time the quantity passed was about 2½ ounces.

Lithotrity was first performed, with the fenestrated instrument, on the 28th of April, 1868. The stone was found to be 1¼ inch in diameter. The operation was repeated with the flat-bladed lithotrite on the 2nd and 5th of May. He was kept in hospital till the 12th, and was three times carefully examined, but no more stone could be found. All his symptoms had subsided, except slight scalding, and frequency of micturition. He could run without any inconvenience. He passed altogether 83 grains of calculous matter.

Tabular Statement of the foregoing Cases.

No.	Name.	Age.	Sex.	Size of Stone.	Date of first operation.	Number of operations.	Duration of treatment.	Composition of Stone.	Result.	Remarks.	Quantity of detritus.
				Inches.							
1	Bhobany	40	Male	... ...	July 12th, 1861	3	17 days.	U.	Cured	... ...	232 Grs.
2	Monawar Shah ...	50	,,	... ...	July 20th, 1861	1	6 ,,	U.	No better ...	Left of his own accord ..	
3	Doonah	21	,,	... ...	Jan. 14th, 1862	2	24 ,,	... ...	Cured	... ...	270 ,,
4	Bala	36	,,	... ...	Feb. 6th, 1862	2	13 ,,	P.	Ditto	... ...	122 ,,
5	Kootba	30	,,	... ...	Mar. 16th, 1862	9	113 ,,	... ...	Ditto	3 times in hospital	279 ,,
6	Jawaye	20	Female	... ..	June 23rd, 1862	6	41 ,,	U.	Ditto		349 ,,
7	Ameera	40	Male	... ...	July 2nd, 1862	1	10 ,,	...	No better .	Left of his own accord ...	28 ,,
8	Soolka	40	,,	... ...	Aug. 1st, 1862	3	36 ,,	U.	Cured	...	83 ,,
9	Oomur Deen .	40	,,	... ...	Aug. 20th, 1862	2	38 ,,	P.	Died	Died of diarrhœa	89 ,,
10	Roheea	60	,,	... ...	Sept. 24th, 1862	2	16 ,,	. .	Relieved ...	Left of his own accord ...	100 ,,
11	Fazl Deen . .	30	,,	... ...	Dec. 12th, 1862	5	36 ,,	..	Cured	... ...	106 ,,
12	Buchun Sing ...	22	,,	.. ...	May 1st, 1863	1	7 ,,	P.	Relieved .	Left of his own accord ..	129 ,,
13	Morad Buksh ...	50	,,	... .	May 14th, 1863	1	1 ,,	... ...	Ditto ..	Ditto	
14	Elahee Buksh ...	50	,,	2	July 21st, 1863	2	40 ,,	. .	Cured	Lithotomised on Aug. 5th	102 ,,
15	Sazawar	58	,,	... ...	April 2nd, 1864	7	90 ,,	...	Ditto	... ...	294 ,,
16	Multa	60	,,	1¼	July 17th, 1864	2	27 ,,	U.	Relieved ...	Left of his own accord ..	89 ,,
17	Soobhan	60	,,	1	Dec. 14th, 1864	3	21 ,,	P.	No better ...	Ditto	38 ,,
18	Wuzeera	60	,,	... ...	Dec. 31st, 1864	6	89 ,,	U.	Cured	... ...	74 ,,
19	Sazawar	59	,,	.. ...	Oct. 2 th, 1865	1	26 ,,	... ...	Relieved ..	Lithectasy } These four cases were operated on when I was in England. ...	
20	Emam Beebee .	5	Female	... ...	Nov. 1st, 1865	1	17 ,,	... ..	Cured		
21	Emam Deen ...	30	Male	... ...	Mar. 16th, 1866	4	57 ,,	... ..	Ditto ...	3 times in hospital	
22	Kanoon	10	Female	... ..	Nov. 24th, 1866	4	17 ,,	.	Ditto		118 ,,
23	Nazar	60	Male	... .	Feb. 13th, 1867	17	106 ,,	.	Ditto	3 times in hospital	145 ,,
24	Emam Deen ...	26	,,	... ...	June 6th, 1867	4	13 ,,	P.	Ditto	. ...	52 ,,
25	Morad Shah .	20	,,	... ..	Aug 22nd, 1867	9	12 ,,	P.	Ditto	... ...	94 ,,
26	Bucktawar	20	,,	... ...	Sept 13th, 1867	2	11 ,,	...	Ditto	... . .	10 ,,
27	Valee Dad	40	,,	¾	Nov. 15th, 1867	2	23 ,,	P.	Ditto . .	. . ...	7 ,,
28	Parmeshree ...	55	Female	⅞	Jan. 9th, 1868	1	6 ,,	. ...	Ditto	... ...	107 ,,
29	Jaga	30	Male	2½	Jan. 11th, 1868	6	53 ,,	P.	Ditto	. . ...	
30	Natha	55	,,	2	Mar. 1st, 1868	17	91 ,,	U.	Ditto	..	295 ,,
31	Rahman	25	,,	... .	Mar. 6th, 1868	3	52 ,,	U.	Lithotomised	Weight of stone extracted, 599 grains	21 ,,
32	Milava	35	,,	2	Mar 31st, 1868	15	67 ,,	U.	Cured . ..	. . . .	387 ,,
33	Nathoo	45	,,	1¼	April 28th, 1868	3	14 ,,	U.	Ditto	. . ...	83 ,,

I now wish to offer a few explanatory remarks on the above details.

The grounds on which it was considered that any patient was "cured," will, for the most part, be found in the statement of each case; and it may fairly be taken as a fact, when the patient, having been believed cured, at the time of discharge, has not since returned. There are but four instances, out of the 33 cases, in which the patients have returned for treatment of the same disorder, *viz.*, Kootba, No 5; Sazawar, No. 15; Emam Deen, No. 21; and Nazar, No. 23. Now Kootba, Emam Deen, and Nazar were each three times in hospital, and left it, on the first and second occasions, with the evidence of cure either absent or unsatisfactory. They were all three eventually cured In Sazawar's case there is good ground, as stated before, for believing that the cure was complete on the first occasion. As to the duration of treatment, I have reckoned it from the day of the first operation to that of discharge from hospital (in the case of re-admission, of course deducting the time the patient was absent and not under treatment); but in the case of Kootba, who was detained in hospital after the completion of the treatment for stone, on account of orchitis, I have reckoned it from the first operation to the cessation of symptoms. In the cases of Nazar and Kootba, who were both treated for some time as out-patients, this time has been included. In those instances only, in which the case-book history affords distinct evidence of the composition of the stone either inferred from the recorded condition of the urine, or ascertained by analysis), has it been noted in the table; P. standing for phosphatic, and U. for uric acid or urate. The quantities of detritus collected have been stated, but

[illegible]

INSOLATIO CONSIDERED AS A ZYMOTIC DISEASE

[illegible]

other zymotic diseases, a specific poison or miasm for its source. This belief has been gradually gaining ground; but it has hitherto existed only as a belief, and the virus of insolatio has probably always been regarded as separate and distinct from others of its class.

It is not improbable that a more intimate acquaintance with the subject will teach us that some diseases now apparently unconnected, are really identical, and owe their dissimilarities to the fact of the poison working in different constitutions, in varying quantities, or perhaps under differing circumstances yet unknown, and thereby acquiring not only varying degrees, but perfectly distinct forms of action. This may be illustrated in many ways, but one simile will suffice. Oxalic acid in a concentrated form is a powerful irritant poison, but largely diluted, it is an equally powerful sedative—diametrically opposite effects produced solely by the presence or absence of a certain quantity of water.

I have not the intention, nor indeed the power, of advancing any new arguments in favour of the zymotic theory. In this paper that doctrine will be accepted as a truth, although it has not received the incontestable proof that is so desirable in all medical investigations; and I wish it to be understood that I use the word *zymotic* without any reference to its derivation, simply to express some sort of change taking place after the introduction into the body of external causes competent to excite such morbid alterations. In like manner, the words *materies*, [illegible], &c., are used to denote these exciting causes; and to convey the impression that they are actual, tangible substances, but they are not intended to carry any further signification. When writing upon subjects that are uncertain, it is necessary to fix arbitrarily upon words which will convey the ideas required, although the elucidation of those subjects may be impossible, and the words expressing them very likely to lead to erroneous conceptions. This is a mode of [illegible] vague.

The relation that exists between ardent continued fever and [illegible] has been frequently pointed out by many who have written upon the subject. In the following pages it will be my endeavour to establish not merely the relation, but the absolute identity of the two diseases; and in order to do this, it will be necessary for me to make in the first place those remarks upon ardent fever which my observations in India have suggested to me.

The common continued fever of the hot season is epidemic in this country during the summer months, in the widest sense of the term; and if this [illegible] stood alone, there would be strong reasons for attributing the disease solely to the effects of increased temperature [illegible] excitation. But, besides being general in its attacks, it also exhibits remarkable endemic characters, which render its [illegible] in one locality far greater than in another that is quite adjacent, and under precisely similar climatic [illegible]. And from this I draw the conclusion that heat is only one of the causes which co-operate to produce it.

It appears to me that [illegible] heat is the generator of the specific [illegible] which, when [illegible] into the economy, are capable [illegible] fever in constitutions predisposed [illegible] the poison. What condition is necessary, [illegible] with the sun's heat, or be [illegible] of the *materies*; whether it be organic, [illegible] in its nature, or from what element [illegible] the poison is evolved, I cannot conjecture. But [illegible] by argument that such elements exist, and in such [illegible] quantity as [illegible] effects.

When this *materies* [illegible], it will produce symptoms of greater or less severity [illegible] proportion to its quantity and the amount of predisposition [illegible] the individuals attacked.

The predisposing causes [illegible] are all such as lower the bodily vigour, but especially intemperance and impure atmosphere, because, as will presently be shown, these two influences act in precisely the same manner as the fever poison does, and produce in a lesser degree the same results. It does not seem necessary "that there should be present that kind of predisposition peculiar to the robust European lately arrived in a warm climate," though, no doubt, such men contract the fever in its most asthenic form; nor does it appear that "this form of fever is almost confined to the hot dry months of the year in arid localities, and to regiments or recruits recently arrived from Europe;"* as during the months of May and June, 1865, I witnessed at Dum-Dum an outbreak of sun fever in a regiment which had been eight years in India. In six weeks 303 men, out of a total strength of 680, were admitted into hospital with continued fever. Some of the cases were very mild (febricula), whilst others were of the greatest severity, and needed active antiphlogistic treatment. Many old soldiers were attacked,—men who certainly could not be classed as "robust Europeans lately arrived," and the difference between the dry and wet bulb thermometer rarely exceeded, and was often less than three degrees. A regiment stationed at Calcutta, seven miles distant, maintained excellent health, whilst we were prostrated with sickness. A similar epidemic occurred to another regiment at Dum-Dum the summer before, and sent 504 into hospital; but this corps had not been so long in the country, and had been weakened by service in Bhootan.

It therefore appears to me evident that there are other reasons for the causation of the fever in addition to elevated temperature; and while every allowance is made for personal or local causes of predisposition, I believe it is impossible to deny the existence of a *materies* or specific principle which excites fever in constitutions predisposed to succumb to its effects.

Sun fever varies greatly in its severity. In its mildest form it is a very trifling ailment, and between febricula and the severest ardent fever, there is every possible gradation. Ardent fever is often accompanied with cerebral complications of the gravest nature, and the post-mortem examinations in the fatal cases frequently show great congestion of the cerebral sinuses, the vessels of the arachnoid, and the spinal veins.

In most cases there is a tendency to congestion of the lungs, and an instance occurred to me in which death was caused in a few hours by this complication. The patient in question was convalescing from a not very severe form of ardent fever, on the fifth day he was suddenly seized with hæmoptysis and difficulty of breathing, and died asphyxiated in four hours from the commencement of these symptoms. His lungs were found engorged with dark-coloured blood, which had transuded into the air vesicles.

I have seen delirium, in cases in which the head was affected, subside into coma, without oppression of the brain; and, on the other hand, men recovering from insolatio exhibit nearly all the symptoms of common continued fever. And it by no means unfrequently happens that fever patients are suddenly struck down with heat apoplexy, and no cerebral mischief can be detected after death; but, as a rule, the membranes of the brain are congested.

The similarity of the action of immoderate doses of alcohol [illegible] on the human frame to that of the poison of ardent fever has been referred to, and must now be more fully examined, for in this similarity lies, I believe, a key to the [illegible] of the disease.

[illegible] compounds capable of assimilation, [illegible] stimulant in their primary action. [illegible] consequently, animal heat, [illegible] functions, and enhance the bodily vigour. But whilst [illegible] moderation, produces an agreeable stimulation by supplying [illegible] to be consumed, a great excess of it acts in a very different

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* Morehead on Diseases in India, 2nd Ed., p. [illegible]

[illegible] system, induces profound asthenia.

In order to [illegible] clearly the deductions I draw from the preceding [illegible], I will contrast the effects of alcohol with those of the [illegible] fever. A slight excess of the stimulant will be followed by excitement and, subsequently, corresponding depression; a greater excess produces a higher amount of [illegible], flushed face, burning skin and rapid pulse; and these symptoms are followed by headache, [illegible], and general debility. But a very large quantity of pure spirit suddenly swallowed often produces immediate coma with [illegible], and speedy death. These three results are analogous to those produced by the [illegible] of common continued fever, [illegible], febricula or ephemeral fever; [illegible] ardent fever [illegible] insolatio.

I therefore imagine that the poison acts in the first two instances by promoting overdue combustion of the tissues, and that the fluid is consequently surcharged with carbonaceous products, and the lungs are unequal to the task thus imposed upon them. These products, therefore, remain and accumulate in the circulation, and produce the effects which we have seen result from alcohol, by their depressing action on the nervous system. This view is borne out both by the symptoms and treatment. The dry heat of the body, and the urine loaded with lithates, evidence increased combustion. While the great benefit derived from copious perspiration shows that the noxious matters were imprisoned in the blood. In the third case the poison acts suddenly, either on account of its quantity, or the inability of the patient to withstand it.

The effects of an atmosphere overloaded with CO_2 are very similar, they are quickened pulse, some excitement, hot dry skin,—with vertigo and subsequent depression, and when the gas is abundant, insensibility.

Therefore, inebriation and overcrowding, or imperfect ventilation, render men especially liable to attacks of continued fever and insolatio, because they exhaust their capabilities of averting the morbid actions which the poison of these diseases tends to create. The vital force is complex and as little understood as is the origin of disease. We possess within ourselves powers which [illegible], expel corruptive influences, and [illegible]. The [illegible] of these powers [illegible] immunity from [illegible] state that [illegible] that heat [illegible].

[illegible]

[illegible] attempt is that, to establish [illegible].

I now [illegible] part of my subject—the consideration of [illegible] aggravation or concentration of the effects [illegible].

There is perhaps [illegible] which has received so many varying descriptions as [illegible], symptoms, mortality and [illegible]. And this may be due to the different [illegible] several observers, who [illegible] their experience [illegible] that. I believe these differences are principally [illegible] being expressed only [illegible] name. I have chosen [illegible] to signify the [illegible] so many synonyms, because it is the name now most commonly used, but I must express my conviction that [illegible] the condition suddenly produced during exposure to the direct rays of the sun is a totally distinct affection from that [illegible] occurring under other circumstances, often [illegible]. Sunstroke is seen even in England, where heat apoplexy is unknown, but if the two diseases were [illegible] the causes that could produce the [illegible] form, would [illegible] to give rise to the other.

Sunstroke is not nearly so fatal as heat apoplexy. The mortality from [illegible] is stated by various authorities to be between 40 and 50 per cent. Of 200 cases of sunstroke which occurred to the 20th Bombay Native Infantry while on active service in the [illegible] in the year 1858, [illegible]. This single fact [illegible] to prove that some great difference exists between the two diseases.

In sunstroke the common explanation may be received, that is, that the heat produces a shock "quite similar to that of concussion"; [illegible] syncope is the result of the shock; but that does not tell us a great deal. However, I have not much more to say with regard to sunstroke. Dr. Morehead perceived the difficulty of separating the two diseases. He attributes the one to "a gradual heating of the blood," but remarks of the other, "It is not, however, only by increasing the heat of the blood, in the manner explained, [illegible] the functions of the nervous system; [illegible] temperature acts as the exciting cause [illegible]

[illegible]

for hours together to greater heat than ever emanated from a tropical sun; yet the peculiar symptoms of heat apoplexy never result.

There are no thermometrical observations in insolatio to prove that the bodily temperature is any higher than in some other acute diseases; and even if this should be found to be the case, it follows that, inasmuch as the heat exceeds that of the surrounding atmosphere, it must be dependent upon causes operating within the body, and cannot be produced by a gradual heating of the blood by the external temperature which does not maintain an equally high degree. And it is also quite certain that the normal temperature is retained until very shortly before the attack, as a rise of even two degrees is quite enough, unless transient, to render a man incapable of performing any of his ordinary duties.

Some other cause for the disease, then, has to be sought for,—though, for the production of this cause, heat, no doubt, is essential. Under its stimulus, the lower forms of animal and vegetable life multiply, electrical phenomena exhibit their highest activity, and unknown atmospheric changes probably take place; and, I believe, it is from one of these conditions that the disease originates.

(To be continued.)

MISMANAGEMENT.

By A Civil Surgeon.

An important case occurred in this district lately. A corpse was sent to me for examination. I found compound comminuted fracture of the skull, and reported accordingly. Some days after, various clothes and weapons were forwarded for inspection; they were examined, the articles numbered, and returned, with a report. About twenty days afterwards, I was called upon to give my evidence in Court, where I was, of course, asked if I had examined any weapons, &c. I replied that I had, but did not know whether they belonged to this case, as the Police, in their letter, had omitted to inform me with what case they were connected. I was then shewn the articles, which I recognized; but, on being requested to point out on which of them I had discovered blood-stains, I discovered that my numbers had been removed. Natives' clothes being so much alike, I was unable, with satisfaction to myself, to do so, and stated the cause of my inability to the Court; adding, the removing of my numbers was more likely to defeat justice than to catch me tripping in my evidence, as in such a case I should always give my doubt in behalf of the defendant.

Five days after this, these clothes were again sent to me for examination and report.

Now, I wish to ask you, or any Civil Surgeon, if this was not unfair to the defendant? 2*ndly*, were the Police, or Court authorities, justified in removing any numbers? Or rather, were they not bound to preserve them? And 3*rdly*, could I have refused to report again on those clothes, considering the length of time they had been in the hands of the Police and Court officials, after my first report, and again after my examination in Court?

I may add that the way I recognized the clothes in Court was, that where I had noticed a suspicious spot on them, I had cut it out to examine.

Calcutta, 2*nd August*, 1868.

Perchloride of Iron, in solution, employed topically, is very efficacious to detroy the virus after the bite of a rabid animal; it is an antidote for various animal poisons.

CASES FROM PRACTICE.

◆

BHURTPORE HOSPITAL REPORTS.—No. I

By Robert Harvey, M.B., C.M.,

Surgeon to the Bhurtpore Political Agency.

Summary of Capital and Important Operations for the half-year ending June 30th, 1868.

No.	Operations.	Disease.	Recovered.	Died.	Remarks.
5	*Amputations*				
	1 Shoulder-joint	Enchondroma ...	1	...	
	1 Arm	C. C. F. Gangrene	1	...	
	1 Fore-arm	Mycetoma ...	1	...	
	1 Thigh	Necrosis ...	1		
	1 Leg	C. C. Fracture ...	...	1	Of exhaustion consequent on secondary hæmorrhage.
1	*Resection*				
	Elbow-joint	Scrofulous ...	1	...	Partially successful; arm of no great use.
4	*Lithotomies*				
	3 Lateral	Calculus Vesicæ ...	3	.	Stones weighed 55½, 93, and 329½ grs., respectively.
	1 do. with division of both lobes of prostate ...	Ditto ditto ...	1	.	Stone weighed 3,815 grains.
4	*Excisions*				
	1 Tumour of upper jaw	Fibrous ...	1	.	
	1 Tumour of neck	Fatty ...	1		
	1 ,, of axilla	Glandular ...	1	...	
	1 ,, of scalp	Cystic ...	1	..	

CASE I.—COMPOUND COMMINUTED FRACTURE OF LEG; SECONDARY HÆMORRHAGE AFTER AMPUTATION; DEATH.

Mohun Lall, a Brahmin beggar, aged 65, admitted January 24th, 1868, at 7 p.m., having been run over by a heavy cart half an hour before. When seen next morning about 10 o'clock, he was found in the following state:—

The right leg was completely smashed and almost severed about its middle. Three inches of the shaft of the tibia, deeply fissured and much comminuted, protruded from a large and deep wound almost encircling the limb. The fibula was broken in several places, and there had been a good deal of bleeding. Pulse 120, weak and thready, but regular. General health below par. Spirits good. He consented to amputation without demur.

Chloroform having been administered, the leg was amputated at the junction of the upper and middle thirds, by the usual flap operation, by Sub-Assistant Surgeon Bhola Nath Dass. There was little hæmorrhage, and he bore the operation exceedingly well. Three vessels were tied; the flaps (which were ample) brought together with a few sutures, and a cold water bandage applied. His pulse steadied under the chloroform, and he was left, half an hour after the operation, comfortable, free from pain, and with a very fair pulse at 92.

Two hours afterwards the stump began to bleed, so much so that it was found necessary to re-open the wound. This was done in my absence *without* chloroform, and additional ligatures were applied to four small vessels. He bore the handling wonderfully well, and for some days it seemed probable that he would recover. The wound, however, made no attempts to heal, and after the 1st of February became dirty and sloughy. From that day his strength gradually declined, and, in spite of stimulants freely administered, he sank, and died on the 8th, having been in a lethargic stupor for two days before.

Remarks.

Whatever chance of recovery this patient may originally have had, was without doubt taken away by the renewed loss of blood, and the shock consequent on the undoing of the flaps. The cause of the secondary hæmorrhage was, unfortunately, only too apparent. It was due to the ignorance, stupidity, or mere "mischief found for idle hands to do" of one of the assistants, who re-screwed the tourniquet immediately after it had been loosened. This was not discovered until the mouths of the small vessels had become occluded, only to re-open when to stretch [illegible] from the chloroform seat [illegible] through them with increasing force.

CASE II.—LITHOTOMY—LARGE CALCULUS EXTRACTED WITH CRANIOTOMY FORCEPS—RECOVERY.

Kussiah, aged 20, a [illegible] from K[illegible], Pergunnah Bysee, Bimeth, was admitted 13th May, with well-marked symptoms of stone in the bladder. These had begun six years before, and had gradually increased in severity. For some time he had passed water, about every half hour, in small quantity, and with great pain. The urine was often tinged with blood, and contained a good deal of [illegible] matter and epithelial debris. His general health had suffered a good deal, and he was weak and thin, but no organic disease of the kidneys or other organs could be detected. As he refused to remain unless immediately relieved, lithotomy was resolved on at once, although his condition was regarded as unfavourable to success. A clyster of castor oil was ordered to clear out the bowels.

At 4-30 p.m. of the same day the operation was commenced with the usual lateral incision, which was made free, as the stone was felt to be a large one, both with the sound and by the finger in the rectum. The calculus was grasped at once with a pair of medium sized forceps, but on attempting to extract the instrument immediately slipped. This occurred repeatedly, both with the same pair and with another of the largest size. A strong scoop was tried, but failed, the scoop being straightened by the force used. The right side of the prostate was then incised, and further attempts made with the same result, the instruments invariably slipping. The internal wound was enlarged a second time, and two of the largest sized forceps applied in turn. The pressure applied to the handles to prevent slipping was so great that one and the other bent under it and was rendered useless. The stone was then fixed at the neck of the bladder, and attempts made to crush it, but no proper instruments being at hand, they failed. It appeared likely that the patient, who had been upwards of fifty minutes under chloroform, would die on the table with the calculus unremoved. The lithotomy *armamentarium* was exhausted, and it seemed that nothing more could be done, when it struck me that a pair of craniotomy forceps might be used for the purpose of lessening the stone. A pair of Lever's pattern, a very powerful but clumsy instrument, with a fixed scissors joint, the only one available, was introduced; but, from its unwieldiness, great difficulty was experienced in catching the stone, and the first grip was insufficient, the instrument slipping like the others. A second attempt was successful, a firm hold being obtained in the long axis of the stone. All attempts to crush it were, however, fruitless, the united strength of three pairs of hands making no impression on it. Extractive efforts were then used in the direction of the axis of the pelvis, and with a swaying motion as in forceps delivery, and after a degree of force which must have caused much bruising of the soft parts, and which, [illegible] the issue, might have been termed unwarrantable, the calculus was got away just an hour and ten minutes after the operation was begun. It was an ovoid [illegible], measuring 7½ inches in circumference, and weighing [illegible] or 8 ounces 5 drachms and 15 grains avoirdupois.

A good deal of [illegible] was [illegible] the length of time [illegible] the bleeding. The patient was [illegible] exhausted, and it was some time before he [illegible] from the [illegible] the shock and the large [illegible]. He [illegible] had been [illegible]. The [illegible] wasn't [illegible]. Two hours after the operation, the pulse was [illegible] thready, and [illegible]. He [illegible] to recover, and the following [illegible] was [illegible].

R. Am[illegible] gr. ij

[illegible]

A[illegible] 3-8 [illegible]

[illegible] [illegible]

A [illegible] the rectum, and [illegible] and every [illegible]

He [illegible] 21st, after which [illegible] heat, and [illegible]. A [illegible] over the sacrum, and another over the

[illegible] These symptoms were treated as reported. [illegible] on the south, but the wound was [illegible] being kept [illegible] which was forced through it by the cough. It remained [illegible] throughout, and there was no inflammatory [illegible] along its track. The [illegible] for a [illegible], but I am not prepared to say that the absence of the expected [illegible] was due to [illegible]. He was finally discharged cured on the 19th of May, the wound having consolidated and the [illegible] completely healed.

Remarks.

The interest of this case is not affected by the patient's recovery, which was not to be expected after the rough handling he underwent, and which was mainly due to the excellent nursing and great attention paid him by the subordinates of the hospital. [illegible] that the risks to life would have been greatly diminished had a proper instrument been available for reducing the bulk of the stone, and that had [illegible], the fatal result might, in part at least, have been ascribed to its absence. His escape must be regarded as exceptional, and that a similar risk may be avoided in future cases a large and powerful stone-crusher has been obtained from England, together with a set of lithotomy instruments for small stones. Had the size of the calculus been clearly made out, it would have been matter for consideration whether the high operation, or—as giving a better and freer division of the prostate—the bilateral one, recently described by Professors Fergusson and [illegible], would not have been preferable to the lateral incision which was adopted; but though a large stone was recognised, the estimate formed of its size fell far short of the reality.

CASE III.—COMPOUND FRACTURE OF ULNA—GANGRENE OF FOREARM CONSEQUENT ON MALPRAXIS—SECONDARY AMPUTATION—RECOVERY.

Cheetun, aged 17, a Mussulman house-painter, admitted on the 12th of June, under the following circumstances:—

On the evening of the 10th he was struck over the right [illegible] with an [illegible] by a companion with whom he had quarrelled. The blow shattered the ulna just below the elbow, and [illegible] a wound across the back of the forearm, which bled [illegible], the blood coming in jerks until the arm was tied up. He went to a Hakeem, who removed some loose bone [illegible] some [illegible] splints, and applied bandages extremely tightly to check the bleeding. He said he had lost a great deal of blood, nearly two pounds of blood, according to the account of his brother. In the morning a Native Doctor went to see him, and found the bandages, which [illegible] recommended. He, as a make-shift, [illegible] a bandage [illegible] round the upper arm so as to serve as a tourniquet [illegible] the limb [illegible], and [illegible] to the hospital. His friends, however, [illegible], and the tight ligature was not removed until ten the next morning, when he was admitted.

On removing the splints and bandages, the whole forearm was found gangrenous, [illegible] black, cold, and covered with [illegible] odour. The upper arm was [illegible] swollen and brawny, and the ligature had [illegible] in the surrounding swelling. The temperature [illegible] the bandage was 100, between the [illegible] was 103, [illegible] not more than 92 [illegible] of the extremity. The ulna was considerably splintered, [illegible], and the wound was filled with [illegible] grumous, foetid blood. From the extent of the [illegible] the rapidity and completeness with which gangrene had set in, it seemed probable that a splinter of bone must have wounded a large artery, probably the ulnar, at the time of the injury. The general condition of the patient was wonderfully good. Pulse 84, quiet, and regular. His [illegible] being robust, and no urgent symptoms [illegible] operation, which would have involved amputation [illegible], it was resolved to wait [illegible] whether the gangrene [illegible] and then [illegible] amputation through the [illegible]. Stimulant was ordered, with ten minims of [illegible] in water every two hours, and had a grain of morphia at bed time. Cold lead lotion was applied to the arm, carbolic acid sprinkled freely over the fore-arm, to correct fœtor, and sulphur kept burning in sufficient quantity to leave a constant taint of sulphurous acid in the room.

This plan of treatment was continued till the 16th, when, as his health was suffering, and the arm had, to some extent, regained its natural condition, the limb was amputated through the middle of the humerus by flap operation. The parts were enormously congested, and much blood was lost: eleven ligatures being required, as the smallest arterial twigs bled profusely. After recovering from chloroform, he became very restless, and tossed about a good deal with the effect of renewing the bleeding. The wound was re-opened, and three small vessels, scarcely larger than pin points, ligatured. No more blood was lost, and he made an excellent recovery, the wound being now healed. He will leave the hospital in a day or two.

Remarks.

Had this case occurred in England, the plea of malpraxis would probably have been urged by the defendant in mitigation of punishment. It is difficult to say whether it would have been a valid one, as it is possible that the serious nature of the original injury might have rendered amputation necessary, or have been sufficient of itself to cause gangrene. That there was gross malpraxis is sufficiently evident, both on the part of the Hakeem and on that of the Native Doctor. The latter, indeed, excuses himself by saying that the ligature was intended as a purely temporary appliance, till the patient should reach the hospital, but as he allowed it to remain nearly thirty hours, he cannot be held blameless. Indeed, it is possible that but for his ligature, the bad effects of the Hakeem's tight bandaging might have passed away. Had the patient died, the charge might have been extended to me, on the ground that immediate amputation at the shoulder-joint might have saved him; but to this plea the circumstances of the case, and the counter-plea of *bona fides*, would have been a sufficient answer. The youth and good constitution of the patient, and the absence of any urgent symptoms, sufficiently justified a delay, which has ended by saving a useful stump capable of sustaining an artificial limb.

Political Agency, Bhurtpoor, *July 20th*, 1868.

CASE OF ATROPHY OF THE LUNGS IN A NEW-BORN INFANT.

By G. D. McReddie,

Civil Surgeon.

This was observed in a female infant, which had survived its birth about a quarter of an hour. On opening the chest, the right lung was discovered, after some search, lying far back pressed against the ribs; it was removed and examined; respiration had freely taken place in it, but it weighed only 120 grains. The mean weight of *one* lung which has respired for less than an hour is something above 450 grains (918 grains being the figure given for both lungs in the 2nd edition of Guy's Forensic Medicine, p. 83). The left lung was not separated from its attachment to the heart; it measured about three-quarters of an inch in length by half an inch in breadth. The diaphragm on the left side was entirely absent, its site being indicated posteriorly only by a ribbon-like band of muscular fibres. The left lung also had respired.

Hurdui, Oudh. *5th August*, 1868.

Notices to Correspondents.

Communications have been received from

Inspector General of Hospitals Dr John Murray.
T. R. Wilson, *Mymensing.*
Surgeon Barnard.
A Madras Civil Surgeon.
Sub-Assistant Surgeon Hem Chunder Bhuttacharjee.
Our own English Correspondent.
&c., &c., &c.

The Indian Medical Gazette.

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Neglect of these simple rules causes much trouble.

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The Co-operation of the Profession throughout India is earnestly solicited.

Hare Street,
January, 1868.

WYMAN BROS.,
Proprietors.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history, and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen twentieths of the courtiers and politicians of the periods in which they lived. —SIR BENJAMIN BRODIE.

THE EPIDEMIC CYANOSIS OF LOWER BENGAL.

A remarkable discovery has lately been published to the world by the Municipality of Calcutta. The statistics appended to the Report for 1867 will afford great delight to certain scientific societies in England. The most astounding facts are there propounded without explanation, comment, or foot-note. Revelations, such as the physician does not usually meet with in a lifetime, are here offered to the profession with a degree of *sang froid* which would certainly be amusing, if it did not, as is actually the case, amount to official absurdity. Is it intended to extend the empire of human knowledge by the triumphs of human imagination—a process which, however successfully it may work in the realms of poetry, is not generally acknowledged as fair fighting on the field of science? The following observations will prove whether we are justified or not in making these remarks. We need scarcely remind our readers that the disease, or more properly the condition, which is defined by the term *cyanosis*, is one of very considerable rarity; at least we confess to having believed it to be so until now. But the Mortuary Returns of the Calcutta Municipality only prove in [illegible] we have [illegible] Cyanosis, the blue disease, [illegible] from the [illegible] with arterial blood, the result of imperfect development of the infantile heart, we have certainly seen in a few instances. Those of [illegible] experience have, no doubt, seen it more frequently than we have. Yet we [illegible] perhaps [illegible] say that [illegible] individual [illegible] has met with the disease in such frequency as to consider it very common. What do we find in Calcutta?

The following is the statement put forth by the Municipality of Calcutta:—

[illegible] Calcutta [illegible] 1867.

In January	..	..	[illegible]
" February	..	..	21
" March	..	..	[illegible]
" April	..	..	[illegible]
" May	..	..	[illegible]
" June	..	..	[illegible]
" July	..	..	[illegible]
" August	..	..	[illegible]
" September	..	..	81
" October	..	..	[illegible]
" November	..	..	[illegible]
" December	..	..	[illegible]
	Total	..	[illegible]

[illegible] *Calcutta* [illegible] 1867, [illegible] of the year having evidently much to [illegible] there being 223 deaths [illegible] against 181 during the second similar [illegible] "*What [illegible] England?*"

We [illegible] look at English statistics bearing [illegible]

We have before us the 29th Report of the Registrar General [illegible] We [illegible] the estimated population of [illegible] 21,2[illegible] [illegible] of deaths from [illegible] from the same [illegible] 704 [illegible] Calcutta [illegible] population is [illegible] more than [illegible] Calcutta [illegible]

[illegible] malformations [illegible]

[illegible] We are disappoint[illegible] there was [illegible] Calcutta during 1867. But, under [illegible] in England [illegible] 171 [illegible] other mal[illegible] general law [illegible] in India, [illegible] certainly [illegible] Reports of [illegible] [illegible] for the [illegible] death [illegible] deaths has [illegible] reason to [illegible]

[illegible] the effects of the cyclone [illegible] disastrous. The [illegible] November, in consequence [illegible] the poor [illegible] whose houses and property had been destroyed by the hurricane? We naturally ask—[illegible] have accounted for [illegible] cyanosis during November, against 21 in February?

It was [illegible] we know [illegible] professional brethren who are in need of recreation and amusement, we can confidently recommend an hour's study of the Calcutta Municipality's death statistics. They are replete with the most startling professional [illegible] and with much that is provocative of general mirth. They will repay perusal much in the same way as do the more familiar works of Mark Lemon and Mr. Joseph Miller. The philosopher who first brought to light the epidemic cyanosis of Lower Bengal, could he fail to work out many other like discoveries? No, there is a [illegible] standard up to which our Health Officer seems always to exert his fancy, if not his intellect, and accordingly he brings before us in profusion the very gems of thought. Let us still further look into the figures before us.

During 1867, in Calcutta, two murders [illegible] There was [illegible] only one man committed suicide by hanging. But we find that eight individuals were hanged by accident! ([illegible] general statement No. 5). In England, in 1866, there were 180 murders, [illegible] the crime was amongst the same number of people nearly six times as common in 1866 as it was in Calcutta during 1867. In Calcutta eight persons thrust their heads by accident into nooses. In the course of many years no such curious phenomenon is returned in the figures of the Registrar-General of England.

Let us look a little more closely at the [illegible] It will [illegible] the statistics of 1867 [illegible] with those of England in 1866, as we have [illegible] corresponding [illegible] committed [illegible] ways, [illegible] times as common in England [illegible] Calcutta. [illegible] Calcutta, 54 [illegible] England, [illegible] *same* [illegible]

Premature births are 17 times more common in England than in Calcutta. Deaths from hepatitis are nearly six times more common *in* [illegible] "(when only [illegible] fatal cases are reported in the [illegible] side by side with 272 deaths from spleen disease [illegible] the same time.)"

[illegible] times [illegible] in England. [illegible] diseases 11 times more [illegible] Parasitic diseases [illegible] fatal. Atrophy and debility 74 times more fatal [illegible] heart disease 100 times [illegible] common, [illegible] 170 times more fatal in England than in Calcutta [illegible] numbers of individuals.

Only two deaths [illegible] from stone in Calcutta during 1867, only two [illegible] and [illegible] pleurisy. [illegible] the penetration and [illegible] our Health Officer [illegible] death from [illegible] is 20 times less frequent in Calcutta than in London, and similarly the [illegible] death not specified [illegible] times" are [illegible] frequent [illegible] as they are in England.

Well, indeed, may it be said—"Anything can be made out from Statistics." We [illegible], however, [illegible] state that the above propositions (whatever be their want of worth) are not set down by us at random, but that they are the result of a careful comparison between the Reports of the Health Officer for Calcutta, for 1867, and that of the English Registrar-General for 1866.

We are driven, from the above inquiry, to a few curious conclusions :—

1st. Our Indian Mortuary Returns are much more precise and valuable than those of England.

2nd. There is no difficulty in arriving at the exact causes of death in all cases, within the limits of the Calcutta Municipality. Beyond such boundaries, the difficulties are allowed to be considerable.

3rd. The frequency of diseases of the pleura, kidney, heart, and brain in Calcutta is merely nominal.

4th. Death from hepatitis is a thing all but unknown.

5th. For one poor weak man to be seen in the purlieus of Calcutta, amongst half a million of souls, you have seventy atrophied and debilitated creatures amongst the same number of human beings in England.

6th. Children do not suffer at all from teething in India.

7th. Murder is never heard of in this metropolis.

8th. Suicide is equally rare.

9th. A few men *will* run their heads into hempen nooses, and it then becomes the painful duty of the Health Officer to return all such cases as deaths from *accidental hanging*.

Lastly, it is pleasant to know that the ratio of deaths among Christians to the Christian population in Calcutta, during 1867, being 2,836 per cent., this rate of mortality is lower than has occurred in Italy during the 5 years 1862-66, or in the population of Austria during the 14 years 1653-66. (*Vide* Dr. Farr's figures, p. xxv., Registrar-General's Report, 1866.)

This is a true fact, if the health statistics in the report be also true; and who will be sceptical enough to doubt their perfect accuracy? Echo answers *perfect accuracy!*

Joking aside, this is an unpleasant task we have taken up. Yet it is our duty, as journalists, to correct pernicious error, and to counteract what is likely to deceive. It is honestly with this desire, and with this alone, that we are driven to thrusting a lance through all this miserable mock science now before us. These might indeed, on favorable occasions, excite the laughter of the members of the Statistical and Epidemiological Societies of England, but we have no wish that they should bring ridicule and contempt generally on men of science in India. It shall be our task to prevent this if possible. If it be a fact that cyanosis is unusually prevalent in Calcutta, it is but right that our physicians should see to it. If, on the contrary, it is a hoax, all we can say is, that it ill-becomes any Health Officer to indulge in such poor jokes at the expense of his public reputation. Physical malformations, the Health Officer would have us believe, are twice as common in spring as in autumn. What shall we be asked to believe next? Probably that old men die of teething, and infants of old age, or something equally absurd. What else can we expect from a statistician who is not restrained by any compunction in publishing, as matters of every-day occurrence, the most impossible mis-statements, and whose returns generally seem to us to be based on chance or fancy, and on bad information. We not only mistrust the accuracy of such returns, but we unhesitatingly declare them to be, in certain particulars, as in the matter of epidemic cyanosis, accidental hanging &c., [illegible]. It is full time that all this unphilosophical [illegible] should be put a stop to. Two or three years ago we called upon the Health Officer to desist from careless blundering in figures and in facts. Our good advice, it would appear, has been thrown away.

We are inclined to ask.—Is there no Moral Vagrancy Act, the provisions of which can point to an appropriate place of detention for such triflers with science? Is not the deportation of those individuals justifiable whose offences against science can only be condoned by time and distance?

When the Health Officer of Calcutta retires from office, it will be allowed by all that, during his reign, he particularly distinguished himself by his readiness to accept, and to publish, unquestioned, as important truths, the statements of ignorant persons; that he aspired to be, and that he deserved the title of, the Baron Munchausen of Indian Statistical Science.

When the Calcutta Municipality see the last of their present Health Officer and appoint his successor—be he who he may—we shall be the first to congratulate them on having found a gentleman with weaker imagination and a greater reverence for accuracy than their present Œdipus;—the oracular *savant* who shouts *Eureka*, the unenviable discoverer of epidemic cyanosis in Lower Bengal.

Some of our readers may possibly feel inclined to accuse us of too great personality in our criticism of public returns. We can only reply that it is very difficult to separate blunders from the author of those blunders,—as it would be for a Judge or jury to consider the merits of a charge of murder apart from all consideration of the individual charged with the crime. It may be well, however, for us to state that we regard the Calcutta Municipality as open to grave censure for allowing such figures to be published as those of which we have above exposed the culpable inaccuracy. The lamentable display of ignorance and error presented by the Calcutta Health Officer's Report for 1867, has, in a manner, come before the public, stamped with the *imprimatur* of the whole Calcutta Municipality. It is to be regretted that a large and influential body of intelligent men should allow to pass, unsifted and uncorrected, reports the accuracy of which they must at least be interested in. We hope our civic senators may not think it unworthy of their consideration how long they should allow their Health Officer to continue to fritter away his time in the production of what must inevitably bring discredit upon the Municipality of Calcutta.

VERNACULAR MEDICAL EDUCATION.

The extension of medical education among the natives of India is a subject of daily increasing interest and importance.

We have now not only the large collegiate institutions at the capitals of the several presidencies, and important schools at Agra and Lahore, which may now be considered as firmly established and time-honoured institutions, but in addition the minor Governments are bestirring themselves and showing a disposition to carry on the good work. Just a year ago we wrote on the subject of Vernacular Medical Education, and called attention to the active measures being taken by Mr. George Campbell, the able Chief Commissioner of the Central Provinces, for the establishment of a [illegible]

Nagpore [illegible] the [illegible] of Dr. Townsend. We are [illegible] to [illegible] that the Nagpore school has been at work a year [illegible], and that 38 promising students are [illegible]. We heartily wish the [illegible] Native medical teachers who preside over the classes success in their work — a work which, if well carried out, must yield them honour and praise, not for the [illegible].

While thus we would encourage them, however, we cannot fail to see that there are difficulties and obstacles in their way which may greatly hinder their best directed efforts. They cannot always have the best material to work upon. "*Ex* [illegible] *M*[illegible]," and but too often the attempt to [illegible] mind of an ill-educated Native youth [illegible] with the theories of [illegible] and physiology, or the hard and practical facts of anatomy and surgery, will be found a hopeless task. The very terminology of medical science must be a sad stumbling-block to many. Caste prejudices may sometimes intervene, but of these we have little fear. From the day that the Brahmin Madhoo Soodun Goopto took up his scalpel in Calcutta and made his first dissection of the human body, the prejudice against anatomy in the Native mind has gradually been wasting away, and though it may yet linger among the Mahrattas, it must soon be effaced by the great wave of civilization which is rolling towards them.

But to the success of these schools we see greater impediments than ignorance the most crass, or prejudice the most overwhelming.

There may be, and we fear there is, a sound financial basis wanting; there may be, and we *know* there is, a deficiency in means of instruction. In our articles last year, we pointed out that the stipends of the pupils of the Nagpore school had been fixed at too low a rate; but we omitted to notice a very [illegible] point in its financial organization, which seems to us to make the promising school but a smiling apple rotten at the core. It is true the Government locally provides the [illegible] of the Principal and the Native teachers, but it allows [illegible] expenses [illegible] the stipends of pupils but a [illegible] Rs. 150, the [illegible] Rs. 100, is obviously insufficient to support more than twelve or fifteen pupils, and at a fixed rate, while the number of pupils must be an annually [illegible] the school prove a success. The excess [illegible] by contributions [illegible] for by the Chief Commissioner from the Municipalities of the several districts [illegible] sufficient; but how [illegible] that, as [illegible] Municipal [illegible] with a tight [illegible] tendency towards [illegible].

[illegible] certain basis, we [illegible] be made, not [illegible] order for the [illegible] Government recognizes [illegible] and it devotes [illegible] that, by this [illegible], the Government proposes to take to itself, not [illegible] of the [illegible] schools, and not to leave them dependent on a [illegible] shifting as a Municipal Fund. Preparatory orders are, we believe, soon to issue, on the subject of the pay of all medical subordinates, and we trust we shall find that our view is correct, and that the stipends will hereafter be paid in full from the Government treasury; the sure financial basis will then be attained.

But all will not then be done. Assured pay alone will not bring opportunities of acquiring clinical knowledge. Lectures may be attended, anatomy may be mastered in the dissecting-room, chemistry in the laboratory, but of what use will be such a foundation, if the superstructure of medical knowledge cannot be reared from want of the means of clinical instruction? Without an hospital, a medical school is but a lecture-hall, a medical student but a paper man and a bookworm. Now, what is the condition of Nagpore in this respect? There is certainly a city hospital for in-patients, and there are three out-door dispensaries. But the city hospital consists of two wretched ill-constructed sheds, mean and unattractive in appearance, unventilated, and incapable of ventilation, badly situated with reference to the wants both of the sick poor and of the students, and in consequence, crowded only with the miserable and wretched, who come but to obtain shelter and to die.

We think it is high time that the capital of the Central Provinces, from which under favourable circumstances a rich stream of medical knowledge may be made to flow, should have an hospital capable of attracting patients to its wards, and of affording clinical instruction to the rising medical generation. We would urgently call the attention of the Supreme Government to this crying need, and we feel sure that in a city where the liberality of a Bunsee Lall has already endowed a dispensary, there will be no lack of benevolent native gentlemen willing to contribute to a similar object, should the local Government move in the matter, as we believe they are about to do.

We have a great confidence in the philanthropy of the present Chief Commissioner, Mr. J. H. Morris, and have no doubt that he will take the matter up with his accustomed energy.

"PAUCITY OF MEDICAL OFFICERS."

EMERGENCIES often bring out the truth. That there *are* not, and that there *have not been*, for some time past, Medical Officers sufficient to meet the wants of the country, is a fact well known to all concerned. But we have tided over the difficulty, *so far*. We have acted upon the Native axiom "guzara kur lo." We have "done" with one Doctor when two were required *in times of peace*; but, now, murmurings of storms have reached us from the North and from the South. "Send [illegible] Medical Officers as quickly as possible," flash the wires from our warrior chiefs who are about to deal with [illegible] treacherous enemy in the "Black Mountain." "We have no Doctor and no medicine," urges the same unerring messenger from an opposite corner of the empire. It is the sickly season of the year. The autumnal diseases of India spare the sons of Esculapius no less than they do those of Mars. There are but few of the former, and of these dysentery and fever claim their allotted share. The wires may flash, but *echo*, in its mocking hollowness, will be the answer. Whence this difficulty, we cannot, or need not, stay to inquire now; but how is the necessity to be met? Are there no Medical men in the country, no highly qualified adventurous spirits, who have come out to *test* the *El Dorado* fame of India? Or, are there not others less able, whose lot has hitherto been unlucky in the gyrations of fortune's wheel, and who would be content with almost anything they could get? We believe that there is a fair sprinkling of each of these classes. But, in the first place, the best of those, who are willing to take Government service, are not always free to do so at once: and, in the second, it is not well that the Government of such a vast empire should be dependent upon mere adventurers in her hour of need. The quality of the material cannot always be detected. Who shall guarantee that, promiscuously entertained as such men are, and bound by no covenant, they may not, *if they find the place does not suit them*, simply abscond, and leave the sick who have been entrusted to their care to a kinder, and it may be a safer, guardian,—the *vis medicatrix naturæ!* It is too much the custom to depend upon such men, too, for the smaller civil stations: but it is a serious mistake. An instance has recently been brought to our notice, strongly illustrative of this. During the progress of negotiations between the Medical Department and one of the local Governments, with reference to the appointment of one of these gentlemen to a civil station,—nay, just as it was finally arranged that he was to go and assume charge, (his services there were urgently required,) the individual in question heard of some other appointment which he preferred, and, without any compunction, threw the Government over, and accepted it. Nor can we blame him.

We venture to urge two ways of dealing with this perplexing difficulty. After, in the first place, increasing the regular establishments, (a) *Second* those Medical Officers who have elected for other than the medical walks of life, and in which they look for prizes; and bring upon the Medical Establishment, in their place, men who shall perform the professional work which they were originally intended to perform, and who, in the event of the *Seconded* ever returning to the ranks of the profession, would become supernumeraries, and so remain, until they were absorbed, by vacancies, into the general service. Or, b), let Government enter into a contract with a certain number of well-qualified medical men in England, and induce them to come to India upon the same terms as a large number of engineers have recently taken Government service. There is but little doubt that the majority of such, *once here*, would remain. The pay is good, and the "Uncovenanted Family Pension Fund" offers a reasonable provision for widows and orphans. But the adoption of such a measure would be to aim a heavy blow at the old service. We incline rather to protect it—"Woodman spare that tree." We would rather add to its growth, and infuse new life into its constitution. It is our only chance of maintaining our Broughtons, our [illegible], our Sprengers, our Forsyths, our Cheverses, and our Fayrers. The primary object of every Christian, who comes to India, should be to benefit those amongst whom he is to live. If his sojourn is to be short, we can never expect him to identify himself with the people. His main object would be to strive to leave the country as soon, and with as large a golden shower, as he could. Nor can we wonder. His ties are elsewhere.

We firmly believe that, as, with years of experience, it will be found that a local European army *must* again be maintained, so must the old medical service be preserved on its ancient foundations. A *nomadic race* of Doctors, perpetuated from generation to generation, would, in time, lead as effectually to the estrangement of the people from our rule, as men, who have made India the land of their adoption, now do more to establish our popularity than untold battalions of infantry. We strongly incline, then, for this reason, to the first of our two suggestions. But, in the first place, we must increase the strength of the *regular establishment*.

"NATIVE MIDWIFERY."

We beg to draw attention to the cases of difficult labour recorded, in our present issue, by the Civil Surgeon of Ajmere. The subject is one of vital importance to the Native community, and it has at length attracted the attention of the authorities. Sub-Assistant Surgeons have, for some time past, been instructed in midwifery; and one of these, a proficient in the art, is now appointed at the Médical College, in Calcutta, to teach the *Native Doctor* class; so that there is a prospect of the blessings of good midwifery, as well as of good medicine and surgery, being, in course of time, conveyed to the masses. But this, in itself, will do nothing towards the safe delivery of poor Native women in their own homes in remote villages, miles and miles away from dispensaries and Sub-Assistant Surgeons and Native Doctors. Though, indeed, when Native Doctors generally *are* educated with a view to their establishing themselves in practice, as some of those of the Bengalee class in the Medical College have done, then this desirable result may come to pass. According to their popularity, so will they be "called in" and consulted by the *Native Daees*. But we must advance a step further, and *educate the Native Daees themselves*. A few of these future *Mesdames la Chapelles* are being taught by the Civil Surgeon at Umballah, who has set an admirable example in this respect. He has *a class* of *Daees* whom he instructs in practical midwifery: and we see no reason why, with reference to the habits of seclusion prevalent in Native society, this should not be done systematically throughout India at our colleges and schools. It is a fact well known to all experienced medical men, that parturition in this country is far from being the simple process that it is thought, by the uninitiated, to be. We trust that others will follow Dr. Murray's example, and record the results of their experience, in this respect, in these pages. We doubt not that a mass of evidence will be collected, which, whilst it may surprise those who perhaps have not thought much on the subject, will prove the necessity of systematic and enlarged endeavour to remedy the evil.

Review.

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[illegible] *Treatment of* [illegible]. By David [illegible]

This is a useful treatise, in which [illegible] at length the several drugs [illegible] by the profession [illegible] especially worthy of notice [illegible] to abstain from [illegible]

[illegible]

Extracts.

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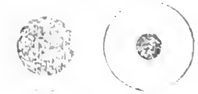
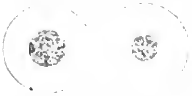
[illegible]

Correspondence.

[illegible]





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ORIGINAL COMMUNICATIONS.

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EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

(Continued.)

BY J. FAYRER, M.D.,

Professor of Surgery, Medical College of Bengal.

September 11th, 1868.—I am indebted to Messrs. Greenhill and Rutherford, Veterinary Surgeons, for the opportunity of making the following experiments. The horses experimented on had been condemned to be destroyed for the disease, partial paraplegia (gone in the loins), and were placed at my disposal by the above gentlemen, for whose valuable aid in noting the symptoms and recording the pathological conditions I am under much obligation. The disease, though incapacitating the animal for work, is not such as to reduce his strength so much as to vitiate the evidence derived from the effects upon him of the poison; and I believe these experiments may be accepted as fair illustrations of the action of snake-poison on the larger animals. The subjects experimented on were a stud-bred mare about 14-3 high and aged 27 years, suffering from partial paraplegia, and an Australian horse, 15-1, 9 years old, a powerful animal, and in good condition, though also paraplegic. The mare succumbed in an hour and twenty minutes from the effects of the bite of a large Cobra; whilst the stronger and younger horse survived the bite of a powerful, fresh, and full-grown Daboia nearly twelve hours.

The difference in the effects of the poison of the Daboia and Cobra in these two cases is very remarkable, not only as to the duration of life in the animals bitten, but also in the pathological conditions before and after death.

The mare bitten by the Cobra was rapidly affected—staggered, became exhausted, and died in less than an hour and a half. The post-mortem examination shewed distinct rigor mortis, firm coagulation of the blood; the heart and large vessels, aorta as well as venæ cavæ, distended by firm ante and post-mortem coagula. The lungs were very slightly congested, frothy when cut into, and on the anterior surface rather pale and bloodless than the reverse—whilst all the abdominal viscera were equally free from congestion. The horse bitten by the Daboia, on the other hand, was affected very slowly, and seemed to doze his life away until just at the last, when a few unconscious plunges terminated his existence; the post-mortem in this case shewed less cadaveric rigidity, fluid blood, empty cardiac cavities, and lungs and other viscera congested.

But it is to be noted that the Cobra bit more vigorously, forced his fangs deeper, and had to deal with a more feeble animal than the Daboia, who bit a more powerful and healthy horse, and did not insert his teeth with such vigor as the Cobra. The snakes were both fresh and full-grown, and their terrible power was strikingly illustrated by the death of these two horses.

The difference observed in the pathological appearances, and state of the blood after death, may probably be accounted for by the greater rapidity of death in one case, rather than by any essential difference in the nature of the action of the poisons. The mare bitten by the Cobra died in 80 minutes, and after death the blood coagulated firmly, and was found distending the heart and great vessels with firm coagula. Death was probably caused by the rapid effects of the poison on the nerve-centres, before the blood had time to be thoroughly devitalized. In the other case, where death did not occur for nearly 12 hours, there was no coagulation either in or out of the heart or vessels; sufficient time had elapsed to allow the blood to be thus thoroughly charged. I am inclined to believe that if death were protracted after a Cobra-bite, the condition of the blood would be as it was in the case of the Daboia-bite.

EXPERIMENT No. 1.

A bay Australian gelding, 15-1 high, 9 years old, so partially paraplegic, (but otherwise a strong, well-conditioned horse): pulse 42, soft; respiration 48 per minute; was bitten by a full-grown fresh Daboia Russelli near the lower part of the neck, *over* the track of the right jugular.[*] The snake struck vigorously, and drew blood freely. The time was 12-15.

12-19.—Respiration 58 (gone up 10); pulse still 42.

12-30.—Respiration 61; pulse now 64. The puncture swollen.

12-52.—Lies down; looks languid; pulse 80 and weak.

1-1. Twitching of head to the near side; horse still down and very dull. Lower lip pendulous; muzzle resting on the ground; sight and hearing natural.

1-5.—A spasmodic twitch of the muscles of the neck; patches of urticaria, about the size of a shilling, making their appearance on the abdominal surface.

1-9. Pulse 70, intermittent.

1-16.—Pulse 76; respiration 52. Can rise from the recumbent posture without much effort.

3.—Pulse 80, tremulous and intermittent; horse looks dull and sleepy; yawning, getting up, and lying down again very frequently, as in colic.

4-30.—Pulse 67, weak and intermittent; breathing hurried; horse standing, but very dull; wound swollen, and very painful to the touch; mucous membrane of mouth pallid; ears and legs cold; body moderately warm; when roused is quite sensible.

6.—Horse lying down, breathing heavily; pulse almost imperceptible at the jaw, 60; fugitive colic pains.

9-30.—Breathing stertorous and very heavy; body and extremities cold; pulse imperceptible; horse drank a little water, but is evidently sinking; region of wound much swollen and very painful; purging thin, watery fæces (they were quite natural when the horse was bitten).

11-45.—Down and struggling; getting up and moving to and fro in the loose box restlessly; then lying down again and struggling with all four legs; straining and passing small quantities of watery fæces with flatus.

12. Dead.

Bitten at 12-15.

Died at 12, midnight, *i.e.*, in eleven hours and three-quarters.

Post-mortem 12 hours after death. Cadaveric rigidity moderate; abdomen distended, and mucous membrane of rectum partially congested and swollen; vicinity of wound blackened by infiltrated blood in the cellular tissue. Muscles all discolored, and general venous congestion apparent.

Thorax. Heart, right auricle empty; right ventricle contained a little frothy blood; left auricle and ventricle both empty; substance of heart firm, but presents numerous small ecchymosed spots. Larger blood vessels as usual. Blood in them fluid.

Lungs congested.

Liver and spleen congested.

Mucous surface of intestines in a highly irritable state, congested and thickened.

Other viscera healthy.

EXPERIMENT No. 2.

A stud-bred mare, about 14-3 high, aged 27, suffering from partial paraplegia and emphysema of lungs, but otherwise strong,

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[*] The vein was not penetrated.

[illegible]

EXPERIMENT No. 3.

[illegible] 12 [illegible] the body [illegible]

[illegible]

EXPERIMENT No. 4.

A [illegible] the thigh by a Daboia at 12·45 [illegible] quite dead at 12·46·30. Dead [illegible] after death.

EXPERIMENT No. 5.

A [illegible] with about 30 drops of the blood [illegible] at 12·29.

It walked about; was soon rather lame in the injected leg; gradually became sluggish; drooped; could walk if roused, but remained quietly crouching. It gradually drooped and died at 1-40 p.m.

Experiment No. 6.

Mr. Sceva injected the blood of the fowl (experiment No. 5) into another fowl's thigh at 1 p.m. 26th September.

27th September, 10 a.m. Fowl still alive.

28th September, 2 p.m. The fowl is alive and apparently well, excepting slight lameness in the injected leg.

30th, noon. It is still alive. There has evidently been no effect produced.

2nd October. The fowl is [illegible].

Experiment No. 7.

A fowl was bitten by a large Cobra in the thigh at 12-19-5. It fell into convulsions immediately, and was dead in 50 seconds.

Blood coagulated after death.

Experiment No. 8.

A hypodermic syringe full of the blood of the fowl bitten by the Cobra in experiment No. 7, taken from the heart, was injected into a fowl's thigh at 12-29.

12-32. Sluggish; lame in punctured leg.

12-47.—Walks about, but is drowsy.

1-27 p.m.—Being still in the same sluggish state; another syringe full of the serum that had separated in the clotting of the same blood (that of No. 7) was again injected into the fowl's thigh.

1-52.—Lying down, resting its beak on the ground; very drowsy and sluggish.

2-2. Cannot be roused.

Died shortly after, at 3-16 p.m.

Experiment No. 9.

A fowl bitten in the thigh at 12-35 by the Daboia that had bitten the Cobra. It walked about immediately after with slight muscular twitching.

12-36-15. Standing with the lame leg drawn up.

12-40.—Pecking at food. Walks, but staggers slightly.

12-41. Bitten again in the thigh by the same snake, which is evidently much exhausted.

12-43.—No very apparent effect.

12-43-33. Fell over in convulsions.

12-44-15.—Dead.

This experiment shows that the snake was much exhausted by previous biting.

Experiment No. 10.

A fowl was placed near a fresh Daboia,* free on the ground. The snake, on being irritated, struck the fowl somewhere about the neck at 12-49. It fell into convulsions immediately, and was dead at 12-49-15, that is, it was completely dead in 15 seconds.

This experiment shows the terribly deadly nature of the Daboia's poison.

Experiment No. 11.

A Cobra was injected at 1 p.m. with fifteen drops of *his own* poison; the syringe was inserted about 8 inches from the head.

Ten minutes after there was no effect.

At 5 p.m. the snake was still unaffected.

September 27th, 10 a.m.—No effect.

30th September, noon. No effect.

This experiment seems to shew that the Cobra is not poisoned by his own venom.

2nd October. Seems sluggish, but after so long an interval it may be from other causes.

Experiment No. 12.

Five drops of Cobra poison, diluted with about ten drops of water, were injected with the hypodermic syringe into the inner side of a cat's thigh at 1-7-45 p.m.

At 1-12 restless; muscular twitchings; mewing loudly.

1-13. Partially paralyzed; dragging the punctured leg; breathing very much hurried. As the cat crouches on the ground the hind-quarters fall over as though paralyzed.

1-14. Tries to walk; drags the hind leg.

1-56. Sluggish; apparently in no pain; does not move, even when touched.

[*Mr. Sceva reports after this.*]

2-20. Lying on its side, with hind leg extended; profuse flow of saliva from the mouth, and symptoms of nausea. Frequent evacuation of thin fæcal matter.

2-30. Raised the head and fore part of the body; dragging the hind limbs for a short distance on the floor.

3.—Attempted to get up again, but was unable to do so.

3-5.—Died, slightly convulsed. The blood coagulated firmly after death. It was examined by Professor Partridge and myself, and no change from the normal structure could be made out. The corpuscles, red and white, were unchanged, excepting that some of the red ones were shrivelled.

The quantity of poison used was only 5 drops, and that was mixed with water. It was injected at 1-7-45 p.m.; the cat died at 3-5 p.m., rather less than two hours.

It is evident from this that the poison does not suffer by mixture with water.

Experiment No. 13.

A large Cobra was injected at 1-33 p.m. with five drops of the solution of strychnia, gr. i. to ℥i., near the head.

It was convulsed and powerless at 1-36.

At 1-40 muscular tetanic twitchings.

1-42. Dead.

This experiment shows that a poison is rapidly effective on the snake when inoculated into the circulation.

Experiment No. 14.

A Cobra was injected with about 15 drops of the poison of another fresh and vigorous Cobra at 1-43 p.m. The poison was carefully injected with the hypodermic syringe about eight inches from the head. The Cobra inoculated was of the pale, yellowish-coloured variety, with a single spectacle on the hood. It was very active and vicious, the most so of any I have seen. It was sent to me a short time ago by the Police authorities; having been captured after biting a native lad in a boat, who died, it is said, within an hour after being bitten.

At 2-2 p.m. and 5 p.m. not affected; as vicious and active as ever.

At 10 a.m. of 27th September still unaffected.

30th September, noon. Still unaffected.

2nd October. Still quite well.

Present: Dr. Fayrer and Mr. Sceva.

Experiment No. 15.

28th September.—At 1-47 p.m., a fowl, half-grown, was bitten in the thigh by a Daboia; convulsed immediately, and dead in 35 seconds.

Blood drawn from the heart of the fowl in experiment

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* The Daboia is naturally very sluggish, and not aggressive, unless irritated, when it strikes with great rapidity and deadly precision.

Mr. W. Blanford tells me of an instance where a Daboia was carried home by a gentleman who thought he had got a young Python. It did him no injury, and he only became aware of the danger he had escaped by the snake striking at and killing a dog that approached too near it.

Experiment No. 16.

[illegible] 15 [illegible] injected into [illegible] at 1-22 p.m.

7-15 [illegible] yet.

[illegible] drowsy. [illegible] gone off into [illegible] over [illegible] like a creature [illegible]

[illegible] drowsy, and died at [illegible]

Experiment No. 17.

[illegible] At 2-50 p.m. a full-grown chicken was [illegible] with ten drops of the blood of the chicken [illegible] No. 16.

[illegible] 2 p.m.—Appears to be slightly affected; [illegible] depressed, not so active as it was.

[illegible] It [illegible] having been only very slightly affected.

Experiment No. 18.

[illegible] A full-grown fowl was bitten in the thigh 12-15 [illegible] very [illegible] and active Cobra (one that [illegible] was itself the subject of experiment on [illegible] 26 [illegible] convulsed immediately, and was [illegible] dead in [illegible] 34 seconds.

[illegible] were found to be without [illegible] a few minutes after death. The blood [illegible]

Experiment No. 19.

[illegible] of the blood of the fowl in experiment No. 18 were injected into the thigh of a full-grown and strong [illegible] 12-25 [illegible] 28th September.

12-27 [illegible] this passed off, and at 1-26 [illegible] affected except that it was purged.

[illegible]

2-[illegible] wings drooping [illegible] ground.

[illegible] to one side [illegible] wings extended over it.

[illegible] partly extended, a small [illegible] beak. Head lying on the [illegible]

[illegible] 16 [illegible]

Experiment No. 20.

[illegible] About 25 [illegible] of blood, taken from [illegible] No. 19, injected into the [illegible]

At 7-15 [illegible] from the [illegible]

[illegible] affected [illegible]

[illegible] affected [illegible]

[illegible] to be affected [illegible] it appeared [illegible] with its head [illegible] time since [illegible] chickens [illegible] following [illegible] was found to [illegible] disease [illegible]

Experiment No. 21.

S[illegible] 29th.—A Ophiophagus Elaps about 8 feet long, [illegible] its fangs by the snake man was [illegible] squeezing the jaws; a drop [illegible] exuded.

[illegible] was inoculated into a fowl's thigh [illegible] with a lancet, and the poison was [illegible]

[illegible] effect was [illegible] as usual. It then began to [illegible] stiff, seemed dazed; sat down and [illegible] began to droop, to nod its head [illegible] The state of drowsiness grew [illegible] profoundly sleepy, after [illegible] falling off again into a profound [illegible]

At 12 [illegible] unconscious, and could not [illegible] its [illegible] its eyes, made an attempt to raise the head [illegible] again. Its condition seemed to be [illegible] narcotism.

12-37. A few [illegible] movements only indicate life.

12-40. [illegible] movements and stretching of the neck.

12-43. Dead.

[illegible] and ecchymosed; emphysema of the [illegible]. The blood clotted firmly after death.

At 1-10 p.m. [illegible] of the blood (half a syringeful 15 drops) was injected into the thigh of another fowl.

30th [illegible] More than 24 hours and it is not affected [illegible] looks bright and active. The quantity [illegible] was very small.

2nd October.—Quite well.

This, [illegible] as it is, is the first opportunity I have had of experimenting with the poison of this snake; it is rare, and [illegible] have not been able to procure me a [illegible] specimen. The snake experimented with has been [illegible] the hands of the snake-catcher. The man who [illegible] had borrowed it from a friend, and he was unable to say how long it had been in captivity, or where it had been [illegible]. The Ophiophagus Elaps is the largest kind of [illegible] snake, and a very formidable and terrible [illegible]. In general form it resembles the Cobra, having the head and hood similarly shaped. Its fangs are like those of the Cobra, and its venom is said to be equally deadly [illegible] to its size. It is very active and aggressive, has great power of turning itself in a short space on its own body, and when about to attack, assumes the same erect and [illegible] attitude as the Cobra.

In color it differs from the Cobra, being of an olive-green and marked with [illegible] bars of white edged with black, which are very conspicuous on the hood and tail. The hood is proportionately not so large as in the Cobra, and there are other unimportant anatomical differences which I need not detail here. It attains to a great size, 12 feet or even more, and is therefore [illegible] one of, if not the largest poisonous snakes known. There is only one species of the genus which has received its name from its habit of feeding on other snakes.

[illegible] strus saggittalibus nigris [illegible]
[illegible] marmorato."—Cantor.

It is said to be very dangerous and aggressive (Dr. Cantor says "it is very fierce, and is always ready not only to attack, but to pursue when opposed"); and stories are told (I know not if truly) that it has chased men for hours when disturbed in its native haunts. It has a variety of synonyms:

Ophiophagus Elaps (Bengalee name Sunkr Choar). Naja

Bungarus. Naja Elaps. Naja Vittata. Hamadryas Ophiophagus. Trimeresurus Ophiophagus. Hamadryas Elaps.

Such are the synonyms given from different authorities by Gunther. The first is the one by which it is generally recognized by naturalists in the present day. It has a wide geographical distribution, and is found in Bengal, though I have not yet ascertained the localities in this province that it most affects. The snake-catchers say it is to be found in the Soonderbuns and other dense and secluded jungle, and that it is difficult and dangerous to capture. It is certainly found in Burmah and the Tenasserim Provinces and Assam. Gunther speaks of three varieties: the one experimented with, found in the Malayan Peninsula, Bengal, Peninsula of Southern India; another in the Phillipine Islands; a third in Borneo.

These are merely varieties, and are distinguished by some difference in color. It has, Gunther says, been found in every part of the Indian Continent—in the Andaman Islands, Java, Sumatra, Borneo, and the Phillipine Islands, and, according to Dumeril, in New Guinea. It inhabits hollow trees, and is sometimes found between their branches.

Its food, as its name implies, consists of other snakes.

PRESENT:—Dr. Fayrer and Mr. Seeva.

EXPERIMENT No. 22.

October 2nd, 1868.—The Ophiophagus Elaps, mentioned in experiment No. 21, September 29th, that had been deprived of its fangs, was made to shed its poison by squeezing the poison-glands; a drop or two only could be obtained, so much having been secreted in four days. It had the same appearance as on the first occasion. This, diluted with an equal quantity of water, was injected with the hypodermic syringe into a fowl's thigh at 12-30 a.m. The fowl was not immediately affected, and being carelessly placed near an open door, it made its escape into a drain, in which, as it did not emerge, I presume it died. The opportunity of watching the effects of the poison was lost; but the experiment is interesting, as it shews that the poison is secreted although the poison fangs are removed, and it shews the rate at which it was secreted, about two drops in four days. The snake had not been fed, but on this occasion it was fed with a Passerita Mycterezans, (a green whip-snake) that was poisoned by a Cobra.—*Vide* experiment No. 23. The snake-man put the head of the dead snake into the Ophiophagus' mouth: it seemed delighted to have it, and proceeded to swallow it forthwith, gradually drawing it into its gullet by alternate lateral movements of the lower maxillary bones. The process of swallowing occupied about five minutes, during which the Ophiophagus moved slowly about with the anterior part of his body raised and his hood distended, the Passerita hanging out of its mouth. The last few inches of the tail were swallowed more slowly than the rest.

A second Passerita being offered shortly after, was declined, and its head ejected from its mouth.

EXPERIMENT No. 23.

A green whip-snake, more than three feet long (Passerita Mycterezans), was bitten by a Cobra, about ten inches from the head, at 12-37 a.m.

At 12-38, sluggish; moves less actively; gapes, keeping the mouth wide open.

12-39. Almost paralyzed; mouth now closed; head lying on the side. The body is swollen where bitten.

12-40 – Dead.

Death was very rapid; a peculiarly active and vigorous, though innocuous, snake killed in two minutes by the poison of the Cobra.

EXPERIMENT No. 24.

At 12-48 p.m. a Cobra bit a Cobra in three places near the head. They were both vigorous, fresh, and full-grown.

1-10 p.m.—Appears rather sluggish.

At 1-11 this bitten Cobra bit a fowl in the thigh: it died in four minutes.* I should note that it had been partially exhausted by biting the Passerita, which it killed in two minutes.

1-16.—Appears rather sluggish as it lies on the floor.

At 1-35 it appears in its natural state; raises its head, expands the hood, and strikes when threatened.

At 1-13 it was bitten severely in the body, about a foot from the head, by a Daboia, one of those that have been some time in confinement.

At 1-47 it appeared to be affected; was sluggish, and lay with its hood shrunken and its skin shrivelled. It is possible that in presenting it to the Daboia to be bitten it may have been squeezed, but it did not appear so. It remained in this sluggish state, and was dead at 4-10 p.m.

EXPERIMENT No. 25.

A Passerita Mycterezans, (green whip-snake,) rather smaller than the former one, bitten in the body at 1-40 by a Daboia.

At 1-45 p.m. almost powerless. It gradually became more and more exhausted, gaped like the one bitten by the Cobra, and was dead at 2-2 p.m., or in 17 minutes.

The Daboia was one of those long in confinement, and had no doubt become exhausted.

EXPERIMENT No. 26.

A large black Cobra bitten in the body by a Daboia at 1-52 p.m., October 2nd, at about a foot from the head.

At 2-20 no change.

October 3rd, 6 *a.m.*—No change.

EXPERIMENT No. 27.

A full-grown Cobra bitten by a Daboia in the body at 2-4 p.m.

At 2-20 no change.

Died at 10-30, October 4th.

EXPERIMENT No. 28.

A half-grown fowl was bitten in the thigh by a Cobra at 1-11 p.m.

At 1-11-15 it crouched, drooped its wings, rose, staggered, and dropped down.

At 1-13 drooped its wings; rested on its breast, with the point of its beak on the ground.

1-14. – Convulsed and dying.

1-15 – Dead. Died in four minutes.

The Cobra was not quite fresh: it had bitten the Passerita, and had itself been bitten by another Cobra before biting the fowl.

EXPERIMENT No. 29.

At 1-25 about four drops of the blood of the above fowl (experiment No. 28) were injected into the hind-quarters of a Sorex cærulescens (musk-rat.)

At 1-35 eating a portion of the dead fowl, apparently not affected, unless it may be perhaps rather sluggish.

At 5-30 a.m. of 3rd October the musk-rat found dead; appeared to have been dead two or three hours; no sign of any injury, but the syringe puncture in the thigh apparent.

The evidence of experiments Nos. 1, 2, 3, 11, 14, 26 goes to show that the Cobra and the Daboia are not affected by each other or by their own poison.

The experiments Nos. 24, 27, on the other hand, would prove that the Cobra succumbs to the Daboia. If such really be the

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* *Vide* experiment No. 28.

to enquire if the exceptional seasons of 1832, as described by the Superintending Surgeon of Cawnpore, may not have influenced this phenomenon.

It will be noticed, the amount of rain which fell during the year 1832 in the Cawnpore district was far less than usual, a fact also noticed by Colonel Baird Smith, for on account of the drought thus caused there was a partial famine in these parts in 1833. This idea is somewhat confirmed by subsequent events; for no sooner had the rain of 1833 set in, than the cholera of 1831, which until then we may suppose to have been suppressed for want of moisture, instantly burst out, and committed the terrible ravages described by the Superintending Surgeon of Cawnpore.

In 1834, the North-West was again under the influence of an invading cholera, which, although not characterized by any great power of diffusion, was generated with considerable force in certain localities. On the 7th August, the Superintending Surgeon of Agra writes that "cases of cholera took place towards the end of the month (July); in the city the disease has been very severe, yet in the jail not a single case has occurred." From Muttra Dr. J. McRae reports (5th September, 1834) "during the month of July it rained incessantly; about the middle of the month cholera made its appearance in the city of Muttra and carried off great numbers. The rains ceased suddenly on the 3rd of August, and none fell till the 22nd; during this interval of hot, dry, sultry, enervating weather, the cholera spread all round Muttra, and from the 14th to the 22nd it prevailed to a frightful extent. Amongst the Europeans of the 3rd Troop Horse Artillery, it was characterized by early collapse of the system; blueness of the skin had commenced in several cases at so early a period, that the individual seized had no other symptom of indisposition except a feeling of general debility and slight relaxation of the bowels; vomiting scarcely made any part of the complaint; spasms were seldom present in the early stages."

At the commencement of the year 1834, the disease, in a very virulent form, was generated in Sylhet, Cachar, and Assam. Dr. Brown reports from the former district that "about the middle of May cholera broke out in Sylhet for the second time in the year, and spread with great mortality; it raged with equal violence from the 4th to the 22nd, when the weather was excessively sultry." "Cholera generally appears twice a year in this district as an epidemic, and at all times sporadic cases are met with." In fact, the inhabitants of Sylhet and Cachar were never absolutely free from cholera.

The disease was very prevalent at Dinapore throughout the whole of the first quarter of 1834.

We must now briefly consider a few details regarding cholera in the Madras Presidency. In 1833, H. M.'s 62nd Regiment, while on the march from Chittore to Masulipatam, was attacked with a most severe form of cholera; no less than 200 cases occurred in this regiment. Among the troops forming the northern division of the army, the mortality "in 1833-34 was much increased from the prevalence of cholera" in the Hyderabad subsidiary force, "the mortality being greater than usual in 1833-34 and 1838, in consequence of the great prevalence of fever and cholera."* In the Nagpore Division, "cholera was very prevalent during the years 1833-34 and 1837-38, the greatest number of deaths occurring in June, July, August, and October."

In the central division of the army, in "the years 1833-34 and 1838, the mortality was considerably increased, and almost solely by cholera."†

In 1833-34 cholera was most severe among the troops of the Mysore Division. In the Ceded Districts, of which Bellary is the capital, and which includes the table-land lying between the Eastern and Western Ghauts, having an average elevation of about 1,600 feet above the level of the sea, "cholera prevails to a greater extent than in any other division of the army (Madras), the percentage of admissions as well as of deaths to strength being much above the average. It has frequently been observed that regiments, while marching through this division, are particularly obnoxious to outbreaks of this disease. The question here arises, to what influence are these attributable? and if to a deleterious exhalation emitted from the soil, how is it to be explained that a regiment shall march over ground from one station to another in a perfectly healthy state, while in another body, on the same road, after an interval of only three days, cholera shall commit ravages? while, again, instances occurred where a regiment has been severely attacked with cholera in its march, and another following the same road, after an interval of only two or three days, has altogether escaped." "The mortality was greatly above the average in 1833 and 1838, the result in both years of epidemic cholera."*

The Central Provinces and valley of the Nerbudda were also under the influence of a widespread epidemic of cholera in 1833-34. The Superintending Surgeon of Saugor states that the disease appeared at Hoshungabad at the close of the year 1833, "having raged epidemically for some time previously in the neighbouring villages. When it appeared, the weather was unsettled, the wind variable, and the temperature unusually high. The disease committed great ravages at Garrawarra. During the month of October, at Seuni, "easterly winds, as in the preceding year, prevailed in the end of June and July, when cholera first appeared, raging violently among the population." He adds, "cholera and fever may be considered as endemical" in these parts. During the year cholera was prevalent among the shipping in the Madras Roads; and incidentally we hear of it breaking out among the crew of the *Peacock* while at Manilla† and at Trincomalee.

In May, 1834, the Superintending Surgeon of Saugor reports "that cholera is raging throughout the high table-lands to the south, and at Mundla with greater severity than it has ever before been known. In the neighbourhood of Bhilsa and Jhansi, the roads have been nearly impassible from the putridity of the numerous bodies. Some of the deaths have been very sudden, only two hours having elapsed from the first moment of attack." Among the European troops in the Bombay Presidency, the deaths from cholera amounted to 35 in 1831, to 113 in 1832, and to 263 in 1834

It is evident, therefore, as I before remarked, that the whole of the Madras Presidency, Central India, and Bombay‡ weer under the influence of a vast outburst of epidemic cholera in 1832-33-34, which probably spread to the Hadjezy in 1835, and into the basin of the Mediterranean, and Europe, in 1836-37.

In 1835, epidemic cholera was at a very low ebb throughout Bengal; the districts of Chittagong, Beauleah, Midnapore, Purneah, and Hazareebaugh suffered from it, the troops in the latter station being also affected during May and June. The prison and troops in the North-Western Provinces and the Saugor divisions were well nigh free from cholera. The Superintending Surgeon of Meerut, however, described an outbreak of the disease in April. "The weather early in the month was very hot, with prevailing easterly winds; several cases of cholera appeared among the Cameronians. On the afternoon of the 11th we had much rain, the temperature fell in a few hours to [illegible]. This change was only temporary; the weather soon became hot and sultry. A number of cases of cholera appeared among the Cameronians, the rest of the troops remaining free from the disease." It does not appear that the convict, civil population,

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* Report on the Central Division, Madras, 1848.

† Report on the Medical Topography and Statistics of Northern Hyderabad and Nagpore Provinces. Compiled and published by the Madras Medical Board, 1844.

* Report on the Medical Topography [illegible] Ceded Districts, Madras, 1844, pp. 7, 12.

† Essays on the Origin and Progress of [illegible] Madras, [illegible] p. 37.

‡ Transactions of the Medical and Physical Society of Bombay for 1840, p. 7[illegible], and Vol. I., New Series, [illegible]

in a few instances partaken of the spasmodic form, but has been one of collapse; a few watery motions, succeeded by sudden prostration of all the animal powers, and the patient died without a struggle in a few hours." It is useless my entering into further particulars regarding the invading cholera of 1838. The above quotations, which, it must be remembered, were written by officers widely separated from one another at the time and on the spot where the disease appeared, seem to me precisely the independent evidence we require to prove the fact of the districts belonging to this Presidency, west and north-west of the Cawnpore division, being under the influence of a vast outburst of cholera in 1838.

Our troops entered Cabul in 1838, but no cases of cholera occurred among them until the following year. Dr J. Atkinson reports from "near Cabul," that early in August (1839) "the camp at Quetta received a formidable visitation from cholera, which naturally produced great alarm. The cases were numerous and very fatal; the natives of the country were dying daily in great numbers, both in the town of Quetta and the neighbouring villages."* We have in this and subsequent communications, evidence that during August, 1839, cholera had passed into Cabul, as I supposed the epidemic of 1828 had done in 1829; nor would it have been possible for us to have traced the further history of the epidemic of 1838, had not our unfortunate army happened to have been in the country at the time.

From the Madras reports, it is evident that cholera was again very prevalent in that Presidency during the year 1837-38. The number of native troops suffering from cholera amounted to 12 in 1835, to 63 in 1836, 702 in 1837, 1,108 in 1838, 530 in 1839, and 270 in 1840.† The disease was very severe at Bellary among the men of H.M.'s 39th Regiment. On the 21st and 22nd of March, there were a few showers and much lightning. On the evening of the former day the first case of cholera appeared, and between that date and the 21st of May, 75 cases of cholera occurred in the regiment.‡

Among the European troops serving in the Presidency of Bombay, the deaths from cholera amounted to 62 in 1837, to 53 in 1838, and to 259 in 1839.§

Throughout 1839 we have accounts of cholera from almost every large station in this Presidency, the epidemic being reproduced over the whole country invaded by it in 1837-38. The following table, compiled from the reports contained in the proceedings of the Bengal Medical Board, illustrates these facts with considerable precision:—

Table showing the average strength, and number of deaths from cholera among the European troops in the Bengal Presidency for five years.

	Troops stationed to the East of 80° E. Long.		Troops stationed to the West of 80° E. Long.		
Years.	Average strength.	Number of deaths from cholera.	Average strength.	Number of deaths from cholera.	Remarks.
1835	6,767	26	4,707	3	* Of these, 25 deaths took place among the men of the regiment stationed at Ghazeepore.
1836	7,332	38*	5,359	4	
1837	7,144	120	4,306	16	
1838	6,375	52	7,122	86	
1839	6,011	35	5,970	12	

I may here remark that I find carefully kept returns in the proceedings of the Medical Board regarding the health of our troops and prisoners in the settlements of Singapore, Penang and Malacca from 1827 to 1840; and, as far as I can ascertain, not a single death from cholera occurred either among the troops or convicts at any one of these stations during this period. One or two instances of cholera are reported, but the patients recovered. And I find the Madras records confirm the fact that epidemic cholera was absolutely unknown in our eastern possessions during the period under review,* although within these fourteen years we have clear evidence of three great outbursts of the disease over Hindoostan, our eastern settlements being in constant and speedy communication with India, receiving our convicts, and being absolutely unprotected by anything approaching to a system of quarantine.

ANTISEPTIC DRESSING: A MODIFICATION OF LISTER'S METHOD. KELO OIL, A CHEAP AND EFFICIENT SUBSTITUTE FOR CARBOLIC ACID.

By J. Newton, M.A., M.D.

For more than a year past, in the Mission Dispensary at Subathoo, I have pursued Lister's method of treatment, in more than a hundred cases, with results so uniformly successful and satisfactory, as to convince me that in it we have a most valuable means of relieving suffering, which we have no right to neglect.

Most of the antiseptics, though easily used in the form of a lotion, are not of a convenient consistency for employment in a paste, after the plan recommended by Professor Lister. Probably no one substance of this entire class is more admirable than the chloride of zinc, introduced to the notice of the profession a few years ago by Mr DeMorgan, by whom it is, I believe, still employed with great success in London. But neither chloride of zinc nor its late rival, sulphurous acid, seems well adapted to use in the form of a paste, being liable to decomposition when used with any ordinary vehicle. In every respect *kelo oil*† answers, better than anything else with which I am acquainted, the end in view,—that is, of securing a *cheap substitute* for carbolic acid. It is apparently rich in creasote, it mingles readily with oil, and it is certainly very cheap, being sold in the Simla and Subathoo bazaars at the retail price of four annas a quart bottle, while kerosine and the oil of turpentine, either of which might be mixed with the paste, cost each a rupee a bottle. The antiseptic property of kelo oil, though doubtless inferior to that of pure carbolic acid, is yet very great, having proved sufficient in all the numerous cases in which it has been used, to prevent decomposition or fermentation.‡

Whether Pasteur's theory of the influence of atmospheric germs in promoting suppuration is correct, or whether, as is believed by some high authorities, it is wholly untenable, it is not my purpose here to inquire. I only maintain, independently of all theories, as a matter of fact which cannot be gain

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* MS. Proceedings of Medical Board.

† Report on Epidemic Cholera, by Dr. Lorimer, p. 24.

‡ Report on Asiatic Cholera, by S. Rogers, p. 56. London, 1848.

§ Transactions of the Medical and Physical Society of Bombay, No. I, New Series, p. 98.

* Report on the Medical Topography of the Eastern Settlements, Madras, 1841; also the *Madras Quarterly Journal*, Vol. I., p. 71. Madras, [illegible].

† Similar in appearance and properties to the *huile de cade*, so well known in Europe.

‡ To test its power in this respect, I laid aside some of the paste used for a dressing for wounds, in the hottest June weather, in an uncovered vessel. At the end of a fortnight it was found unchanged, being neither sour nor mouldy. The paste consisted simply of wheaten flour and a little linseed meal, cooked as a common poultice, and then kneaded up with as much kelo oil as it would bear without becoming fluid. Without the kelo oil, it would have fermented and [illegible] in less than 36 hours.

[illegible] I never did [illegible] from [illegible] only by [illegible] I [illegible] that I take [illegible] steps which [illegible]

A [illegible] it may [illegible] The class [illegible] very large proportion of [illegible] and by [illegible] &c. Moreover, this principle of treatment [illegible] may be applied [illegible] chancres [illegible] of Wharton [illegible] pulmonary [illegible] cancer.* In [illegible] the position of the wound or [illegible] It may [illegible] this method of treatment [illegible] for example, in the mouth. Such a dressing would [illegible] the simple, [illegible]; but the difficulty of retaining it in most of those situations in which chancres are found has prevented me from making the experiment. Suppurating buboes, however, as well as suppurating lymphatic glands in [illegible], may be so treated as I have tested in practice.

The process of applying the dressing involves three distinct steps: 1st, the preliminary washing; 2nd, the careful adjusting [illegible] an antiseptic curtain; 3rd, the application [illegible] paste, together with the covering with sheet [illegible] and [illegible] of the whole.

1st. *The [illegible] Wash.* In [illegible] wounds [illegible] hope of [illegible]

[illegible]

[illegible] should [illegible] may be [illegible] there is the least tendency to [illegible] always admissible, is perhaps especially [illegible]

The method of applying [illegible] a matter of [illegible] the best [illegible] R[illegible] play [illegible] W[illegible] I [illegible] I have [illegible] glass [illegible] Condy's fluid [illegible] may be [illegible] thrown [illegible] No amount [illegible] will ever [illegible] so thoroughly [illegible] process [illegible].

2nd. *The Antiseptic Curtain.*—This is a piece [illegible] large enough to overlap by two or three inches [illegible] the wound [illegible] should be [illegible] various [illegible] fast [illegible] being carefully adapted to the surface of [illegible] except where [illegible] Before it is applied, the curtain should be [illegible] in a mixture of carbolic acid [illegible] part and sweet oil* four parts. Other substances, such as [illegible], would doubtless answer well for this purpose, especially [illegible] but hitherto, while I make up the paste with [illegible] oil, I have preferred to use at this stage of the proceedings dilute carbolic acid, the quantity of the acid required being so small as to make [illegible] a trifling consideration. After all that has already been said of the importance of an antiseptic curtain, I need hardly [illegible] conclusion that it should be adjusted [illegible] the greatest care, since it is [illegible] to last for several weeks at least.

3rd. *The [illegible] and [illegible] Dressing.* Having washed the [illegible] by a well-arranged antiseptic curtain, we proceed to [illegible] with a thick [illegible] antiseptic paste. [illegible] from the [illegible] while it is, at the same time, [illegible] the tissues [illegible] the [illegible] to [illegible] I used with success the paste recommended by Professor [illegible]

[illegible]

quantity; stir over the fire so as to form a thick paste; keep this up as long as possible without burning the flour, the object being to render the paste very tough and dry, in order to admit of a large quantity of kelo oil. When the mass is cool enough to be conveniently worked, pour upon it a mixture consisting of kelo oil three parts, to apricot (or any other) oil one part. As much as possible of the fluid should be well worked into the paste, care being taken that the latter become not too soft. The paste thus formed is now ready for use, and may be put away in a metallic or porcelain vessel, which should be kept closed to prevent either evaporation or the admission, in the rainy season, of excessive moisture. So rapid, indeed, is the absorption of moisture in the hills in the rainy season, that the paste cannot, with the greatest precautions, be kept tough and firm for more than a day or two. To save the trouble of making it afresh every day, I have lately, in very wet weather, resorted again to the old putty made with pipe-clay. This has, however, more than ever, by contrast, convinced me of the superiority of the poultice, whenever the season admits of its being used. The putty, I may here remark, may be made like the poultice, with a mixture of kelo oil, instead of carbolic acid, with common oil, in the proportion of about three of the former to two of the latter.

When the antiseptic paste, whatever be its composition, is to be applied, it is well to enclose it in a piece of muslin twice as large as the antiseptic curtain. This should first be dipped in kelo oil. The paste should then be spread evenly over one-half of it, the layer being from half an inch to an inch in depth. Over this should be folded the remaining half of the muslin. The ends and sides being then neatly tucked in all round, there will be no danger of any portion of the paste being pressed out. The whole can now be placed upon the antiseptic curtains. Around it should be put a thick border of cotton wool to protect the skin from the pressure of the margin of the *sheet lead*,* a piece of which, overlapping the paste, should now be laid over all. Finally, the entire dressing should be firmly secured by some turns of a common bandage.

Under ordinary circumstances, the paste should be renewed every third or fourth day; the latter is hardly safe if the suppurating surface is very large. In removing it, care should be taken not to disturb the antiseptic curtain, which should be kept closely adherent to the surface of the ulcer. The mere presence of *pus* should never induce us to remove the curtain, so long as there is no fœtid odour. No matter how foul it *looks*, we should let it alone. But if there be any degree of fœtor, there is something wrong, which calls for prompt redress. In such cases it will inevitably be found, either that dressing was not adjusted with sufficient care in the first place, or that it was afterwards suffered to get loose, or, finally that the interval allowed to elapse since the previous dressing has been too great. At any rate, whatever the cause, if the antiseptic be found to have an offensive smell, it should be removed at once. The ulcer should then be washed as at first, then bathed by means of the spray-producer with sulphurous acid, some other antiseptic lotion, and a new curtain should be applied with greater care. If, however, there be no fœtor, we may rest assured that all is right. The old antiseptic curtain should at once, without being disturbed, be mopped with some fresh carbolic acid and oil (1 to 4), so as to saturate it as completely as possible. Fresh paste should then be applied, enclosed in a fresh piece of muslin, and the dressing completed as at first.

Slowly, but very surely, a case thus treated will go on to a cure. After some weeks, the curtain may be lifted to see what progress has been made. The change will sometimes be very striking. If there be but a slight superficial ulcer left, it may be well to discontinue the method of dressing above described, and to employ either a simple water-dressing, or, what is better, a weak carbolic acid lotion. I may add that, in a large proportion of cases, especially in cases of ulcers, lupus, &c., I administer, as a matter of course, tonics and alteratives conjointly with the above local treatment. Iron, arsenic, atees, quinine, and strychnia in various forms and combinations are, as every practitioner knows, invaluable in the constitutional treatment of most of the maladies under consideration.

N.B.—Since the above was written, I have repeated several times the experiment of keeping, for a week or more, the paste described in this paper, consisting of flour and kelo oil mixed with a small proportion of apricot oil. In *every* case the paste, when kept more than five or six days, has been found covered, to some extent, with a superficial fungous growth,—a white mould. Practically, this fact has proved to be of no consequence. The paste has in no case undergone any fermentative change, nor has there been any ill odour. It has, therefore, been used freely as a dressing, with all the good effects ascribed to it above, the antiseptic curtain being always soaked in the mixture of carbolic acid (1) and oil (4). In the experiments made just before the rains, there was no such mould. I attribute its presence *chiefly*, however, to the fact that I have found it difficult, of late, to get kelo oil of a good quality. It is adulterated, often largely with water (?). I need hardly repeat that the use of kelo oil is recommended merely on the score of economy: its antiseptic power is far inferior to that of carbolic acid. A small proportion of the latter might be added to it with advantage.

SUBATHOO, *September 17th*, 1868.

MEMORANDUM OF POINTS TO BE STUDIED, CHIEFLY WITH THE HELP OF THE MICROSCOPE, IN *POST-MORTEM* EXAMINATIONS OF LEPROSY.

By J. Newton, M.A., M.D.

By way of preface, it may be said that a special record of each case should be kept separately. Yet the facts should be noted according to a fixed plan, in systematic order. This should be done partly in order to elicit the utmost amount of information, and partly for future convenience in tabulating the results. Each case, too, is best studied with primary (though not by any means with exclusive) reference to some hypothesis as to the pathology of the disease; either the one given below, or some other.

I. Obtain, if possible, a history of each case; especially a history of the last illness and immediate cause of death.

II.—Observe carefully the external appearance of the subject to be dissected. Specify the particular type of leprosy, whether anæsthetic or tubercular, or mixed. Record the number, character, and extent of the external lesions.

III.—The hypothesis which I, for my own part, would like to have tested may be stated thus:—Whatever the specific cause, and whatever the accidental type of the disease, *leprosy is essentially an affection of the gelatine-yielding tissues*; *i.e.*, of the connective tissue of Virchow, together, probably, with the epithelial tissues likewise. We should examine them

1. Generally, all the tissues of the body, belonging respectively to these two categories, noting any peculiarity that may

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* Neither gutta-purcha nor oiled skin, Professor Lister tells us, will answer the purpose of arresting the vapour of a substance so volatile as carbolic acid. Hitherto I have obtained an abundant supply of sheet lead from the lining of tea chests.

[illegible] the eye, and [illegible] This would [illegible] connective tissue everywhere [illegible] (1) [illegible] for [illegible], and (2) [illegible] the [illegible] membranes.

2. [illegible] nervous apparatus [illegible] and spinal [illegible] Virchow expressly [illegible] the [illegible] of the [illegible] degree [illegible]

3. Examine also the membranes of [illegible] system — [illegible] and the membranes [illegible]

4. Particular attention [illegible] parts of the spinal [illegible] tenderness on pressure. This symptom [illegible] shoulder blades and [illegible] Is there any visible lesion [illegible] tenderness [illegible] if so, what is its nature. [illegible] to any extent, with the cervical and the lumbar enlargements of the cord.

5. Is it possible to discern, by means of the microscope, why the neuritic phenomena of leprosy are confined to the sensory [illegible] whilst the motor fibres are [illegible] Is there any [illegible] degeneration of the [illegible] as distinguished from the perineurium and [illegible] consist of connective tissue?

IV. [illegible] and the lymphatic glands [illegible]

V. [illegible]

AN [illegible]

By [illegible]

[illegible] something must be done to [illegible] easy [illegible] who is [illegible] ignorant of [illegible] He is [illegible] by [illegible] However large the number of Sub-Assistant [illegible] may be, they are of no use to the people [illegible] Then how are these people to be [illegible] that the [illegible] Calcutta, Agra, and Nagpore, [illegible] But [illegible] they are [illegible] that they are [illegible] worth [illegible] Left to [illegible] to them as the system [illegible] little learning is a [illegible] thing [illegible] they are a useful class [illegible] would have the [illegible] to deal with human [illegible] Yet these [illegible] down, and practise the profession [illegible] large practice; and the Government [illegible] dispensaries. I would be the last [illegible] as they are the only [illegible] mass of the people; but I think the [illegible] education should be improved [illegible] to take such onerous tasks [illegible] and [illegible] to them [illegible] must [illegible] without study of books [illegible] experience, or the [illegible] It is now several years [illegible] been introduced [illegible] experience of [illegible] help them [illegible]

I [illegible] I would [illegible] institution [illegible]

[illegible] except [illegible] and [illegible] from the metropolis, I cannot do anything, else I would not have asked any one to take up the task, but I would devote my head and heart in co-operating with such a body.

The corporation may be formed and managed in the following way:—1 The association should be formed of all medical men, whether in the metropolis or out of it. 2. Contributions should be raised by agents in different parts of the country, and formed into a fund. 3. Sub-Assistant Surgeons should be asked to write one book each, and make it over to the association. 4. Four or five of the books should be published every year from the fund. 5. The fund should be aided by permanent subscriptions. 6 The subscribers should be supplied with a copy of all the publications. 7. The books should be sold at a moderate price. 8. Government should be asked to subscribe for a few copies.

In this way a great deal can be done to render the medical science into the vernaculars of the country. If no individual comes forward to unite the medical profession in this good and great work, it is well worth the attention of the Bengal Branch of the British Medical Association. If the association take this work in hand, and become really resolved to do some tangible and lasting good, then I think many will join and take a special interest in the institution.

It has been proposed of late by many to try and impart some education to the *hakeems* and quacks that are practising all over India, and thereby introduce the practice of European medicine in India; but I fear that is a round-about way, and does not seem likely to prove an effectual means. Nothing can be so direct and sure of producing a permanent good as the multiplying of native doctors, and some improvement in their education. They would in time replace these quacks, and would help the profession with their large experience. From these there can be no fear of imposition. A quack or a *hakeem* may be taught to treat diseases more skilfully, and more in accordance with modern science, but where would he get that professional dignity which is so essential to a medical practitioner? This is my appeal to the profession and the numerous readers of the journal. My sense of duty has actuated me to make this appeal, and I hope that no one will pass it off without giving a practical response.

Bhaugulpore, 17*th June*, 1868.

CASES FROM PRACTICE.

◆

NOTES ON A CASE OF ABSCESS IN THE BRAIN

By Isaac Newton,

Civil Surgeon, Kurnaul.

Abdoolla, aged 40, was admitted into the dispensary on 20th May, 1868, supposed to be suffering from epileptic fits.

Previous History.—About two months ago, came to Kurnaul and lived with a man in the city, who stated that Abdoolla complained at first of great pain and a burning sensation on one side of his head, but frequent attacks of dizziness, when he would fall down, with slight convulsive movements of his arms and legs, being insensible for about a minute. These attacks invariably came on when he rose from his bed, but even lying still they would come on four or five times during the day. The day before his admission he walked a distance of nearly a mile.

On admission, he was able to walk a little, talked sensibly and clearly, ate well, but complained of great weakness and dizziness; did not complain of pain in the head; had six or seven fits during the first day, being very slight; trembling of the extremities; no foaming at the mouth, nor biting of the tongue, &c.; consciousness returning very quickly.

21*st.*—Was much the same; about the same number of fits.

22*nd.*—Asked for opium; said he was in the habit of eating it, and was in great want of it; gave him two grs.; had only one fit during this day. On questioning him particularly, said he felt a weight on his head and sense of heat, but his only complaint was frequent dizziness. Always felt chilly, and kept warm woollen clothes on him during the heat of the day. On eating, or being touched, he invariably placed his fingers on the right side of his head. There was nothing to attract attention about his pupils, pulse, or skin.

23*rd.*—At 4-30 a.m. the Native Doctor saw him. He was then sitting up in his bed, and to enquiries said, "Aj achcha hai." At 5-30 he was found insensible in bed. At 8 o'clock I saw him; he was quite insensible, breathing a little hard, as though in a heavy sleep; pulse weak, but regular; pupils nearly natural, skin cool, and no sweats. On touching him, he instantly moved, and seemed morbidly sensitive to touch, but made no response to calling, however loud. I had a stream of cold water poured on his head, but finding it produced trembling of the extremities, and placing his fingers on his head, I stopped it, as it apparently distressed him; during the day pus came from the nose; no return of consciousness, and he died at 10 p.m.

The treatment consisted of, first, a good cathartic purge, a blister to the nape of neck, head shaved and rubbed with croton seeds, and cold water cloth on the head, with good nourishing diet.

Post-mortem, 10 hours after death.—Calvarium congested; membranes slightly adherent to the brain. Pia mater congested. On opening the membranes, pus oozed out at the back; on removing the brain, a quantity of serum came from the spinal canal. On examining the brain externally, a small orifice, from which pus was oozing at the most posterior part of the right hemisphere, was seen. On opening this, a cavity, the size of a fair-sized orange, was found, containing about 2 ounces of pus; this abscess occupied the posterior lobe of right hemisphere; anterior and externally to this was another abscess, size of a small orange; its walls complete, the pus being very thick and yellow. The left hemisphere healthy; the left ventricle contained about three drachms of serum, the right none. The puncta sanguinea were abundant in both hemispheres. The cerebellum was quite healthy.

Remarks.

I have endeavoured to give as full an account of this case as possible; not only on account of the rareness of abscesses in the brain, but also because the symptoms in this case are very different to the only other case I can find recorded amongst the limited works in my possession. The case referred to is related in the April number of the *Medical Times and Gazette* for 1866, an extract of which I give for the benefit of those of your readers who have not the paper to refer to. "A boy, aged 4, had been ill three months; had first been seized with convulsions, and on recovery was found paralysed on left side; there was ptosis of the right eyelid; both pupils dilated, the right entirely insensible to light, the left nearly so. He was apparently blind of the right eye. He placed his hand on right temple and said 'pain, pain.' [illegible] At the post-mortem examination, an abscess, containing [illegible] ounces of greenish-yellow pus, was found in the right middle cerebral lobe, extending close to the convolutions.

"The President of the Pathological Society [illegible] the case arose from the [illegible] was evidently of old date, the child was [illegible] up to a very short time before his death."

In the case I have reported, the man was [illegible] few hours of his death; there was no paralysis, [illegible] movements of the limbs were [illegible] convulsive movements of other parts [illegible] the pupils were not dilated, and [illegible] date. In [illegible] the case [illegible] extended through the [illegible]

PRIMARY AMPUTATION OF BOTH LOWER LIMBS AFTER RAILWAY INJURIES—RECOVERY.

By Dr. A. [illegible]

M[illegible]

M[illegible] C[illegible] May 8th 1868 [illegible]

[illegible] it was learned [illegible] before, by a [illegible] The nearest [illegible] the part of the [illegible] that part of the [illegible] to play.

[illegible] the left [illegible] both legs, [illegible] the rest of the [illegible] knees.

[illegible] it was stated that [illegible] first. The child looked [illegible] and partly [illegible] and administer [illegible] the [illegible]. It was thought best to [illegible] subject [illegible] Chloroform [illegible] desired effect. Both legs were [illegible] the knees as circumstances [illegible] skin flaps and circular [illegible] the left by a near approach to [illegible]. Very little blood was lost during the operation [illegible] ligature was required on the right side. [illegible] were [illegible] the fracture put up in short [illegible] the child immediately placed in bed, and given a [illegible]. There was very slight heat of skin with [illegible] for the first few days, but apparently no [illegible] notwithstanding the age, this child had not [illegible]. There was so little discharge from the stumps, that it was not necessary to remove the first dressing till the 11th. From this date the child looked bright and well always, and seldom gave any trouble when the stumps were being dressed. On the 21st the right ligature separated, and all ligatures had separated on the left side by the 26th. On June 1st the stumps were quite healed up. The fracture was united, but still required care.

With some difficulty I induced the mother to keep the child [illegible] hospital for another week, but had then to be content with [illegible] up the thigh in a starch bandage, and letting the child go.

WALKING FISHES.—Dr. Shortt is expected shortly to arrive from India, bringing with him about a dozen and a half of the walking fishes of India, *M[illegible]* and *K[illegible]*, many of [illegible] to the Zoological Society's Gardens from Dr. Day. The largest species, known as *ophiocephalus* [illegible], grows to upwards of three feet in length, and if they [illegible] addition to our lakes and [illegible]. The smaller variety, *[illegible]*, will perhaps be more interesting [illegible] grow to about [illegible] to count on them [illegible] for the [illegible]

Notices to Correspondents.

[illegible]

The Indian Medical Gazette.

NOTICE.

All [illegible] will in future be acknowledged in the INDIAN MEDICAL GAZETTE, *instead of by letter post.*

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THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

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[illegible] Harvey or the Hunters [illegible] means of the persons in which they [illegible].—SIR BENJAMIN BRODIE.

RIVERSIDE DISPENSARIES.

IT is generally admitted that the earlier remedial measures are brought to bear upon disease, the better for the sufferer. Nowhere is this truth more forcibly illustrated than in the treatment of cholera. And we venture to affirm that in direct proportion to the early application of the treatment will be the chances of recovery. Thinking as we do, it has long been to us a matter of surprise that there should not ere this have been no better provision for the [illegible] treatment of the cases of cholera, which [illegible] on the river in Calcutta, than the one in force. The [illegible] takes credit to himself for first drawing attention [illegible] more than four years ago, and urging the Rev. J. [illegible] Brown to [illegible] the idea of riverside dispensaries [illegible] with his scheme for a new Sailor's Home. [illegible] cholera, but more cases originate, as [illegible], on the river, [illegible] part of the town, not even excepting Jail [illegible], in which cholera is largely generated [illegible] extent that certain other tropical diseases [illegible] by the shipping.

[illegible] are aware, the medical arrangements for [illegible] amongst the crews of the shipping have [illegible] as follows. A medical practitioner from the town [illegible] by the owners or agent of a vessel to attend upon the crew of that vessel so long as she remains in harbour. A single practitioner [illegible] frequently, in this way, the charge of several vessels, and [illegible] in visiting these every morning, [illegible], if necessary, and in prescribing for whatever sick there may be. The arrangements *on board* the vessels for the comfort of the sick are naturally very imperfect; and consequently, where the sickness is likely to be severe, it is very common for the practitioner to order such patients to be sent to one of the hospitals on shore; or, if a man should be taken seriously ill after the morning medical visit, he is so sent by the officer on duty. Should the disease be cholera, the time which must necessarily elapse between the despatch of the patient and his arrival in hospital may seriously affect his recovery, if it does not lead to a rapidly fatal result. The statistics of the two principal hospitals in Calcutta, the General Hospital and that attached to the Medical College, show a large *early* mortality in those cases which have been taken from the shipping. This is doubtless due in part to the long distances which the sick are required to travel before they are brought under effective treatment.

It has been proposed that riverside dispensaries should be erected at convenient points, on the river bank; and that all cases of cholera should be transferred to them, in the first instance, from the shipping. The Bengal Government, in a letter addressed to the Secretary to the Sanitary Commission in April, 1866, suggested the establishment of a *floating dispensary*. The Inspector-General of Hospitals, however, very wisely opposed this scheme, arguing that, unless a vessel of the character of the *Dreadnought* were fitted up with all the appliances, the establishment, and the spaciousness of a well-equipped hospital, no great decrease in the mortality from cholera and other severe forms of disease could be expected. In a subsequent communication from the Bengal Government to the Board of Revenue, dated June, 1866, it was intimated that Mr. Crawford, the newly-appointed Shipping-Master, would be called upon "to report further on the subject when he had acquired more experience in his office." In due course, the Shipping-Master reported favorably of the establishment of riverside dispensaries, and the *fiat* has now gone forth for the erection of one close to Prinsep's Ghât.

The establishment of a riverside dispensary is abundantly justified, and the only regret is that two, instead of one, are not sanctioned. Two have been recommended, one to meet the tide of cholera, at the Esplanade moorings, from the ships in which the patients are at present conveyed at once to the Medical College Hospital, and the other for the shipping moored off Prinsep's Ghât, the first stone of which we may hope shortly to see laid. The plan of the building has been finally approved of; and one question only remains, but that is an all-important one, *viz.*, "who is to pay for it?" It is questionable if the new impost of nine pie per ton upon the shipping will be sufficient to do more than pay for the ordinary hospital accommodation of the town, and that is far from being complete.

The dispensary is to be constructed in one block, and, standing obliquely across the grass-plot between the road and the river, is to face so as to receive as much of the south wind as possible. The block, to be divided in the centre into two wards—each capable of accommodating five patients—will be surrounded by a raised verandah. A small room will be made at each of the four corners, and one of them is to be fitted with a reservoir and tap for cases of *insolation*. The value of this arrangement has been frequently felt at the Medical College Hospital. The apothecary, whose quarters are ample, will reside in the building.

There can be no doubt that the establishment of this dispensary will, under Providence, lead to the saving of many a life; but we earnestly trust that it will not be diverted from its original purport. It is not a dispensary in the ordinary sense of the word, but a *feeder* to the hospitals on the Calcutta side of the river of a certain class of cases. It is intended especially for the temporary reception of cases of cholera and sunstroke, for the proper treatment of which there is usually no provision on board the ships, and which are to be forwarded eventually—as soon, in fact, as possible—to one of the city hospitals. If the building is used for general sickness, it may be unavailable when most urgently required for its own legitimate use, *viz.*, in the cholera months. Persons applying for admission on other than the grounds specified, should be instructed to seek it elsewhere. Medical and surgical aid would always, of course, be available where it was *urgently* needed; but we strongly protest against the dispensary being allowed to become an ordinary hospital, or to degenerate into what "Jack" would be only too glad to recognize it as—*viz.*, a building in which he could conveniently meet with treatment for the results of his visitations into the Wellesley Streets of the town. The site chosen is very public, and if the resort to it of such patients were encouraged, we very much fear that, at certain periods of the day, the neighbourhood of Prinsep's Ghât would be unapproachable.

The establishment of riverside dispensaries, together with the new mode of charging nine pie per ton to each vessel for the admission of her sick sailors into hospital, will materially affect the nature and extent of the medical practice on the river. We must say something on this subject, as also on the appointment of a Port Surgeon, a denomination of Health Officer who is most urgently required for Calcutta, in a future article.

"AS YOU WERE."

In May last, the Governor-General enquired of the Secretary of State for India how a Deputy Inspector-General of Hospitals, who may be compelled by ill-health to take leave to England beyond six months during his five years' tenure of office, is to become entitled to the special pension of £250.

It was a generous question, and an opening was offered for Sir Stafford Northcote to do a liberal thing. Six months leave to a man advanced in life, and with a constitution more or less broken by long residence in India, is, in most cases, next to useless. It is a well understood axiom with medical men in this country, that a protracted residence in a cool climate is required to maintain and thoroughly establish the health which has been recovered during the earlier portion of the sick furlough. What will six months' effect? As well might we hope to extinguish the flames of a burning edifice with the contents of a watering pot, as to effect any real good in the attempt to restore shattered human health with such a modicum of leave. The time will come, however, we are convinced, when some useful Bishop will be burnt, and then the *fiat* will undergo a change.

The reply to Sir John Lawrence's enquiry is highly unsatisfactory. The Secretary merely observes, that "although an active service of five years, including six months' leave on medical certificate, is required in the rank of Deputy Inspector-General for the pension in question, and although on the expiration of five years' service on full pay, inclusive of all leave, [illegible] a [illegible] permanent Deputy Inspector General of [illegible]

[illegible]

[illegible] £700 a year [illegible] 15 years' [illegible] ; but £750 [illegible] 30 years [illegible] Under the former system [illegible] to enjoy his £700 a year from the Government and £300 from the Medical Retiring Fund. But [illegible] *Espagne.* [illegible] of the medical service we would urge, as we urged in former [illegible] Deputy [illegible] £50 [illegible]

[illegible]

THE SUBORDINATE MEDICAL DEPARTMENT.

[illegible]

NEW [illegible]

[illegible]

NEW FURLOUGH REGULATIONS.

[illegible]

Meetings of the Bengal Branch of the British Medical Association.

[illegible] He did not [illegible] treatment [illegible] was virtually, [illegible]

[illegible]

[illegible]

ularly when the disease had been developed in India, not nported. The subject of tuberculosis in India was one of ich importance, that it would be well to bring it before the ociety from time to time. He would now call for a discussion n Dr Fayrer's paper, read at the annual meeting.

Dr. Fayrer said that his paper had been chiefly intended to upplement one read by him in 1865 before the Association, ointing out the evils caused by massing sick together. He ished to cast no reflection on the designers of the Medical ollege Hospital, the full design of which had never been xecuted, but which, even as it stood, had been, at the time of s completion, of a model hospital, according to the then receiv- l standard. But the sick were too closely placed, and although e actual cubic space for each patient was considerable, it was hiefly *above* the beds, not around them. Since the number beds had been reduced, pyæmia and ochlectic diseases had ecreased in frequency.

A discussion followed upon the subject of hospital construc- on, in which Drs. Sutherland, Fayrer, Francis, Chuckerbutty, d Charles took part.

Dr. Chuckerbutty said that the very important subject of ospital accommodation should be regarded in several lights: ace, cost, &c., had to be considered as well as sanitary arrange- ent. On ship-board, where space was necessarily valuable, e amount allowed to troops (150 cubic feet to each European, d 75 to each native soldier) was in the abstract absurdly nall; but, owing to the number of openings provided for venti- tion, the air was seldom offensive, even in the "sick bay," cept in foul weather, when the hatches, &c., must be closed. ilitary hospitals were built in this country regardless of cost, th a liberal allowance of space, and on the healthiest sites, ere being generally no necessity for placing them in large wns. With civil hospitals the case was different; they must built close to the dwellings of the poor, for whose benefit ey are intended, hence their sites were necessarily limited, d often unhealthy. He considered that, while there were any faults in the Medical College Hospital, the most had en made of the available space. The system of perfectly tached wards exposed on all sides to the air was, of course, the st, where practicable. He did not see how the plan of having number of small detached rooms, each containing only one two beds, could be carried into practice, a hospital so nstructed would form a small town in itself. It was of great nsequence that the wards should be raised considerably above e ground. Had the wards of the Medical College Hospital en arranged end to end (instead of side by side) the building ould have required many times a larger area than it now cupies; and, though ventilation would be improved, on the her hand the wards would be more exposed than they are now unhealthy emanations from the city. Even ventilation might carried too far, as in the Sealdah Pauper Hospital, where the e access of wind and rain to the interior of the building was tterly complained of. He agreed with Dr. Fayrer that medi- l and surgical cases should be separated; and, further, that ses of capital operation should be kept apart from those of dinary wounds and ulcers; but he deprecated the collecting all cases of dysentery into a separate ward. The atmosphere such a ward would become so foul as to prove fatal to even ild cases of the disease.

Dr. Fayrer did not advocate the system of wards with only e or two beds to the exclusion of larger ones; but he thought at every large hospital should contain five or six such wards, r the isolation of important surgical cases.

Dr. Francis could bear testimony to the deficient ventilation the wards in the Medical College Hospital, which could not fully appreciated by visitors in the daytime. He had been the habit, when Principal, of visiting the wards at midnight, d used to find them very offensive.

Dr. Charles said that, in India, the air in the best ventilated ards became foul at certain seasons. He had served in several the best hospitals in the Bengal army, as well as in the Garri- on Hospital at Allahabad, which he considered as unquestion- y the very worst; but in all the ventilation was more or ss defective. He did believe it possible to construct a ward pable of accommodating twenty-five men, the air in which ould remain pure, without artificial ventilation, during those eeks of the year when the surrounding atmosphere was close nd stagnant. He asked Dr. Fayrer whether he found that rgical cases did better in Calcutta when treated in tents than ey do in wards. At the siege of Lucknow he had found the ounded did well under canvas until towards the end of the ins, when even open tents became unhealthy.

Dr. Fayrer thought that surgical cases did as well in tents as in wards at Calcutta, but not better.

Dr. Chevers spoke of the importance, first pointed out by Dr. Sutherland, of isolating all cases of gangrenous dysentery in large hospitals.

Dr. Sutherland said that where this plan was adopted, the mortality from bowel complaints was reduced by one-half.

Dr. Francis thought that Dr. Chuckerbutty over-estimated the amount of ventilation on board transports.

In these vessels a great number of soldiers were ordered to remain on deck during the day and night, according to the system of "reliefs," and hence the cubic space per man between decks was really much greater than that nominally allowed. On board coolie ships, however, with nearly the same means of ventilation, the mortality was very large, because a similar rule was not enforced. He dwelt upon the necessity for enlarging the amount of cubic and superficial space per man, proportionably to the increase in number of the persons to be provided for. A large body required more space, in proportion to their numbers, than a small one.

After some more discussion, the President proposed that the further discussion of the subject of hospital construction should be adjourned to the next meeting.

Dr. Fayrer exhibited a knee-joint in an advanced state of disorganisation, the result of a wound inflicted three weeks before, owing to the patient having been thrown violently upon a heap of glass bottles. The patient had died with symptoms indicative of the formation of ante-mortem coagula in the heart and pulmonary vessels.

A discussion upon the subject of ante-mortem coagula in the heart and their influence in causing death followed, in which Drs. Chevers, Fayrer, and Chuckerbutty took part. Dr. Fayrer believed that these clots often formed suddenly in surgical cases, without any premonitory symptoms, and that the tendency to their formation was best combated by good food, stimulants, and pure air.

Dr. Colles reminded the meeting, that as Baboo Dwarka Nauth Mookerjee's period of duty as House-Surgeon at the Medical College Hospital had expired, and as he himself expected shortly to leave Calcutta, it would be necessary to take steps to elect Secretaries for the rest of the current year.

It was then agreed to call a special meeting on Saturday, the 23rd May, at 9 a.m. for the purpose of electing the Secretaries.

The following gentlemen were then proposed for the office:—

Baboo Chunder Mohun Ghose, M.B., by Dr. Chuckerbutty, seconded by Dr. Francis.

Dr. W. K. Waller, by Dr. Fayrer, seconded by Dr. Chuckerbutty.

Votes of thanks to the out-going Secretaries, and to Dr. Ewart for his address on Medicine, read at the annual meeting, were proposed and carried.

The meeting adjourned at 10-30 p.m., with a vote of thanks to the chair.

A SPECIAL meeting of the Bengal Branch of the British Medical Association was held in the Theatre of the Medical College Hospital at 9-15 a.m., on Saturday, the 23rd May, 1868; Dr. Chevers, President, in the chair.

The President submitted to the meeting a letter from Baboo Dwarka Nauth Mookerjee, resigning his office as Secretary, his term of duty at the Medical College Hospital having expired.

Dr. Colles also tendered his resignation of the post of Secretary, being about to leave Calcutta.

The following gentlemen were then unanimously elected as Joint-Secretaries:

Dr. W. K. Waller,—proposed by Dr. Fayrer, seconded by Dr. Chuckerbutty.

Baboo Chunder Mohun Ghose, M.B.,—proposed by Dr. Chuckerbutty, seconded by Dr. Francis.

The following resolution, proposed by the President, was unanimously carried:—

"That this meeting regrets that Dr. Colles and Baboo Dwarka Nauth Mookerjee have been under the necessity of resigning their office, and desires to record a sense of the services which they have rendered to this Branch of the Association, and to thank them for the same."

The meeting then closed, with a vote of thanks to the chair.

NORMAN CHEVERS, *President*.

[illegible]

SNAKE BITES [illegible] THEM.

[illegible]

Extracts.

◆

[illegible]

[illegible] of [illegible] Books.

◆

[illegible]

[illegible] a useful [illegible] revised by Dr. [illegible] St. [illegible] although this [illegible] work [illegible]

[illegible] Mr. Waring [illegible]

[illegible] at [illegible] to which Mr. Waring's book belongs.

[illegible] *of the Public*. By F. E. Anstie, M.D., F.R.C.P. [illegible] Stockton and Stockton, 1868.

[illegible] thoroughly refreshing in reading a [illegible] like the [illegible] of a well known [illegible] volume [illegible] stand point [illegible] *British* [illegible] with [illegible] and very [illegible] a good sale. Dr. Anstie [illegible] He [illegible] the fevers [illegible] types [illegible] from [illegible] and finally [illegible] dysentery [illegible] small-pox, whooping-cough, [illegible] his book there is an utter absence [illegible] and [illegible] the public [illegible] epidemic maladies, it is not that they [illegible] treat themselves, but that they may [illegible] of many of the epidemics, so that they may [illegible] assistance earlier than they otherwise should. Written in good, bold, clear English, by a master not only of the clinical details, but of the higher scientific departments of our profession, Dr. Anstie's book is one which may be read with equal pleasure by the physician and the layman.

Medical Education and Medical Interests. By Isaac Ashe, M.B. Dublin: Fannin, 1868.

This is the essay which received the Carmichael prize of £100 from the Council of the Irish College of Surgeons. It was, we believe, ranked second to Dr. Mapother's. We by no means accept the author's opinions on the numerous points of medical ethics he has undertaken to discuss, nor have we space to enter so fully into the matter as to shew in what respect we consider Dr. Ashe's views mistaken ones. But we can nevertheless recommend this book as a worthy addition to the particular branch to which it belongs, and as one which contains an abundance of useful and pleasant reading, anent our profession as a body. The following is a list of some of the questions in which the author treats:—Study of Languages and Sciences, Moral Discipline, Age for Commencing Medical Study, Hospital Case-taking, Systematic Lectures, Private Tuition, Professional Examinations, Qualifications of Examiners, Public Function of Corporations, "Physicians *v.* General Practitioners," The Physician's Fee, etc. On all these heads Dr. Ashe has something of interest to say.

On Digitalis: with some Observations on the Urine. By T. L. Brunton, BSc., M.B. London: Churchill, 1868.

This is an Edinburgh graduative thesis of more than ordinary merit. The author has taken up for discussion the important question of the action of digitalis, and while he has brought together from all sides a mass of information, which the general medical reader is unfamiliar with, he has given us some good results of his own experience. The author's researches have extended both to the physiological and therapeutical effects of the drug. His own hypothesis of the action is as follows:—It causes contraction of the small arteries, and at the same time acts on the regulating apparatus of the heart, both directly and to a much greater extent through the vagus, thus causing decreased action of the heart without loss of tension; it stimulates the musculo-motory apparatus, causing increased force of the cardiac contractions. This primary stimulus then gives place to paralysis—first partial and then complete. Dr. Brunton's introductory remarks on the physics of the circulation are not exactly what we should wish them to be: his explanation of tension, for instance, is far from having the necessary clearness. It seems to us, too, that in treating of the influence of the movements of respiration on the pulse, he has overlooked the very important investigation laid before the Royal Society of London last year by Dr. Burdon-Sanderson. Their sphygmographic tracings would be interesting if one felt sure of their accuracy. One is led to doubt this latter from the fact that the author records so many extraordinary variations in the tracings of his own pulse. If there is anything which those experienced in sphygmography insist on, it is that the pulse gives an almost unvarying trace if taken several times at the same hour of the day, and at the same interval of meals. Dr. Brunton's traces have not this quality. Still his book is a useful contribution to scientific therapeutics, and will be studied with benefit.

On Varicose Disease of the Lower Extremities and its Allied Disorders, etc. By John Gay, F.R.C.S. London: Churchill, 1868.

This book contains the Lettsomian Lectures delivered in 1867 before the Medical Society of London. Mr. Gay is a surgeon of considerable eminence, and his method of operation in femoral rupture has already been very favorably spoken of by Sir William Fergusson. In this work, which is illustrated by a number of interesting lithographs of dissections, he shows the great value of a knowledge of anatomy and physiology to the practical surgeon. The lectures are three in number, and deal with the following branches of the subject: Anatomy and Physiology of the Saphenous System in relation to Varicose Veins, Morbid Anatomy, Seats of Obstruction, Currents in Varicose Veins, Etiology of Varicose Disease, Treatment, Skin Disease, Discoloration, Induration, Ulcer and its Treatment. Under this latter head, which, after all, is of most importance to the practitioner, Mr. Gay treats of the methods employed by the ancients, and then passes on to the plans recommended in the present day. He analyzes with much fairness the different processes of bandages, elastic stockings, compresses, and obliteration, and shews under what circumstances each of these means is advisable. We rather take exception to his statement that "varicosity gives rise to *subjective symptoms*," such as cramp, neuralgia, &c. We really think that these sensations are as much objective ones as any that the sensorium is capable of appreciating. The venous ulcer, he says, is curable only in one way—by incisions at the edges; the arterial ulcer he almost regards as incurable. Mr. Gay's book is a good practical contribution to surgical literature.

Recherches Chimiques et Physiologiques sur l'Erythroxylum Coca. Par T. Moreno y Maiz. Paris: Louis Leclerc.

The extraordinary properties attributed to the coca lead us to say a few words about the memoir above. The author, while he objects to the coca being regarded as a food, in some measure corroborates the statements of other physiologists to the effect that this substance has some peculiar power of sustaining the animal operations in the absence of food. He states also that, when taken in very large doses, it is a narcotic poison. He thus sums up its properties:—(1) In very large poisonous doses it produces tetanic convulsions resembling those of strychnia. (2) In much smaller doses it produces decided hyperæsthesia, dilatation of the pupils, and loss of movement from want of co-ordination. (3) In intermediate doses it diminishes, and then destroys, sensation, without influencing the movements in any marked degree. The preparation which the author recommends for those who wish to try experiments is a salt of the alkaloid—*acetate of cocaine.*

Clinical Lectures on Diseases of the Liver, Jaundice, and Abdominal Dropsy. By Charles Murchison, M.D., F.R.S. London: Longmans, 1868.

Dr Murchison's long-expected treatise has just been published, and we hasten to lay a brief analysis of it before our readers. The lectures were originally delivered to the students of Middlesex Hospital, and four of them have already been published in the *Lancet.* The third lecture embodies an essay on the treatment, etc., of hydatid tumours of the liver, which appeared in the *Edinburgh Medical Journal* for December, 1865. The series is distributed as follows:—General Remarks on Diagnosis, etc.; Enlargements of the Liver (Lectures II, III, IV, V, and VI); Contraction of the Liver; Jaundice (Lectures VIII, IX, and X); Fluid in the Peritoneum. Hepatic Pain; Gall-stones; and Enlargement of Gall-bladder. Twenty-five very excellent engravings accompany the text, and records are furnished of ninety-six cases, these being arranged under their proper headings. The subject-matter is as excellent as might have been expected from so studious and cautious an inquirer as Dr. Murchison, and we shall say no more on the general character of the book. There is, however, a special point of practical as well as theoretical interest to which we may direct attention. It will be remembered that Dr. George Harley, in treating of jaundice, accepts Kühne's view, that in jaundice, resulting from closure of the common bile-duct, the biliary acids may be found in the urine. Hence he argues that the presence or absence of them in the urine is a test to distinguish suppression from obstruction, and he then gives a slight modification of Pettenkofer's test. Now, Dr. Murchison's experience is quite opposed to this conclusion of Dr. G. Harley's. He says (p. 123) "that both the theory and the practice based on it are open to objection." We have no space for Dr. Murchison's arguments *in extenso*, but we may give a quotation from a case which seems to justify his opinion. Alluding to his pupils he says: "You will remember that on one occasion I applied the test to the urine of six patients in my care at the Middlesex Hospital. In three of these cases a dark purple coloration was produced at the line of junction of the sulphuric acid and the urine. One of the three cases was an example of jaundice from impacted gall-stone; in the other two cases there was [illegible] symptom of [illegible] the [illegible] [illegible] the [illegible] most [illegible] to the [illegible]

A [illegible] *Pathology* [illegible] By Henry Hyde Salter, M.D., F.R.S. 2nd [illegible] London: Churchill, 1868.

[illegible] of the [illegible] changes in the author's opinions [illegible]

[illegible]

English Correspondence.

[illegible]

choice fell unanimously on Dr. William Russell, one of the evening lecturers at University College, and a pupil of Bunsens. He is the discoverer of a very ingenious process for gas analysis, and is one of the Secretaries in the Chemical Section of the British Association. His published researches are both numerous and important.

Medical circles will remain over quiet between this and October, for most of our London physicians are "taking the air and the waters" in various parts of the world.

It is thought that the number of new students will be less this year than last. Time will tell.

I regret to have to mention the death of Dr. W. Mackenzie, of Glasgow. Dr. Mackenzie's many works on the eye need no eulogium from me, as everyone knows and appreciates them. He died at his residence at the ripe age of 74 years.

London, September 25th, 1868.

Few who have had anything to do with hospitals believe that they are the most perfectly managed institutions in the world. The assistant physician, who is so often taxed with using expensive medicines, who is provided with hardly any of the scientific appliances of modern medicine, and who has to prescribe for and examine about 150 patients in two or three hours, knows this better than any one. The public, however, are not so well informed. It looks, however, as though the day of reckoning had come, at least for the London hospitals. I say this because a pamphlet which has just been published, and which merely furnishes the statistics of expense, lays bare the sores of certain "charities," which have not dealt as well with their inmates as they ought to have done. Mr. Josh. G. Wilkinson, Secretary of St. Mary's Hospital desiring to make some retrenchment in the heavy expenditure of his own hospital, wrote to the secretaries of the other metropolitan charities for their statistics. He arranged and tabulated these for comparison, and laid the result before the Board of Governors. The board ordered it to be reprinted, and it is now upon my table, and in the hands of most of our editors. It displays the most inexplicable differences between the sums expended for each patient by the different hospitals. Indeed, one hospital cures and feeds its patient at about half the rate that the others do. A few instances selected from Mr. Wilkinson's pamphlet will interest your readers. The following is the total expenditure of each hospital per annum, the number of beds being stated:—Charing-Cross, 120 beds, £6,778; Guy's, 560 beds, £26,923; King's College, 162 beds, £9,617; London, 516 beds, £25,687; Middlesex, 310 beds, £14,723; Bartholomew's, 650 beds, £33,631; St. George's, 335 beds, £16,001; St. Mary's, 157 beds, £9,861; University, 130 beds, £8,610; Westminster, 191 beds, £6,474. These are the figures for the general hospitals, and they exhibit some curious discrepancies. It is, however, when we come to the details that the most startling contrasts are observed; contrasts, too, which are all the more extraordinary when it is remembered that the total number of beds by no means indicates the number really occupied. In the matter of drugs, the expenditure for the different hospitals is pretty nearly the same, but when we come to diet, there is quite another state of things. As Mr Wilkinson says, we find some very startling results: "St. Mary's, with 141 beds occupied, expends £2,564 on the patients' food; while King's, with almost the same number, costs only £1,680, a variation of nearly £900 in this one article. Again, the provisions at Charing-Cross, with about three-fourths of the number of beds occupied at King's, costs £1,865, being £185 more than the larger hospital. As an instance of economy in diet, Guy's stands peculiarly prominent, the patients in that hospital being fed at little more than half the cost of those at St. Bartholomew's, and at about one-third less than those at St. George's, St. Mary's, or Middlesex." Again, as to nursing the variations are equally curious. Thus the nursing at King's costs more than at St. George's and about half of that at Guy's, although the former contains more than twice, and the latter more than three times, the number of occupied beds. Westminster Hospital contains about the same number of occupied beds as King's, while the expense of nursing does not represent one-third of the amount. What does all this discrepancy indicate? To me it seems to be either that in some of the hospitals the patients are starved, or that in other they are over-fed. Indeed, the rations of the Westminster Hospital are so low, that they have already been commented on by the *British Medical Journal*, whose remarks have elicited replies from Drs. Fincham and Basham. These gentlemen allege that, though the diet-scale is very low, this circumstance is always compensated for by the physicians, who put nearly all the patients on extra diet. This clears up the question of feeding, but I fear there is no satisfactory reply to be made in reference to the nursing. There can be little doubt that nursing at this hospital is inefficient, a fact which accounts for the apparent economy in the expenditure. Altogether, I think Mr. Wilkinson is to be thanked for his exertions, and his impartiality must be admitted, since he taxes his own hospital with excessive outlay.

The annual report of the Poor-law Board has just been issued, and is, on the whole, very unsatisfactory. It admits that there has been some (!) negligence, but in great measure palliates it. It makes no adequate provision for the future management of the infirmaries. There was every reason to believe that the Board would have increased its number of medical inspectors, but it has not done so. So far from conferring this anticipated benefit on our profession, it has actually thrown more work on the shoulders of the already over-taxed medical officers. It now requires the medical officers to report on themselves, and gives them no additional pay for this extra, and very absurd, duty.

Old St. George's Hospital men will be glad to learn that the new school and addition to the hospital have been completed. The lecture theatre is entered through a corridor leading from the basement of the hospital and ornamented with busts of Cæsar, Hawkins, Brodie, Baillie, and Hunter. The lecture-room is capable of holding two hundred persons, and as there is no gallery, the students have to enter in front of the lecture-seat, a matter of some importance to the teacher who wishes to keep his class in order. There is also a smaller theatre for the chemical lecturer, the laboratory adjoins this, and both are connected with a shaft, which rapidly carries away the offensive gases formed in the course of lecture demonstration. The dissecting-room is large and well ventilated, with a demonstration-room at the end with a balcony after the fashion of the old St. Thomas's dissecting-room. The new museum is handsome and elegant in decoration, and there is a comfortable reading-room for the students. The opening address will be delivered by Dr. Acland on the 1st proximo.

A good deal of angry correspondence is going on in the medical journals in reference to the increase in the subscription to the Medical Club. It certainly looks as though the committee had treated the members somewhat ungenerously. When the club was started a couple of years ago by Dr Lory Marsh—who, by the way, has just been made a justice of the peace—it was stated, in order to induce the profession to join at once, that the subscription for those joining within, up to a certain date, should be, for country members, a guinea, and for town members three guineas; and on the faith of this promise several members joined. It has quite recently been proposed to raise the subscription for the country members to three guineas, and for the town members to five guineas. Now this is manifestly unfair. It is idle to say that the old subscriptions are inadequate to the support of the club; a contract has been entered into, and I think it should be maintained. Whatever the ultimate issue, it is much to be regretted that the club has not been able to pay its way. I think there is much need of a club in London, and I believe such an institution, if properly worked, would do much to extend the *entente cordiale* of our now much-divided body.

A very strong feeling exists here that some tangible reward should be offered to the Indian medical officers who laboured so well and so faithfully in the Abyssinian war. It is not of course to be expected that promotions can be made; but, as the *Lancet* says, there are ways in which officers may be rewarded besides promotion.

An important reorganisation of services has just been made. Deputy Inspector-General of Hospitals Thomas Longmore, C.B., has been gazetted to be Honorary Surgeon to Her Majesty. Those of your readers—and they are many—who have studied at Netley, can judge how worthily the Professor of Surgery discharges his duties, and how well he deserves the high honour that has been conferred upon him.

Is there such a disease as hydrophobia? This is really a serious question, and it is generally asked by Mr. Holmes Coote in a letter to the *Times*. He says that, during thirty-five years at St. Bartholomew's, he saw only two cases, and these he believes to have been modified forms of tetanus. In one of these, far from the patient having any horror for water, he was greatly relieved by sucking ice. Mr. Coote seems disposed to deny that the so-called cases of hydrophobia are caused by the absorption of a poison. He looks on the affection as a sort of traumatic tetanus. In the face of our present absurd and stringent police regulations for dogs, this expression of opinion is important.

Animal Life.

[illegible] and old [illegible]

[illegible] following experiment is [illegible] was [illegible] and put into a [illegible] A piece of sponge saturated [illegible] and was lowered into the [illegible] from the bottom. Five [illegible] of the sponge, the mouse stag- [illegible] movements continuing for fifteen [illegible] occurred. These paroxysms [illegible] during an hour and a half, then [illegible] convulsed, the spasmodic action [illegible] it died. Upon examination it [illegible] covering the brain were injected, some of the vessels being very large. The lungs were of a light pink colour, many shades above that of the normal human lung; they were collapsed. The heart appeared large and felt hard, and upon being opened was found distended with very dark clots, which [illegible] out as the incision was made.

Vegetable Organisms in the Blood.—In confirmation of Professor Salisbury's views of the connection between vegetable germs and disease, some very instructive and remarkable experimental observations have been quite recently published by another American physician, Dr. Joseph G. Richardson. The following record is so unique that we give it in Dr. Richardson's own words:—"At 7 p.m., January 7th, 1868, four hours after dinner, I swallowed four fluid ounces of water, which had been standing some seventy hours on some fragments of beef, and which, according to the data of experiment 2nd, contained at least 27,000,000,000 living organisms. As this test was intended to be, so far as possible, a clinical one, at 8 o'clock I prepared a slide and cover in the following manner: after washing them thoroughly and drawing them on a clean cotton cloth, I applied a drop of strong hydrochloric acid to the middle of the slide and laid upon it the glass cover, taking care that by suitable pressure the acid was evenly distributed between the surfaces. Raising the cover after about a minute, I held it by means of forceps in the flame of a spirit lamp, until all the acid was volatilized, and then placed it carefully under a small bell-glass. The slide itself was similarly treated, and when both were quite cool, a drop of blood (obtained from an incision made through integument painted with tinct. ferri chlor.) was touched to the slide, which was quickly transferred beneath the bell-glass, applied to the glass cover, and the whole reversed and placed on the microscope stage. The lenses being adjusted, I found the blood remarkably full of moving particles, precisely resembling to my eye specimens of vibrio bacillus; these were so abundant, that I counted twelve in as many minutes, and at one time three were visible in the same field. At a quarter before nine, another drop of blood from a new incision was examined under similar conditions, but four vegetable bodies were found, and later still they diminished in number."

Carbolate of Quinia.—A peculiar preparation which can hardly be honoured with the name of chemical compound, has been suggested by Herr Bernatzik, and highly spoken of by Herr Wenzel, as combining the useful qualities of both quinia and carbolic acid. It is especially recommended in all cases of zymotic disease, and is said to have been used with advantage in cases of rinderpest during the time that disease was prevalent in England. It seems that with bases even of a weak character like quinia, carbolic acid loses many of its irritating qualities. "Pills containing a grain of quinia and [illegible]th of a grain of carbolic acid, were given in puerperal disease without the slightest inconvenience, and with much advantage. This preparation is made by dissolving sixty parts of carbolic acid with hundred parts of quinia in three hundred parts of highly rectified spirit, intermixing, filtering, and evaporating to the consistence of turpentine, and then mixing with it some powdered cassia.

The Existence of Arterial Capillaries in Insects.—In a memoir lately presented to the French Academy, M. Jules Kunckel reverts to M. Blanchard's discovery of the peculiar blood-passages in the walls of the tracheæ. He then states that while he was engaged on some enquiries into the development of dipterous insects, he discovered the existence of a [illegible] net-work of capillary vessels, which, he says, not only ramify among the muscles, but are distributed to the various organs of the body. The blood is easily recognised by its rosy tint. But the difficulties of making the preparation to observe the capillaries are, says M. Kunckel, extremely great, and you must take a living insect, open it while alive, lift up a bundle of muscles, transfer it immediately to the stage of the microscope, and examine it without a moment's delay. A high magnifying power is required, and it is best to employ one of M. Hartnack's immersion-lenses. The formation of the capillaries is curious. Their coats are formed of the outer tunic of the tracheæ or air-tubes; these end in the muscles as usual, but their outer coats are continued on to form the capillary tubes.

Use of Galvanism in Chorea.—[illegible] one of those horrible obstinate [illegible] which [illegible] every treatment, one is glad to [illegible]. For this reason we [illegible] G[illegible] (Gaz. Med. Ital., Lombard), in [illegible] a young [illegible], in whom chorea followed a severe neuralgic attack, was cured by application of the constant galvanic current. The battery used was the old crown of cups of Galvani's time. The positive pole was applied to the palm sometimes of the right and sometimes of the left hand; the negative was placed successively on the nape of the neck, the shoulder, and beneath the breast, but always to the side in which the neuralgic symptoms presented themselves. The improvement was decided, and, says the Signor, the cure was completed by *[illegible]* and ice [illegible] to the spine. This is the old story. How are we ever to [illegible] a rational and precise system of therapeutics whilst so inexact and lax a mode of carrying on investigations as this exists? How in this case can we tell what brought about the cure—the galvanism, the *[illegible]*, or the ice?

A new application of Collodion.—It is well known to those who have to employ the actual cautery, that the part burnt becomes excessively sore. This is not due to the application of the white-hot point, for this completely destroys the tissues and prevents all pain. But the bulk of the instrument which retains the heat, which keeps the point at a fixed temperature, [illegible] destroys the surrounding tissues, and produces a nasty burn. How may this be avoided? Our advice would be to freeze the skin, for we have found this in practice most successful. But another method, which is simpler and more, is recommended by M. Voillemier in the *Journal de Chimie Médicale* for August. He says, coat the part well with a layer of collodion and let this dry. There is thus a cellulose cover over all the skin but the part to be destroyed. This is a better non-conductor of heat even than wood; it prevents the neighbouring tissues from being burnt, and should not be removed for some days after the operation.

Ophidian Inoculation.—What is ophidian inoculation? This has been answered in a recent number of *Les Mondes*. The writer stated that hydrophobia is unknown in Spain. The reason of this was, that the bite of the snake inoculated the individual bitten with some substance which rendered him proof against the poison of hydrophobia. Indeed, said he, the peasants are so well aware of this, that they often submit their children to be bitten by snakes. This extraordinary tale met with few believers, and it has now received flat denial from M. Ramon de la Sagra, a Spanish physiologist of great repute. In a letter to the French Academy, which was read in August, he stated that the story was entirely without truth; that rabid hydrophobia was common enough in Spain, for they had there not unfrequently not only mad dogs, but mad wolves.

Conium in the Treatment of Chorea.—In a very valuable article in *The Practitioner* for September, Dr. John Harley, who is our best authority on the physiological action of conium, gives us his experience of the value of this drug in chorea. He records six or seven cases, all of which were of considerable, and some of very intense, severity. These were treated by large doses (increasing daily from ʒi to ʒiv) of the succus conii, and were all discharged cured. These results are very remarkable, and it is to be hoped that further experiments may shew us that we have in conium what seems a specific for chorea. It will be well for those who intend to try the preparation to bear in mind the following conclusions which Dr. John Harley has expressed with regard to hemlock: (1) That for a very long time we have been using preparations which are comparatively inert, even when given in the largest doses that can be conveniently given. (2) That the *extract* and *succus* of the present pharmacopœia are also inert when taken in the doses therein prescribed. (3) That in order to influence any of the diseases in which it is antagonistic, hemlock must be given in such doses as to produce within an hour its proper physiological effects. (4) That the quantity required to produce these effects will be in direct proportion to the muscular activity of the individual.

How Ovariotomy Progresses.—When we think of the dreadful outcry which was raised against this operation when it was first [illegible], it is not a little [illegible] trying to find [illegible] results it has given in Mr. [illegible] Wells's hands. [illegible] surgeon has [illegible] A [illegible] record of his operations [illegible] during [illegible] years. These results [illegible] success [illegible] that have been [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
2	[illegible]	2
[illegible]	8	2
[illegible]	9	[illegible]
[illegible]	19	9
[illegible]	2	6

Influence of Tea [illegible] M[illegible]. [illegible]

The Composition of Milk. [illegible] which was [illegible] by [illegible] M[illegible] [illegible] the Royal [illegible] which the [illegible] the year [illegible] very uniform [illegible] percentage of water was 88·65 [illegible] lowest was 8[illegible]·92.

[illegible]	[illegible]
Caseine [illegible]	3·32
Sugar of milk	4·71
Ash	0·73
Water	87·19
	100·00

What is Mycoderma? [illegible] is described [illegible] exists a good deal of doubt [illegible]. We [illegible], therefore, to find that a valuable [illegible] yeast of beer by M. Trécul [illegible] Academy (August 10th). The French [illegible] is a specific identity between [illegible]. He thinks it most [illegible] commences its existence by cells [illegible]. He [illegible] a process of budding [illegible] by M. Pouchet, the [illegible].

The Rate at which Chemical Actions take place. In a lec[illegible] Mr. Vernon H[illegible] very [illegible] properties [illegible] action [illegible] commenced. [illegible] change of [illegible]

O[illegible] [illegible]

A[illegible] Picrophyllin. This [illegible] and a

[illegible] and salivation may prove [illegible] very well summed up by Dr. [illegible] American [illegible] H[illegible] of poisoning by [illegible]. In that [illegible] the intestinal tract almost as [illegible] the lower end, and affects [illegible] the uterus and bladder, [illegible] and not exhausting, [illegible] producing strangury after its [illegible] very [illegible] that [illegible] W[illegible] cantharides [illegible] very few [illegible] requiring a great [illegible] those who use the drug in [illegible] its dust upon the eyes. [illegible] than cantharides, and [illegible]

Nitro-glycerine from a Toxicologic Point of View. Some [illegible] for the purpose of poison[illegible] the medical man should know [illegible] following simple method [illegible] W[illegible] in the [illegible] to be tested is extracted with ether [illegible] extract mixed on a watchglass with two or three drops of pure aniline, and evaporated on a water-bath. A few drops of concentrated sulphuric acid [illegible] glycerine is present, a purple [illegible] changes to dark green on dilution with water. By [illegible] as small a portion of nitro-glycerine as ·001 [illegible] be readily detected.

Artificial Inversion of the Viscera. In a recent memoir M. Dareste [illegible] devoted himself to investi[illegible] that though inversion of the viscera [illegible] is rare in all animals, it may [illegible] by very simple artificial con[illegible]. [illegible] M. Dareste, is in the commence[illegible] It is only at a certain period [illegible] from this arrangement, [illegible] He shews [illegible] result from the left [illegible] more developed than the [illegible] can bring about this [illegible] produce inversion artificially. [illegible] experimentally in the case of the [illegible] try the experiment for them[illegible] which is as follows. Place [illegible] situate in [illegible] of the artificial incubating [illegible] the egg be always higher than [illegible]

Application of Mineral Substances to the Nostril. In an [illegible] recommendation of the [illegible] M. [illegible] affection, which were either [illegible] into the nostril a morphia [illegible] to give it back, he used [illegible] The patient took a pinch [illegible] was produced.

The Common Origin of the Parasitic Fungi. Professor H[illegible] fungi arrives at some [illegible] is not [illegible] matter. (2) A [illegible] blood, &c. (3) *Oidium* [illegible] of the body which contain [illegible] always developed when [illegible] also [illegible] by budding [illegible] may be [illegible] substances, such, for [illegible] very remarkable facts, and [illegible] those who love to establish several distinct species [illegible]

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

(Continued.)

BY J. FAYRER, M.D.,
Professor of Surgery, Medical College of Bengal.

PRESENT:—Dr. Fayrer and Mr. Seeva.

EXPERIMENT No. 1.

15th October.—A fish (Ophiocephalus Marulius), about ten inches in length, was bitten by a fresh Cobra, at 11-20 a.m., in two places, on the dorsal and ventral surfaces.

11-22.—The fish turned over on its side in the water.

11-23. Struggling and plunging violently in the water.

11-25.—Turned over on its side.

11-26.—On being roused, plunges violently.

11-40.—Dead.

Bitten at 11-20.

Died at 11-40. Dead in 20 minutes.

EXPERIMENT No. 2.

A large snail (Achatina Fulica) was bitten at 11-28 by a Cobra; it immediately withdrew itself within its shell.

11-45.—In order to examine its condition, the shell was broken; it still continued to contract.

12.—No contraction; all irritability seems extinct. Dead.

EXPERIMENT No. 3.

Two snails of equal size—shells previously broken; one was bitten by a Cobra at 12-28. It immediately shrank and contracted itself. The other snail was not bitten, and was kept for comparison.

12-40.—Irritability of the bitten snail much diminished.

The bitten snail seemed to lose its vitality much sooner than the uninjured one; but the precise time when irritability ceased was not noted.

These were the only invertebrate animals I could procure on this occasion. The experiments, though not very satisfactory, leave no doubt that the mollusc was affected by the poison.

EXPERIMENT No. 4.

A full-grown Cobra was bitten at 11-40 a.m. in two places near the tail by a Daboia Russelli.

11-48.—No effect.

12-50.—No effect.

10th October, 8 *p.m.*—The snake was perhaps not so lively, but there was no marked effect, and it lived.

EXPERIMENT No. 5.

A full-grown Cobra was bitten in two places, on the ventral surface and the middle of the body, by a Daboia, at 11-58.

12-50.—No effect.

16th October, 8 *p.m.*—No effect; the snake lived.

EXPERIMENT No. 6.

A half-grown chicken was bitten by a fresh Cobra in the thigh at 12-2.

12-3-45. It crouched; head drooping, beak resting on the ground.

12-4-30.—Paralysed; head lying on the ground.

12-5.—Convulsed.

12-5-10.—Dead, in 3 minutes and 10 seconds.

EXPERIMENT No. 7.

A second chicken was bitten by the same Cobra at 12-9-30 in the thigh.

At 12-10.—Leg partially paralysed.

12-13.—Lying down, beak resting on the ground.

12-13-30.—Paralysed, beak resting its point on the ground.

12-14.—Convulsed; dead in 5 minutes and 30 seconds.

EXPERIMENT No. 8.

A third chicken was bitten by the same Cobra in the thigh at 12-17-30.

At 12-18-30.—Fell over; rested the point of its beak on the ground.

12-19.—Convulsed.

12-21.—Dead, in 4 minutes and 30 seconds.

This chicken was rather smaller than the two preceding ones.

These three experiments shew that the snake had lost but little of its power in three efforts. The Cobra used in these experiments was not full-grown, but it was very active and vicious.

EXPERIMENT No. 9.

The above small Cobra was bitten at 12-35 in two places, on the middle of its body and on the ventral surface, by a large and fresh Cobra.

16th October, 8 *p.m.*—Not affected; it lived.

EXPERIMENT No. 10.

19th October, 11-40 *a.m.*—A large Dhamin (Ptyas Mucosus) was bitten in two places by a Daboia.

11-47.—Is partially paralysed; the mouth is wide open; appears unable to move; respiration continues.

11-47.—Moving about slowly.

11-52.—Appears to be recovering.

12.—More active.

20th October, 6 *a.m.*—Appears sluggish.

10 *a.m.*—On being roused, moves slowly; but is weak and stiff.

Recovered subsequently.

October 26th, 12-47-1.—Bitten again by another Daboia.

1 *p.m.* No effect.

Became sluggish, and died at 10-40 p.m., 27th October.

PRESENT: Dr. Fayrer and Mr. Seeva.

26th October.—The following experiments were made with the view of again carefully examining the blood before and after the snake-bite.

The blood was very carefully examined on three occasions—

1st, before the animal was bitten.

2nd, whilst it was under the influence of the poison.

3rd, after death.

In no case was anything found to support Professor Halford's theory, or to confirm his observations. There was no appearance of any new corpuscle, nor was there any change of importance in the condition of either the red or white globules of the blood.

My impressions were in favour of the theory advocated by Professor Halford, and if any bias existed, it was certainly for rather than against the explanation he gives of the pathological changes in the blood. Nothing, however, that I have seen after many observations supports the view in question, and I am constrained to believe that the change in the blood is of a much more subtle character than can be detected by the microscope. Moreover, in rapid death, as for example where it occurs in from 30 to 40 seconds, it is impossible that such developmental changes could have taken place. The cause of death is evidently an impression made on the nerve centres through the medium of the circulation; but it is, I think, evident also that it is one of a dynamical nature, and not immediately dependent on any structural changes that may, if any do, occur in the blood, and can be seen with the microscope. When death is protracted,

[illegible]

EXPERIMENT No. 11.

[illegible] slightly, by a [illegible]

[illegible] and the [illegible] apparently [illegible]

12 [illegible]

12 [illegible] by another Cobra [illegible]

12·18. [illegible] of the poison [illegible] on the ground. [illegible] be detected.

12·58. [illegible]

[illegible] he could [illegible] from the [illegible]

EXPERIMENT No. 12.

At 12 [illegible] dog was [illegible] in the right hind leg and [illegible] had been previously [illegible] was not [illegible] its appearance. The [illegible]

12·18. [illegible] almost paralysed [illegible]

12·20. [illegible]

12·21. [illegible]

12·30. [illegible] microscope. No [illegible]

12·38. Died. Blood examined after death. The microscope [illegible]

[illegible] The blood was [illegible] coagulate. It is [illegible] experiment, [illegible] family. In [illegible] structural change [illegible]

EXPERIMENT No. 13.

A [illegible] as at par [illegible] the ligature [illegible]

[illegible] drooping, [illegible]

[illegible] of the beak [illegible]

12·27. [illegible] cannot [illegible]

[illegible]

12·37. [illegible] in 16 [illegible] bitten [illegible]

PRESENT.—Dr. Fayrer and Mr. Sceva.

17th [illegible] following experiments were made with the view of testing the [illegible] of the poison of the Bungarus Fasciatus [illegible] the influence of other snake-poison on the Bungarus [illegible] other poisonous snakes.

EXPERIMENT No. 14.

A full-grown Bungarus Fasciatus, said to be fresh, bit a young dog [illegible] at 1·37 p.m.

1·38. [illegible] whining.

1·48. [illegible] not much affected.

1·54. [illegible] restless.

1·58. [illegible] getting up in a restless manner.

2 p.m. [illegible] affected.

2·10. Staggers [illegible] is evidently uneasy.

2·20. [illegible] sleepy; when roused he moves about, but [illegible] again.

2·27. [illegible]

2·38. Very drowsy; breathing hurried. Staggers when he walks [illegible] has general tremors.

Bitten at 1·37 p.m.

Died at 6·5 [illegible] 4 hours and 28 minutes.

6·5. [illegible] The blood coagulated firmly after death.

EXPERIMENT No. 15.

The same Bungarus bit a fowl in the thigh at 1·35 p.m.

1·37. Fowl [illegible] excited.

1·38. Does not now seem much affected.

1·40. [illegible] affected.

1·45. Begins to show the effects of the poison; staggers, and rests with its head almost resting on the ground.

1·50. Paralysed [illegible] over.

1·55. [illegible] convulsed.

1·57. [illegible] convulsed.

1·59. [illegible]

2·1 p.m. Dead.

Bitten at 1·35.

Died at 2·1 [illegible] in 26 minutes.

EXPERIMENT No. 16.

Another fowl bitten by the same Bungarus in the thigh at 1·40 p.m.

1·42. W[illegible] leg.

1·44. Staggers [illegible] with its head on the ground.

1·45. [illegible] cannot rise or move.

1·49. [illegible]

1·55. [illegible]

1·57. Dead [illegible] 17 minutes.

Death was [illegible] rapid in this case than the last, although the [illegible] The fowl was about the same size [illegible] and its more rapid death may be attributed to [illegible] of the poison, which was probably caused by the snake's fangs having entered a vein.

EXPERIMENT No. 17.

A fowl was bitten [illegible] by another Bungarus, at 1·50, in the thigh.

At 2·10. Slightly affected.

2·25. Sleepy, but can be roused.

2·30. Very [illegible] the beak on the ground.

2·45. [illegible] 3·45 p.m.

[illegible] the action of the poison of this [illegible] of the Cobra or Daboia. [illegible] much the same, but [illegible] as the poison fang of the Bungarus [illegible] that of the Cobra.

[illegible] Bungarus [illegible] is a black [illegible] snake, and it derives its name [illegible] parts of the

Coast of Coromandel. Their bite is dangerous, but the fang is so short that the wound inflicted is superficial. They are shy and attempt to escape, but defend themselves fiercely when attacked, says Gunther; they lie coiled up, and, when irritated, dart in a peculiar manner sideways, uncoiling themselves as though with a spring. This is the largest species of the genus Bungarus; it attains to a length of five feet or more. It has a wide range—Java, the Malayan Peninsula, Burmah, China, Bengal, and the Coromandel Coast. There are several species:

1. Bungarus Fasciatus (synonyms).
   Pseudoboa Fasciata
   Bungarus Annularis (Bengalee Sankni).
2. Bungarus Cœruleus (synonym).
   Pseudoboa Candidus
   Boa Krait*
   „ Lineata
   Bungarus Lividus
   „ Candidus
   „ Arcuatus
   „ Lineatus
3. Bungarus Ceylonicus
4. „ Semifasciatus

and other species of the same genus; but they are not found in the peninsula of India, I believe.

Experiment No. 18.

A Bungarus Fasciatus was severely bitten three times, about 8 inches from the head, by a powerful and fresh Cobra, at 1-55 p.m.

No apparent effect was produced either at the time, soon after, or later. The Bungarus was alive and well two days later. It died a day or two after, but its thorax and lungs were found filled with blood. The Cobra fang had probably penetrated the lung.

Experiment No. 19.

A Daboia was severely bitten by a fresh Cobra in three or four places at 2-10 p.m.

No present or subsequent effect was produced. The snake remained quite well.

Experiment No. 20.

Another Daboia was severely bitten by a fresh Cobra about a foot from the tail at 2-22 p.m. No effect produced. The snake remained perfectly well.

Experiment No. 21.

Two fresh and vigorous Cobras were made to bite each other in several places at 2-35 to 2-37 p.m. No evil result followed; both remained quite well.

The result of these experiments has been to demonstrate that the invertebrata and hæmatocryal vertebrata are, like the hæmatothermal vertebrata, subject to the deadly influence of snake-poison. The mollusca, fish, and innocuous colubrine snakes rapidly succumb when bitten by either the viper or the elapidæ.

The weight of evidence, however, tends to shew that the poisonous snakes have little, if any, power to injure each other, for in none of these last series of experiments was the bite of a venomous snake fatal to any other venomous snake. The Bungarus that died after being bitten by a Cobra, probably died from internal hæmorrhage, and not from the poison.

In repeated careful microscopical examinations of the blood of animals before they were bitten, during the action of the poison, and after death, I failed to detect any structural changes, such as are described by Professor Halford.

I may here note, in anticipation of future experiments on the efficacy of the so-called antidotes, that the application of a ligature to the thigh of a fowl bitten by a Cobra manifestly retarded the entry of the poison into the circulation, and warded off for a time its fatal effects.

I hope ere long to commence a series of experiments for the purpose of testing the value of various remedies, antidotes, prophylactics, &c., proposed from a variety of sources for snake-poisoning. This will be the natural sequel to the experiments that have been hitherto made with a view of investigating the effect of the poison on the living body and the pathological changes produced.

ON CHOLERA.

BY C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

(*Continued from Vol. III, pag.* 249.)

In the early part of 1840, the Government of India despatched a combined European and Native expedition to China; these troops had hardly landed on the island of Chusan before cholera broke out among them. There were only twenty cases, it is true, out of a force of some 1,500 men, nevertheless, as the troops had been absolutely free from the disease before starting from India, and on the passage to China, we may fairly conclude that they contracted cholera on arriving in that country.

I have before referred to the existence of cholera in China in 1820. M. Huc informs us that the disease was unknown to the Chinese prior to that year; they believe that it first appeared on the shores of the Yellow Sea as a mist which gradually rose from the water, "winding its course along the hills and valleys, and, wherever it passed, men found themselves suddenly attacked with a frightful disease, which was incontestably the cholera.* It ravaged first the province of Chan-tung, then turned northward to Pekin, striking in its march the most populous towns; it then crossed the Great Wall. It is possible," continues M. Huc, "that it followed the route of the caravans as far as the Russian station of Kheaktha, and afterwards, passing through Siberia, invaded Russia."

It is evident, therefore, that epidemic cholera was by no means a new phenomenon in China; and from the following history I think it probable that an outburst of the disease occurred there in 1841-42, which we may trace into Burmah, and even venture to assume followed the route indicated by M. Huc, or perhaps a more southern one, into Central Asia and Persia in 1844-45, there uniting with a vast wave of cholera from India, and spreading over Europe and America, as it had done in 1832-33. We must, however, proceed to examine the data upon which this idea is formed.

In 1841 Dr. J. French reported to the Medical Board that cholera, in an aggravated form, had broken out among the Bengal troops at Ningpo. "In August the disease was even of a more malignant form at Chinhai. Of nine men seized with it no less than six died." Dr. Bryson makes almost precisely the same remark as to the health of the fleet in these seas. He says cholera "seems to have prevailed in its most malignant form at Chusan and Ningpo. Out of a party of marines serving on shore with the force, ten were attacked and six died."† During the year 1842, 163 cases of cholera and 45 deaths occurred in our fleet; in 1843, there were 131 cases and 35 deaths from this disease. Dr. Bryson observes: "On a careful perusal of all the medical reports from the squadron (China), it appears that

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* This is the Krait of Bengal. I have not yet succeeded in obtaining a living specimen. It is found in Bengal, Southern India, and in Assam, but not in Ceylon.

* The Chinese Empire, by M. Huc. Vol. II, p. 21.

† Health of the Navy. Part II, East India Station, p. 33. Printed by order of the House of Commons, 1853.

[illegible] July and October, [illegible]. The disease was alarmingly prevalent at Macao.† Dr. [illegible] expressly affirms that [illegible] history of our [illegible].

We have [illegible] of the Medical [illegible] (Bengal) [illegible] of the year 1841-42. [illegible] H. M.'s [illegible] Regiment [illegible]. "The disease [illegible]. (Bengal) [illegible] August and September, 1842, [illegible], there were [illegible].

Dr. M[illegible] that, with regard to [illegible] report for 1841, [illegible] had broken [illegible] first manifested [illegible] from whence [illegible] coast. The disease [illegible] were attacked [illegible] before the [illegible] 1842. [illegible] among the [illegible].

[illegible] in 1841-42-43, the Straits Settlements [illegible] Canton, were [illegible] it is somewhat [illegible], that Dr. E. A. Parkes [illegible] "Some time in the early part of 1842 [illegible] north of Burmah, and, passing in a [illegible] at Ava and Amarapoora. [illegible] passed down towards [illegible] the Irrawady." Dr. Richardson, [illegible] Commissioner of the Tenasserim Provinces, [illegible] among the prisoners at Moulmein [illegible] September, 1842. "It was [illegible] and the Burmese," a fact confirmed by Dr. [illegible] "[illegible] attacked at [illegible] were the [illegible] belonging [illegible] the shore [illegible]. [illegible] H. M.'s [illegible] moved about a mile [illegible] from November [illegible] May, 1843, [illegible] the number of [illegible] Medical [illegible] to the 1st of [illegible] increased, [illegible].

[illegible] of this outbreak [illegible] the [illegible] Punjab, in [illegible] we must [illegible] the Bengal [illegible].

[illegible] prevailed to [illegible] of Cholera, [illegible]

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* [illegible] p. 33. Printed [illegible]

† [illegible]

‡ M[illegible]

§ [illegible] of Cholera, by Dr. [illegible]

[illegible] the commencement [illegible]." In the [illegible] was most severe in April, 156 cases and 74 [illegible] among the convicts. The disease was very fatal at C[illegible] less than 50 per cent. of those [illegible] dying. On the [illegible] of May, 1840, it rained heavily at [illegible] which the prisoners' tents were [illegible] the mortality was very great." It prevailed [illegible] but proved less fatal [illegible] at Dinapore and [illegible] North-Western Provinces, Central [illegible] the disease [illegible].

In [illegible] Dr. Lamb reports from Dacca [illegible] "It first made [illegible] river. The prisoners working [illegible] after they were [illegible]. Only one decided case was [illegible]."

In January, 1841, the [illegible] Regiment Native Infantry left [illegible] Native Infantry [illegible] the river. [illegible] the [illegible] till it arrived at Dacca. [illegible] the 15th Regiment [illegible] perfectly free from [illegible] 15th arrived among them, [illegible] less than [illegible] 105 cases and 80 deaths [illegible]. [illegible] by the Medical Officer [illegible]. As I have above mentioned, [illegible] 15th Native Infantry on the 27th [illegible] were found [illegible] to a deceased [illegible] of the 15th [illegible] cholera. There was [illegible]. [illegible] a few hours after [illegible] coincidence that [illegible] company, the next case was [illegible] of [illegible]."

[illegible] of a most malignant character invaded the [illegible] in March and April, 1841, having [illegible] previously in different parts of the [illegible] during [illegible]. All [illegible] within twenty [illegible] hours. [illegible] of April, there [illegible] M[illegible] on the [illegible]. It is remarkable, however, [illegible] were suffering [illegible] prisoners at G[illegible], or [illegible]. In May [illegible] the Allahabad and Cawnpore [illegible] the [illegible] June and July, many of [illegible] fatal [illegible] time, the [illegible] and Saugor districts received a slight invasion of cholera. The disease was terribly [illegible] at Lucknow in July, several of the royal family [illegible].

[illegible] the whole of the districts above-[illegible] Assam, and Cachar, in September and October. From Cawnpore eastward the [illegible] of [illegible] in the various jails amounted to [illegible] more than an average of [illegible] during the year 1841, and [illegible] of 800 deaths from cholera; [illegible] of some 1[illegible]000 prisoners, [illegible] disease throughout the twelve months. [illegible] this presidency to the west of [illegible] of the slight outbreak in [illegible].

[illegible] 1842 [illegible] of the disease again [illegible] Calcutta divisions, and, in [illegible]. At Barrackpore, for instance, [illegible] among the European troops in April [illegible] with great severity among [illegible] down the Ganges. A remarkable [illegible], however, occurred later in the year [illegible]. Cholera was very [illegible] at Monghyr, and no sooner [illegible] arrived in this locality than [illegible]. "A few days later they [illegible], and at the same time the [illegible]. About a month afterwards, the men of the [illegible] down the river, were affected with [illegible] the former wing had been, and, [illegible] on, they lost it where the first division got [illegible]."

[illegible] Cawnpore, although the season was a remarkably [illegible] is no evidence of an outbreak of [illegible], as we might have expected [illegible] of the disease to the east during the [illegible].

[illegible] twelve months we have again [illegible] Bengal, and as far west as Ghazeepore, [illegible] H.M. [illegible] Regiment, just arrived from Europe, [illegible].

"In July, 184[illegible] became fearfully epidemic at Agra. It [illegible] for upwards of two months [illegible] European and Native troops, [illegible], however, it [illegible] in August, though in very [illegible] degrees. H.M. [illegible] Regiment and European Artillery suffered awfully, [illegible] native corps and camp-followers [illegible] very slightly. The European barracks, and the lines of the sepoys, as well as the bazars, are [illegible] an extensive open clear plain, [illegible] level of the river, the soil [illegible]. The season was marked [illegible] with deluges of rain; [illegible] 21 [illegible] August, accompanied by [illegible]." One hundred and sixty [illegible] the convicts in the Agra [illegible]. The dis[illegible] throughout the Muttra [illegible] as far as Bolundshahur, [illegible] broke out with [illegible]

[illegible]

[illegible]

[illegible] Half-yearly [illegible] 1845, p. [illegible]. By [illegible] Calcutta, 1844.

attending the Delhi dispensary during the second half of 1843. It is clear, therefore, that the invading cholera of this year failed to pass beyond a line to the north-west corresponding to about longitude 77° 50.' To the south-west of this Presidency, however, it broke out in May in the Oodeypore territory, and still earlier in the year to the north-west of this state.*

In 1844 cholera was confined to its endemic area in Bengal, and even there appeared only in certain localities. The following table serves to illustrate this point, and is of interest with reference to the history of the disease during the succeeding twelve months:—

Names of stations.	Average strength of European troops during the year 1844.	Number of deaths from cholera among European troops during 1844.
Barrackpore	1,569	45
Dinapore	1,855	5
Benares	1,234	29
Allahabad	735	30
Cawnpore	2,055	1
Agra	1,333	...
Muttra	102	...
Gwalior	75	...
Meerut	2,032	1
Landour	116	...
Kussowlie	1,435	3
Subathoo	943	...
Loodiana	1,605	...
Ferozepore	195	1
Sukkur	1,036	...
Nusserabad	979	...

Towards the close of 1844 the Medical Board addressed the Government of India concerning a reported outbreak of the plague in Cabul, and in reply they received the following communication from Major Broadfoot, the Governor-General's Agent in the North-Western Frontier:—"In answer to your letter of the 16th December, I have the honor to inform you that the disorder at Cabul, called 'plague' in the newspapers, has advanced steadily from Bokhara to Peshawur, where, since the winter has set in, its violence seems to have decreased, as well as its progress to be suspended, though it still exists in the Eusufzye country. The symptoms of the disease at Cabul and Peshawur are described as similar, and they appear to me to be those of cholera rather than that of plague. They are violent vomiting and purging, ending in death in a few hours, when the disorder is violent; all witnesses concur in this description of it, and it was similarly described to me a few days ago by an [illegible] of Cabul, who had the disease there and recovered. He had [illegible] under me in Affghanistan, and I think his description was probably correct; [illegible] that of virulent cholera [illegible] by an [illegible]. As to precautions, I think it impossible to provide any which would be [illegible] extensive [illegible] frontiers into which are numerous, and not in [illegible]." This letter contains the first [illegible] announcement [illegible] of the cholera which [illegible] terrible [illegible] Affghanistan in 1844. Dr. F. S. [illegible] the Inspector-General of the Bombay Medical [illegible], "about the end of the hot season of 1844, the [illegible] north of the Hindoo Koosh were devastated by

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* [illegible] Statement of the [illegible] Corps. By Dr. [illegible]. From the In[illegible] Medical Science, No. XII, p. 1[illegible].

[illegible] Peshawur [illegible] was [illegible] 2[illegible],000 [illegible] and [illegible] Sind [illegible] Kurrachee [illegible] steamers [illegible]. Towards [illegible] Bengal about the [illegible] of Cabul [illegible] of October. By the 8th of November it had extended to Jellalabad, and towards the end of November to Peshawur. In March and April 1845 it appeared at Hoosand, Attock, and Lahore, destroying 5[illegible] of General [illegible]'s regiment at the former place. In May it broke out at Lahore, where it was supposed to have carried off 22,000 people. In June, it again showed itself at Umritsur, [illegible] the Sutlej, and [illegible] at Ferozepore, and afterwards at Loodianah, [illegible] its course towards Central India. It [illegible] sent off a [illegible] down the Sutlej and Indus to Sukkur, which place it reached on the 15th of June. It began to subside at Sukkur about the 26th of June, and by the beginning of July it had altogether ceased. It, however, continued its course down the river, and broke out at Hyderabad about the middle of July, and afterwards proceeded onwards to Tatta and Kurrachee, but by the time it reached the latter place it had abated much of its violence."*

This description of the course taken by the cholera of 1845 exactly coincides with that of the Governor-General's Agent on the North-Western Frontier, and, as I shall presently show, with the information contained in the proceedings of the Medical Board regarding the Bengal troops in those localities. Moreover, as Dr. Arnott is still in Bombay, I wrote to him, and he has most kindly furnished me with all the information I required on the subject, and, having been in Sind with his regiment in 1844-45, he was, as he states, at the time most anxiously watching the progress of this terrible epidemic.

Dr. Arnott's evidence, in fact, regarding this important epoch in the history of Indian cholera is precisely of the description upon which we naturally place so much value. He was an independent eye-witness of the events he describes.

Ferozepore was the farthest point to the north-west occupied by British troops (Bengal) in 1845; and from the proceedings of the Medical Board, I find that only in June 36 cases and 1[illegible] deaths [illegible] cholera occurred among our troops stationed [illegible] same time, instances of the disease were reported from [illegible] and Sukkur. Early in July it broke out with [illegible] among H.M.'s 1[illegible] Regiment at [illegible]. [illegible] there were [illegible] and 187 [illegible] this regiment, [illegible] Sind division [illegible] three months, June, July, and August 1845 [illegible] Englishmen [illegible] battle in [illegible] which was fought in the following February.

A [illegible] of H.M.'s 31st, who was with the regiment in 1845, [illegible] to fill [illegible] and [illegible] of the outbreak of cholera [illegible] in his own words: "In the month of July [illegible] which [illegible] day, and [illegible] 7[illegible] men were [illegible] shell. We were [illegible] We were [illegible] I [illegible] between 10 [illegible] dead, [illegible] like [illegible] informs me that [illegible] had a baby, [illegible] had the [illegible] after the eighth [illegible] greatly [illegible] the cantonment there were twelve [illegible] man and his wife, and by the [illegible] them were in their graves, except the [illegible] was taken by a daughter of Mrs. Hall, [illegible]

In August 1845 [illegible] advanced eastward to Meerut, where, during [illegible] 23 cases and 9 deaths among the [illegible] there were 114 cases and 7[illegible] deaths. In October and November the disease was [illegible] Delhi, whereas, at Agra, there was [illegible] among the prisoners or natives [illegible] August or November, and only one casualty from [illegible].

[illegible] quoted from Dr. Arnott's paper as to the existence [illegible] Sind, before leaving the subject, may add Dr. K. K. Kirk's evidence on the subject. He writes, "during the [illegible] 1845 [illegible] Sukkur and many other [illegible] Sind [illegible]. In the cantonment [illegible] 40 people were dying daily [illegible]. The [illegible] consisting [illegible] of a direct [illegible] the ricewater passed [illegible] bowels. The attack was [illegible] and some [illegible] I saw presented [illegible] but few in that [illegible] followed [illegible] of their [illegible] of the [illegible], [illegible] who had successfully [illegible]."*

From a careful study of these facts, I can arrive at no other conclusion than that the cholera of the Punjab and North-west of 1845 was a continuation of the Central Asian epidemic of 1844. I have shown that an outburst of the disease took place in C[illegible] in 1841-42; that it appeared in the north of Burmah [illegible] 1842, [illegible] country in 18[illegible] to have continued its course to the [illegible]. [illegible] same rate as we have seen [illegible] would account for the outbreak [illegible] in 1844, which, [illegible] Constantinople [illegible] at the [illegible] to the west, and appearing in [illegible] towards the close of 1845.

[illegible] was [illegible] Delhi [illegible] Kurrachee [illegible] Bengal. In A[illegible] we hear of its [illegible] Futtehpore, [illegible] and [illegible] Allahabad [illegible]. [illegible] Dr. Daily reports from Cawnpore, [illegible] the station [illegible] visited by [illegible] in its most [illegible] form," [illegible] that out of a [illegible] 2,21[illegible] [illegible] death from cholera [illegible], [illegible] troops, there [illegible] only [illegible] 30 [illegible] epidemic [illegible] entirely [illegible]." Had we [illegible] contrary, we [illegible] I [illegible] appearing [illegible] Bengal. [illegible] in 18[illegible] of the disease [illegible] Peshawur [illegible] doubt on the [illegible]. [illegible] with the history of the disease [illegible] its etiology than its progress in 1843-44-45.

(*To be continued.*)

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* Transactions of the Medical and Physical Society of Bombay, No. II, New Series, p. 178.

* Medical Topography of Upper Sind, by Dr. K. K. Kirk, Calcutta, 1847, p. 46.

SUMMARY OF FIFTY *POST-MORTEM* EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

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(Continued from Vol. III, page 206.)

II.—AGE, SEX, CASTE, EMPLOYMENT, PERIOD OF IMPRISONMENT, AND CAUSE OF DEATH.

These several circumstances are set forth in Table No. II, the number prefixed to each instance being the same in series as in Table No. I. As the induction is so limited, I have not attempted any analysis or generalization, merely placing the facts on record, in order that they may serve as data of comparison with any other similar series which may be contributed, in future, by myself or others. The statement of age is merely approximative, as few grown-up natives of the lower class have any idea of what their age actually is.

TABLE No. II.

No.	Sex.	Age.	Caste.	Employment.	Period of Imprisonment.			Diseases Causing Death.	
					Years.	Months.	Days.	Primary.	Secondary.
1	Male.	65	Mussulman	Cultivator	1	...	...	Chronic dysentery	Intussusception.
2	,,	55	Ditto	Ditto	2	...	20	Ditto	Asthenia.
3	,,	50	Ditto	Ditto	2	5	29	Ditto	Ditto.
4	,,	72	Ditto	Ditto	...	.	1	Bright's disease	Diarrhœa.
5	,,	52	Brahmin	Priest	2	10	8	Tetanus	Asphyxia.
6	,,	30	Mussulman	Cultivator	..	3	3	Acute dysentery	Asthenia.
7	,,	40	Ditto	Ditto	6	7	3	Laryngitis	Œdema glottidis.
8	,,	45	Hindoo	Ditto	...	1	8	Rupture of spleen	Peritonitis.
9	,,	35	Mussulman	Ditto	..	..	12	Phthisis	Pleuritis.
10	,,	45	Chamar	Ditto	..	2	23	Pneumonia	
11	,,	25	Hindoo	Ditto	6	4	..	Chronic dysentery	Pneumonia.
12	,,	55	Mussulman	Ditto	...	8	6	Ditto	Ditto.
13	,,	55	Ditto	Ditto	...	2	10	Dysentery	Ditto.
14	,,	40	Ditto	Ditto	.	1	5	Pneumonia	
15	,,	37	Ditto	Ditto	1	...	...	Splenic enlargement	Fever and debility.
16	,,	40	Suttri	Service	..	8	14	Dysentery, acute	Emaciation and œdema.
17	,,	38	Mussulman	Cultivator	1	3	..	Feb. int. quot.	Congestion of brain & lungs.
18	,,	52	Kyast	Writer	4	10	8	Phthisis	
19	,,	55	Hindoo	Cultivator	...	1	6	Chronic bronchitis	Emphysema.
20	,,	33	Mussulman	Chaprassee	...	9	..	Cholera	
21	,,	34	Kyast	Service	...	3	..	Abscess of liver	Pneumonia.
22	,,	49	Hindoo	Ditto	...	11	.	Splenic enlargement	Ditto.
23	,,	41	Ditto	Cultivator	..	6	22	Fever, remittent	Congestion of brain.
24	,,	45	Chamar	Ditto	2	11	6	Dysentery	
25	,,	27	Mussulman	Ditto	...	10	11	Splenic enlargement and dysentery	Pneumonia.
26	,,	65	Ditto	Ditto	...	9	7	Dysentery, chronic	
27	,,	35	Ditto	Ditto	...	1	27	Splenic enlargement	Pneumonia.
28	,,	28	Ditto	Ditto	...	10	4	Ditto	Pleuritis.
29	,,	70	Hindoo	Ditto	5	3	4	Pneumonia	
30	,,	57	Mussulman	Ditto	...	3	23	Feb. int. quot.	Cerebral congestion and exhaustion.
31	,,	22	Hindoo	Writer	...	5	15	Phthisis pulmonalis	Pneumonia.
32	,,	29	Mussulman	Cultivator	2	9	17	Splenic enlargement	Asthenia.
33	,,	45	Ditto	Ditto	...	3	13	Ditto	Ditto.
34	,,	45	Hindoo	Writer	...	5	20	Lepra	Tubercular peritonitis.
35	,,	40	Chamar	Mochi	1	7	.	Dysentery	
36	,,	45	Mussulman	Cultivator	1	3	19	Cholera	
37	,,	25	Kyast	Service	...	3	7	Splenic enlargement	Pneumonia.
38	,,	20	Mussulman	Cultivator	...	5	13	Acute dysentery	Ditto.
39	,,	35	Ditto	Ditto	...	1	2	Dysentery	Ditto.
40	,,	75	Ditto	Ditto	...	...	17	Pneumonia	
41	,,	23	Ditto	Ditto	...	8	5	Splenic enlargement	Anasarca and asthenia.
42	,,	66	Brahmin	Priest	...	1	9	Feb. int. quot.	Exhaustion.
43	,,	17	Mussulman	Cultivator	...	1	12	Fever: enlarged spleen	Dysentery.
44	,,	43	Ditto	Ditto	...	7	.	Fever, remittent	
45	,,	50	Ditto	Ditto	...	5	29	Ditto	
46	,,	27	Chamar	Ditto	...	4	6	Chronic dysentery	Fever, remittent.
47	,,	32	Brahmin	Service	...	7	22	Secondary syphilis	Ulceration of trachœa.
48	,,	32	Hindoo	Cultivator	2	11	1	Splenic enlargement	Pneumonia.
49	,,	75	Mussulman	Ditto	...	4	2	Phthisis	
50	,,	37	Hindoo	Ditto	...	4	3	Pleuritis	

III.—PATHOLOGICAL CONDITION OF THE ORGANS.

1. The *bodily condition* of the subjects examined is noted as follows:—

Nine bodies (*a*) (18 per cent.) were noted "well nourished." The average body weight of these was 45s. 1ch.

Thirteen bodies (*b*) (26 per cent.) were noted "emaciated." The average body weight of these was 39s. 13ch.

Twelve bodies (*a*) (24 per cent.) were noted "much emaciated." The average body weight of these was 40s. 2ch.

Sixteen bodies (*b*) (32 per cent.) were noted "extremely emaciated." The average body weight of these was 38s. Generally, the weight is directly proportional to the state of nutrition of the body, as might have been expected.

(*a*) Nos. 5, 7, 9, 23, 27, 29, 34, 45, 46.
(*b*) Nos. 14, 20, 28, 30, 31, 35, 38, 39, 42, 44, 47, 48, 50.

(*a*) Nos. 2, 4, 15, 16, 17, 22, 25, 33, 36, 37, 40, 41.
(*b*) Nos. 1, 3, 6, 8, 10, 11, 12, 13, 18, 19, 21, 24, 26, 32, 43, 49.

[illegible] was found [illegible]

[illegible] per cent.) [illegible] 22 [illegible] (44 per [illegible])

A [illegible] observed in 1 case [illegible] 2 [illegible]

A [illegible] in 2 cases [illegible]

[illegible] hardly a pathe[illegible] I have been struck [illegible] with the [illegible] presents [illegible] compared with European. I found, [illegible] 12 examinations in England, that [illegible] shaped outgrowths from the [illegible] into the meshes of the dura mater [illegible] and around the entrance [illegible] into that sinus, frequently [illegible] and often deeply [illegible] were frequently [illegible] constituting a very [illegible] dura mater and [illegible] number I have [illegible] of pathogen[illegible] progressive develop[illegible]

[illegible]

6. [illegible] the [illegible] and [illegible]

7. [illegible] of the [illegible], the cartilages of [illegible] was [illegible]

8. [illegible] of the [illegible] were [illegible]

(a) [illegible] were healthy [illegible] 10 cases [illegible] (20 per cent.)

(b) [illegible] on the [illegible] 8 cases [illegible], [illegible] both sides in 11 [illegible] 21 [illegible] (18 per cent.)

(c) [illegible] 1 case on the [illegible] side only [illegible], and in 10 cases [illegible] on both sides. Total 11 cases (22 per cent.)

(d) A [illegible] existed on the right side in 11 cases [illegible] on the left in 1 case [illegible], and on both sides in 2 cases [illegible]. Total 14 cases (28 per cent.)

(e) [illegible] existed in 1 case [illegible]. This was rather an intra-[illegible] bounded and limited by adhesions.

(f) [illegible] existed also in 1 case [illegible] a case of [illegible]

(g) [illegible] was [illegible] serum in the cavity in 1 case [illegible]

(h) [illegible] was perforated in 1 case of phthisis [illegible]

[illegible] past pleural disease [illegible] disease [illegible] derangements and [illegible]. Progressive [illegible] osseous [illegible] cancerous, or [illegible] observed. In one case, not [illegible] of the [illegible] with [illegible] of the [illegible] to undergo [illegible]

[illegible]

NOTES ON THE MALARIOUS DISEASES OF PEGU.

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Nothing can be more conducive to a proper understanding of the pathology of malarious diseases and their *modus operandi* upon the human system, nor more instructive for purposes of generalization, than a careful study, based upon clinical observations, of the different phases they exhibit under a variety of circumstances, as existing among different races, in particular localities, and under certain conditions of climate.

With a view, therefore, of recording the results of my own experience in this division, and of exciting further discussion on questions of such vital importance, I purpose making a few brief observations, so far as I have been able to judge from observed facts, on some of the leading features and peculiarities which these terrible scourges present among the inhabitants of this country, and contrasting them with the malarious diseases that are to be met with in most parts of India. The principal—in fact, I may say, the only malarious—diseases to be met with in this province are intermittent and remittent fevers, diarrhœa, and dysentery. Hypertrophy of the spleen is, comparatively speaking, extremely rare, and goitre is almost unknown to the locality.

1. *Intermittent and Remittent Fevers.*—Taking the physical aspect of the province of Pegu into consideration, two-thirds of which is nearly completely covered over with dense jungle, being hilly and picturesque towards the north, and to the west and east, but extending into plains and flats, gentle [illegible], [illegible] of paddy lands and swamps towards the south, [illegible] no matter of surprise should diseases of zymotic [illegible] [illegible]; but it is worthy of note that they should [illegible] in many important respects, from the same [illegible] [illegible] other intertropical regions.

[illegible] the great advance that has yet been made [illegible] its primeval jungle forests, it is [illegible] freer from malarious fevers and their concomitants than some of the most fertile and highly cultivated [illegible] of India. Both intermittent and remittent fevers are [illegible] common enough, but, so far as my observations extend, they attack the natives of India in a much greater [illegible] than the Burmese, probably in consequence of their [illegible] a weaker race of people, or from their mode of living. Be this as it may, such is the fact, as I will presently [illegible]; [illegible] this paper is chiefly intended to give an [illegible] endemic diseases of the country as they affect the Burmese, I must confine my remarks almost exclusively to the latter.

The most important and remarkable difference between the malarious diseases of Pegu and those of India is the almost total absence of splenic enlargement as a result of malarial poisoning. [illegible] I have only seen two well-marked cases [illegible] Burmese who had never left the [illegible], [illegible] apparently completely cured by [illegible] treatment.

I am not aware that this comparative immunity from [illegible] the Burmese has hitherto been recorded [illegible] that it is [illegible] so common a complication in [illegible] this province.

It seems to me that [illegible] this peculiar form of disease [illegible] independent of previous attacks [illegible] malarious fevers. I have often seen it [illegible] at a very early age who were [illegible] known to have had fever. This is [illegible] the case [illegible] Berar, where the "spleen test" [illegible] of finding a [illegible] greater [illegible] than adults.

The case is entirely different in Burmah. Here the "spleen test" could detect nothing, or, at all events, would certainly fail in giving any indications for judging of the salubrity or otherwise of any particular locality.

In my public and private practice at this station, extending over a period of eighteen months, during which time I have had little under 500 cases of fevers to treat, only thirteen were entered under the head of "splenitis," and two-thirds of these occurred among natives of India, some of whom acknowledged to having had several attacks of fever prior to leaving India. This is a very limited number, considering that, besides dispensary out-door practice, the Prome jail has got a daily average number of 280 prisoners, many of whom come from different parts of the country.

Though the results of dispensary and jail practice cannot be taken as certain criteria of the extent to which a population may be affected by any particular disease, still sufficient data can be collected from them to show whether an endemic disease is very prevalent, or very fatal, or otherwise. From my experience in this district, therefore, I can aver that the intermittent and remittent fevers of Pegu, though perhaps nearly as prevalent, are not so fatal as the malarious fevers of India, and are rarely followed by spleen and hepatic complications.

The quotidian type of intermittent fever is the most common, but it invariably becomes more or less irregular, if not treated in the earlier stages. The tertian type is also frequently met with, especially in the hot weather; and when either occurs in the cold season, it is often accompanied by catarrhal affections of the chest, or diarrhœa.

The mortality among the Burmese from these varieties is very small indeed, but they not unfrequently lead indirectly to serious consequences, chiefly by inducing a cachectic state of system predisposing to attacks of diarrhœa and dysentery, which often terminate fatally. As, however, these latter diseases are also endemic, and the offspring of malarious influences, it is often difficult, if not impossible, to say whether a previous attack of fever had actually predisposed the system to their invasion or not.

The remittent type of fever is by far the most fatal kind of fever to be met with among the Burmese, especially in the case of children and aged people who readily succumb to it, as in them it often partakes of an adynamic character. Bilious remittent fever is also to be met with occasionally, but I have never seen a case terminate fatally from it.

Pathology.—Since there does not appear to be any perceptible difference between the nature of the poison which causes these different types of fever, the following remarks will apply equally to all.

Whatever may be the real nature of the morbific influence, it is evident that some other cause besides heat, moisture, and vegetable matter in a state of decay, is at work in developing the different types and [illegible]; otherwise, we should [illegible] possess greater [illegible] symptoms, and [illegible] by [illegible] circumstances, produce enlargement of the spleen [illegible] more frequently than in another. The problem [illegible] must be solved in this way: That the Burmese being physically a stronger race of people than the [illegible] natives of India, and being accustomed to [illegible] at the same time being great vegetarians, besides having their [illegible] raised off the ground on wooden posts [illegible] so liable, nor so much exposed, to [illegible] of malaria which is generally admitted [illegible] the surface of the ground.

If this does not explain the difference, it must be [illegible] that the [illegible] are of a different nature, which [illegible] in India often induces [illegible] at a very [illegible], independent of previous attacks [illegible] how it does so is not so easily explained.

I b[illegible] that the [illegible] whatever they may be found to exist in the nature of the soil. Goitre, for instance, is always met with in the vicinity of calcareous soils, and is attributed to drinking the water which percolates through such soils.

Now if this be true as regards goitre, why should the same principle not be extended to the causation of fevers also? A sandy or gravelly surface [illegible] stratum of clay, is at all times dangerous, and this is, in my opinion, the principal kind of soil that generates malarious diseases in this country. Prome is a famous place for fever, diarrhoea, and dysentery, in consequence of its being peculiarly situated between, as it were—three fires, having a large strip of paddy lands to the east, another of [illegible] to the west of it, and a large swamp passing through the centre of the station, the whole being included in the valley of the Irrawaddy.

Now here are three different sources of malaria, and the result of their joint action is a multiplicity of malarious diseases closely attributable to the above causes, because its inhabitants suffer to a much greater extent from these diseases than those of the villages in its immediate vicinity.

In the treatment of intermittent and remittent fevers, I have always followed a very simple course, and I have invariably found it successful. An emetic or a purgative at the commencement, according to the stage of the fever, after which I give five-grain doses of quinine three times a day, and rarely exceed ten grains. This, with attention to the diet, and removal from the unhealthy locality, is sufficient to cure almost any case that is not otherwise complicated.

The liquor arsenicalis I have found serviceable in many cases, but I cannot say that, in my experience, I have met with the success I anticipated from it.

II. *Diarrhoea.*—This disease is rather prevalent among the Burmese at all seasons of the year. It appears to prevail principally north of the delta of the Irrawaddy, where the country becomes more or less hilly, and is of a purely malarious nature. It is essentially an endemic disease in the Prome district, and popularly attributed to the water used for drinking, but I do not think that this can invariably be the case, because a great majority of the population obtain their drinking water from the Irrawaddy, which proves on analysis to be as sweet and pure as that of most rivers for at least six months out of the year, viz., from December to May; but during the rains, which generally set in towards the end of May, it becomes of course quite muddy, and cannot be used for drinking purposes. Though diarrhoea may, perhaps, be more prevalent at this season of the year than it is in the hot weather, owing to sudden changes of temperature, its real season commences at the close of the rains, and lasts till February, in consequence of more malaria being engendered in those months than at any other season of the year; besides owing to the low temperature of the nights and the great heat of the days (the thermometer sometimes standing as low as [illegible] at sunrise, and as high as 90° in the afternoons), with the concomitant of dense fogs in the mornings, it can readily be imagined that such circumstances should act both as predisposing and exciting causes of bowel complaints.

I attribute its prevalence at this station entirely to malaria which is evolved from a swamp that passes through the station, and which becomes inundated annually by the waters of the Irrawaddy.

This is corroborated by the facts that that portion of the population who reside on the banks of the swamp is more subject to diarrhoea, dysentery, and fevers than those who live in more elevated localities, and that all Europeans who come to reside here for any length of time, and who never drink but filtered water, are invariably more or less affected by it.

The children of the latter are also especially liable to its inroads, in whom it often becomes chronic, and very difficult to cure without a change of air.

Beyond the ordinary principles of treatment, I generally administer small doses of quinine, which in many cases prove singularly beneficial when the ordinary astringents fail. In the case of Europeans, besides the above, I never omit recommending the wearing of a flannel belt round the waist, the efficacy of which I can vouch for from personal experience.

III. *Dysentery* is a universal and often fatal malady in this province. When it lapses into the chronic state, it generally ends in atrophy,—a complication which is rarely curable. The same result also not unfrequently follows chronic diarrhoea.

The acute disease is comparatively easily cured, but the chronic variety is a very intractable disorder. It is less amenable to treatment in the Burmese than in the natives of India, owing to the mixed kind of diet they are in the habit of using, and their predilection for a horrible preparation of fish in a state of decomposition, called "ngapee," which they use under all circumstances of health and disease.

It is very prevalent during and after the rains, probably from the same causes which had already been mentioned under the head of diarrhoea.

The miasm which induces it appears to be analogous to, if not the same as, that which causes diarrhoea, for they are often found to lapse into each other,—a circumstance dependent upon the parts affected, the amount of the poison absorbed into the system, and the intensity of its application.

In its symptoms and progress it does not appear to differ much from the same disease as met with in India.

When it ends in atrophy, the frequent dejections often cease altogether, and the bowels become as regular as they generally are in a state of health; still, the disease progresses, and ultimately proves fatal.

In those cases I have seldom met with any particular lesions after death, beyond a remarkable thinness of the mucous membranes of the small and large intestines, and thickening of the mucous coat of the colon.

In the treatment of acute cases, I believe ten-grain doses of ipecacuanha, three times a day, to be more efficacious than the heroic doses of some writers, because I meet with so few cases that are proof against its emetic properties, even in ten-grain doses.

It is not enough to tell a patient that his recovery depends upon his taking this medicine; the medical attendant must see it administered in his presence, especially if his patient displays any symptoms of reluctance to a repetition of the nauseous effects of the drug.

I invariably lessen the dose in such cases, and combine it with a fourth or half a grain of opium instead.

Mercury and opium are also valuable remedies, when administered in the early stages of the disease; but my own conviction is that most cases of acute dysentery in these latitudes can be cured by little more than removal from the unhealthy locality, with rest, careful regulation of the diet, and attention to clothing, independent of pills, powders, and draughts.

Conclusion.—In the foregoing remarks, I should gladly have availed myself of statistical information from our public registrars respecting the exact mortality existing among the Burmese from the several diseases treated of in this paper; but since our system of registration is as yet in its infancy, it would be too premature to rely upon such records as being thoroughly trustworthy and accurate for scientific purposes.

PROME, *26th May*, 1868.

ON THE BICHLORIDE OF METHYLENE AS AN ANÆSTHETIC.

By J. Fayrer, M.D.

Present :—Dr. Green (Inspector-General), Dr. Chevers, Dr. Fayrer, Dr. Partridge, Dr. Johnson, Baboo Mohendro Nath Guptoo, H.S., and the usual dressers.

CASE I.

August 24th, 1868.—Judonath, Hindoo, aged 28 years, has been in hospital since 1st June, admitted in a very low state of health, with fever, anæmia, slightly enlarged spleen, feet and anasarcous legs. He improved under quinine and iron, and was sufficiently well on this date to have his scrotal tumour removed. It was about the size of an adult head, and on each side was a large hydrocele. His weight before the operation was 8st 2lbs.

He was brought under the influence of the bichloride of methylene at 8-30, and during the operation, which lasted about 25 minutes, about one ounce was used. He came under the influence of it readily, and the action seemed very like that of chloroform. His pulse was accelerated, rose above 120, and, towards the completion of the operation, became rather intermittent.

There was no excitement, and when he recovered he did so by degrees, and not suddenly. In fact, the action of the anæsthetic seemed scarcely to differ from that of chloroform. The following day, 25th, the pulse was 130; temp. 103°. Face rather flushed, with headache.*

CASE II.

Apoo, Chinese, aged 21 years, admitted August 5th with fungus testis of the right side.

The operation for reduction was performed on the 24th August under the influence of the bichloride of methylene; about ʒii. were administered during the operation, which is a rather tedious one, and anæsthesia was apparently complete. He came under the influence of the anæsthetic readily, and recovered from its effects gradually. Pulse rose under its influence. He was sick on the table on recovering. In every respect the action of the methylene appeared to resemble that of chloroform.

On the following morning his pulse was full and quick, 110; temperature in axilla 103°. Face flushed; headache; pupils contracted. He vomited several times throughout the day of the operation.

Memo. by Dr. N. Chevers.

The effect of the bichloride of methylene upon the heart's action was nearly the same in both cases. At first the result of the inhalation was to render the pulse strong, full and rapid, evidence of decided cardiac excitement. Under the full influence of the drug the heart's rythm was distinctly affected. In either case the pulse never lost its fulness, but the beat became faltering, unequal, intermittent.

This led me, more than once, to stop the inhalation. Latterly the pulse was nearly as at the commencement, becoming, in the scrotal tumour case, somewhat hæmorrhagic. It certainly appeared that this agent excites the heart's action considerably, and, when in full action, affects the rythm in a manner which would be liable to tell very seriously upon a dilated, fatty, or otherwise weak or diseased heart. I am not encouraged by these two cases to think that it is as safe as chloroform, but only record this as a first impression. N. C.

Present: Dr. Chevers, Dr. Fayrer, Dr. Chuckerbutty, and Dr. Johnson.

CASE III.

On the 28th August the bichloride of methylene was administered by Dr. Johnson to Mr. ——, with the view of inducing anæsthesia during the removal of part of the great toe nail for onychia.

At 9-28 a.m. the first inhalation was commenced in the recumbent posture; one drachm having been poured into a folded pocket handkerchief, was held near the nostrils, and thus gently inhaled. The pulse before commencing was 80; it immediately began to rise, and after a few respirations it was 104. He said the sensation was very like that of inhaling chloroform; there was just as much throbbing and ringing in the ears and pulsation in the chest, and, if anything, the vapour was more pungent than that of chloroform.

At 9-30 another half-drachm was poured into the handkerchief. Pulse 108 in the minute

9-31.—It was gradually taking effect.

9-32.—Pulse less frequent, 91 in the minute.

He was quite conscious, and described his various sensations as they occurred.

9-33.—Another half-drachm given. Slight cough, caused by the pungency of the vapour.

9-35.—Said it was more irritating than chloroform. Throbbing in the head; pulsation in the heart painfully distinct. Began to talk in an excited manner. Pulse full and regular, 84 in the minute. There were occasional slight muscular jerks in the arms. Said he felt "almost off." Talked excitedly about the throbbing in his head and chest. Tongue slightly affected.

9-37.—Quite incoherent, and much more excited than when he took chloroform on a former occasion for a similar operation.

Pulse again excited, but quite firm and regular, 100 in the minute; was still apparently sensible to pain, shrinking if the toe was touched.

9-38.—Pulse down to 84 in the minute. Another half-drachm given; talking quite incoherently; asked for more, and said he had had only two drachms. Raised the arms and legs in a sort of cataleptic manner; pulse 96.

9-40.—Cried out; was still sensible to pain; shrank when the toe was touched.

9-41.—Another half-drachm given.

9-42.—He was quiet, and seemed unconscious of pain; the eyeballs bore touching. The toe nail was then divided longitudinally with a strong pair of sharp-pointed scissors, and the diseased half removed by evulsion. He appeared to feel this, and cried out.

The wound was dressed with the carbolic oil dressing, and he appeared to feel this also.

9-44.—The operation and dressing over; consciousness returning, and with it nausea and vomiting; said he felt nothing whatever of the operation or dressing, though he certainly appeared to do so.

Face had a more congested appearance after return of consciousness than when he took chloroform, on which occasion also there was no sickness.

9-47.—Had quite recovered, but talked in rather an excited manner; insisted that he felt no pain. There was no headache, and the nausea had passed away.

9-48.—Pulse 80 in the minute. It was perfectly regular and full throughout.

He said that he would as willingly take this anæsthetic as chloroform. Both equally annihilated pain; and there was very little difference in their operation.

He thought that the vapour of the methylene was rather more irritating than that of chloroform; it also caused sickness during recovery, which the chloroform did not. Recovery seemed to him as well as to those about him, rather quicker than from chloroform, and during its administration he once or twice appeared to regain consciousness more rapidly than when

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* The pulse was always strong, but quickened and intermittent. It was administered very carefully by Dr. Johnson, Dr. Chevers taking notice of the state of the heart's action and respiration.

There was no sickness in this case.

[illegible] view that [illegible]

[illegible] Dr. R[illegible] says [illegible] to breathe [illegible] unconscious [illegible]

[illegible] empty.

[illegible] Dr. R[illegible] summarises the action of the [illegible] as follows.

1st. [illegible] general anæsthetic [illegible]

2nd. [illegible] more rapid [illegible]

3rd. [illegible] second degree [illegible]

4th. W[illegible]

5th. [illegible]

6th. [illegible]

7th. [illegible]

8th. W[illegible] by [illegible] paralysis [illegible]

9th. [illegible] arrest [illegible]

10th. [illegible]

ON THE APPLICATION OF ICE IN THE CURE OF SCIATICA.

By James Irving, M.D.,

Civil Surgeon of Allahabad.

This disease is sometimes so intractable, that it seems worth while to place on record a very unmanageable case, in which the application of ice appeared to have a most beneficial effect. The subject of the case was a strong, healthy gentleman, who had suffered in a neighbouring station for some time before I saw him,—on the 6th February, 1868. I found that a great many medicines and applications of various kinds had been used without much apparent effect. I tried a good many more, including oil of turpentine, hydriodate of potash, quinine, iron, blisters; he was relieved, but not cured. I then recommended him to try hypodermic injections of muriate of morphia. These caused entire cessation of pain for some time after they were given.

In March he left for Bombay, and felt a good deal better for some time after his arrival, which he attributed to his having resumed the practice of bathing in cold water. "After that (to quote my patient's own words) clouds appeared, and continued for the remaining fortnight of my stay there, causing me to suffer every night with the pain, which was only allayed by the injection of morphia under the skin. This I had to repeat every night.

"On 25th April I left Bombay for Nagpore, and the change to drier climate made the pain much more severe and continuous, so that I was confined to my bed. The pain now extended to the foot and ankle, which became so sensitive, that I could not [illegible] to be touched, and could not, even if seated, let the [illegible] down.

"[illegible] day I called on Dr. Law, and he prescribed pills [illegible] I also applied hot flannel [illegible] the latter at once increased the pain. I [illegible] the application of ice should be tried, as I had [illegible] of service in some cases of neuralgia.

"Dr. Law [illegible] the experiment, and procured me [illegible] I applied it at once (the ice being [illegible] of the thigh joint and lower [illegible] of the affected leg. The pain [illegible] and every subsequent application [illegible]. From that time I have enjoyed [illegible] only had slight twinges of the pain in my ankle; [illegible] the sole of my foot now even has [illegible] benumbed. This does not prevent my walking about [illegible], and is only a trifling inconvenience. Occasionally I find [illegible] accompanied by a sense of [illegible] pain in the lower part of the [illegible]. I [illegible] the small of the back [illegible]. I have also applied ice, [illegible]"

The date of the letter [illegible] the above extract is taken [illegible] of June. [illegible] I wrote to ask how he then [illegible], and I [illegible] four questions that I put to him. [illegible]:—

1. "I am still [illegible] the pain of sciatica, in fact, I have never had any [illegible] of it since the day I applied [illegible]."

2. "For two months [illegible] I have not had any twinges in [illegible] ankle."

3. "I am also free now from any heaviness or stiffness in the lower part of the spine."

4. "No new symptoms have manifested themselves."

MEDICO-LEGAL NOTES.

By B. F. Hutchinson, M.D.,

Civil Surgeon, Patna.

The two following cases of precocious puberty in European female children may prove interesting.

1. M. L., born August 25th, 1844, somewhat prematurely, grew up into a strong, healthy, and active child, and at the age of ten looked fully two years older, being tall and stout. On June 1st, 1855, she menstruated for the first time, and has done so regularly ever since. But she has fallen into very bad health. When about thirteen, she began to show hysterical symptoms, and gradually these gave way to silliness and eccentricity. As her infirmity increased, she became subject to fits of melancholy and occasional violence; her growth was arrested at eleven or twelve years of age, and she is now thin and small, with a vacant look in her eyes, and a silly smile on her face. I may add that she is a posthumous child, and that her father died deranged.

In her case menstruation set in when she was ten years nine months and six days old.

2. A. R., born December 9th, 1856, fully four weeks earlier than she should have been, was a very delicate infant, requiring to be nursed until she was two and a half years old, and only becoming really strong when seven years old.

In June, 1867, she began to suffer from attacks of intestinal irritation, accompanied with more or less fever, and on October 1st, 1867, after rather a sharp attack, she menstruated for the first time, and has been regular ever since.

These pseudo-dysenteric attacks were clearly due to the irritation produced on the rectum by the enlarging uterus.

This girl is now stout, and in rude health: mammæ well developed, but in appearance, manner, and dress, she is a mere child.

With her menstruation set in when she was ten years nine months and twenty-two days old.

Both girls might have been mothers when eleven years and seven months old!

Patna, *September 18th*, 1868.

PERIODIC HÆMATURIA.

By C. R. Francis, M.B.

The subject of "periodic hæmaturia" has been recently much discussed by the profession in England, and a valuable communication was contributed by Dr. Lionel Beale in the August number of the *Practitioner*, which he concludes by saying, "perhaps the disease is, after all, more closely allied to ague than to the affection of which hæmaturia is a symptom." Dr. Beale, I venture to think, has detected the true indication of this disease.

Practitioners have been so accustomed to regard diaphoresis as the [illegible] and only termination to an attack of ague, that they [illegible] prepared to recognize any other as critical.

S[illegible] Rennie, H. M.'s British Forces, [illegible] English and French legations in C[illegible] 1860, submitted to his senior medical officer some original views on the [illegible] of discharges other than diaphoretic in intermittent and remittent fever. The gist of his views amounted to [illegible] to the intestinal tract and other parts [illegible] in this disease, but the [illegible] Dr. Rennie [illegible] for some time, engaged in experiments [illegible] General Hospital in Calcutta, with a view to [illegible] of "tartar emetic ointment" as a remedy [illegible] disease. In this somewhat [illegible] facts, but his views [illegible] discharges in periodic fever are worthy of att[illegible]

[illegible] only observed [illegible] Dr. [illegible]'s explanation [illegible] that it may [illegible]. He wisely advises [illegible] all circumstances [illegible] true state of the case. It may, indeed, be necessary [illegible] that the stage [illegible]. Several medical officers, who were serving with Dr. R[illegible], were [illegible] with his views.

The most [illegible] of [illegible] cases of [illegible] and dysentery where the discharges are periodic, [illegible] periodicity of attacks in which [illegible] represents the [illegible] are well known to practitioners in tropical climates, and such cases do not do well unless, in addition to local treatment, antiperiodics are given.

In Dr. Beale's case the attacks were remarkably periodic, and the account given of them points to an evidently malarious origin. The discharge was not hæmaturia, in the true sense of the word; there were no blood corpuscles, but a form of albumen with [illegible]. Dr. Beale has gone so far as to say that he believes an effusion, which would [illegible], may take place into the pleura or any [illegible] at the close of an attack of ague, instead of the usual [illegible]. The character of the discharge in Dr. Beale's [illegible] would be quite in keeping with these views. It is [illegible] whether, in the cases referred to, there were [illegible] belonging to the later stages of a periodic febrile [illegible] with the so-called hæmaturia as the most prominent of [illegible], or whether this last was simply a cyclical condition, dependent upon a malarious origin, and tending to become a habit. To us, who live in a tropical climate, the Protean consequences of malarious infection are familiar enough; and it is more than probable that an Indian physician would at once have recognized, as Dr. Beale ultimately did, in the cases which form the subject of these remarks, a genuine malarious disorder.

ON INSOLATION.

By John F. Foster.

I regret to say that I am unable, in consequence of prolonged [illegible], to complete my paper on Insolation in the manner I intended. My misfortune necessitates an apology from me both to yourself and to the readers of the *Indian Medical Gazette*; but, since I am not in a position to continue the subject at present, I trust I shall be pardoned, in consequence of the manifest impossibility of foreseeing the obstacle that would arise.

In a few words let me point out the line of argument I meant to adopt. The illustrations I would have produced are, in my [illegible], similar ones will [illegible] occur to any one who has witnessed epidemics of [illegible] continued fever in this country.

The [illegible] upon which I rely for proofs of the identity of [illegible] fever with insolation are briefly these:—

1. They occur simultaneously, and no single case of insolation ever happens unless continued fever prevails at the same time and place.

2. Cases of insolation always occur in direct proportion to the gravity of the type of fever at the time prevalent; that is to say, the more severe the individual attacks of fever are, the larger number of cases of insolation will there be.

3. Cases of [illegible] fever, under treatment, not unfrequently [illegible] from insolation. A fair consideration of the nature of these cases leads to the belief that insolation is not an added disease, but rather an aggravation of the effects of the fever. We see some cases of fever threatening to end in coma, but not quite reaching to that condition.

4. Cases of insolation [illegible] during the period of recovery from the graver sort of fevers, often exhibit all the phenomena of [illegible] continued fever.

5. The morbid changes that take place are very similar in both diseases. [illegible] congestion of the lungs, and engorgement of the vessels of the membranes of the brain; both these lesions are usually seen in fatal cases of fever and insolation.

I must express my strong conviction that the entire absence of [illegible] lesions within the cranium is confined to cases of [illegible]. I have never seen a post-mortem examination of a case of insolation that did not show more or less congestion of the veins of the arachnoid, and sometimes even a glistening semi-opaque state of that membrane.

These, with other minor details, bearing in the same direction, are the grounds upon which I have formed my opinion, but which I now feel unable to elaborate into a connected argument.

Peshawur, [illegible] Oct. [illegible], 1868.

NOTE.—In a [illegible] paper recently read by Dr. Handfield Jones before [illegible] the [illegible] Society in London, the author shows [illegible] that, with high atmospheric temperature, the evolution of [illegible] was [illegible]. We are glad to observe that the connection between [illegible] and [illegible] is so practically acknowledged in Mr. Foster's [illegible]. We [illegible] that there is a practitioner in Calcutta who [illegible] the treatment of insolation with large doses of [illegible], who [illegible] to offer further proof of the connection. We [illegible] of these cases, which we hope to give to our readers [illegible]. The subject is of the deepest importance, and we trust our professional brethren in the Mofussil will study it as Mr. Foster has done, carefully, in connection with its malarious origin, as opportunity may offer.—Ed., *I. M. G.*

MAGGOTS IN THE NOSTRILS (AT THE SUMMIT) OF FULL-GROWN SHEEP.—Dr. Jackson, of [illegible], has sent us a specimen of these larvæ, which Dr. S[illegible] has kindly examined, and pronounces to be a species of a large Oestrus.* He states that these creatures lay their eggs in the nostrils of various ruminants, and that the young larva, when developed, walks up the nasal bones and ensconces itself in any part of the surrounding tissue. It frequently lodges itself in the brain. These larvæ are very common in the heads of sheep in the Punjab. Ed., *I. M. G.*

Notices to Correspondents.

◆

Communications have been received from

Dr. [illegible]
Dr. N. C. Macnamara,
Dr. [illegible] Charles
[illegible]
Major [illegible]
" [illegible] Putt.
Dr. [illegible], 27th M. N. I., Madras.
Dr. [illegible], M[illegible].
Dr. [illegible]
Dr. J. C. Mackenzie
Assistant Surgeon Durant, *Shahabad.*
Apothecary [illegible], *Meerut*
Sub-Assistant Surgeon [illegible], *Bombay.*
&c., &c., &c.

Want of space prevents our noticing several important subjects, which must therefore be [illegible] to a future number.

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* Gadfly.

The Indian Medical Gazette.

SPECIAL NOTICE.

As we are desirous of correcting our "Address-List" of Subscribers for the New Year, it is particularly requested that in any case where present addresses are insufficient or inaccurate, a new and correct address may be sent to us during this month.

WYMAN BROS.,
Publishers.

HARE STREET, CALCUTTA.
December, 1868.

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The Publishers beg to assure Subscribers that the delay *rests entirely* with the Post Office. The Publishers have been informed that newspapers are frequently allowed to lie there *one or two days before despatch.*

In all cases where miscarriage of copies has taken place the Publishers have hitherto, on being advised, invariably sent *duplicates*, at loss and inconvenience to themselves, (though they are by no means obliged to do so.) rather than that Subscribers should suffer. A representation is being made to the postal authorities, and it is hoped this may have the effect of securing greater regularity in future.

If every case of late delivery or miscarriage be promptly brought to the Publishers' notice, they will be the better enabled to find a remedy against the annoyance now so frequently experienced both by the Subscribers and the Publishers themselves.

HARE STREET,
December, 1868.

WYMAN BROS.,
Publishers.

THE INDIAN MEDICAL GAZETTE for 1869.

SUBSCRIBERS not intimating their wish to cease subscribing, will be entered on the List of Subscribers for 1869.

HARE STREET,
December, 1868.

WYMAN BROS.,
Publishers.

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HARE STREET,
December, 1868.

WYMAN BROS.,
Publishers.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE

TYPOGRAPHICAL ERRORS.

WE must apologize to our valued correspondents, as also to our readers, for the numerous typographical errors which occasionally appear in this journal. The tricks of printers' devils in India seem even more lively than those of their confrères in England. The feats which they execute in their cabalistic dances amongst the type has a remarkably irritating effect upon the letters, which are in consequence so strangely displaced, that the writer's meaning becomes simply unintelligible. We write in fear lest the bracing effect of the coming cold season may give an additional impetus to these imps of the press; but we are assured that the master of the ceremonies intends to keep them well in check. With this assurance we must endeavour to be content, and hope for better results in future.

CHOLERA HOSPITALS.

MORE than half a century has elapsed since the profession was first brought face to face with the great pestilence of modern times, and it still remains appalled by its progressive energy, yet utterly unable, *professionally*, to resist it. Volumes, whose numbers may be estimated by thousands, have issued from the press, in numerous languages, during this period,—all treating of the disease. But they have practically taught us NOTHING; and it has been left for a military hero to instruct mankind in the best method of dealing with the enemy, viz., how most effectually to run away from it!

During fifty years of active enquiry no professional remedy has been discovered upon which positive reliance may be placed; nay, the startling fact remains that cholera has fairly eluded us and gone far ahead. Forty years ago its victims were one in five of those attacked, and now these are multiplied three-fold. Whereas, then, twenty succumbed of every hundred, now nearly 70 per cent. gasp out their souls before this—Death's most active agent. During the past forty years the relative mortality from cholera in India has been steadily increasing. When a European soldier enters a hospital cholera-stricken *now*, the chances are at least 3 to 1 against his ever coming out again alive. Forty years ago, as we learn from Dr. Bryden's tables, the death-rate from cholera in the European army was 22·89; in 1867 it was 66·07! And this astonishing difference is not the result of a sudden rise, the cause of which is evident, but of a gradual and systematic ascent, the history of which requires investigation. With the Native army in 1829 the death-rate was 19·56; in 1867 it was 50·82, arrived at by the same process. Nor have the prisoners in our jails escaped. The cholera death-rate with them in 1867 was 12·88. Dr. Corbyn tells us, in his book on cholera, that, when he wrote—now forty years ago—the mortality in the practice (almost exclusively native) of Mr. Young was only 8·68 per cent.! This statement is confirmed by Dr. Strong, who, when in medical charge of the 24-Pergunnahs, drew up a set of tables extending over 30 years, in which the death-rate, [illegible] 1817 to 1867 [illegible] fifty years [illegible]

[illegible] in 1817 [illegible] Dr. Macpherson [illegible] on the subject [illegible] Government of Bengal [illegible] cases which he [illegible] years ago, and what [illegible] as to his own [illegible] see the disease in 1832 [illegible] the past quarter of a century [illegible] Dr. Macpherson's statement.

Have we [illegible] looks very like it. Do we find our [illegible] this and that remedy [illegible] If this be so, it is very [illegible] and add largely to the general death-rate. [illegible] June and July last amongst [illegible] near Palamow, near Hazareebagh, of some 600 [illegible] the greater number, in [illegible] of proper treatment [illegible]. When cholera breaks [illegible]

[illegible]

[illegible] But in a [illegible] station, we [illegible] approved remedies. What have we [illegible] the mortality [illegible] science have [illegible] of mankind [illegible] by the [illegible] of 5 out of 6 [illegible] have not [illegible] Whereas we have [illegible] general [illegible] patients [illegible] and where the medical officer treats them in a general sort of way, sometimes trying one remedy and sometimes another; or he may be satisfied that a certain line of treatment is [illegible] the best, and he remains content if the mortality does not exceed 50 or 60 per cent. [illegible] say our intelligent practitioners; we ought not to lose more than half. And so the sons of Esculapius rest in the belief that cholera is beyond the domain of medicine, and that there is nothing more to be done!

Are we to sit [illegible]? Whilst we have a Small-pox Hospital for [illegible] Calcutta [illegible] of the world [illegible] systematically [illegible]

[illegible] modes of [illegible]

[illegible] with indications [illegible] Whereas [illegible] been to promote the welfare of the [illegible] Dr. Corbyn wrote [illegible] the Governor-General [illegible] suggested that his [illegible] throughout the country; and when Dr. [illegible] advocated the employment of a remedy for the [illegible] of India, Lord Dalhousie placed a [illegible] portion of the sick of a regiment, at his disposal, that it surely might have a fair trial. Have not the results justified the measure? Will not Sir John Lawrence take the first step in the scheme of a Cholera Hospital, and, although he can himself now do nothing, leave the idea as a legacy to his successor, and endeavour to inoculate Lord Mayo with a sense of its importance? Money, of course, must be freely expended, and a year or two may elapse before a definite line of treatment is decided upon; but these are insignificant objections, and unworthy of a conquering race. Can we look at the deficits of many of our public works, and think of the thousands and millions which have gone to swell the persons and the fortunes of contractors, who have thus fattened at the expense of the Government treasury, can we go on from year to year squandering public money in this way, and then say, there is nothing for schemes of philanthropy? It is no Utopian scheme that we propose, but one which involves a question of such vital importance to the *world*, that we venture to say any other nation would have endeavoured thus practically to solve it half a century ago.

On the score of humanity we write, and urge its adoption. When those who have the charge of the country's finances are brought fully to understand its money value, they must, on economical grounds, advocate it too. It was only when Sir Francis Head informed the people of England that a new railway engine and tender cost exactly £1,250 upon a certain line every Monday morning, that they began to look into the money question connected with railways. Ten years ago, the annual loss in all ways of European soldiers to the state was 69 per 1,000. This number has now, as the result of better barracks and improved hygiene, been reduced to 20! The British soldier does not now run, as he did then, the risk of *three* battles of Waterloo, in which 1 in 10 fell, every year of his sojourn in the country; but he runs the risk of *one*; and shall we not endeavour to do away with even this? Ten millions of public money have been sanctioned for new sets of buildings, improvement of those existing, family [illegible] accommodation [illegible] permanent for European and Native troops, &c. [illegible] we not have something for so useful a step [illegible] in advance? [illegible] and will be [illegible] results of Colonel Crommelin's labours if [illegible] one [illegible] swoops, fatal [illegible] resistless, sweeps [illegible] carry off in countless numbers the brave [illegible]

[illegible]

Then [illegible] the [illegible] and [illegible] its [illegible] to the [illegible] But let the G[illegible] our departm[illegible] experimente[illegible] or not a Cholera H[illegible] definite ob[illegible] venture to assure [illegible] will receive an affirmative reply.

LOCK HOSPITALS IN CALCUTTA.

(Communicated.)

We beg to call the attention of our readers to the following passages in the Municipal Budget, submitted for consideration at the meeting of the Justices of the Peace held on 17th instant:—

"*Lock Hospital.*—The Government have intimated that the current expenditure of the proposed Lock Hospital will amount to about Rs. 72,000 per mensem, and it is requested that half of this sum shall be provided in the Municipal Budget, in accordance with the resolution passed by the Justices at the quarterly meeting held on the 15th April last. This estimate is based on a report from the Commissioner of *Police*, *who* calculates that the number of common prostitutes in the town of Calcutta is about 6,000, and taking 10 per cent. as diseased, *he* proposes that hospital accommodation should be provided for 600.

"As the Justices have already consented to defray half the current expenses of the hospital, we have provided for the allotment required by Government, subject, of course, to the understanding that, should the expenditure be less than the estimate the Justices will reduce the allotment proportionately."

It would have been well if this matter had been submitted to the Medical Justices in the Conservancy Committee before it was brought before the Finance Committee. But as this has not been done, we address the following observations for the earnest consideration of the Justices. The necessity for the *Lock Hospital* has arisen out of "*The Contagious Diseases Act, for the prevention of Venereal Diseases*," lately passed by the Legislature. Now, the prevention of venereal diseases is intimately connected with the control of prostitution. The control of prostitution is a police affair, and, for the purposes of this Act, has for its object, 1st, the compulsory registration of prostitutes; 2nd, the compulsory subjection of prostitutes to periodical medical examinations; and 3rd, the compulsory detention of diseased prostitutes in hospital till they are pronounced cured. To carry out these objects, there will be necessary, a [illegible] office and a police establishment, which [illegible]

The prevention of venereal diseases [illegible] has for its object, 1st, the [illegible] and 2nd, the [illegible] of disease [illegible] medical treatment [illegible] Lock Hospital. Now, [illegible] it will take [illegible] On the [illegible] will require [illegible] be properly [illegible]

The [illegible] venereal diseases [illegible]

[illegible] That examination to be strictly and effectively [illegible] be conducted in the Lock Hospital, [illegible] and not in the houses of the prostitutes. For examining prostitutes in their own houses it would be necessary to send to each house a medical officer with one or two policemen. Thus much valuable [illegible] and material would be comparatively wasted, and besides, the cost of it will be very heavy. No respectable [illegible] will undertake such work; and if it be expected that Native Doctors will do it, there are no Native Doctors educated as yet to make instrumental examinations. The result of [illegible] by such agency will hence be quite unsatisfactory. Moreover, we must think of the moral debasement, bribery and corruption, to which such people will be exposed if they are engaged in such a business. No, that will not do; the examination must take place in the Lock Hospital itself.

Now, assuming the correctness of the figures given by the Commissioner of Police, if we deduct the 600 patients from the 6,000 prostitutes, there will remain 5,400 to be examined during the week; for to be able to prevent venereal diseases, we must nip them in the bud, and that cannot be done unless each prostitute is examined at least once a week. In many of the European cities each prostitute is examined twice a week. Now, dividing 5,400 by the six working-days in the week, there will be 900 persons to be examined per diem. This would certainly be an enormous evil—*i.e.*, to collect these 900 females in any one place; and yet not so great an evil as examining them in their own houses. The whole work could be done in two hours by twelve Sub-Assistant Surgeons subordinate to the twelve medical officers of the hospital. The advantage of this plan would be, that after the examination the prostitutes could communicate with their friends in the hospital without any further trouble. On the other hand, many of them would have to travel a considerable distance to reach the hospital, besides the temporary over-crowding.

However, for the public convenience, it would be better to have six Lock Hospitals situated in different quarters of the city, instead of one. This plan would make the hospitals easily accessible, and greatly reduce the over-crowding. The expense would be just the same, as for every hundred patients there must be a certain allowance of coolies and other servants in either case; the efficiency would be infinitely greater, and a spirit of emulation would be introduced, which cannot fail to be of great advantage to the public.

The cost would be as follows:—

12 Medical Officers, at Rs. 200 each ...	... Rs.	2,400
12 Sub-Assistant Surgeons, at Rs. 100 each...	...	1,200
Total monthly expenditure ...	... Rs.	3,600
		12
Total annual expenditure ...	... Rs.	43,200

On the other hand, the saving of police expenditure would be very great, as no policeman would be required to attend medical visitors to prostitutes' houses. These are the arrangements which strictly belong to the Lock Hospital, a moiety of the expenses of which the Justices have agreed to pay; the Justices have not agreed to pay any part of the police expenses. The supervision and control of the medical arrangements seem to lie with the Commissioner of Police; but, in our opinion, he is wholly and utterly incompetent for that duty. The Commissioner of Police may have the control and responsibility of the police arrangements, but the medical arrangements are beyond his sphere, and it should be confided to professional men, according to the usual practice of Government, responsible to the head of the Medical Department.

So far for the prevention of venereal diseases among the civil and military populations. There is another question which concerns the comfort and security of the prostitutes themselves, which must be taken up sooner or later. All the foregoing measures will necessarily involve a great deal of hardship and loss on that class of females. As they have no friends, their absence from home will frequently result in the loss of their little property, and they will have nothing to support themselves with for a time after their discharge from hospital. To guard against these evils, prostitutes in all European towns are under direct Government inspection. The best system is that adopted in Prussia. There all prostitutes are compelled to live in licensed brothels, and the masters of these brothels are a sort of police agents. No solicitations are allowed in the streets, nor even from open windows. The masters of the brothels are responsible for the order and good hygienic condition of their dwellings, as well as for the proper care, feeding, and security of the prostitutes. The only indication of their houses is a green paint on their doors, and their visitors are obliged to enter and depart without noise or disturbance. When any of the inmates is detained in hospital, the master is responsible to the police for the care of her property, and he is bound to feed her, too, on her discharge therefrom, till she can earn something for herself.

This is a very rational system, and more conducive to public morality and diminution of crime than prudish abstinence from all interference. Some such system must be introduced here before the work is completed. Prostitutes may be outcasts, still they are citizens; and it is just according to the treatment they receive that they constitute either a dangerous or a peaceable class. Neglected, their homes become dens of iniquity; properly cared for, they often prove useful members of the community. In the city of Hamburgh they contribute no less a sum than 60,000 dollars annually to the Municipality. In Calcutta there is no reason why they should not pay the some amount, if not more, towards the Municipal revenue, and that would then amply suffice to meet all the expenditure incurred on their behalf.

THE MEDICAL CHARGE OF NATIVE REGIMENTS.

We beg to draw attention to a paragraph in our English letter, in which it is stated that the new arrangements as to furlough in the Indian Medical Service have given rise to great dissatisfaction at home. It is understood there, amongst medical students, that the medical officer in charge of a native regiment forfeits all claim to his appointment if he takes furlough to Europe. As all other appointments are held to be "staff," to which the incumbent can return, this is thought to be an invidious distinction, detrimental in every way to the medical officer.

We venture to draw the attention of the authorities to the fact. The Indian Medical Service is no longer the attractive service that it was when our present Governor-General first landed in India. The executive ranks are better paid now than then, and so far there is improvement; but the *status* of the Indian medical officer is gone. Ichabod! his glory has departed, and there is now but one stimulus to enter the service—the same pitiless power which drives men into the ranks of our English army—viz., poverty. It is a delicate subject to dilate upon—difficult even to *handle*—without giving offence, which it is far from our wish to do. We will therefore say no more, but earnestly entreat our rulers to look into the question. As the pay of a medical officer in medical charge of a native regiment is a consolidated sum, it would seem that the intention of those who framed the rules was to recognize such a charge as a "staff" appointment. In fact, we are not sure that this is not the view taken by the Pay Department in this country, and that there is some prospect of legislation on the point. May we venture to urge that, if so, it be speedily dealt with and disposed of? Those who are not familiar with medical opinion at home, little know how far a concession of this kind would tend to induce contentment, and to remove one of the barriers—and that a very important one—which now prevents the best men from entering our ranks, and becoming members of the Indian Medical Service.

SCURVY IN FORT WILLIAM.

Outbreaks of scurvy are rare, now-a-days, in India. On looking through Dr. Bryden's statistical tables for the last ten years, we find that the disease has become—as the result of our better acquaintance with its pathology, and of appropriate prophylaxis in the shape of suitable diet and vegetables, in addition to improved hygiene generally—almost extinct throughout the length and breadth of the country. A few cases of scurvy are admitted annually into the city hospitals, supplied, almost invariably, by ill-found Liverpool ships; but, beyond this, the existence of the disease in India is almost unknown.

When, therefore, the announcement reached us that it had attacked a fine Sikh regiment in the Fort—more than fifty being admitted into hospital in a few weeks, of whom five or six had died, independent of some twenty or more who had been sent to their homes on medical certificate—it seemed almost incredible; the more, too, because the men, we understand, have not been much underfed, and because they have eaten freely of what in the Punjab is considered, and with reason, almost specific as a prophylactic against scurvy—viz., *onions*.

We are happy to hear that the regiment is now improving in health, which is attributed to the free exhibition of lime-juice throughout the entire corps. The sick in hospital have also derived great benefit from being removed into tents.

But what has been the cause of this unusual dyscrasia of the blood? One reason assigned is the difficulty of procuring milk—of anti-scorbutic reputation, and a favourite item in a Sikh's diet—which, however, is too expensive a luxury for him in Calcutta, as is also butcher's meat, to which he is likewise very partial. This may be one in the chain of causes, of which there have been, doubtless, several in operation: probably excessive work, confined barracks, and prolonged residence in an uncongenial climate have been the chief of the evil influences.

Excessive Work. The average number of nights in bed has for some time been less than two during the week.

Confined Barracks.—We would draw the attention of the Sanatory Commissioner to the accommodation provided for the native regiment which is required to reside in the Fort. The bomb-proof barracks in which the men live are simply dungeons, with but little ventilation, reminding the visitor of the *Black Hole* of a past century. We believe that they have been repeatedly condemned. They resemble the range of rooms on the basement floor of the Medical College Hospital, which are only used for stores, and, temporarily, for lunatics, and drunkards brought by the police. For ordinary human habitation they are quite unsuited. These native barracks in the Fort are, moreover, according to the hygienic views of the day, far too crowded.

Prolonged residence in an uncongenial climate.—The regiment has now been more than four years in an unsuitable climate, if we include Benares.* We must remember that the Sikh is not *personally* cleanly. He would therefore naturally suffer from unfavorable influences more than the Oudh sepoy, who bathes and keeps the "cutaneous emunctory" in full operation, daily.

The lesson to be learnt from this outbreak, we venture to urge, is that the Bengal climate is singularly unsuited to the Sikh constitution; and if, added to this, he cannot afford suitable food, and lives in close quarters, being at the same time very much over-worked, the chances are strongly in favor of his blood becoming impoverished, even to the melancholy extent which we have recently witnessed in Fort William.

As these sheets are passing through the press, we observe that tenders are being invited for the construction of a Native Infantry *Hospital*. Will it not be wise to do the same for *barracks also?*

A PORT SURGEON FOR CALCUTTA.

Where is our Health Officer for the harbour of Calcutta? Why, when other ports have their Port Surgeon, is the capital of India still without this important functionary? Are we to wait until a grave catastrophe drags into the light of noonday some of the *arcana* which are a disgrace to the river? Meanwhile, the various duties which a Port Surgeon is urgently required to perform remain neglected!—an official sanitary inspection of the shipping, a careful enquiry into the condition of the crews, and the investigation and analysis of food and water supplies being amongst the chief. A Sanatory Commissioner for the river, invested with plenary powers, and allowed to deal summarily with cases requiring immediate action, would, if he did his duty, be the means of preventing much of the sickness (and consequent mortality) which now prevails from time to time amongst the shipping. Who is *not* responsible for the welfare of the ships' crews? The river practitioners have no official status. They may *recommend* sanatory measures to the owners and captains of vessels, but who can *insist* upon their being carried out? An *unofficial* surgeon may urge that one of the ship's hands about to be attacked by cholera—nay, who may be in the first stage of the disease—should be sent to one of the hospitals in the town; but what if the captain refuse? The man may be dead before night, but does anything happen?—is there any enquiry?—is anybody hung?

We are not writing without grounds for what we write. Such things *have* happened, and they *will* happen, again and again, until the arm of the law—in the shape of a Port Surgeon—is extended over the Hooghly. Human life is too precious to be

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* The corps was in perfect health when it left Benares.—Ed., *I. M. G.*

[illegible]

CIVIL SURGEONS IN INDIA.

[illegible]

THE SUBORDINATE MEDICAL DEPARTMENT.

[illegible]

NATURAL AND PHYSICAL SCIENCE IN INDIA.

On Thursday, the 19th ultimo, the Hon'ble Justice Phear delivered a lecture, at the usual monthly meeting of the Bethune Society, in the theatre of the Medical College, on the "Periodic Rains and Winds" of the Calcutta seasons. The lecturer disavowed any intention to instruct his audience, but he wished, he said, rather to serve as a pioneer to those who were willing to cultivate the paths of science in earnest, and to shew what treasures were in store for all acolytes, however humble, in this department of knowledge. So far, however, as it went, the lecture conveyed information, and was gracefully delivered; but (we say this in no spirit of hypercriticism) it lacked lively illustration. No allusion, for example, was made to those great convulsions of nature which occasionally visit this country and carry such frightful desolation in their wake—viz., cyclones. The causes of heat and cold in Europe and the tropics were *comparatively* discussed and explained, together with the theory of the trade winds, and the reasons why one wind conveys moisture and fertility into countries, whilst another leads to barrenness and famine.

But the great point which attracted the attention of all—of the audience as well as of those who addressed it—was the paramount necessity which exists for adding to our university curriculum a course of study by which the young men of the day should acquire a knowledge of natural science; and the chairman greatly gratified the meeting by stating, at the close of the evening's proceedings, that the council of the Asiatic Society had moved the Government of India to cause the valuable collection of natural history in the Indian Museum to be made available for university education. This is, in fact, the tendency of the age. At some of the schools in Germany natural science is taught; it has been introduced into the curriculum of study at more than one English university; and at one of our most rising public institutions in England—Marlborough (the modern school)—the boys are instructed in botany. Nothing can exceed the value of such knowledge, especially when taught in early life. Not only is a love of the country engendered, but the analytical powers of the mind are developed, and a resource, of the purest kind, obtained. Why should such knowledge not be taught in India—aye, made compulsory? Mr. Woodrow, in explaining the reason, reminded us of the subaltern who, unable to fire an important salute, gave as his chief reason that there *was no gunpowder*. Mr. Woodrow stated that the university had *not* lost sight of the subject, but no teachers were to be found. Now, we venture to say that, if sufficient inducements are held out, there will be no lack of teachers. All medical men who come to India know more or less of science. Let but a proper salary be offered, and it will be abundantly cultivated—for the benefit not only of the pupils, who may be then *compelled* to take it up as a branch of study, but of the country at large. Or, let professors of natural science be imported and added to the educational staff. A little expenditure of money will soon remove the objection raised by Mr. Woodrow.

Mr. Phear is a genuine friend to the natives of this country, and he will have added another to the many laurels he has gained from them if his lecture—which is the subject of this article—shall in any way lead to the cultivation of natural science amongst his Aryan brethren. The mantle of Prince Albert has descended upon the shoulders of Justice Phear.

Short Notices of Recent Books.

On the Parasitic Affections of Diseases of the Skin. By Dr. M'Call Anderson, Lecturer on the Practice of Medicine in Anderson's University. 2nd Edition. London: Churchill, 1868.

So much attention has recently been given by such men as Lemaire in France, and Salisbury in America, to the study of the relation between fungi and disease, that Dr. Anderson has done wisely in bringing out an improved and advanced edition of his treatise. In the present issue, the text has been nearly entirely re-written, and the number of illustrations has been considerably increased. The first part of the work is devoted to vegetable, and the second to animal parasites of the skin. The work is altogether divided into 16 chapters; of these, the first is devoted to a general sketch of the subject and a reference to the more recent scientific researches in skin affections; the 2nd, 3rd, and 4th deal with tinea favosa; the 5th with tinea tricophytina, or ringworm; the 6th with tinea circinata; the 7th with tinea sycosis; the 8th with tinea tonsurans; the 9th concludes the subject of tinea tricophytina, begun in the 5th; the 10th treats of tinea versicolor; the 11th of alopecia areata; the 12th of the distinctions between the foregoing species; the 13th gives a classification of the animal parasitic affections; the 14th describes scabies, the description being continued in the 15th; and, finally, the 16th includes an account of the bug, flea, chiggre, guinea-worm, and the acarus folliculorum. Among the many interesting matters discussed by the author, there is one which is at the present moment especially worthy of notice, that is, the question whether *alopecia areata*—or *tinea decalvans*, as it is more commonly described—is, or is not, a parasitic disease. Dr. Anderson gives a short analysis of the opinions of the most recent observers, and points out that this affection is decidedly contagious, and that children affected with it should be separated from their fellows. He then expresses his belief that the disease is not connected with a fungus. He states that he has himself made a great number of microscopic examinations of the hair and scales taken from cases of *alopecia areata*, and with every expectation of finding a parasite, for the disease presents all the other characters of a parasitic affection, and yet in not a single instance was he able to detect a trace of tubes or spores. He has observed, however, that the bulbs were atrophied; that the little stumps of hair frequently met with on, and in the vicinity of, the bald patches, often presented dilatations, as alluded to by Bazin, but without any local cause to account for them; and he has also noticed that at their broken extremities the fibres projected in a ragged manner, like the broken end of a piece of wood. While he thus publishes his own negative observations, the author admits that the disease presents all the external features of a vegetable parasitic disease. He is nevertheless disposed to look upon it—as Wilson does—as a species of neurosis. But apart from this special branch of the question is the much larger one raised by Wilson, as to whether so-called skin diseases of parasitic origin have really anything to do with parasites at all. Wilson alleges that all the growths which have been called fungi are merely anatomically metamorphosed animal structures, and he has written a very clever article in support of this in the *British and Foreign Medico-Chirurgical Review*.

On the other hand, Dr Tilbury Fox holds the opposite view. Dr. Anderson very fully discusses these questions also, and he inclines to the belief not only that these diseases—alopecia areata excepted—are due to a vegetable parasite, but that the *tricophyton*, the *achorion schönleinii*, and the *microsporon furfur* are all three distinct species. For the arguments adduced, we must refer our readers to the book itself, and we must conclude our notice by thanking Dr. Anderson for a treatise as practical as it is scientific, and whose exquisite illustrations and marginal notes are luxuries seldom met with in medical works.

A Treatise on Physiology and Hygiene. For Schools, Families, and Colleges. By J. C. Dalton, M.D., Professor of Physiology in the College of Physicians and Surgeons, New York. London: Sampson, Low, and Son, 1868.

Dr. Dalton is well known in America as a successful teacher, and as author of a large treatise on physiology, which has commanded, at least in its earlier editions, a very large circulation. The book before us is issued as a work on hygiene and physiology; and as it seemed well "got up," we were at first disposed to give it a cordial welcome to the field of medical [illegible] say that Dr. Dar[illegible] that of Professor H[illegible] M[illegible]'s S[illegible] W[illegible] not the [illegible] side out of the United States.

A T[illegible] [illegible] Fr. L. N[illegible] L. [illegible] 1868.

Some [illegible] of our [illegible] heard of closed [illegible] Mr. N[illegible] had men were [illegible] with Mr. N[illegible] [illegible] its heart, [illegible] not likely to produce [illegible]. The [illegible] part of the book is [illegible] attempt to explain the [illegible] accumulation [illegible] enough to drown the whole work. He says—"I am strongly inclined to think [illegible] sort of galvanic or electric [illegible] means of light proceeding from external [illegible] action depending on the distance from which [illegible] of the light," etc. This [illegible] and we give it as a [illegible] of a work which may [illegible] very scientific.

The [illegible] Edited by Erasmus Wilson, F.R.S. October [illegible], 1868.

In [illegible] medical, the editor [illegible] present [illegible] VIII [illegible] affections. Among [illegible] may be mentioned [illegible] Dr. Duncan, on [illegible] the Skin" by Mr. H[illegible]

[illegible] Edited by Dr. [illegible] and H. Lawson.

[illegible] M[illegible] La Pr[illegible] and M[illegible] Dr. J. Barr[illegible] Dr. H[illegible] paper on [illegible] M[illegible] [illegible]

English Correspondence.

[illegible]

[illegible] 23rd [illegible] 1868.

[illegible] quarterly

[illegible] H[illegible] Sandwith, C.B., the [illegible] K[illegible] F[illegible] of M[illegible] Dr. Sandwith is a [illegible] action [illegible] for [illegible] very [illegible] of things. [illegible] Mr. Gladstone; [illegible] affairs, [illegible] of military [illegible] House of Commons. Sir Dominic Corrigan [illegible] H[illegible] [illegible] Dr. Sandwith [illegible] that he [illegible] Dr. Sandwith's [illegible] I [illegible] of any likelihood [illegible]

The [illegible] which have commenced the study [illegible] at [illegible] popular, [illegible] their [illegible] the numbers [illegible] Bartholomew's 86, University College, 60, King's College, [illegible] Hospital, 35, St. Thomas's, 24, St. George's, 23, Charing Cross, 20, St. Mary's, 1[illegible], Middlesex, 14, and Westminster, 4. It will be noticed that King's College is below University, that "London" stands [illegible] St. Mary's, which used to stand [illegible] next to King's, is now below St. Thomas's, St. George's, Charing Cross, or Westminster, and that, finally, the Charing Cross, which had hitherto a very small entry, is [illegible]

[illegible] to furlough in your medical service [illegible] Sir John Lawrence [illegible] officers of native regiments are [illegible] officers of the Indian service who are [illegible] United Kingdom [illegible] the *Times* [illegible] "We [illegible] such [illegible] should [illegible] Indian Medical Service [illegible] most [illegible] Government [illegible] was [illegible]. When a man has served [illegible] country [illegible] It further [illegible] that the [illegible] Indian service [illegible] few [illegible] Calcutta and elsewhere.

The [illegible] Clinical Society was [illegible] the other [illegible] Mr. [illegible] received a very [illegible]. The papers read [illegible] by Dr. [illegible] Hospital [illegible] led to some discussion [illegible] Dr. W[illegible] deprecated [illegible] went, Dr. [illegible] members. Dr. Andrew Clarke, [illegible] of blood [illegible] expected to say a word [illegible]. The meeting [illegible] in the [illegible] M[illegible] and was attended [illegible] than [illegible] Medical Society [illegible] first [illegible] Dr. Richardson, as usual, [illegible] and read [illegible] very important one [illegible] question [illegible] more [illegible] the old [illegible] be regarded [illegible] as ad[illegible] condition [illegible] are very few pupils of the new school [illegible] theory, that, in drawing off the [illegible] inflammation we improve the patient's condition by [illegible] a certain quantity of inflammatory matter. However, I shall not prejudge Dr. Richardson's views; the paper will appear in full in the forthcoming (November) number of the *Practitioner*, and will, I doubt not, lead to a considerable deal of controversy between the representatives of the modern and *[illegible]* of medicine.

Will the University of Edinburgh elect Mr. Gladstone as its chancellor? This is even at the present time a question impossible to answer. The hopes of the profession generally throughout the kingdom are centred upon the leader of the Opposition, but there are numbers of local clique bound to support his opponent. It seems to me that it would contribute more to the advancement of the university to be represented by a man of Mr. Gladstone's status and ripened experience, in both political and purely educational questions, than by one whose opinions—from his direct connection with the university—must naturally be narrower and more one-sided. Time only can tell us the result, no one attempts to predict.

The water-supply of towns is the subject of a somewhat bitter controversy between the *Saturday Review* and the *Lancet*. In a recent article, the former [illegible] some very disparaging and, indeed, offensive comments on the [illegible] of the Registrar General and Dr. Frankland. The *Lancet*, in its last number (17th instant), takes the subject up, and in an article of great scientific ability and much scholarship scrutinizes the efforts of its contemporary, and, I think, demonstrates satisfactorily that the writer knew nothing of his subject, and wrote with the sole object of venting his spleen, and exercising his gift of vituperation on two of our most painstaking and trustworthy scientific sanitarians.

Scarlatina, I am sorry to say, prevails to a somewhat alarming extent in the metropolis. The wonder is that its ravages are not even more serious than those recorded in the Registrar's returns. Notwithstanding our numerous medical officers of health, the hygienic condition of London can be expressed only in one word—abominable. The reason of this is that there is no sanitary department in our government in direct connection with the body of medical officers. Hence, the latter are compelled to take the only course open to them, and do what work in their parishes the vestry will allow them to do; and, as a rule, it is the fact that the less noise—in other words, the less work—a medical officer makes, the more acceptable is he to the vestry, the latter body containing, doubtless, many sanitary delinquents.

Is the medical profession ever to be properly represented in the Medical Council? The problem remains for the council of the British Medical Association to solve, and no doubt at its meeting, which is now near at hand, something definitive will be arrived at in reference to the course to be taken to obtain representation. As at present constituted, the General Medical Council is a most abnormally constituted corporation. It has nearly unlimited power over the general conduct of the profession; it annually extracts large sums from young medical men, who can least afford to pay so heavy a tax; it has done nothing for the profession which could not have been achieved at about one-tenth of the money and in half the time it has expended. It is composed of representatives from [illegible] corporations which care not one jot for the interests of medical men in general, and of a few governmental members, who are equally unadapted to consider the [illegible] of the practitioner. Under such circumstances, it would be but the barest justice to enact that the profession at large should annually, or at stated intervals, send in to the council its own chosen representatives, and we believe that, were such a step taken, we should no longer have the hanging over [illegible] the [illegible] waste of funds which characterize the existing Medical Parliament. Indeed this question has already attracted so much attention, that Mr. Campbell Swinton, one of the candidates for the representation of Edinburgh and St. Andrews, in a letter to Dr. Andrew Wood (Oct. 21st), expresses his willingness, should he be elected, "to give a favourable consideration to any well-considered plan for attaining this object, which may meet the wishes of those more directly interested in the question."

The affairs of the Medical Club are still *in statu quo*. The result of the last meeting was to refer the consideration of the question of raising the subscriptions to a committee. So the matter rests. It is a pity [illegible] should have happened [illegible] for with its [illegible] now [illegible] it was safe to have been a success.

You will be [illegible] the *Indian Medical Gazette* [illegible] now look [illegible] organ of the profession in India, and [illegible] of social or [illegible] importance [illegible] of the opinion of a large body [illegible] with [illegible] other journals in [illegible].

Progress of the Medical and Collateral Sciences.

◆

Physiological Action of Quinine.—At the meeting of the "Académie des Sciences" of Paris, on the 19th of October, Dr. Binz, of Bordeaux, made a statement that quinine diminishes the vitality of the white globules of the blood, and prevents them from passing through the vessels in cases of inflammation.

Action of Mercury as a Cholagogue.—At the Oxford meeting of the British Medical Association, Dr. Hughes Bennett presented a report containing the results of a series of experiments on dogs. A biliary fistula was established in each case, and mercury afterwards administered. The general deductions from those researches are (1) that in poisonous doses mercury produces similar effects on dogs and on men; (2) that in large doses it distinctly diminishes the amount of biliary secretion, while in moderate doses it produces no perceptible effect on it.

The most important objection to the above conclusions was that the experiments had been made on *healthy* animals; and that, although mercury might have similar effects if administered to *healthy* men, it was impossible to infer from those experiments what effect the drug would produce on men affected with morbid conditions.

The Principles of Anæsthesia, and the Anæsthetics of the Present Day.—At the same meeting Dr. A. E. Sansom expressed his opinion that the action of anæsthetics, so far as really useful, depends on their depriving the system of oxygen. The evidence does not warrant the belief that they have any direct action on the central sensory ganglia. They stimulate the cardiac and vaso-motor systems, contract the systemic arteries, and force the blood into the venous system, which becomes gorged. The great danger attending the use of chloroform—that of *paralysing* the cardiac and vaso-motor forces—may be avoided in a great degree by cautious dilution of the vapour, especially if the chloroform be mixed with an equal amount of alcohol. Nitrous oxide is, in *skilled* hands only, a valuable agent for short operations, such as those of dentistry, but should not be given in cases of pulmonary, cardiac, or cerebral affections.

Vesicles of Herpes and other Diseases.—At a recent meeting of the Academy of Sciences, Vienna, Mr. Rokitansky presented a paper from Mr. D. Haight, of New York, on the vesicles formed in certain morbid conditions of the skin. Those of herpes and erysipelas are partitioned, and the elements of the partitions are furnished by the cells of the median portion of the [illegible] net-work, drawn out into length and fusiform cells, or into threads analogous to the fibres of conjunctive tissue. Herpes zoster developes a profusion of cells in the corium, which, at [illegible] defined, extend along the nerves into the depth of the subcutaneous conjunctive tissue. In erysipelas of the head, an exudation takes place into the interior of the hair follicle, in consequence of which the root matrix of the capillary [illegible] becomes detached from the membrane, which is devoid of [illegible]; the latter exhibits, on its interior surface, [illegible] projections. The vesicle of pemphigus is single, and is [illegible] by the detached portion of epidermis and the upper malpighian layer. The exuded matter interposes itself between the cells of this layer, without perceptibly [illegible] them. The ampulla of Purpura (Friesel) is confined on both sides by the epidermic scales, and a widened duct from a sweat gland opens into each ampulla. They result from [illegible] of secreted sweat, bursting the sweat duct, which [illegible] the epidermis in cork-screw form, and spreading in the [illegible] of the epidermic layers.

Carbolic Acid as a Remedial Agent.—Dr. W. [illegible], [illegible] N. Y., writes to the *[illegible] Journal of Medical Science* [illegible] He has tried the [illegible] of carbolic acid [illegible] discharge [illegible] *[illegible]*, one grain of crystals [illegible] distilled water. After one or two [illegible] the character of the discharge [illegible] simple tonsilitis.

Sulphites in the Treatment of Fevers.—Dr. A. C. Sa[illegible], who has [illegible] the treatment in intermittent fevers, [illegible] that the [illegible] on which [illegible] the ordinary drugs, and then [illegible]

Earache [illegible] Dr. D. D. S[illegible] digitalis in this [illegible] into the ear, and then [illegible] with [illegible]

Sulphate of Zinc in Dyspepsia. [illegible] Dr. G[illegible] some [illegible] half [illegible] a day. He [illegible] and [illegible] He [illegible] as to say that [illegible] valuable in dyspepsia as is quinine in intermittent fevers.

The Pathology of Red Lichenous Exudation.—Some recent [illegible] by Herr Neumann. He [illegible] accumulating in larger [illegible] within the masses of fine granular matter. [illegible] more or less [illegible] processes into the [illegible] of the papillæ. [illegible] brown [illegible] enlarged and [illegible] distinctly enlarged [illegible] layers of the [illegible] abundance of [illegible] the capillary [illegible] conical processes [illegible] the hair layer the [illegible] follicle thus is widened, and the [illegible] at its base. The inflammatory process, according to Herr Neumann, takes its origin in the walls of the hair follicles.

Compressed Air as a Therapeutic Agent.—M. le Dr. Bertin [illegible] Academy with a [illegible] As pointed out by Dr. [illegible] for October, this [illegible] Baths, where, in the [illegible] establishment, under [illegible] Herr Dr. Lange, is now in full swing [illegible] M. Bertin's [illegible] that this therapeutic [illegible] patient has left the bath [illegible]

The Value of System and Routine in the Study of Medicine. It [illegible] of system in the [illegible] let him read M. [illegible] It has been reprinted [illegible] found in the [illegible] for September last.

Physiological Action of Arsenic. An important work has [illegible] gives the [illegible] book for some [illegible] par le Dr. Jules [illegible]

Variations in Human Myology.—The last number of the [illegible] contains [illegible] Mr. W[illegible] paper is [illegible] the variations [illegible] were found [illegible] 296 abnormal [illegible] 173 [illegible] making 124 [illegible] found in 18 [illegible] only, [illegible] in the right [illegible] in the [illegible] The [illegible] found to depend on the [illegible] of the [illegible] 96 in [illegible] 12 [illegible] occurred in the [illegible] 51 [illegible] in the males; [illegible] in the females 29 as [illegible] males, on the other hand, the number [illegible] in the [illegible] 10 in comparison with [illegible] and with 20 in the right leg [illegible] of the female sex.

A Novel and Useful Camera Lucida for the Microscope.—[illegible] by Dr. [illegible] of the Calcutta M[illegible] Dr. L[illegible] has been [illegible] by Mr. C[illegible] of London. In [illegible] glass reflector, [illegible] to place the body of the microscope in [illegible] horizontal position. It is therefore impossible to use this instrument with [illegible] such as animalcules, &c., which are [illegible] To obviate this, Dr. C[illegible] suggested [illegible] containing a right-angled prism [illegible] to the body of the microscope between [illegible] Mr. C[illegible] has constructed [illegible] Dr. L[illegible] would [illegible] in terms of [illegible] light, and allows the [illegible] to be [illegible] in a perfectly horizontal position.

The Clinical History and Pathology of Herpes Zoster.—Herpes zoster is one of those diseases which it is difficult to place [illegible] in any one category. Some [illegible] One of the fullest memoirs we have [illegible] is that which [illegible] from the pen of Dr. John Duncan, in W[illegible]'s *Journal of* [illegible] The writer gives his own opinions, and summarises the views of nearly all who have written upon the affection. He [illegible] with an account of his own personal observations in 23 cases, seen within three years. The disease was [illegible] ten times on the right, and thirteen on the [illegible] side of the body. [illegible] of those attacked were females. [illegible] the eruption appeared [illegible] in six in the [illegible] in two on the thigh, in one in the neck, and in one [illegible] The pain was always severe, but was allayed [illegible] Spirit, oxide of zinc, camphor [illegible] &c., were [illegible] The writer of this [illegible] having had [illegible] attack of herpes zoster, following the [illegible] to state the mode of treatment [illegible] the most [illegible] The moment the [illegible] with [illegible] collodion [illegible] British [illegible] This [illegible] entirely [illegible] The [illegible] pains were [illegible] morning and evening, of one-sixth of a [illegible] hydrochlorate of morphia. He has since tried [illegible] in two other cases, and with equally satisfactory results.

An Extraordinary Human Monster.—In a recent American [illegible] of the [illegible] University, have [illegible] an extraordinary monster, [illegible] It has [illegible] external [illegible] "It [illegible] is thriving well," [illegible] of the two [illegible] most [illegible] but are [illegible] two supernumerary [illegible], which are [illegible] with the body. "Should [illegible]" say the professors, "and the natural [illegible] there is nothing to prevent conception [illegible]" The first difficulty will, however, be in [illegible] the outer, or external legs may be used for progression, the inner or in-turned ones probably never. These might be [illegible] amputated at the knee, or higher up.

THE

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A MONTHLY RECORD

OF

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INDEX TO VOLUME IV

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ORIGINAL COMMUNICATIONS.

Page.

Antiseptic Treatment of Wounds 138
Apoplexy 134

Belladonna an Antidote to Opium 182

Carbolic Acid in treatment of Wounds ... 12
Carbolic Acid in Small-pox 162
Cholera 4, 26, 49, 72
Cholera, Cantharides in 138
Cholera, note on ... 256
Cyst-infected meat ... 114

Death of Mr. Thorp at Sirinagar ... 30
Death from Snake-bites ... 156
Delhi Ulcers ... 233

Effects of Famine in Rajpootana ... 254
Experiments on the action of Snake-poison 1, 25, 129, 153, 177, 201, 225, 249, 250

Foul Air in Ill-ventilated Rooms ... 206

Heat Apoplexy 132
Hypodermic Injection of Liquor Ammonia in Cholera 161

Influence of Cold in Chloroform ... 138
Insane, General Paralysis of ... 75

Lithotrity 69
Lunar Influence over Malarious Fevers 112, 139

Page.

Maladies attributed to Lunar Influence 189

Native Doctor's English... 76

Opthalmic Practice, selections from... ... ... 89, 110

Pathology of Cholera, doubtful points of 32
Peking Hospital 93
Post-partum Hæmorrhage 133
Puncture of the Knee-Joint in Synovitis 109
Prevailing Disease in the Angami Naga Hills 13

Relation between Cattle Disease and Vaccinia 207, 229
Remittent and Continued Fevers 90
Results of Sanitation in India 204, 231

Sanitation in the Bhawulpore State 162
Sea snake, bite of 92
Small-pox at Umballa 115
Small-pox and Vaccination in Bhurtpore 257
Snake-bite, case of 92
Sub-Assistant Surgeons 36
Sulphurous Acid 36
Summary of 50 *post-mortem* Examinations ... 9, 52, 70, 136

Tape-worm, remedy for 92
Typhoid Fever in 92nd Highlanders 157

Ventilation in India 251

CASES FROM PRACTICE.

Page.

Abscess of the Spleen 118, 211
Abdominal Aneurism bursting into left Pleural Cavity ... 264
Abscess in Tunica Vaginalis 238
Amputation of the Leg 164
Amputation at Hip-joint ... 261
Amputation of Thigh ... 263
Antiseptic Treatment of Necrosis 141
Aphasia 234
Arm presentation, Version 95

Belladonna in Opium Poisoning 116
Bromide of Potassium in Delirium Tremens ... 115

Calculus in the Female 118
Cancer of the Liver 190
Chionyphe Carteri 140
Cholera, Liquor Ammonia in 212
Chronic Arsenical Poisoning 189
Compound Fracture of Leg, Jaundice and Ischuria ... 260
Costiveness 78
Criminal Abortion 14
Cutaneous Anaesthesia ... 140
Cystic Tumor of left Labium 117

Death caused by a Tooth-Stick 117, 141
Dislocation of Patella 161
Dry earth dressing for Wounds 141

Page.

Enucleating an Eye to prevent Blindness 116
Enlarged Speen and Hæmatocele 262
Enteric Fever 163
Excision of the Elbow 163

Feigned Tumor of Jaw 78
Fibrous Tumor of Jaw—Operation 186
Foreign Body in Bladder 141

Guinea Worm treated by Carbolic Acid 118

Hæmorrhage, uncertain cause of 163
Heat Apoplexy 142
Hepatic Abscess 259
Herpes Zoster Frontalis 139, 164
Hydatid Disease of Liver 77
Hydrocephaloid Disease 211
Hydrocele and Hæmatocele within one Tunica Vaginalis ... 262
Hyposulphates in arresting formation of Pus in the Bladder 116
Hysteria 55

Ictus Fulminis 188
Inguinal Hernia 212
Injury to the Wrist-joints 165
Injury to head of child followed by Pyæmia, &c. ... 184
Insidious Dysentery 190
Intestinal Hæmorrhage 37

CASES FROM PRACTICE.—(*Continued.*)

Page

Linear Extraction 79
Liver Flukes in Human Intestines 210
L[illegible] 184

M[illegible]pathia 15

Op[illegible] Poisoning 257
Oxaluria 165

Petroleum in Antiseptic Treatment 185
Poisoning by Datura 51
Pulsating Abdominal Tumor 211
Punctured Wound of Leg 78

Page

Retention of Urine 8[illegible]
R[illegible] Abdominal Tumor 237
R[illegible] 95
R[illegible] 141

S[illegible] 164
S[illegible] 264
S[illegible] 269
S[illegible] 260
S[illegible] 264
S[illegible] 51
Syncope [illegible] 237

T[illegible] 187

HINTS IN PRACTICE.

Page

[illegible] Fungus Foot 183

Enucleation of Diseased Glands in Groin 181

Iodine in Chloroform Accidents 183
I[illegible], Iron, Warm Dressing, Carbolic Acid in Surgery 278

Morphia Hypodermically in Vomiting of Pregnancy 181

Page

On S[illegible] in certain Operations 259

P[illegible] 183

R[illegible] Imparted Itches 259

Spl[illegible] Rectal Abscess 184

EDITORIAL ARTICLES.

Page

Aneurism in the Army 141
Annuitants for 1869 243

B[illegible] 193

Camp at Umballa 101
Captain Jennings's Punkah-pulling Machine 170
Cholera 217, 241
Cholera Fungi 196
Cholera Hospitals 193
Cholera Reports 56
Contagious Diseases' Act 215

Deaths by Poison 196
D[illegible] Cholera 18
Dispensaries [illegible] 196
Dispensaries [illegible] 61
Dispensaries [illegible] 194
Dispensary [illegible] 243
Dr. [illegible] 16
Dr. Murray [illegible] 166
Drainage and [illegible] 168
Drinking Water in Bengal 191

Education of Native Medical Practitioners 119
E[illegible] 167
E[illegible] 1[illegible]
E[illegible] 191

F[illegible] 195
French M[illegible] 268
Furlough Rules [illegible] 163

H[illegible] 101
Health of the [illegible] 211
Hill Stations in Bengal 97

Page

Indigenous Drugs 19
Indigenous Food 148
Indian Medical [illegible] 96
Immunity of a Monkey to Strychnine 267
Imperfection [illegible] Examinations 195

J[illegible] Medical N[illegible] 195

L[illegible] Medical School 170
Lock Hospitals 11

Medical [illegible] Dispensaries 267
Medical M[illegible] 81, 146
Medical Service [illegible] New Furlough Rules 167

N[illegible] 42
N[illegible] 87
N[illegible] 267
Native Hospital [illegible] 81
Native Medical Pr[illegible] 81
Native Midwives 191
Native M[illegible] 81
New N[illegible] 56, 147
New Works [illegible] 124
North S[illegible] Hospital 161
N[illegible] 122
N[illegible] Medical [illegible] Furlough 143

Property of Medical [illegible] 81
Prot[illegible] Illness 124
Professor Syme 166
Professor Pettenkofer's Theory of Cholera 239

Quid Pro Quo 162
Quinine, Physiological action of 265

EDITORIAL ARTICLES.—(*Continued.*)

Page.
Railway Sanitation ... 57
Railway Surgeons in India ... 58
River side Dispensaries ... 119
Royal Sanitary Commission ... 148

Sanitary Commissioners ... 16
Sanitation ... 84
Small-pox, Cessation of, in Ireland ... 267
Snake-poison and its Antidote ... 38
Sub-Assistant Surgeons ... 16
Subordinate Medical Education in India ... 19, 42, 58, 84
Sub-soil Water ... 194

Tatties at Night in Barracks ... 194

Page.
Temperature in Health and Disease ... 147
The East Indian Railway ... 99, 265
The Experiments on Snake-poison ... 242
The Governor-General's Surgeon ... 45
The Jails and Jail System of India ... 38, 61, 86, 148, 102, 268
The Nagpore Medical School ... 193
The Sanitary Service and Science ... 45, 82, 213
Treatment for Heat Appolexy ... 143

Vaccination in the Punjab ... 123

What is Contre-Coup? ... 192
Writers for Jails ... 243
Writers for Civil Surgeons ... 243

REVIEW OR NOTICES OF BOOKS.

Page.
Atlas of Venereal Diseases. M. Cullerier ... 107
Auscultation of the Heart. Dr. Churchill ... 173

Cases of Disease of Nervous System from Syphilis. Dr. Hughlings Jackson ... 107
Cholera Maligna. Dr. Barnard ... 214
Conservative Surgery in America. Dr. Walter ... 107

Diabetes, Nature of Treatment. Dr. Pavy ... 66
Dictionary of Materia Medica. Dr. Wahltuch ... 173
Diseases of the Eye. Dr. Macnamara ... 21, 22
Disinfectants and Disinfection ... 105

Epidemic Cholera in the Bengal Presidency. Dr. Bryden 270

Glasgow Medical Journal ... 67

Hand-book of Uterine Therapeutics. Dr. Tilt... ... 65

Page.
Lectures on Diseases of Urinary Organs. Sir H. Thompson 66

Manual of Elementary Chemistry. Mr. Fownes ... 22
Manual of Skin Diseases. Dr. Fox ... 63
Medical Electricity. Dr. Powell ... 67
Medical Formulary. Dr. Smith ... 67

Operations on Cicatrices after Burns. Mr. James ... 22
Operations of Surgery, Manual. Mr. Bell ... 66

Parasitic Affections of the Skin. Dr. Anderson ... 66
Pathology and Treatment of Syphilis. Dr. Barton ... 65
Perimetritis and Parametritis ... 107

Reports on Small-pox. Dr. Charles ... 21

The Origin of Life. M. Pennetier, M.D. ... 107
Treatment of Epidemic Cholera. Dr. Murray... ... 171

CORRESPONDENCE.

Page.
A Hard Case ... 199

Bengallee Class Native Doctors ... 199

Civil Surgeoncy of Darjeeling ... 85

ENGLISH CORRESPONDENCE ... 22, 67
Examination of Sub-Assistant Surgeons ... 88

IRISH CORRESPONDENCE ... 170, 217

Native Doctors' Difficulties ... 174
New Furlough Rules ... 199, 246

Page.
On Sub-soil Drainage ... 198

Pay and Allowances ... 15

Scientific Information ... 150
Subordinate Medical Department ... 88
Status of Sub-Assistant Surgeons ... 106

The Viceroy's Private Surgeon ... 18

Want of Surgical Mechanicians ... 215

OFFICIAL SELECTIONS.

Page.
Extract of Inspection Report on District of Hooghly. Dr. Saunders, D.I.G.H ... 220
Extracts from the Madras Medical Records ... 196, 218, 243
Extracts from Records, Bengal Medical Department 101, 124, 150, 197, 222

Extract of Report on Sanitary State of Umritsur. Surgeon A. Taylor ... 221

Page.
Proceedings, Bengal Branch, British Medical Association ... 63, 126

Report on the Jails, Eastern Bengal. Dr. Buckle, C.B., D.I.G.H 173

NOTICE OF REMEDIES.

Cod Liver Oil ... 106

EXTRACTS.

Page.

A[illegible] ... 247
A[illegible] P[illegible] ... 224
A[illegible] ... 176
A[illegible] M[illegible] ... 200
A[illegible] ... 108
A[illegible] ... 18
A[illegible] Stamps ... 24
A[illegible] Pupils ... 47
A[illegible] ... 176
A[illegible] ... 271
A[illegible] W[illegible] ... 223
A[illegible] Nerves, Structure of ... 24
A[illegible] ... 200

B[illegible] P[illegible] of ... 200
B[illegible] ... 200
B[illegible] Potassium in D[illegible] ... 218
B[illegible] Potassium in large Doses ... 67
B[illegible] ... 224

C[illegible] Fractures ... 176
C[illegible] ... 18
C[illegible] Mountains ... 68
C[illegible] ... 18
C[illegible] Rheumatism ... 224
C[illegible] ... 223
C[illegible] Cough, Croton Coke ... 272
C[illegible] ... 152
C[illegible] Operation ... 47
C[illegible] ... 24
C[illegible] ... 67
C[illegible] Fever ... 224
C[illegible] ... 68
C[illegible] in the Hand ... 176

D[illegible] Covering Skin with Varnish ... 24
D[illegible] ... 108
D[illegible] a Prophylactic ... 18
D[illegible] W[illegible] ... 151
D[illegible] W[illegible] ... 128

E[illegible] Internal Obstruction ... 18
E[illegible] ... 218
E[illegible] ... 175
E[illegible] Strychnia ... 24

F[illegible] Cod ... 127
F[illegible] Aphonia ... 1[illegible]
F[illegible] ... 272

G[illegible] Post-Partum Hæmorrhage ... 175
G[illegible] P[illegible] ... 47
G[illegible] Capillary Vascular System of ... 67
G[illegible] ... 108
G[illegible] ... 48
G[illegible] for Microscopists ... 108

H[illegible] D[illegible] of ... 175
H[illegible] ... 200
H[illegible] ... 223
H[illegible] Mercury ... 271
H[illegible] ... 108

I[illegible] Syphilis ... 175
I[illegible] ... 200
I[illegible] ... [illegible]
I[illegible] ... 16

L[illegible] of ... 175
L[illegible] ... 108
L[illegible] ... 68

M[illegible] ... 68
M[illegible] ... 200
M[illegible] Complaints ... 18
M[illegible] P[illegible] ... 271
Mortality [illegible] Ages ... 176

Nervous C[illegible] ... 218
N[illegible] Air ... 108
N[illegible] ... 18
Nipples, Cracked [illegible] ... 200, 218
Nitrous Oxide as an Anæsthetic ... 68

O'Brien, P[illegible] ... 24
Opium P[illegible] and Belladonna ... 224
Ozæna, Permanganate of Potassium ... 218

Painless Cutting in Surgery ... 223
P[illegible] ... 108
P[illegible] ... 224
P[illegible] Structure of ... 24
P[illegible] Calomel ... 151
P[illegible] ... 200
P[illegible] ... 152
Pr[illegible] ... 23
P[illegible] First Work ... 68
P[illegible] Structure of ... 18
Purgative, Tasteless ... 200

Relation of [illegible] Medulla to the Blood ... 272
R[illegible] Smallpox [illegible] Tissues ... 68
R[illegible] Blood Corpuscles ... 108
Rowing on the Circulation by Sphygmograph ... 68

Salts of Iron on the Blood ... 23
S[illegible] Pumpkin ... 108
S[illegible] of Sodium ... 176
S[illegible] Blood ... 108
S[illegible] in ... 18
S[illegible] ... 272
Sphygmograph and Heart Movements ... 200
S[illegible] Epilepsy ... 218
S[illegible] ... 1[illegible]
S[illegible] Treatment of Abscess ... 224
Styptic C[illegible] ... 152
S[illegible] and Ammonia in Internal Fever ... 175
Sun, Constitution of ... 18

Tape Worm Monstrosity ... 176
T[illegible] Movements of Joints ... 200
T[illegible] ... 151
T[illegible] Chicken ... 200
T[illegible] of ... 68
T[illegible] of ... 68
T[illegible] Frogs ... 37
T[illegible] ... 272
T[illegible] Pleuritic Effusion ... 108
T[illegible] Blood ... 272
T[illegible] ... 18, 108
T[illegible] ... 224
T[illegible] Body ... 272
T[illegible] by Opthalmoscope ... 24
Typhoid Fever [illegible] ... 176

U[illegible] of Carbolic Acid ... 272

V[illegible] the H[illegible] ... 152
V[illegible] and [illegible] ... 24
V[illegible] ... 176
V[illegible] Therapeutical Value of ... 67
V[illegible] ... 152

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ORIGINAL COMMUNICATIONS.

◆

EXPERIMENTS ON THE ACTION OF SNAKE-POISON AND ITS ANTIDOTE,

CONDUCTED AT THE GWALIOR RESIDENCY,

IN THE PRESENCE OF

COLONEL C. L. SHOWERS, *Officiating Political Agent:*

AND

DR. J. MACBETH, *Superintending Staff Surgeon of Morar.*

To JOSEPH FAYRER, ESQ., M.D., M.R.C.P., Lon., &c., &c.

DEAR MR. FAYRER,—I have been much interested in reading, from time to time, the published accounts of your own and Dr. Shortt's experiments on the action of snake-poison.

There is a man here, a native, who possesses what he believes to be a specific antidote. I was led to institute experiments for its being tested by accidentally witnessing its efficacy in the case of a woman who had been bitten by a venomous snake.

The following record of facts and experiments which, by the kind and skilful co-operation of Dr. Macbeth, Staff Superintending Surgeon of Morar, I am able to lay before you, will place you, and any other professional gentlemen whom you may think proper to associate with yourself in the enquiry, in a position to judge whether a specific antidote to snake-poison has been found. It is naturally an object of universal importance. The native has communicated his secret to me, and desires to proclaim it. But, before doing so, all I wish is that the antidote, after being subjected to every test that can be devised, and to which I am prepared to submit it, shall be admitted by competent professional authority to be really a specific antidote for snake-poison, in order that I may present it as a boon to the world.

The case of the woman above referred to, as having brought the man and his antidote under my notice, occurred on the 1st August last, and may be described as follows:—

A report being made to me that a woman, living in a village adjoining the Residency, had been bitten by a snake and was dying, I sent for the Residency Surgeon, and walked over myself at once, attended by a servant, with brandy, in the hope of being able to afford assistance. On arriving at the scene of the accident, I found the woman seated on the ground outside the door of her hut, under a sort of improvided porch formed of branches and leaves, which the villagers had erected at the moment to afford the woman air without exposure to the sun. She was suffering from a succession of swooning fits, having already had eight previous to my arrival, in the interval of about two hours since she was bitten. The marks of the bite were distinctly visible on her ankle.

While waiting for the surgeon, one of the swooning fits recurred. The method resorted to by two men who were treating her was what is known among natives by the term *jharna phookna*, or to exorcise. I had never witnessed it before. It was a strange and painful spectacle. As soon as indications of the approaching swoon appeared, and the woman fell forward from her sitting posture insensible, one of the two men seized her head across the forehead and temples with one hand, the other hand supporting her head behind, and then commenced shouting some *muntras*, or charmed verses, into her ear, at the very top of his voice; the other man, seated on the opposite side, taking up the last note of each cadence and prolonging it with an indescribable howl, with his mouth close to her ear. After this had been continued for some minutes without any sign of returning consciousness, the man who was supporting the woman by the head commenced shaking her violently, and slapping her and rating her vociferously, in apparent anger at her obstinacy. After some time this had the desired effect, as slowly, with convulsive gasps and other symptoms of distress, she came to herself.

In the interval a man had arrived on the scene, who at once assumed—and was tacitly admitted by the bystanders to do so—the treatment of the case. He quietly put aside the charmers, reassured the woman and her relatives with an air of perfect confidence as to the safety of her life, and pounding something on a stone, he administered it to her. We then left, directing that a report of the progress of the woman's case should be made from time to time. In about two hours another swooning fit was reported—the previous ones having recurred at intervals of about a quarter of an hour. Subsequent reports announced her steady progress and complete recovery. That night she was kept forcibly awake by the instructions of the man who had administered the antidote as a precaution, on account of the long time she had been under the influence of the snake-poison before he was called in.

This case led me to make enquiries about the person who had treated it so successfully, and I sent for him. On questioning him as to the nature of his antidote, he was very reserved at first, but on my offering to take him into my own service, he grew more communicative. He subsequently entered my service and revealed to me the secret of his antidote, giving me some of the material. So confident was he in its efficacy, that he offered to allow himself to be bitten by any snake; but this was a test that it hardly required the fatal example of Mr. Drummond's case at Melbourne to place out of the question.

The best test of [illegible] by experiments [illegible], I sought [illegible] Dr. [illegible], was I was aware, the greatest test in the [illegible], and hence the series of experiments which are recorded in the accompanying enclosure.

As the last experiment [illegible] some weeks [illegible] 7th September, I should not have delayed so long forwarding the account, but owing to the pressure of public business, occasioned by the exigencies of these years of [illegible], I have never [illegible] a leisure hour to transmit it to you. The delay, however, has proved of material assistance to the strengthening of my opinion in favor of the antidote, in the saving of another human life. The case is [illegible].

On the 2nd instant, a resident of Old Gwalior, a carpenter, came to the Residency, in much apparent distress, to say that his wife had been bitten by a snake, and had become insensible from its effects. Hearing, he added, that there was a person in my employ who could administer relief, he had come to seek it. I sent back my servant with him. He administered the antidote to the woman, which, as he reported on his return in the evening, had brought her round.

The following morning I sent to enquire how the woman was, and desired that if quite recovered, her husband, the carpenter, and herself should appear at my office. They duly came the same day. The marks of the bite were distinctly visible on the woman's finger, but she had quite recovered from the effects of the poison. I had the man's deposition taken by my office moonshee, and append a translation of it, which will be found at the end of the record of experiments.

The importance of the subject may be gathered from the fact recorded in the last Oude Administration Report, that 1,127 persons died from snake-bites during the past year, and, again, in the Central Provinces Administration Report, that 1,874 had died from the same cause during the three preceding years. These figures, referring to isolated districts of India, may afford some approximate idea of the mortality arising from this cause throughout India and all other serpent-infested countries of the East.

The boon to humanity then, if the efficacy of the antidote be established, could hardly be over-estimated. Yours very truly,

Gwalior, 25th *October*, 1868. C. L. Showers.

First day, 26th August, 1868.

1. A full grown cock was given to the *[illegible]* * who administered his antidote. The feathers having been plucked from one wing, and part of the breast, the bird was freely bitten more than once in these parts by a lively cobra, over four feet long. The cock showed no symptoms of distress of any kind, and, after an hour, was set loose and ran about apparently unaffected. Did not at any time subsequently exhibit any symptoms of distress.

2. A [illegible] which had not [illegible] administered by the *[illegible]* was [illegible] to attempt to do so. The [illegible] cobra, over four feet long, [illegible]. It was then [illegible] fell on one [illegible] tumbled over, showed great restlessness [illegible] efforts to [illegible], heart's action [illegible] and irregular, the [illegible] by some foreign influence, [illegible], in 12 minutes from the time of being bitten, the [illegible] gave a convulsive [illegible] dead.

3. A female [illegible], seemingly in perfect health, was handed [illegible] who administered his antidote [illegible], which the slut swallowed in our presence at 8-52 a.m. She was then bitten on the inner side of the left thigh by a cobra over four feet long, which closed its jaws upon the place, holding on for some seconds. Several other attempts were made to make the cobra bite again, but it is [illegible] whether a second bite was given or not. The slut was then tied up, and [illegible] was offered to her about an hour afterwards, at the instance of the *[illegible]*, which she refused. He subsequently gave this as a reason why he thought the antidote had not been quite powerful enough, but said [illegible] that the remaining effects of the poison would pass off in a few hours. The slut showed no symptoms of distress [illegible] for two hours, after which she lay down and appeared drowsy. The *[illegible]* then administered a second dose of his antidote, which, in the course of an hour, entirely dissipated all drowsiness and weakness. At 1 p.m., the slut, having been for about an hour and a half lively and apparently well, was let loose, and ran away to the neighbouring village to which it belonged.*

4. Another dog, full-grown, in good condition and apparent health, was bitten at 8-48-50 a.m. by a cobra over four feet long, the snake closing its jaws upon the place. Strong symptoms of uneasiness after 3 minutes, with very hurried and spasmodic breathing; pupil of eye violently acted on. In about 15 minutes action of the heart much enfeebled, and very hurried. Pupil of eye still more evidently under a foreign influence; very shortly after this the breathing became more hurried, and the animal very restless. Frothy saliva also began to flow freely; *[illegible]* asserted the dog would go mad. Shortly afterwards, on putting anything within reach of his mouth, he snapped spasmodically and laid hold of a rope, but more convulsively than with any object. First effects seemed to be excitement and distress, followed by considerable lethargy, after which its muscular efforts appeared to be nervously spasmodic, excited by some foreign influence, and evidently not voluntary. The hinder extremities first appeared to lose power; action of the heart hurried, weak, and intermittent; about this period the pupil of the eye became fixed, lower jaw powerless, tongue lolling out, and of a bluish black color; and breathing distressed, hurried, and spasmodic, with only partial expansion of the chest. Died easily, after one or two slight spasmodic gasps, at 9-2[illegible], that is, in [illegible] minutes and 10 seconds after being bitten. Just before death it showed a dislike to the presence of water.

Second day, 7th September, 1868.

1. Pariah dog, without antidote, bitten at 7-[illegible] a.m. Bitten twice on right leg and inner part of left thigh, on both which occasions he gave tongue as if in pain. In about 10 minutes afterwards the same appearance in pupils of eyes as in the previous experiments. In about a quarter of an hour strong convulsions, with involuntary evacuations of the bowels, and subsequently, at intervals, made violent attempts to bite everything within reach, including his own legs and tail. Thus the [illegible] symptom of hydrophobia, or his idea of [illegible]. [illegible] his struggles ceased, the power of motion seemed first to leave the posterior limbs. A good deal of viscid saliva flowed from the mouth, and as before, the tongue was

---

* [illegible]

* [illegible] toward evening, and [illegible] from the [illegible] her [illegible] unknown [illegible] whether an antidote was administered [illegible] symptoms [illegible] and [illegible] after being bitten.

observed lolling out, livid in appearance. The circulation in this case became more gradually affected than in the previous experiments; the heart's action continued for 6 minutes, gradually becoming feeble, after all pulsation in the arteries had ceased. Died at 8-15 a.m.

2. Second dog, without antidote, bitten at 7-54-58; died at 8-23-30—that is, in 28 minutes 28 seconds,—exhibiting more or less the symptoms recorded in the foregoing case.

3. Third dog, with antidote previously administered, bitten at 8-13 a.m. Remained quite unaffected, and, being kept tied up for three days, did not exhibit at any time anything wrong.

4. Fourth dog, with antidote, bitten at 8-39 a.m. Remained quite unaffected, as in the foregoing case.

5. Previous to this experiment, the *kelaree* asked whether the fresh snake should bite a prepared or an unprepared animal. We selected the former in this instance, having already seen two dogs die, Nos. 1 and 2.

A prepared full-grown pariah was then bitten, the first time at 8-57 a.m., and a second time at 8-57-30. Both times the jaws were firmly closed on the limb. The *kelaree* says that it was bitten a third time before the snake was disengaged from the dog, but we saw only the two bites above recorded. The dog remained perfectly unaffected after two hours, when the *kelaree* was told to take all three dogs away to his house, report their state in the evening, and, if alive, to bring them up to the Residency for inspection the next morning.

The *kelaree* reported in the evening that the dog last bitten—twice as we saw, but three times as he affirms—had vomitted at 3 p.m., and exhibited other symptoms of distress; and that he had in consequence administered to this dog more of his antidote, and that it was doing well.

The following morning, that is, in 24 hours after being bitten, exhibited great weakness and distress, and decided symptoms of being under the influence of poison. We thought it would not recover, but the *kelaree* appeared confident it would. Antidote was again administered; grew better and stronger towards the evening, and the following morning—that is, in 48 hours after being bitten—had quite recovered. It was kept tied up a third day, when all three dogs, in perfect state of health, were let loose.

Third day, 12th September, 1868.

Experiment with one and the same cobra biting two full-grown pariah dogs in succession, at an interval of a quarter of an hour; the first being prepared with the antidote, the second without. This experiment was tried to afford an *à fortiori* test of the efficacy of the antidote.

1. Prepared dog bitten at 7-42 a.m., the cobra closing his jaws twice upon the part. Remained quite unaffected, apparently, for four hours, after which begun to exhibit symptoms of distress, with increasing weakness. The following morning too weak to stand; tongue beginning to exhibit signs of paralysis, and becoming dark colored. Antidote was again administered; towards evening strength returned; dog eat food. Second morning—that is, in 48 hours—quite recovered; was kept tied up for a week; never at any time exhibited any return of symptoms.

2. The other dog, in natural state, that is unprepared, was bitten by the same cobra at 7-57 a.m. in two places,—on the back, and in the line of the spine. At 8½—that is, in 33 minutes—it began to show symptoms of being under the influence of poison. All the symptoms noted in previous experiments developed themselves, such as affections of the pupils, convulsive twitchings of the jaws and limbs, paralysis of the tongue, with gradually increasing swelling and lividity, sluggish circulation, and feeble heart's action. In this instance there was but little struggling or violent convulsions in comparison with the other cases noted. Died at 9-5; that is, in 1 hour and 8 minutes.

Deposition of Daree, Carpenter, residing in Ghaspoora, of Gwalior. Taken 3rd October, 1868.

This woman, by name Jusoda, is my wife. Yesterday she was bitten by a snake on the fourth finger of the right hand, about 8 a.m. Blood flowed from two wounds. We adopted the usual remedy of *jharna*, or exorcism, and, by making a great noise, tried to prevent her from going to sleep, but without success. She soon became speechless and insensible. Having heard that the Political Agent had a person in his employ who could cure snake-bites, I came to the Residency to seek aid. The Political Agent sent his servant back with me. He gave my wife some medicine in *dhye* (curded milk), which revived her, and she recovered, and the anger of the deity was appeased.

(True translation.)

(Sd.) PIRTHILE NATH, PUNDIT,
Translator of the Gwalior Agency.

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON.

By J. Fayrer, M.D.,
Professor of Surgery, Medical College of Bengal.

(Continued from Vol. III., page 267).

PRESENT: Dr. Fayrer and Mr. Seeva.

EXPERIMENT No. 1.

12th December, 1868.—A small Cobra, about sixteen inches long, was bitten in two or three places, about one-third of its length from the tail, by a very large, powerful, and vigorous Cobra of the spectacled variety. The fangs penetrated deeply, and there could be no doubt that the venom was freely injected. When bitten the young snake threw itself into a series of momentary curves, but on being released it appeared unaffected.

It was closely watched for some time, but showed no sign of being affected. It was as active and vicious as before, assuming an aggressive attitude, with its little hood erect, and striking vigorously at anything that approached it.

It was bitten at 11-45 a.m., and I saw it again at 4 p.m.; it was then lively, but looked rather stiff, and disinclined to be so active as it had been, probably owing to the pain and commencing inflammation in the bites.

On the 13th, at 5 p.m., there was no apparent change in the snake; it was as lively as ever.

14th, 2 p.m.—Mr. Seeva reports that, beyond a slight apparent soreness in the muscles of the bitten part, there is no change. The snake remains quite well.

EXPERIMENT No. 2.

A small Cobra, one probably of the same brood as the one bitten in the previous experiment, and of the same size, very active, vicious, and vigorous, was bitten at 12-15, 12th December, 1868, by a Daboia that had not bitten for many days, and whose poison glands and ducts were apparently full of poison.

The fangs of the Daboia were made to penetrate deeply in a part of the snake posterior to the viscera—that is, not far from the tail; and a quantity of the poison was shed on the snake, and probably into the wound.

The young Cobra, beyond the local effects of the bite, appeared unaffected; on being released, it deported itself just like the one bitten by the Cobra in experiment No. 1, and was active, ill tempered, and aggressive as ever.

At [illegible] p.m. it w[illegible].

On the 15th at [illegible] great change.

On the 16th M[illegible].

"[illegible] they were bitten [illegible] the extremity of the tail, and the [illegible] the body are as lively as [illegible]."

These experiments [illegible] that the p[illegible] of its own or of other species.

The Cobras bitten were [illegible] the Daboia and the Cobras [illegible] were [illegible] vigorous and fresh snakes. The [illegible] of the venom was the [illegible] that the fangs penetrated deeply. The bites were [illegible] that no chance of [illegible] the [illegible] being [illegible].

The bitten Cobras were closely watched for 48 hours, at the end of which period, no symptom [illegible] effects of the bite was manifested. It [illegible] concluded, from these and other experiments, that the Cobra is not affected by the poison either of the Daboia or of its own species.

ON CHOLERA.

By C. Macnamara,

Surgeon to the Calcutta Ophthalmic Hospital.

(Continued from Vol. III, page 270.)

Cholera appeared in an epidemic form in Madras during the month of June, 1845. Dr Parkes, on this occasion, observed that "a hot land wind during the day, followed by a heavy shower in the evening, generally produced one or two cases of cholera in the next twenty-four hours."* It spread gradually from Madras towards Bombay and the Coast of Malabar.† Among the native troops in the Madras Presidency, amounting to some 74,000 men, there were 1,718 cases and 708 deaths from cholera in 1845, and 2,0[illegible] cases and 1,258 deaths in 1846.‡ From the returns of the Nizam's army, it is evident epidemic cholera was [illegible] in his territories in 1845-46.§ In the Satara district, the disease was very prevalent and very fatal, in May and June, 1845; it was [illegible] 1,000 fatal cases occurred in the town alone.|| In the Island of Ceylon also cholera was most virulent, [illegible] at [illegible] of [illegible] 11 cases, no less than 3,055 persons [illegible] the month of November, 1845.

Early in April, 1846, we [illegible] cholera was [illegible] produced over nearly the whole of Western India, Madras, and Bombay. On the 21st of April, Dr. D. Macl[illegible] reports its appearance in the 58th Regiment, near Indore; 20 cases and 12 deaths occurring within a few hours of the outbreak of the disease. The troops of the [illegible] Irregular Cavalry were similarly affected near Neemuch [illegible] the 22nd Bombay Infantry on their march to [illegible] Dr. C. R. Francis reports the circumstance of the outbreak [illegible] of N[illegible], and similar information was received by the Medical Board from Nowgong and Mhow. Dr. Spilsbury [illegible] reports that cholera had broken out at Hoshungabad, [illegible] for several days at Saugor and [illegible] had almost disappeared by the end of M[illegible]. He adds: "On the whole, however, the troops in this [illegible] may consider themselves fortunate to [illegible] the [illegible] of the disease [illegible]."*

While [illegible] was [illegible] over the western [illegible] have taken place [illegible] first [illegible] N[illegible], when [illegible] M[illegible] had [illegible] R[illegible] may [illegible] Aden.†

From [illegible] 1820 [illegible] Western India, Madras, and Bombay, [illegible] the same [illegible] as we have seen that it [illegible] in 1845-46, and [illegible] Mr Fraser's work [illegible] in 1821 [illegible] the coast of Zanzibar. It is remarkable that we have almost an exact [illegible] of these details in the history of the cholera of 1846. Rigler‡ expressly states that in the month of May, 1846, cholera showed itself at Aden, Mocha, and Jeddah, and invaded the entire [illegible] of the coast and of the Arabian [illegible], [illegible] penetrated into the interior of the country. However, it [illegible] R[illegible] reached [illegible] Mecca, which is not far from Jeddah." The [illegible] at Aden in the early part of 1846 is confirmed by the Bombay medical returns; the [illegible] from cholera among the European portion of the garrison, from 1840 to 1848, occurring in 1846.§

At the time of the outbreak of the disease at Jeddah, the annual fair was being held there, at which merchants assembled from India, the Islands of the Archipelago, and Coast of Africa; as many as 200 vessels have been known to arrive in the port on these occasions. Fortunately for the pilgrims the celebration of the Courban-Bairam did not take place until November, otherwise there can be little doubt that cholera would have spread to Mecca, as, in fact, it did later in the year, when the devotees had crowded into the Holy Places for the celebration of this festival.

In consequence of our operations in Sind, Kurrachee had risen to be a place of some importance since the former visitation of India by cholera. In 1846 there were three European regiments stationed there, and on the 14th of June cholera broke out with terrible violence among these men. Dr. F. S. Arnott, who was at the time stationed at Kurrachee in medical charge of the 1st Bombay Fusiliers, [illegible], as I have before remarked, noticed the fact of cholera having visited the station during the previous year, and he adds: "[illegible] in the camp, town, and vicinity, continued to occur throughout the cold and [illegible] season. It [illegible] not improbable that the terrible disease of June, 1846, may have arrived in Kurrachee in the previous year. That it did not previously show itself in an aggravated form may, perhaps, be explained by the want of certain circumstances necessary to its full development. What was wanting may have been supplied [illegible] the beginning of June, when the weather begins to partake of the peculiarities of the south-west monsoon, being loaded with moisture. Clouds accompany the wind sweeping over the southern coast of Sind."* Among the men of H. M.'s 86th

---

* Dr. E. A. Parkes [illegible].

† [illegible].

‡ [illegible].

§ [illegible] and Army, by Lieutenant-Colonel [illegible].

|| Dr. J. Murray [illegible] Satara, Bombay Medical Transactions, Vol. I., [illegible].

* MS. [illegible].

† Report [illegible] Cholera of 1845-46.

‡ [illegible] H[illegible], [illegible].

§ Army [illegible] 1848, [illegible].

|| A Medical Report [illegible] H.M.'s [illegible] Regiment at Kurrachee, By Surgeon A. H[illegible] the House of Commons, February, 1848.

* Report on the Health of the 1st [illegible] by Dr. F. S. Arnott, Bombay Medical Journal, No. II., New Series, Bombay, 18[illegible], p. 17[illegible].

Regiment, there were [illegible] cases and 238 deaths from cholera between the 11th and 25th of June; in the three European Regiments at Kurrachee, no less than 800 cases occurred within the space of a few days.

I noticed the appearance of cholera at Mushed towards the close of 1845, and it burst forth there again with renewed violence in June of the following year, quickly extending to Teheran and Tabreeze, and overspreading the province of Ghilan; before the close of the year, it reached as far north as the town of Derbent, on the Caspian Sea.

In September, 1846, cholera had appeared at Bagdad; it advanced up the Tigris and Euphrates by Diarbekir, Orfa, Biredjik to Damascus and Aleppo, but did not, as has been affirmed by some, cross the desert directly from Bagdad to Damascus.* Nor does it appear to have travelled with the Persian pilgrims from Kerbela across the desert to Mecca; doubtless, as Verrollot asserts, cholera did break out at Mecca in November; but, as we have seen, it existed at Jeddah during the month of May, when in all probability the seeds of the disease were sown, to be brought into active operation again by the assemblage of the pilgrims during the later months of the year, some 15,000 of them then falling victims to this pestilence in and about the city of Mecca.

"The further progress of the scourge seems to have been stopped by the approach of winter (1846-47); but early in the following spring it broke out with fresh violence,"† and was reproduced over the entire area invaded by it during the previous year.

In April, 1847, the disease appeared again at Derbent and spread to Temir-Khan-Showry, from whence it was said to have been transmitted to Kizliar, in June, by a detachment of invalid soldiers. From Kizliar it spread along the steppes as far as the Volga, reaching Astrachan on the 30th of July. It had broken out at Tiflis on the first of the month, and spread from thence to the coast of the Black Sea, *via* Gori to Poti and Trebizond. Following the great military road from Tiflis, the cholera spread over the Caucasus mountains, reaching a height of some 6,000 feet, and appeared at Staveopol. During August it broke out among the shipping at Tagonrog, to the north of the Sea of Azov, at the same time appearing at Saratov (August 20th) and in the Government of Orenburg. In September it reached Simbirsk and Nijni-Novgrod to the north, and to the west Moscow, where the disease was not severely felt during the year, confining its attacks chiefly to one particular district, near the river. Here, however, it assumed a severe character, for nearly one half of the cases that first occurred terminated fatally.‡

Cholera broke out at Constantinople on the 24th of October, 1847,§ but from this time the epidemic began to decline over the area it had invaded. During the winter of 1847-48, some few cases, however, being reported as far west as Alexandria in Kherson, and Olgopol in Podolia, not above 30 miles from the Austrian frontier, and others near Riga. Sporadic cases were noticed in France and Britain.

In the spring of 1848 we find cholera breaking out with renewed vigour, and by August it had advanced from the east as far as a line drawn through Arabia, Poland, and Sweden.

Having broken out at Mecca and Medina in April 1848, it appeared with the returning pilgrims in Egypt in the middle of July, destroying some [illegible]000 of them at the Tantah fair, and committing terrible ravages over the whole country. In Moldavia and Wallachia the mortality from cholera was very great. The whole of Russia, Poland, Finland, and Sweden were under its influence by August, although the Government of the latter country made most strenuous and costly efforts to prevent its advent by means of quarantine. As a general rule, however, there were but faint exertions made on the part of the Governments of Europe to restrict the advance of cholera by the enforcement of quarantine laws, during the epidemic of 1848-49. It appears from a statistical paper submitted to the Russian Minister of the Interior by Dr. Rosenberger, that from 1847 to 1849 the deaths from cholera in Russia exceeded the number of one million, and the number of towns attacked was 471, the communications between infected and healthy places being open. On the other hand, in the first invasion from 1829-35, when the progress of cholera was interrupted by sanitary cordons, the number of deaths did not exceed 100,000, and there were only [illegible] towns attacked. From this fact the Cholera (Constantinople) Conference argue, the epidemic on both occasions being equally violent, that the restrictive, measures employed in the first epidemic were, without doubt, useful. The value of this deduction evidently rests on the statement that the two epidemics were equally violent, a fact which Dr. Gavin Milroy evidently doubts; and he gives us reliable data for concluding "that the diffusive energy of the epidemic of 1848-49 was considerably greater than that of its predecessor, invading a larger area of the world's surface (and with more deadly consequences) than in 1831-32.* If so, evidently the force of Dr Rosenberger's arguments regarding the advantage of sanitary cordons is much weakened, if not destroyed.

The disease had broken out at Berlin as early as July, and in September at Hamburgh, and in Holland. The southern portion of the Austrian dominions appear to have suffered to some slight extent, and there was a partial outbreak of cholera near the port of Vigo in Spain. Italy was not affected at this time. Greece and Malta remained free from the disease, having been under strict quarantine from July. A few cases of cholera occurred in France, towards the end of the year.

On account of the insulated position of England and America, the circumstances of the advent of the disease into these countries could be more satisfactorily investigated than in most continental states. Dr. Parkes was selected to enquire into the history of the first cases that occurred in London. From his account we learn, that the first instance of the disease in the metropolis was that of a seaman named Harnold, who arrived on the 18th or 19th of September, in a steamer from Hamburgh; he died of cholera at Horsleydown (London), on the 22nd of the month; the next case was in the instance of a man who slept in the same room with Harnold. There can be no doubt as to the fact of cholera having existed on board the steamer in which Harnold sailed, for the second engineer died from cholera on the passage, and we know the disease had been prevalent at Hamburgh for some time before the vessel started. During the first week of October, 26 cases were reported in London, all but four being fatal; of these 18 occurred on the River Thames or on its banks, the remainder being scattered over other parts of the city.

In Edinburgh cholera first appeared on the 4th of October, 1848. "On the Wednesday before this, three pilots from Newhaven went to the Isle of May to look out for vessels; one of them went on board a ship from Cronstadt, bound to Leith. The other two remained in their boat on the leeside of the vessel, and were towed to Leith, a distance of four or five and twenty miles; both of the men were seized with diarrhoea on their passage. On arriving at Leith, they went on board the ship; one of them died on the following Sunday of cholera. During the next eight days several cases occurred among relations and immediate neighbours of the pilot who died, and these were

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* Cholera Conference of Constantinople, Calcutta, 1868, p. [illegible].

† Report of the General Board of Health on Cholera, 1848-49, p. 5.

‡ Idem, p. 6.

§ Lancet, Vol. I., 1848, p. [illegible].

Cholera Conference of Constantinople, Calcutta, 1868, p. [illegible].

* Dr. Gavin Milroy on Cholera, Medico-Chirurgical Review, 18[illegible], p. 116.

[illegible] * [illegible] Hamburg [illegible] 2nd of December [illegible] H[illegible] was [illegible] the 2nd of December 1848 [illegible] New Orleans [illegible] 1848 [illegible] Moscow [illegible] States of America (30° W. [illegible]).

The [illegible] of its advent into America is a [illegible] only [illegible] circumstances, in order [illegible] of the disease in 1848.

[illegible] the existence of cholera in Havre [illegible] Towards the close of the year [illegible] emigrants arrived at Havre and [illegible] the New York, bound for America [illegible] Havre on the 29th of November, with [illegible] There was no cholera [illegible] all remained well [illegible] after leaving port, when [illegible] arrival at Staten Island [illegible] New York [illegible] seven of the steerage [illegible] twelve sick were landed [illegible] time in Staten Island; [illegible] America. One of the [illegible] to the hospital [illegible] with [illegible] two died afterwards. A [illegible] any communication [illegible] although [illegible] state and [illegible] New York [illegible] intercourse [illegible] the German [illegible]

[illegible] Staten Island [illegible] water. Thus [illegible]

[illegible] different [illegible] Havre [illegible] the ship is [illegible] were [illegible] 1848 [illegible]*

It [illegible] passengers [illegible] at Havre [illegible] 1,100 miles [illegible] The first case [illegible] November, 1848, when [illegible] 42° western longitude [illegible] November, the first case [illegible] 27 [illegible] north [illegible] 25° 47′ west [illegible] cases appeared [illegible] weather from an [illegible] the captain of the [illegible] which he describes as more [illegible] anything else. From this time until the [illegible] respective ports [illegible] Immediately [illegible] at Staten Island and New Orleans [illegible] never been on board the vessels, [illegible] the United States.† [illegible] Dr. Ferrer reports that after the disease had once [illegible] New Orleans, almost every vessel and steamer leaving the port had 20 to 30 cases on board, and thus persons having [illegible] were carried to all the landing towns [illegible] Cincinnati. For instance, the [illegible] four days from New Orleans, and [illegible] reached Memphis on the 20th of December [illegible] cholera, [illegible] had [illegible] arrived. [illegible] and neighbourhood. It is [illegible] 26th October to the 29th December, [illegible] the temperature [illegible] of the year.

[illegible] during the winter of 1848-49 [illegible] in the spring over the greater part of [illegible] America and Canada.

In [illegible] the disease did not extend to any considerable [illegible] however, at Vienna early in the year.‡ The same remark applies to Spain, a few cases occurring at G[illegible] free from cholera. After spreading [illegible] France, the disease reached Marseilles [illegible] afterwards Toulon, Nice, Genoa, Leghorn, [illegible] Naples and Brindisi, notwithstanding every [illegible]§ Towards the end of the year, [illegible] were more or less under the influence [illegible]

[illegible] March [illegible] and till the end of [illegible] 274 cases and 15,677 deaths from it, [illegible] subsided and disappeared altogether

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[illegible] Cholera [illegible]

[illegible] 1848-49 [illegible] Drs. Bates and [illegible]

* [illegible] Report [illegible] 1848.

† [illegible]

‡ [illegible]

§ [illegible] 1850, p. [illegible]

in October. The epidemic was very general throughout France, and the history of its spread into several departments has been carefully described; for instance, Hamel, a rural commune, was absolutely free from cholera until the 4th of April, 1849 when a soldier named Guilbert arrived from Paris, where cholera was raging. After remaining ill in his father's house from diarrhœa for four days, he was removed to the hospital at Amiens; on the same day the soldier's brother, Andre Guilbert, who had constantly visited the sick man, was seized with cholera and died. Three days afterwards Andre's wife took the disease and died. Guilbert's father was attacked on the 11th of April and died on the 15th; his brother and several other members of the family, together with a little girl who was in the habit of frequenting the house, were all seized with cholera within a few days.*

Cholera was diffused more or less completely over the whole of England during the summer of 1849; the greatest mortality that occurred in any one place was at Hall, where, out of a population of some 10,000 inhabitants, 287 died from this disease. Dr. W. Farr observes, "if a foreign army had landed on the coast of England, seized all the seaports, sent detachments over the surrounding districts, ravaged the population through the summer, after having destroyed more than a thousand lives a day, for several days in succession, and, in the year it held possession of the country, slain 53,293 men, women, and children, the task of registering the dead would be inexpressibly painful; and the pain is not greatly diminished by the circumstance that in the calamity to be described the minister of destruction was a pestilence that spread over the face of the island, and found in so many cities quick poisonous matters ready at hand to destroy the inhabitants."†

The disease in England, as in other places, was apparently very capricious in its habits, leaving the inhabitants of many localities unaffected, and in the serene enjoyment of health; but Dr. Farr on this occasion brought out, with remarkable clearness, the relation which existed between the elevation of the soil and the mortality from cholera; thus at 100 feet above the Trinity high-water mark, the observed average mortality was 17, at 70 feet it was 27, at 30 feet 65, and at high water level 177, conclusively showing that human beings living on a low, and consequently, as a general rule, a humid soil, were those most subjected to the influence of cholera.‡ This rule, it must be remembered, holds good only so far as, that where the mortality was high the elevation of the soil was low; it by no means follows that all low lying places were affected with cholera, and that the high levels escaped. Lyons, for instance, has been always free from cholera, although a part of the city is built on a low alluvial soil, situated on the confines of two rivers, with a poor and dense population; nevertheless, it was unaffected by cholera in the epidemics of 1832 and 1835; the disease appeared in a single building only in 1849; a few cases occurred there in the epidemic of 1853, and none in 1865.

With regard to the spread of the disease in England, 119 places, of which 69 were distinct towns or villages, 15 parishes or districts, and 34 public establishments, and the remaining 1 a private house standing isolated in the country, it was ascertained that, in no less than 73 instances, the disease appeared subsequently to the arrival of infected persons, or the introduction of other possible vehicles of infection.§ In some few towns, as at Shrewsbury and Oxford, and where the first cases occurred in public institutions, it was impossible to trace the importation of cholera to human intercourse. The disease did not appear simultaneously in all parts ultimately affected, but began in one spot, or in a small number of spots, and increased by attacking a larger number of localities. In large cities it is true it appeared in nearly all quarters or divisions within a few days, but still in each quarter it affected one spot first and others in succession.*

I have already described the outbreak of cholera in Staten's Island in December, 1848; the disease did not make its appearance in the city of New York until the following May, when it first attacked some of the poorest and most degraded human beings on the face of the earth. Dr. Buel, of New York, states, on his first visit to these people in Orange Street, he found five of them crowded into a cellar, some ten or 12 feet square, with nothing over them but a few rags, and nothing under them but the mud floor; they were all five in various stages of cholera. It appears that other cases had previously occurred in this cellar, for these poor creatures had been seized with cholera after celebrating a wake in commemoration of a departed friend, who had just died of the disease. From Orange Street cholera spread over New York, and from thence to the various large towns on the American sea-board of the Atlantic, and, in fact, over the greater part of the United States. In several instances the commencement of the epidemic was traceable to persons arriving from previously affected localities, but in New York and in other cities it was found impossible to trace the first instances of the disease to such a source.† Throughout Canada cholera prevailed extensively between the months of July and September, 1850. It does not appear to have extended from the east as in 1832, but rather from the United States. A few cases only occurred at Gross Isle, the quarantine station on the St. Lawrence, below Quebec; whereas in the first epidemic this station suffered very severely.‡

During the year 1850, cholera of a virulent type again broke out in Egypt, and along the whole of the African sea-board of the Mediterranean. It did not, however, in any instance, spread beyond three days' journey into the desert.§ Slight outbursts of the disease at the same time occurred over the greater part of Europe and America; in fact, cholera was reproduced over the area invaded by it during the previous years. Beyond this, localities hitherto free from its influence were now attacked, as for instance Malta and Gozo. Cephalonia, one of the Ionian group, was affected in July, "the population being reduced to famine by means of the rigorous quarantine, which excluded them from all intercourse with Greece, and with their brethren;" nevertheless, Greece was preserved from cholera throughout this epidemic, as she had been in the former visitations of the disease to Europe in 1832 and 1837.

During the year 1850 cholera spread over Mexico and California. In October, Cuba and Jamaica were under its influence; this was the first time the latter island had been visited by cholera; and it committed the most distressing havoc among the people. Mr. J. Watson, Surgeon to the Naval Hospital, Port Royal, and whose account of the disease in 1833 in Portugal I have referred to, reports that "for months past American steamers had been in the custom of touching at Port Royal and Kingston on their voyage between New York and Chagres. About a week before cholera appeared in Port Royal, two young men arrived from Chagres, their father having died, shortly before they left America, of cholera." This was the only instance of a suspicious person arriving in the town which Mr. Watson could discover, and as neither of these men, or the inmates of their house, were affected with the disease, he concludes, it was not communicated to the inhabitants of Jamaica from a previously affected place.

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[*] Constantinople Cholera Conference, Calcutta, 1868, p. 88.

[†] Report on the Mortality of Cholera in England, 1848-49, by Dr. W. Farr.

[‡] Ibid., p. 64.

[§] Drs. Baley and Gull's Report on Cholera, p. 157.

[*] Drs. Baley and Gull's Report on Cholera, p. 71.

[†] Report of the General Board of Health, 1848-49, London, 1850.

[‡] Medico-Chirurgical Review, p. [illegible]

[§] Report of the Constantinople Conference, p. 101, Calcutta, 1868.

Lancet, 1866, p. 19.

Dr. [illegible] M[illegible] of the [illegible] 1852, [illegible] two months [illegible] Dr. T[illegible] nowhere else [illegible] of 1848-49 [illegible] Europe [illegible]. An[illegible] by the [illegible] 1855, [illegible] during the [illegible] such as Cuba and Jamaica [illegible] the disease was [illegible] 1851.

A [illegible] outbreak of cholera [illegible], however, during [illegible] among the inhabitants of the Grand Canary Island; it was one of those isolated cases upon which we [illegible] much value in a history of this kind, and we are [illegible] to Mr. H. Haughton, the British Vice-Consul in the Canary Islands, for the following particulars regarding the epidemic.* He observes during the prevalence of the disease in Europe, even when it reached Cadiz, the Canary Islands, as well as Madeira, were preserved intact. The cholera had [illegible] been making great ravages in the West Indies. "About the 8th or 9th of May a vessel arrived from Havannah, [illegible], and was consequently admitted to pratique without any preliminary fumigation. It is said that the first house in San José, a suburb principally inhabited by poor people, in which the disease made its appearance, was that of a washerwoman, who had taken the mattresses and foul clothes of one of the poorer passengers to wash, and that her children slept upon them during the night. Death soon followed; one neighbour after another was slowly, but gradually, attacked; the [illegible] found its appropriate soil, and slowly, but too surely, germinated." Supposing the articles from this vessel to have been landed about the 14th of May, four or five days after her arrival in the port, it was just 15 days subsequently the first cases of cholera occurred, [illegible] having commenced on the 30th of May. It spread rapidly from the quarter of San José. Mr. Haughton remarks "no pen can give an idea of [illegible]. [illegible] place [illegible] by Daniel De Foe [illegible] among the inhabitants of [illegible] of them within the space of a few [illegible] commencing on the [illegible] of May, and being [illegible] on the 10th of June. It began to decline on the [illegible] month."

The island was, of course, cut off from all communication [illegible] by [illegible] the Spanish authorities, and Mr. Haughton particularly notices the fact that neither Teneriffe nor any other of the neighbouring islands was affected [illegible], the cholera being [illegible] and completely [illegible] the Grand Canary Island, in consequence of the [illegible] enforced to prevent people escaping from the [illegible].

[illegible] the reports [illegible] that period in the [illegible] without [illegible] the more important [illegible] at the [illegible] phenomena of [illegible] an important [illegible] by comparison [illegible] I must, there- [illegible] experience [illegible] progress without [illegible] within the last 20 [illegible] upon the [illegible] of the causes of [illegible] cholera.

It was [illegible] of 1848-49, Dr. J. Snow [illegible] to the [illegible] of cholera [illegible] and not [illegible] on the [illegible] of the [illegible] being reproduced in the [illegible] passage [illegible] much increased in quantity [illegible] that the discharges [illegible], but chiefly by mixing with the drinking water [illegible] and wells, [illegible] the alimentary canals of other persons, and produced the like disease in them.*

Dr. W. Budd, of Bristol, in a letter to the *Times* dated September [illegible] 1849, expresses somewhat similar opinions [illegible]. He supposes the disease to be [illegible] of a [illegible] species of fungus, which being swallowed [illegible] multiplied in the intestinal canal, and [illegible] excite the flux of cholera, which, with its consequences, constitute the disease. These organisms Dr. Budd believed to be disseminated through society by means of their contact with food, but principally by the drinking water of infected places, and he consequently recommends, as the most important means for preventing the progress of cholera, [illegible] the poison which continues to be generated in the [illegible] persons, by mixing the discharges with some [illegible] known to be fatal to [illegible] the fungus tribe, such as chloride of lime. And [illegible] water [illegible] the principal means of the dissemination of the [illegible], [illegible] care cannot be exercised in [illegible] pure drinking water.

The [illegible] of cholera [illegible] with the presence of a fungus growth affecting the epithelium of the intestinal canal, had originated with Boehm in 1838. [illegible] distinguished observer not only then described, but figured, forms of cryptogamic growth [illegible] the cells of the [illegible] human [illegible]. He remarks that the matters [illegible] intestines after death [illegible] with [illegible] of microscopic [illegible], and that [illegible] to be found in [illegible]. Dr. Swayne published [illegible] in the *Times* for October 12th, 1849, but these were subsequently discovered by Mr. Busk to be the [illegible] of a species of uredo, and other extraneous matters introduced into the intestinal canal with the food.‡

Dr. W. Farr, reporting on the epidemic of 1848-49 in 1852, states that Asiatic cholera is induced in man by a certain specific matter, the zymotic principle of cholera, which he proposes to call cholerine. "A variety of this matter was produced in I[illegible] in certain unfavourable circumstances, it [illegible] the property of propagating and multiplying itself in air, or water, or food, and of [illegible] men by [illegible] in [illegible] attacks [illegible] which constitute Asiatic cholera." He adds:— "[illegible] cholerine is [illegible] matter [illegible] I think, be [illegible] which [illegible] the whole phenomena and the general law of zymotic disease. The [illegible] remains, is [illegible] produced [illegible] human organism alone, and propagated by [illegible] matter? Is it produced and propagated in [illegible] or [illegible] matter, or mixed [illegible] exhalations of the body? Is it propagated through air, [illegible] contact, [illegible] through all these channels?"§

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* [illegible] Medical [illegible], Vol. XIII, 185[illegible].

* On the Mode of Communicating Cholera, by Mr. J. Snow, London, 1849.

† J. S[illegible] Report to the Privy Council for 1866, p. 318.

‡ [illegible], October [illegible], 1849.

§ Report on the Mortality of Cholera in England in 1848-49, by Dr. W. Farr.

The London College of Physicians, in their report on the epidemic of 1848-49, published in 1854, replied with authority to several of the questions put forward by Dr. Farr. The college gave it as their decided opinion that, on the whole, they consider Dr. Snow's theory untenable, observing "that it is not probable that in the case of cholera the influence of water will ever be shown to consist in its serving as a vehicle for the poison generated in the bodies of those who had suffered from the disease."[*]

The College were also of opinion, "the theory that the cause of the disease is a general state of the atmosphere," a general "atmospheric influence," or "epidemic constitution," has been found untenable;[†] they believe "that human intercourse has, at least, a share in the propagation of the disease; and that, under some circumstances, it is the most important, if not sole means of effecting its diffusion,[‡] attaching itself to the surface of bodies, to the walls of rooms, and to furniture; it will also be collected by the cloths of persons living in infected dwellings, will be carried by them from place to place, and, wherever it meets with conditions favourable to its increase and action, will produce fresh outbreaks of the epidemic."[§] The College, however, observe—"it by no means follows that cholera is always propagated in this way; it may spread independently of communication between the sick and the healthy; the agent then most likely to have conveyed the poison from one spot to another is the wind." Having discarded Drs. Snow and Budd's theory as to the origin of the disease, they formed the hypothesis that it was necessary for the spread of cholera that the poison should be received into a congenial nidus, in which it might multiply and exercise its terrible power upon human beings susceptible to, and brought within, its influence. By means of this theory the extraordinary exemption of certain localities from the disease was explained, the poison itself not having been carried by human beings, or the wind, into these exempted places, or if introduced, and no deleterious effect following, it was argued the poison could not have been delivered into a nidus fitted for its growth. It was evidently impossible to gainsay the truth of negative propositions of this description; but they very certainly did not furnish a satisfactory solution to Dr. Farr's questions, although elaborated with extraordinary skill, learning, and ingenuity. Men naturally began to enquire for some more tangible evidence of the existence of this subtile poison, and wished for more explicit information as to the nature of the nidus necessary for its growth and propagation.

We must, however, return from the land of speculation in which, it appears, most writers on cholera love to dwell, and study the somewhat dry details connected with the progress of the disease from one part of the earth to another. It is only by bringing into regular order the scattered records we possess on the subject, that we can hope to arrive at definite conclusions as to the etiology of the disease. I am confident, however, that, with a history of the kind before us, we shall, by means of a carefully considered process of inductive reasoning, be enabled to form positive conclusions as to the laws which govern the spread of cholera among mankind; and if so, it will not be too much to expect that we may be in a position to point out the means for its suppression, though not for its cure, when once it has attacked a human being.

(To be continued.)

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[*] Drs. Baly and Gull's Report, p. 213.

[†] Idem, p. 214.

[‡] Idem, p. 218.

[§] Idem, p. 221.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

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(Continued from Vol. III., page 272.)

9. The morbid changes in the *lungs* may be exhibited as follows:—

In no case could either lung be said to be healthy.

(a) Hypostatic congestion was the only morbid change in 5 right (*a*) and 9 left lungs (*b*). Total 14.

(b) Eight right lungs (*c*) and 13 left (*d*) were congested throughout. Total 21.

(c) Congestion and œdema co-existed in the case of 14 right (*e*) and 10 left lungs (*f*). Total 24.

(d) Engorgement, partial or total, was the condition noted in 14 right (*g*) and 14 left lungs (*h*). Total 28.

(e) Hepatization existed in 16 right (*h*) and 9 left lungs (*i*). Total 25.

In the case of the right lung, the whole organ was hepatized in 6 cases (*j*), the upper lobe in 5 (*k*), the middle lobe in 1 (*l*), and the lower lobe in 4 cases (*m*).

In the case of the left lung, the upper lobe was hepatized in 4 (*n*), and the lower in 5 cases (*o*).

(f) Emphysema existed in 3 right lungs (*p*) and 5 left lungs (*q*). Total 8.

(g) Tubercle existed in 4 right (*r*) and 3 left lungs (*s*). Total 7, and tuberculous cavities in the same number.

(h) One right lung (*t*) and 1 left lung (*u*) were collapsed and carnified.

(i) One right lung (*v*) and 1 left lung (*w*) were the subject of syphilitic degeneration.

(j) Excess of pigment was noted in 2 right and 2 left (*x*) lungs.

(k) The bronchiæ were inflamed in 1 case (*y*) and ulcerated in another on both sides (*z*).

(l) A cretaceous nodule existed in the right lung in 1 case (*aa*).

(*a*) Nos. 14, 23, 26, 35, 42.

(*b*) Nos. 2, 14, 23, 26, 29, 35, 42, 44, 45.

(*c*) Nos. 1, 5, 7, 8, 19, 20, 22, 31.

(*d*) Nos. 1, 5, 7, 8, 9, 19, 20, 21, 24, 25, 28, 30, 31.

(*e*) Nos. 4, 10, 15, 16, 17, 24, 30, 32, 33, 34, 38, 43, 48, 50.

(*f*) Nos. 4, 15, 16, 17, 32, 33, 34, 36, 43, 48.

(*g*) Nos. 3, 6, 12, 25, 27, 28, 29, 36, 37, 39, 40, 41, 45, 46.

(*h*) Nos. 3, 6, 10, 11, 12, 13, 22, 27, 37, 38, 39, 40, 41, 46.

(*i*) Nos. 6, 9, 10, 11, 12, 13, 14, 25, 28, 29, 37, 39, 40, 41, 44, 46.

(*j*) Nos. 3, 10, 11, 12, 22, 27, 38, 39, 41.

(*k*) Nos. 9, 11, 13, 14, 29, 44.

(*l*) Nos. 6, 25, 39, 40, 46.

(*m*) No. 41.

(*n*) Nos. 10, 28, 37, 12.

(*o*) Nos. 3, 12, 22, 39.

(*p*) Nos. 10, 11, 27, 38, 41.

(*q*) Nos. 19, 22, 45.

(*r*) Nos. 19, 40, 44, 45, 46.

(*s*) Nos. 2, 9, 18, 49.

(*t*) Nos. 9, 18, 49.

(*u*) No. 21.

(*v*) No. 50.

(*w*) No. 47.

(*x*) Nos. 2, 24.

(*y*) No. 19.

(*z*) No. 47.

(*aa*) No. 3.

[illegible] lungs are taken separately. [illegible] show the extent to which the processes [illegible]:—

(a) Hypostatic congestion existed in 9 cases (18 per cent.), on both lungs in 5 cases, on the right only in 1, and on the left only in 3 cases.

(b) General congestion existed in 14 cases (28 per cent.), on both lungs in 7, on the right only in 1, and on the left only in 6.

(c) Congestion and oedema were observed in 15 cases (30 per cent.), on both lungs in 9 cases, on the right only in 5 cases, on the left only in 1 case.

(d) Engorgement existed in 19 cases (38 per cent.), on both lungs in 8 cases, on the right only in 5 cases, and left only in 6 cases.

(e) Hepatization existed in 20 cases (40 per cent.), on both sides in 5 cases, on the right only in 11 cases, and on the left only in 4.

(f) Emphysema was observed in 6 cases (12 per cent.), on both sides in 2 cases, in the right lung only in 1, and left lung only in 3 cases.

(g) Tubercle was found in 4 cases (8 per cent.). It was double in 3 cases, and confined to the right lung in 1 case.

A [illegible] was observed in two cases, which were [illegible] owing to a deficiency in the record of weights, so that the proportion is understated.

From the foregoing it is evident that the lungs are liable to most serious pathological lesions, and that these are principally congestive and inflammatory. The processes have been arranged in series; and as their intensity proceeds from simple hypostatic congestion to hepatization, the ratio of cases affected increases. It also appears that the right lung is more liable to the more severe forms of congestion and inflammatory disease than the left. [illegible] that the left lung was more [illegible] than the right [illegible] of the left lung there was [illegible] of the right, left, or both.

The [illegible] of the left lung would [illegible]. The proportion of cases [illegible] exceedingly great, but it is [illegible]. In most cases [illegible] spleen, or chronic dysentery [illegible] by any symptom other than [illegible] is of little or no avail. [illegible] most assiduously [illegible] 12 or 24 hours [illegible] of the [illegible] the heart is found [illegible] in a state of chronic [illegible].

I have [illegible] whenever a case of [illegible] high sustained temperature [illegible] with or without any [illegible] chest, and I thus frequently [illegible] which, as far as [illegible], might remain unrevealed [illegible].

The [illegible] were associated with engorgement [illegible] the lower and posterior portions of the lung [illegible] condition of the upper and anterior portions of the lung shortly preceding death.

The other affections of the lung are comparatively unimportant as compared with the more active processes. The syphilitic degeneration noted might be called a compound of tubercular and fibroid degeneration in a subject saturated with the poison.

The [illegible] of the lungs in the [illegible] is shown in the following statement:—

(a) Hypostatic congestion.—The average weight of the right lung was 8·6ch. (17·6 oz.), and left 6·7ch. (14·1oz.)

(b) General congestion.—Right lung 7·2ch. (14·7oz.), left 6·5ch. (13·3 oz.)

(c) Congestion and oedema.—Right lung 9·5ch. (19·4oz.), left 7·2ch. (14·7oz.)

(d) Engorgement.—Right 10·9ch. (22·3oz.), left 12·1ch. (24·8oz.)

(e) Partial hepatization.—Right 11·9ch. (24·4oz.), left 9·9ch. (20·3oz.)

(f) Complete hepatization.—Right 19·7ch. (40·4oz.), left no case.

(g) Right lung.—Upper lobe hepatized 10·7ch. (21·9oz.)

(h) Right lung.—Lower lobe hepatized 14·2ch. (29·1oz.)

(i) Left lung.—Upper lobe hepatized 12·3ch. (25·2oz.)

(j) Left lung.—Lower lobe hepatized 8·07ch. (16·4oz.)

(k) Tubercle.—Right 10·2ch. (20·9oz.), left 8·7ch. (17·8oz.)

(l) Collapsed and carnified, right 4ch. (8·2oz.), left 12·5ch. (25·6oz.)

The correct weight of the healthy lungs is probably considerably under the average given above; 7ch. (14·36oz.) would probably be an approximation of the weight of the right, and 6½ch. (13·33oz.) of the left.

The adjusted proportion to body weight would be 1 to 119 for the right, and 1 to 128 for the left lung.

10. The condition of the *pericardium* was as follows:—

(a) Noted healthy in 29 cases (58 per cent.)

(b) Contained serum in 20 cases (a) (40 per cent.)

(c) Inflamed in 1 case (b) (2 per cent.)

11. The condition of the *heart* was as follows:—

As to the walls of the organ—

(a) A white spot was observed on the anterior surface of the right ventricle in 9 cases (c) (18 per cent.): this condition, which is a fibroid degeneration of the epicardium, has acquired a peculiar importance from the assertion, which was made last year by the Netley professors, that it was caused in soldiers by the undue pressure of the infantry pack, and the thickening was called the "soldiers' spot." In one case (No. 15) this statement would seem to derive remarkable and curious support. In this case two glands in the posterior mediastinum had become enlarged to the size of a pigeon's egg. The heart was somewhat hypertrophied, and the white patch on the surface of the right ventricle very well marked. Here a pressure on the organ *ab intra* seemed to produce the same effect on the heart as a pressure *ab extra* is supposed to do in the case of the soldier. On the other hand, the considerable percentage of cases in which the patch was found—and I presume that the Bengalee is less liable to fibroid degeneration than the European—would tend to throw a doubt upon the correctness of the inference drawn from finding this spot so often on the heart of the soldier. In my post-mortems at home I was very familiar with the patch in question.

(a) Nos. 2–7, 9, 10, 11–19, 21, 24, 30.

(b) No. 8.

(c) Nos. 1, 3, 4, 8, 15, 18, 46, 49, 50.

(b) The walls were noted fatty in 5 cases (*a*) (10 per cent.)
(c) Hypertrophied in 2 cases (*b*) (4 per cent.)
(d) The lining membrane of the heart was stained in 1 case (*c*).

In all other cases the walls were healthy.

As regards the valves—

(e) There was thickening of the mitral or aortic valves in 3 cases (*d*) (6 per cent.)

No other abnormality was noted.

The amount of morbid change disclosed in these 50 examinations is very trifling, and quite consorts with the clinical experience of the rarity of cardiac and vascular disease in the natives of lower Bengal.

(f) Atheroma of the aorta was noted in 8 cases (*e*) (16 per cent)—in all very incipient. Of these 8 cases, 4 had also the white patch on the right ventricle. The atheroma noted consisted of simple elevations, and neither ulcers nor cretaceous particles, or plates or bony formations, were noted.

As regards the contents of the heart—

(g) Fibrinous or decolorized clots were observed in 43 cases (86 per cent.), the cavities contained sanguineous clots only in 2 cases (4 per cent.), fluid blood in 4 cases (8 per cent.), and were empty in 1.

The distribution of fibrinous clots in the cavities of the heart will be seen from the following statement:—

They existed in all the cavities of the heart in 31 cases (*f*); in eight (*g*) of these they were noted as extending into the large arteries and their branches. In a typical case the largest clot is found in the right auricle, the next in size in the left auricle, next right ventricle, and the smallest in the left ventricle. In some cases they were associated with sanguineous clots which existed where the vessels joined or left the cavities; in other words, where the stream was most active. In such cases both clots were parts of the same mass. They existed in the right ventricle and auricle and left auricle in 2 cases (*h*); in the right auricle and ventricle only in 5 cases (*i*); in the right and left auricle in two cases (*j*); in the right auricle only in 1 case (*k*); in the left auricle only in 1 case (*l*); and in the right ventricle only in 1 case (*m*). The distribution of the clots in the cavities corresponds with their comparative size when all the cavities are occupied. To discuss the formation of these clots would be foreign to the scope and design of this record; but, as a fact of experience, I have found that their formation is invariably associated with asthenia, and that the more gradual the fatal exhaustion, the more firm and organized these clots are. The largest and hardest I have ever seen—more like a concretion than a coagulum—was in a case of general paralysis of the insane, in which the process of death was remarkably slow.

As the heart was always weighed empty, and its condition varied from health in so few instances, the statement of its weight already given requires no modification.

12. The *peritoneum* was—

(a) Inflamed in 3 instances (*a*).
(b) Contained serum in 6 instances (*b*).
(c) Was adherent to liver or spleen in 3 instances. (*c*).
(d) Tuberculated in 1 case (*d*), and healthy in every other case.

The tuberculated condition was in a fatal case of lepra. The tubercles were both pale and pigmented. In this case, besides the contractions and ulcerations of connective tissues, there was atheroma of the aorta and fatty degeneration of heart, liver, and kidneys.

13. The *stomach* was—

(a) Congested in 1 case (*e*).
(b) Ulcerated in 1 case (*f*).
(c) Covered with a false membrane in 1 case (*g*) (*Indian Medical Gazette*, Vol. III., p. 130).
(d) Inflamed in 1 case (*h*). It was healthy in every other instance.

14 The *small intestine* was—

(a) Healthy in 24 cases (48 per cent.)
(b) Congested in 10 cases (*i*) (20 per cent.)
(c) Inflamed in 1 case (*j*).
(d) Mucous membrane thinned and wasted in 4 cases (*k*).
(e) Peyer's glands enlarged in 3 cases (*l*), one of cholera and two tubercular; and
(f) Wasted in one case (*m*).

15. The *mucous membrane* was—

(a) Pigmented in 6 cases (*n*).
(b) Sodden in 1 case of cholera (No. 31).

The amount of disease disclosed was thus neither serious nor severe.

16. The *large intestine* was—

(a) Healthy in 27 cases (54 per cent.)
(b) Congested in 11 cases (*o*) (22 per cent.)
(c) Ulcerated in 13 cases (*p*) (26 per cent.)
(d) Pigmented in 10 cases (*q*) (20 per cent.)
(e) Contracted and thickened in 8 cases (*r*) (16 per cent.)

The amount and kind of disease was greater than in the small intestine. In cases of dysentery I have observed that the morbid changes are, as a rule, more severe and pronounced towards the rectum.

17. The *liver* was noted—

(a) Healthy in 13 cases (*s*) (26 per cent.)
(b) Congested in 7 cases (*t*) (14 per cent.)

(*a*) Nos. 12, 19, 24, 33, 49.
(*b*) Nos. 15, 48.
(*c*) No. 48.
(*d*) Nos. 15, 19, 48.
(*e*) Nos. 1, 4, 6, 12, 18, 19, 34, 49.
(*f*) Nos. 6, 10, 11, 12, 13, 17, 18, 19, 21, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 42, 43, 45, 46, 47, 49, 50.
(*g*) Nos. 6, 10, 13, 18, 27, 28, 31, 35.
(*h*) Nos. 1, 16.
(*i*) Nos. 9, 16, 20, 26, 44.
(*j*) Nos. 22, 38.
(*k*) No. 14.
(*l*) No. 39.
(*m*) No. 8.

(*a*) Nos. 8, 36, 50.
(*b*) Nos. 3, 4, 9, 21, 24, 50.
(*c*) Nos. 2, 8, 13.
(*d*) No. 36.
(*e*) No. 3.
(*f*) No. 1.
(*g*) No. 48.
(*h*) No. 8.
(*i*) Nos. 12, 16, 18, 19, 20, 24, 26, 43, 44, 48.
(*j*) No. 8.
(*k*) Nos. 1, 2, 4, 24.
(*l*) Nos. 31, 47, 49.
(*m*) No. 19.
(*n*) Nos. 1, 3, 6, 9, 17, 26.
(*o*) Nos. 1, 3, 4, 11, 18, 19, 35, 38, 39, 44, 49.
(*p*) Nos. 3, 4, 6, 16, 24, 26, 35, 38, 39, 41, 43, 48, 49.
(*q*) Nos. 1, 2, 3, 6, 11, 12, 13, 26, 35, 48.
(*r*) Nos. 3, 6, 12, 13, 26, 31, 43, 48.
(*s*) Nos. 5, 6, 7, 14, 20, 23, 25, 27, 30, 31, 43, 45, 48.
(*t*) Nos. 3, 11, 36, 38, 39, 44, 48.

(a) [illegible] 26 cases [illegible] 52 [illegible]
(b) [illegible] 9 cases [illegible] 18 [illegible]
(c) Hyp[illegible] 8 cases [illegible] 16 [illegible]
(d) Capsule [illegible]
(e) A[illegible] No. 20 [illegible] the weight is [illegible] evacuation of pus.
(f) [illegible] 5 cases [illegible]
(g) Pig[illegible] 1 case [illegible]
(h) [illegible] in 3 cases [illegible]
(i) C[illegible] 1 case [illegible]
(j) Adhesions [illegible] organ [illegible] 3 cases [illegible]

[illegible] organs [illegible] (brain and lungs), [illegible] degenerative, [illegible] vascular or [illegible] change. The degrees of fatty degeneration [illegible] were exceedingly various; from a state differing [illegible] from what may be considered healthy up to very general [illegible] tissue change. In several instances the [illegible] with [illegible] and in others with congestion, constituting the "nutmeg" condition.

The weight of the liver, as influenced by its condition, is shown as follows:

(a) The healthy livers average 1s. 6ch. (15 1oz.)
(b) The congested livers average 1s. 7 5ch. (18 2oz.)
(c) The fatty livers 1s. 4 9ch. (12 9oz.)
(d) The hypertrophied livers 4s. 10 5ch. (51 4oz.)

1s. 6ch. (15oz.) may fairly be taken to represent the weight of a healthy liver, or 1 to 37 the proportion to body weight.

18. The pathological states of the *spleen* are recorded as follows:

(a) The organ is noted "healthy" in 2 cases (*a*).

These were, however, examined by the Sub-Assistant Surgeon, and "comparatively healthy" would probably be the correct term. I have not seen a perfectly healthy spleen since I came to India.

(b) The organ was enlarged in 33 cases (*b*) (66 per cent.)
(c) [illegible] in 21 cases (*c*) (42 per cent.)
(d) [illegible] in 13 cases (*d*) (26 per cent.)
(e) [illegible] in 15 cases (*e*) (30 per cent.)
(f) A[illegible] organ in 4 cases (*f*).
(g) Spleen [illegible] in 1 instance (*g*).
(h) Capsule cartilaginous in 4 cases (*h*).
(i) Organ pigmented in 2 cases (*i*).

It is not easy from the universality of disease of this organ and the great variations in size, to determine the correct weight of the spleen. The natural variation of bulk and weight of the spleen must also, from the nature of the organ, be very considerable, so that, for practical purposes, the statements already made need not be modified.

19. The *kidneys* were:

(a) Healthy in 18 instances (*a*) (36 per cent.)
(b) Congested in 8 instances (*b*) (16 per cent.)
(c) Degenerated in 25 cases (*c*) (50 per cent.)

The degeneration was in most cases fatty; no microscopic examination was made of the tissue, and its pathological condition was [illegible] from [illegible] inspection of sections.

(d) The organs were atrophied in 14 cases (*d*) (28 per cent.)
(e) Cystic degeneration existed in 7 cases (*e*).
(f) Hypertrophy in 2 cases (*f*) (4 per cent.)
(g) Abscess in 1 case No. 17.
(h) Pigment deposit in 1 case No. 32.
(i) Tubercle in 1 case (No. 32).

The average weight of the healthy kidneys is 1 8ch. (3 7oz.) for the right, and 1 9ch. (4 9oz.) for the left. This gives a proportion to body weight of 1 to 162 and 1 to 1[illegible]7.

The foregoing summary will render clear the various pathological results to which the several organs are liable, and the extent to which they obtain. To discuss the grouping of these processes in individual cases, would be beyond the scope of this record, and would hardly be profitable with so small an induction. The appended table (No. III) gives, however, in short, the principal morbid conditions of each organ in each case, and the numbers given in the foot-notes will serve as an index to the detail.

(To be continued.)

THE CARBOLIC ACID TREATMENT OF WOUNDS.

By G. D. McReddie,

Civil Surgeon, Hurdui.

Having for some time adopted this mode of treatment of wounds, I beg to lay the results of my experience before the profession, as shewing the great value of this antiseptic agent in the dressing of wounds and ulcers. The first important case in which I used carbolic acid was in an amputation below the knee-joint on account of old standing disease, fatty degeneration of bone. Syme's double flap operation was performed. Immediately after the operation, Professor Lister's solution of 1 part carbolic acid to 4 parts boiled linseed oil was applied over the whole surface of the wound; after the flaps had been brought together, strips of lint dipped in the oil were laid on; and the stump was directed to be kept wet with a watery solution of the acid, of the strength of 1 to 40. On the third day the dressings were opened and re-adjusted. When again opened, on the sixth day after the operation, except in two small spots, primary union was seen to have taken place along the line of flaps; by pressure a little pus exuded from within the flaps. The "carbolic" dressings were replaced with a covering of [illegible] (to [illegible] the lining [illegible]), the whole supported with a bandage. The dressings subsequently were [illegible], and the patient was discharged cured in 17 days. Suppuration, never of any consequence, gradually ceased, and by the [illegible] day had nearly disappeared. [illegible] I may remark that the disease, for which amputation was resorted to, makes the tissues very

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(a) Nos. 1, [illegible] 4, 8, 9, [illegible] 16, 17, 18, 19, 21, 24, 26, 28, 29, 32, [illegible] 4, 41, [illegible] 44, 47.
(b) Nos. [illegible] 4[illegible]
(c) N[illegible]
(d) No. 17.
(e) Nos. 4, [illegible] 32, 40.
(f) No. [illegible]
(g) Nos. 10, [illegible] 48.
(h) No. 4.
(i) Nos. [illegible] 45, 47.
(j) [illegible]
(k) Nos. 2, [illegible] 7, 8, [illegible] 11, [illegible] 25, [illegible] 27, 28, [illegible] 41 [illegible] 48, 48, 49, 50.
(l) N[illegible] 31, [illegible] 27, 29, 31, [illegible] 46, 48, 41, 44[illegible]
(m) [illegible] 4 [illegible] 46, 47, 49.
(n) [illegible] 42, 46.
(o) N[illegible] 40.
(p) N[illegible]
(q) N[illegible] 28.
(r) N[illegible]

(a) N[illegible] 27, 28, 29, 31, [illegible] 47, 50.
(b) N[illegible] 4[illegible] 48.
(c) No. 4, [illegible] 13, 16, 18, 19, 22, 24, 26, [illegible] 32, 34, 35, [illegible] 41, 44, [illegible]
(d) N[illegible] 26, 30.
N[illegible] 4 [illegible] 26.
(e) N[illegible] 42.

liable to take on a sloughy action; and, under ordinary treatment, I have no doubt that the patient would have remained in hospital for 8 or 10 weeks, instead of 17 days only. A patient, on whom I operated in 1861 for the same disease, was under treatment for upwards of two months.

Since the above case, carbolic acid has been used in all operations, and in all wounds and ulcers in in-door patients. Its trial in two cases of removal of the female breast for scirrhus has tended still further to show its antiseptic properties. In both instances the patients were several weeks under treatment, one is still so, though nearly well; but their progress, though slow, was steady; and suppuration, notwithstanding the large surface exposed, was very small indeed. Its efficacy, in a case of operation on a little girl aged nine years, suffering from caries of the elbow-joint, is worthy of remark. The disease was of two years' standing. In this case the joint was laid open from behind, and the diseased bone removed; strong carbolic acid was then freely applied to the exposed bones, and then the edges of the flaps of skin were brought together as usual. In this instance, though the patient was a delicate child, the deep soft parts healed by primary union, and from the beginning the amount of suppuration was small. The operation was performed on the 2nd September; she is still under treatment, but will be discharged in another week.

It may be mentioned that the application of the strong acid to an exposed raw surface acts very beneficially, and this procedure is now nearly always adopted after operation. The entire absence of all putrid animal odour with carbolic acid is no small advantage to patients and attendants, a fact which can fully be appreciated by all who have had any experience of a crowded surgical ward in an Indian hospital. In capital operations, I believe that pure, or at all events colourless, acid ought to be used. I have had some experience with an impure article, and have found that the latter does not act antiseptically as well as the pure acid; more suppuration takes place, and progress is not so satisfactory and rapid as with a better agent. Imported acid can now be obtained in Calcutta at a moderate cost, and where the charge for inland carriage is not excessive, its efficacy will, on the whole, be found superior to any other.

One suggestion I would beg to make. Is not carbolic acid worthy of trial internally in cholera? Probably it has already been used; if so, the results obtained by it, whether favorable or otherwise, are called for.

Hurdui, 10*th November*, 1868.

PREVAILING DISEASES IN THE ANGAMI NAGA HILLS.

By Hem Chunder Bhuttacharjee,

Sub-Assistant Surgeon.

The valley of the Berhampootra is encircled with mountains or hills of various heights on all sides, except on the west, where it opens into the plains of Bengal. The southern extremity of this valley is bounded by a continuous range of hills, which have been artificially divided into the Garrow hills, the Cossyah and Jyntea hills, and the Naga hills; these designations signify that this continuous range is inhabited by distinct hills tribes, known as the Garrows, the Cossyahs, Jynteas, and the Nagas. The Naga tribe is divided into four sub-tribes; the Angami, the Lotah, the Kutcha, and the Rengma Nagas. The last, on account of mutual wars, have deserted their original habitations, and now inhabit a distinct set of hills, some two days' journey from their Angami brethren, occupying only a limited tract of country. The Angami Nagas live in straw-built houses on the summits of hills, varying in height from 500 feet to 3,000 feet above the level of the sea, feeding themselves with rice, vegetables, meat, and fish, and their liquor is prepared rice beer, though they are not averse to English wines when they find them. They still hold little intercourse with the rest of the world, save when they come down for trading purposes in the plains.

The prevailing diseases amongst these men are—

1. Intermittent fever.
2. Remittent fever.
3. Diarrhœa.
4. Dysentery.
5. Scabies.
6. Intestinal worms.
7. A peculiar kind of ulcer, called in Assamese *doomooro*.
8. Affections of the eye.

1 *and* 2. Although it might be expected, (if we believe that malaria loves the surface of the ground, and does not ascend high hills or places of elevation,) that these people should be tolerably free from the attacks of malaria, yet it is not so, and one cause of their frequently getting the above diseases is that the sides of their hills are covered with dense jungle, and here malaria of the deadliest type originates from decomposing vegetation. To the influence of this deleterious agent they are constantly exposed, whether they go to their farms or descend to fetch water from springs below, because their footpath lies through these jungles, and they have no high roads or other means of descending or going to other villages. The types of these fevers are seldom virulent; and nothing like the dreadful epidemics which rage in the plains of Bengal has ever been heard of in the Naga hills. When attacked with any disease, whether it be fever or any one of those which follow in my list, they, having no medical treatment or native medicines of their own, take usually a fowl and sacrifice to their gods, in case the disease proves to be severe. It is an established maxim with these people, that starvation and abstinence from food during disease does more harm than good; consequently they take their usual diet, as much as their appetite permits them, during illness. No people follow so strictly the rule of "vis medicatrix naturæ" than these; and if any value is to be attached to the doctrine that mind has a good deal of influence on the state of the body as regards health and disease, nowhere is it more fully demonstrated than in the case of these people. For, when depending on nature does them no good during a disease, they always sacrifice pigs and fowls to their gods, with the faith that the evil spirit which has given birth to the disease will be driven out by the gods, and so they will be cured; and in several cases they are actually cured by this means. English medicines and doctors they value in case the doctor or his medicines never fail, whether the affection be simple or severe. This is not only the case with these people alone, but also with the Meekirs, Cookies, and Cucharis, all these, like the Nagas, having no medicines of their own, trust to their gods and nature in cases of disease.

3 *and* 4. It is no wonder that the greater part of the mortality which results in a Naga village is from these diseases. If we accept as true that impure water and air, and decomposed food, can give rise to diarrhœa and dysentery, then it is to be granted that providence is especially kind to these men, for I believe it is not as yet known to the public that there are few animals in nature which a Naga does not eat with relish, and it is said by them that decomposed fish and meat taste better than fresh ones. A Naga does not care whether the water he drinks is pure or impure, and the food he takes is fresh or decomposed, and, if we examine the interior of his dwelling, he surpasses the native of the plains in respect of uncleanliness, because in the same room he sleeps with pigs and fowls, and never cares to throw off their excreta but when the quantity is large and occupies space. If we analyse the usual constituents of his diet, we shall find that more than half of it is decomposed. Rice and vegetables, though simply dressed and taken like other rice-eating people, are deprived of their good qualities, when, at the same time, he drinks pints of decomposed beer, not only during meals, but also through the rest of the day. The meat he takes is generally also a decomposed article, because [illegible]

[illegible] the [illegible] months [illegible] family [illegible] treatment of [illegible] for days or months. When they [illegible] a huge quantity [illegible] or smoking it in [illegible] fish they [illegible] do it is always [illegible] instruments to catch them [illegible] which [illegible]. A few hours are sufficient [illegible].

Hunger, which is considered [illegible] nature, does modify the [illegible] of these [illegible] a good deal, but when from any cause health is a little below its par, their effects are easily [illegible].

[illegible] The cause of this parasitic disease is that the water supply being scarcely in the hills generally, and, when not so, brought from distances many thousands of feet below their homes, the [illegible] which it creates has, as it were, accustomed them to [illegible] as seldom as possible; and if we say that they [illegible] washed only twice in their lives, namely, when born and when dead, it will not be far from the truth; consequently their [illegible] and clothes are dirty in the extreme, and as the itch insect [illegible] nasty fellow [illegible] his body often, it finds [illegible] soil in the persons of these Nagas.

[illegible] Intestinal worms [illegible] in the shape of round worms. [illegible] not only frequent in the Naga hills, but also in Assam generally. What the cause of its general prevalence is still in the dark, although it is said that impure water is the cause of [illegible], still it is found in those who take the precaution to drink water filtered and boiled. In Assam, natives and newcomers alike suffer from it, so few can be said to be free from its attacks.

7. There is a peculiar kind of ulcer, with a central hard white [illegible] composed of semi-organized fibrous substance, and covered [illegible] a scab, which, when peeled off, a puriform creamy substance [illegible], and when this is washed off, the central core [illegible] in view. [illegible], as a rule, in the sole of the foot, in [illegible] varying from 1 to 20, and in a manner cripples the [illegible]. It is not only peculiar with these hill people, but is also [illegible] in the people of the plains in Assam.

They are not very obstinate to treatment. Several cases I successfully treated with caustic simply, first removing [illegible] and, after removing the puriform matter, a good touch [illegible] in a day or two forms another few [illegible] and the [illegible] heals under it. One peculiarity with these [illegible] is that they are prone to return.

8. Affections of the eyes, namely, conjunctivitis of the [illegible] and catarrhal kinds, is common among these people, [illegible], I believe, to the frequent alterations of temperature [illegible] in the hills, and also to the dirty habits of the [illegible] the secretion of the eye after a night's [illegible], and, from the irritation, the disease is [illegible].

[illegible] those mentioned are not very common [illegible] and [illegible] of the chest, gout, [illegible] met with, few [illegible] may be called exceptions. [illegible] children, [illegible] measles, though [illegible] the [illegible]. The [illegible] so great, that [illegible] journey [illegible] that small-pox [illegible]. They neither allow anybody [illegible] village, [illegible]. They have [illegible] of preventing [illegible] inoculation, [illegible] latter experi[illegible] epidemic has taught [illegible] from a distance.

[illegible] the great [illegible] the Nagas still enjoy is their exemption [illegible] from syphilis and the attendant evils that [illegible]. Secluded from the rest of the world by forests [illegible], they never had sexual intercourse with the people of the plains (who hate them as objects not to be [illegible]), though they [illegible] very [illegible] regarding chastity and [illegible]. This boon, which civilization has destroyed in the plains, they still enjoy, and will continue to do so till they intermarry with their more civilised brethren of the plains.

[illegible], 1868.

CASES FROM PRACTICE.

◆

CASE OF CRIMINAL ABORTION, BY A NATIVE MEDICINE.

By Indoo Bhushun Mookerjee,

Sub-Assistant Surgeon, Hummerpore.

[illegible], a female, aged about 15 years, the mother of twelve children, of whom only two are surviving, and a widow for the last nine months, was sent in on the 10th June, 1868, owing to her suffering from uterine hæmorrhage, consequent on the induction of criminal abortion, at about the third month of gestation, by a native medicine, which is said by the [illegible] to be generally resorted to in this district for the purposes in question.

The woman stated that the medicine administered to her was prepared according to the following recipe:—

Green capsules of common cotton (freed from seeds and cotton)	8 ozs.
Garlic	½ oz.
Treacle (long kept)	1 „
Water	2 pints

boiled down to half the quantity and strained, and the decoction thus prepared taken in equal doses three times a day. In taking the medicine, the first day she vomited thrice, and had four or five loose stools, but felt nothing like pain in the uterus. In the course of the succeeding four days, during which the drug, prepared daily, was taken, there was merely looseness of her bowels, unattended with vomiting; on the sixth day uterine pains supervened, accompanied with hæmorrhage, and was soon followed by the expulsion of the embryo from the uterus.

On admission, on the sixth day of the abortion, she was found somewhat prostrated by the occurrence of hæmorrhage, which still continued, though in a diminished quantity. The os was low down in the vagina; the lips were open, but scarcely admitting the tip of the five fingers.

Under appropriate treatment the hæmorrhage stopped, and the patient seemed improved, but unfortunately, in the course of her recovery, she was seized with puerperal fever, which, after protracted suffering, carried her off on the 8th July, 1868.

The post mortem examination, conducted sixteen hours after death, exhibited in the pelvic cavity a pultaceous putrid mass infiltrated with purulent fluid; the original structures, uterus, ovaries, and uterine ligaments being scarcely discernible. The abdominal organs were quite normal.

The physiological effects, displayed in this case by apparently trifling agents, are worthy of note; but it remains to be decided how their actions were brought to bear upon the tissues of the impregnated uterus. But as vomiting and purging were the prelude to the uterine symptoms, it is but natural to infer that the organ was called into action by sympathy through the neighbouring organs.

The seeds of the carrot (daucus carota) in ounce doses, and old plaster mortar from the wall of some 40 or 50 years' standing, are said to be sometimes taken by natives for causing criminal abortion; but I have not yet had a case in point to test the truth.

Hummerpore, 20th Sept., 1868.

MELANOPATHIA.

By C. R. Francis, M.B.

The following account of a case of melanopathia has been kindly placed at my disposal by one of the medical officers attached to the Calcutta General Hospital, for record in these pages.

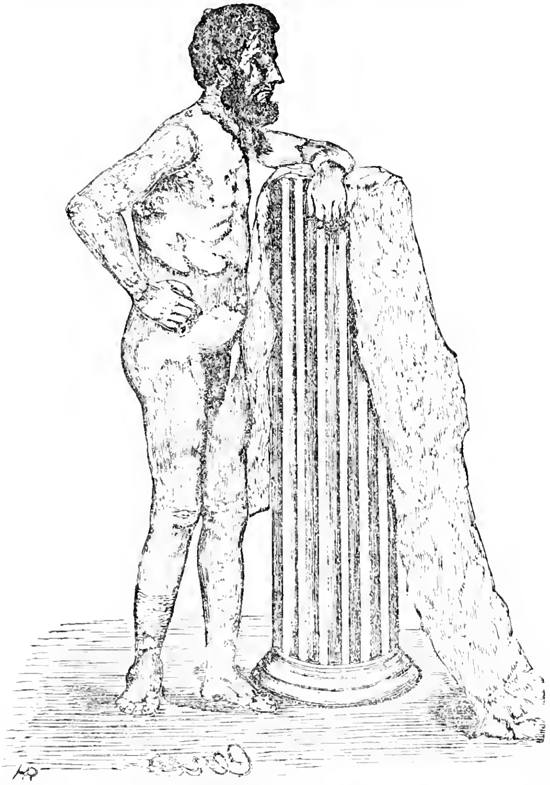
The condition is interesting to practitioners in India, as being the antithesis of what is sometimes met with here, and (though incorrectly) spoken of as *white leprosy*.* In the one case—*leucopathia*—there is an entire *absence*, on certain portions of the skin, of pigment; in the other—*melanopathia*, or, as it is sometimes called, *melasma*—the pigment is in excess.

In the case before us it is note worthy that the colored patches are inclined to be symmetrical, shewing the constitutional nature of the disorder. The islets of pigment are represented by corresponding islets on the other.

John Wisshing, aged 43, a Russian Finn, seaman of the ship *Red Gauntlet*, was admitted into the General Hospital, Calcutta, on the 15th June, 1868, suffering from scurvy, contracted three weeks previous to admission, on the voyage from Liverpool.

Dr. J. C. Mackenzie, the Assistant-Surgeon in charge of the case, on examining the man, was surprised to find deposits of buff-colored pigment in irregular patches on his face, neck, trunk, and extremities; the deposits appeared to be in the rete mucosum, the epidermis being apparently quite unaffected.

The patient states that he observed the discoloration about eight years ago, when he first visited the tropics. Its commencement was gradual, first appearing in the region of the umbilicus, and then spreading over the parts now involved. He has always been in perfect health, and is at present a stout, strong man.



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* The Mosaic leprosy, Dr. Gavin Milroy (quoted by Dr N. C. Macnamara) thinks, was an eruption, squamous, tuberculated, or composed of smooth shining spots or blotches, depressed in their centre. This eruption was reddish white, or white: and is spoken of occasionally, as in the case of Gehazi, "as white as snow." It is not, however, known with accuracy *what* cutaneous affection was indicated by the term *leprosy*.—Ed., *I. M. G.*

To Correspondents.

From Novice.—"I am an assistant surgeon, under five years' service. I had charge of a 2nd class civil station as *locum tenens* No. 2, and in this way. A was in England on sick certificate: B. (*locum tenens No.* 1) left for another appointment; and C. (myself, *locum tenens No.* 2) took over charge after the expiration of six months from the date of the departure of the incumbent (A.) for England. Query.—As A. had, at that date, *forfeited all his staff*, was I entitled to the whole of it in addition to my unemployed pay of rank? B. drew full pay of the appointment after he had been officiating six months. But C. was restricted by the Audit Department to Rs. 286-10 plus "the forfeited half difference"—(as it was expressed) because he (C.) had not officiated over six months. Officers of the Indian Medical Service are, by No. 370 G. G. O., dated 4th April, 1867, *on the same footing as military staff officers.* In such cases, what is that footing?

The work being done, does Government save the absentee's *second half staff*, which, at the end of six months, (under the rules in force at the date in question,) used to revert to the appointment, by removing B. and substituting C.?"

☞ The principle upon which Government acts in paying "officiating" men is that no extra expense must be incurred. At the end of the six months, during which period half the salary of the appointment is paid to the permanent incumbent, and half to the *locum tenens*, the entire sum reverts to the appointment. If the Pay Department rules otherwise, the officer should appeal to Government.—Ed., *I. M. G.*

A Madras medical officer, writing from Bangalore, enquires:—

"What rates of pay and allowances are passed in the Bengal Presidency to a surgeon major (Indian service), over 25 years' service, in charge of his own regiment, and of an extra one, no portion of staff salary for the latter being due to an absentee? Our correspondent adds that, in the Madras presidency, the answer would be Rs. 1,000 + 100, and thus the surgeon major gets Rs. 6-11 only for his extra charge. His impression, however, is that the spirit of the Government orders of 23rd December, 1864, and No. 370 of 1867, is to the effect that the full regimental pay, Rs. 1,093-2 + 100, for the extra charge, should be allowed to him as a member of the old Indian Medical Service; but the Controller of Military Accounts in this presidency thinks otherwise. An anomaly results from the Controller's reviews, inasmuch as a junior surgeon even of the old service gains a much larger proportion of the allowance for an extra charge than a senior surgeon major does,—and rather larger than a junior surgeon major."

☞ In Bengal the allowances are as follow:—

	Rs.	As.
For a surgeon major above 25 years' service	1,093	2
For the extra charge	100	0
Total ...	1,193	2

Our correspondent should refer the matter.—Ed., *I. M. G.*

The Indian Medical Gazette.

BINDING OF BACK VOLS.

◆

We shall be happy to [illegible] of the Nos. of the past or previous years, to make BOUND VOLUMES, instead, at a charge of Rs. 2-4, to cover [illegible] forwarding cost.

Hare Street, } Wyman & Co.,
January, 1869. } Publishers.

NOTICE.

◆

The Publishers of the *Indian Medical Gazette* are happy in being able to announce, with the new year, the increasing popularity of the Journal, which is now regarded at home as the leading professional organ in India. It continues, too, to be highly esteemed by the profession in this country. The Editor's object is to make the journal cosmopolitan, and to fill its pages with practical information which shall be interesting, not to Bengal alone, but to each of the three Presidencies in India.

The profession and public need hardly be assured that, so long as the editorial functions are performed by Dr. Francis, this object will be consistently fulfilled.

The Publishers beg further to announce that they have received promises of contributions throughout the present year from several eminent members of the profession. They hope, therefore, that they may calculate upon increased patronage from all interested in medical science.

Hare Street, } Wyman & Co.,
January, 1869. } Publishers.

[illegible] of science. Among [illegible] departments, [illegible] history, and [illegible] among you [illegible] to that of [illegible] the periods in which [illegible] BENJAMIN BRODIE.

JOSEPH FAYRER DECORATED.

As these sheets were passing through the press, we became aware of the fact that Joseph Fayrer, whose name has now become a household word throughout the country, is to be decorated with the Star of India. We shall have something to say on the subject in our next number; meanwhile we cannot [illegible] the current issue of the *Indian Medical Gazette* without [illegible] congratulations; and in doing so we express the [illegible] of the entire Indian Medical Establishment) to Dr. Fayrer on this recognition by the Queen of his [illegible], and of his conspicuously noble conduct before [illegible] emergency in a moment of England's great danger.

SUB-ASSISTANT SURGEONS.

We observe that Sub-Assistant Surgeons are complaining that certain privileges [illegible] granted to Apothecaries by the Government, to which [illegible] "A Friend" to the Sub-Assistant, writing recently in the *Indian Daily News*, [illegible] has not, [illegible] quite correctly. Apothecaries and Sub-Assistant Surgeons are now both admitted into the uncovenanted service [illegible]. They each draw the pay of that service, beginning from the lowest salary of Rs. 350 per month, and rising with the maximum attainable in this department, to Rs. 700 a month. "A Friend" states that, although previous service in a regiment in a *subordinate capacity* is allowed to count towards the periodic increments of pay in the case of Apothecaries transferred afterwards to the medical charge of a civil station in the uncovenanted service, similar service is not allowed to count for Sub-Assistant Surgeons; and this journal is quoted as the authority for the statement.

Our "Friend" has misunderstood what we wrote. The Apothecary's previous service qualifying for the periodic increments of pay must have been something more than subordinate service: he must have held *medical charge of the regiment*; and, doubtless, if a Sub-Assistant Surgeon could show similar service, *he* would be admitted to the same privilege. "A Friend" has taken no notice of a great concession recently made to Sub-Assistant Surgeons in the fact of their previous service as Sub-Assistant Surgeons being allowed to count towards the *pension of the uncovenanted service*. This is a decided boon. It must be remembered that all that a Sub-Assistant Surgeon could look forward to, so long as he remained in that grade, was one-third of his salary at the end of fifteen years, or one-half at the end of twenty-five years, the maximum being Rs. 100 a month. Now, as an uncovenanted medical officer, he may become entitled to one of Rs. 150 a month at the end of fifteen years, and he may realize Rs. 350 at the end of twenty-five, his previous service as Sub-Assistant Surgeon qualifying for this advantage.

It has, indeed, been decided by the Government that, although the Sub-Assistant Surgeon's previous period of service may count for pension, it cannot for increments of pay. This may be considered a hardship. It may be urged that if the service is considered of sufficient value to qualify for pension, why not also for pay? It is well known, in high places, that the Sub-Assistant Surgeon receives a first-rate education, and that his usefulness when in charge of a dispensary is often incalculable. We quite agree with what "Bull's Eye" says on this point in his letter, which we publish in our next issue. There is no doubt that the post of a Sub-Assistant Surgeon in medical charge of a civil station involves the performance of duties quite equal to, if not greater than those of a medical officer in charge of a regiment. The time may come, therefore, when distinguished services in this capacity will be considered as qualifying for periodical increments of pay as well as for pension; meanwhile, we would say to those who murmur and are impatient, in the language (somewhat paraphrased) of a well-known poet:

[illegible] the present hour,
[illegible] for the past;
A[illegible] [illegible], the [illegible] power
W[illegible] you to the last.

SANITARY COMMISSIONERS.

In the supplement to the *Gazette of India*, dated the 17th October, 1868, it is stated that, "in determining the nature of the duties to be discharged by the new Sanitary Commissioners, it must be remembered that these appointments were created solely for the purpose of improving the sanitary condition of the people." It was further observed that, "considering the magnitude and difficulty of the task to be undertaken, the supervision of the public health will, the Governor-General in Council thinks, take up all the time and tax all the energy and ability of the Sanitary Commissioners;" that, therefore, "these officers should not be called on to undertake any work which is not intimately associated with the special objects for which they were appointed; that they should not have transferred to them any duty now performed by others, unless that duty is unmistakeably one which more properly belongs to them; and that their work should be so arranged as to prevent, as far as practicable, all possibility of collision between them and other officials."

We cordially concur in the wisdom which dictated these remarks, and earnestly trust that the Sanitary Commissioners will bear them in mind in the execution of their essentially important duties. The task which is thus presented to them is truly gigantic. It is none other than the improvement of the sanatary condition of the people of India—roughly estimated at from 150,000,000 to 200,000,000. It comprises the general introduction amongst the people of the art of conserving and preserving health, or of securing "the most perfect action of body and mind, during as long a period as is consistent with the laws of life—of rendering growth more perfect, decay less rapid, life more vigorous, death more remote." (Parkes). It imperatively demands the waging of an incessant but judiciously conducted warfare against all habits, customs, and usages which equally oppose civilization and the healthy operation of physiological laws, and the substitution of cleanliness for filth, good for bad air, well arranged and nutritious for defective and comparatively innutritious dietaries, good houses for bad ones, a pure for an impure water supply, &c.; in short, of physiological and sanitary for pathological and insanitary conditions. It would, therefore, be difficult to estimate, even approximately, the importance of the duties attaching to the post of Sanitary Commissioner, the successful carrying out of which will contribute materially to the augmentation of the national wealth by effecting an improvement in the national health.

We note from the resolution of the Governor-General in Council an attempt on the part of some of the minor Governments to saddle the Sanitary Commissioners with other duties than those for which they were appointed. Thus the Punjab Government wished to combine in one officer the offices of Sanitary Commissioner and of the Inspector-General of Dispensaries; whilst that of the North-Western Provinces requested authority to give the Sanitary Commissioner the control of the civil medical establishments, and to convert him into an Under-Secretary to Government. A similar doubling-up system was proposed for Oude.

We are glad to observe that these propositions have been negatived by the Government of India. "As no other appointment which the Sanitary Commissioner could hold would so completely occupy his time and divert his attention from his own proper work as the medical supervision of a whole province, the Governor-General in Council does not consider that it will be advisable to add this to the Sanitary Commissioner's duties." If the Sanitary Commissioners are to be health officers with plenary powers in their own special department, acting directly under their respective Governments, they must be restricted to the devising of measures for the hygienic and sanitary amelioration of the general population in their jurisdiction, or for the gradual development of the great principles of *preventive or state medicine*. In order to increase their efficiency, they should be supplied with all necessary information by the municipal corporations, and by other authorities capable of affording such information within their provinces. We have no doubt that *all* will only be too glad to supply this information. But the first thing to be done, under existing circumstances, is that the Sanitary Commissioners should make themselves personally acquainted with the sanitary wants of villages, towns, and cities.

To attain the desired knowledge of what is wanted to better the health of the people, the Sanitary Commissioners will have to be continually on the move. To hamper these officers with other duties entirely foreign to the objects contemplated in their appointment to the important and useful offices they hold, would simply result in the production of inefficiency and the postponement of the adoption of the necessary measures for "improving the sanitary condition of the people."

We undertake to declare that in no country in the world are cantonments, garrisons, jails, hospitals, and dispensaries better cared for, in a sanitary point of view, than in India. Where defects exist, these have been systematically brought to notice by executive and administrative medical officers. And though much improvement may in many of these institutions be still necessary, yet it may be fearlessly stated that the present officers responsible for their sanitary condition are acutely sensible of them, and perfectly competent to deal with them according to the light of the times. Wherever imperfection is found, its perpetuation is universally dependent upon want of funds, and in no way attributable to destitution in sanitary knowledge on the part of the ordinary executive and administrative staff. No one would for a moment suppose that, were the ways and means provided with sufficient liberality to Norman Chevers, he would fail in making the sanitary condition of the great imperial institution under his charge all that could be desired. Who would dare to assert that if Frederick Mouat were put in possession of the needful amount of money, he would be many years before he secured a *maximum* of sanitation, and thereby a *minimum* of mortality in the prisons under his control? What is applicable to these two eminent sanitarians may be assumed as being equally applicable to the position and capacity of the local executive officers studded throughout the length and breadth of the land. Where then, it may be asked, is the necessity or expediency of making the sanitary superintendence of any of the institutions already well-cared for a part of the duty of the Sanitary Commissioners? The inutility of such a measure has been clearly recognized by the Governor-General in the third paragraph of the resolution under review.

There is, however, one feature in this resolution which, we fear, cannot but give pain to the medical department generally. To imply that this department is unequal to the task now devolving upon Sanitary Commissioners is, in truth, to deny to it the high historic renown which it has acquired for itself as an *appanage* of the Indian Army. Let the Deputy Inspectors-General, and the Inspector-General of the Medical Department also, be carefully chosen, not by seniority, but *by select* [illegible] or [illegible] enumerated [illegible] Lord Dalhousie [illegible] commissioned and surgeons, and we venture to assert that the competency of [illegible] was [illegible] other in India.

Our [illegible] restriction [illegible] Sanitary Commissioners [illegible] of the great principles of PREVENTIVE or CURATIVE MEDICINE for the good of the [illegible] of India, is that [illegible] way in which these officers can be expected to [illegible] their onerous duties with efficiency, with credit to themselves, and benefit to the teeming millions of British India. Our plea for the preservation and elevation of the [illegible] medical department, with its full complement of administrative and executive officers, is that it is essentially necessary [illegible] and management of civil, jail, and military [illegible] dispensaries in times of peace and war.

DELENDA EST CARTHAGO?

[illegible] Government [illegible] which we have ventured to [illegible] in another article, are there not sentiments [illegible] which may justly [illegible] fear that successful sanitation [illegible] skill? To bear a [illegible] well [illegible] sanitary science will hence- [illegible] aspirants in the service [illegible] and [illegible]. As a matter of fact, the Sanitary Commissioner, with the Government of India, is now [illegible] questions of a [illegible] nature. Practically, [illegible] to the Inspector-General of Hospitals. It would seem as if the good old medical service, as an administrative body, was really destined to destruction, and that the temple of [illegible], in which the sons of Æsculapius must [illegible] was to be erected on its ruins.

We propose to devote a few remarks to the origin and progress of the establishment which has so long assisted in [illegible] of English rule, and in removing the [illegible] of [illegible].

The earlier [illegible] medical service in India, however, were [illegible] that, in 1770, [illegible] Court of Directors [illegible] as to the class [illegible] in the civil and [illegible] service. [illegible] ordinarily men [illegible]. These were [illegible], what is worse, [illegible] had the power to [illegible] surgeons' [illegible] 1784, the [illegible] Court of Directors, [illegible] examined [illegible] from the civil [illegible]

[illegible] It is obvious, therefore, that [illegible] was [illegible] such a service at that time, and that [illegible] risk expense and education by entering it. In fact, circumstances tended rather to discourage candidates, for in 1784 we find an order which directs that surgeons [illegible] on their private practice until vacancies occurred in the service, [illegible] in permitting surgeons of any description to proceed to India for the purpose of practising their profession, it was not the intention of the Court of Directors that the surgeons should, immediately on their arrival, receive pay.

"Their allowances were to commence on being appointed to [illegible]. This state of things could not last long, but the effects which followed were sufficient to demonstrate the impolicy of the measure, which proved to be as injurious to the service as it was inimical to humanity. In 1795, the Court of Directors therefore commenced to put their medical department upon a more respectable footing.

"Previous to the admission of any medical gentleman into their service, they required that diplomas from one of the leading colleges of London, Edinburgh, Glasgow, or Dublin should be procured. Simultaneously with such requisitions, the local Government gave to regimental surgeons contracts for the purveying of hospitals, and the supply of European [illegible]. In consequence of this arrangement, some of the surgeons, from a state of absolute distress, soon found themselves in the receipt of enormous salaries, for such was the paucity of surgeons at this time, that several offices fell to the lot of one individual, and for each of them he received a full allowance. It, however, [illegible] that, at large stations, the senior surgeons alone [illegible] to assume charge of regiments, or detachments without surgeons, [illegible] the whole of the emoluments.

"[illegible] camp, such were the enormous receipts in consequence of these contracts for supplying corps with [illegible], and [illegible] that Drs. Monroe and Cochrane [illegible] the largest fortunes ever made in this country.

"The intelligence of the realization of such brilliant fortunes in [illegible] parts of Britain. Gentlemen [illegible] sent their sons to study medicine, the Indian service, therefore, was soon filled with as accomplished and able men as were to be found in any part of the world. Indeed, such was their literary acquirements, that many were employed in the political department, while the press of India [illegible] were [illegible] by them. We [illegible] by referring to several medical works written some thirty or forty years ago by Wade, [illegible], [illegible], Fleming, Assey, and Wilson. But [illegible] not to continue long. In 1815, [illegible] H.M.'s army was undergoing [illegible] men of respectability and [illegible] of Directors [illegible] adopt the [illegible] local Government [illegible] allowance granted [illegible] the [illegible] charge of European [illegible] for remuneration for length of service and [illegible] native regiments yielded no reward [illegible] allowances of a regiment [illegible] promotion [illegible] that [illegible] content, and [illegible] education and respectability have continued to come out and fill the vacated ranks. From this period it would have been prudent and sound policy to have pursued a system which had been found by experience in the king's service to be expedient, namely, that of progressively improving the situation of the medical servants of the state."*

(To be continued.)

INDIGENOUS DRUGS.

We understand that a great impetus is about to be given to the development of the native medicines of India. It is not, perhaps, generally known that a large proportion of those already in use in our European and native hospitals in Bengal are the products of this country. They are procured from the bazaars, and afterwards prepared for use in the laboratories of the depôt in Calcutta, the provincial depôts being supplied from this source. It has been shown that these indigenous substitutes for their European congeners are quite equal in efficacy to, whilst they are much cheaper than, those costly importations.

It is expected that more attention, therefore, will be given to this subject by the provincial storekeepers. The drugs which exist in Calcutta and its neighbourhood are to be found generally all over India, and there is no reason why they should not be collected and prepared, locally, as they are at the presidency town. We have not space to enter fully into the matter now, but we would urge that *medical storekeepers* should be *selected men*,—that they should evince a special fitness for the development of the native materia medica. All cannot be Warings; but, with the assistance of his Pharmacopœia, recently published, those who are appointed to these important posts may follow in his steps and become of great use to the country. The men who are selected for the charge of medical depôts should have *something*, at least, of the spirit of a Waring, the great pioneer (with Royle and Forbes Watson) of India's progress in the development of the products of her soil.

SUBORDINATE MEDICAL EDUCATION IN INDIA.

It is universally acknowledged that the greatest boon to the natives of India, which has accompanied the English rule in their country, is the medical education of her sons, and the diffusion of European medical skill amongst her people. *Undoubtedly*, much has been done in this direction; but have we done all we could? We make bold to assert that we have not; and that, not from any want of energy in the cause, (on the contrary, we point to our metropolitan hospitals and dispensaries and say to sceptics, "si monumentum quaeris circumspice,") but from ignorance of the most effective method of attaining our object.

We do not propose in the present article, to deal with the question of hospital apprentices. This we reserve to a future opportunity. Our object to-day is rather to analyse the system, now in existence, by which we hope to bring the incalculable blessings of Western medical science to the homesteads of our poorest native subjects, to establish one or more skilled village doctors in every village in India.

Let us first ask ourselves what course we have already pursued, and what have been the results, and then we shall be in a position to discuss any more desirable method that may suggest itself, if there be found, as we venture to think there will be, room for improvement. Thirty-four years ago, a *people's* Governor-General crowned his remarkable administration by the foundation of the Medical College of Bengal. His object was to create a class of highly-educated native medical men, who were to become the medium of communication of English surgery and medicine to the *masses*. And, so far as the educational part of the scheme is concerned, the object has been attained to a degree beyond the most sanguine expectation. The ablest medical officers in the service have, from time to time, been appointed to the various professional chairs, and to the hospital. The standard of the education to be received has been so much raised by the University of Calcutta, that the students are found competent, after leaving college and proceeding to England, to maintain their position against the best educated students of Europe. They go home in medical charge of coolies to the West India Islands, Demerara, &c., from whence they are shipped free by the Emigration Agents to Liverpool or London. They then pass a short time in either Edinburgh or London, and return to their native country fortified with European diplomas and degrees, and ready either to engage in private practice, or to assume medical charge of a civil station in the uncovenanted department. Some compete for an appointment on the Indian medical establishment, and come out as assistant surgeons. Others, less ambitious, are content to remain in their own country; but it is remarkable that a large number first make an effort to succeed in private practice, failing which they declare for Government service. Some few, at stations where they are appointed to dispensaries, contrive to make themselves popular, where they become naturalized, as it were, in the locality, and are a real blessing to the people. A sub-assistant surgeon's surgical reputation will sometimes bring villagers more than a hundred miles for the purpose of consulting him. But such men are "raræ aves in terris;" the majority cluster together in Bengal, and about the large towns, as much as they can, very many engaging in private practice on their own account, quite independent of the Government, for the sake of personal profit on a large scale. Some sub-assistant surgeons in Government employ, we grieve to say, do as little as they possibly can, and shirk their legitimate duties to the verge of safety. References are made now and then, to the head of the medical department, about a certain sub-assistant surgeon declining to see a poor suffering individual because he has not been summoned quite *en règle*, or because he has not met with what he considers his due share of civility. Some of these men thus stickle at trifles, whilst a fellow creature is suffering pain. Not only is such conduct inhuman, but, in the present day especially, when the cause of sub-assistant surgeons is being advocated by their influential friends, it is impolitic, as bringing discredit upon a body of really intelligent, well-educated, and, in many instances, gentlemanly and high-minded public servants.

The sub-assistant surgeon can never be the village doctor. As a medium for educating the latter, he is invaluable; but there his utility, as regards the masses, ceases. Except in the rare instances we have mentioned, the sub-assistant surgeon

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[*] This account between inverted commas is taken from the *Indian Journal of Medical Science*, edited by F. Corbyn, Esq.—1836.

[illegible] necessary a [illegible]. The [illegible] of such a class becomes, nevertheless, of the utmost importance. It is required not only for the [illegible] of the general practitioner, village doctor, but also for the [illegible] numbers of native society of men who can appreciate European medical skill and pay for it. It is to be hoped that the time will come when this class will occupy itself with yet higher objects of [illegible],—that its members will form themselves into councils and associations for the purpose of discussing various medical questions, such as the state of medicine generally in India, &c. This class might become an influential body in native Indian society, as the Indian prototype of the Medical Council in England. We are looking somewhat into futurity, but we cannot help urging sub-assistant surgeons and native general practitioners to be up and doing something for themselves. The Government is only too desirous that the college alumni should scatter themselves over the face of the land, and settle down as independent practitioners, and these gentlemen should remember that India looks to them as her future medical councillors.

Before concluding this part of the subject, we would raise our voice against any attempt to make teaching a *secondary* occupation. Unfortunately, there is a great dearth of European medical officers on the medical establishment; and hence it need not be a matter of surprise that legislators should endeavour to get all they can out of a few individuals. For example, we have reason to believe that it is in contemplation to establish a college either at Agra or Allahabad, and to call upon the resident medical officers to give the necessary lectures. A certain amount of "doubling up" is perhaps absolutely necessary in a medical town, in the present debilitated state of the medical service; although we would earnestly advocate the principle of single professorships wherever possible. Where, however, this is impossible, we would urge that the professorship should be made the primary occupation, that is, that the station medical officers should be appointed to their station duties with strict reference to their skill in certain specialities which they would be able to teach. For example, the civil and staff surgeon should be competent to take the chairs of surgery, medicine, and midwifery between them, including, perhaps, hygiene; ophthalmic and dental surgery would naturally, at the outset, be included, though here again we should advocate separate professorships even for these subjects. The medical storekeeper (if there were one, as there would be if Allahabad were selected as the station) might give lectures on materia medica and its kindred study botany. *He should be debarred from private practice.* The medical storekeeper would be selected [illegible] for his practical [illegible] with the above [illegible] so that an impetus [illegible] being given to the great [illegible] of indigenous [illegible] he would be expected to carry [illegible] the products of the country, and he should also instruct the students in practical pharmacy. Considering that the [illegible] storekeeper is away from his depôt, the latter, it is desirable that he should teach on his own premises.

So far, we have shown how a certain extent of "doubling up" may be admissible, but here we stop. The Principal of the college should be *resident*, and he should be *ex officio* one of the physicians or surgeons to the hospital, (without a hospital no college would be necessary) with a view to giving him a [illegible] amongst the professors and pupils. He should not be debarred from consulting practice; *private practice* it would be necessary for him to forego. Chemistry requires a special professor, whose laboratory should be on the college premises. He, of course, should not practise. If possible, he should be imported from Europe. A good analytical chemist, co-operating with the medical storekeeper, might be of material use in developing the resources of India. He might lecture on medical jurisprudence, and he should be the chemical examiner to Government.

We have now four important chairs left—anatomy, physiology, comparative anatomy and zoology, and pathology. To the hospital would be attached a European house surgeon, and a European house physician. Both these gentlemen would be resident, and, in the infancy of the institution, they and the Principal might divide these subjects amongst them. To the hospital would naturally be attached a museum, the curatorship of which might be undertaken by one of the two first-named. There would thus be four—or at any rate three—resident medical officers.

We next come to the important question of the hospital. To be thoroughly useful, it should contain beds for European, as well as native, patients. The European element is comparatively absent at Agra, whilst it abounds at Allahabad; this, in itself, is a strong argument in favor of establishing the new college at Allahabad, which is, moreover, the capital of the North-West Provinces. Further, it is centrally situated, and readily accessible by land and water. Agra is invested with historic associations which Allahabad is not, the name of Thomason having given to the hospital at the former station a significance which a building of the same description at the latter would not possess. But to establish a college and hospital at Agra on this account alone, would be to perform a romantic act unworthy of the utilitarian disciple of the beloved Gamaliel, who would himself, were he alive, utterly condemn the proceeding. Let the Thomason hospital be maintained by all means. The more schools and dispensaries scattered throughout the length and breadth of the country the better: the building at Agra may still be maintained as a *dispensary*; but let a *collegiate* institution, with its large hospital for all classes, irrespective of race or creed, with its staff of European and native teachers, its laboratories and museums, be located at the second capital of the Bengal Presidency. We have spoken in this article only of the higher kind of education to be given at this college,—of the education of sub-assistant surgeons. In our next we propose to discuss the education of hospital assistants, heretofore yclept native doctors,—of the class which is intended to represent the country practitioner in England. The cost of the whole will be then considered also.

(To be continued.)

Domestic Occurrence.

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DEATH.

METCALFE.—At Dera Ismail Khan, on November 25th, at 3·30 a.m., of diarrhœa, KATHERINE ALICE, only child of Assistant-Surgeon FENWICK METCALFE, aged 10 months.

Reviews.

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"Report on the Stamping out of Small-Pox Epidemics occurring within a certain distance of Calcutta," &c. "Report on the Outbreak of Small-Pox at Sukkerith." "Report on the Stamping out of Small-Pox in Calcutta." By T. EDMONSTONE CHARLES, M.D., M.R.C.P., Lond. 1868.

IN the first of these able reports Dr. Charles clearly shows the value of *movable vaccine establishments.* Small-pox bursts forth, and spreads over a tract of country—say a village—in an epidemic form, but the establishment is moved up, and rapidly stamps it out; *i.e.*, it vaccinates everybody, and surrounds the infected tract by a cordon of protected individuals, beyond which the disease cannot penetrate. It dies,—it is stamped out. The vaccine establishment in Calcutta works upon this principle. But vaccination at the Presidency will always be imperfect in its results, *until it is made compulsory.* The victim of small-pox is *dangerous*, and he has no right to allow himself to become so. He may be forbidden to inoculate himself for small-pox, but if he be not compelled to protect himself by the vaccine prophylactic—of whose efficacy *here* there can be no doubt—the measure is only a *half one.* The portals for the entry of small-pox into a large eastern city are numerous and wide, and its inhabitants ought not to be allowed to offer themselves as targets to be shot at by it.

Why do we hesitate? Compulsory vaccination has stamped small-pox out in Denmark: why should it not be made to effect the same desirable object in Calcutta? Until such a law be passed, this hideous disease will strike down its victims, in epidemic years—in spite of improved sanitation and vaccine establishments,—by hundreds and tens of hundreds. In 1865, in the months of February and March, nearly 3,000 persons died of small-pox in Calcutta. If, as Dr. Charles says, the killed and wounded at the battles of St. Vincent, Camperdown, the Nile, Trafalgar, Algiers, and Navarino were added together, the sum total would approach the number struck down here by small-pox in those two months. During the last four years of the Peninsular War, nearly 9,000 British soldiers were either killed in action, or died afterwards from their wounds. Add to the deaths from small-pox in 1865 those which took place in 1850, and we have a death-roll of more than 9,000!

Men go into battle *expecting* to be wounded or killed. When Lord Cardigan charged with the light brigade at Balaklava—the play of the "white stocking" on his chestnut's near foreleg, as horse and rider advanced along that fatal valley, indicating to close observers that the post of danger was maintained throughout,—he never, for an instant, imagined that aught but death would be his fate at the termination of the ride; but it was to be the death of a soldier, *required* (wisely or otherwise is not now the question) by his country,—very different to deaths which are *not* required, and which are preventable.

Dr. Charles says that he fully sees the necessity for a law rendering vaccination compulsory, but that he is not prepared to press for it, till all *other** means of having the people protected have been fairly pushed. What other means? We sincerely trust that the Government of India will never give its sanction to any scheme of inoculation for small-pox; and yet, a recent Gazette intimates as much. Mr. Strachey thinks favorably of Dr. Charles's scheme in this direction. Those who favor it little know—we venture to say—what mischief will result in consequence. We write in no captious spirit; but we must, as a public journalist and experienced vaccinator, most emphatically raise our voice against a system which would encourage inoculation for small-pox under Government regulation, however restrictive. The intention is undoubtedly good. Millions wait to be protected. Vaccination, unless propagated on an enormous scale, and at an incalculable cost, cannot do this. "Hence," say Dr. Charles and his followers, "let us adopt some measure which shall protect the people *at once, in those places where good vaccination cannot be depended upon.* We can't yet give you a really good substitute for your own excellent prophylactic, therefore, for the present, we will let you fall back upon that!"

Once let the natives of India see that their own system is thus thought of by their rulers, and an impetus will be given to their inoculating operations, which hereafter it will be found most difficult to control. It has been proved that a perfect virus may be made available, either from England or the Hills. Dr. Pearson's successful cases are 90 per cent.; and the protection of all India therefore is simply a question of time. Let vaccinators, who should be sons of native physicians or of inoculators, if not inoculators themselves, be retained *all the year round*, and *live* among the people, who will thus become habituated to the prophylactic, and vaccination will make its way, and, *in time*, become one of the institutions of the country. If encouragement, on the other hand, be given to inoculation for small-pox, the advances which have been made in securing a footing for its antagonist since the days of Shoolbred will not only be checked, but we verily believe that its progress will be thrown back, as a prophylactic measure, *in the eyes of the people*, at least a century.

A Manual of the Diseases of the Eye. BY C. MACNAMARA, Surgeon to the Calcutta Ophthalmic Hospital; Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College. With Coloured Plates, fcap. 8vo, cloth, 12s. 6d.

Cœlum non animum mutat, qui trans mare currunt.

HOWEVER readily the above proverb may have been allowed to apply, by our untravelled friends at home, to the European *character*, they have been chary of extending it to the European *intellect.* It is too generally thought that the mental faculties of Europeans in India will not bear comparison with those of their brethren in Europe. The medical profession has not escaped the unmerited stigma. It will be remembered that a writer in the *Pall Mall Gazette* stated—a little more than two years ago—that "the Indian doctors are not good physicians, and have contributed wonderfully little to the materia medica; but they are good surgeons, and they really understand tropical hygiene."

We took occasion to notice this effusion in our issue of June, 1866, and to point out the fallacy of the writer.

We venture to say that there are no abler surgeons (our correspondent probably would not go *so* far) to be found in the world than some of the eminent men who adorn the Indian medical establishment, whilst our ranks have furnished a physician competent to sit side by side with delegates from European nations for the discussion of subjects of world-wide importance.

Since we wrote, a Fayrer, a Goodeve, and a Waring have stood forth as champions of the reputation of the old Indian Medical Service; and now last, but far from least, a Macnamara gives to the profession so useful and attractive a manual on ophthalmic surgery that it has been pronounced, by competent authorities at home, to be by far the best work of the kind published. To say that it supplies a gap in the series of the Messrs. Churchill, is to give it small praise. It is no mere compilation, but a work displaying considerable originality of thought, whilst it is full of practical matter drawn principally from the author's own experience. It is, moreover, beautifully illustrated by colored delineations of the different diseases of the organ of vision, as seen by the naked eye and through the ophthalmoscope. These are reproductions of Liebreich's exquisite drawings.

Dr. Macnamara's manual is, in fact, *the* book on diseases of the eye, and it possesses the additional advantage of being applicable to the study of disease as well in Native as in European eyes. No medical man's library can henceforth be considered complete without it.

Notices to Correspondents.

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Communications have been received from

DR. N. C. MACNAMARA.
BULL'S EYE.
DR. CONDON FRANCIS.
A PASSED APOTHECARY.
A CIVIL MEDICAL OFFICER.
OODY CHUND DUTT.

The following contribution is postponed:—

"A paper on Cholera," by DR. DEFABECK

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* The italics are ours.—ED., *I. M. G.*

Short Notices of Recent Books.

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A Manual of the Diseases of the Eye. By C. Macnamara, Surgeon to the Calcutta Ophthalmic Hospital, Professor of Ophthalmic Medicine and Surgery in the Calcutta Medical College. London: Churchill. 1868.

Of all the excellent manuals which Messrs. Churchill have published, this work of Mr. Macnamara's is essentially the most [illegible] of [illegible], and one of the most useful [illegible] works for the student. Its type is clearer, larger, and [illegible] than that of other books of this series; its illustrations are [illegible] and accurate, and it has [illegible] which render it an [illegible] work, not only for the student, but for the busy [illegible] who wishes to refer to a particular fact in [illegible]. But it is not of the mere external [illegible] of the work that we would speak in the highest terms of praise, but of the care and labour in preparing this manual. Mr. Macnamara has spared no pains in making the work a thorough [illegible] of modern ophthalmology; and though he has given reference to nearly everything of practical value which has been done within the past few years, he has been most successful in avoiding that diffuseness, [illegible] which to so many writers is a [illegible] stumbling block. It would be out of our power, in the limited space at our disposal, to do anything like justice to this work; we think it is really one of the most thoroughly [illegible] treatises we have ever met with. We use the word [illegible] in its widest sense, to signify methods of healing. The author intentionally omits notice of the more minute points in pathology, referring his reader for these to the larger treatises of Wecker and Stellwag. It is to questions of diagnosis and treatment that he especially directs attention, and on these the information he supplies is ample and good. If we may select any portion of the book as better than another, we would take the chapter on cataract as an illustration of how the author has discharged his task. In this we find, first, a brief account of the pathology of cataract, then a description of its varieties, and next an account of the mode of treatment, and finally a succinct statement of the features of the various operations now in vogue among ophthalmic surgeons. For example, depression of the lens, solution, flap extraction and its modifications, linear extraction, traction, modified linear extraction, and linear extraction without iridectomy, all find a place in these pages, and are illustrated by appropriate woodcuts. The author points out where each of these operations is advisable, but he enters a protest against the recent revival of "reclination" by Signor Quaglino, of Pavia, and he urges several very just reasons for his objection to this method. The portions of the book devoted to the subjects of astigmatism and the selection of glasses for near and distant vision are just what the student requires, and will be read with much advantage by the general practitioner as well as by the specialist. In the opening chapter, on the physiology of vision, the author leans to, or indeed admits, the theory of Helmholtz, that the lens alters in form; and he gives a certain amount of support to the view by the results of his own inquiry into the structure of the crystalline lens, which he regards as a sort of muscular structure. We cordially agree with him when he expresses his belief that the ciliary muscle [illegible] at all [illegible] the form of the lens. Indeed, we have always [illegible] who understands the anatomy of the eye [illegible] argument. But we cannot [illegible] agent in accommodation [illegible] the image [illegible] from the [illegible] satisfactory [illegible] and we [illegible] never could take place in the experiment [illegible] explained by supposing [illegible] On the other hand, there [illegible] animals whose range of accommodation [illegible] the ciliary muscle is largely [illegible] in which accommodation [illegible] developed. We [illegible] allude to [illegible] Mr. Macnamara, who has done such [illegible] of the lens, to [illegible] Helmholtz [illegible] A text-book [illegible] for the student, [illegible] manual [illegible] and we heartily wish it the success it so highly [illegible] merits.

A Manual of Elementary Chemistry. By George Fownes, F.R.S., &c., Professor of Practical Chemistry in University College, London. Tenth Edition. London: Churchill. 1868.

Here is a new edition of a work which has been long watched for by eager students of chemistry. The previous editions had not been kept up with the advance of chemical fact and theory, and hence for some years "Fownes' Manual" fell into disrepute among lecturers. In its new garb, and under the [illegible] of Mr. Watts, it has resumed its old place as the most successful text-book. Nominally, this edition has been issued under the joint revision of Dr. Bence Jones and Mr. Watts, but there is internal evidence to show that it is to the latter alone that we owe the marked improvements which the work has undergone. This edition contains about 200 pages of new matter. Old paragraphs which referred to bygone and exploded views have been excised, and fresh matter has been introduced into the chapters where it was found necessary. Thus the whole account of the "General Principles of Chemical Philosophy" has been written for this edition. The classification of the substances is different from that hitherto pursued. After the non-metallic elements (we wish they had an affirmative, not a negative title), we find the metals arranged as monads (potassium, sodium, etc.), dyads, (calcium, barium, copper, mercury, etc.), triads (thallium and gold), tetrads (platinum, lead, etc.), pentads (arsenic and bismuth), and hexads, as tungsten and wolfram.

Under the head of organic chemistry, which, in our opinion, ought no longer to exist as a distinct division, we find the many curious substances *called* organic arranged as follows:—(1) hydrocarbons containing even numbers of hydrogen; (2) haloid ethers; (3) alcohols; (4) oxygen ethers; (5) sulphur and selenium ethers and [illegible]; (6) acid anhydrides; (7) organic acids; (8) [illegible]; (9) ethereal salts or compound ethers; (10) aldehydes; (11) ketones; (12) amines; (13) alcoholic ammonium compounds; (14) phosphorus, arsenic, and antimony compounds; (15) organo-metallic bodies; (16) amides; and (17) amic acids. This list includes nearly all substances of organic origin, but there are still some whose proper position is so difficult to define, that they have been left out of consideration. Before concluding our notice, we must refer to the early chapters of this work, which, as formerly, deal with experimental physics. These are not so good as the more purely chemical parts, still they are "up to the time" as concerns discovery. It would have been better, however, had they contained a clear description of the method of spectrum analysis, and of Sorby's very interesting "interference" scale for registering the spectral position of the absorption bands of coloured liquids. On the whole, as we have already said, the new edition of Fowne's Manual is most creditable to its Editor.

On the Results of the Operations for Contractions after Burns. By J. H. James, F.R.C.S. London: Churchill. 1868.

The author, in consulting Holme's "System of Surgery" lately, was surprised to find the following statement:—"It may be laid down as a rule, almost without exception, that *a cicatrix should* [illegible] *the knife*, and I would add that these operations have for some time past been discarded as useless at St. Bartholomew's Hospital and some other hospitals of London." Mr. James then relates the cases of a number of cicatrices, all treated by [illegible] extension of the part, and treated successfully.

English Correspondence.

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FROM OUR OWN CORRESPONDENT.

London, November 20th, 1868.

The excitement of the general elections has at last subsided; the Liberals have obtained a majority of about a hundred; [illegible] twenty-two medical candidates have [illegible] in their efforts to [illegible] legislators. Dr. Humphry Sandwith, who was candidate for Marylebone, and Sir Dominic Corrigan, who offered himself as representative for Dublin, have both been defeated by very considerable majorities. This is a severe blow to prospects of medical reform, and its intensity is increased by the fact that a lay member, who takes the greatest interest in the progress of medicine and science, Mr. J. Stuart Mill, has not been returned to the new parliament. Dr. Sandwith of Kar's celebrity had little claims upon the electors of Marylebone; still had some of his supposed medical supporters been a little more energetic in working his canvass, he would at least have been placed second at the poll. Sir D. Corrigan, who was supported by a large number of the Liberals of Ireland, was thrown out because of his expressed desire to see the Irish Church disestablished. When this view of his became known, formidable opposition was originated by his more Conservative brethren, who forthwith issued a signed document to the effect that they could not support Sir Dominic's candidature. Hence the failure—*hinc illæ lachrymæ*.

Under the circumstance of this loss, it is difficult to know what will be done upon the question now so much mooted in professional circles—the question of direct representation in the General Medical Council. I doubt not most persons will agree with me in thinking that the present "Council" is a most anomalous and unfairly constituted body, which in no adequate or proper manner represents the interest of the medical body. Direct representation, then, appears the only remedy. But what chance is there of obtaining this from a House of Commons, where medicine is so feebly, and to so small an extent, represented. Mr. Vanderbyl is certainly a useful member, but we need not expect much in the way of advancement from either the eloquence or the persuasive arguments of Dr. Brady.

The two great medico-scientific questions in the *tapis* of medical journalism are blood-letting and tobacco-smoking. The subject of blood-letting has been re-opened by Dr. B. W. Richardson in a long article in the *Practitioner* for this month, in which the author all but gives the rank of panacea to blood-letting. Dr. Richardson's arguments on the purely scientific point of the relation between venesection and the supposed reduction of inflammation are by no means satisfactory. His arguments from practical experience will have more influence; but even these are founded rather on the vague statistics of the ancients than from any exact returns from modern practice. For myself, I cannot concur in Dr. Richardson's opinions; but, as his article is written in his usual brilliant and forcible style, I doubt not he will find many disciples among the rural practitioners. He advises blood-letting in typhus, spasmodic pain, the acute pain of membranes, sun-stroke, non-dropsical uræmia, congestion of brain from weak vessels, concussion, cases of embarrassed heart, convulsions, and, finally, hæmorrhage. The tobacco question has been opened by Mr. G. Henry Lewes—Goethe's biographer, and Marshall Hall's opponent on the reflex-action theory in an article in *St. Paul's Magazine*. Mr. Lewes, on the *medio tutissimus* principle, shows, in a cleverly written, spirited, and logical essay, that tobacco is neither a universal poison, nor a perfectly innocuous substance. The late Sir Benjamin Brodie, in his papers on tobacco, stated that when a drop of the concentrated empyreumatic oil was placed on the tongue of a cat, it threw her into convulsions. Hence, he somewhat illogically reasoned, smoking must be extremely injurious in all cases. He forgot an important axiom which is now very generally admitted by therapeutists, that increased dose of a drug does not merely imply increased action of the same kind as produced by small dose, but actual alteration of effect. M. Pelikan, of St. Petersburg, demonstrates this in the case of oxalic-acid; and Anstie's researches have equally proved it for alcohol. We may therefore even, on *à priori* grounds, admit the same for tobacco, and deny its generally poisonous nature. In point of fact, if tobacco is asserted to be universally destructive of health, its enormous consumption with an increasing life-rate is a certain *reductio ad absurdum* of the proposition. The *Lancet* of Saturday has a very able leader on the subject, from the pen of our most accomplished and earnest student of the physiological action of drugs. It is worth reading.

St. Thomas's Hospital (the new building) is making vast strides towards completion: already from the immense and bewildering forest of spars the first story begins to be shadowed forth; and as no less than seven hundred pairs of hands are busily engaged in the work, we may soon hope to see the most ornamental and best-placed of all the London charities actively dispensing its hospitality.

When speaking of parliamentary matters, I forgot to mention, as a "set-off" against our losses in Dr. Sandwith's and Sir D. Corrigan's defeat, that the University of London returned Mr. Lowe. This is a step in advance. It is really to Mr. R. Lowe that we are indebted for the medical department of the Privy Council, a section of state medicine—indeed, the only one we have—which already, under the experienced and discriminating guidance of Mr. Simon, has borne such good fruit for sanitary science. Mr. Lowe has the deepest interest in the future of medicine. I remember, in his address to the students of St. Mary's Hospital in May last, how well he spoke [illegible] how clearly he discerned our failings, and how well he recognised the necessity for the establishment of governmental commissions for the investigation of special disease. "Look," he said, "at the report on cattle-plague: have we such an exhaustive memoir on any single human malady?" This return, therefore, looks hopeful.

On Saturday last Mr. Carlyle's term of office as Lord Rector of the University of Edinburgh had expired; the usual election took place, and terminated in favor of Mr. Moncrieff, the Dean of the Faculty of Advocates. The contest was at first between Mr. Lowe, Mr. Ruskin, and Mr. Moncrieff. Mr. Lowe retired after about a quarter of an hour, and the tussle was kept up between the other two, the final result in number of votes being for Mr. Moncrieff 607, and for Mr. Ruskin 425.

Dublin has lost one of its brightest medical luminaries by the death of Dr Hardy. But a couple of weeks since Dr. Hardy was elected a Fellow of the King and Queen's College of Physicians; and now, in the very prime of life, he has been removed from among us. He held a very high rank in Dublin as an obstetrician, having been President of the Obstetrical Society, ex-Assistant Master of the Rotunda, and Physician-Accoucheur to Stevens' Hospital. I have to record another gap in our ranks, which has a number of very sad associations. I refer to the death of Dr. Thomas Hillier, late Physician to the Skin Department of University College Hospital, and medical officer for St. Pancras. Dr. Hillier was equally respected and beloved by all who knew him. He was a most conscientious and earnest physician, and a very able and advanced scientific man. His death was caused by nervous shocks, which followed a severe accident a fortnight previously, by which his brother lost his life. His life has been sketched in the *Lancet* by a loving hand, by one who knew him as student and physician, and who has given a very sad and touching picture of the painful circumstances by which he was taken from us.

A new scientific weekly journal, called *Scientific Opinion*, has just been started by the Messrs. Wyman, of Great Queen Street; it is intended to effect for men of science what public opinion does for the general world of literature. The first three numbers have been issued, and they show what a want exists for this class of journal. The matter consists of selected papers from the various English and foreign scientific periodicals; original correspondence; reviews of books; a copious list of all the French, English, and German scientific treatises published during the week; reports of all the English societies and foreign academies; and, finally, a page of very interesting notes and queries.

Progress of the Medical and Collateral Sciences.

Action of Salts of Iron on the Blood.—In the *Journal of Anatomy and Physiology* for November, there is an extremely interesting paper, by Dr. James Blake, of California, on this subject. Some of the distinctions drawn by the author between the protosalts and the persalts are of the highest interest. For example, he tell us that the protosalts evidently tend to diminish the irritability of the heart, while the persalts seem to have little or no effect of this kind. The action of the protosalts on the nervous system shews itself in slower respiration—a peculiar state of quietness in which the animal does not wish to move. Again, the protosalts give rise to changes in the blood, which prevent its coagulation after death; while the salts of the peroxide do not at all interfere with its coagulation, but indeed, as Dr. Blake thinks, render the clot firmer. The quantities required to produce death in dogs are different for the two sets of salts, for which 60 or 70 grains of the protosalt can be held in the blood without serious consequences; 5 or 6 of the persalts will destroy life. These experiments of Dr. Blake shew us how much inquiry yet remains to be made in the department of therapeutics.

Prevention of Convulsions.—In a recent number of the *Journal de Physiologie*, Dr. Brown Sequard describes seven cases, in which irritation of the sensory nerves was found to arrest tetanic spasm and convulsions. The irritation of the sensory nerves was effected by violent flexion of the great toe. He considers that this is an instance of the same kind of action that we observe in the stoppage of the heart's action by irritation of the vagus. He is also of opinion that the arrest of an epileptic fit by irritating centripetal nerves is due to a like process.

[illegible]

[illegible] Seen with Va[illegible]sh.—It is well [illegible] by varnishing [illegible] 1868, [illegible] any ligature.

The Cause and Treatment of Vaginismus.—The very [illegible] Dr. Marion Sims [illegible] attracted so much [illegible] "Notes on Uterine Surgery," [illegible] Professor Scanzoni [illegible] October [illegible] in the question [illegible] organs [illegible] At the [illegible] Professor Scanzoni [illegible] introduction [illegible]

Maisonneuve's Method of Treating Stumps after Amputation.—[illegible] called the [illegible] M. [illegible] of two [illegible] The authors [illegible] stumps were [illegible] the process [illegible] form compresses [illegible] times the air [illegible] which [illegible] first 24 hours [illegible] of reparative [illegible] with the [illegible] and the [illegible] to remark [illegible] carried out [illegible] M. M. [illegible] employed, [illegible] degree of [illegible] pressure to which [illegible] were submitted, and, [illegible] whilst [illegible] the usual manner, and [illegible] has been done, [illegible] had a [illegible] that much atmospheric pressure will [illegible]

The Law of Contagion.—At the meeting of the French Academy of Sciences on the 9th of November, M. Chauveau [illegible] especially in [illegible] M. Chauveau [illegible] through the test [illegible] in the two [illegible] by allowing [illegible] or drink.

Tubercular Meningitis detected with the Opthalmoscope.—[illegible] of tubercles on the [illegible] M. B[illegible] has also [illegible] a new affection which he [illegible]

The Muscular Structure of the Auriculo-Ventricular Valves.—[illegible] recently read a memoir before the [illegible] Academy of Vienna on the above subject. He showed [illegible] of Kürschner and Joseph were correct, and [illegible] structures is not confined to animals, but [illegible] man also.

The Pathology of Œdema.—Herr [illegible] lately presented [illegible] Academy a memoir by M. W. Young, on [illegible] He showed [illegible] the [illegible] vessels formed in the [illegible] networks.

The Physiological Action of Ethyl-and Methyl-Strychnia.—[illegible] and Crum-Brown of [illegible] and has [illegible] without [illegible] by M. M. Jolyet and Cahours [illegible] at very many [illegible] was introduced [illegible] of a [illegible] These effects, however, were [illegible] of ordinary strychnia. At first the [illegible] but after a few moments its [illegible] and subsequently it [illegible] locomotion was concerned. [illegible] enough [illegible] the animal remained for nearly [illegible] In the case [illegible] the effects [illegible] any result, [illegible] These were not, however, [illegible] and they came on slowly, and at a very long [illegible] centigrammes of [illegible] took 20 centigrammes of ethyl-[illegible] non-fatal convulsions, and twice the [illegible] methyl-strychnia compound.—*Comptes Rendus*, November [illegible]

The Structure of the Placenta.—Herr W. Reitz has [illegible] of the human placenta. He [illegible] villi of this organ are not invested [illegible] They are prolonged into filaments, which, [illegible] and fitted with matter, but in which [illegible] At this period of its development the cell [illegible] of a hollow mass of protoplasm studded [illegible] with which is one blood vessel. It [illegible] many segments. Herr Reitz affirms the existence of muscular fibres of the non-striated variety in the human placenta.

ORIGINAL COMMUNICATIONS.

◆

EXPERIMENTS ON THE INFLUENCE OF CERTAIN REPUTED ANTIDOTES FOR SNAKE-POISONING.

By J. Fayrer, M.D.,

Professor of Surgery, Medical College of Bengal.

Present:—Dr. Francis, Dr. Ross, Dr. Fayrer, Dr. J. Ewart, Dr. D. B. Smith, Col. Showers, Mr. W. F. Blanford, and Mr. Seeva.

16th January, 1869.—The following experiment was made in the presence of the above gentlemen, with the view of testing an antidote described by Colonel Showers in his letter, and in the series of experiments performed at Gwalior in September, 1868, and recorded in the January (1869) number of the *Indian Medical Gazette*.

Colonel Showers having very kindly brought the man, who administered the antidote, to Calcutta, and expressed his wish that its effects should be tested, I accordingly, with the assistance of the above-mentioned gentlemen, proceeded to make the following experiments. The *kelaree* had been allowed to make any preparation that he deemed necessary on the day preceding, and in the morning of the day on which the experiment was performed.

It is right to note that he says, on the day of the experiments, that the antidote he has now with him is not the most potent one he knows, but that, owing to the absence of rain, he had not been able to procure it, as the drought had prevented the growth of the plant from which it is derived. He expressed his belief that the drug he had with him would prove sufficient to counteract the influence of snake-poison. Accordingly, a pariah dog was made over to him, and he administered to it a small piece of whitish-looking root, pounded and put in a piece of meat: this the dog, which was a full-grown pariah, ate readily. The *kelaree* next selected, from a basket of fresh Cobras, a full-grown one of the spectacled variety, which was made to close its jaws three times in the dog's hind leg, just at the fold of the skin of the thigh, and in the thigh. The dog shewed signs of pain when bitten, but had not evinced the least fear of the snake when it was brought near him; it was probably the first he had seen. The experiment was performed in the usual place, and as follows:—

Experiment No. 1.

The antidote was given to the dog in a piece of meat at 11-55 a.m. of the 16th January. At 11-59 the dog was bitten by a full-grown spectacled Cobra, of the variety known by the natives of Bengal as the *Gokurrah*. The snake was made, by a snakeman occasionally employed by me, to close its jaws three times at the fold of skin in the right thigh and in the thigh itself. We ascertained that the Cobra had only one effective poison fang, the other being broken, but with this he drew blood slightly.

Noon.—Dog licks the puncture; bitten leg weak; partially paralyzed.

12-1. *p.m.*—Dog lies down; shews indisposition to walk about.

12-3.—No pain apparently felt; is drowsy; refuses to be roused, and then walks about, but shews a tendency to lie down.

12-5.—Looks sleepy; roused, he walks, but soon lies down again.

12-13.—Breathing catching; is drowsy.

12-17.—Cannot walk without staggering; falls down when left alone; breathing hurried.

12-20.—Convulsed. The *kelaree* now applied some oil to the mouth and nostrils.

12-21.—Lies on the left side; universally convulsed; eyes glazed; pupils dilated, and insensible to light.

12-22. Defecates; is pale and bloodless about the mouth and lips.

12-23.—Involuntary micturition.

12-27.—Respiration ceased.

12-31. Dead.

Ceased to breathe three minutes before heart ceased to beat. Bitten at 11-59. Died at 12-31. Death in 32 minutes.

The above notes were taken by Dr. Ewart, who carefully watched and noted all the symptoms, and he adds the following remarks:—"There is evidence that death takes place through the nerve centres, the heart continuing to beat after the respiration entirely ceases, which can only be through its own inherent irritability and its own ganglionic supply, and quite independent of the medulla, which, in all other respects, is *hors de combat*, from three to four minutes before the heart actually ceases to pulsate."

This experiment, though unsuccessful in demonstrating the good effects of the reputed antidote, cannot be considered conclusive, as the man stated that it was not the most potent agent he was in the habit of using, nor, indeed, should I consider any single trial as proof either for or against the good effects of the drug, however it had resulted. Many and repeated experiments are necessary before any definite opinion can be formed on so important a subject: and, therefore, before recording one, it is expedient that the experiments should be made again: and as Colonel Showers has expressed a wish that the man should have further opportunity of exhibiting his antidote, I think that, on a future occasion, more certain results may be obtained.

Having studied the effects of the poison in many animals, and having formed conclusions as to the nature of the cause of death, I am sceptical on the subject of antidotes, and fear that the hopes of those who are most sanguine on the subject will not be realized. I am not the less anxious though to become acquainted with whatever may be of service in the treatment of snake-bites, whether prophylactic or therapeutic, and I shall be as glad to record any facts that tend to throw light on the subject, as to admit the potency of an antidote when I see it proved. Colonel Showers informs me that the *kelaree* makes the following objections to the experiment:—

First, that he was not fully prepared.

Second, that the antidote was not the most reliable one he knows of.

Third, that the animal was bitten three times by the Cobra.

With reference to these, I would remark that the time for the experiment was appointed some days previously; that he was invited to make any previous preparationhe thought desirable; that the room in which the experiments were performed was placed at his disposal, and that certain snakes were also made over to him; that he locked himself in for some time the day before making his preparations; and that Mr. Seeva was most careful to see that all he wanted was procured, and all his wishes carried out on the day of the experiment. The animal bitten was placed at his disposal to do what he liked with, and all his wishes were complied with to the minutest details. If, therefore, anything were wanting, the fault was his own.

Secondly, with reference to the [illegible], it was suggested by himself, and he certainly expressed his belief that it would prove efficacious; or else why did he administer it.

As to the number of times the dog was bitten by the Cobra, the snake was made to close its jaws in three places to ensure the injection of the poison; the first bite, at least, being [illegible].

I am quite satisfied that one bite, had it been fairly inflicted, would have been sufficient. Nevertheless the fact of there having been three [illegible] bites [illegible] the question in this instance, for nothing [illegible] that the dog was in any way influenced by the [illegible]. It succumbed with the same symptoms, and nearly at the same time as other dogs that had not taken any antidote at all, and were bitten in the same way by a Cobra.

The efficacy of the antidotes described by Colonel Showers should be thoroughly tested whenever the man who administers them declares himself to be ready and fully prepared.

Experiment No. 2.

At 12·13, a kid of about 3 or 4 months old was bitten [illegible] times on the hind-leg by the same Cobra that bit the dog in the previous experiments.

The object was, that in the event of the poison not taking effect on the dog, the activity of the poison might be demonstrated by its action on the kid. Thus, had the dog survived, and the kid died, would have been so far confirmative of the efficacy of the antidote.

12·15.—Leg weak; partially paralyzed.

12·16.—Bleating; staggers, but walks; lies down; defecation.

12·20.—Can stand, but the bitten limb is paralyzed.

12·25.—Almost paralyzed; convulsed.

12·29.—Convulsed.

12·31.—Heart beats 96 per minute; respiration almost gone. Eyes glazed; pupils dilated, insensible to light.

12·36.—Death. Heart beat for two minutes after respiration had ceased.

Bitten at 12·13. Dead at 12·36. Death in 23 minutes.

The activity of the poison had no doubt been exhausted by the previous biting of the dog, otherwise a young animal like the kid would have probably succumbed more rapidly.

The following experiments were made to test the efficacy of the injection of liquor ammonia as an antidote. They will be repeated with various strength of the ammonia in solution.

Experiment No. 3.

At 12·36, a pigeon was injected in the thigh with Cobra poison recently taken from the living snake. Two drops were inserted into the muscles of the thigh with the hypodermic syringe.

12·37.—Is affected by the poison; staggers; is slightly convulsed and drowsy.

12·39.—Droops and falls over, but is able to walk when roused. Ten drops of liquor ammonia, diluted with three times the quantity of water, injected by means of the hypodermic syringe into the same thigh.

12·40.—Very drowsy; rests the point of the beak on the ground; legs stretched out with a convulsive quivering motion; head falls over.

12·40·30.—Gasping respiration.

12·41.—Dead.

Death occurred in four minutes—rather a long period for so small and sensitive a creature as the pigeon; but the quantity of poison was small (2 drops), and all that was not thoroughly inserted.

In this instance, I do not believe that any beneficial effect was caused by the injection of the ammonia.

Experiment No. 4.

12·54.—A full-grown pariah dog had the femoral vein exposed in order that the solution of ammonia might be readily injected with the hypodermic syringe; it was then bitten in the opposite thigh by a fresh full-grown spectacled Cobra.

12·56.—Dog walks with staggering gait; the bitten limb is weakened.

12·57.—[illegible] of liquor ammonia, twice diluted with water, injected into the femoral vein.

1·2.—Licks the bitten leg, and lies down.

1·3.—Leg drawn up; slightly drowsy.

1·6.—Becomes more drowsy; sits down.

1·7.—Made him swallow [illegible] of liquor ammonia, well diluted with six parts of water.

1·9.—Purged [illegible]; lies down exhausted.

1·12.—Lying flat on the left side.

1·15.—Staggers. When [illegible] is not quite so drowsy; refuses water; lies down, whining and moaning; [illegible] at the legs as though in pain.

1·21.—Pupils much dilated; froths at the mouth; very weak in the hind legs, but more so in the bitten than the other limb; still moaning.

1·26.—Paralyzed completely in the posterior extremities; jerking movements of the head. Respiration, 44; pulse, 100.

1·29.—Respiration 28; pulse irregular, fluttering, and difficult to count; convulsed; is very restless; convulsive movements of the diaphragm; gasping; spasm of diaphragm; pupils dilated, insensible to light.

1·30.—Struggled and changed the position to the other side. Respiration, 12 in the minute; pulse very irregular; cannot be counted from subsultus tendinum.

1·34.—[illegible]. Heart beats 104 in the minute; fluttering irregular pulse; respiration has ceased; muscular twitchings.

1·37.—80 beats of heart in the minute; muscular twitchings.

1·38.—Heart beats faint, slow but perceptible.

1·38·15.—Heart ceased to beat about 4 minutes after respiration ceased.

Dead in 44 minutes and 15 seconds.

Death was rather later in this case than usual in the case of a full-grown pariah dog bitten by a full-grown and fresh Cobra. It would appear, therefore, that the ammonia may have been so far beneficial. The benefit, however, is very small; but further experiments may prove that, given in larger quantities and more frequently, it may be of service.

ON CHOLERA.

By C. Macnamara,

[illegible] Hospital.

(Continued from Vol. III., p. [illegible].)

I have endeavoured to describe the course pursued by the [illegible] cholera of 1843-44-45 in its progress over Europe and America (1846-47-1849); we have noticed its steady advance, and its decline towards the end of 1851. In the meantime, epidemic cholera had again broken out in India; so that, while the disease was on the wane in Europe, it was recruiting its energy in this country, and was destined soon to burst forth again beyond its natural limits, and overspread the greater part of the civilized world with unprecedented fury.

India was, on the whole, comparatively free from cholera in 1847, the epidemic of the previous years having died out, and but few cases being heard of beyond its endemic area. In Bengal proper, that is from Arrah eastward, among an average number of 22,247 prisoners confined in the various jails, there were 747 cases of cholera during the year.

In 1848, out of an average force of 775 Europeans stationed in Calcutta, there were 20 cases and 13 deaths from cholera. From Dinapore the Superintending Surgeon reported:—"Cholera first manifested itself in Her Majesty's 80th Regiment in the beginning of May; it was then raging in the native bazar and villages around the station, and had attacked and proved fatal in many instances. Among the native troops, the visitation was, however, of mild character, and the mortality less than usual. The disease has always been prevalent at Dinapore, and may be termed rather endemic than epidemic." We hear but little of cholera at Benares, or Allahabad, in 1848; but there was a terrible outburst of the disease at Cawnpore among the men of the 1st Bengal Fusiliers.

The Agra circle was affected to some extent at the same time; for Dr. John Murray endorses Sub-Assistant Surgeon Dhurmodoss Bose's remarks in the dispensary returns dated October 1st, 1848, to the effect that "cholera, though of a mild type, was generally epidemic from the latter end of August. It continued in the city (Agra) till the end of September, and then took its way towards the cantonments and the adjacent villages."* The disease did not, however, spread to the troops stationed at Agra; the Punjab, and the country to the north-west of Agra, were free from the disease throughout the year 1848. Dr. F. Corbyne, in his annual report from Lahore, remarks upon the great deficiency of rain throughout the Upper Provinces, and the peculiarly healthy nature of the season.†

Towards the end of the year another outbreak of cholera occurred among the 62nd Regiment Native Infantry, which left Dacca for Monghyr in November, in a fleet of country boats. Before quitting Dacca, it was ascertained some of the boatmen had died of cholera. The evening after the regiment embarked, the first case occurred among the sepoys; the disease rapidly increased, and Dr. Cumberland, the medical officer in charge of the regiment, reported to the Medical Board that the subsequent confusion and mortality among the men was so great, that it was impossible for him even to collect data as to the number of deaths that occurred, and much less give any detailed account of this terrible outburst of disease.

Unfortunately, the proceedings of the Bengal Medical Board have never been compiled for the period now under review; but we may nevertheless trace the history of cholera in this presidency from the published report and returns of the Government dispensaries. From these documents, dated 1st October, 1849, I find that, from Midnapore, Sub-Assistant-Surgeon Issur Chunder Gangooly reports "pestilential cholera prevailed to such a fearful extent in and about the station, that its effects in thinning the population were scarcely less powerful than in 1832." The total amount of rain in June was about 8½ inches, that of the same month last year (1848) was 14½ inches; the total number of rainy days in June of both years was, however, equal. The rains set in on the 19th May, since which date to the end of the month there was scarcely a fine day, the partial and unrefreshing showers being productive of more harm than good. From the 5th to the 9th of June the rain was heavy, and from the latter date to the 15th of the month cholera was at its height.‡

From Baboo Gobin Chunder Dutt's report of the Pooree dispensary, we learn "cholera broke out during the Ruth Jattra festival, in July. The pilgrims suffered principally." In Gyah, "cholera was not so prevalent in the town during the period under consideration as on former occasions, although its severity was very great in the district, where it first made its appearance in April, and continued till August." In Patna, the disease "raged with great virulence in May and June;" it was very bad again in August and September.

From Tirhoot, Dr. Kinsey reports that, during the six months ending 1st October, 1849, "cholera had carried off numbers of the population throughout the district."§ Sub-Assistant Surgeon Nimadhub Mookerjee asserts that the disease "invaded the city of Mirzapore in the month of May, and, although the duration was not long, yet the ravages were comparatively frightful in the adjacent villages, specially those lying on the southern boundary of Mirzapore. The devastation was terribly frightful; it was reported that the inhabitants fled for refuge to other districts, forsaking their habitations, cattle, and property."*

Sub-Assistant Surgeon Tarachand Banerjee reports from Allahabad, "towards the latter end of May cholera broke out with its usual severity, and carried away many; this disease prevailed epidemically throughout the station and surrounding country."

In Allahabad and Cawnpore, cholera appeared among the European troops in July and August, and "was raging in the city" during these months.

There were no less than 136 cases and 88 deaths among the convicts confined in the Jubbulpore, Saugor, and Nursingpore jails during the year 1849, and the disease was very prevalent among the inhabitants of these districts.

Dr. Leith informs us that "cholera made its approach (to Bombay) from the eastward towards the end of the rains of 1849. It had prevailed more or less severely in the southern "Malwatta" country, and the neighbourhood of Shelapore, in the month of May, and, in the middle of July, in the Ahmednuggur and Poonah collectorates; but it did not then extend further northward.

During the week preceding the invasion of the epidemic, rain, which had been unusually abundant, fell daily, and at the rate of 1¼-inch a day, and the south-west monsoon blew during the same week with a force varying from 1½ to 5lbs., or an average of 3½lbs. on the square foot, which is equivalent to a velocity of more than 25 miles an hour, in a direction contrary to that in which cholera advanced.

The first four fatal attacks took place in the three different divisions of the island; and from 4th to 12th August the fatal cases that occurred, fifteen in all, were scattered over four divisions, six districts, and twelve streets, some of which were widely separated from each other by densely-peopled portions of the town. These fifteen sufferers belonged to seven different castes, and eight different occupations, and none of them had recently arrived in Bombay."

Throughout the year 1850, cholera was reproduced with considerable virulence over the whole of Bengal proper; Cachar, Sylhet, and the eastern districts suffering very severely.

In August it "raged with great violence at Jubbulpore;"† the prisoners were attacked by the disease, but, being speedily removed from the jail, it disappeared from among them. Dr. J. Squire reports the prevalence of cholera at Seuni and Baitool‡ throughout the hot and rainy season. It is evident, therefore, that the south-western districts of the Bengal presidency were under the influence of epidemic cholera in 1850; and at the same time the disease was severely felt in Bombay, as is shown by the following table:—

YEARS.	No. of deaths registered from Cholera in Bombay.
1848	69
1849	2,269
1850	4,729
1851	4,020
1852	1,135
1853	1,339

Dr. W. Mackenzie, C.B., Principal Inspector-General of the Madras Medical Service, has been most kind in furnishing me

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* Half-yearly Reports of the Government Charitable Dispensaries, 1849, p. 196.

† MS Proceedings of the Bengal Medical Board.

‡ Half-yearly Reports of the Government Charitable Dispensaries from 1st April to 30th September, 1849, p. [illegible].

§ Dispensary Reports for 1849, p. 90.

* Dispensary Reports for 1849, p. 60.

† MS Proceedings of the Bengal Medical Board for 1850.

‡ Idem.

[illegible] 1849 [illegible] along the [illegible]

[illegible] 1851 [illegible] Paris the [illegible] 1851.—"The [illegible] Persian frontier, [illegible] great ravages. [illegible]

In August 1852, [illegible] the province of [illegible] with great fury. It [illegible] Caspian [illegible] passed into Russia [illegible]

[illegible] of this outburst [illegible] up the Tigris [illegible] previous [illegible] Meshed? [illegible]

[illegible] spread to a very great extent [illegible] North-Western Provinces [illegible] 1850-51. The civil surgeon [illegible] Jail Report for 1850, expressly states the [illegible] of August was very con[illegible]

[illegible] ending 1st October, [illegible] spread to a very great extent [illegible] At the same time it broke out in the [illegible] epidemically to the [illegible]

[illegible] of 1852, extensive works of irrigation [illegible] in Kumaon. [illegible] there from the [illegible] Cholera broke out among these people [illegible] several days' [illegible]

[illegible] Esq., [illegible]

[illegible] however, it appears [illegible] was [illegible]

At the same time, therefore, that the disease was spreading [illegible] and in the [illegible] Persian [illegible] from east to west, and [illegible] I am unable [illegible] May, 1852 [illegible] of that year, which I cannot [illegible] epidemic of 1852. [illegible] 1852, and it [illegible] of 1853, in the north of Persia, was [illegible] 1849-50, and [illegible] 1852.

The [illegible] has already been pointed out [illegible] the course taken by [illegible] Europe and America. It appears [illegible] however, that [illegible] of mankind, we [illegible] future [illegible] thwart [illegible] along its [illegible] which rule its production [illegible] from place to place [illegible] very considerable [illegible] overcoming the [illegible] the phenomena presented [illegible] well as [illegible]

[illegible] months of May and June, 1853, [illegible] 100,000 are said to have perished. [illegible] of Persia.

[illegible] the course of the [illegible] to Europe in 1853, [illegible] 1848 [illegible] of a very [illegible] instance [illegible]

It is now, in fact, beyond our power to determine with any certainty when and where the former epidemic ended and the new one begun.

We may, however, assert with confidence that cholera of a virulent type was widely desseminated over Russia during the summer of 1853. Sweden, Norway, Denmark, Hanover, and Holland, together with numerous towns in the north of Prussia, suffered from the disease. Nor did the south-eastern and central parts of Europe escape the influence of this epidemic. Numerous places in Bessarabia, Moldavia, and Wallachia, besides the towns of Odessa and Jassy, were attacked in August and the latter part of the year. Piedmont, Barbary, and certain districts of Portugal were affected. France was under its influence in the autumn, but had suffered considerably from choleraic disease in the spring.[*]

In London, a number of *suspicious* cases had occurred in the winter of 1852, but in January, 1853, no instances of death from cholera were registered. As the temperature rose in July, "diarrhœa, as well as the *common* form of *cholera*, became fatal in the metropolis; and a few deaths from *cholera of the Asiatic form* were registered in August in the low districts by the side of the river. Several deaths by the disease occurred in September and October while the temperature fell, and diarrhœa decreased from 723 in August to 283 in October; but during this time the cholera spread and became more fatal, so that the deaths from it were 335 in October and 228 in November, 43 in December, 1 in January, and another in February (1854). There were no deaths in March; only 4 in April, 4 in May, and 3 in June."[†]

New York and New Orleans were both invaded by an apparently fresh epidemic of cholera towards the close of the year 1853. Mexico suffered very severely, and the disease was widely extended over the whole of the West India Islands.

In 1854, cholera was reproduced throughout nearly every country in the Old and New World. Europe and America had never before been so terribly stricken by this fearful disease, for hardly a single province, and but few large towns, escaped its deadly influence.

Both Varna and Odessa were known to be affected with cholera early in 1854, as well as the countries near the mouth of the Danube; it attacked the Russian and Turkish forces on either banks of this river. Later in the season, the English and French armies were first affected at Varna, where, as we have already observed, cholera existed earlier in the year. Dr. Marroin, the chief physician to the French fleet, assures us that cholera effected its entrance into the Black Sea on the 13th and 14th of July, with the *Primauguet* and the *Magellan*, from Gallipoli. The disease spread from these vessels to the army at Varna. The cases on board the French fleet in Baltchick Bay were by no means numerous till the 7th of August, when constant communication was opened between the fleet and General Bosquet's division of the army, at the time being ravaged by cholera. Two days afterwards, the disease broke out with extreme violence on board the ships. From the 9th of August the epidemic assumed great proportions; in three days it attained its maximum of intensity, and terminated at the end of ten days.[‡]

Dr. Linton informs us that the disease was said to have been imported into Bulgaria in the early part of June, 1854, by a French vessel arrived at Varna from Marseilles, bringing troops from Avignon, already under the influence of cholera. Several cases of the disease occurred on board the ships on their passage to Varna. From the time the troops landed from this vessel, cholera spread progressively through the town and allied forces, attacking the French and Turks simultaneously, and afterwards the English; no class of people, no description of locality, obtaining an exemption from it.[*]

In the English fleet it first appeared in the *Diamond*, on the 16th of July, ten days after the arrival of a French steamer from Toulon, in which cholera was prevalent.

"At the time of the outbreak of the cholera, the population of the British fleet numbered 12,572 men. These men, all living under the same conditions, except in one particular, yielded 710 cases of cholera and 397 deaths. Of these cases in the gross, 91·26 per cent. of the men attacked were supplied with water derived from springs at Baltschick, a spot on which French troops had been quartered while suffering from cholera; the troops had washed their clothing at these springs, and the ground for a great distance around was saturated with their exereta. The remaining 9·74 per cent. of the infected were supplied with water partly from Baltschick. Three other crews of vessels suffered from severe diarrhœa. Of these two positively took in water from Baltschick, and the third probably so. In one vessel which used distilled water, water condensed from the steam of the engines, cholera broke out; on examination, it turns out that this water was passed to the tank through a foul hose pipe. In all the other ships supplied with distilled water not a case occurred. The officers in such ships as were attacked were in the proportion of 1 in 177, the men in the proportion of 1 in 16·29.

"We may, perhaps, account for the comparative exemption of officers by supposing that the men partook most freely of the infected water with which the ships were supplied without disinfecting it by heat. The officer took his wine, tea, or coffee; the sailor, his grog. That the disease did not become distributed amongst the crews by mere personal contact with the infected is proved by the fact that in one ship several infected persons were removed, and there was not a case of the disease amongst those who received them."[†]

The disease commenced in the British army in June, it increased in prevalence for three months and then subsided, disappearing entirely in February, 1855. There were no cases at all among our troops in March; but it burst out again in April, and reached its culmination in June. From this date the disease declined slowly but irregularly.

Dr. Downes, of H.M.'s 97th Regiment, informs us that the troops in the Piræus were all perfectly healthy until the early part of July, 1854, when a French steamer arrived from Marseilles with cholera on board. "Two cases were landed and admitted into the French hospital at the Piræus. Asiatic cholera of a malignant kind now made its appearance and rapidly spread; and cases of the disease occurred in various parts of the town of the Piræus. The disease continued to prevail from the 19th of July to the 26th of August, when it gradually ceased.[‡] Greece, from her peculiar relations, had been able to isolate herself from the rest of the world in the epidemics of 1832 and 1849, and had been absolutely free from cholera. In 1854, being under exceptional circumstances, and occupied by a foreign force, over which she had no control, cholera effected its entrance into the country. In 1865, this source of danger being absent, she again entirely protected herself from the cholera which was raging around her.

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[*] Dr. Gavin Milroy on Cholera, Medico-Chirurgical Review, p. 451, October, 1865.

[†] Report of the Committee for Scientific Inquiry in Relation to Cholera of 1854, London, 1855.

[‡] Cholera Conference (Constantinople, 1866), Calcutta, 1868, p. 104.

[*] Medical and Surgical History of the British Army in the Crimea, presented to Parliament by command of her Majesty, 1858, Vol. II., p. 47.

[†] Dr. B. W. Richardson on the Propagation of Cholera, Transactions of the Epidemiological Society, Volume II., Part II., p. 125.

[‡] Medical and Surgical History of the British Army in the Crimea, presented to Parliament by command of her Majesty, 1858, Vol. II., p. 47.

[illegible] was introduced [illegible] on the 10th [illegible] the French [illegible] a portion of which was [illegible] part of the town, [illegible].*

[illegible] were [illegible] in contact with [illegible] of the army [illegible]. The proportion of admissions and deaths [illegible] that of any division of the army [illegible]. No less than 80 per cent. of those attacked [illegible].

With reference to climatic influences and seasons, there was [illegible] outbreak of cholera and the temperature [illegible] its severity, [illegible] extension of the disease in connection with [illegible] was somewhat [illegible]. Drs. [illegible] and Lawson [illegible] occurred, the outbreak of the [illegible] coincident with [illegible] state of the atmosphere; [illegible] the barometric pressure was [illegible].

[illegible] of a kind calculated [illegible] degree [illegible] but it appears to spread [illegible]. "The determination [illegible] would seem indeed [illegible] knowledge [illegible] few [illegible]." How, then, are we to account for the fact [illegible] 67 of [illegible], where it is stated:—"We have known a regiment to be exempt from the disease for two years in [illegible], and yet, after leaving the station [illegible] on service, [illegible], three of which proved fatal, occurred during the first [illegible], although the [illegible], nearly 100 [illegible] were [illegible]."

M[illegible] rule as to [illegible] the case of [illegible] men fresh [illegible] more liable to be attacked by cholera than [illegible].

[illegible] the Crimean [illegible] the ordinary [illegible] very [illegible] Dr. M[illegible], of [illegible] the attack [illegible] sudden [illegible] diarrhœa [illegible] fever was [illegible] Dr. H[illegible] that of the [illegible] the [illegible] during the war [illegible] 7 [illegible] 3 [illegible].

W[illegible] good [illegible] but [illegible] and [illegible] from [illegible].

[illegible] Indian Medical Gazette.)

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* [illegible] Crimea, [illegible] Vol. II, [illegible]

CIRCUMSTANCES ATTENDING THE DEATH OF THE LATE MR. R. THORP AT SIRINAGAR.

BY ASSISTANT-SURGEON H. CAYLEY.

WE have been favored with the following account of the circumstances attending the death of the late Mr. R. Thorp at Sirinagar.

On the evening of the 25th November, when halting at Poonch, on the march down from Sirinagar, I received an express with letters from Colonel Gardner and the Dewans at Sirinagar, telling me of the "sudden and extraordinary" death of Mr. Thorp on the 22nd, and begging me to return and investigate the cause of death. The man who brought the letter said he had heard that the deceased had vomited a quantity of water. I at once went back, and on reaching Sirinagar on the morning of the 28th, proceeded to investigate the case. The history was that Mr. Thorp had gone out early on the morning of the 22nd to take a walk, as he was in the habit of doing, and had been seen in the direction of the Takht, a rocky hill near the lake; that he had returned home about 10 o'clock, and, as he went upstairs, he said to his servant (an old confidential servant of his, named Sadik) "get me warm water ready for my bath, and don't disturb me, as I am going to take rest." There were a number of beggars at the gate, and he added, "give them all some pice," and went up to his room. Shortly afterwards a man came with a pair of boots he had been making, and after waiting about an hour he got the servant Sadik to go upstairs, where he found his master in a half-sitting posture on the floor, his back supported against the wall, and one arm on the bed, and, as he said, "his look was changed, and he was ashy pale." Sadik spoke to him and touched him, and finding he did not move, he called up the other servants, and he himself ran off and told the city Dewan that his master was speechless, and he thought dead. The Dewan immediately sent for the English Baboo, Mohes Chunder, Colonel Gardner, an old officer in the Maharajah's service, and the native doctor of the dispensary, and they went together to the house and found the deceased in the above described position, and quite dead and cold. All said that there had been no vomiting, but that some watery saliva had run out of his lips, which they had wiped away. (This gave rise to the report of vomiting made by the messenger who brought me the letter, and who had not, therefore, been to the house.) The native doctor rubbed deceased's hands with a little hartshorn and oil, but seeing that he was quite dead, they placed a shawl over the body, sprinkled on it a little scent, and, at Colonel Gardner's advice, left the body and everything in the room untouched, placed a sentry at the door, and sent off letters to me and also to the Maharajah at *Jummoo*. They were going to leave everything in the same state for any length of time till some one came to make an investigation. All this I heard from the above-named people, and also from the boot-maker and the other servants. Mr. Thorp had gone out in the morning without "chota hazri," as he frequently did. The servants all said he had not been complaining of any illness. I then proceeded to examine the room and the corpse. The room was in its usual state, but many of his things were lying about, as he was preparing to march down to the Punjab, and was going to start in two or three days; papers and letters, &c., were scattered about on the table. The body was on the floor, half sitting, half lying, with the back resting against the wall, the right arm was resting on the bed and the left hanging down on the ground, and the head just resting over on the right side. The face was pale and slightly mottled with purple veins from commencing decomposition. The right hand was pale, and the left, which hung down, was slightly swollen and discolored from decomposition. The expression was quite calm and natural, no distortion of any kind; the eyes half-open, and the pupils natural: the appearance was almost that of sleep. He was fully dressed with the small cap he usually wore on his head. On the bed, by his side, was a diary book in which he had been writing an account of his walk that morning round the "Takht" by the lake. A small pencil, with which he had been writing, had fallen on to the ground just under his head. I examined carefully for vomiting, but there was not a trace on the floor, the bed, his clothes, beard, or in his mouth. There was a little dried saliva on the lower lip. The appearance at once suggested that he had been sitting on the bed, and had got up and slipped down to the ground in a faint, and never moved again or rallied. He had written two pages in the journal, and ended abruptly in the middle of a description of the views on the lake. There had evidently been no struggling of any kind. On examining the body, I found the abdomen and dependent parts were becoming discolored by decomposition; I then opened the chest and abdomen. The viscera of the latter all appeared healthy. In the former the lungs were partially collapsed, showed no adhesions or other signs of disease. They were not congested, but of a dark colour. The pericardium was most tensely distended with an enormous clot of blood, the clot measuring not less than a pint and a half. On removing the clot, I found the heart empty and compressed in shape, and on the side of the left auricle there was a distinct perforation surrounded by a ring of dark tissue, where the blood had soaked into the structures round the point of perforation. On opening the cavities, they were found to contain no blood, though a small amount issued from the large veins. The valves were all healthy; the ventricles and right auricle presented no appearance of disease, though the muscular substance was pale and soft, and had a "fatty" appearance. The left auricle was most extensively diseased, to a degree that I have never seen equalled; the lining membrane was entirely destroyed; the whole surface was covered with bright red granulation, some in the form of long pendant granulation—like clots, one of which was firmly attached to the inner surface of the auricle, and hung down through the valve into the left ventricle. The muscular tissue of the auricle was softened and friable, and in some places very thin, and at one spot was a distinct circular depression or ulcer, which had gone quite through the muscular wall; and at this point the thin external membrane had given way, and the blood had poured out into the pericardial cavity, the effect of which must have been that the blood rapidly filled and distended the pericardium, and the heart's action was arrested. The escape of the blood must have produced syncope followed by complete stoppage of the heart's action from the pressure. The pericardium externally was thickly covered with fat. The body generally was muscular and well nourished.

With regard to previous health, I have seen Mr. Thorp on several occasions during the last two years. He suffered most severely this last summer from acute pain, which he called rheumatism, though there was no inflammation in his legs and ankles. This affection was on two occasions so severe as to lay him up almost in bed for two or three weeks, and caused great depression of spirits. He never complained to me of any heart disease; latterly he had almost got rid of the rheumatic pain, which had never the character of neuralgia. He was strong and active, and a vigorous mountaineer; but his servant Sadik—an old servant who had known him for years—told me that he noticed his master had not lately been able to walk up hill so well as formerly, and he seemed to lose his wind and get tired much more easily. During the week before his death, I saw Mr. Thorp several times, and he appeared in good health; and on the 19th he came to see me as I started from Sirinagar, and he then seemed well. The next day he went out to visit a celebrated place of pilgrimage, 18 miles from Sirinagar, and returned the following day.

The most remarkable feature of this case is that such very extensive disease of the heart could go on without giving rise to more marked symptoms, and that he should have kept strong and well and capable of so much exertion. This may be explained by the fact of the valves of the heart not being affected, so that there was no obstruction to the circulation of the blood. The ventricles also being healthy, the power of the heart in propelling the blood would not be much impaired, and until the moment of perforation, the disease gave rise to no decided symptoms. The lesion of the heart most clearly explained the account given of his death. He got up early, took a walk of two hours, (round the Takht, as written down in his journal,) returned, and after speaking a few words with his servant, went up stairs, and an hour afterwards was found dead, without his having uttered a sound or made any noise of struggling. Apparently he sat down on the bed, wrote two pages in his journal, and whilst in the middle of a description slipped on to the floor in a faint and never rallied, as the action of the heart must have been arrested by the pressure of the blood suddenly poured out into the pericardium.

The following was received shortly after the preceding communication:—

I shall feel obliged by your adding the following supplement to the account I sent you two days ago of the death of Mr. Thorp at Sirinagar:—

When I first examined the body I discovered perforation into the pericardium of what appeared to be the left auricle. After removing the heart, I opened first the left ventricle, and passing my finger upwards into the *auricle*, made a separate incision into its walls, and then saw the diseased surface, the ulcer-like perforation, and a long clot hanging down into the ventricle. I then opened the right auricle and ventricle without dividing any of the valves. I was desirous of destroying the relations of the parts as little as possible, as I wished to bring the heart down to Lahore for the purpose of making a more careful minute examination. This I have just had an opportunity of doing in conjunction with Drs. Smith, Scriven, and Brown, and on laying open the left ventricle through the valve into the aorta, it became apparent that what I had taken for the left auricle was in reality an aneurism opening into the aorta just above the *posterior* segment of the semi-lunar valves by a large, well-defined orifice with a firm thickened margin. The aneurismal sac was the size of a large hen's egg. It had thick fleshy walls, and was situated at the base of the heart, just in front of the auricles, and inside and behind the aortic arch. It was *covered* externally by the pericardial membrane. The finger could be passed directly from the aneurism into the ventricle. The tumour projected forward on the left side, and seemed to occupy the place of the auricle and its appendage. The auricle was pressed backward, flattened and concealed by the aneurism. The perforation opened into the pericardium a little below the reflection of that membrane from the vessels. The valves of the heart were all healthy and entire, as I had before noticed. The left ventricle appeared slightly dilated. There was on the inner wall of this ventricle, just on a level with the lower border of the aortic valves, a small circular orifice through which a probe passed upwards and backwards for five or six lines of an inch into the muscular wall of the heart, and which appeared like the cavity of a small abscess. The aorta was roughened internally by atheromatous deposit. In my first somewhat superficial examination of the heart, being anxious to have the parts as little disturbed as possible for further examination I had not cut through any of the valves; and observing this cavity exactly occupying the place of the left auricle, which was itself compressed and seemed merely to form the wall of the aneurismal sac, and passing my finger down freely and directly into the ventricle, I had mistaken the sac of the aneurism for the left auricle, which it exactly resembled in position and appearance,—a mistake that was at once apparent when the ventricle and aorta were laid open into one.

The disease was thus of no *exceptional* character, but it is remarkable that an aneurism of the base of the heart could grow to the size of a large egg, and not give rise to any symptoms until the moment of perforation and death.

Lahore, 29th December.

NOTE.—Since the above was in type, we have received another account of the death of Mr. [illegible], very much to the same effect, which we have, therefore, not published. This account is in the form of a report, signed by Drs. C. M. Smith, J. B. Scriven, and F. F. Brown. Dr. Scriven has added a note that the muscular structure of the heart was in a state of *fatty degeneration*.—ED., *I. M. G.*

A. Aneurism; its communication with the aorta kept open by a bit of stick.

B. Bristle passing through the perforation in it.

C. Right coronary artery.

D. Left coronary artery.

E. Aneurism opening in the septum of the ventricles.

F. Left auricular appendage.

G. Aorta laid open and turned aside.

H. Pulmonary artery.

ON CERTAIN DOUBTFUL POINTS IN THE PATHOLOGY OF CHOLERA.

By F. W. A. DeFabeck,

Assistant-Surgeon, [illegible], and Hospital for Police, [illegible] Ajmere.

THERE is an earnest desire abroad in the profession to reach, if possible, a true solution of all the difficulties which beset us in the treatment of cholera. With a strong share in this desire, I have been induced to give publicity to the following remarks and suggestions, in the hope that they may receive their fair share of criticism, confident that if even they are found to exert no practical influence in themselves towards our knowledge of this important subject, yet that the discussion, which I am ambitious enough to hope they may provoke, will bring us a few steps further upon our difficult inquiry. Let this be my apology for the succeeding observations.

That which attracts our attention most forcibly on first examining a patient suffering from cholera, is the sunken appearance of the face, and the cold clammy skin, shrivelled at the extremities. There is no doubt that the coldness of the skin is dependent on a deficiency of blood in the capillary vessels, and that the clammy condition is due, not to *exosmosis* of the watery constituents of the blood, but to the lowered temperature of the surface itself, which, in condensing the quondam vapory exhalations from the sudoriparous follicles, now converts into *visible* that was previously *invisible* transpiration. The shrunken appearance of the face, and, in general, of all parts of the surface, supported by any considerable thickness of the cellular layer, together with the shrivelled appearance of the skin of the extremities, sufficiently proves that the watery particles contained in these situations during health have passed into the circulation by the process of *endosmosis*.

If we examine into the state of the circulatory system of patients who die from this disease, we find (1) that the capillaries are empty, (2) the smaller venous trunks moderately full, but (3) the larger ones, as they approach the heart, more or less distended with dark, thickened blood. The condition of the pulmonary surface presents a marked similarity to the appearances just noted. Dr. Goodeve, in the 1st volume of Reynolds' "System of Medicine" (p. 168), has given such an admirable account of these appearances in the lungs, as observed by Dr. Parkes, that I make no apology for quoting it in full. "It was previously supposed that the lungs and heart were gorged with blood, but he (Dr. Parkes) pointed out accurately what was the precise situation of the congestion. He showed that the gorged parts were the vessels of the right side of the heart and the pulmonary artery, in the roots of the lungs, from the right side of the heart to the smaller branches; and that the smaller vessels, the pulmonary capillaries, the pulmonary veins, and the left side of the heart, were nearly empty: in fact, that the blood was not arrested in the capillaries of the lungs as in common asphyxia, but in the arteries short of them. On section there was free bleeding from the roots of the lungs, but there was little or none in the peripheral parts: they were generally ex-sanguine."

For the present, I defer examination into the state of the abdominal organs, as I shall presently have occasion to show that the condition of the circulation there presents marked differences from that which now forms the subject of our investigation. Let us pause and examine this phenomenon, peculiar, as I believe, to this disease, in which *the blood is not arrested in the capillaries, or smaller veins, but in the smaller arteries*. To what is this obstruction in the smaller arteries due?

We know that the arterial walls throughout the system are mainly composed of elastic tissue, whose action is purely mechanical, and in harmony with all the established laws of elasticity. We further know that this elastic tissue is supplemented by muscular fibres, which are but sparingly distributed to the larger trunks, while they are abundantly dispersed over the walls of the smaller branches; and that inversely the proportional strength of the elastic tissue decreases, according to its distance from the centre of circulation. It is this admirable balance of the elastic and muscular force which regulates the flow of blood through the arteries, and assists its progress onwards through the capillaries. A precisely similar arrangement, we know, exists, to a minor extent, in the veins, but the walls of the capillaries forming the peripheral connexion between the arterial and venous systems have neither of these elastic or contractile properties.

Dr. George Johnson has advanced the theory that, as far as the lungs are concerned, the obstructed condition of the arterial branches is due to spasm of the muscular fibres entering into the composition of their parietes; but while this theory seems to explain, better than any hitherto suggested, the pathological conditions of the thoracic viscera, and *some* of the general symptoms of cholera, it does not sufficiently account for *all* the peculiarities of this disease.

Post-mortem examination shows that the peripheral circulation all over the body (excluding the abdomen) is in a similar condition to that observed in the lungs; and if a certain mechanical cause be admitted as explanatory of this state in *one* situation, it will necessarily be applicable to *all*. Anatomical evidence, and conclusions logically drawn from certain remarkable symptoms, establish this fact, that the large venous trunks are distended, and the capillaries empty. Now, if an obstruction more than usual, to the reflux of the pent-up blood in the larger veins, did not exist, we should have full capillaries, *exosmosis* from their walls, and all the well-known consequences of obstructed venous circulation: appearances, in fact, directly the reverse of those peculiar to this disease. Now, let us see if the theory suggested by Dr. Johnson, as explanatory of the condition of the thoracic circulation, is applicable to other parts of the body also.

Let us imagine a column of blood leaving the left side of the heart, circulating through the capillaries and venous system in the natural way, traversing the right side of the heart, entering the pulmonary artery, and there meeting with an unusually constricted channel. A portion of this stream forces its way through into the capillaries and pulmonary veins, but the remainder is thrown back upon the heart. From this state of things, there results deficiency of blood on the arterial plethora on the venous side of the circulatory system. This pressure on the latter, however, is not sufficiently great to overcome the obstructions of the valves in the veins with the spasmodic condition which is now supposed to have attacked the venous branches as well as the arterial. The capillaries, therefore, become empty, because the supply of blood from the arteries is deficient, and because the regurgitant action which *does* take place in the veins is not strong enough to overcome the obstruction it meets. Hence we have *endosmosis* of all the serous particles derived from the tissues which surround the capillaries, both in the lungs and over the surface of the body generally: accounting, in the first situation, for dyspnœa, cold breath, partial aphonia, and anxiety of countenance; and, in the other, for cold skin, with clammy transudation, sinking and shrinking of certain portions of it, and, associated with these conditions, we have, because of the deficient arterial circulation, diminished pulse.

That a similar lesion exists in the head, is evidenced by an absence of all the usual symptoms of cerebral effusion.

There is a phenomenon peculiar to cholera, constantly remarked as occurring in fatal cases of that disorder, not observed in any other disease. I allude to the elevation of temperature, over the surface, which occurs shortly after death, and the filling up of parts previously shrunken. By no theory, hitherto maintained, is this strange condition to be so satisfactorily accounted for. With death, the spasmodic condition of the arteries becomes relaxed, and the warm arterial blood now flows peacefully into the empty capillaries; and these, resuming their natural properties, permit of serous *exosmosis* into the cellular tissue in which they are embedded.

We have now seen that this supposed spasmodic state of the muscular fibres of the smaller arteries and veins is abundantly sufficient to account for the phenomena observed in all parts of the body except the abdominal cavity and its contained viscera; and we shall now endeavour to ascertain how far a similar condition may explain morbid appearances in these. Let us first examine the very urgent symptoms which occur in the stomach and intestines, and compare them with the post-mortem appearances usually observed in these situations. The symptoms are vomiting and purging of fluid matter, which, whether ejected by the oral or anal apperture, bears pretty much the same characteristics in both cases. The post-mortem appearances are, an œdematous condition of the mucous membrane of the stomach and intestines, sometimes associated with considerable venous hyperæmia, which occasionally proceeds to actual rupture of [illegible] of the [illegible] causing part [illegible] [illegible] complete [illegible] [illegible] considering [illegible] arterial obstruc[illegible] of the [illegible] [illegible] of Dr. [illegible] [illegible] is locked [illegible] the heart. [illegible] however, we [illegible] of the [illegible] [illegible] Now, when [illegible] the first branches of [illegible] from the heart, the [illegible] fluid within [illegible] moreover, these [illegible] that a pressure [illegible] distance from the [illegible] enough to [illegible] throw back [illegible] Simultaneously [illegible] supply of arterial blood [illegible] artery, by reason of the pressure [illegible] of its walls; and hence, [illegible] heart, and obstruct [illegible] artery, the whole [illegible] to a standstill. Under such a [illegible] natural that we should find [illegible] obstructed, and all the [illegible] which are furnished [illegible] At the same time, [illegible] continues to [illegible] intestinal walls, [illegible] branches of [illegible] [illegible] the [illegible] water [illegible] by the [illegible] intestines.

[illegible] the [illegible] cholera, [illegible] [illegible] cause for [illegible] A [illegible] of the nervous [illegible] the irregularity of [illegible] the [illegible] the sympathetic [illegible] which are not [illegible] [illegible] violent action [illegible] from without [illegible] [illegible]

[illegible] from within. Moreover, it is reasonable [illegible] both of the liver and kidneys [illegible] the same [illegible] causes which act upon the [illegible] system. As regards the liver, it is found, after [illegible] that the normal secretion of this organ, [illegible] is [illegible] arrested, for [illegible] observed to [illegible] Moreover [illegible] of the [illegible] cases has [illegible] the existence of [illegible] [illegible] must be in the [illegible] [illegible] there is no [illegible] cause to be [illegible] that [illegible] due to [illegible] [illegible] organs. [illegible] for [illegible] for [illegible] remarkable [illegible] this disease.

N[illegible]

[illegible] Dr. [illegible] [illegible] arterial [illegible] and that [illegible] circulation, it is [illegible] limited [illegible] supply the necessary arterial [illegible]

[illegible] the subject [illegible] depression, [illegible] by some, [illegible]

1. [illegible] from want [illegible] that this condition, if [illegible] of the circulating fluid [illegible] Moreover, there is no [illegible] On the contrary, the patho[illegible] that secretion is not [illegible] but that the *discharge* of secreted [illegible]

2. We have [illegible] that the peculiar appearances [illegible] in the circulatory system [illegible] condition of the vascular channel. [illegible] of the [illegible] world, on the contrary, produce a relaxed state of the arterial and venous walls, and we should have, as [illegible] gorged capillaries and *exosmosis* into the cellular tissue of the body, resulting in general [illegible].

3. I admit that the existence of painful cramps, which are generally observed to attack patients suffering from cholera, is no proof of the presence of a similar condition in muscular tissues supplied by the sympathetic; but although these cramps owe their origin undoubtedly to sensory-motor influences, the existence of which we have every reason to connect with the operation of the morbific matter to which all the other changes in the system are attributed, yet it is much more probable that such an excited state of one division of the nervous system should be reciprocated by the other, than that this latter should assume a state of paralysis. These muscular spasms, therefore, of which the patient is *sensible*, constitute a strong *à fortiori* argument in favor of the existence of similar spasmodic actions in situations where, from their physiological characters, they are *insensible*.[*] The following considerations may tend to strengthen this view:—

a. Vomiting is one of the urgent symptoms of cholera. A necessary condition of the production of vomiting is obstruction of some kind at the pylorus. In this disease, there can be no other cause for such obstruction than spasmodic contraction of the muscular fibres of the lower third of the stomach.

b The pain and uneasiness felt in the epigastric and precordial regions can only, as far as I know, be satisfactorily accounted for by the spasmodic state of the stomach, diaphragm, and associated muscular structures making itself felt in this way.

c. The intestinal canal is almost entirely dependent for its nervous supply on the sympathetic. If this nervous supply were arrested, as it would be in paralysis, we should have this, and the suppressed discharge of bile, above adverted to, acting as powerful causes to produce a state of *constipation*. Thus then there is nothing to show that the peristaltic action of the intestines is, in any way, impaired; and if it be granted that there is no positive proof to indicate that that action is exalted, of which, I believe, there is much, there is none to establish that it is not as free as at any period during health

4. Lastly, if cholera were associated with a paralyzed condition of the sympathetic system of nerves, injury or impairment of function of this system, under other conditions, could produce results similar to those observed in cholera, which, it is well known, is very far from being the case.

There are many points in the consideration of this important subject, which, for want of sufficient collection of verified facts, we must necessarily leave to conjecture. We sadly need carefully conducted enquiries regarding post-mortem appearances *immediately* after death, before the reflux of blood into its natural channels has produced that increase of temperature generally noticed shortly after death, and especially with regard to the condition of the blood-vessels and glandular ducts; also results of experimental stimulation in animals, of the whole of the sympathetic system, and also of suppression in its function.

I do not wish to say much regarding treatment, while the theory of the pathology of cholera here advanced is yet so conjectural; it is enough to remark that the indications it suggests are the following:—

1. To promote elimination of the morbific matter from the body.

2. To release the state of spasmodic contraction of the channels of circulation, and of the biliary and renal ducts, so as to allow the blood to resume its normal flow, and to restore the proper secretions of liver, kidneys, stomach, and intestines.

3. To soothe the nervous system after the excitement under which it has laboured, and to ensure healthy reaction.

In the earlier stages of the disorder, before the characteristic flux from the stomach and intestines has set in, remedies may be admitted to the stomach; but it must be borne in mind that there is one class of drugs which is useful in the first stage, positively poisonous in the reactionary stage of cholera, and another which is useful in both. The first class must be exposed to the action of the stomach with great caution, since, if any portion of them lie in the stomach when collapse has once set in, there is much danger of their remaining inert, until the first effort at reaction causes their absorption with detriment to recovery. Of this nature are narcotics and diffusible stimuli. The other class may be administered with freedom, because, after the period of their inactive retention in the stomach during collapse, they are presented for absorption at the very instant when reaction sets in, and thus act beneficially at the precise moment of commencing recovery. Of this nature are calomel and other allied medicines.[*]

The state of the dermal capillaries permits of applications to the skin, with the hope of their absorption; and with this view, mercurial inunctions, fluid preparations of opium in the earlier stage, with or without chloroform, and perhaps quinine, may be of use. The surface, however, which gives us the greatest promise of speedy absorption of remedies applied to it, is the pulmonary mucous membrane; and I believe that experiments carefully made in this direction would lead to most beneficial results. Of the advantage of chloroform inhalations, we have already had some proof; but much remains to be tried in the exhibition of other remedies in this form, principally, perhaps, mercurial vapor. I have spoken so much in favor of mercurial preparations, because, in my own practice, I have had reason to be well satisfied with their efficacy—an experience which is borne out by that of many of my professional brethren, both in this country and at home. Of these, of course, calomel holds the chief place. It is difficult to conceive a remedy more likely to be of use in this disease than one which is at once, as Dr. Christison states, "an irritant, stimulant, antiphlogistic or sedative, cathartic, diuretic, diaphoretic, cholagogue, sialagogue, and alterative." Latterly, the application of ice to the spine has been much extolled by European practitioners. I have no personal experience of this mode of treatment, although I am disposed to think that, as an adjunct to other remedies, already mentioned, it may be useful. In closing one of his lectures on tetanus, Dr. Watson observes, "Dr. Todd has suggested to me the application of ice to the *spine*—a measure which he has found eminently beneficial in convulsions. This mode of employing cold as a remedy in tetanus seems well worthy of trial. It would have the advantage of not inflicting any shock which might excite or disturb the reflex function of the cord through its incident nerves."

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[*] It is a question whether the cramps usually complained of in cholera may not be induced secondarily by reason of diminished supply of blood to the cerebro-spinal centres—a cause from which we know certain forms of spasmodic disease arise. On this point information is needed.

[*] Although the act of absorption is generally in abeyance during the period of collapse, it is not necessarily completely so from its first interruption until the moment of reaction. There may be periods, however brief, during which the balance between healthy and disordered action may waver, when fluttering efforts towards recovery, of which there is no external indication, may occur; and no doubt, at such moments, remedies lying ready in the stomach may become partially absorbed. "It is, I think, well," says Dr. Morehead, "to assume the possibility of some degree of absorption."

SUB-ASSISTANT SURGEONS.

By [illegible]

In the *India Government Gazette*, of the 24th October last, appears [illegible] Notification No. 3115, dated the 20th of the same month, which rules that, whilst a sub-assistant surgeon who has been transferred to the rank of uncovenanted medical officer is to count his former service in the lower grade towards pension and leave, he forfeits the same towards the periodical increments to his salary in the higher grade.

Now it is a matter of regret that neither the Bengal Government, by which the question was mooted, nor that of India, to which it was referred for final decision, have recognised the fact that the previous service of a sub-assistant surgeon may greatly vary in its nature, it being either what is connected with the mere charge of a charitable dispensary, as it generally happens, or its being in connection with the onerous duties of a civil medical charge; for the ignoring of this distinction has been the source of not a little anxiety and perplexity to some.

To give an instance, I shall here mention the case of a sub-assistant surgeon, now serving in the Punjab, who has, since the issue of Circular No. 710 of the Home Department, of the 13th February last, regarding the recognition of the status of sub-assistant surgeon for promotion to the rank of uncovenanted medical officer, been hesitating as to what to do. For, at present, the same sub-assistant surgeon draws his pay and allowances as follows:—

1.	Pay of second grade sub-assistant surgeon, minus the usual Punjab allowance of Rs. 50 per mensem (which is disallowed to one holding independent charge)	Rs. 150
2.	Allowance for holding independent charge ...	,, 150
3.	,, as superintendent of dispensary ...	,, 20
4.	,, for medical charge of police ...	,, 30
	Total ...	Rs. 350

To this sum, if Rs. 50 be added, which is an increase which the same individual has every reasonable hope of obtaining on passing successfully the second departmental examination, for which his time has already arrived, then his pay and allowances will amount to Rs. 400; that is, Rs. 50 more than what he would be entitled to by his getting himself transferred to what is called the higher grade. And what must be still more trying to him is, that he should, for at least five years to come, pay a donation, as it were, of the sum of Rs. 50 a month, with the hope of attaining a monthly salary of Rs. 400 after that period, and of Rs. 550 after twice that period. As for his being ever promoted to Rs. 700, the salary of the highest class of uncovenanted medical officers, though not to enjoy the privilege for any number of years, it is highly problematical; for, in order to it, he will not only have to complete altogether a term of service of 30 years, but also to attain an age of about 55 years,—an age which, it is believed, disqualifies a person from retaining his appointment in the Government service.

To complete this notice, it would be necessary to mention also that the subject of this letter has, since the last [illegible] years, had continually the [illegible] medical charge of a [illegible] station. But since [illegible] the previous service of a sub-assistant surgeon promoted to the rank of uncovenanted medical officer is meant only that service which he may have rendered to the State before the recognition of his [illegible], will it be just and fair to withhold from this [illegible] neglected class of public servants a privilege which the liberal policy of an enlightened Government has already accorded to honorary assistant surgeons and apothecaries in civil medical charge, who, as it is well known, are allowed to count their previous service in the same civil medical charge towards the periodical increments to salary in the grade of uncovenanted medical officers, and that in the face of the well-known Royal proclamation of 1858, which has granted equal rights and privileges to all the servants of the State?

It is therefore to be hoped that Sir John Lawrence, who has done so much in improving the position and prospects of almost every class belonging to Her Majesty's Indian service, with the exception, alas! of that of sub-assistant surgeons, will never allow the claims of this department to be overlooked.

P.S.—Since the above was written, I find from your last issue that another concession has been made by the Government to the apothecaries and assistant apothecaries, which consists in allowing them to count the time served in permanent medical charge of a regiment towards the periodical increments of pay in case of their being appointed to civil medical charge. When will the same liberal spirit be shown in the case of our sub-assistant surgeons?

A NOTE ON SULPHUROUS ACID.

By Robert Bird, M.D.

I have recently used sulphurous acid, in cases where the temperature of the body was abnormally high, with the happiest result. A fall in the measured heat of the tissues has almost always followed its administration continued over 24 hours. In several cases of remittent fever where aconite and sulphuric ether had failed to cool the body, sulphurous acid succeeded. I usually give it in drachm doses every two, three, or four hours, according to the intensity of the fever, the greater the heat the more frequent the repetition of the dose.

In remittent fever it is specially beneficial, and in many instances in that condition of the body named by the natives internal fever. I do not present it as a panacea for every form of diseased action but it is a valuable addition to the list of those remedies which control animal heat. A fair trial will prove this to the most sceptical. I was at first led to use it therapeutically, from finding that it had been given a high place in a list of substances powerful to absorb radiant heat. In this list sulphuric ether and ammonia take high places, but sulphurous acid takes a higher place still. It can scarcely be otherwise than that the substance, which has the power to absorb radiant heat in a shut chamber, should also have the power to absorb it when it is set amongst the living tissues. At any rate, it is not a little remarkable that ammonia, sulphuric ether, and sulphurous acid, which are large absorbers of radiant heat, are also powerful febrifuges, and that quinine, our most powerful antiperiodic, is at the same time one of the few known substances which can render the chemical rays in the spectrum luminous.

In 1865, I made an unsuccessful attempt to have a series of experiments carried out by an eminent man in England in trial of this theory. If it can be established, and I firmly believe it can, that all substances which are powerful over light and heat are also powerful over vital action, then we already possess a wonderful means [illegible] for the discovery of new remedies. For it would then be the chief end and glory of the physicist to test through the agency of radiant heat and light the therapeutic value of every substance freshly made or discovered by the chemist. The action of every untried remedy on the human tissues could then be predicted. In this direction, it appears to me, we have a glimpse of a truly scientific medicine.

Howrah, 15th *January* 1869.

CASES FROM PRACTICE.

◆

INTESTINAL HÆMORRHAGE.

By Oodoy Chund Dutt,

Civil Medical Officer.

During the last two years I have met with a few cases of intestinal disease which, I believe, are curious and worthy of record. Two of these were cases of hæmorrhagic flux, and the other two I am about to relate were apparently cases of inflammation of the bowels and peritoneum, of a peculiar form.

CASE I.

Luckhun Roy, a hajut prisoner, aged 35, weak and famine-stricken, was admitted into the Pooree jail on the 12th July, 1866. On the morning of the 17th July, he came to hospital, complaining of severe pain in both knees. His countenance was pinched and anxious, as if suffering from great pain; pulse frequent, small, and weak; bowels costive. At this time the case was considered to be one of neuralgic pains, and an anodyne liniment was ordered to be rubbed on the knees. At about 4 p.m., the native doctor found the patient no better, and in a state bordering on collapse. I was sent for and found the pulse almost imperceptible, perspirations pouring out of the body, and the patient restless. Even now he did not complain of abdominal pain, or of any other symptoms, except pain in both knees. I examined the heart, but did not in any way examine the abdominal cavity, so that I am unable to state if pain would have been elicited on pressure or not. I ordered stimulant mixture to be administered every hour, as also hot bottles to the feet and ginger frictions. The patient died early on the morning of the 18th, from symptoms of collapse. On opening the body, the whole of the intestines were found deeply inflamed in their serous coat. The parietal peritoneum was also very red and vascular. The abdominal cavity contained about a pint of gummous fluid, turbid, with shreds of lymph. Patches of lymph were also effused about the bends of the intestines. On opening the intestines, they were found distended with a yellowish thin fluid. The mucous membrane was of a dark red color. The lower lobe of the left lung was congested. There was nothing worthy of notice in the other organs.

CASE II.

Boloram Saut Singar, aged 30, was admitted into the Pooree jail on the 12th July, in a weak, famine stricken state. On the morning of the 19th he came to hospital, complaining of severe pain in the thighs, and a tense, tender state of the abdomen. Bowels confined; no fever. On examination, the abdomen was found very tense and tender; pulse small, weak, and frequent. This case was diagnosed to be of the same nature as that of Luckhon Roy, above described, and the patient was ordered calomel and opium pills every three hours, and frequent turpentine fomentations over the abdomen. At 3 p.m. he was very restless, the pain in the thighs was very severe; pulse feeble. Was ordered an injection of castor-oil and hot conjee. Died suddenly at 4 p.m. The appearances presented by the intestines and abdominal cavity were much the same as in the case of Luckhon Doss; only the congestion of the intestines and peritoneum was not so deep and bright. The fluid effused in the abdominal cavity was of a deep yellow color, with abundant flakes of yellow lymph floating in it.

Remarks.—I will not venture to offer any suggestion as to the nature of these two cases. In the books in my possession, I cannot find any account of a similar disease. At the time I attributed the disease to sleeping on damp floor of a newly-made temporary shed, and I directed that the prisoners should all sleep on straw thickly laid all over the floor; and after this I had no other case of this sort.

CASE III.

Dhoner Swaine, aged 20, a hajut prisoner, was admitted into hospital on the 21st August, 1866, with fever of six days' duration. The fever was intermittent in type, and not very severe apparently. He was ordered a dose of castor-oil.

22nd.—Had five stools from the oil, had fever whole day and night yesterday; it is a little less severe now. He was ordered quinine, grs. iii., every three hours; fever mixture to be given if the fever increases.

23rd.—Had fever during the day, and took fever mixture of tartar emetic and nitre yesterday; has got remission this morning. He was ordered quinine, grs. v., every four hours. At 4 p.m. it was reported that patient was very weak and faint from having had three copious watery stools of a red color. On visiting him I found him pulseless and dying; one of the stools was preserved for my inspection. I found it of a bright red color, very thin, but without any large coagula. Patient died at 5 p.m.

On opening the abdomen, the peritoneum and large intestines generally were found to be congested. About a pint of reddish serum was effused into the abdominal cavity. Cæcum congested, thickened, and covered with red patches. On opening the large intestines, they were found filled with a dark yellow fluid. The other organs were normal in appearance.

CASE IV.

Mansa, aged about 30, a hajut prisoner, of robust constitution, complained of fever on the 2nd March, and had a dose of castor-oil. He did not come in to hospital, nor did he apply for any medicine on the 3rd. On the morning of the 4th he came into hospital, and said he had a return of fever on the 3rd. He was given a dose of atees powder, grs. xx., and afterwards took some rice, at 10 a.m. Soon after he vomited three times, and was purged twice within 2 p.m. The appearance of these two stools was not noticed, but they were stated to be thin and feculent. Between 2 and 4 p.m. he had two copious watery stools of a deep dark red color, with flocculent yellowish deposits, and had vomited thrice, the thrown up matters consisting of bile and mucus. On my visiting him shortly afterwards, I found that his eyes were sunk, pulse very feeble, abdomen sunk and free from pain or tenderness; was very restless. The native doctor had given him a calomel and opium pill at 2 p.m., and another at 4 p.m. I now ordered him an enema of sugar of lead ʒss. and tinct. opii ʒi. in four ounces of water, and gave internally, every half hour, a mixture composed of 10 drops of liquor ammoniæ and 20 drops of sulphuric ether. A large mustard plaster was also applied to the abdomen. Had another stool of the same sort at 7 p.m., and an injection of 10 grains of sugar of lead and half a drachm of tinct. opii was repeated.

5th March, 7 a.m.—Has taken 14 doses of the stimulant mixture since 4 p.m. yesterday. Had one scanty stool at night of a dark red color. Is very sick and retching this morning. Pulse weak and quick, but fully restored. Was ordered Collis Browne's chlorodyne (prepared according to the formula published by Peter Squire) in doses of 20 minims every two hours.

4 p.m.—Had strong fever at 12 a.m. It is getting less now, but not quite gone yet. Says he feels great relief from taking the chlorodyne, and wants to have it oftener than once in two hours. Pulse weak; sickness and retching relieved by chlorodyne. Took a little soft rice and *dahee* for food.

6th, 7 a.m.—Took twelve doses of chlorodyne since 4 p.m. yesterday; fever left yesterday evening. Since then feels composed. Had no stool. Was ordered quinine, grs. iii., every two hours along with a dose of chlorodyne.

4 p.m.—Had fever at 12 or 1 o'clock, attended with sickness; the fever has just left. Mustard plaster was applied to the abdomen, and the chlorodyne continued every two hours. Had taken three doses of the quinine, and the fever was less strong to-day than on the 6th.

7th.—Feels pretty well now, is only very weak; was ordered quinine, grs. v., at 8 and 10 a.m. respectively, along with a dose of chlorodyne. To have no other medicine.

8th.—Had no fever yesterday; complains only of weakness; was ordered bark and sulphuric acid. Patient was discharged cured on the 11th.

Remarks.—The two cases of hæmorrhagic flux above related are apparently cases of bloody flux, occurring as complications of malarious fevers. Profuse and long-continued perspirations, with a tendency to end fatally from exhaustion, are often met with as complications of apparently slight attacks of fevers. A similar relaxation of the intestinal mucous membrane, permitting of copious exudation from its blood vessels, readily accounts for the hæmorrhagic flux that is now and then met with.

The Lymphatics in Frogs.—Herr C. Toldt, a military physician, has communicated to the Royal Academy of Vienna some interesting facts in relation to this subject. The details of the memoir are too long for abstract. The author first describes the thyroid gland of frogs, and demonstrates its functional analogy to the lymphatics of mammals. Then he describes minutely what may be called the thymus gland of the frog, and assigns to this organ a peculiar series of functions.

Notices to Correspondents.

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[illegible] Fox.

[illegible] W[illegible].

[illegible] at the institution [illegible] after their admission.

[illegible] of pleasure [illegible] went to her Master."

[illegible] subordinate [illegible] the noise have been [illegible]

The Indian Medical Gazette.

A MANUAL OF THE DISEASES OF THE EYE.

C. MACNAMARA,

Price, Rs. 8.

WYMAN & Co., Hare Street, Calcutta.

[illegible]

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY REQUESTED.

HARE STREET, }
January, 1869. }

WYMAN & Co.,
Proprietors.

[illegible] each [illegible].

T[illegible] J[illegible] this [illegible], at the eleventh hour, [illegible].

ON SNAKE-POISON AND ITS ANTIDOTES.

We [illegible] to lay the result of some experiments recently [illegible] testing the [illegible] of a certain antidote [illegible] to the poison of the Cobra. The [illegible] the usual symptoms [illegible] the venom. Of course from the [illegible] be made. [illegible] and [illegible], that we [illegible]. But we [illegible] however [illegible] the experiments [illegible] Friday, the 15th January 1869, they [illegible] satisfactory solution of the question.

We must not lose sight of the fact that snake-poisons [illegible] of [illegible]. In searching for [illegible] antidote, therefore, are we working in the right direction?

We [illegible] space in our present issue to enter into this subject, which must, therefore, be reserved for a subsequent issue.

THE JAILS AND JAIL SYSTEM OF INDIA.

A very important note on this subject has recently been published by the Home Department, and, as the volume may not be accessible to many of our readers, we propose to present to them an epitome of the whole question.

From the earliest settlement of the British in India, their progress and advance has ever been marked by the setting apart of [illegible] prisoners. In the earliest period of our rule the vilest dungeons, as long as they were secure enough, were thought sufficient for the purpose; and we read, to the benefit [illegible] of our countrymen in the Black Hole, which had previously been employed as a prison under the [illegible] administration, and its situation and former use, no doubt, suggested it to the Soubahdar as a fit place to secure his captives.

At the end of the last century, persons in our possession in India were but only on a par with those in England—a type of everything that was miserable and pestilential. Improvement seems to have been slow, and mainly attributable to want of system.

About 1811, the Sudder Nizamut Adawlut appear to have drawn up a code of rules for general guidance on jail management, and these continued in force, altered, perhaps, in different parts of the province to suit local aspects, or different opinions of civil officers, until the question was permanently taken up from the date on which the Home Secretary begins his review.

The note is divided into the following 9 subjects :—

1. Outline of history of Prison Administration.
2. Jail buildings and the Cellular system.
3. Inspection and superintendence.
4. Health.
5. Classification.
6. Discipline and general management.
7. Finance.
8. Reformatories.
9. Transportation.

The first practical measures of prison reform were initiated by Lord Macaulay, in 1835, shortly after his arrival in India, as a member of the Indian Law Commission.

His minute on the subject states, that as the practice of flogging has been abolished, and the punishment of transportation has proved so expensive, imprisonment must principally be resorted to in India as the instrument of the law; and he therefore called the attention of the Council of India to the establishment of such regulations as should "make imprisonment a terror to wrong-doers, and should, at the same time, prevent it from being attended by any circumstances shocking to humanity."

Sir C. Metcalfe, then acting as Governor-General, appointed a committee to inquire into the whole subject, comprised of men whose opinions would command respect in England, and some of the ablest representatives of the Civil Service. Their report was presented early in 1838, and it has since been the standard authority on the principles of prison management and prison discipline.

The jails in Bengal, 30 years ago, would seem to have held no inferior position to those of more civilized countries. The committee state that, although the humanity of some points in the treatment of prisoners was doubtful, yet, generally, "the care that is taken of the physical condition of these unfortunate men, in the great essentials of cleanliness, attention to the sick, and the provision of food and clothing, appear to be highly honorable to the Government of British India." In fact, what was then the second stage of prison reform in England, would seem to have been the state of prison discipline in India—a state in which the physical condition of the prisoners was looked to, but nothing more; and a prison was made rather a pleasant place of residence. In a moral point of view also, Indian jails held a good place in comparison with other countries. "The mixture of debtors with criminals, which in some places still exists in England, and which was universal in North America, is unknown in any jail in India. The proportion of distinct civil jails to criminal jails is very honorable to the Government. The mixture of the two sexes in Indian prisons is unknown, and, in general, the separation of tried and untried prisoners is at least as complete in India as in other countries."

The gradual steps taken in Indian prison reform will be noted under the several heads of the note.

Previous to the appointment of Lord Macaulay's committee, the management of jails in Bengal had been under the sudder court, zillah judges, and magistrates; but the individual efforts of the latter could do little towards improvement; their time was taken up by more pressing calls upon it, and it was not until the appointment of an officer solely for the purpose, as urged by the committee of 1838, that jail reform really began.

In 1844, under the administration of Mr. Thomason in the North-West Provinces, the first Inspector-General of Prisons, Mr. Woodcock, C.S., was appointed, whose office was "to effect an improvement in the health and discipline of the prisoners, a reduction in the periods of imprisonments, and at the same time a material diminution of expense." A few years later, the Lieutenant-Governor was able to report that these objects had been well gained, a comparison with the statistics of previous years showing that "the prisoners were generally more healthy, that they were better lodged, clothed, and fed; that jail discipline had much improved; and that the expenditure had been reduced."

On such good results following the experiment, the office was made permanent in 1850; similar appointments were made in the Punjab in 1853, in Bengal and in the presidencies of Madras, and Bombay in 1854; more recently a special official has also been appointed to the minor administrations.

The next administrative reform that took place was also originated by the Government of the North-West Provinces, in 18[illegible], by the appointment of civil surgeons to the entire management of their jails. The general superintendence had, up to this time, been in the hands of the magistrate of the district; but as their work in their provinces increased, it was found they had not time to attend to the minutiae of jail economy, and that some other agency was required. Civil surgeons, who had only been concerned in the medical and sanitary state of the prisoners, were now to have "the entire charge; and an allowance for the additional duty, with a small office establishment, was sanctioned."

This arrangement was confirmed experimentally by the Government of India in 1862, and was finally sanctioned in 1864, "when the local Government was able to show that, in every one of the twenty-five jails to which civil surgeons had been appointed, there had been improved discipline and economy."

Since the latter date, the principle has been adopted over the presidency of Bengal, and in the Governments of Madras and Bombay.

The last measure of administrative reform took place at the instance of Sir John Lawrence, in 1864, who, in a minute dated the 3rd March, states—"The subject of jail discipline and the condition of prisoners in India appears to be a question which calls for earnest consideration," and he appointed a committee to report fully on the present state of jail discipline, and to suggest improvements in the management and treatment of prisoners.

In the Health Section, the "Indian Jail Committee" attributed the high sickness and mortality in jails to the following causes, and in their report they make suggestions for their removal or mitigation:—

Overcrowding, bad ventilation, conservancy, drainage, and water; insufficiency of clothing, sleeping on the ground, deficiency of personal cleanliness, exaction of labor from unfit persons, and insufficient medical inspection; their great points in advance of previous practice being that no central jail intended for all prisoners sentenced to a term exceeding one year should be built for more than 1,000 prisoners, and that the minimum space allotted to each prisoner should be 54 superficial and 648 cubic feet. They classify the introduction of such discipline into jails as shall tend to make imprisonment a really deterrent punishment, under five heads, reporting upon each: viz., superintendence, labor, rewards, punishments, education; and they note also upon other subjects, such as juvenile delinquency and reformatories, female prisoners, jail dietary, habitual offenders, tickets of leave, classification of convicts, salaries, fines, statistics, and the accommodation of European prisoners.

2. [illegible] *Jail buildings.*—The provision of prison accommodation was coeval with the first settlement of the English in India. Imprisonment was not a punishment inflicted by native Govern-

[illegible] of punitive measures were made more summary, and [illegible] said they did anything with a prisoner rather than [illegible] him. So little does this "rudeness and simplicity of native administration" appear to have been remarked [illegible], that in 1852, on application to the Court of Directors for [illegible] expenditure for the accommodation of 10,000 prisoners in the Punjab, they first desired to be informed of the manner in which the people had hitherto been imprisoned, and whether [illegible] measures were no longer, in any degree, available. The answer that imprisonment, except in dungeons or at the [illegible] of city walls for political offences, was not a native [illegible], accompanied by a long detail of how prisoners were disposed of in Runjeet Singh's time, was accepted, and the [illegible] sanctioned.

It is not within the scope of this article to relate the history of prison accommodation, or to show how culprits were housed and provided for from our earliest occupancy of the country; suffice it to say that improvements in every shape have been progressive under all difficulties, and that the recommendations of the last Prison Committee in 1864, as noted under the former [illegible], by defining the size of the prison, and increasing the amount of superficial and cubic accommodation per man, add largely to the expense and difficulty of providing buildings to come up to their recommendations.

As in barracks, so in jails, the country is in a progressive state, and while the present generation is acting up to the advanced state of knowledge on the subject, our successors may yet look upon us as to be quite as inferior in action and practice, as we now have learnt to regard the first authors of reformation.

The recommendation for "central jails" emanated from the Committee of 1836; one of this class was first established at Agra, in the North-Western Provinces in 1846, and the Inspector-General of Prisons was appointed to the direct charge of it; in 1848, one was established at Bareilly and another at Allahabad. In the Punjab, the first central prison was established at Lahore in 1852, and similar buildings at Mooltan and Rawul Pindee were at that date nearly finished.

The above two Governments appear to have taken the lead in prison construction, and at this present date the requirements of the North-Western Provinces are approaching completion, while in the Punjab some district jails are only required.

In the Government of Bengal, the Lieutenant-Governor reported in 1864 that "the principal defects pointed out by the Prison Committee of 1836 still exist, though in a diminished degree." "A standard design for large jails in this province has, during the current year (1868), been sanctioned by the Government of India, and grants have been provided for the commencement of three buildings.

"In this presidency there appears to have been delay in the preparation of [illegible] estimates, the main causes being considerable difference of opinion among high authorities in the jail department, as to demands on their part for jails of a character unknown in other parts of India, and the construction of which would have been for financial and other reasons undesirable."

In the presidency of Madras, two central prisons had been commenced as far back as 1857 of which one was completed in 1867, a second has been [illegible] and now to be finished, while three others are in progress [illegible]. The supply of district jails is also progressing, and grants are made for the purpose from the annual budgets.

Prior to 1864, nothing appears to have been done in the presidency of Bombay towards building central prisons; one, however, has since been commenced in the Deccan.

In the Central Provinces, the Hyderabad Assigned Districts, and in British Burmah, some are completed, and others are well advanced.

"Thus it will be seen that great progress has been made in jail construction in all provinces, except Bombay and Bengal, since the report of the Jail Committee in 1864; and in the case of these two provinces, designs have at length been settled, so that they should now soon be on a par with the rest."

A reference to all local Governments and administrations was made at the instigation of the committee of 1864, to find out the "amount of existing jail accommodation, and the number of prisoners of all classes, for whom it was considered necessary to provide in each district." The replies showed that, while the average "number of prisoners of all classes, at that time throughout India, was about 74,000," that, at the [illegible] superficial space recommended by the committee, accommodation really existed only for 52,000. On this the Government of India sanctioned extension and alterations in the plans of buildings then commenced, and lost no time in considering details of designs submitted for new buildings, being guided generally by the principles laid down by the committee of 1864, with certain modifications.

In the various climates of India, and amid the peculiarities of available sites, local supply of materials, &c., what is a good plan of building for one part of the country must be greatly modified in another; but the general principle on which all jails in India, except in British Burmah, are now constructed, is the radiating system, that is, blocks or lines of barracks, radiating from one central point, where a watch-tower surveys the whole. The buildings are generally of one story, the floor raised two or three feet from the ground, each barrack about 18 feet broad, and intended to contain from 20 to 30 prisoners at the cubic and superficial space laid down by the Jail Committee; ample provision is made for ventilation, conservancy, &c. Buildings also exist for hospitals, quarters for officials, workshops, separate wards for females and juvenile offenders, affording complete separation; a certain proportion of solitary cells, every convenience for other offices, &c., &c., all of which are designed with the greatest care and looked after with the greatest vigilance.

"The estimated cost of jails which have been sanctioned during the past four years has varied from Rs. 190 to Rs. 577 per prisoner, including the value of convict labor."

(c). "*The Cellular System*." It is remarked in the note, that there are four generally recognized systems of imprisonment.

1st.—"Complete isolation of the prisoner in a separate cell by day and night, without labor of any kind, and without any communication with other prisoners or with prison officials.

2nd.—"Isolation by day and night in a separate cell, with labor and official inspection.

3rd.—"Isolation in a separate cell at night, with labor in association with other prisoners during the day.

4th.—"Association in labor by day and at night with other prisoners.

"Of these systems, the first was tried in America, but has long since been abandoned as inhuman, dangerous to reason, and even to life. The second is the system contemplated in the English Prison Act of 1865. The third is the system which has been advocated by some local Governments for introduction into India. The fourth, with certain modifications to be noted hereafter, is the existing system in India. For the purposes of this note, the first and second systems will be termed the solitary; the third, the separate system; and the fourth, the system of common imprisonment. Most of the local Governments in India advocate the introduction of the separate system. The Government of Madras is persuaded that no completesystem of reformation is possible until each prisoner is provided with a separate sleeping cell; but the objection on the score of expense is admitted. The Government of Bombay considers the separate system to be undoubtedly the best, but to be delayed only on the score of expense. The Government of the North-Western Provinces seems satisfied with the existing system, under which, in those provinces, each prisoner has a separate, well elevated sleeping berth, measuring 6½ by 2 by 2 feet, and is associated with other prisoners in labor by day. The Punjab Government strongly urges the immediate introduction of the separate system, and deprecates the objection on the score of expense. The Chief Commissioners of Oude and the Central Provinces, the Resident of the Hyderabad Assigned Districts, and the Commissioner of Mysore, appear to concur with the Government of the North-Western Provinces that separate sleeping berths are all that is required. The Chief Commissioner of British Burmah seems to agree with Dr. Planck, the Inspector-General of that province, that solitary sleeping accommodation would cost a very large sum to provide, and would increase the mortality among the prisoners when provided. But the most strenuous advocate of the separate system is the Inspector-General of Jails in Bengal."

(To be continued.)

SEPTENNIAL EXAMINATIONS OF SUB-ASSISTANT SURGEONS.

IN accordance with a recent Government order, issued upon a recommendation by the Inspector-General of Hospitals, I.P., sub-assistant surgeons in this presidency are now to be examined as to the extent of their professional qualifications, on the termination of each of their septennial periods of service, by written questions from the professors of the Medical College. We publish, by the permission of Dr. Green, a set of questions on the several subjects, that sub-assistant surgeons may be made acquainted with the *nature* of the examinations to which they would henceforth be subjected. It will, of course, now be more than ever imperative upon sub-assistant surgeons, not only to keep up the knowledge which they acquired at college, but also to be familiar with the advances which are being made in each branch of the profession. The former will be very easy of accomplishment by an occasional perusal of their text books, and the latter need not be less difficult, if the monthly retrospects, which are (or ought to be) circulated throughout each circle, are carefully studied.

We have reason to hope that the above order will effect a marked improvement in the professional character of the entire body of the sub-assistant surgeons in this presidency, for we are too well aware that very many are apt to occupy themselves with literary pursuits which have no bearing whatever upon medicine, to the detriment of their own reputation and of their patients. As a matter of course, questions emanating from the college professors, who are compelled—as teachers, if for no other reason—to keep themselves informed of the progress made in medical and surgical science, will be "stiffer" than what may be expected from medical officers who are engaged in practice only; and it is therefore fitting that the *crucial* tests at the septennial examinations should be applied by the professors. The examining committees will be convened as usual, and the members are expected to ascertain, by *viva voce* questions, general intelligence and acquirements of the candidates, and to report accordingly. On the score of uniformity, the new system is a decided improvement upon the one lately in force. The examinations will henceforth be *always* of the same searching character, as coming from men who are *accustomed* to teach and to examine. We fully believe that, after a time, after the first feelings of opposition shall have subsided, sub-assistant surgeons will accept the new system as a boon. A higher *professional* status, which they will henceforth acquire, will lead to an earlier recognition, on the part of Government, of professional merit, and so to an earlier bestowal of Government patronage in the shape of higher paid appointments.

We are aware that a feeling of discontent is abroad, and we are grieved to find that it is fostered by the editor of a journal for whom we would fain entertain a high respect. The editor is mistaken, however, in thinking that the sub-assistant surgeon alone is to be subjected to examinations *after* he has once been admitted into the service. The same rule is in force with respect to her Majesty's *assistant-surgeons*, who are examined for promotion to the rank of surgeon (on the completion of 10 years' service) by questions sent from England; and, by the Secretary of State's despatch of November 7th, 1864, No. 340, the medical officers on the Indian establishment are required to go through the same ordeal. We look forward to seeing it extended likewise to apothecaries and native doctors.

Let not sub-assistant surgeons be led into the belief that they are neglected, and that their very name is a disgrace. We have pointed out, in a former article, that they may look in confidence to a still further acknowledgment of good service beyond the concessions which have already been made: and we must remind them that the term *sub* is used in other high departments of the State, as well as their own, and in reference to officers who may hereafter fill some of the *highest* situations of trust under Government. If, however, the title of sub-assistant-surgeon be distasteful, we have no doubt that, upon a respectful memorial being submitted to Government, it would be changed for that of *native surgeon*, the term by which this class of medical officers is indicated in Madras. With *that* title we presume no fault would be found.

QUESTIONS IN SURGERY.

1. Describe the pathology of gangrene, and the different forms in which it occurs. Give an account of the causes, symptoms, and treatment of each form of the disease.

2. What is meant by acute angular curvature of the spinal column? Describe its causes, symptoms, pathology, treatment, and results.

3. What are the subsequent dangers from pathological changes to be apprehended in persons who have recently suffered from wounds, or undergone grave surgical operations?

[illegible] the predisposing causes, symptoms, and general characters of these [illegible] affections, and their origin, and state how far you may [illegible] remedy, avert, or prevent them by hygienic [illegible] measures.

4. Describe, with strict anatomical detail, the operations of lithotomy [illegible] median lithotomy, [illegible] treating the respective advantages of each, and explaining how you would be guided in your selections of either.

5. To what morbid conditions is the external auditory meatus liable? What are the causes, symptoms, and treatment of each of these diseases?

QUESTIONS IN MEDICINE.

1. Give a full description of acute hepatitis, chiefly with reference to causes, pathology, symptoms, and treatment.

2. In what diseases do you usually have recourse to mercurial treatment? If averse to the use of mercury, how do you treat the principal diseases in which mercury was at one time generally employed?

3. A patient is brought to you insensible, and you believe him to be the subject of pernicious or [illegible] malarious fever. How do you treat this case?

QUESTIONS IN MIDWIFERY.

1. State the circumstances under which rupture of the uterus occurs. Enumerate the symptoms of its having happened, and detail the treatment you would pursue under varying circumstances.

2. What is meant by periuterine hæmatoma? Describe the symptoms by which its presence is recognised. What treatment would you advise for this affection?

3. What is the hydrocephaloid disease? Under what conditions does it occur? How would you diagnose it? and under what treatment would your patient do well?

QUESTIONS IN MEDICAL JURISPRUDENCE.

1. What are the characteristics which distinguish a case of death by strangulation from one of hanging?

2. What morbid appearances are observed in cases of drowning?

3. How would you distinguish blood from other stains?

4. In death from the bite of a snake, what morbid appearances are produced?

ON THE NASAL ADMINISTRATION OF SULPHATE OF QUININE.

Mr. J. J. [illegible], sends us a [illegible], consisting of [illegible] 2 grains of [illegible] instead of [illegible] [illegible] [illegible] the [illegible] is preferable [illegible] through the [illegible] Mr. Durant [illegible] [illegible] which an antiperiodic [illegible] [illegible].

SUBORDINATE MEDICAL EDUCATION IN INDIA.

We propose to [illegible] the subject of Subordinate Medical Education [illegible] the best mode of [illegible]. Before [illegible] this, however, we must say a word with regard to [illegible], the subordinate [illegible] for whose [illegible] we [illegible] last [illegible] some [illegible] the present numerically [illegible] Medical Service.

The first point [illegible] very [illegible] that [illegible]— [illegible], has not been sufficiently insisted upon in the [illegible] of this class, viz., the possession on the part of the [illegible] of an [illegible] knowledge of English. It has been remarked that the cause of so large a proportion of failures at the University examinations for the [illegible] is owing to [illegible] the youths possessing so imperfect a knowledge of English, [illegible] of technical terms, that they cannot [illegible] comprehend the lectures which are delivered in that language. This is a serious defect, which we commend to the [illegible] and earnest consideration of the [illegible] department. It is universally admitted—nay it is self-evident—that the [illegible] of [illegible] knowledge to this class [illegible] in English, the language in which is written the [illegible] literature of which, even in the days of their pupilage, they [illegible] to know something, and the translations [illegible] do not exist, nor can they be [illegible] for to the extent of professional requirements. It is also necessary that the students of this class should be thoroughly conversant with English, because, when they pass out of the *status pupillaris*, and themselves become teachers, they must familiarize themselves with all the principal [illegible] of the day, which [illegible].

Upon every consideration, [illegible] the sub-assistant surgeon should possess a thorough knowledge of English, and this point should be insisted upon [illegible] they are admitted as students into the college [illegible]. The possession of a certificate of having passed the "[illegible] examination" in Arts of the Calcutta University, or of any other university recognised by that of Calcutta, is accepted as a sufficient guarantee of [illegible] requirements, and [illegible] as qualifying [illegible] Medical College in Calcutta, and nothing [illegible] wherever this class is educated. [illegible] in [illegible] cases, but we must remember who [illegible] that we are about to educate, and what will be expected from them hereafter. In the establishment of the new college [illegible] North-Western Provinces, this point [illegible] borne in mind.

We [illegible] to the question of *pay*. When we urged, in [illegible], that [illegible] officers should be [illegible] duties with [illegible] reference to their [illegible] which they would be able to teach," [illegible] and receive no [illegible]. So far [illegible], we [illegible] their [illegible] the same extent that the professors at the [illegible]:—

	Rs.
Principal and *ex officio* [illegible] to the Hospital* Do. Professor [illegible] Pathology	1,800
Professor of Surgery and Hygiene, and *ex officio* Surgeon to the Hospital†	800

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* [illegible] the [illegible] of Clinical Medicine.

† [illegible] Ophthalmic and [illegible] Surgery.

Professor of Medicine and Midwifery, and *ex officio* Physician to the Hospital	800
Professor of Materia Medica* and Botany	800
Professor of Chemistry and Medical Jurisprudence, and Chemical Examiner	800
Resident Surgeon†	800
Professor of Anatomy and Physiology ..	
Resident Physician†	800
Professor of Comparative Anatomy and Zoology, and Curator of the Museum	
‡Registrar or Statistical Officer	200
Total ..	6,800

We have, probably, in the estimation of those who are accustomed to look upon *teaching* as a *secondary* duty, fixed the salaries of the Principal and Professors too high. But we cannot too emphatically, or too earnestly, impress upon ourselves that our great mission in this country is *the education of the people.* And we must also remember that it is better not to educate at all than to do so imperfectly. "A little learning is a dangerous thing." Second-rate teaching will not answer. But first-rate teachers are not to be enlisted without adequate remuneration; and there is no lack of them. The assistant-surgeons of the Indian Medical Service who come to India now-a-days are, as a body, *professionally*, exceedingly well educated in a general way. Only let it be known at home that well-paid professorships at medical colleges are amongst the prizes of the Indian service, and students will qualify accordingly. Thus a further stimulus will be given to medical education for India. Not that we would urge the bestowal of these appointments upon young men fresh from the schools; on the contrary, they should be offered as prizes to those who have *distinguished themselves* in their medical career; and of such there will doubtless be a multiplied number in after years.

We next come to the duties and pay of the native teachers, who should be sub-assistant surgeons. In the Medical College in Calcutta the students of the native doctor (or, as it is now termed, the *hospital assistant*) class are, we venture to say, insufficiently taught. A few months ago, a well-known Commissioner drew attention to the very inferior professional qualifications of some of these young men whom he had met with in certain dispensaries in Bengal. Shortly after the publication of this report, a correspondent of the *Englishman* (who was apparently familiar with the subject), replied that native doctors were only educated to be *dressers*. This, we fear, is too true. It is understood that the native doctors—hitherto *par excellence* so called—are to serve as *dressers* in regimental hospitals, and that their education is, therefore, not to exceed what will qualify them for these subordinate situations. But the regimental native doctor is occasionally the only person in the shape of a doctor with a detachment; and it is clear that unless he is qualified beyond the mere subordinate standard, he may not only be useless, but mischievous. It sometimes occurs that a native doctor of this class is required for the sole medical charge of a dispensary; to assume the functions, in fact, of a sub-assistant surgeon. There are a few men in the service who are qualified for such a charge; but they have qualified *themselves* after leaving college, and their fitness is, therefore, the result of personal effort, not of any educational system. Bearing in mind that these higher qualifications *may* be demanded of this class of native doctors, would it not be well to educate them accordingly?

But, there is educated at the Medical College in Calcutta yet another variety of native doctors composed of two classes:—one, the *apothecary class*, the students in which are intended to occupy subordinate positions in jails; the other, the *Bengalee class*, (both classes are composed of Bengalees,) in which the youths are educated up to a higher standard. *These are to become the village practitioners of Bengal*, though they too are employed, when required and available, as Government assistants, and the system adopted with them might be taken, so far as it goes, as a model for the instruction of *all* native doctors. We would, however, go even further, and raise the standard still higher. We proceed to state what this standard should be. In the first place, native doctors remain too short a time at college; three years are not sufficient, even to master the subjects which, at present, constitute the curriculum of study at the Medical College in Calcutta. This is the period fixed for all the classes. Under the new regulations bearing upon the training of hospital assistants, (of students intended for regimental hospitals—the native doctors of the military class in fact,) the youths are required to serve for two years in a military or civil hospital, after which they will be entered for two more years at the Medical College in Calcutta. Thus four years of professional education are secured. This is the Madras system, and *there* it works well. We have every reason to hope that it will work equally well in this presidency, though we would extend the period of education from four to five years. We would give the same advantage, as to *time*, to both classes of the Bengalee native doctors. The youths of these classes might be attached, for two years, to dispensaries before entering the college. During this period of apprenticeship, so to speak, the character and qualifications of each youth should be carefully studied and kept in view by the European medical officer. Of course, the *selection* of the youths in the first instance must be carefully seen to. An unpromising youth should be unscrupulously rejected, whether at the commencement, or during the progress, of his apprenticeship.

We now proceed to the instruction given at the Medical College. It is presumed that the student has been instructed, as far as possible, in practical pharmacy, in materia medica, and in the minor operations of surgery, if not to the same extent, yet, at least in the same direction, that the country apprentice in England is instructed, by which he would carry with him a certain amount of elementary knowledge to the college, so that the time now employed there for its acquisition might be considerably curtailed. The instruction given at the college would be very nearly equal to that which the student of the [illegible] assistant-surgeon class enjoys. In another article

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* Including practical Pharmacy and Inorganic Analysis.

† We would suggest the [illegible] of these new chairs, in the *infancy* of the institution. Hereafter, when there would be an increase in the number of sick in the hospital, neither the resident surgeon nor the house physician should hold chairs, as their own duties would then completely occupy their time.

‡ The suggestion has been made that it might be entrusted to a respectable European clerk, or to a [illegible] officer who has left the army. [illegible] well [illegible] seeking for them. We [illegible] preferable to [illegible] an extra duty [illegible] already hard worked.—Ed., *I. M. G.*

[illegible] construction [illegible] [illegible] now. The [illegible] [illegible] [illegible] Their [illegible] [illegible] were not dangerous. [illegible] which are worth [illegible] in their heads. [illegible] that we are correct [illegible], they are not up to the required [illegible]. [illegible] must be raised, and we [illegible] carrying out of this [illegible] the Government by [illegible] Medical Department.

In the construction of a college staff, the sub-assistant surgeons, who would act as assistants to the several professors of physicians and surgeons, should, as we have said, be nominated to teach the "native doctor" classes. These will be (... two classes, although all would be taught together,) the class which is to supply hospital assistants for jails and native regiments, and that which contains the embryo village practitioner.

I

One Sub-assistant surgeon, who would act as assistant to the Professor of Surgery and Hygiene, [illegible] to the hospital, would [illegible]	Surgery and Hygiene.
Ditto ditto in Medicine*	Medicine.
Ditto ditto in Midwifery	Midwifery.
Ditto ditto in Materia Medica and Botany	Materia Medica and Botany.
Ditto ditto in Chemistry ...	Chemistry
Ditto ditto in Anatomy	Anatomy
Ditto ditto Assistant to the Curator in the Museum	Pathology and post-mortem examinations.

II. The Sub-assistant surgeon attached to the hospital should receive per mensem, besides the pay of his grade, a staff allowance, Rs. 150, because, besides teaching his own subject, he would give clinical [illegible] by the bedside. This is much more [illegible] than delivering a clinical lecture in a theatre. There would be three such teachers—the teachers of [illegible], of [illegible], and of *midwifery* .. .. Rs. 450

The teachers of Anatomy, Pathology, the mode of making Post-mortem Examinations, Chemistry, Materia Medica, and Botany, should receive Rs. 100 each per mensem, besides the pay of their grade† 400

[illegible] of the whole educational staff would, therefore, [illegible]

For Professors and Teachers, the teachers of the Sub-[illegible] 6,800

For Sub-assistant surgeons, the teachers of the [illegible] 850

Total per mensem, Rs. .. .. 7,650‡

We have thus endeavoured to sketch the outline of a scheme for the organization of a medical college in the provinces of India [illegible] away from the metropolis, where the local means and efforts are such [illegible] they can only be utilized to a [illegible], with due regard to the requirements of the institution. The details of the scheme must be [illegible] hereafter. We earnestly hope that the intention to establish a medical college in the North-Western Provinces, which has been recently revived after a lapse of six or seven years, will be acted upon. The supposed period of the consummation which is said to be necessary for the [illegible] fulfilment and carrying out of an idea in India has been [illegible], and we believe that the construction of a college would be now simply a question of finance. Money alone is required. Will not the local funds suffice? If the Government treasury is too empty, will not the people help? Such institutions are required, not in the North-Western Provinces only, but in Bengal, in Oudh, in the Central Provinces, and in Rajpootana. Surely, for so popular a cause, the rich men of the land, who will build *serais*, make *tanks*, and plant *orchards*, if they are encouraged to do so, surely they will come forward and render their names imperishable, (as the founder of the Medical College in Calcutta has done), by giving medical education, in such like colleges, to their countrymen. We shall revert to the subject of subordinate medical education hereafter, and take up the question of *text-books*.

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* The Professors of Medicine and Midwifery should have two assistants, one of [illegible] ward.

† The sub-assistant surgeons appointed to this duty should not be [illegible].

‡ This expense would be borne by the Local Government.

LOCK HOSPITALS.

In a recent issue we published, in our leading columns, an excellent article (communicated) on the subject of Lock Hospitals in Calcutta, to the sentiments expressed in which, with a single exception, (whereof it is not necessary now to speak), we gave our unqualified adhesion.

There is one point in connection with this subject to which we would wish to draw the attention of the Government of India. It is now universally admitted, as the result of long and bitter experience, that no department of state machinery, (in this country), which requires careful organization in the first instance, and unremitting supervision afterwards, is likely to be successfully managed without direct agency, responsible through the chief of the department to the supreme power. Not only should there be a single superintendent of the Lock Hospitals that are to be established in certain quarters of the city and suburbs, with executive subordinates under him, but he should be *selected*, and *without other occupation*. We can do justice to no question in medical science in India which requires for its full elaboration the undivided application of medical acumen and experience, because (so short-handed is the service) we cannot spare the men, who are already required for the ordinary routine work of the hospitals and dispensaries of the country. Is an enquiry sought for into the subject of intoxicating meat? Is a Medical College to be set on foot? Is a superintendent of Lock Hospitals suggested?—and the answer is ever the same, "No man can be set aside for special duties." And then follows the pernicious system of *doubling up*—of burdening one labourer with the work of three or four. The present paucity of educated medical officers of the establishment is a crying evil which, we have reason to believe, was brought to the notice of Sir John Lawrence. But the evil increases, and is sapping the strength of the service. It is possible that reference may have been made to the Secretary of State for India, in which would be pointed out the numerically defective condition of the Bengal Medical establishment, and the difficult complications which spring out of it; and the remedy *may* be in the "womb of time;" but, if not, we implore our new Viceroy to look into the question, and—act. Not only is one medical man unable to leave an inferior appointment to take up another which is more lucrative, not only does the victim of circumstances in robust health think of a medical certificate with which to secure leave to England which he *ought* to have on private affairs, and not only is it impossible for the head of the medical department to meet the requirements of local Governments for competent medical officers for even the medical charge of civil stations,—not only do these inconveniences result from the fact of there not being medical men enough in the country,—but, as we said before, medical science is threatened with stagnation. A cholera hospital is suggested for the study and possible eradication of the greatest pest of modern times. There are neither men nor money, is the reply! A fine opportunity occurs for the study of the syphilitic poison. There are to be several hospitals, each to contain some 300 patients, and at which are to be examined some 700 or 800 women daily. What a field! Here is an opening for a Ricord or a Henry Lee. Doubtless, in the medical service of this presidency alone, there might be found men, any one of whom would, possessing the required administrative ability, judgment, and tact, and having cultivated the specialty, be an admirable superintendent to *organize* and to *establish* hospitals of this delicate nature in Calcutta. It is not *every* man that would be suitable for the post. We sincerely trust that there will be no "doubling up." If this measure be decided upon, if the appointment of Superintendent of the Lock Hospitals in Calcutta be conferred upon a medical officer who is already occupied with other duties, and who, probably, has no taste for this, we must not be surprised if the work is done in a perfunctory manner, and therefore *ill done*. It has been whispered to us that the Government fiat *has* gone forth, and that there is *not* to be a special Superintendent. But (we say it with all respect) the laws of the Imperial Government need not of necessity resemble that ancient code which underwent no change. Rather let them resemble the opinions of one of England's greatest orators, which he never hesitated to alter if good reason were shown. May we venture to indulge the hope that *if* the question which forms the subject of our article *has* been disposed of, it may be re-opened and again dealt with, and that, if satisfactory proof be given of the benefit to be derived from the appointment of a special Superintendent of Lock Hospitals, the appointment will be created.

THE GOVERNOR-GENERAL'S SURGEON.

IN this country the Ruling Power is at liberty to choose the family physician, and no one can object to the arrangement. At the same time the members of the various departments of the State have an interest in the selection. The health of their chief is dear to them; and they are, therefore, anxious that it should be placed in good keeping. Moreover, the medical department of the State, notwithstanding that it may have an independent organization and action of its own, should feel the kindly influence of the State physician for whom its welfare and its progress ought to possess a special interest. The head of our department governs his own service, of course, quite independently of any other power: still, the Viceroy's Body Surgeon (as he is called) should be intimately acquainted with its machinery, and be able to help the Viceroy with valuable information respecting it, when required to do so. Without being, in the remotest degree, the adviser or referee on medical questions, he may yet, occasionally, give an opinion based upon his own experience; whilst he should be qualified to discuss all medical questions brought before the Government, whether by the head of the medical department or in any other way. The appointment of "Surgeon to the Governor-General in India" is something more than a mere *private* appointment; and we venture to assert that its delicate functions were well, though unostentatiously, fulfilled by the late incumbent. Who his successor may be, we are not very sure. Names have been mentioned, but only, we presume, to raise a smile. It is whispered that a medical officer is to be summoned from a sister presidency, and not from the Indian service, out of whose body the appointment has *always*, we believe, hitherto been made. A new Viceroy is naturally unacquainted with the usual course of procedure in this matter; but he should be informed by his immediate councillors of what is the practice; and what a grievous disappointment to the old medical service of India it would be if the Viceroy's surgeon were to be one whose career has been out of Bengal, whose interests are not theirs, and whose functions, therefore, would be imperfectly, and so unsatisfactorily, performed.

Far be it from us to write in a querulous or a dictatorial spirit. But, as representing the current of medical opinion in this presidency, we should fail in our duty if we hesitated to give expression to those feelings of mingled surprise and regret with which the profession sees one of the greatest prizes of the service—the high appointment of surgeon to the Governor-General of India—conferred upon a stranger.

CUI BONO?

IT has been recently stated, in one of the local newspapers, that from the 1st April next the Sanitary Commission for India is to be transferred from the military to the civil authorities, and will, in that case, be under the Home Department, and, therefore, under the administration of the member of Council who presides over that office under the Governor-General.

If the movement involved in this change was merely nominal, no notice need be taken of it; but it is the feeling of a large body of the medical service that it is but another form of separating the sanitary from the medical administration of the country; as such, it is viewed with very great distrust, and believed to be fraught with great danger to the organization of the medical department.

Sanitary work in India has ever been propounded and supervised by medical officers. Dr. Gordon's recent account of sanitary work among British troops, dating back forty years, is very valuable; and, as a recent memorandum states, "should the history of the Royal and Bengal medical departments ever be written, it would be shown that for many years past they have steadily advocated and promoted sanitary improvement in India, and that many individual members of the Royal and Bengal services have been foremost in the good work."

When the whole medical administration of the British Army was reorganized in 1858, under the presidency of Lord Herbert, he advised the establishment of an army medical [illegible]

[illegible] express purpose of "giving [illegible] of the medical officers an amount of practical instruction in sanitary science." He also provided for the "practical direction of that knowledge" by a superior administrative officer of rank to help the Director-General of the department in carrying out its details all over the world.

In this country, where sanitation is administered as a science, it is not found possible to separate it from the medical art; indeed, it is rather a noticeable fact, that the great authors of rules for prevention of disease are those only who would profit by the [illegible] of mortality.

It is singular that in India only has the plan been tried of separating the administration of the medical from the sanitary department, and very signally it may be said to have failed. The history of the first Sanitary Commission for Bengal will probably never be known; its collapse may be simply pointed to. The constitution of the second may be said to have been one of expediency; and so it has worked [illegible]. It may avoid difficult complications by this, but that should not be the position or work of the sanitary adviser to the Imperial Government. If Government have it in contemplation to revise or reconstitute the medical administration of the country, they should bring back medical officers to occupy their proper position as their trusted and responsible advisers on sanitary matters. In India, military and civil sanitation should be as one, they cannot be distinct, as they are in England, where the soldier forms the least important part of the population. Here sanitary work may be said to have begun for the welfare of the soldier alone; increased knowledge of the subject, the progress made in the science as a department of State in other countries, and the real charitable wish to improve the people of the country, have at last caused such knowledge to be extended to the people.

Separation of the sanitary administration from the medical, if it were really successful even, must fall to the ground eventually. Of no work could it be better said "that separation was weakness, union was strength."

It is believed that no sanitary administration can be complete without bringing in the heads of the British and Bengal medical departments to act as a central authority, assisted by a secretary and others.

The power of such a body, always with the head-quarters of Government, would be supreme and united, and competent to deal with every question that came before it, and in this council might the solution be found of what would be the best [illegible] sanitary administration of the country.

It is well-known how many conflicting interests and schemes are to be consulted on any great administrative changes being made. The contemplated change is a great one; therefore we would venture to urge that Government should call some of its members of the service to their aid, [illegible] every side of the question before any radical change is carried into execution.

Considering the various interests and departments to be represented, why should not a combination be formed of the representative members to constitute a "committee," or "body," or "commission," or call it what you will? Here might sit the Director-General of H. M.'s British Hospitals, the Inspector-General of the Indian Medical Department, with the Statistical Officer, and the Secretary. Such a "body" would be the medical referee *always present with Government* on every question affecting the health of each section of the community in India,

Local Correspondence.

THE VICEROY'S PRIVATE SURGEON

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

Sir,—In the *Indian Daily News* for January 21st, the following announcement appeared:—

"The medical appointment at Government House, vacant by the departure of Dr. Farquhar, has been conferred on Dr. Tonnerre, the Health Officer."

In the issue of the same paper for the following morning this piece of intelligence was thus modified:—

"We yesterday noticed a medical appointment in connection with Government House. Possibly the announcement was premature; but the authority for the statement was at least respectable. The fact was based on the authority of the late incumbent of the office."

Again, on the morning after, in the same columns, we find that

"Surgeon J. Fayrer, M.D., C.S.I., has been appointed to officiate as surgeon to his Excellency the Viceroy, in addition to his other duties."

These paragraphs, though brief, cannot but be of much interest to your readers. The post of Surgeon to the Viceroy is one of great responsibility and importance. Dr. Farquhar, during his incumbency, not only enjoyed Sir John Lawrence's favor and friendship, but in the quiet, unobtrusive, and conscientious manner befitting his post, he proved himself worthy of deep respect. It is certainly not the least important of Earl Mayo's duties to select a successor to Dr. Farquhar. On such a choice depends not only the extremely important consideration of His Excellency's personal well-being, but many other matters of general public interest. In one sense, the appointment is a private and domestic one; in many other respects, however, it is fairly a public and service question. Many of the relations in which the private surgeon stands to the Viceroy are of a general character. He becomes from his position, *de facto*, the confidential adviser of Viceroyalty in all matters bearing on the interests of the Indian Medical Service and the health of the native army in this country. Indeed, it is not too much to say that on many of the points on which he is privileged to offer his opinions, to a great degree depend the physical prosperity and happiness of the people of India. It is surely, then, but right that the Viceroy should have by his side one who is possessed of a direct and personal knowledge of the requirements of the medical service of Bengal, and of the sanitary wants of the general population. The private surgeon at Government House should have special and wide Indian experiences. It being so, it must have caused much astonishment to the members of our service to hear of the possibility of Dr. Tonnerre, Health Officer and homœopathist, being appointed to the Viceroy's staff.

Let us hope that the *Daily News* was, to a certain degree, misinformed regarding the medical arrangements of Earl Mayo. In such a case we have only to set aside the globule of intelligence placed at the head of this letter, which, if true, in spite of its insignificance, must have proved a somewhat nauseating bitter pill to the medical service of India. Should homœopathy ever gain official entrance to Government House the claims and dignity of legitimate medicine must receive a rude shock. Oil and water, even in India, do not mix well. The more service [illegible] of the question interest us as a body. It is clearly our duty to resent anything that we believe to be calculated to lower the medical profession in the eyes of the world. We, the [illegible] partizans of a system anterior to Hahnemann's infinitesimal [illegible], [illegible] that we are sworn to evince a [illegible] and [illegible] reverence for the reputation of the College of Physicians of England, and that we solemnly pledged ourselves, in the [illegible] of the honorable old Company, to oppose all false systems of medicine, and to prove ourselves the enemies of any unworthy partnership between what we judge to be truth and error.

It is surely not flattering the service to which we belong to express the opinion that Earl Mayo might, without difficulty, select a worthy personal medical attendant from the ranks of those who have ever proved themselves ready to incur any risks, however imminent, in the service of the State and for the good of suffering humanity within the wide limits of this empire. It is the undoubted privilege of the *Local* Medical Service of India to regard it as one of their rights that the professional attendant and adviser of Viceroyalty in India shall be taken from their ranks. In the *recent General Orders relating to the Bengal Medical Service*, lately published by Messrs. Wyman & Co., at page 19, we find G. G. O. No. 370 of 14th April, 1867, which, in accordance with instructions received from the Right Hon'ble the Secretary of State for India, "lays down the following revised scale of consolidated salaries for officers of her Majesty's *Indian* Medical Service." Beginning with the Inspector-General, we have the salaries of various officers of the administrative staff laid down; and we find, amongst the salaries for *officers of her Majesty's Indian Service*, that of the appointment of "Surgeon to the Viceroy and Governor-General." From this it is clear that the order in question implies that the Surgeon to the Viceroy shall be chosen from her Majesty's *Indian* Medical Service. It has been so in the past, and it ought still to be so. The appointment of Dr. Fayrer will doubtless be hailed with satisfaction by every member of our service. It would be impossible to find any one more fitted, by the ascendancy of his character and the respect in which he is universally held, for the post of *honorary* Surgeon to the Viceroy. I say *honorary Surgeon* advisedly, inasmuch as Dr. Fayrer will not reside at Government House, and will officiate as "Surgeon to the Viceroy, *in addition to his other duties*." It appears clear from this that there yet remains to be filled up, in due time, the regular appointment on the staff. Indeed, there are certain grounds for the belief that a gentleman from the ranks of the *Royal* Medical Department is likely ultimately to fill the post of private surgeon. Far be it from me to endeavour to create any spirit of faction between the sister services, whose interests and aims are of a kindred character. On the contrary, may kindly and noble feelings ever exist between the members of the Royal and of the local medical services! May such feelings never be marred by paltry jealousies! In writing this—which one does most honestly—there is, I believe, no reason why we should not express, without disguise, the opinion that the members of the Indian Medical Department would be stung with disappointment were they to forfeit the high privilege of serving on the Viceroy's staff. It could not but be with regret that we should see the guerdons and distinctions, to which, as a service, we believe we are entitled, passing beyond our reach. The men whose eager services have at all times been available, without stint, for the mitigation of the evils of war in India; they who have devoted themselves to science in this country, and to profound self-denial in the cause of practical philanthropy amongst its people, cannot but know how to value the approbation of the State, and the rewards bestowed for honorable services. It would simply be foolish to affect to despise or depreciate the recognition of public merit by our rulers. Let us therefore hope that Earl Mayo will not forego the present opportunity of doing simple justice, and at the same time paying a well-merited compliment to a department which has ever been animated by feelings of honorable pride regarding the professional status which is its due. As I wrote above, it is not that we grudge the medical officers of the Royal Army any possible good fortune which they can fairly enjoy: very far from it. Yet we are naturally averse to seeing precedents established which must be regarded with extreme disfavor by the officers of the *local* Indian Medical Service, who would thus experience the painful consciousness of being dispossessed of one of their most honorable appointments. It is argued by some that he whom his Excellency the Viceroy may believe to understand his constitution best must of necessity be the most fitting man for the post of private surgeon. The question, however, is clearly one of wider scope. Of two men equally able, why should not the Indian officer be selected, as heretofore? I submit that those who have served with reputation and success in India, and who have faced the disadvantages of continual exile in this country, not unfairly desire and expect to enjoy the distinctions which have heretofore attached to such conditions of service. On this principle it is that I, for one, should be very sorry to see the members of the Bengal Medical Department debarred from furnishing, from their ranks, the private surgeon to the Viceroy of India. There would appear to be really no good reason why they should be subjected to any chagrin or disappointment in such a matter; and they would certainly be wanting in self-respect and magnanimity were they indifferent to the fact of State favor passing away from their midst without good cause. Were any but an Indian officer appointed as the Viceroy's Surgeon, I believe that the nomination would be resented in every Indian civil station and regiment. Without desiring to imply that local medical officers care to hang obsequiously upon the favor of the great, it is yet impossible to ignore the important distinction between sycophancy and proper professional pride. A post of elevation and great trust which it has heretofore been the privilege of an Indian officer to fill, should surely not be allowed to pass to others without very good grounds for such an altered system of patronage. Indeed, I feel convinced that the introduction of such a precedent could only produce widespread heart-burning and discontent. Let us therefore trust that the ambition of our service is in no respect doomed to be baffled or blighted; but that, on the contrary, his Excellency the Viceroy may see fit to afford its members every reason to cherish that spirit of magnanimous rivalry for posts of honor which has in the past been the mainspring of great part of their public usefulness, and the secret of their best service achievements.

I am, sir, yours truly,
SPECTATOR.*

* We have published this letter at the request of our gifted and valued correspondent, though we venture to think that, as the subject has been dealt with in our editorial columns, it is unnecessary. And we beg it to be distinctly understood, that we neither endorse all the sentiments expressed, nor can we approve of the general tone of the letter, which is written somewhat in a spirit of resentment, and of "*service*" laudation. If there is one man more than another, who is anxious to conciliate public opinion, it is our present Viceroy. What he has done has been, we are sure, the result of inadvertence, and no one would more deeply regret a false step than he would. To take up a position of *resentment*, therefore, is to assume an attitude which is hardly suitable to the occasion.—ED., *I. M. G.*

Progress of the Medical and Collateral Sciences.

Animal Life at Great Depths in the Ocean.—On Thursday night, December 17th, 1868, Dr. B. W. Carpenter read to the Royal Society of London his report on the recent dredging exploration undertaken by him and Professor Wyville Thomson at the instance of the Government. The results obtained by the eminent physiologist are very remarkable, and completely upset the dictum of the late Edmond Forbes, that animal life ceases at a depth of eighty fathoms. Dr. Carpenter let down his dredge in water off the Faroe Islands of a depth of about 650 fathoms, and when he hauled it up he found it not only full of living creatures, but that these presented types of many genera and species, and in some respects recalled the littoral fauna of warm climates like the Mediterranean. At another point in their expedition, the dredge was let down in nearly equal deep water, at a point about midway between the Faroe Islands and the north-west of Scotland. Here, when drawn up, the dredge was not found to contain many individual or specific forms, and those which did present themselves were almost all of an arctic type. Now this is not the most remarkable fact. What is more singular, though more in accordance with *à priori* reasoning, is the fact that at the sea-bottom, from which the first animals were taken, the water had a temperature of about 48° Faht., while the temperature of the water on the second sea-bed was 32° or over the usual freezing point. Then comes the important question, at what point does sea-water find its greatest density, for distilled and fresh-water are most dense at 40 or 39°. Since it is clear that the densest water must be at the bottom, the greatest density of sea-water must be at or about freezing point; and it seems that the researches of physicists bear this view out. Many new species of invertebrates have been discovered by Dr. Carpenter, and among others, certain shells which were thought to be extinct, and are only known in some of the Sicilian Tertiary deposits.

Acetate of Potash in Gastric Catarrh.—In the *Bulletin Générale de Therapeutique* for November 30th, there is an excellent therapeutical article by M. le Professeur Gosselin, in which the author expresses the belief that the above salt is one of the most valuable of our preparations for the mucous affections of the stomach and digestive canal. He gives cases of acute and chronic dyspepsia, (and in one the catarrh of the stomach was accompanied by acute hepatitis) which were rapidly cured by the employment of the acetate. He mentions, however, that while this salt is not only useful in reducing [illegible] ... in te has a ... [illegible]

E[illegible] I[illegible] O[illegible].—A case ... [illegible] ... may be ... to ... by the way, that ... is employed. We ... said to be ... [illegible] ... was ... 25, was ... for ten ... of heat ... long time after the ... A ... was ... a few days ... [illegible] and the patient ...

C[illegible] Acid [illegible] S[illegible]. In a recent number ... Medical ... Journal, Dr. D. L. P[illegible] ... [illegible] ... and he gives it ... three times a day. He also applies it ... as a lotion.

Bromine as a Prophylactic against Diphtheria.—M. Ozanam ... inhalation of bromine for this purpose. He ... [illegible] ... 25 ... He states that he has ... in many cases with considerable success ... [illegible] ... He also recommends the inhalation of bromine ... of croup.

The Treatment of Goitre.—A memoir has recently been presented ... [illegible] ... the districts of ... Haute Savoie. The authors state ... treatment, there are ... it seems ... disease, and those ... of the commune ... 2,000 have been ... improved. The ... [illegible] ... The method consists in ... water, and stating ... giving the school children ... proportion of iodine.

Congestion of the cerebellum ... by no means a common ... has been ... M. Ley[illegible] ... [illegible] ... cerebral ... of the brain ... had ceased, she ... Voluntary ... days ... [illegible] ... of the ...

The Contraction of the Sun.—The recent eclipse (August ... [illegible] ... M. Janssen, whose ... M. Norman Lockyer, who ... [illegible] ... M. Lockyer ... [illegible] ... of the sun, that ... to the ... [illegible] ... that of the ... as he found the ... the sun's ... he has ... represent a ... Dr. ... M[illegible] ... discovery, but, as the ... was ... Mr. Lockyer, ... at the same time by both observers, Mr. Lockyer has really the highest claims to the credit of the discovery.

The Structure of the Prostate Gland.—The ... a memoir from Herr H. ... He says that the ... the organ is ... ducts traverse the prostate, and ... of glandular ... The structure of these glands ... he says, ... ordinary type of gland. A transverse section ... them ... cells and ... correspond to ...—*The [illegible], Dec[illegible]* 1868.

Operation for Conical Cornea. In the *Practitioner* for Ja[illegible] ... an article recently ... surgeon, ... distinguished ... mode of operation for ... affection. A ... is made ... from the apex of the ... along its base with a pair of scissors. ... is touched with a mixture of ... nitrate of potash, and this is ... daily ... a slightly ... The surgeon must ... from six to eight weeks ... which makes the vision far more distinct ... obviously.

Methyl-Strychnium and Allied Compounds.—In a memoir ... (November ... MM. ... Drs. ... Brown ... physiological action of ... however, ... [illegible] ... A ... account of experiments ... action of ... in which the ... of chlorine ... replaced by the radical ethyl.

Ergotine after Amputation. If we are to believe some recent statements of M. ..., the mortality after amputation is ... from ... to one-fifth by the administration, ... after the operation, and for some days subsequently, ... containing ergotine. The quantity of ergotine given ... from a gramme to two or three grammes ... The plan has been tried at the Hospital Saint André, at Bordeaux, with the results above given.

The Effects of Resection of the Nerves.—MM. Arloing and T[illegible] have published the results of numerous experiments on the ... results of resection of the nerves. They give ... where nerves were divided completely, and where, nevertheless, ... the integument supplied by those nerves ... regained their sensibility.

A New Cure for Cataract. A French ... M. le Dr. ... states that he has cured a certain number of ... [illegible] ... however, ... the use of this ...

T[illegible]. Herr Mathes has recorded, in the proceedings of the Vienna Academy of Sciences, numerous experiments ... operation is not attended by half the danger ...

THE HISTORY OF CHOLERA.

(Continued from page 30.)

Although it is impossible to fix the date and circumstances of the advent of cholera into England in 1853–54, we may with advantage consider its progress in certain localities, as for instance in Newcastle, which suffered most severely during this epidemic.

The Tyne, as is well known, is a tidal river, and during its flow it carried the sewage of Newcastle as far as Elswick, where, in 1853, the open culvert of the water company supplying the town was situated. A large drainage area at Whittle Dean had usually yielded water for the purposes of the company; but early in 1854 the supply from this locality having been partially cut off, the company took upon themselves to pump water directly from the Tyne at Elswick, into the town; the inhabitants of Newcastle were constantly, therefore, imbibing water contaminated with the filth of their own dirty city. We may conceive the nature of this drinking water when it is stated that no less than two-thirds of the population of Newcastle were without privies, and the filth accumulating in the streets was washed down into the river by the rain, and as already explained, carried up in a diluted form to Elswick, to be re-distributed to the inhabitants of the town for domestic purposes. Supposing cholera to have existed in Newcastle, it is evident the dejecta of those affected, would very probably under these circumstances, have found its way into the intestinal canal of the unfortunate townspeople; the more so, as directly cases of the disease occurred, the authorities betook themselves vigorously to washing and flushing out all the drains and dirty holes in the place, thereby increasing the chances of cholera fomes finding their way into the river, to be consumed by the population. It is quite certain the drinking water contained organic matter, for Dr. Thomson found it in abundance by analyses, and considered it probable a portion of it consisted of human excrements. And Mr. Furness, during the height of the epidemic, exhibited a bottle of drinking water to the guardians of the city of "a most noxious quality." I may observe, however, in passing, that although this impure water was consumed from May till the end of August, 1854, it did not generate cholera among the inhabitants of the place up to that time.

On the 29th of August, a woman living at Bill Quay, where cholera was known to exist, was attacked with diarrhœa. She proceeded to Newcastle by steamer, and the case was declared to be one of cholera on the 31st of August. On the 1st of September, 3 deaths from cholera were reported in the town; and by the 5th, Mr. Granger states, the disease "was epidemic" in the city. On the 12th there were 59 deaths, and on the 15th no less than 140 individuals fell victims to the disease. In the meantime, the scandalous proceedings of the water company had been discovered, and on the 15th of the month the supply of water to the town from the Tyne was stopped. From that date, the cholera began to diminish.* On the 25th the deaths had fallen to 75 per diem, and on the 30th to 16, after which not more than four deaths occurred on any one day.

A still more remarkable instance of the kind is Dr. Snow's well-known Broad-street case, which was one among many of a succession of partial local outbreaks of the disease, which have always been one of its marked features, attributable, by the majority of authorities at the time, to "the localizing cause" plus an "epidemic or pestilential constitution of the season."†

It appears that among the sub-districts of St. Ann's, Golden Square, the mortality from cholera in 1854 was no less than 128 for every 10,000 persons, while the general cholera-rate of the metropolis was only 60 to the same number.

The district was not situated on a low level, nor were its inhabitants very poor; it had enjoyed a peculiar exemption from disease up to the time of the outbreak of cholera.*

A child who had been ill with cholera, or choleraic diarrhœa for three or four days, died at No. 40, Broad-street, on the 2nd September, 1854, and it was ascertained that the child's fæces had been emptied into a cesspool situated only three feet from the well of the public pump in Broad-street, from which most of the surrounding people took their supply of water. It was further discovered that the bricks of the cesspool were loose, and allowed its contents to drain into the pump well.† On the night of the 31st of August, cholera broke out among the inhabitants of Broad-street, the greater number of cases occurring on the 1st of September. On the following day the attacks fell from 143 to 116, and the day after to 44; by the 12th of the month it had almost subsided. Dr. Snow and the Reverend J. Whitehead investigated the circumstances of this case with the greatest care, nor have the facts they brought forward ever been disproved. These gentlemen affirm:—"It was found that nearly all the persons who had the malady during the first few days of the outbreak drank of the water from the Broad-street pump, and that very few who drank of this water during these days escaped having cholera." In the weekly returns of deaths for September 9th, the following was recorded as occurring in the Hampstead district.—"At West End, on 2nd September, the widow of a percussion-cap maker, aged 59 years; diarrhœa two hours, cholera epidemic sixteen hours." Dr. Snow was informed by this lady's son that she had formerly resided in Broad-street, but had not been in the neighbourhood for many months. A cart went from Broad-street to West End every day, taking out, among other things, a large bottle of water filled from the pump in Broad-street, the lady in question preferring this to any other water. The bottle of water was carried out to Hampstead as usual on Thursday the 31st of August, and she drank some of it that evening, and more on the following day. She was seized with cholera on the evening of the latter day, and died on Saturday. A niece, who was on a visit to this lady, also drank the water; she returned to her residence, in a high and healthy part of Islington, was attacked with cholera and died. There was no cholera at the time either at West End or in the neighbourhood. Besides these two persons, only one servant partook of the water at Hampstead, West End, and she did not suffer, or only to a slight extent.‡ On examining the Broad-street pump water, Dr. Snow found it to contain organic matter in the form of "small white flocculent particles," which, Dr. Hassal thought, "resulted from the decomposition of other matters."

With regard to this remarkable case, the committee appointed by the Board of Health to conduct a scientific enquiry into the circumstances of the epidemic of 1854, remark:—"It seems probable that the water of this well did really act as a vehicle of choleraic infection"; but (assuming the absence of fallacy in the case) this probability might easily be admitted, without its therefrom resulting that infection depended on the specific material alleged by (Dr. Snow). The water was undeniably impure, with organic contamination; and we have already argued that if, at the time of epidemic invasion, there be operating in the air some influence which converts putrefiable impurities into a specific poison, the water of the locality, in proportion as it contains such impurities, would probably be liable to similar poisonous conversion.§ The committee argue:—"If, therefore, the specific

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* Report on the Cholera Epidemic of 1866 in England, by the Registrar-General, p. xxviii.

† Dr. E. H. Greenhow on Cholera, Medical Chirurgical Review, 1857, p. 65.

* Report of Committee for Scientific Inquiries into the Cholera of 1854, p. 5[illegible].

† Lancet, Vol. II, 1855, p. 156.

‡ Mode of Communication of Cholera, by Dr. J. Snow, Second Edition, London, 1855, pp. 44-45.

§ Report of Committee for Scientific Inquiries into the Cholera Epidemic of 1854, p. 52.

[illegible]

[illegible] temper- [illegible] zone, and of [illegible] throughout [illegible] statements are [illegible] conditions [illegible] with [illegible] of that

[illegible] as to the [illegible] the doctrine of [illegible] the existing [illegible] intervals of time [illegible] sometimes [illegible] owing to [illegible] for the third [illegible]

[illegible] grown more [illegible] and [illegible] that it [illegible] effect only [illegible] out of which [illegible] with organic [illegible] hypothesis [illegible] it by the [illegible] would [illegible] all.

[illegible] the infection [illegible] impossible to [illegible] geographical [illegible] water than to [illegible] showed the degree [illegible] other [illegible] result greatly [illegible] rather in an [illegible] explains how the [illegible] health- [illegible] of the higher [illegible] their less [illegible] temper[illegible] of the metropolis by [illegible] by the [illegible] ventilation.[‡]

W[illegible] the etiology of [illegible] immutable [illegible] of Mr. Simon, a [illegible] Drs. Baly and Farr [illegible] expressed [illegible] and Registrar-General's reports on [illegible] It was [illegible] admirably [illegible] put forward by the College of P[illegible] combination [illegible] such as only [illegible] and yet [illegible] was unsatisfac- tory [illegible] by Dr. Snow and Budd, and [illegible] its [illegible] and attracting [illegible] working and [illegible] men, both in E[illegible]

[illegible] of Munich, in 1855, attributed the [illegible] of patients [illegible] Dr. Pettenkofer believed in the [illegible] without [illegible] but [illegible] that this

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* [illegible]

† [illegible] Scientific Inquiries into the Cholera of 1854, p. [illegible]

‡ [illegible]

[illegible] I have [illegible] was composed of [illegible] Drs. N. Arnott, W. Farr, W. Baly, M[illegible] R. Owen [illegible]

[illegible] copied from Dr. E. Headlam Greenhow's Review in the Medico-Chirurgical Review, 1857, p. [illegible], of Untersuchungen und Beobachtungen über die Verbreitungsart der Cholera, nebst Betrachtungen über Maßregeln [illegible] Zathun, Von Dr. Max Pettenkofer, München 1855.

ferment can only act where it meets with suitable local conditions. According to this authority, a special leaven sets up a zymosis or decomposition in the impure soil itself, and the poison of cholera is generated from this earthy fermentation. While, therefore, he considered the presence of a special ferment as essential to the production of a cholera epidemic, he also insisted upon the existence of certain local peculiarities. These he supposed to consist of a damp subsoil, sufficiently porous to be penetrable by the decomposition products of human and animal excrements. He was of opinion that it was only in such a soil, thoroughly impregnated with this peculiar organic matter, that the special cholera poison is generated.

Hence, as Dr. Greenhow observes, Professor Pettenkofer asserts the susceptibility or insusceptibility of towns, for a cholera epidemic is in exact proportion to their soil relations. The difference between the mortality from cholera in the upper and lower terraces of London he attributed to the dry gravelly soil of the former, which allowed all the impure matters for decomposition to gravitate towards the moist, closer soil of the lower levels, where it underwent a much slower decomposition. Single cases may occur, Dr. Pettenkofer says, in towns or houses whose foundations are built on a rock, but never epidemics; and any exceptions to this rule will, upon closer examination, be found more apparent than real. Arguing upon this presumed fact, he abandoned all ideas of air and water as the nidus of cholera, and sought for it in the soil alone.*

The ferment supposed by Dr. Pettenkofer to be necessary to set up the peculiar decomposition of which cholera poison forms one of the products, is the matter of the dejections of cholera patients. His notion was that the cholera germ-bearing excrement which spreads itself in the damp porous soil already impregnated with fecal matters, produced by means of the fine division which it there underwent, such a modification in the process of putrefaction and decomposition, that, in addition to the gases usually formed, a cholera miasma was produced, which became diffused through the atmosphere of dwellings in common with other exhalations. Thus, although the cholera miasma was formed in the ground, the air was the vehicle for its transmission to the patient. He considered the dejecta of persons suffering from diarrhœa or cholerine equally capable of producing the pestilence as the cholera dejections.

In confirmation of his theory, Dr. Pettenkofer gives the following history of the introduction of cholera into the convent prison of Ebrach, where both the male and female prisoners were attacked, whilst the officials, a company of soldiers quartered there as a guard, and the inhabitants of the adjoining village, entirely escaped. In the first place, however, we may notice that the "necessary" accomodation of the prison consisted chiefly of wooden night stools.† Such privies as existed for the use of the prisoners emptied themselves into a stream, which, entering at the women's division, ran through the institution, and passed out at the men's side. The privies in the female division were thoroughly bad, the brickwork through all the floors being impregnated with excrement; "the stink was a pestilential one," and the excrements were conveyed from the privies to the ditch by means of wooden spouts. Into this very objectionable jail a prisoner was brought on the 20th of August, suffering from diarrhœa, which soon became developed into cholera. On the 27th, the man who attended him took ill of cholera and died; an epidemic spread through the jail, affecting the male and female division equally, although there had been no intercommunication between them, except through the officials of the place, all of whom remained free of the disease. But among the females it was discovered the first case occurred in a woman who had washed the linen of the patient admitted into the prison with cholera.

There were 600 prisoners, arranged in classes, between which there was little communication, yet the disease showed itself speedily throughout all parts of the prison, reached its climax in the men's ward on the 11th of September, and then declined, having carried off about ten per cent. Dr. Pettenkofer attributed the outbreak to the fermentation set up in the excreta brought into the jail by the first case, and which were thrown into a large cesspool in the garden, and the badly arranged "necessaries" of the women's department, into which all their dejections were emptied.

The same author also mentions the fact of cholera having been introduced into the prison of Kaisheim in 1854 by two prisoners. Nothing could have been worse, he says, than the hygienic state of this jail, but the stools of the cholera cases, and all others, were subjected to disinfection, and not a case of cholera occurred among the other prisoners.

The same phenomena were observed at Traunstein, in Bavaria, when sulphate of iron was employed as the disinfecting agent, and the disease in every instance contented itself, contrary to its usual habit, with the first victim.* In England Dr. Budd used similar means, and with admirable effect to stop an outbreak of cholera at Horfield Barracks, near Bristol. He recommended that the dejecta of all the patients should be received into vessels containing a strong solution of chloride of lime, that the soiled linen should be burnt, latrines disinfected, the troops to be kept under constant observation, so as to catch the disease in its first stage, and lastly that the men should be prevented from wandering from their baracks into infected localities.

The above are a few among many cases of the kind recorded during the epidemic of 1853-54, not only as evidence of the value of disinfectants in cholera epidemics, but as proving the direct influence exercised by cholera dejecta in causing the spread of the disease.

Another class of cases occupied the attention of several observers during the epidemic of 1854, from which it was intended to demonstrate not only that the fæces of cholera patients generated cholera in otherwise healthy people, but that articles of clothing soiled with these dejecta might induce a similar result. I have already referred to a case in point related by Sir J. Simpson, which occurred at Moor Monkton, in 1832. In 1854, cholera was not known in the county of Bedford, when it broke out in the village of Ridgmount, and eleven cases occurred, all of which were fatal. It was ascertained that the first case occurred in a man whose son had died of cholera in London a week or two before, and whose clothes were sent down to the country. The poor man unrapped the bundle of clothes himself, was seized with the disease and died; his case was the nucleus of the others.† An instance of a similar nature was reported from Lustheim, near Munich, where the first case of cholera was generated in the house of a labourer, one of whose daughters was in service in Munich. The latter sent her parents' clothes belonging to a family, some members of which had just died of cholera. These old clothes were at once appropriated and worn. Three days afterwards (September 21st, 1854), the father and mother were seized with cholera and died; on the 22nd and 25th other members of the family took the disease.

Sjur Neilsen, when out fishing, was moored to a small island, on which several bodies of persons who had died of cholera lay unburied. A few days afterwards, four cases occurred among men in his boat. Before Neilsen returned home, fearing infection, he changed his clothes; he remained with his family for one day only; on the following morning he left for Bergen.

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* Dr. Greenhow on Cholera, Medico-Chirurgical Review, 1857, pp. 104, 110, 37, 38.

† Idem, p. 77.

* Constantinople Cholera Conference, Calcutta, 1868, p. 41.

† On "Malaria and Miasmata." By Dr. J. Barker, F.R.S., London, 1863, p. 140.

[illegible] which [illegible] had been, the [illegible] with other [illegible] and hardly in [illegible] a man who was [illegible] of a person who [illegible] other instances [illegible] lying in beds [illegible] which in the meantime [illegible]

[illegible] the mattress of a [illegible] curtains of the [illegible] The waste pipe of the [illegible] mixed with the [illegible] seventy sixty [illegible] that time, healthy district, were [illegible]

[illegible] over the whole [illegible] America, and the West Indies [illegible] parts of Russia [illegible] which we shall subsequently [illegible] and the [illegible] cholera in April, May [illegible] parts of Asia Minor, [illegible] continued [illegible] after [illegible]

[illegible] in the island of Fogo, one of the Cape Verde [illegible] of July, it was supposed [illegible] by a Sardinian emigrant vessel from Savona bound for Buenos Ayres, which had touched at Fogo. All that could be learned was, that many of the passengers were [illegible], and that there had been some deaths during the voyage [illegible] the nature of the [illegible] at the time. None of the [illegible] islands of the group were attacked until the following year.

In 1855 [illegible] parts of Europe [illegible] suffered severely from [illegible] Malta, which [illegible] in that city. [illegible] Spain, and Portugal, were [illegible] British [illegible] Main and the [illegible]

[illegible] 1854. It was said [illegible] by the ship [illegible] but, [illegible] Mauritius [illegible] January, 1855, [illegible] Mauritius they [illegible]

[illegible]

[illegible] were kept at anchor at the Bell Buoy from the 14th to the 16th of January; the coolies were then landed on Gabriel Island, the quarantine station of the Mauritius. On the 17th, Dr. [illegible] went from Port Louis to take charge of the coolies, and [illegible] after they landed, two deaths from cholera had taken place among them. Within the [illegible] month [illegible] of the coolies died from cholera.

Close to Gabriel Island is Flat Island, between the two communication was at all times easy by boat, and on foot at low [illegible]. It was clearly shown that intercourse had taken place between the two islands after the landing of the coolies. On the [illegible] of February, the wife of the lighthouse keeper at Flat Island was seized with cholera and died.

The coolies on Gabriel Island were permitted to go to the beach [illegible] water and provisions sent to them from Port Louis, [illegible] effective means taken to prevent their communicating with those who landed the stores on the island.

A man by the name of Alfred, who had from the first been employed on the [illegible] boat, and whose duty it was to carry [illegible] up the beach at Gabriel Island, and who was thus employed on the 20th, 23rd, and 24th of February, was [illegible] later date, and, as [illegible] Port Louis, Alfred was [illegible]. On his [illegible] cholera declared itself [illegible] on the night (26th February) [illegible]. This was the first case [illegible] in Port Louis. The [illegible] were [illegible] out the town. A few days afterwards cholera [illegible] in Port Louis, [illegible] sacrificing in the Mauritius [illegible]. A portion of Savanne was attacked at the very [illegible] of the epidemic, which had [illegible] by a prisoner arriving from Port Louis [illegible] March, and who was attacked [illegible] cholera [illegible] on his arrival at Savanne, the disease spread [illegible] in contact with him [illegible]. It was [illegible] districts of the island [illegible] always [illegible] in persons who had come from Port Louis. [illegible] Commission was appointed by the [illegible] origin of this terrible [illegible], [illegible] in fact, it was not [illegible] deliberate opinion [illegible] other conclusion [illegible] Mauritius, in the month of March, 1856, [illegible] from Gabriel Island by the [illegible] Alfred."

During 1857 and 1858, cholera entirely died out from the greater part of Europe and America.

In 1859, it [illegible] in a sudden and mysterious manner in several places. It was [illegible] at Hamburgh, in July, attacking young and old, rich and poor, in all parts of the town, showing no preference to the waterside over any other locality." In July, several towns on the Gulf of Finland were under the influence of cholera, and it was said to have been imported into the [illegible] of Sweden by a vessel from [illegible], during the month of August. At the same time the disease [illegible] out at M[illegible], on the Mediterranean coast of Spain. [illegible] and the Spanish army in M[illegible], were severely attacked by the scourge.

Cholera was imported into London and Hull, from Hamburgh in July 1859, but did not spread in either of these towns.

At Southampton there was a fatal case on board a vessel from Hamburgh on the 24th of September. Two cases of cholera [illegible] on the next day, but they were separated from the rest of the passengers, and the disease did not extend.

(*To be continued.*)

ORIGINAL COMMUNICATIONS.

INDIAN EXPERIENCES OF LITHOTRITY.

By J. B. Scriven,

Principal, Lahore Medical School.

Having published in the numbers of the *Indian Medical Gazette* for August and October, 1868, a brief account of thirty-three cases of lithotrity at the medical school hospital at Lahore, I now add a tabular statement of seven more, making the number forty since 1861, of which 18 have been during the last two years, 1867 and 1868. All of these seven were successful except one, that of an old man, who could not have lived under any circumstances. He got diarrhœa soon after the operation, and gradually sank, without any new symptoms referable to the bladder.

After death, his kidneys were found enlarged and fatty, their pelves dilated, inflamed, and containing pus. In the bladder there were five stones, varying from 1 inch to $1\frac{1}{2}$ inch in their long diameter; one of these had been broken into large fragments by the lithotrite. The bladder was much thickened, and its mucous membrane injected; the middle lobe of the prostate was greatly enlarged, and projected upwards into the bladder. The mucous membrane of the urethra was ulcerated, and even in a sloughy condition in some places; and, about its middle, was a faceted calculus, half an inch in diameter. The bladder contained about six ounces of urine. The other six cases were ordinary ones, and the stones of moderate size.

One principal object in the present communication is to supply a deficiency in the former papers, in which, it will be remembered, I had no very useful information to supply from my own practice as to the time the lithotrite ought to remain in the bladder.

In the seven cases now under consideration, the time has been carefully noted in several instances, so that some deductions can be drawn. These are certainly not too favourable; for, in some of the patients, especially Kahun Sing, there was unusual difficulty in catching the stone, which was generally found sunk down into a hollow behind the prostate gland. The tabular form given below, is the same as in the last paper, except that the column of remarks has been cut up into three, referring to the time the instrument was in the bladder. I may mention here that the shortest time in these cases was 45 seconds, and the longest 4 minutes and 37 seconds, a very unusual period. It appears from the table that in the case of Peer Buksh five pieces were crushed in 1 minute and 15 seconds, which gives 15 seconds to each piece.

Furthermore, the period that these cases were under treatment was less than is usual in lithotomy, with the exception of the last case, Khoda Buksh. Taking the six cases that recovered, the shortest period was eight days, and the longest thirty-seven, the average being twenty days, which, I believe, is less than the average of any successive six cases of lithotomy that could be collected from the records of any hospital in India, counting from the day of operation till the wound in the perineum was completely healed. Thus, one great objection raised to the practice of lithotrity in this country, *viz.*, the protraction of the treatment, did not exist in these cases, and, with good instruments and proper selection of cases, seems to me likely to disappear in the vast majority of instances.

The fifth case, Jaga, was once in hospital before; but there is no doubt that on this second occasion he was suffering from a fresh stone, and not from any remnant of the former one, for he persistently declared that he had remained perfectly well, and been able to run, jump, and perform any active exercise after his discharge on March 4th, till a fortnight or three weeks previous to his second admission on October 19th.

I have heard the objection raised to lithotrity, that there could be no certainty of the last fragments having been removed. That this is more difficult to ascertain than in lithotomy, must be admitted, but, surely, the total absence of symptoms for seven months is sufficient evidence of cure. Neither operation, of course, can alter the diathesis, and it must be well known to all surgeons of large experience in lithotomy that it is no unusual thing for a second stone to form after the first has been removed by a *cutting* operation.

Number.	Name.	Age.	Sex.	Size of Stone.	Date of first operation.	Number of operations.	Duration of treatment.	Composition of Stone.	Result.	Number of operations in which the time the instrument was in the bladder was noted.	Average time the instrument was in the bladder in the same operations. M.	S.	Average number of pieces crushed on the occasions on which the time was noted.	Quantity of detritus collected.
1	Kumma, Hospital Register xi., p. 171 ...	60	Male.	$\frac{2}{3}$ inch.	June 27, 1865	3	15 days ...	U.	Cured ...	2	2	22	4	42 grains.
2	Mahomed Deen, xiii., p. 61 ...	43	Do.	1[illegible] „	July 7, „	5	21 „ ...	U.	Do. ...	4	1	30	4	133 „
3	Peer Buksh, xi., p. 176	28	Do.	$\frac{3}{4}$ „	Ditto 15, „	2	9 „ ...	...	Do. ...	1	1	15	5	26 „
4	Kahun Singh, xiii., p. 131	45	Do.	$1\frac{3}{8}$ „	Oct. 14, „	5	28 „ ...	P.	Do. ...	4	2	18	4	100 „
5	Jaga, xii., p. 149 ...	31	Do.	...	Ditto 21, „	3	13 „ ...	P.	Do. ...	3	1	43	3	29 „
6	Hama, xiii., p. 113 ...	60	Do.	$1\frac{3}{4}$ „	Ditto 31, „	1	7 „ ...	P.	Died ...	1	1	40	3	...
7	Khoda Buksh, xiii., p. 153 ...	19	Do.	$1\frac{1}{4}$ „	Nov. 25, „	9	37 „ ...	U.	Cured ...	6	2	27	6	220 „

Lahore, February 18th, 1869.

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.

(Continued from

TABLE

	I.	II.	III.				IV.				
			Cranial Cavity				Thoracic Cavity.				
No.	General Condition.	External Appearances.	Scalp & Skull.	Membranes.	Brain, &c.	Larynx & Trachea.	Pleural Cavities.	Right Lung.	Left Lung.	Pericardium.	Heart, &c.
11	Extremely emaciated.	Nothing noted.	Healthy.	Pia mater congested, with effusion.	White substance punctated.	Healthy.	Slight adhesions [illegible] thickenings.	Grey hepatization.	Lower lobe hepatized, upper engorged.	Contained [illegible] of serum.	Contained fibrinous [illegible] clots, [illegible], otherwise healthy.
12	Extremely emaciated.	Nothing noted.	Healthy.	Pia mater congested, with effusion.	Healthy.	Healthy.	Old fibrous adhesions on both sides; recent effusion on left side.	Enlarged and oedematous; red hepatization at base.	Upper lobe hepatized; lower engorged.	Contained a [illegible] quantity of serum.	Heart contained white clots; walls a little fatty; aorta atheromatous.
13	Extremely emaciated.	Nothing noted.	Healthy.	Dura mater adherent to skull; pia mater congested, with slight effusion.	Healthy.	Healthy.	Cartilages of ribs [illegible]; left [illegible]; right [illegible] completely [illegible].	Grey hepatization; upper lobe most advanced.	Engorged and oedematous.	Contained a large quantity of serum.	White clots in cavities extending into large vessels; otherwise healthy.
14	Emaciated.	Nothing noted.	Healthy.	Pia mater congested, with effusion.	Healthy.	Healthy.	Firm adhesions [illegible] contained serum.	Red hepatization.	Congested posteriorly.	Contained 2oz of serum.	White clot in right auricle.
15	Much emaciated.	Slight oedema of left [illegible] on back.	Healthy.	Pia mater congested, with slight effusion.	Healthy.	Healthy.	Slight effusion on both sides.	Congested and oedematous.	Congested and oedematous.	Contained slight effusion.	White spot on right ventricle; slight thickening of aortic valves; heart somewhat hypertrophied.
16	Greatly emaciated.	Nothing noted.	Healthy.	Effusion into cavity of arachnoid.	Healthy.	Healthy.	Extensive adhesions of left pleura.	Oedematous.	Oedematous.	Contained about [illegible] oz of serum.	White clot in cavities; valves, &c., healthy.
17	Much emaciated.	Cicatrices of recent variola.	Healthy.	Congested, with [illegible] effusion.	Healthy.	Healthy.	Contained a large amount of serum.	Congested and oedematous.	Congested and oedematous.	Contained a [illegible] quantity of serum.	Contained white clots; walls, &c., healthy.
18	[illegible] emaciated.	[illegible]	Healthy.	Healthy.	Healthy.	Healthy.	Strong [illegible]	[illegible] infiltrated with [illegible] and [illegible]	Small [illegible] near apex; tubercles throughout.	Contained a small amount of serum.	White spot on right ventricle; white clot in heart; atheromatous tubercles in aorta.
19	Extremely emaciated.	Nothing noted.	Healthy.	Strong [illegible]	Healthy.	Healthy.	[illegible] and extensive adhesions [illegible]	Congested and emphysematous [illegible] inflamed.	Congested and emphysematous [illegible] membrane of [illegible] inflamed.	Contained a small quantity of serum.	Contained white clots, atheroma of aorta and [illegible] valves, walls fatty.
[illegible]	[illegible]	Nothing noted.	Healthy.	[illegible]	Punctated.	Healthy.	Healthy.	Congested.	Congested.	Healthy.	Contained fibrinous coagula; otherwise healthy.

OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

Civil Assistant-Surgeon, Jessore.

Vol. IV., page 53.)

No. III.

V

Abdominal Cavity.

Parietes and Peritoneum.	Stomach.	Small Intestine.	Large Intestine.	Liver.	Spleen.	Right Kidney.	Left Kidney.	Prancreas, &c.
Healthy.	Healthy.	Healthy.	Congested and pigmented in patches	Fatty and slightly congested.	Enlarged; congested.	Cortical substance slightly degenerated.	Cortical substance slightly degenerated.	Healthy.
Healthy.	Healthy.	Occasionally congested.	Contracted, thickened, and pigmented.	Fatty and cirrhotic	Capsule thickened; organ enlarged.	Cortical substance degenerated.	Cortical substance degenerated.	Healthy.
Old bands of organized lymph.	Healthy.	Healthy.	Contracted; ulcers in process of healing; pigment deposit.	Capsule slightly opacified and contracted; slightly fatty.	Enlarged; capsule opaque.	Cortical substance degenerated; congested.	Cortical substance degenerated; congested.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Fatty and slightly cirrhotic.	Adhesions around; capsule opacified and cartilaginous.	Cortical substance degenerated; wasted, right contained cysts.	Cortical substance degenerated and wasted; right contained cysts.	Healthy.
Healthy.	Healthy.	Occasionally congested.	Large transverse ulcers in sigmoid pleura, and rectum.	Fatty, with biliary congestion.	Enlarged and engorged.	Enlarged and congested.	Slight small abcess in cortical substance.	Healthy.
Healthy.	Healthy.	Mucous membrane densely pigmented.	Healthy.	Fatty.	Enlarged and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Congested in patches.	Congested.	Cirrhotic and fatty.	Enlarged; capsule opaque; firm.	Cortical substance slightly atrophied and degenerated.	Cortical substance slightly atrophied & degenerated.	Healthy.
Healthy.	Healthy.	Chronic congestion; peyer's patches wasted.	Congested.	Cirrhotic and slightly fatty; intra lobular congestion.	Small and congested.	Highly cystic; cortical substance degenerated and wasted.	Highly cystic; cortical substance degenerated and wasted.	Healthy.
Healthy.	Healthy.	Mucous membrane highly congested.	Healthy.	Healthy.	Congested.	Pyramids congested.	Pyramids congested.	Healthy.

ON CHOLERA.

By C. MACNAMARA, [illegible]

[illegible]

[illegible] that [illegible] cholera [illegible] along the [illegible]

In 1857, cholera showed itself [illegible] Persia [illegible] in 1856, [illegible] the cholera of [illegible] from 1851 until [illegible] Persia, year [illegible] Caspian Sea [illegible] the principal [illegible] the Persian Gulf [illegible] ravaged by [illegible] the disease [illegible]

[illegible] the influence of [illegible] at Beyrouth [illegible] St. John d'Acre [illegible] In 1856 [illegible] In 1857, as above [illegible] Kerbela, Bagdad, [illegible] and Bassora were [illegible] its influence. [illegible] the province of [illegible] that during [illegible] the district; the [illegible] in 1857, when not [illegible] but those of the interior [illegible]

In 1860 and 1861 [illegible] Persia, Kermanshah [illegible] but the cities above [illegible] its influence.

[illegible] in Persia [illegible] of cholera [illegible] Persia, from 1851 to [illegible] to the effect that [illegible] almost become [illegible] Russia.

In 1858 [illegible] the Arabian coast of the Red Sea [illegible]

[illegible] and at [illegible] Arabia [illegible] with [illegible] Europe, were [illegible]

I have [illegible] caravan was found [illegible]

In 18[illegible] was reproduced [illegible] caravan was [illegible] 10th of September [illegible]

From these [illegible] spread over the [illegible] of the country [illegible] Persian Gulf and the [illegible] it is evident [illegible] in 1858 [illegible] in Asia [illegible]

[illegible] which is evident from [illegible] from 1850 to 1860 [illegible] to have taken place [illegible]

[illegible] cholera [illegible] as follows:—

1851	[illegible]
1852	1,1[illegible]
1853	[illegible]
1854	3,6[illegible]
1855	1,7[illegible]
1856	2,151
1857	1,741
1858	105
1859	[illegible]
1860	[illegible]257
1861	1,251

[illegible] the Punjab, [illegible] corresponding [illegible]

[illegible] the history of [illegible] Bengal [illegible] 1857 [illegible]

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* Constantinople Conference, 1866, p. 302.

state of the country. We know, however, it appeared among our troops before Delhi from June to September, 1857, and some 16 cases and 11 deaths took place among the prisoners in the Delhi Jail in 1858.[*] The Lucknow Garrison also suffered to a slight extent from cholera in 1857.[†]

During the year 1859 cholera was widely disseminated in Bengal, eastward of a line corresponding to about 80° east longitude; to the north-west of this, we hear nothing of the disease. For instance, to the east of Cawnpore no less than [illegible] Europeans and 394 prisoners (Natives) died from cholera; to the north-west of Cawnpore not one single death occurred in either of these classes of the community. In the Saugor division, however, there were 62 admissions and 23 deaths among the European troops from this disease.

Several of the local epidemics which broke out in Bengal during the year were attended with considerable loss of life. Dr. Hugh Macpherson reports that the artillery at Dum Dum were attacked by cholera on the night of the 9th of August, 1859, and that out of a force of 1,407 men, 87 fell victims to the disease within a week; the epidemic then rapidly subsided and soon disappeared. Dr. Macpherson remarks "that the admissions were most numerous when the sky was overcast with clouds, and rain fell, and fewest when the sky was clear."[‡] The disease was very prevalent at Barrackpore, Berhampore, and Lucknow about the same time. In May and June it was generated with terrible virulence in the Allahabad, Banda, and Hamerpore districts,[§] and, as I have already remarked, it extended into the Central Provinces, visiting several stations in the Saugor circle.

Throughout the year 1860 cholera prevailed to a terrible extent throughout Bengal Proper, and, in fact, from Assam to [illegible] from the sea-shore of the Bay of Bengal away into the [illegible] it even extended far up the Himalaya to Darjeeling. The number of deaths from cholera among the prisoners [illegible] the jails eastward of Cawnpore rose during these [illegible] to 1,055, being, therefore, nearly four times as [illegible] in 1859. Among the small European force at M[illegible] there were 89 deaths from cholera; at Jhansi 13; at Saugor 4; Nagod 15; and Jubbulpore 5. The prisoners in these stations together with the civil population suffered in an equal degree. So that we have evidence of cholera of a virulent type and extensive power of diffusion having been generated over the enormous tract of country above indicated during the early part of the year 1860. And, as we might have expected, the disease spread at the same time to Agra.

Dr. Walker, Superintendent of the Central Jail at Agra, informs me that cholera appeared in the city in July, and [illegible] slowly among the Natives.—"Rain had fallen sufficient to soak the ground, and even to be lying in pools in many places. On the 10th of August cholera broke out among the prisoners at Agra and lasted 23 days, 816 cases and 175 deaths resulting from it. At the same time there were 24 casual[illegible] disease among the European troops at Muttra."

Dr. Walker remarks that of a party of 396 prisoners who arrived at Agra from Mynpoory on the 9th of August, no less than 25 per cent. died of cholera, whereas the death-rate among the other prisoners was only at the rate of 17 per cent. He attributes this excessive mortality in the Mynpoory party to the fact of their vital powers having been depressed from the fatigue, exposure to damp, and irregular supply of food they had experienced during their march into Agra. He was of opinion that "the epidemic influence appears to have been on this occasion more widely spread, and more [illegible] fatal, than in former years." From this statement of Dr. Walker's, which is borne out by his figures and from the history of the disease in 1859, together with its terrible virulence over the whole of Bengal Proper, the Central Provinces, and as far to the north-west as Muttra, we should naturally have expected to have heard of its immediate dissemination throughout the North-Western Provinces and the Punjab with the setting in of the rains of 1860.

I would call the reader's attention, however, to the exceptional state of these provinces. Throughout this year, they were subjected to unprecedented drought, which converted an enormous tract of otherwise fertile country into a desert. This arid waste was bounded to the east by the Agra district, to the west by Sirhind, to the north by [illegible], and to the south by Goorgaon; and although cholera spread from Bengal and central India up to the very borders of these districts, it in no single instance extended into this barren area, which constituted what Colonel Baird Smith describes as the famine tract of 1860-61, and which is very clearly defined in chart No. II. of his valuable report on the subject. Section 28 of this report refers to the mortality attributable to the famine, but among the diseases which affected the starving people, he makes no allusion to cholera. Throughout the whole of the jails in the famine districts, not one instance of cholera occurred; and there were only one or two cases among the troops, and some of them are described as "cholera biliosa." Dr. David B. Smith, who at this time was in medical charge of the civil station of Delhi, and therefore in the midst of all the suffering, expressly states that the first instance of cholera he heard of among the famine-stricken people was in *May* 1861. Small-pox and fever raged among the starving people, but from all the reports and returns I have read on the subject, the existence of cholera is never once alluded to during the year 1860 in the famine-stricken districts.

I think I am justified, therefore, in asserting that in 1859 a very considerable portion of this presidency was under the influence of epidemic cholera. Throughout the following year it was reproduced over the whole presidency, with the exception of that part of the country which had been affected by a grievous drought and thereby converted into a sandy desert.

It is almost impossible for those who have not experienced the influence of the annual rains in the north-west of India to realize the condition of the country after such a year as 1860. Colonel Baird Smith says—"It would be difficult to exaggerate its forlorn dreariness. It seemed denuded of its inhabitants, that monotonous brown tint of the untilled soil suppressed everything else. It was only by some enquiry I could learn that even in this great waste there was cultivation in [illegible] round the villages, and round the [illegible] from villages." This is truly a fearful picture of [illegible], and in this country, cholera never gained a footing during the continuance of the drought, although the disease [illegible] around.[‖]

It is not my province now to discuss the bearing of these facts on the etiology of cholera; but when taken in conjunction with the circumstances I have related as occurring in the [illegible] in 1861, they are very significant, and well worthy of [illegible]

The [illegible] by what followed. [illegible] had the rains of 1861 set in over the famine tract [illegible] than cholera broke out among its inhabitants with terrible virulence.

I [illegible] proceed to demonstrate this fact from [illegible] bearing on the subject.

In 1861 cholera was reproduced over the whole of Bengal Proper. Out of 5[illegible] jails in the province, only 11 escaped [illegible] total number of deaths among the [illegible]

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[*] [illegible] Vol. 5, No. [illegible], p. 79.

[†] Dr. [illegible]'s Notes during the Siege of Lucknow, Indian Annals, [illegible]

[‡] MS. Pr[illegible]

[§] Ibid.

[‖] [illegible] Report on the North-Western Provinces, [illegible] amounted to 779. In May the prisoners and European troops at Cawnpore and Allahabad were attacked with cholera, and in July the stations at Gwalior and Jubbulpore suffered very severely. It is evident, therefore, cholera was reproduced over the area in which it was principally generated during the previous years, and this remark is applicable to the circumstances of the inhabitants of the Agra and Muttra districts, where, as I previously stated, cholera had been very severe in 1860.

Dr. David B. Smith informs us that "The first heavy fall of rain at Delhi in 1861 occurred on the 31st of May," at which time cholera appeared among the inhabitants of the southern portion of the Goorgaon district, extending from the direction of the Jeypore territories. The disease rapidly spread among the famine-stricken people of the district, and reached Delhi on the 11th of June.* Dr. Smith remarks, "It is important to note that at this time there was not a single case of diarrhœa in the jail, and the amount of sickness in the station generally seemed to be below the usual average; it is well known that many cholera epidemics are preceded, introduced as it were, by the occurrence of a great amount of generally prevailing diarrhœa. It was not so in this instance as regards the city of Delhi."

It appears that among the prisoners, one patient only sunk from the effects of the disease within four hours of the time he was attacked by it; of the others, none died under an illness of less than nine hours.

Of H. M.'s 82nd Regiment, Dr. Smith reports 80 men were seized with cholera; 57 of these were in a state of collapse on admission into hospital. "One man had no vomiting or purging throughout, but after death the intestines were found filled with rice-water fluid."

The men of H. M.'s 107th Regiment and the prisoners were attacked by cholera on the same day at Agra (7th July). The disease spread with alarming rapidity both among the Europeans and Natives; indeed, it had existed among the latter from the middle of June.† Dr. Banister writes from Muttra that the disease appeared among the Europeans on the 14th July.—"The weather being very close, the rain was unusually heavy, the wind continuing to blow from the east."

Dr. J. M. Cunningham makes a similar remark respecting the state of the weather at Bareilly, and observes that "during the year 1861 there have been 59[illegible] inches of rain." He continues: "In what manner unusually heavy rains are connected with the development of the cholera poison, it is difficult to say; that there is some connection between the two, few can doubt. The heavy rains of 1856 were accompanied by a severe outbreak of cholera at Agra, Ferozepore, Lahore, and Umritsur, just as the heavy rains of 1861 have been accompanied by a severe epidemic of cholera in the same places. Bareilly is little subject to even sporadic cases of the disease. But the inhabitants of the city suffered from it severely during the heavy rains of 1856, and the disease, after four years' absence, has been again prevalent with the heavy rains of 1861."

Dr. J. C. Corbyn reports that, on the [illegible] of July, the station of Meerut was visited by a heavy fall of rain, which flooded part of the prison enclosure. On the 27th of July, the first case of cholera occurred amongst the prisoners, and did not cease until the 24th of August, by which time there had been [illegible] admissions and 344 deaths from the disease. Cholera had, however, appeared among the Europeans in the station since the 30th of June.

The disease broke out at Umballa about the 17th of July, and continued to extend [illegible] to the north-west, reaching Meean Meer on the 31st [illegible]. In this part of the country, the rains, [illegible] exceeded the average of former years.

On the 6th of August and two following days, 1[illegible] cases of cholera, all of which were fatal, occurred among the European troops at Meean Meer; by the 14th of the month, all the regiments in cantonments were more or less affected, and Dr. W. A. Green, Inspector General of Indian Medical Service,) strenuously urged their removal into camp. Unfortunately, it was found impracticable to move the whole of the troops out of cantonments at once; the country for miles round was under water; and although Captain F. Norman, the assistant quartermaster-general, was as anxious as every one else to see the men out of the station, he found it impossible to select a dry encamping ground for them; besides, the commissariat was unprovided with carriage and other appurtenances for a camp of this kind at a moment's call. The military authorities, however, did all in their power to forward Dr. Green's views, and on the 15th of August, three companies of her Majesty's 51st Regiment left the station; at the same time the Artillery marched to Shahdera, on the banks of the Ravee, ten miles to the north of Meean Meer. Subsequently, one single case of cholera occurred among the men of this party; but among the troops who remained in the station, there were no less than 457 cases and 261 deaths from the disease within the following ten days. In fact, after the 15th of August, cholera increased with such fearful rapidity, that the soldiers in a few days were panic-stricken and hopeless.

In one regiment, out of a total strength of 1,002 men, 863 were employed as hospital orderlies, and of these, no less than 428 were seized with cholera. In the other European regiment at Meean Meer, of 203 cases of cholera, 137 occurred among hospital orderlies. It was not found possible, however, to determine if these hospital orderlies were more liable to be attacked than men who had not been exposed to cholera in the hospital, because all the men in the station had been on duty of this kind at one time or the other. On the other hand, we cannot overlook the fact that the medical officers and the whole of the medical establishment, together with the native servants, almost entirely escaped the influence of the disease, although prostrated by the fearfully harrassing nature of their duties. And what is more remarkable, when it was discovered that the European orderlies were unable to work any longer, some 30 Sikhs of the 51st Regiment were daily sent to take their place in the European hospitals,—not a single instance of cholera occurred among them.

The Government of India subsequently appointed a commission, presided over by a civilian, Mr. J. Strachey, to report on the circumstances of the outbreak of cholera in the Punjab. This action on the part of the Indian Government in 1861 was the first effort they had made since 1817 to gain any information on the subject of cholera among the troops serving in this country. There was no want of material at their command; the records of the Medical Board are full of reports and valuable matter bearing on the subject, an [illegible] of which had been sent up to the Government every year by the Board. But it was not until home authorities had begun to tell on India, and after the country had passed under the direct rule of her Majesty, that it was found necessary out here to yield in some measure to what probably most Indian statesmen consider the prejudices of Europe on the subject of cholera. Hence the appointment of the commission to report on the epidemic of 1861. The first edition of the report published by this commission had subsequently to be withdrawn and re-written, because it contained statements of a personal nature, reflecting on the character of individual officers; and to the revised report, published under the authority of Government, the two most influential members of the four commissioners refused to append their names; the dissenting officers being Dr. Linton, the head of the British Medical Service in India, and Colonel Gawler, of the Royal Engineers.

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* Punjab [illegible], A. N[illegible], Cholera in the Delhi Division, [illegible] 1861.

† Dr. J. Murray's Report on the [illegible] at Agra, [illegible]

These facts will explain my silence regarding the details and opinions contained in the report on the Punjab epidemic of 1861. And if this work be contrasted with that of Mr. J. Simon, R. Owen, and other scientific men on the cholera of 1854, the difference is very appreciable. The one, evidently the production of men deeply sensible of their responsibilities, the difficulty and magnitude of the work before them requiring their best energies and the concentration of all their faculties, which years of hard labour on these special subjects had ripened into mature wisdom; the other, as far as I can judge, evincing a very different spirit. Besides, I am creditbly informed by officers who were at Meean Meer, and who visited the cholera patients there in 1861, that the account of the hospitals given by the Reverend Mr. Sloggett during the epidemic is, to say the least of it, a very highly coloured picture, and yet this account is the one published by the Punjab Commission as authoritative, and upon which hangs much of their theory as to the hospitals having been the most direct cause of the dissemination of the disease.

Had Dr. Green's advice of the 15th of August been practicable, and the whole of the men removed from the station on the outbreak of the epidemic, it might possibly have saved much of the misery that subsequently occurred at Meean Meer; but when once the disease had taken hold of the troops, to have thrust them out into tents in the pouring rain would probably have been followed by even worse consequences than befel them, and have been made the subject of just criticism, if not of severe censure.

GENERAL PARALYSIS OF THE INSANE.

By Dr. Wise.

One of the most remarkable points connected with insanity among the natives of India is the rarity of general paralysis. In the Patna Asylum Report for 1866, the deaths of two women, aged, respectively, 26 and 35 years, are recorded. With this exception, no other cases are cited in the reports of the Dhullunda, Patna, and Moydapore Asylums between 1862 and 1867. In the Dacca Asylum, between 1841 and 1867, I have only been able to discover 3 cases among 1,576 admissions, and 925 deaths. This infrequency becomes more unaccountable when the records of the European asylums are contrasted with those of Bengal.

Calmeil was of opinion that there was one general paralytic in every 15 male patients, and 1 in 50 among women. Foville calculated 31 general paralytics to 334 insanes, or 9·2 per cent. According to Bayle (1855), the proportion of paralytics in the asylums of Paris was 1 in 4; but Baillarger, on the other hand, gives for Bicêtre and Salpêtrière together the proportion of 1 in 16.

When we examine the assigned causes of this mysterious disease, the reason of its unfrequent appearance in Indian asylums is not explained, as the native is as much exposed to most of them as is the resident of Europe. Intemperance, sexual debauchery, excessive use of tobacco, mental excitement, violent emotional agitation, hereditary predisposition, and concussion of the brain following blows on the head, have either singly or conjointly been pointed to as the causes of general paralysis. The use of ardent spirits is certainly less common among Hindoos and Mahomedans than among Europeans, and this fact corroborates the statement of Guislain, that general paralysis is caused by the combined action of drink and study, or drink and trouble.

It seems probable, however, that if search is made in the case books of the different asylums, cases will be found classed under the head of chronic meningitis which were really cases of general paralysis. It is the hope that the record of the following cases will prompt those interested in the study of insanity among the natives of this country to investigate the registers in their possession, and to make known the result of their enquiries, that has induced me to publish the details of the only cases which have occurred in the Dacca Asylum during the last 27 years:—

CASE I.

Ram Kishore Rukhit, Hindoo, aged 15 years, was admitted into the asylum with dementia on the 23rd January, 1850. On his admission, he was in a state of nearly complete mental imbecility. In the following November, his speech became impeded, and the motions of his tongue and free movement of his jaw became impaired. He halted in walking, and he dragged his lower limbs after him. No further details of his case can be discovered. On the 11th December, 1851, he died of cholera.

At the post-mortem examination, a state of general congestion and engorgement of the cerebral circulation was observed. There was serous effusion beneath, and raising up, the arachnoid; also at the base of the brain, and in the ventricles; seated on the corpus striatum, on the right side beneath the lining membrane of the ventricle, was a spot of broken down brain, the circumference being about the size of an eight-anna piece. The ragged, degenerated, and softened cerebral substance was of a yellowish colour."

The above are all the particulars that I have been able to discover regarding this interesting case.

CASE II.

A Hindoo mohurrir, aged about 35, was admitted into the asylum in 1850. The following history was given by his friends.—He followed actively his business as a clerk, but was also passionately fond of singing and playing upon musical instruments. Upon the occasion of some festival, he spent the night in the bazaar, performing to a crowd of listeners: from that night he became insane. In October, 1850, while in the asylum, he was observed for the first time to drag his leg after him. On admission, it is noted that he was noisy, but that he answered questions put to him. By January, 1851, he could not be induced to speak, although he was heard to sing to himself at times. The further progress of this case is not to be found. In the report for 1851, it is stated that the issue being to all appearance hopeless, he was taken away at the earnest solicitation of his friends.

CASE III.

Radha Chamarnie, aged 45, a midwife by profession, was admitted into the asylum on the 27th December, 1860, in an insane state. She had previously been an inmate of the asylum from the 5th September to the 27th November, 1860. The cause of her insanity was jealousy on account of her husband living with another woman. On admission, she was melancholic, incoherent, intractable, sleepless, variable, unsettled, and very abusive. She took her food, dressed, and bathed, like a sane person. She was emaciated, and out of health.

In June, 1861, slight tremor of the whole muscular system, without paralysis, was noted. In September, the tremors increased; she had great difficulty in speaking and moving about. Her expression was idiotic, and her mental faculties were impaired. She had to be fed, as she was unable to feed herself. Bowels were regular. By blisters and mild stimulants, she rallied; but about the beginning of November, 1861, she became very talkative and excited, screaming at night without apparent cause, and rarely sleeping. Pulse weak, mental faculties less dull, and the muscular tremors less uncontrollable. On the morning of the 9th November, while eating bread, she suddenly choked and was dead before the native doctor could reach her.

Post-mortem examination.—A mass of half-masticated bread, weighing 3 ounces 20 grains, was found lodged in the pharynx [illegible] membranes [illegible] was [illegible] [illegible] had been [illegible].

CASE IV.

[illegible] Mahomedan [illegible] 40, was admitted into the asylum on the 29th July, 1868, from Kamroop. The [illegible] was sent with him. In February [illegible] he [illegible] deserted him. His ideas and [illegible] changed. He [illegible] violent, [illegible], talkative, and incoherent. He neglected his business, [illegible], and wandered from home in a state of [illegible]. He was never addicted to ganjah, opium, or ardent spirits, and was never known to have suffered from epilepsy. None of his relatives were insane. While under observation in the dispensary at Gowhatty, the civil surgeon reported that he [illegible] in an unsettled manner, that he talked nonsense, [illegible] to wear clothes, that he [illegible] in [illegible] that he was threatening in his behaviour, and very [illegible] as regards food.

On his admission into this asylum, he was noisy, talkative, and [illegible], passing the night singing, without sleep. He had [illegible] without [illegible] 20 grain doses twice a day was [illegible] By the middle of [illegible] excitement had [illegible] but he was [illegible]. On the 25th August, he was [illegible] He talked [illegible] to be understood. [illegible] On [illegible] to stand upright [illegible] was unable to [illegible] He only [illegible] that he could not feel [illegible] appetite was good [illegible] was seriously [illegible] rapidly [illegible] continued his [illegible]

[illegible] of [illegible] his death, which occurred [illegible] 7th October.

Post-mortem examination.—The [illegible] was very hard and [illegible] largely large. In the left [illegible] spots. The [illegible] were [illegible] transparent. [illegible] it was [illegible] by a [illegible] there was [illegible] [illegible] Both lateral ventricles were [illegible] than the [illegible]. A few [illegible] plexuses [illegible] was [illegible] by a yellow [illegible] the [illegible] was of hard consistence, and adhered firmly to the pia mater.

The whole of the [illegible] was anæmic; but the cortical stratum, in the right hemisphere, was as soft as putty, and of an ivory whiteness. The anterior lobes were less [illegible] than the other parts. The [illegible] matter of this hemisphere was of a dark brown [illegible].

The cerebellum was large and softened. The pons varolii broke down on the slightest pressure. The spinal canal was laid open. No atrophy of the cord was detected. [illegible] serous effusion existed. [illegible] to be of the consistence of butter. The grey matter was very pale, while the vascularity of the white was increased. The arteries at the base of the brain were healthy. The only other morbid appearances found were a few crude masses of tubercle at the apex of the left lung, a few atheromatous deposits in the aorta, and a large congested liver. The following were the weights of the different viscera:—

		lbs.	oz.
Brain		2	14
Lungs	Right, 1[illegible] 8 Left, 1[illegible] 7	2	15
Heart		0	7
Liver		3	0
Spleen		0	5
Kidneys		0	9

In [illegible] which the disease progressed [illegible] 25th [illegible] the first [illegible] were observed [illegible] were also [illegible] indications of an advanced stage of the disease.

NATIVE DOCTORS' ENGLISH.

A [illegible] furnished by a Native Doctor in Rajshahye [illegible] Deputy M[illegible] subdivision, on the examination of [illegible] who was murdered:

[illegible] side of her back. Four [illegible] Saw that of similar kind on the [illegible] one just below the [illegible] lower jaw, another one [illegible] and one [illegible], about two [illegible] just above the [illegible] the back [illegible] the neck was [illegible]

"[illegible] over the penis* [illegible] tom [illegible] with [illegible] displaced from her [illegible] extremities [illegible] [illegible] on the right eye. Lungs, [illegible] and [illegible] full of dark [illegible] of blood [illegible] stomach, spleen and kidneys [illegible]

* [illegible]

[illegible] *I. M. G.*

also conjested. It was also seen that about $\frac{1}{4}$ pound of raddish effusion of serum on the pelvic cavity. Brain conjested. Vassels of the piameter full of block blood; stomach full of $\frac{3}{4}$ digested rice. Under these circumstances I conclude, that the lady died from the effects of strangulation made by robbers."

N.B.—The above is given *in original*, to shew how lamentably and absurdly deficient some Native Doctors are in a knowledge of English, and of forensic medicine. This is by no means an exceptional specimen.—Ed., *I. M. G.*

CASES FROM PRACTICE.

◆

CASE OF HYDATID DISEASE OF THE LIVER; HYDATIDS (ACEPHALOCYSTES PROLIFERÆ) DISCHARGED BY THE BOWELS.

By J. Browne, A.B. and F.R.C.S.I.,

Surgeon, in Medical charge, Mussoorie.

On the afternoon of the 24th December, 1868, I was asked to attend Mrs. S., who had been ill since the morning of the 22nd December.

Her husband told me that she had always been a most active person, and had generally enjoyed good health, though he noticed that for sometime past she was getting thin and her appetite had failed. Her friends too, who only saw her occasionally, remarked how very ill she was looking. Her husband also told me that Mrs S. had an attack of jaundice some ten years ago, and he considers that she has not been the same since then.

On the morning of the 22nd December, 1868, Mrs. S. was attacked with violent vomiting, and told her husband she felt as if there was a bar of iron across her stomach. He thought she was suffering from a bilious attack, and immediately gave her an emetic, which, having acted freely, afforded her some relief. She, however, had to continue in bed, being sometimes better, sometimes worse, and I was asked to see her on the afternoon of the 24th December, as on the morning of that day she had drawn the attention of her husband to a tumour in the right hypochondrium, and which she considered to be an enlarged liver.

On my first visit (24th December) I found my patient, a cachectic-looking subject, suffering from sharp fever, lying on the back, and complaining of pain in the hepatic region. Her pulse was 110, and of rather small volume; conjunctivæ slightly jaundiced; tongue thickly coated.

On examining the liver I found it to be much enlarged, extending fully an inch below the cartilages of the ribs, and across nearly into the left hypochondrium. There was considerable tenderness of the enlarged liver on pressure, and its surface was perfectly smooth, quite free from any prominences or inequalities, its thin edge could also be distinctly felt.

The urine was scanty, and contained a very copious lithatic deposit.

It is unnecessary, and would take up too much valuable space, to give a daily record of the case; but I shall briefly describe the most prominent and interesting events in connection with it, and which tended to complicate the diagnosis very considerably.

On the 29th of December there was effusion into the right pleura, and a few days afterwards there was some slight effusion in the left one. The pain in the hepatic region was persistent, and she was frequently troubled by sharp pains running, as she described them, through the liver to the back. She could lie, she said, with equal comfort and freedom on either side, or on the back; but, as I generally found her at this stage of the disease lying on the right side, I have no doubt but that she was most easy in this position.

On the 2nd of January she was in some respects decidedly better; she was free from fever, and the pulse was 96, but still there was the enlargement of the liver, and the tenderness on pressure. On the morning of the 3rd, I was surprised to find my patient in a very dangerous condition; her countenance was pinched and anxious looking, pulse very weak, and 120, she was unable to lie on the right side; complained of great pain in the right side, and over the abdomen as far as the umbilicus, and lay on the left side with the knees drawn up; in fact, there were symptoms of peritoneal inflammation.

On examination, I found the belly extremely tympanitic, and generally tender on pressure, but more so in the hepatic region, and over the course of the transverse colon. She was unable to move off the left side without assistance, and even then the movement caused her most intense agony. At this period she suffered for about 72 hours from retention of urine, the catheter being required.

On the 5th January, the tympanitis was in a measure relieved, but the abdominal tenderness still continued, the decubitus was still on the left side, with the legs drawn up; and, in addition, there was a remarkable and rapid increase in the hepatic enlargement, which now extended to the umbilicus, and nearly to the crest of the right ilium; still, the surface of the tumour was perfectly smooth, and at times I fancied I could distinguish indistinct and deep fluctuation.

At this time Mrs. S. began to lose flesh rapidly, and had profuse night sweats.

From the 5th to the 10th January, the abdominal tenderness had become less; the tympanitis had disappeared; but still the hepatic enlargement was gradually increasing, and did not present any sensation of fluctuation more than I have before mentioned, nor was the surface of the tumour otherwise than smooth, though a marked fulness of the right side was visible. Altogether, at this stage, the case looked most unpromising, and a fatal termination of it expected.

On the morning of the 10th, her pulse was 128, and very feeble; she complained of extreme debility, and was perspiring profusely. In the afternoon of this day, her bowels were moved, and her husband was surprised to find that "more than half the motion consisted of globular gelatinous-looking substances, and varying in size from about that of a hen's egg to a gooseberry." After this motion she expressed herself as feeling great and immediate relief. During the night and next day, she had some nine motions; the few first containing hydatids, the latter ones only containing the empty membranous sacs of others; and Mr. S., a most accurate observer, conjectured that, altogether, some 500 of these entozoa must have been passed. I forgot to mention that on the 7th and 8th Mrs. S. suffered from dysenteric symptoms.

This case presents several features of unusual interest, the most prominent amongst which are, perhaps,

1stly. The apparently sudden and very rapid hepatic enlargement. Mrs. S. assures me that she never had any idea of enlargement of liver until the 24th December, 1868.

2ndly. The double pleuritic effusion.
3rdly. The sudden symptoms of peritonitis.
4thly. The extreme tympanitis.
5thly. The dysenteric symptoms.

6thly. The rapid emaciation and profuse night sweats, symptoms which pointed to the probable formation of an abscess—but then there had not been any rigor.

7thly. The channel selected by nature for the discharge of the hydatids, the rapid subsidence of the hepatic tumour, and the general amendment of the patient after the discharge of the hydatids.

I did not see any of the hydatids till after the rupture of their cysts, as I thoughtlessly asked Mr. S. to keep them in cold water; and I have no doubt but that the cysts became ruptured owing to their over-distention by the process of endosmose; however, I am of opinion, from the examination of the empty cysts, and from Mr. S.'s description of them, that they were acephalocyst hydatids.

I was very glad in being able to avail myself of the able advice and experience of Dr. Fogo, Royal Horse Artillery, from almost the commencement of this lady's illness, and to him my best acknowledgments are due.

A few remarks on some of the most prominent symptoms already mentioned, and on the treatment pursued, as also on the case generally, may perhaps form the subject of a second paper.

P.S.—Up to the present, January 20th, Mrs. S. has been gradually and steadily improving, but is very weak. If all goes on well, she will proceed to England *via* the Cape in February.

FEIGNED TUMOR OF THE JAW.

By J. Ma[illegible] Cameron,

Civil Assistant Surgeon.

Emamun, a Mussulmani, aged 15, was brought to me on November 20th, by her parents.

They stated that upwards of a year before they had observed a small tumor form at the angle of the lower jaw on the left side. It continued to increase slowly; native practitioners failed to give relief, and at last, despairing of a cure, they had brought her to me to have it removed by operation.

There was a tumor on the left side of the face, rounded, of the size of a teacup. The skin slid easily over it, and at its most prominent part was dusky red, and apparently on the point of ulcerating. The tumor was firm, of a bony consistence, and seemed equally connected with both jaws. The lower jaw was fixed, the mouth nearly closed, and the girl complained of great pain. In spite of the suffering she had undergone, she had not lost flesh, and the right cheek was plump and rounded.

On separating the lips, to inspect as far as possible the interior of the mouth, I observed the ends of two flat bands of a black colour, which hung from the tumor into the mouth. On inspecting these somewhat minutely (which was a matter of some difficulty, as she was perpetually starting back, and complaining of great pain), I noticed certain lines, which seemed to me to indicate either that the bands were pieces of cloth inserted into a cavity in the tumor, or that cloth of some sort had been recently placed in contact with them, so as to leave its impression. I asked the parents if any cloth had been introduced into the mouth, but they asserted that such was not the case, and the girl corroborated their statement.

I now seized the band with forceps, and, using a little force, succeeded in removing it, the girl shrinking badly and endeavouring to seize my hand. The band was simply a piece of eksootee cloth. On examining the mouth, I saw what was undoubtedly a second piece of cloth, which I also removed, and thus I went on removing piece after piece till every vestige of the tumor disappeared. The girl looked foolish and sulky. The parents seemed stupified, and could not at once realize that their daughter's illness was pure deception.

They brought her to me again on the following day. There was not the slightest trace of disease. The teeth were sound; the jaws well formed. The right cheek was, as I have said before, plump and round; the left was thin, and hung flaccid and void of expression. The centre of the cheek, which formed the most prominent part of the tumor, was now shrivelled up, like the skin of a withered apple.

The tumor was composed of 23 pieces of cloth, weighing, when washed and dried, 4 ounces.

Monghyr, January 25th, 1869.

A PUNCTURED WOUND OF THE LEG, WITH COMPLETE PERFORATION OF THE TIBIA; RECOVERY.

By Henry O. Wilson,

Civil Assistant Surgeon, Mymensingh.

Kolum Shaik, a strong, robust man about 35 years of age, was admitted on the 24th April, 1868, into the Mymensingh Charitable Dispensary, with a recently inflicted wound in the upper part of the left leg, just below, and to the outer side of, the outer edge of the patella. Through this wound was projecting, about ¾ of an inch, the pointed extremity of the iron head of a koach, (a spear used in bundles by the natives for killing fish, the long shaft being made of wood); in the ham were four small punctured wounds which had healed.

The patient stated that, four days previous to admission, a man had thrown at him a bundle of these spears; four of them struck him in the ham, and one of these, penetrating deeply into the leg, broke off where the iron head joins with the shaft.

Immediately after receiving the injury, the man went to a *kobiraj*, who, feeling the point of the spear-head just beneath the skin in the front part of the leg, cut down upon it, and made several fruitless attempts to drag it out by its point.

When I saw him, I cut down in the popliteal space, and pushed back the spear-head by its point, until I felt the other extremity behind, at the spot where it had penetrated the bone; from this position it was easily withdrawn. The spear-head measured two inches in length, its larger extremity having a diameter of ⅜ of an inch. It had passed from behind forwards, outwards, and a little downwards, forming in the tibia a canal about the size of a large goose-quill.

In this canal, I could feel with a probe a few small loose fragments of bone.

Immediately after the operation, I gave five grains of calomel with a grain of opium, and at night an enema containing 25 minims of laudanum. Cold water dressing was applied to both wounds.

25th.—A little feverish; complains of but little pain in the leg; some small fragments of bone have come away from the anterior wound. Ordered a saline mixture every four hours; continued the cold water dressing.

26th.—Some maggots have been coming away from the anterior wound; still a little feverish. Applied to the anterior wound a linseed-meal poultice sprinkled with turpentine; continued the cold water dressing to the posterior wound; repeated the saline mixture.

27th.—No fever. Ordered quinine mixture; wounds dressed as before.

30th.—Complains of very little pain in the leg. Ordered iron and quinine mixture; turpentine and resin ointment to be applied to both wounds.

1st May.—Complains of pain in the knee-joint, which is slightly swollen; no feverish symptoms. The joint to be painted with tincture of iodine; continued the mixture and dressing as before.

4th.—The swelling in the knee-joint has subsided; is free from pain. Mixture and dressing as before.

From this date the man steadily improved. On the 26th of May a small superficial abscess was opened in the calf of the leg. On the 31st May he was discharged.

Remarks.—The attention of the profession has been lately called by Dr. Fayrer to the occasional occurrence of osteomyelitis after amputations, and severe injuries to the bones. This case illustrates how serious an injury may, under some circumstances, be inflicted on a bone without this disease resulting. For four days a foreign substance lay impacted close to the articular extremity, and, consequently, in the most cancellated and vascular portion of a long bone. In the first attempts to extract the foreign substance, the bone was subjected to considerable violence, yet the bone was repaired without the occurrence of any abnormal inflammation.

The slight inflammation in the knee-joint was probably only sympathetic; the abscess in the calf of the leg was the probable result of a few drops of pus finding their way down the leg from the wounds before their final closure.

A DISPUTED CASE OF OBSTINATE COSTIVENESS.

By Gopaul Chunder Roy,

Teacher, Medical School, Nagpore.

A man, aged about 50 years, is brought to the hospital with symptoms of obstinate costiveness. The history of the case goes on as follows: That for the last two years he had been suffering, off and on, from irregularity of bowels; sometimes passing 4 or 5 stools in a day, at other times none. At the middle of the night, about 4 hours after his usual meal, he is roused with a pain in the abdomen, which became so unbearable, as to induce him next morning to ask for relief in the hospital. He is seen 8 or 10 hours afterwards with the following symptoms: Countenance anxious and indicative of collapse; eyes sunk and staring; cold perspiration over the forehead, extremities in an algide condition, pulse barely perceptible at the wrist, respiration thoracic; abdomen tensely bloated and tympanitic. Had two natural evacuations in the previous day, but none since the accident. Thinks he will be relieved if the bowels be moved, and earnestly craves for a purgative. An injection given by the native doctor was returned, bringing away little lumps of fæces, with no relief of urgent symptoms; no vomiting. Passed water; legs flexed and drawn up. Complaining of a tension in the abdomen, but could bear slight pressure over it without wincing. He remains in that condition up to evening, and dies, retaining his consciousness to the last, within 18 hours from the first appearance of the symptoms. There was no external hernia. The post-mortem examination was refused.

Such being the data of the case, let us theorize on it and try to elucidate its nature. Was it a case of internal strangulation or of perforation of intestine? The amount of evidence weighs equally in favor of both conjectures; but by signalising one set as primary symptoms, we may expect to come to a definite conclusion. The necessity of determining between the two diseases will be evident when we consider the diametrically opposite treatments that are usually adopted in each instance, for whilst in one the main remedial measures lie in heavy injections, the same treatment in the other will aggravate the patient's suffering, if not actually hasten his death. To begin, we meet with the most prominent symptoms as *collapse*. It is a known fact that collapse sets in earlier in injuries in the abdomen than in any other organs. Hence, the collapse and occasional death in blows over the stomach, in rupture of vessels within the abdomen, in rupture of spleen, kidney, or liver, in perforation of intestine and extravasation, &c., in strangulated external hernia, we meet with a small wiry pulse, if the strangulation is too tight or long continued; but this condition is quite different from what we ordinarily term collapse. Here collapse supervenes as the result of gangrene of intestine, and not otherwise, and then even its symptoms become first apparent in worst cases not before some hours after the accident. Let it be remembered that strangulation external to the abdomen is quite different in its nature and degree from strangulation produced within the abdomen. In the first we have the intestine tightly grasped after its escape through a small resistent hole; in the second, it gets obstructed generally by a loop getting twisted on itself or by passing underneath a band of mesentery during the natural intestinal peristaltic action. To show that in one case pressure is sooner exerted and more intense than the other, I may bring forth the following reasons:—1st, that in strangulated external hernia, the pain from the beginning is unbearable, whilst in the other variety of intestinal obstruction the patient begins to feel pain after a long time, perhaps when the accumulated fœces and gas begin to distend the intestine; 2nd, that in intestinal obstruction the patient lingers for some days, when the obstruction is not removed (they rarely die under 3 days; there may be exceptional instances), and after death the post-mortem examination reveals in but a few instances commencing gangrene of intestine; whereas, in strangulated hernia, the intestine generally passes into a state of sphacelus within 24 hours, the late appearance of gangrene being here exceptional. The deductions from the above agreements can be summed up thus. That owing to a greater amount of stricture in the strangulation of external hernia, the intestine may die within 8 or 10 hours; but in internal obstruction, where the pressure is less acute, it is rare to find in general run of cases death from gangrene and its symptoms within so short a period It will be preposterous therefore to suppose in the present instance collapse to have been caused by early supervention of grangrene, for although the patient was not seen earlier, and consequently his condition just after the accident was not known, yet there was no doubt of the existence of marked depression in him at the time when he came under our observation. Moreover, the previous history, the age of the patient, the suddenness of the symptoms, and the rapid death, are all favorable to the occurrence of perforation. The tympanitic state of the abdomen was due to effusion of of gas and fœces in the peritoneal cavity through the rent caused in the intestine.

It has been urged by my colleagues that the obstinate costiveness is not observed in cases of perforation, for enough of continuity of surface is still preserved to allow the gas and the fœcal matter to find their way from one part of the tube to the other. In opposition to this, I may assert that although this is practicable at the commencement, the effusion and accumulation of gas in the peritoneum afterwards becomes so great as to produce collapse of the intestine, and we can well understand how fluid will entirely run out of a tube through a hole made in its wall when it is made to traverse it from one end to the other, not by a rapid, but by a *slow*, peristaltic action.

As the want of post-mortem examination in the present case has left its nature a disputed point, I would take the liberty to invite the opinion of our brethren in the profession to cite instances in favor of one or of other diagnosis verified by the post-mortem examination.

Nagpore City Hospital, 10th February, 1869.

CASES FROM PRACTICE.

By S. C. Chatterjee, B.A., M.B.,
Sub-Assistant Surgeon, Azimgunge.

CASE I.—OF LINEAR EXTRACTION COMPLICATED WITH PROLAPSUS IRIDIS.

Bhoodhos Sing, a strong-built up-country man, of short make, aged about 55 years, was admitted into the dispensary on the 18th of July last with cataract in both the eyes; the right one more affected than the left. I selected the right one as fit for operation. Pupil normal; iris healthy looking; tension normal. No supra or circum-orbital pain. No vascularity of the conjunctiva. An ophthalmoscopic examination ought to have been made previous to the operation, but unfortunately I had no instrument, so I could not make any examination. The patient having been brought fully under the influence of chloroform, I performed the operation called linear extraction, in the way recommended by Dr. C. Macnamara, but without any iridectomy. The cataractous degeneration of the lens was of the mixed variety, a hard nucleus surrounded by soft lenticular substance.

A thin cotton compress and bandage were put on.

19th July.—Slight pain in the eye; wound in the cornea has healed but partially; nearly one-third of it, at the upper part, remaining ununited, and a bit of the iris separating the two segments. I would have used a saturated solution of calabar bean to contract the pupil (as it was somewhat distorted), but as there was none in store, I applied extract opii round the eye.
Ordered.—Ol. ricini. Pad and bandage.

The cornea was looking hazy; no effusion of blood.

21st.—Eye looking worse; a little bit of the iris protruding through the ununited portion of the wound; much pain in the eye.

Ordered.—Extr. opii round the eye. Tr. opii. ♏xv. thrice daily. Pad and bandage.

26th.—Iris gradually protruding outwards; much vascularity of the conjuctiva; pain very severe, specially at night; cornea also ulcerating at the cut edges.

Ordered.—Zinc lotion (gr. ij-℥) to be dropped into the eye. Pad and bandage.

I intended only to keep down the inflammation by weak astringent lotions, without any meddlesome interference.

31st.—Ulceration of the cornea and prolapsus; irides quite stationary

5th August.—Ulcer healthy looking; prolapsus not increasing; continued dressing as before.
21st.—Iris gradually receding back; ulcer tending towards healthy cicatrisation.

25th.—Much better now; prolapsus of the iris no longer existing; iris has receded, and the ulcer almost cicatrised; slight vascularity of the conjunctiva only remaining. There is slight effusion of lymph into the anterior chamber.
Ordered.—Alum zinc lotion. Bandage.

Patient discharged on the 1st of September. Could see dimly to grope his way about in the room; unable to make out features. In fact, a little better than what he was previous to his admission.

I bring this case to the notice of the profession only because it will be interesting and instructive to those who, like me, have just commenced to perform the operation.

The incision I made through the cornea was, as Dr. Macnamara recommends, "a little anterior to its junction with the sclerotic," nor was it so large as to easily admit of a prolapse.

I am rather inclined to believe that the unfavourable termination of this case was solely attributable to the wretched state of our present dispensary house, both with reference to the accommodation it affords, and the site it occupies; nothing can be more miserable than what it is at present. The rooms are mere cells—dirty, damp, ill-ventilated, and what not! I operated upon another case, in the person of an old woman, outside the dispensary, with the happiest results. In conclusion, I have only to say that this has remarkably manifested the recuperative powers of nature. Every one who saw the case thought, and most reasonably, that the patient would eventually lose her eye.

CASE II.—LINEAR EXTRACTION.

[illegible]

CASE OF RETENTION OF URINE. PARACENTESIS VESICÆ. RECOVERY.

By [illegible] Mookerjee,

[illegible]

[illegible] stout healthy [illegible] hospital at [illegible] retention of urine [illegible] syphilis [illegible]

[illegible] along with [illegible] through [illegible] regular stream, and the patient [illegible] With the usual [illegible] the wounds on the [illegible] and in the [illegible] place [illegible] good streams, [illegible] from [illegible] and as there [illegible] canal, it has [illegible] for a change, [illegible] present, [illegible] the stricture would be ineffectual [illegible]

It may [illegible] place to observe that retention of urine, [illegible] of bladder, when suffered to [illegible] may in some cases result in the paralysis [illegible] when in [illegible] at Cossia. The operation under consideration [illegible] day of retention, [illegible] notwithstanding all [illegible] the [illegible] a month, during which [illegible] our treatment in the hospital.

[illegible] 1868.

Notices to Correspondents.

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[illegible]

The Indian Medical Gazette.

INDEX FOR 1868.

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The above is now ready, and we shall feel obliged by subscribers intimating whether they wish it sent loose, or whether they prefer to return their Nos. for 1868, and receive in exchange a bound Vol. complete with the Index. The cost of binding will be Rs. 2-8.

WYMAN & CO.

[illegible] *Indian Medical* [illegible] ON ONE SIDE [illegible]

[illegible] *that no possible mistake can be* [illegible]

[illegible] *as possible, else* [illegible]

[illegible] *Publishers, Messrs. Wyman & Co.;* [illegible]

[illegible] THE PROFESSION THROUGHOUT INDIA IS EARN- [illegible]

WYMAN & Co.,
Proprietors.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

NATIVE MEDICAL PROGRESS IN INDIA.

It is very much the fashion to cry out against anglicised Bengalees—anglicised, it is too often thought, only to the extent to which they may have imitated the vices of Beau Brummel, or fraternized with the devotees of Bacchus. But they are a little better than this, too. They are profiting as well by the virtues as by the vices of their English models.

There is a society in Calcutta, composed of educated Bengalees, who are endeavouring to introduce annual "national gatherings" in the room of the Churruck Poojah, which is steadily disappearing, as Sir J. P. Grant prophesied it would, under the force of improved native opinion. The committee of this gathering (Choitra méla) have endeavoured to provide an *intellectual* stimulus in the "upper stories" of men, in place of that produced by "hook swinging" in the lower.

They have offered prizes—too small, we fear, considering the objects—for essays and treatises on various subjects; for, amongst others, a treatise on some of the physical sciences, and upon the best essay, in pure Bengalee, on the anatomy of the human form according to the medical science of this country. The amount offered is only Rs. 100. We venture, however, to enquire what is meant by the "medical science of this country." The anatomy of the human form is unchangeable, whatever the country in which it is developed, and whatever the nature of the medical science that is based upon it. What is the essayist to represent? Whether the medical science be one that recognizes the navel as the centre from whence forty blood vessels originate, or whether it be in accordance with the views of the eminent practitioners of the nineteenth century,—the human form divine is the same. We presume that the intention is to secure anatomical descriptions of the body as represented by the beautiful models that grew under the chisels of the Grecian anatomists. We cannot conceive that any other medical science is intended than that which has been imported from the West. Were it otherwise, the noble example of Modoosoodun Goopto would, indeed, have been thrown away.

MEDICAL MISSIONARIES IN INDIA.

It is much to be lamented that the functions of the physician and priest are not more intimately blended than they are, in the persons of missionaries. They were eminently so in Him who visited the world in this double capacity; and his example was abundantly followed in the early days of Christianity, when the heathen cried out "The gods are come down to us in the likeness of men." They had just witnessed the first instance, on record, of a minister of the gospel performing the duties of the physician. Paul had cured the poor cripple at Lystra of a congenital lameness. Even prior to Christ's advent, medicine was practised by the priests amongst several of the nations of antiquity; and the medico-theosophists, the Essenes of Judea, performed the combined duties of ministering among the Levite priests and curing the sick. The instances of the union are numerous and striking. Now, we see Peter curing the impotent beggar at the gate of the Temple and filling the people with wonder and amazement at his skill; now, restoring to health Æneas, the paralytic, at Lydda, thereby so astonishing the people, that, when they saw these works, they "turned to the Lord."

Again, during the persecutions of the Christians at Lyons, one Alexander, a physician and an earnest preacher, became a martyr to his cause, and was destroyed by wild beasts in the amphitheatre. Then Columba, the laborious and much-honored apostle of the ancient Picts and Scots, now spreading the gospel, and now practising with remarkable success as a physician.

As the world's age increases, we hear of monks whose chief object was to provide physical and spiritual relief for the unfortunate and the outcast; of laymen and ecclesiastics combining to take care of the sick in hospitals; of even Jesuits making the care of the sick the most prominent of their duties. Three hundred years ago, the Protestant churches sent missionaries to the heathen; but, "during the first 150 years of that time, there is no record of any Protestant physician or surgeon having consecrated his profession to the service of Christ in connection with the preaching of the gospel." But, then, an English general not only set this duty before the Society for the Propagation of the Gospel, but nobly provided the means. He bequeathed some West India property to the Society with these instructions,—"That the plantations should continue entire, and that 300 Negroes, at least, should always be kept thereon; and that a convenient number of professional scholars should be maintained there, who should be obliged to study and practice physic, and chirurgery, as well as divinity, that, by the apparent usefulness of the former to all mankind, they may both endear themselves to the people, and have the better opportunity of doing good to men's souls whilst they are taking care of their bodies; but the particulars of the constitution he leaves to the Society, composed of wise and good men."

We have quoted these words in their entirety, as they express, to a great extent, what we would wish to say in advocating the cause of medical missions in India.

But General Codrington made a fatal mistake in providing for the education of medical missionaries *on the spot*, for, however successfully we may create and *adapt the subordinate agency* in a tropical country, the administrative, or controlling, authority should be *imported*. The requisite zeal and energy cannot be expected in natives of hot climates. It is not said that this was the cause of failure in General Codrington's scheme, (for fail it did), but that the circumstances of West Indian Islands were not such as to make any of them fit for the establishment of a school of medicine, even on a small scale; added to this, law suits with the executors and frequent hurricanes helped in bringing about the failure. The school was indeed established, consisting of a president and 12 scholars, and stipends were allowed to those who were desirous of prosecuting their studies in England, either in divinity, law, or physic.

Subsequent to this, we hear of the Moravians of Germany sending Dr. Hocker, a physician, and Mr. Ruetler, a surgeon, to Persia, to labor amongst the Guebres, descendants from the Magi, or wise men of the East; then of John Thomas, an English naval surgeon, who, after two voyages, decided upon remaining in Bengal to preach Christianity and to cure disease amongst the Hindus on behalf of the Baptist Mission; then of the renowned

Dr. Carey, who was sent by the same society to labor with him in Bengal; and contemporaneously with these men we hear of Dr. Vanderkemp—an agent of the London Missionary Society, at one time an officer in the Dutch Army,—who went so far in his medico-religious zeal, that he adopted the very questionable step of marrying one of their women."

Later on, we hear of Colman and Price in Burmah, (intimately associated with Dr. Judson,) and of the latter acquiring so much renown as an oculist, that he was summoned by the king to his capital.

We now come to the progress of medical missions in our days. In 1822 appeared Cavers' "Hints on Missions," followed by an article, by the same author, on "Missions," in the seventh edition of the *Encyclopædia Britannica*. So thoroughly in accord with our own views are those expressed by this author, that we cannot refrain from transcribing his own words.

"If, with scientific attainments, missionaries combined the profession of physic, it would be attended with many advantages; for there is something suspicious in a foreigner remaining long in a country without an openly defined object. The character of a physician has been always highly honored in the East, and would give an easy and unsuspected admission to a familiar intercourse with all classes and creeds. *** He who is a physician is pardoned for being a Christian; religious and national prejudices disappear before him; all hearts and harems are opened; and he is welcomed as if he were carrying to the dying the elixir of immortality. He, more than any one else, possesses the '*mollia tempora fandi*.'*** In many cases the cure of the body (as in the early miracles) might precede the cure of the soul; but, if not, some positive good is done when science is enriched, diseases removed, and the gratitude and respect of many secured.*** The employment of physicians as missionaries, which has only very lately and very partially been practised, has been attended, on the limited scale on which it has been tried, with yet happier results than could reasonably have been expected. It has opened a new fountain of humanity in the hard and selfish breasts of distant nations, to see the strange spectacle of a man, in imitation of his Saviour, 'going about doing good,' and healing the sick. Those who are insensible to the diseases of the mind, feel with sufficient acuteness the diseases of their bodies; and, though missionaries may complain of the want of hearers, a missionary physician has no reason to complain of the want of patients; nor has he reason to lament the want of success in treating the cases that are submitted to him."

What Mr. Cavers says on the subject of foreigners, without any *apparent* definite occupation, being suspected in a heathen country, will be appreciated by most missionaries in India. Much time has been lost in the first efforts and even years of the pastor's residence amongst the people; and it is only when they have satisfied themselves that the man of God is to them what he professes to be, [illegible] he does year after year amongst them in the village, in the same unobtrusive and unostentatious way, that they learn to look upon him as a harmless person. It is evident that where the physician's calling is made to serve as a means of reaching the hearts of the heathen, much spiritual good, as the result of affectionate intercourse, may consequently be expected. It must not be supposed that we advocate the practice of medicine as a trap for the conversion of the heathen. What we do insist on, must be done [illegible] [illegible] at the exercise of similar offices. At [illegible], it [illegible] us to reap all the benefits, as they are certainly [illegible], that medical missionaries may [illegible] in the exercise of their god-like function of healing. We shall continue the subject in our next issue.

[illegible]

NOTE.—For much of the historical information in the foregoing article we are indebted to a [illegible] work entitled "Addresses to Medical Students," delivered at the instance of the Edinburgh Medical Missionary Society, [illegible] by Dr. Coldstream, on the "History of Medical Missions."—ED., *I. M. G.*

CUILIBET IN ARTE SUA PERITO EST CREDENDUM

WE have received a memorandum on measures adopted for sanitary improvements in India up to the end of 1867, published by order of the Secretary of State for India. The memorandum also contains a most valuable sketch of sanitary progress in the Bengal Presidency previous to 1864, by Dr. E. Goodeve, late of the Bengal Medical Service, who, after perusing the abstracts of the Bengal Sanitary Reports, has made certain suggestions of practical value for their improvement in future years.

With reference to the origin of sanitary measures in India, Dr. Goodeve remarks:—"Should the history of the Royal and Bengal Medical Departments (in India) ever be written, it will be shewn that for many years past they have steadily advocated and promoted sanitary improvement in India, and that many individual members of the Royal and Bengal Medical Services, amongst whom must be reckoned that earnest sanitary reformer, Sir J. Ranald Martin, have been foremost in the good work." "It was chiefly, if not entirely, among medical men that any knowledge of the causes of disease existed, and from them that any warning in the matter of prevention could be obtained. Hence the progress of preventive medicine depended upon the progress of medicine itself in India, and upon the attention which medical recommendation could command from the ruling powers. The records of the Medical Board, and the writings of individuals, shew this connection." "Besides official reports, which were not generally accessible, the numerous papers and works on Indian public health, published separately in the medical periodical literature, in the *Calcutta Review*, and newspapers, chiefly by members of the medical services during the last 30 or 40 years, and the influence of their personal representations, have had great effect in educating and moulding both general and professional opinion on sanitary matters." With this preface, only a few sentences of which are extracted, Dr. Goodeve gives a list of the principal measures or subjects affecting the progress of public health, which have been considered and acted on during the last 30 or 40 years, and he remarks on the history of each under their separate headings. We will here simply note the subjects:—

1. Vaccination.
2. Reports on the topography of stations.
3. Reports upon special outbreaks of disease or manifestations of unhealthiness.
4. Selection and improvement of cantonments or stations.
5. Improvement of barracks and hospitals.

6. The condition of the soldier, involved in his diet, dress, occupations, and amusements, &c.
7. Conveyance and movements of troops.
8. Hill sanitaria.
9. Health of prisons.
10. Native medical education.
11. Sanitary reform in native towns, villages, &c.
12. Statistics and registration of disease.
13. Sanitary literature.

And in conclusion he remarks :—

"In summing up what has been done in sanitary measures in the Bengal Presidency within the quarter of a century preceding the operation of the permanent (Royal) Sanitary Commission, the present sketch shows that it has truly been a period of progress, and that a large measure of success cannot even yet be claimed for what has been done. The teachings and examples of sanitary reformers in England have been quickly followed in India, but the obstacles in the path of progress have been far greater than at home; in spite of all, however, much has been done, and the ground cleared for future action."

With the experience thus gained in this century of the value of medical officers and medical knowledge in all works of sanitation, it seems the more extraordinary that, as progress advances, it would appear to be the aim of the Government to take all such questions out of the hands of those in the medical departments most experienced by rank and position, and therefore the best qualified to offer opinions upon them; such an idea is evidently foreign to the judgment of the Home Government, who, while looking at the subject from a distance, judges more clearly perhaps of its bearings, but who have given in to the Government of India, as perhaps not wishing to interfere too much in its manner of carrying out details.

In April, 1867, the Government of India was addressed by the Secretary of State, and its policy "of appointing the principal officers of health under the supreme and local Governments to be deputy secretaries, was questioned;" but in the same despatch the Secretary of State gives his opinion that the Inspectors-General of Hospitals, rather than the Inspectors-General of Prisons, should be the principal health officers whose duties should be consultative only, "and that any measures determined on in consequence of their advice, should be carried into effect through the offices of the several departments of Government to which the subject might most appropriately belong."

But the Government of India, following the advice of their non-medical (civil) sanitary advisers, reject this apparently practical scheme, and in a despatch of August of the same year, state, "to introduce a really effective sanitary administration, special organisation would be requisite, and that such should be welded with the general civil administration of the country, and be immediately under the control of the chief civil authorities." The proposed double system was objected to, whereby these arrangements would be partly under the authorities, and partly under the Inspector-General of Hospitals in each province—a system considered likely to create difficulty and delay, if not obstruction! And "it was now proposed that instead of Inspectors-General of Prisons, as formerly suggested by the Viceroy, or Inspectors-General of Hospitals as preferred by the Secretary of State in Council, medical officers, specially selected, should be appointed for the exclusive duty of principal health officers."

This is the origin of the present Sanitary Commissioners of provinces—a great and noble step in the right direction, were they but placed under proper authority.

But we cannot agree with the civil, *i.e.* non-medical, advisers of the Government, who directed the movement, and whose opinions are that the question of sanitation, involving as it does the whole science of preventive medicine, should be immediately under the control of the chief civil authorities.

The proceedings of Government itself thus define the duties of the Sanitary Commissioner with the Government of India :—

"There is no sanitary authority which can exercise any check upon the recommendations of the local sanitary officers, except the Sanitary Commissioner with the Govenment of India." "Possessed of all available information relative to the sanitary condition of the civil population, the native army, and the prisoners in jails, he should always be in a position to give to the Government of India the best opinion regarding many matters of importance affecting the health of the European troops."

Is it reasonable to expect that the constitution of the present Sanitary Commission could be any real authority upon the last item, involving perhaps the most important part of a Sanitary Commissioner's duties?

There can be no question but that an experienced administrative officer of the medical department should be attached to each local Government, to afford advice on all medical and sanitary matters, to advise and control the local Sanitary Commissioner, who will thus be the executive under his guidance and directions; and following up shortly the administrative detail to its higher branches, we would again put forward that the proper direction of sanitation in general, and the proper authority to afford the most reliable aid to Government, in administering the duties above laid down for the Sanitary Commission of India, would be that, in which the heads of the British and Indian medical departments had a guiding voice.

Any compromise from this involves increase of detail, and questions and replies from one department to the other; this is the case now, when information can only be obtained through the heads of the medical departments; there is thus a waste of power and experience, which no amount of talent gained in other branches of the services can compensate for.

That the present sanitary administration and executive is costly, is proved by the recent expressions of Sir R. Temple in his speech on the budget. The Home Government are reported at the present moment to be devising reduction in every branch of the army, from which the medical department will not escape. The *Lancet* notices the design in the following language, which, by a little verbal alteration, would be just applicable to the present state of the sanitary and medical administrations of India :—

"What can the Government want with a special adviser to the War Office drawing a large salary, when they have a whole army medical department with a Director-General in London at their disposal? If the War Office authorities can discover no one fit to advise them on sanitary and medical matters among the officers of the medical service, the sooner we cease to pay them and abolish the department itself the better."

SANITATION

[illegible]

[illegible]

[illegible]

> [illegible]

[illegible]

[illegible]

NATIVE HOSPITAL AT HOWRAH.

[illegible]

[illegible]

PAUCITY OF MEDICAL OFFICERS

[illegible]

[illegible]

[illegible]

NATIVE MORTALITY.

[illegible]

[illegible]

[illegible]

SUBORDINATE MEDICAL EDUCATION

[illegible]

[illegible]

[illegible]

wrote, that this fact alone tends to render the book quite unsuitable for translation. Dr. Ewart says —"It would be necessary to have the text-books carefully revised, in order that theories and practices, which have fallen into desuetude, might be expunged from, and new discoveries and improvements be incorporated with, them." He instances the *spoliative* treatment advocated by Hooper and Harley as one of these practices to be replaced by "concise directions for the *restorative* management of certain diseases." Not only so. The whole natural history of disease is changed, in a tropical climate; and, moreover, disease exists there which is almost unknown at home. We are at a loss to understand why this antiquated system of translating is again brought forward. We are, however, rejoiced to see that the local Government has paused before submitting such a system to the Government of India when it is to cost, moreover, nearly £8,000 of precious money.

To some of the books we have no objection. Gray's Anatomy for example, is an admirable work on anatomy, and might be translated, almost word for word. Strange to say, there is no work (extant) on this subject, of any value, translated into the vernacular.

We note that the committee have not recommended the translation of any work on chemistry or on medical jurisprudence. If they were under the impression that, because the "native doctor" classes do not attend lectures on these subjects, therefore text-books would be superfluous, they laboured under a serious misapprehension. The most urgent requirement of the day is a good vernacular treatise on forensic medicine, and on just so much of chemistry as is cognate with it. Indeed, we do not see why native doctors should not be instructed in a complete course of chemistry. As we have before pointed out, native doctors are often placed in independent charges where they must perform post-mortem examinations; and it is notorious that, at the present time, they are singularly ill-qualified to make them. It is a remarkable fact that the "native doctor" classes at the Medical College receive no systematic instruction, either in medical jurisprudence or in chemistry; and we wonder that the committee did not take the opportunity of drawing attention to this great defect in the college curriculum. It is one which has never been fully brought to the notice of the college authorities. They have, therefore, not realized the necessity of educating these classes to a standard higher than that of the mere drudge.

We venture to urge that Fowne's Chemistry—a text-book with the English classes—and an original treatise on medical jurisprudence (why not Dr. Chevers', modified?) be translated into the vernacular. The committee have recommended a translation of Baboo Durga Doss Kur's book on Materia Medica. But we have now a better book on this subject—Waring's Indian Materia Medica. This and the British Pharmacopœia might be translated. The committee have recommended Druitt's Surgeons' Vade Mecum for the work on surgery. The whole book need not be translated, and, to supply the place of the elisions, we would suggest the introduction of suitable portions of Dr. Fayrer's Clinical Surgery. Literal translations would be wide of the mark. A good deal of adaptation would be required in the surgical department of the series. Hence, in this subject we should recommend an original treatise. We have now left physiology, chemistry, and botany. As the last is not at present essential, it might be omitted. With regard to physiology, we quite agree with the committee in thinking that a good compilation in English should first be made, and that this should subsequently be translated into the vernaculars.

Singularly enough, the important subject of midwifery has received but scant justice at the hands of Dr. Ewart. *The committee* do not notice it at all! A course of lectures for the Bengali classes at the colleges has recently been established, and it is a subject in which these classes take a deep interest.

Dr. Tyler Smith's work on obstetrics is set down as the best book on this subject for translation: but an original treatise would be far better.

The subjects, then, which, we urge, should be originally treated are *medicine*, *midwifery*, *medical jurisprudence*, and *surgery*. Then comes the question, who are to prepare the original works from which translations are to be made? Why should not each professor publish his own course of lectures, and submit it to the committee (the constitution of which we suggested in our last article), and who would, in fact, become, in a way, the *editors* of the whole, whilst they superintended the translations? We do not anticipate any difficulty with respect to the preparation of these lectures. The professors would probably have no objection to even publishing them at their own cost, provided that, by taking a sufficient number of copies, the Government would eventually reimburse them. There is little doubt that the Government would do this, as it has shewn great liberality in the case of professional works recently published by two of the college professors. This arrangement would remove whatever difficulty might be experienced in treating with the authors of the English works that had been selected for translation. Medical officers in India do not write so much with the object of gain as some of their confrères in England are compelled to do. There, they write for *reputation*, and the money which it brings, both in the form of increased practice, and in the actual *lares et penates*. Here, men *make* no more by writing than if they simply *lived* out their period of service, and avoided getting into trouble! This is one of the reasons why there are, comparatively speaking, so few Indian medical authors. At the same time there is no lack of the requisite ability, as is seen in the books which are occasionally sent into the world by an energetic few and although there may not be the inducement to write that there is at home, there is no hesitation in a good cause.

Nor do we think that it would be necessary to offer any *douceur* to the members of the committee or to any single editor or supervisor that might be appointed, if they or he were in Government employ. Possibly, the best arrangement, after all, would be to entrust the editorship to a single individual, who should be eminent in his profession, skilled in teaching, and a good linguist. He would superintend the translations of the several works. This would be a most important and interesting part of the entire undertaking. If we may venture to give any opinion as to the mode of executing these translations, we would suggest that the following arrangement be adopted. Let each of the native teachers be deputed to make the translation of his own subject into the two languages, Hindustani and Bengali, with the assistance of a pundit. They might receive the amount mentioned by the Secretary to the "Calcutta School Book and Vernacular Literature Society," viz., from Rs. 1-5 to Rs. 2 per page, out of which they would pay the pundit for his assistance.

In this way [illegible] expense [illegible] be [illegible] greater economy than the sum [illegible] 77,7[illegible]-2-0 [illegible] we [illegible] for the [illegible].

1. Original work [illegible] professional men, which [illegible] probably [illegible] have come to [illegible] thus [illegible] the [illegible] from the charge of mental degeneration, which [illegible] brought against him, and [illegible] literature.

2. Text [illegible] real value, which will bring credit to our rule in India.

([illegible])

THE JAILS AND JAIL SYSTEM OF INDIA.

([illegible])

The first Jail Manual of the Punjab, published in 1858, contained rules which had been more or less in force since the first prison was built in the province; they were simply regulations for preventing "the mingling and mixing" together of all classes of prisoners. A recent manual, published in 1867, follows the classification laid down by the Committee of 1864; but while its principles are admitted, many causes have interfered with the practice being carried out in entirety.

"In Oude all the adult male prisoners have been divided into the four classes of the Jail Committee of 1864, and each class is distinguished by colored badges on their dress." In the Central Provinces, and British Burmah, beside the above four divisions, there is an additional classification, according to the nature of the crime.

The only classification female prisoners would appear to be under, is that of sex, and the Committee of 1836 record that from the earliest times such segregation had ever been the practice; the most recent English law "orders that the cells for females shall be in buildings entirely separate from those of males."

In the smaller prisons of Bengal Proper, there are few female convicts, and these are only confined for a very short term. For the last ten years, all long term female prisoners have been sent to the Russapugla Penitentiary, in the suburbs of Calcutta, which is exclusively a female prison.

"The whole of the internal duties of this prison are performed by female convict warders, and the wife of the jailor acts as the matron of the establishment." Instruction of these prisoners has not yet begun; they occupy themselves in such "industrial pursuits as native women are accustomed to in their own home," but other and more varied occupations are to be taught them. In the new central jails there will be a separate female compartment where a paid warder will also give instruction.

The same system appears to be in force in all the minor administrations; no man has access to a female ward at any time, except the recognized jail officials and the scavengers, and these latter are always superintended by authority; no visitors are allowed, and seclusion and separation must be enforced.

In the Punjab, a penitentiary* was established at Lahore in 1863 for long term female prisoners. In the other provinces of the Bengal Presidency no separate prisons exist for females, but in all the jails there is most [illegible] separation from male offenders. In Madras, there would also appear to be a penitentiary, and both in that Presidency, and in Bombay, the same system is carried out as in Bengal.

The [illegible] above noted are [illegible] the centre of large [illegible] and therefore are ready for the reception of female [illegible], for there is a certain average of this class of offenders regularly in prison; but the provision of other such central prisons has not been thought necessary, for the reasons given by the Committee of 1864. They remark that the number of female prisoners throughout the Continent is small;* that their transport to and from their homes, under the charge of police, should be avoided, as rendering them liable to hardship and inconveniences which their sex need not be subject to; that any great change of climate should be avoided also. They therefore recommend improved and increased accommodation for females in the large jails; that they should always be sent to the largest jail nearest the place of their committal; that the accommodation for them should be improved and increased; that their wards should be as far removed as possible from the male division; and that a separate hospital should always be made for them in their own portion of the enclosure.

The English Prison Act of 1865 orders that every prisoner is to be kept in a separate cell by day and night; thus rendering classification unnecessary. "In India more elaborate classification is necessary," and we have seen that in "all the provinces, the separation of males from females, juveniles from adults, tried from untried prisoners, is the rule," besides other sub-divisions noted; and the subject may be concluded in the words of the note: "On the whole, it will perhaps be admitted that the proper principles of complete classification are fully recognized in this country, and are carried out wherever central jails are completed. In the smaller jails, owing to structural defects, the rules are in advance of the system, but even in these jails there is no association between those classes which by universal consent should be kept separate."

6. *Discipline and General Management.*—The treatment of prisoners under trial corresponds with that laid down for the same class under the English Prisons' Act, 1865, and is thus described: "The object of preliminary imprisonment being simply that the accused shall be forthcoming at the day of trial, all reasonable indulgences compatible with this object, and with prison discipline generally, are allowed to this class. They are permitted to wear their own clothes, to cook for themselves, and to communicate with their legal adviser; fetters are only imposed in the case of desperate characters, and when

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* Now [illegible], and [illegible] Jail.

* The proportion of female prisoners to male is thus noted throughout [illegible] India:—

	Year.	Proportion per cent. of female to male convicts in jail during the year.
Bengal Proper	1866	4.3
" "	1867	[illegible].7
Presidency of Bombay	1865-66	4.9
" "	1866-67	[illegible]
Presidency of Madras		No information.
N. W. Provinces	1866	[illegible]
" "	1867	[illegible]
Burmah	1867	2.6

		Proportion per cent. of female to male convicts present on last day of the year.
Punjab	1867	3.2
Oudh	1867	7.4
Central Provinces	1867	6.1
[illegible]	1867	4.4
Hyderabad Assigned Districts	1867	7.2

absolutely necessary for security. No labor of any kind is exacted from them, but a rigid attention to cleanliness is insisted upon." Prisoners under sentence form the greatest bulk of the jail population; their discipline has been conducted on various principles for many years past, and still remains unreduced to any settled system. The primary object of imprisonment is punitive, that it should be a punishment; the secondary is that it should be reformatory; and the third that a prisoner should by his labor contribute something to the expenses incurred by the state for him; but it is one of the great problems of the day how to make punishment punitive and reformatory, and yet to make the convict pay something for his keep. If you make him acquire an interest in his work and allow him to earn too much, you destroy the effect of punishment, and enable him after his release to compete with, and perhaps eclipse, honest workmen who have never had the fortune to be as skilfully taught; and on the other hand, if you do not make the most of his labor, shown by increased annual profit, your management of the jail will not be considered as productive as others compared with it, and is liable to be called in question. The first experiment of making prison labour remunerative would appear to have taken place at the model prison at Pentonville in 1842 in connection with the separate system. Each prisoner was invited to pursue his former trade, or to learn a new one in his own cell; and from the second report of the commissioner in 1844, we learn that profits effected by sale of the products of labour were very large, although "care is taken that the regular manufacturer is not undersold, the prices upon the goods being fixed at the regular market value of similar articles."

The Indian Jail Committee of 1836 "did indeed look to a reduction of the cost of imprisonment, not from remunerative labor, but by adding so much to the severity of the sentence, as to render a shorter term of imprisonment under the then system a punishment equivalent to a longer term under the old system."

The committee of 1864 desired to introduce such discipline into jails as "to make imprisonment a really deterrent punishment." They lay down that "labor is the principal means of enforcing discipline; from it alone is derived the possibility of insisting upon order, punctuality, and that clockwork distribution of time which is so burdensome to the lawless and irregular."

They point out that stringently imposed labour is peculiarly repugnant to men of the convict class, but, says the note, "Setting aside the question of the propriety of the state entering into an advantageous competition with free labor, it may be remarked that to insist so much upon the *remunerative* results of prison discipline is quite opposed to the recommendation of the committee of 1836, and to the English prison system as laid down in the Prisons' Act of 1865."

The note then details the system in all the provinces in India, and concludes—"It would seem that in all the Presidencies, and especially in Bengal, the remunerative theory of prison labour prevails to an extent which makes it very doubtful whether the primary object of the sentence—punishment—is steadily and systematically kept before the prisoner." Since the publication of the paper, the Government of India has noted that as the last annual jail reports (of 1867), especially from Bengal Proper and the Central Provinces, show a tendency to make prison labour so remunerative as to interfere with punishment, local Governments and administrations have been desired to introduce into their jails those particular forms of labor which, while they add much to the severity of the sentence, do, as a matter of fact, contribute also to meet the cost of the prisoner's maintenance.

In Great Britain "it does not appear that any prisoner is remunerative. The net annual cost to the state per prisoner seems to vary from £14 to £69."

The jail codes of the several provinces, acting on the principles laid down by the committee of 1864, divide labor under three classes. 1st hard, 2nd medium, and 3rd light; "the allotment of each prisoner to a class being left to the determination of the medical officer, according to the prisoner's physical capacity." These classes approach nearly to the second form of hard labor contemplated by the English Prison Act, and the first form, which consists of treadwheel, crank, &c, is wisely omitted for the less powerful frames and system of the Indian convict.

We will now note the reformatory agents employed, that is, agents to act as an incentive to good behaviour, in all the provinces of India.

"In Bengal the only rewards open to the prisoners are (1) employment in subordinate offices of the jail as work overseers, convict warders, and convict guards; and (2) the grant of intermediate imprisonment. These rewards are open to all classes of convicts, and are accorded for continued good conduct in prison, but no convict is eligible for the former until the expiry of the prescribed term of labor of the first class, or for the latter until he has completed the prescribed periods of first and second class labor, and has discharged, without fault, the duties of convict overseer, warder, or guard.

The indulgence of "intermediate imprisonment" was founded apparently on Sir W. Crofton's system in Ireland, and is stated to be very highly prized; it was allowed in 18 cases in 1867, against 9 in 1866, and 6 in 1865."

(To be continued).

NATIVE BENEFICENCE.

We are glad to hear that Baboo Doorga Churn Laha, of Calcutta, has made over to Government £5,000, yielding Rs. 3,000 per annum, for the foundation of scholarships, to be awarded on the result of the University examinations, and for certain stipendiary studentships in the Government colleges and schools in Calcutta and Hooghly. Amongst others, we observe a *medical scholarship* for a student who has passed the first B.M. examination, and is preparing for the second examination, tenable for two years; and to be awarded every alternate year. Rs. 30.

Whilst we congratulate the promoters of native medical science in India on this bequest, we confess to experiencing great disappointment that so much should have been given to other subjects, and so little,—one-hundredth only of the whole sum, to medicine. Wealthy native gentlemen cannot do more good with their wealth than in encouraging the youth of the country to cultivate the study of a subject which tends more than any other to amalgamate the races, and to benefit India

[illegible]

Yours, &c.,
PRO BONO PUBLICO.

[illegible]

ORIGINAL COMMUNICATIONS.

◆

SELECTIONS FROM OPHTHALMIC PRACTICE.

By J. B. Scriven,

Principal, Lahore Medical School.

Among the numerous cases of eye disease that present themselves at the Medical school hospital, it appears to me that a few are of sufficient interest to deserve a more public record than that of the hospital case book.

I have therefore selected, for the present communication, the following three cases of opacity of the cornea, relieved by iridesis.

This operation was devised by Mr. Critchett, more especially for those cases of central congenital cataract, in which great benefit was derived from dilatation of the pupil with atropine. It consists in making a puncture, with a broad needle, in the sclerotic, just outside the margin of the cornea, introducing either a hook or forceps through a circle of fine silk, previously laid on the conjunctiva, drawing out the pupillary margin of the iris, and tying the silk tightly round it. The silk is prepared thus ☋ for tying in a half knot, and drawn tight upon the iris by an assistant, with two pairs of ciliary forceps. The result is a displaced pupil, tapering towards the ligature, where it terminates in a point. Such a pupil retains the orbicular fibres of the natural pupillary margin, so that, on exposure to light, it contracts, not indeed uniformly, but towards the fixed point. The advantage of thus retaining the natural pupil, instead of forming an artificial one, is considerable. An artificial pupil, in which the sphincter muscle does not exist, remains of one uniform size, in all variations of the light, so that, if large enough for a subdued light, the patient is dazzled in a bright one, and *vice versâ*. A pupil displaced by iridesis, in affording an adaptation to the light, by its contraction and dilatation, is but little inferior to the natural pupil: and, independently of this, by retaining its concert with the ciliary muscle, in the accommodative action of the latter, contributes greatly to the excellence of vision.

CASE I.

Msheea, admitted March 12th, 1868, aged 40: (Hospital Register XI, p. 124). Right eye blind, bare perception of light remaining. On the left eye there was a leucoma of circular form, extending from the inner margin of the cornea to a little beyond its centre, thus leaving a crescent-shaped portion clear on the outer side. The man could not find his way about, nor recognise his friends. Vision was not altered by a dull or bright light. The small amount of vision that remained was for objects at his left side, in which situation he could count the fingers. After the application of atropine the pupil became well dilated, round, and regular, and he could count the fingers in front of the eye. Iridesis was performed, under chloroform, producing a conical pupil, extending downwards and outwards opposite the clear crescent-shaped part of the cornea. This man was discharged on the 10th of April, on which day I find the following notes:—"Can recognise people now, and can distinguish even their features—eyes, nose, mouth, &c. His sight is somewhat dazzled by a strong light; he is obliged to bring objects near, in order to see them.

Is a carpenter, and says that he has got vision sufficient for his work.

CASE II.

Arjora, a Mahomedan male, aged 20, admitted May 17th, 1868. (Hospital Register XIII, p. 49)

In the right eye this man had a small nebula, in the centre of the cornea, but a good active pupil behind, and tolerable vision for near objects.

In the left eye there was leucoma and synechia posterior. With this eye he could count the fingers, and make out the shape of the letters of No. 8½ Snellen. The vision of this left eye was improved by the instillation of atropine, which broke down the synechia, and dilated the pupil evenly and well.

On the 21st iridesis was performed on the left eye, on the outer side, under chloroform. The result was a conical pupil, opposite the clear part of the cornea, with its angle at the puncture. By this the man's vision was much improved, and he was discharged on June 25th. I regret that the improvement was not accurately ascertained by the test types.

In this case, the pupil being widely dilated with atropine, it was found rather difficult to catch the pupillary margin with the canula forceps so near the puncture; the operation, nevertheless, succeeded very well, but the practical lesson was not to operate again on an eye under the influence of atropine.

CASE III.

Ghaseeta, aged 35; (Hospital Register XII, p. 172). A Mahomedan male, admitted November 25th, 1868. This man was practically blind. There was leucoma of both eyes. The opacity on both sides was thick and circular, about the size of a split pea; that of the left eye was at the lower part of the cornea, of the right at the lower and outer part. In a subdued light he could count the fingers with the left eye, but not with the right.

After the instillation of atropine, he could count the fingers in the shade, and even in a strong light, with both eyes and could see persons standing before him, but could not distinguish their features. The margin of the pupil, which previously, in a strong light, was covered by the leucoma on both sides, now became visible on the left side just above the leucoma, and on the right side at its upper and inner margin. By oblique illumination it was discovered that the lower half of the left iris was adherent to the leucoma and immoveable, but the upper half free. There was no synechia in the right eye, the pupil being round and active.

Iridesis was performed on the right eye, on November 29th, the pupil being drawn downwards and inwards, opposite the clear portion of cornea.

On the 14th of December, an artificial pupil was made, opposite the clear inner part of the cornea, in the left eye, a bit of iris being seized with the iris forceps and cut off. The result is shown in the accompanying sketch.

o, Opacity.

p. Pupil, displaced in right eye, artificial in left.

l. Point of ligature of the iris.

Right eye. Left eye

I had considerable difficulty in trying this man with the test types. He could not read, and lacked either the will or the intelligence to define carefully the shape of Snellen's figures. He could see all the objects around him, however, and distinguish many of their details. He recognised a tree, seen through the window, as a peepul. The right eye, with the displaced pupil, was decidedly the best, although there had been more vision in the left before the operation. With the right eye he could make out certain figures, which were drawn for him, ⅛ inch in diameter, at three inches distance; he could do the same with the left eye, though less perfectly; at four feet distance made out No. 50 Snellen, though not very accurately.

The reason of my operating on this man's left eye by iridectomy, when iridesis had succeeded so well in the other was that, in the left, the iris was partially adherent; a free pupillary margin is essential to the success of iridesis.

In the three foregoing cases I used the canula forceps to draw out the iris, as it is much more certain than the hook.

In this operation, no blood gets into the anterior chamber; a mere drop may escape externally from the puncture in the sclerotic. Almost no irritation is set up, and the ligature generally comes away of itself in seven or eight days. Chloroform is absolutely necessary to secure the complete quietude of the patient. Marked improvement of vision, on dilatation of the pupil by atropine, may be taken as an index of its applicability, whether in congenital cataract, or in opacities of the cornea.

[illegible], January 28th, 1869.

REMITTENT AND CONTINUED FEVERS

By T. Farquhar, Esq., M.D.

These are the names given to two classes of disease, which in Dr. Bryden's statistical returns are made to include all the forms of fever (except intermittents) to which the army and prisoners are subject in India.

The principal differences between the symptoms of the three fevers are well expressed by their names, and the belief has been generally entertained that they are all of malarious origin, and of a non-contagious character. This idea is strongly supported by the observation, that intermittent fevers, which are certainly produced by marsh miasm, sometimes appear to pass into fevers identical in their symptoms with remittent and continued fevers; and again that, during convalescence from these severe forms, symptoms of ague will shew themselves.

These fevers, too, are more or less curable by quinine, the great antidote, and at the same time indicator, of malarious types of fever.

Dr. Bryden's valuable tables for the last four years, however, give us data on which to found an opinion that these fevers sometimes occur in an epidemic form. They either then assume the characteristics of a specific form of fever, or, under the cloak of the names of remittent or continued fevers, another distinct type of disease is developed.

That a specific fever of a mild type does frequently occur is more than probable from the observation that severe fevers are most abundant at those seasons of the year when, from the comparative absence of intermittents, we know that marsh poison is not most abundant.

Like small-pox and epidemic cholera, this specific fever chooses a particular season of the year, (usually the hot or beginning of the rains,) at which time it is most freely developed. Like these, too, it exists in an epidemic form for only three or four months at a time, though exceptions to this rule are not unfrequent. Again, one regiment or body of men at a station is seen to suffer, while the rest have comparatively very few cases.

Sometimes, again, the disease seems to stick to particular corps for [illegible] years, impairing their efficiency materially; and a regiment frequently carries the fever apparently from one station to another, or a newly-arrived regiment will pick up the fever at a station where it prevailed immediately before their arrival.

An instance of the former was seen in H. M. [illegible] Foot, which [illegible] fever at Dum-Dum in 1865, and 10[illegible] [illegible] at Lucknow; of the latter [illegible] occurred [illegible] H. M. [illegible] Foot, which in 1866 had [illegible] cases at Jubbulpore, [illegible] 101 [illegible] at Dum-Dum in 1866 [illegible] after that station had [illegible]

Another [illegible] interesting [illegible] the season of the year at which they occur [illegible] the general [illegible] heat, [illegible] Europeans, [illegible] it cannot be doubted [illegible] the development and [illegible] attacks [illegible]. That [illegible] not, however, the only cause of these epidemics must be concluded from observing the irregularity [illegible] months during which they reach their acme. Thus, [illegible] twenty observations, the number of admissions reached its height four times in October, three times in September, and thirteen times between April and July. These fevers, again, occur severely in a station during one year, and lightly the next.

[illegible] point however, of practical importance in regard to this fever is the relative numbers of admissions into hospital from among the different bodies of men under review.

They stand thus :—

		Per cent.
Europeans ..	.. 8,578 or	10.17
Prisoners ..	.. 2,42[illegible] or	4.42
Native soldiers ..	.. 519 or	1.33

This remarkable difference between the sufferings of these men is not confined to the year 1867, but is seen to exist in much the same proportion during all former years of which we have record. It is the more remarkable as we see the same classes of men suffering in the very opposite ratio from strictly malarious fevers.

The cause of this remarkable difference must be sought for most probably in the modes of life of the classes referred to. The susceptibility of the European to the effects of extreme heat must not be overlooked, but that something else must be blamed is concluded from the fact, *first*, that we see this form of fever among Europeans living in cool hill stations as well as in the plains, and in the comparatively cool month of October as well as in May; and, *second*, from the very large disproportion between native prisoners and sepoys who suffer attacks.

The differences in habits of the three classes are seen principally in this, that Europeans and prisoners live always in barracks, and use common latrines. The latter of these have been conclusively shewn in England to be a dangerous cause in the propagation of typhus and typhoid fevers, and of [illegible] probably resembling the one we are now noticing. The sepoys, on the other hand, live only partially in barracks, and these commonly very open. Besides this, at the season when the fever prevails, most of the men usually sleep outside. The sepoys, again, can with difficulty be got to frequent the public latrines, which are provided for them at a few of the Bengal stations.

There is in addition a great amount of segregation in the case of sepoys. This is independent of military regulation, but dependent on their habits and caste prejudices, often more binding than any other law; instances of this need not be enumerated, but on examination they tend to explain the immunity such men have always had from contagious diseases.

The system of herding men together in large barracks seems most, from the data afforded by this fever, to be condemned as unwise [illegible] which is strongly supported by the [illegible] that moving Europeans into camp during epidemics [illegible]. It was [illegible] the exposure in tents was not [illegible] anticipated. On the contrary, the [illegible] were greatly diminished in numbers [illegible] sanitary effect of abandon[illegible] barracks.

Another [illegible] interest is an examination of the [illegible] 1867 [illegible] these fevers. This reveals the fact [illegible] deaths to admissions among Europeans was far [illegible] than among either prisoners or sepoys.

The figures for 1867 [illegible] :—

	Percentage of deaths to admission.
Europeans ...	1.88
Native Soldiers ...	7.71
[illegible] ...	[illegible]

showing that, in the last year, the Europeans died at the rate of only one-seventh of the other two classes.

The records of the three previous years shew how this immunity from death is no new feature in regard to Europeans —

		Died per cent. of admission.
1864.	Europeans	2·16
	Native Soldiers	7·89
	Prisoners	13·26
1865.	Europeans	1·86
	Native Soldiers	8·88
	Prisoners	14·56
1866.	Europeans	1·97
	Native Soldiers	6·48
	Prisoners	13·83

The first explanation that naturally occurs of this is, that the European is probably more carefully nursed in his attacks of bad fevers than either the sepoy or the prisoner, as also that his more stimulating food enables him more effectually to resist their attacks.

A reference, however, to the preceding years shews that this will not account for the whole of the difference in the mortality. We see that in the jails a continuous high rate of mortality prevailed for three years, 1864-65-66, but fell to one-half in 1867. We are told in a note to Dr. Bryden's tables, that what he calls "Jail fever" prevailed in a number of the jails, especially up-country, and to this he attributes the high rate of mortality.

This so-called jail fever, however, passed as a scourge over the upper provinces among the village population; it had only then to be introduced into the barrack of a prison to find a ready means of extending its deadly influence.

The heavy mortality of the sepoys may probably be put down to this fever also, for, from mingling freely with the population, they would readily catch it, as to Europeans, from their mingling so little, they are necessarily cut off to a great extent from contagion, and thereby escape.

Other fevers, as the spotted typhoid and typhus, have shewn themselves lately in India, and are a formidable addition in the classes of disease to be combated.

The mortality from the present fevers among Europeans speaks of the mildest type being as yet in their ranks. Even the mortality in prisons in this last year is less than the death-rate of fevers prevailing in England,* but we have the ratios doubtless lessened by the presence in jails of milder types, including the purely malarious.

Admissions from remittent and continued fevers in the following years.—

1858	33,829
1859	25,316
1860	17,138
1861	12,334
1862	9,339
1863	5,940
1864	4,348
1865	5,945
1866	4,312
1867	3,518
	122,019

The conclusion from the above is, that those continued and remittent fevers which during the last decade have sent 122,019 Europeans into hospital, are very serious evils, the prevention of which demands the most serious attention.

At the same time we rejoice to see from the table in the margin, that the general measures adopted during the decade for the housing and improving the condition of the soldier have worked an increasing change for the better in regard to these fevers; especially is it observable that this last year has had the fewest number of admissions.

From the first half of the decade we see how much the privation and exposure in the field, and in bad barracks, of the large newly-arrived English army, ignorant of the country and unacclimatised, caused attack of severe fevers. The gradual diminution, too, of the British force in the country, and the consequent increased accommodation, must be considered when we account for the reduced amount of "pernicious" fevers, a like result followed the reduction of the French troops in Algeria.

1858	2·15
1859	1·23
1860	1·21
1861	1·16
1862	1·27
1863	1·46
1864	1·97
1865	1·86
1866	1·97
1867	1·84

The percentage of deaths to admissions from remittent and continued fevers is seen in the table in the margin; it has varied little, but has been higher for the last four years than in the four preceding.

We learn from all this the necessity for having good barracks, and the value of peace; we see also how many bad fevers must be the result of extremes of heat, and the necessity there is of keeping the soldiers as cool as possible in their barracks. The question now is whether the very large barrack rooms are the best arrangement for enabling us to keep the temperature in them down to a reasonable degree. The answer to this is, without doubt, that it is far more difficult to cool down, and keep cool, a body of air 36,000 feet in extent, than one of 7,200 feet; the former is the total of the latest built barrack room for 20 men, the other would be this room subdivided to hold four in each division. The smaller rooms would certainly be kept the coolest by the means at present employed, the *tattie*, and would also enable doors to be more closed and kept so, for the doors of large barrack open at all hours allows the building to get thoroughly heated, and thus the soldier lives in a high temperature to which his officer is not exposed.

2nd. On looking over the list of fevers in every month, we see remittent and continued fevers mentioned in each; now we know that some, if not most of these fevers, are exaggerated cases of intermittents. Here we have miasm to deal with, and know that sub-soil drainage is our best hope of freeing the men of this influence.

3rd. Specific fevers, mild and severe, are no doubt in and around our barracks; ***segregation*** is no doubt our chief means of avoiding these. When they do enter a barrack, the same means on a small scale as are employed in epidemic cholera, are called for here. We have seen the success of moving into camp, unattended by the privation of a campaign. Minor means should, however, be first tried to free the barracks of the contagion before the dispersion of camp life is enforced. Much could doubtless be done by turning the men into tents* for the night, on the parade-ground or a short distance from the barracks, and having these and the spare clothes of the men fumigated with sulphur fumes, while the linen, wood work, and the walls are washed and whitened. The latrines should also be thoroughly cleansed and fumigated in the same way, and kept under the influence of the fumes while traces of specific fever existed.

A revised and more distinguishing nomenclature of fevers in the medical returns would give a far more correct idea of the nature of the diseases that have to be dealt with, and the means required for their relief. As an instance of this we see in the

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*	Percentage of death from fevers.
St. Thomas, London	10·0
St. Georges, London	11·3
King's College	18·29
Newcastle	11·54
Nottingham	12·78
Birmingham	14·08
Bristol	9·17
Edinburgh	11·61
Glasgow	11·56
Aberdeen	9·27

* I saw this tried in an out-break of fever in the Lahore jail in 1863, while in tents, the men continued to suffer from the contagious fever, because they were huddled very close together. The cleaning of the barracks seemed, however, to stop the fever at once on the return of the prisoner after a few days' absence from the jail.

[illegible]

NOTE ON EMBELIA RIBES, AS A REMEDY FOR TAPE-WORM.

By JAMES [illegible], M.D.,

[illegible]

[illegible]

[illegible]

ON THE BITE OF THE SEA-SNAKE.

[illegible] F. DAY, Esq., M.D.,

[illegible]

[illegible]

[illegible]

A SUCCESSFUL CASE OF VENOMOUS SNAKE-BITE.

By C. F. COSTELLO,

[illegible] *Punjab Cavalry.*

[illegible]

[illegible]

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* [illegible] snake left no doubt [illegible]

suffering from all the symptoms of severe shock, and the neighbourhood of the bite was red and swollen. A ligature was immediately tied around the right leg, and a good dose of brandy and sal volatile administered. As soon as he had somewhat recovered from the shock, the track of the snake-bite, and the skin, and muscles, &c., encircling it to the extent of a quarter of an inch, were carefully dissected out. Strong nitric acid was then well applied to the wound, which was afterwards covered with a linseed meal poultice, to be renewed every three hours. When all this had been done, the ligature around the leg was removed. Ten minimms of liquor ammoniæ were ordered to be given every three hours.

After the first twenty-four hours, he had completely recovered from the shock. He then, however, began to pass blood in very large quantities from the nostrils, gums, stomach, bowels, and kidneys. To relieve this, twelve minimms of tincture of the sesquichlorid. of iron were given every two hours, with occasional doses of brandy, well diluted, as his pulse was sinking. A very decided impression was made in the hæmorrhage after the first four or five doses of the *tincture of the sesquichloride of iron*. On the second day of its administration, the blood was confined to the urine, and on the fourth day, it had ceased altogether. He was discharged on the 20th December, but continued as out-patient for weeks afterwards, as he had become quite anæmic, owing to the great loss of blood he had suffered.

THE PEKING HOSPITAL.

By R. Harvey, Esq., M.B.,

Civil Surgeon, Bhurtpore.

Apropos to the remarks on medical missionaries in the last issue of the *Gazette*, and to the recent debate on China Missions brought on in the House of Lords by the Duke of Somerset, a brief sketch of the operations of the Peking Hospital, in connection with the London Missionary Society, may be interesting to our readers.

The Hospital—the object of which "is to alleviate suffering by curing disease, to gain the affections and confidence of the people, and to prepare the way for the more extended introduction of Christianity and Western Science"—was established in 1861 by Mr. Lockhart, Surgeon to Her Britannic Majesty's Legation, and has been carried on since the beginning of 1864 by Dr. Dudgeon, the present Physician to the Embassy, whose reports for 1864, '65, '66, and '67 are now before us.

Situated at first in the legation buildings, it speedily became popular in spite of the suspicions of the authorities; but the original premises being required to accommodate the increasing staff of the Embassy, a temple in one of the leading thoroughfares of the Tartar or Northern City was engaged and fitted up in 1865. The consequence of this removal to a better site in a more populous quarter has been a great increase in the attendance—the number of new patients having risen from 3,007 in 1864, to 8,066 in 1866, and 5,722 in nine months of 1867.

The diseases treated, as shown in the tabular statements appended to the reports, embrace almost all "the thousand natural shocks [illegible] to." The ophthalmic practice is perhaps the [illegible] and seems to be Dr. Dudgeon's *specialité*. The [illegible] dust-storms, the dirty habits and strumous constitution [illegible] of the Chinese, joined to the [illegible] of everting [illegible] the eyelids, are the chief causes of the [illegible] diseases. Operations for the cure of entropium and [illegible] have been both numerous and successful, and [illegible] produced a very favourable impression on the people.

Many eyes are lost [illegible] small-pox, which disease is exceedingly prevalent and fatal [illegible] and in bad cases, as many as 50 to 60 per cent. of those attacked dying. This is not to be wondered at, when the [illegible] of the population, the crowded and ill-ventilated houses, and the total absence of all sanitary measures are considered. It may, in part, be due to the peculiar susceptibility of small-pox said to exist in the dark-skinned races, but we are inclined to believe that this statement has been received on too little authority, and is one of those hasty generalizations which will crumble to pieces when properly examined by the light of reliable statistics.

Vaccination was introduced into China in 1805, by Mr. Pearson, a surgeon in the H. E. I. Company's service, and has been partially taken up by the natives, its advantages being readily admitted. In Peking itself, it was first practised on a small scale by the Russians, but in 1828, the Prefect Tseng had a tract published, stating its object and the benefits which it conferred, and three vaccine establishments were opened by the Government. These still exist, and appear to be well-conducted. Attendance is given every eighth day, the operations being done from arm to arm with fresh lymph, and a donation of from two pence to nine pence is given on the second visit, as an inducement to the people to attend and thus perpetuate the lymph supply. At the principal station in 1863, 6,030 vesicles were produced from 7,374 insertions of lymph—a fair success in native hands. The apathy and fatalism of the Chinese causes a very general neglect of the use of the prophylactic, and Dr. Dudgeon calculates that not more than from four to eight per cent. of the children annually born are ever vaccinated. The ravages of small pox are therefore little mitigated, and it is rare to see an adult chinaman who is not marked with the characteristic pitting. The discovery of vaccination is ascribed to the western barbarian Chan-na (Jenner). Believing that the poison of small-pox resides somewhere near the insertion of the deltoid muscle, minute directions and diagrams are given to show how the counteracting lymph is to be applied. The diet is strictly regulated. "The smells of whiskey, opium, heated kangs (sleeping places) and dirty or decaying matter" are to be religiously eschewed. "For at least 100 days after vaccination, cocks, certain kinds of fish, beef, eggs, beans and bean-flowers are to be avoided. For three years after vaccination, buck-wheat and cherries are to be shunned, the things enjoined are vegetables, pork, and salted ham. Three days after vaccination they are allowed to eat shrimps with rice, spirit, mongolian mushrooms, and mutton; and only in winter must birds's nests, steamed with sugar-candy, be eaten. The vaccinator at the principal establishment was presented with a crystal button from the Board of Revenue." Happy vaccinator.

Inoculation has been practised in China since the time of the Tung Dynasty, or for 800 years, and there can be little doubt that it was carried across the pleateau of Central Asia to Turkey by herds of nomadic Tartars. Not more than one per cent. die of the inoculated disease.

Fevers, especially intermittent, are of rare occurrence. Rheumatism and neuralgia, with coughs and colds, are very common, as might be predicated from the extremes of temperature of the Peking climate. Skin diseases are rife, and are kept up and intensified by the crowds of beggars who, in the winter, huddle together for warmth. They are thought little of, and indeed seem to be rather valued as a means of exciting compassion and extracting alms, and the beggars often refuse to submit to treatment from a fear of losing their small chance of a livelihood. Dyspepsia is the most common of all the *medical* diseases. It is to be ascribed to the sedentary habits, peculiar local customs, and unsuitable dietary of the chinese. The popular food seems to be principally "raw and pickled vegetables, unripe fruit, insufficiently and badly-cooked meat, sauces, condiments and sweetmeats, excessive use of tea and warm water—cold water is unknown as a beverage—and immoderate use of alcoholic liquors, opium and tobacco.' The use of warm instead of cold water to drink is considered a wise one, the people being careless as to the source of their supplies. To this [illegible]

[illegible]

[illegible] Chinese [illegible] great [illegible] These, even [illegible] known thing [illegible] anatomy [illegible] and pathology, have [illegible] what [illegible] of disease. The [illegible] is a very favourite remedy, but the universal [illegible]. This is practised in almost all diseases, and with a truly reckless[illegible] which must cause many deaths. It is [illegible] commentation that [illegible] which is driven six inches [illegible] stream for the cure of [illegible] headache," [illegible]

The [illegible] of opium smoking [illegible] as was to be expected, a good many [illegible] in these reports. At first (Report for 1861) Dr. Dudgeon seems to have estimated the evil effects of the habit at much less than they are usually assumed to be. "The opium smoker will bear a favourable comparison with the drinking customs at home. It does not produce the intoxication of ardent spirits. The opium smoker is not such a nuisance to the community and his family." In his last report, however—that for 1867—he says, "It (opium smoking) still continues to be the bar to all progress and happiness, spiritual as well as temporal," [illegible] opium smokers [illegible] not the best subjects for progress. [illegible] present [illegible] gods to their [illegible] of mankind." [illegible] Dr. Dudgeon's [illegible] misery and [illegible] of opium [illegible]

[illegible]

Whatever [illegible] truly terrible [illegible] [illegible] practise of [illegible] There is something [illegible] by the [illegible] closed [illegible] the human race—[illegible] forbidden [illegible] which [illegible] Yet [illegible] under Dr. Dudgeon's care. In place of the [illegible] mandarins [illegible] which [illegible] many occasions, brought [illegible] Chinese mathematicians, and in [illegible] instance [illegible] at Yung-Chow-Foo in August last [illegible] war—the Hospital [illegible] with the [illegible] authorities, and the good which it does to the body is apparently considered to counterbalance the evils of the [illegible]. More than one high mandarin of [illegible] has been brought to acknowledge the [illegible] treatment, and the numbers [illegible] patients—[illegible] testify to the appreciation by the people of the benefits derived from [illegible] services.

The [illegible] for several hours, and in 1867, [illegible] with the [illegible] auxiliary aid to the [illegible] with special [illegible] The whole history of the early [illegible] physician [illegible] indeed, that it was [illegible] a point which [illegible] by Christ [illegible] of the [illegible] was a matter as much of [illegible] Otherwise, working out his [illegible] way—in [illegible] by the Roman [illegible] and the hatred [illegible] him and his [illegible] have collected to [illegible] heard him gladly." So with [illegible] especially St. Luke, [illegible] Indeed, the [illegible] of Christianity, [illegible] among [illegible] that they were [illegible] generally [illegible] Christians, [illegible] The wandering physicians [illegible] and Egypt in the second century, are also plausibly supposed to have been propagandists of the new faith, who had adopted the healing art as a blind, or rather as a readier avenue to the hearts of men. All history teaches us the influence of the physician, from the first empirics dealing out samples by guess-work, to Sir Samuel Baker, administering his tartar-emetic to the savages of the upper Nile; and points to the greater utilization of this influence in mission work. That the union of the missionary and the physician will be more intimate in future, we are convinced; and when it is—when education and modern civilization have broken down the old barriers of ignorance and superstition—when physicians, gentlemen, shall preach to "*goodwill to men*"* with hearts made tender through suffering, and grateful for suffering relieved, the grand truths of Christian morality and love, we shall hear less of gun-boats and more of results. Then, and not till then, may we look to see the nations flocking to the Christian fold, from the East and from the West, from the North and from the South.

CASES FROM PRACTICE.

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ARM PRESENTATION. VERSION FIVE HOURS AFTER RUPTURE OF THE MEMBRANES.

By J. N. Fleming, M.D.,

Civil Surgeon, Nimar.

Gauré Mulár, aged 23. Third confinement. The two previous ones normal.

February 4th, 1869.—Called to see her at 12 noon. Was told that she had been in labour from 11 p.m. (13 hours), and that at 7 that morning, on the escape of the waters, a hand had come down. On arrival, found the hand, and flexed forearm at the vulva, extending the forearm brought the hand completely out. Examination showed it to be the right hand; that the shoulder has pressed low down into the pelvis; and the child lying with its belly anteriorly and head to the right. The waters had completely escaped, and the uterus was firmly contracted on the child, the form of which could be distinctly felt through the abdominal parietes. The pains had, however, entirely ceased, and the patient was free from fever.

Having placed her recumbent on a charpoy (she had, up to my arrival, been sitting on the ground), I succeeded in passing my hand along the child's arm and chest, and in reaching one of the feet. This was (with some difficulty) brought down, but, for a considerable time, the child remained fixed, although steady traction was made. The native doctor was then directed to assist the "version" by external pressure in the direction required, and, in a short time, I had the satisfaction of feeling the child move distinctly, while the hand receded inside the vagina, and the irregular form of the mother's abdomen disappeared.

The patient was now allowed to rest for a short time, and then told to bear down with the pains which had returned slightly. In about half an hour the child was born, in a half breech position, its back anterior. The afterbirth followed almost immediately.

The child, a female at the full time, was dead but not decomposed. The cord was twisted round its neck.

February 5th.—Was unable to see the patient again till to-day at 5 p.m. My native doctor had, however, seen her in the morning, and, finding her fevered, had administered an ounce of castor oil.

At my visit found her in a high fever; pulse 130; skin hot and dry, and complaining much of thirst. The uterus, however, was not unusually enlarged, and only slightly tender on pressure. Oil had not operated. Ordered her to be taken at once to hospital (she was in a wretched hut outside the town), to have one ounce castor oil with four ounces tepid water administered as early as possible by enema, and afterwards opium gr. j. Pulv. Jacobi, ver. grs. iij.

February 6.—Found her this morning very much better. Pulse 96; skin cool; and no tenderness over uterus. Bowels had been relieved twice by the enema, and she had slept pretty well. To be kept on low diet, and have opium and antimonial powder in half dose at bed-time.

Recovery was now rapid; and on 11th February she was discharged well.

A CASE OF EXTENSIVE INJURIES OF THE HANDS, AND A SUCCESSFUL CASE OF RHINOPLASTIC OPERATION.

By Gopaul Chunder Roy,

Teacher, Nagpore Medical School.

The following case is presented for publication, to show how, in extensive injuries of the fingers, nature can be relied on with advantage. In fact, the injury was so violent in this instance, that I only deferred the amputation to observe the extent of gangrene which, I thought, would certainly set in within 24 hours.

Nulah, aged about 25 years, was brought to the Nagpore City Hospital on the 26th July, with laceration of both hands caused by their being crushed under a heavy loaded wagon whilst working in the line of the G. I. P. Railway. The accident happened at a place about five hour's journey by rail from Nagpore, and consequently much blood was lost before any surgical assistance was obtained. The injuries he sustained were the following:—Right hand—the phalanges of the thumb and the head of the first metacarpal bone were smashed, and the broken bones protruded through a lacerated wound on its outer aspect. Tendons were not divided. There was compound-comminuted fracture of the second metacarpal, and much extravasation of blood on the dorsal aspect of hand, producing a diffuse boggy swelling. Middle finger lacerated anteriorly. Besides, there was a large lacerated wound on the inner aspect of hand over the hypothenar eminence, dissecting off a flap of skin from the palm, and exposing the palmar branch of vessels and nerves.

Left hand—ring finger was smashed to a pulp down to the first phalanx, and the head of the metacarpal bone of the middle finger comminuted. A lacerated wound over the first interosseous space completed the extent of the injury.

Except removing the left ring finger with the head of its metacarpal bone, which was irretrievably damaged, I had recourse to conservative surgery. I removed all the crushed detached phalanges of the right thumb by enlarging the wound, carefully avoiding cutting any tendon, and left it boneless. Other loose pieces of bone were dealt with in the same way, the wound was stitched up to keep the flaps in position, and dressed with oil and carbolic acid. Both hands swelled and inflamed and threatened to be gangrenous, the extravasated blood suppurated, but the parts were slowly healing by granulation, when the patient absconded on the 15th August.

At the time of his disappearance it was noted that the mobility of the thumb and fingers were partly retained, and I have no doubt that much of the motion will return in time when the effused lymph disappears by absorption, and the man will have better and more useful fingers in place of no fingers at all.

A SUCCESSFUL CASE OF RHINOPLASTIC OPERATION.

The next is a case of Rhinoplastic operation performed in the person of a woman, named Jankee, aged 17 years, admitted on the 7th March at the 5th month of her pregnancy, whose nose was cut off by her paramour in a sudden fit of temper. The [illegible] were cleanly [illegible] downwards [illegible] the bridge of the nose, and in the downward sweep the anterior portion of upper lips was sliced off to the [illegible]. I thought to lose no time in completing the operation, but I was obliged to delay for two days for want of [illegible], in which I took a flap from the forehead, and operated [illegible] to the Indian method.

I had [illegible] to join a fresh flap with [illegible], but, [illegible] the disadvantage, [illegible] the [illegible]. The skin at the tip was [illegible]. After her recovery, the skin of the [illegible] and the nostrils, which were [illegible] from [illegible], were [illegible]. She left the hospital on the 21st August with a good nose.

Nagpore City Hospital, 9th September, 1868.

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* Gloria in excelsis Deo, et in terra pax, *hominibus bonæ voluntatis.*

The Indian Medical Gazette.

Notices to Correspondents.

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[illegible]

[illegible] Native Doctor. [illegible]

[illegible]

G. A. W[illegible]

[illegible]

INDEX FOR 1868.

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The above is now ready, and we shall feel obliged by subscribers intimating whether they wish it sent loose, or whether they prefer to return their Nos. for 1868, and receive in exchange a bound volume complete with the Index. The cost of binding will be Rs. 2-8.

WYMAN & CO.

[illegible]

THE INDIAN MEDICAL GAZETTE.

[illegible]

It may be interesting [illegible] our literary [illegible] sources from which the supplies [illegible] the [illegible] are drawn.

During the past twelve months there have been about 158 [illegible] "cases from practice," [illegible] perhaps [illegible] the same [illegible] the [illegible] may be thus resolved:—

131 From medical officers of the Bengal army.
3 From [illegible] of the British army in Bengal.
2 From officers of the Madras army.
5 From [illegible] assistant surgeons in Bengal.
2 From [illegible] in medical charge.
15 From sub-assistant surgeons in Bengal.

Further, there were 77 editorials or leaders on different subjects of general medical interest; 62 reviews of books; [illegible] each number contained an epitome of the latest state of science in Europe with notices of all new [illegible] and generally a letter on the latest [illegible] medical intelligence.

The amount of original matter thus published is a subject for congratulation [illegible] perhaps the almost single source from which [illegible] comes. One of the main objects in the establishment of this journal was to make it general [illegible] Medical Service of India, and while it must be very gratifying to the officers of Bengal to find that they [illegible] its pages, we [illegible] the absence both of subscribers and contributors among the Medical Officers of the British army in India, and of those of the Madras and Bombay presidencies. We need the assistance of all; let us again urge those who have been hitherto lukewarm to come to our aid and [illegible] so that this the only periodical of its kind in India may be [illegible] from all the Presidencies, and thus improve the position of a journal which has gained a name and respect for itself, not only wherever it has reached in India, but in England and abroad. If the late editor [illegible] of the success of [illegible] is due [illegible] our paper prominently [illegible] the Editors of the [illegible] London Medical Journal, with which we now regularly exchange [illegible] which frequently extract matter from our columns.

We note with very great pleasure that in the list of contributors, there are 23 sub-assistant surgeons in Bengal, and 10 in Bombay; also that among the [illegible] contributors of the last year there are 15 [illegible] Bengal. We would beg them to keep [illegible] the practice of contributing. They have one of the [illegible] and as they become more practised writers, their papers will [illegible] in interest and instruction.

We know that the [illegible] of the Editors [illegible] the profession, but with [illegible] numerous contributors, their labour would have been [illegible] in the [illegible] form, we can point with pride to many practical and useful papers.

We hope we may be able to keep up the reputation for [illegible] that the journal has already gained; and while the [illegible] of medicine and surgery are daily advancing, it will be our [illegible] to contribute to that progress with [illegible] we possess.

HILL STATIONS IN BENGAL.

Our attention has been drawn to a letter from Dr. Beatson, formerly Inspector-General of Her Majesty's hospitals in the Bengal Presidency, published in the *Lancet* of the 13th February last.

Dr. Beatson writes—"When I left India in 1868, the amount of accommodation (in hill stations) was much the same as I found it on my arrival in Bengal in 1863." The sentence expresses truth; but the substance hardly gives the idea of the progress that is going on to establish British troops in the hills, as the result of the conference on the strategetical positions of the army that took place in 1865.

We have been at some pains to find out the number of men and families who were in the hills during 1866; we can now show also the number who will reside in the hills during this summer of 1869, and the probable number that will be sent there in the two following years.

In the hot weather of 1866, there were 4,256 men and 206 families resident at the different hill stations, including 1,051 men who were employed as working parties on several hill roads.

In the course of the summer of 1869, there will be 5,501 men and 180 families accommodated in the hill stations, including 1,450 men employed as working parties; or, using figures of comparison, in 1866 there were 11·5 per cent. of the troops housed in the hills; in the ensuing summer there will be 18 per cent. And although this only shows an extension of barrack accommodation for 746 men, it does show that increase, and also that there are 271 more families provided for now than was the case two or three years ago.

We can thus summarise the present state of progress :—

At Raneekhet, a newly-planned hill station near Nynee Tal, 200 men are to be accommodated this year; but it is believed that quarters for a full regiment, and probably a convalescent depôt, will be shortly sanctioned; and it may reasonably be expected that two years hence upwards of 1,000 men will be there provided for.

At Chakrata, another new hill station, three marches from Landour on the road to Simla, provision has been made this year to house 850 men and 10 families, while it is understood that sanction has been asked to establish a convalescent depôt there also, which, within the next two years, will provide for at least 500 more. At Darjeeling, where, from the decay of old buildings, only 184 men and 30 families can be sent this year, new barracks have been commenced to shelter a full wing of a regiment (450 men), and two years hence will see that number settled there. At Dalhousie, barracks are building for 500 men, of which two will be ready before the rains this year, and 150 men will be sent to occupy them; the remainder of the buildings will be completed before the rainy season of 1870; it is also projected that a convalescent depôt should be established here as well.

We thus show positively that next year at least 350 more men will be added to the number—5,501—of this year, and that in the summer of 1871 an addition of at least 2,000 men will take place to the figures already given. During the next year also it is very probable that the strength of working parties in the hills will be further increased.

We should like to see this occupation for soldiers more rapidly extended; from the earliest times, soldiers have been utilized in this manner, and always with the greatest advantage; the value of troops so inured to work was illustrated last autumn in the men who, hardened and seasoned by labor and camp life, took their place in the Hazara campaign, and suffered nothing during their exposure in it.

Working parties, who numbered 1,051 in 1866, will number 1,450 in 1869, and there is no reason why a progressive increase should not go on. The present Commander-in-Chief initiated the system when in command of the Bombay Presidency, and he is still well known to be a warm advocate of the practice; the system also is being looked on with more favorable eyes by Government, as the results have proved so satisfactory in regard to the health and conduct of the men, and as the products of their labour has proved to be so profitable.

It has been stated above that 18 per cent. of the troops in Bengal will be accommodated, or employed, during the present year in the hills: and if we take the strength of the army as it at present exists, and calculate accordingly, we shall find that during 1871, 24·7 per cent. will be quartered in them during that year: this figure, moreover, does not include a certain increase in the number of families sent up from the plains, and a probable increase in the strength of the working parties.

The Royal Sanitary Commission at first proposed that at least 20 per cent. of troops should be in the hills; that amount will be exceeded the year after next. More recently, however, that commission considered that not less than one-third of the troops should be accommodated, and that the remaining two-thirds should regularly have their turn. Dr. Beaston's views have ever been "that nothing short of hill accommodation for at least one-third of the British force in Bengal will keep that force in good health and in thorough military efficiency;" and, again, "every regiment, I conceive, should spend the first two years of its Indian service in the hills, and afterwards two years in the mountains for every four years in the plains; with such an arrangement, every regiment landing in India might pass through its ten years of Indian service without being seriously impaired in health."

We fear that there are no measures in operation to bring the percentage up to 33·3, or the one-third required by the most competent authorities. No signs are evident of any sites being examined for new stations, or for any such increase to existing ones, and beyond the possible augmentation of working parties in huts or camps, and the probability of more families being provided for, we do not see a prospect of the 24·7 per cent. being exceeded for some years to come.

On looking back, we cannot shut our eyes to the fact of how little use has comparatively been made of our mountain ranges. Authorities in England, and unprejudiced observers in India, cannot understand why, having such climates at our command, we have not utilised them, and kept a much larger force of men there, who could well have been spared from the plains; the only excuse that can be urged is, that they have not understood the financial and political difficulties of the subject.

The time has now arrived, however, for seriously considering the extension of hill stations; as predicted by Sir Ronald [illegible] Royal S[illegible] [illegible] the [illegible] [illegible] system [illegible] kept [illegible] permanently [illegible] hear [illegible] twenty [illegible] Dr. Beatson remarks, "[illegible] has been [illegible] tenaciously [illegible] of having [illegible] British [illegible] and [illegible] His [illegible] yet now [illegible] way to [illegible] the [illegible] will also [illegible] country being [illegible] in climates [illegible]

[illegible] that there was a much larger proportion [illegible] under the govern[illegible] than there exists now under [illegible]

The [illegible] shows the hill stations in use before 18[illegible]7, with [illegible] occupation:—

1. [illegible] in 1828.
2. S[illegible] regiment, [illegible] occupied about 18[illegible]
3. K[illegible] a convalescent depôt, occupied about 1842.
4. D[illegible] occupied about 184[illegible]
5. [illegible] occupied about 184[illegible]
6. M[illegible] depôt occupied about 1851.
7. D[illegible] two barracks, occupied about 1851.

W[illegible] strength of 19[illegible] in the B[illegible] [illegible] strength in [illegible] of 118, [illegible] at each [illegible] was established.

At [illegible] years [illegible] 18[illegible] was only 11[illegible] it would be about [illegible]

T[illegible]

1. [illegible] in 1858 [illegible]
2. [illegible] about 186[illegible]
3. [illegible] regiment, [illegible]

[illegible] expedient [illegible] expenses [illegible] and otherwise [illegible] the country.

With more [illegible] in the hills, and the [illegible]

[illegible] Dr. Beatson, [illegible] to the [illegible] plains [illegible] the system [illegible] stronger, [illegible] mental [illegible] now [illegible] the depôts [illegible] present [illegible] very strong [illegible]

A[illegible] must [illegible] Dr. [illegible] Dr. Beatson's [illegible] the barrack [illegible] barracks [illegible] Government has spent [illegible] expense in the barracks [illegible] with them [illegible] We [illegible] think [illegible] the Government [illegible] state [illegible] because there [illegible] places [illegible] exist [illegible] are [illegible]"

A[illegible] must ever be stationed in the [illegible] Government [illegible] with the view [illegible] saving in the [illegible] to give [illegible] known and [illegible] will not [illegible] years [illegible] that [illegible] or two, they [illegible] required.

We [illegible] without remark, a reply to Dr. Beatson, [illegible] the *M[illegible]* [illegible] Dr. [illegible] Gordon, who [illegible] The letter is [illegible] which [illegible] weakened [illegible] Dr. Beatson's arguments for [illegible] the whole subject [illegible] welcome.

But, [illegible] Dr. Beatson [illegible] figures, Dr. Gordon [illegible] the utility [illegible] in the [illegible] taken [illegible] them are sing[illegible] sickly men; [illegible] proved fact that [illegible] men who [illegible] first landing, [illegible] of the [illegible] them, which [illegible] at present [illegible] depôts.

Dr. Gordon [illegible] records prove that regiments suddenly brought from the hills to active service in the plains have not, as a rule, been so efficient as those that had not been for a time removed from the latter." He could not have made a more unhappy statement. During the Sutlej and Punjab Campaigns in 1845 and 1848, the finest and most efficient regiments had been quartered in the hills, and he can only mean those regiments, who had been stationed in the Simla group of hills for a few weeks, when ordered down on the breaking out of the mutiny in 1857. These started in rude health: on reaching the plains they came into the atmosphere of a cholera epidemic then raging. The disease, of course, attacked them, they carried it with them to the walls of Delhi, and it never really left them till their onward march after the capture. Is it fair to attribute illness of such a character to having been stationed in the hills?

He would appear to be an advocate for regiments not going to the hills at all: he instances his own regiment, the 10th Foot, which "landed in India in 1842, and served continuously in the plains until 1857." We should like to know the vital statistics of that regiment; in its 15th year it had been probably recruited nearly twice over; and it is to save such destruction to life and health that residence in the hills, instead of the plains, is advocated.

We must not pursue the subject further. We have shown that the numbers located in hill stations have increased since Dr. Beatson left the command, and that the progress of extension is still going on. We have pointed out how little increase in accommodation in the hills has as yet followed the augmentation of British troops in the country, and we have expressed a hope that the matter will still be taken up earnestly.

We cannot help feeling that, although so much attention has been paid to sheltering the men in the plains, there has been too little progress in utilizing the climate of the hills; but we must take the facts as they have been shown, and congratulate the army in a sanitary sense that, in the course of two years, 24·7 per cent of their numbers will be stationed in a good climate, and we must hope that measures will soon be thought of to provide for at least one third of their whole numbers.

THE EAST INDIAN RAILWAY.

Proceeding up the country in March last, we bethought ourselves it might be useful to note the state of the line generally, the sanitary and conservancy arrangements in vogue, and the practical conveniences at several stations, with a view to forming an opinion as to the care and attention paid to these matters "on the line." The barrack offices for troops, although somewhat improved of late years, are still often found in a very disgraceful state, from want chiefly of supervision perhaps, but more from the rough utensils provided for their use; in the stations of this rich and great company, however we expected to find the most modern appliances, and a system of completeness and efficiency in adopting them for use.

We consider the railway stations have every facility for being kept in the highest possible order, at a minimum of expense, and that there should be no one part of the arrangements which could be taken exception to. In regard to "offices" particularly, although there is a rush to them on the arrival of a train, there are many hours when the places are empty, and therefore there is no excuse for the most perfect cleanliness not being observed.

With this preamble we will proceed to take our place in the "up express" from Howrah. On the platform here a strong urinous smell directs you to the office sought for; [illegible] partitions are here ranged against one side of a long passage-like room, very badly lighted, an open iron or zinc tubing, some six inches wide, runs along the whole length of the wall, into which water is constantly dropping in sufficient quantity to cause a small stream; below the tube, on the floor level, is a saucer-like stone drain, the joints cemented apparently with lime mortar. The surface of the drain was thickly incrusted with evaporated salts of urine, and hence the powerful odour which pervaded the place. Gratings were most conveniently placed to stand on, and we must say that, although formerly frequent visitors at the station, it was the first time this state of things had been noticed; it is mentioned now to show that where there is a bad system, its effects must appear some time, and be offensive. Against the opposite wall are enclosed places, each containing a fixed wooden commode, apparently on the water-closet system, but the pans were choked up, no water was in operation, the woodwork of the seats were overlaid with damp and dirt, and all was so objectionable that to use them would have been difficult. With the ample command of water at this station, and the facilities of flushing and discharging sewage into that great sewer of Calcutta—the Hooghly—only a few yards distant, it seems extraordinary that the patented inventions of modern times have not been made use of.

Starting about 9. p. m. with the intention of going "through" without stopping, *i. e.*, a journey of 1,155 miles to be performed in about 52 hours, facilities for sound and unbroken sleep should be afforded, whatever may be the traveller's capabilities for enjoying it; but just, perhaps, as you get off soundly you are waked up at Burdwan, in three hours time, with "tickets please, Sir." We would suggest to the Railway Company that they should institute some system by which "through" travellers could be saved this positive inconvenience, even if injury to health does not ensue, from the less capability of bearing fatigue that a broken night's rest occasions in a long journey.

Sahibgunge.—Reached about 7 a. m.; on the up-platform there was no outward sign, after investigating several doorways, the office was discovered. There were compartments, in each of which was an iron pan fixed on a light iron tripod; the pans had been used, and were filthy; there was no other convenience, or place set apart, and the state of things may therefore be better imagined than described.

[illegible].—A common earthen *[illegible]* stuck on an iron tripod was the primitive arrangement at this station; an ordinary commode, filthy, dirty, and the woodwork soiled and sodden, was the other convenience.

Jamalpore.—The office is a little distance from the inhabited part of the platform; a structure, a "Jennings's" urinal, meets you at the entrance; the original patent has six partitions, in this the circular space is divided into four, and completely prevents privacy; nevertheless wooden commodes were placed in compartments made with sheets of galvanized iron, placed on end. Galvanized iron pans are here fitted into a wooden frame; the seats were most filthy, they were discoloured and sodden with filth and moisture, no one could attempt to sit down on them. This office is evidently used by all classes, and the numerous finger marks on the divisions of the compartments gave off

through—it is part of their duty to do this, and as performance of it often involves the safety of the train, they should be protected in doing so. Constantly looking to the front without protection, while going rapidly through the air in a Bengal fog, or against a hot wind in the North-Western Provinces, must be a most trying thing, and straining to the eye and sight. In America and England the protection is afforded; why not here?

We fear we may be thought to be cavilling at trifles: but the object has been to point out where present practices might be improved upon. To turn to a pleasanter task, that of finding no fault, we believe that there is not a finer, safer, or more comfortable line in the world than the E. I. Railway, from Howrah to to Gazeeabad. The sleeping carriage is in itself, we have no hesitation in saying, the best fitted up of any line in the world; there is length and breadth, and a good cushion to lie on, and only those who have made long journeys in Europe and America can appreciate the luxury of having such space all to oneself.

At Gazeeabad, on changing carriages to those of the Punjab Railway, we find the change in comfort at once. On the principle of the P. & O. steamers, which are the worst ventilated ships in the world, though plying in seas where the best and most perfect airiness is required, so, on the Delhi Railway, where for some months of the year, those during which the most travelling would take place, you would be glad of the warmth, softness, and comfort of the Calcutta line, you find the carriage with open cane-work from end to end, so that the wind blows through, and you can see and hear the occupants of the next compartment; the seats also are of cane, each bench having four wooden bars across, to point out the place for four travellers, but to lie down on this is impossible, at least without the pain of many a sore bone in the morning. There is some sort of an arrangement by which planks are pulled out from under one side, and reach across to be fastened under the seat of the other, like the bars of a Calcutta bed, this is for the convenience of sleeping we were told, but it would require six inches of mattrass on their top to make them at all endurable.

The small number of accidents on the E. I. Railway has been most creditable to the management of the company · seeing, however, that double the number of people were killed in 1868, to the preceding year, we hope they will not suffer their servants to get careless.

There must be such an amount of sameness in the daily working of small matters, which, if not attended to, might occasion the loss of all the lives in the train, that we often wonder more accidents do not happen under the common apathy of human nature when daily employed in the same routine.

How much now depends on the native telegraph worker under the station-master,—how one misspelling, or a moment's forgetfulness, might, on a single line, cause two trains to meet half way at speed.

The employés appear to be on duty a long time eight hours on a stretch is not uncommon, if too much tension of attention is enforced, men must come to occasionally, as the Americans say, "letting things slide."

The following table is interesting and curious —

For the year 1867.

	There was killed—	Travellers.	Country.
1	passenger out of	168,551	in Prussia.
1	,, ,, ,,	5,000,000	,, Belgium.
1	,, ,, ,,	1,700,000	,, France.
1	Passenger out of	1,660,000	in England.
1	,, ,, ,,	116,541	,, Russia.
1	,, ,, ,,	2,376,234	,, E. I. R., India.
1	,, ,, ,,	1,005,201	,, on the same line in 18

Of America we have no similar account: it is the count next to Russia, where human life is taken least care of, but in t year 1866, 79 persons were killed in the State of Jersey, U. S., on 700 miles of rail only. In that year, the total number o miles open in the States was 51,000, and if the same ratio w persistent, 5,600 people would have been slaughtered.

We should like to hear a medical account of the Viceroy's rec remarkable journey. An express train, filled with the members Government, travelled the whole distance, 1,155 miles in 41 hou this included five hours of stoppages—actual number of hou 36—a little over 32 miles an hour, the quickest and long journey ever performed in India. These officials had le sedentary and office life for some months past in the enervat climate of a Calcutta winter, and we cannot fancy but that so among them, starting suddenly on such a rapid journey, must have felt uncomfortable present effects, where we hope, howev they will end.

We may, on a future occasion, pursue this subject, and t the physiological action of railway travelling on such l journeys on all classes, sexes, and ages. We are quite sure of thing, that, but for the comforts and conveniences of the E. I line, the public would long ere this have found out that su travelling could not be performed with impunity.

HEART DISEASE IN INDIA.

In the *Lancet* of the 20th February, Mr. Myers of the C stream Guards, attacks the subject of heart-disease in the Ar and gives this table:—

Statistics of deaths from aneurism in the Foot Guards and Line ser at home compared with the Navy for four years.

Year.	Army.		Navy.	
	Strength.	Ratio of deaths from aneurism per 1000.	Strength.	Ratio of deaths fr aneuris per 100
1862 ...	49,332	·28	58,870	·11
1863 ...	44,291	·47	51,090	[illegible]
1864 ...	40,539	·37	53,000	·18
1865 ...	42,228	·35	51,210	[illegible]

The comparison between the Army and Navy is ver gestive. We have extracted from Dr. Bryden's table following statistics of heart-disease and aneurism in the B Army in India since the year 1858. Deaths under " disease" occurring under Morbus cordis and Pericar those invalided for the same being recorded under the diseases with Palpitatio and Angina pectoris in adart —

[illegible]

W[illegible] per mile of [illegible] rate than A[illegible]s, from heart-dis[illegible]

A[illegible]	[illegible]	[illegible]	Rate per mille [illegible] to average strength.
[illegible]	[illegible]	·7	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	1·7
[illegible]	[illegible]	1·8	1·8
[illegible]	[illegible]	·8	2·0
[illegible]	[illegible]	1·3	1·7
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	2·8

W[illegible] a great field [illegible]

[illegible] QUO [illegible]

[illegible]

[illegible]

THE JAILS AND JAIL SYSTEM OF INDIA.

[illegible]

I[illegible] North-Western Provinces, "convicts are also eligible for promotion to prison offices, after a uniform period of probation, and they are reported to be the most trustworthy [illegible] of the class; "intermediate imprisonment has not yet been introduced, but the Inspector-General is fully aware of its advantages, and looks forward to its establishment." In the Punjab, Oude, Central Provinces, and Burmah, the reward for promotion is identical with that of the North-Western Provinces, but in the two latter, disqualification of certain classes exists as it does in Bombay. The Central Provinces have adopted the Bengal rules of intermediate imprisonment; in the Punjab it has not yet been introduced, but a committee is now engaged considering the subject.

There is another reward attainable—remission of sentence. It is not reduced to any system in Bengal, and can only "be granted under the orders of Government for any special act of good service." In Madras there is a certain system, entitling super[illegible] good conduct and industry to obtain partial remission. In Bombay the practice is not in force. In the North-Western Provinces, Punjab, and Central Provinces the above reward is gained by a system of "marks," which is said to work [illegible] would appear to [illegible] reward [illegible] a further additional reward [illegible]

There [illegible] diversity of opinion regarding [illegible] sentence [illegible] on a convict. [illegible] of reformation [illegible] in the [illegible] that [illegible]

A[illegible] are very [illegible] requested the local Governments and [illegible] rules and [illegible]

[illegible] the Bengal [illegible] are fetters, [illegible] flogging [illegible] however, are so frequently resorted to for mere safety, owing to the extreme insecurity of many of the prisons, as to be of little efficacy as a punishment; and as in the majority of the Bengal jails there are no cells, flogging is the only really efficient punishment."* Twenty per cent. of the daily average of prisoners were beaten in 1867; it is reported that the number of stripes never exceed 30, that no permanent injury has ever been sustained, and that it is always performed with the cognizance of the medical officer.

With a view, however, to lessen such an amount of flogging, a system of penal dietary has recently been introduced with the sanction of the Government of India, who directs a report to be made of its action a year hence, for submission to the Secretary of State.

In Madras and the North-Western Provinces, the punishments in use are flogging, extra labour, and double irons, and they have rules for regulating restriction of diet; this latter, when awarded as a punishment, consists of a diminution of the ration by one-third, unless there are medical reasons against it.

Bombay has solitary confinement up to seven days, confinement in the stocks up to 12 hours, and flogging not exceeding 25 stripes.

In the Punjab, Oude, and Central Provinces, the punishments are increased labour, refusal of permission to see relatives, solitary confinement, heavy irons, and flogging in extreme cases, under the regulations in force in Bengal.

In Burmah, a maximum of 40 stripes is allowed, and for the punishment of females, they employ means which do not appear in other jail codes, "placing them in a straight jacket, or handcuffs, or both, and cutting their hair close." In Mysore, extra to all that has been detailed, are "separation in a punishment-yard, punishment exercise, wearing a mask, and two species of solitary confinement."

Education is conducted on nearly similar principles throughout all the jails in the country. A certain number of prisoners are compelled to learn at hours not employed in labour; and the more educated warders of the convict class are made to overlook them: no paid instructors are employed.

As education spreads among the mass of the population, a different system will rise in jails; but, at present, while the educational efforts of the State can hardly be said to have reached the stratum of the class which furnishes the prison population, it is not thought right to entertain paid agency, or to insist more on the acquiring of knowledge. To discharge men from jails, educated, with the means of thus gaining a higher livelihood, would be a great act of reformation certainly; but an act that would be gained at the expense of elevating a dishonest above an honest man, and would, in fact, hold out a premium on crime.

In Burmah, where it appears that "seven-tenths of the prisoners are able to read and write their own vernacular, the form of education that has been introduced is to teach English;" and this arrangement has very properly been cavilled at, because teaching a prisoner a remunerative employment, which he can make use of after his discharge, is not a deterrent punishment.

The views of the committee of 1836 on this subject were against instruction of the criminal population, as giving them advantages that honest men could not obtain; but "at the present day Government will probably be prepared to admit the obligation of finding elementary instruction for all juvenile prisoners, and for all long-term prisoners in central jails, by convict agency if possible, if not, by paid agency."

It still remains a question whether the systems of labour and punishment in force have any deterrent effect on the native of India; his want of shame or gratitude, his apathy, his disregard of provincial or family ties, his own conscience unawakened by civilization from its dull and blunt state, the absence of religion to form motives of action, and his caste, which frequently comes in to teach the son what the father and his former progenitors have done before him, all combine to make him a being not easily to be acted on through his intellectual qualities; so that it cannot yet be said that jail discipline in India is really satisfactory, either as a reforming or deterrent agent.

The local authorities of each province, says the note, hold such contradictory views on the result of prison discipline, that no satisfactory statement can be made. The committees of 1836 and 1864 both note the increase of the convict class, but hope that the effect of improved knowledge and discipline will in future years diminish their numbers; firstly, by educating the masses outside, and secondly, by making punishments inside a jail really punitive. The Inspector-General of Bengal asserts that prison discipline under him is not deterrent; the Lieutenant-Governor of Punjab asserts that prison discipline in that province is.

In the North-Western Provinces a statement shows that there were 16,576 prisoners sentenced in 1861, against 28,451 in 1867, and re-convictions have increased almost in a like ratio; "but in the absence of authentic statistics of the increase of population, of the effect of a more vigorous and searching administration, of the operation of the codes that during the last few years have come into force, and of the greater efficiency of the re-organized police, any inference would be very untrustworthy. And it will be remembered that even if complete statistics for a sufficient number of years were available in any province, they would prove but little as regards any *system* of prison discipline, because no province can be said as yet to have any fixed and complete system of prison discipline at all. Every year sees changes and improvements, and, pending the completion of central jails, prison discipline must remain in a transitional state."

(To be continued.)

THE FURLOUGH RULES OF 1868.

A recent "Indian Public Opinion" has an [illegible] article on the present uncertainties of furlough rules, in regard to staff and regimental and civil appointments, holding or vacating them on leave, &c., in relation to the medical [illegible], and we fear it gives rather a true picture; but as furloughs on private affairs are for the present not available, owing to the paucity of medical officers in the country, the question at issue will probably be settled before that [illegible] is opened, *[illegible]*. Thus far the article.

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* Is this what calls forth the ire of the Editor of a Bengalee newspaper, when he says in a late issue—"prisoners not having Anglo-Saxon blood in their veins, are subjected to the lash?"

[illegible] MEDICAL OFFICERS AND THE [illegible]

[illegible] The first [illegible] Warren [illegible] 31 [illegible] G. G. O. [illegible] the New [illegible] G. G. O. [illegible] Furlough [illegible]

[illegible]

THE CAMP AT UMBALLA

[illegible] assembled [illegible] the Viceroy [illegible] a memorandum [illegible] Dr. M[illegible] [illegible]

[illegible] Deputy Inspector-General Munro [illegible] sanitary [illegible] have [illegible] amongst [illegible]

[illegible] duties were ably [illegible] by Staff Assistant [illegible] 21st Hussars [illegible] British mounted [illegible]

We [illegible] detailed [illegible] measures adopted.

THE NORTH SUBURBAN HOSPITAL.

We [illegible] support of [illegible]

[illegible] Dispensary [illegible] Honorary [illegible] North Suburban Hospital [illegible] the year [illegible] 721 [illegible] 37 [illegible]

[illegible]

[illegible] 730 [illegible] 231 [illegible]

[illegible]

it was [illegible] that [illegible] should [illegible] to remain with the [illegible] at interest for the purpose of [illegible]; the meeting was unanimous in their intention to [illegible] their exertions to the utmost, not only to keep up the [illegible] of usefulness, but to exert themselves [illegible] and to build a regular hospital.

We would strongly advise the Committee to adopt the suggestion of the Honorary Secretaries and to build, on the [illegible] a series of [illegible] "Cottage Hospitals" [illegible] England, [illegible] with accommodation for [illegible] patients [illegible] should be only sufficiently [illegible] good ventilation [illegible].

We [illegible] would cost less to build some six or eight [illegible] but plain style [illegible] building, which would [illegible].

Official Selections.

◆

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

[illegible] Hospitals [illegible] Medical Board [illegible] the service [illegible] Department [illegible] and [illegible] from time to time [illegible] the Surgeons [illegible] of the large general hospitals. [illegible] humanity [illegible] the natives of [illegible] improvement [illegible] The custom was evidently [illegible] Head Surgeon should submit proposals for the [illegible]. The letters that will appear [illegible] show them to have been the production of [illegible] gentlemen.

The system in general would appear to have been reformed under the [illegible] despatch:—

Court of Directors' letter, 1st September, 1785.—Minutes of Council, 2[illegible] May, 1786.

"1. The [illegible] the Court of Directors having [illegible] Medical Department in Bengal [illegible] to place [illegible] under [illegible] regular system, by which [illegible] and expenses [illegible] accurately ascertained, the sick [illegible] and the gross abuses [illegible] the public service, [illegible]

"2. [illegible] Council [illegible] appoint [illegible]

"3. [illegible]

[illegible] Surgeon [illegible] Board [illegible] regimental [illegible] and the most deserving regimental mate to succeed the hospital mate. But, although the most ample encouragement is hereby given to merit, it must yet be understood that seniority, where merits are equal, is to have the first claims to promotion."

The records are in good preservation; they are written on thick demi-royal paper, in good, plain, legible hand-writing, better, indeed, than is often employed at the present day, and in ink which, though here and there discoloured by age and damp, is still quite distinct and legible; they are bound up in yearly or half-yearly volumes.

The first volume for 1787 opens with "A meeting of the Hospital Board" held at Fort William, the 2nd January, 1787: Messrs. Ellis, Willem. and Fleming being the members, and Surgeon A. Campbell the Secretary.

The Board held weekly meetings every Tuesday; their first work was to read and approve of the proceedings of the former meeting. They then considered letters addressed to them, letters they addressed to Government, corresponding direct with "the Right Hon'ble Earl Cornwallis, Governor-General in Council," and to members of the service under their different titles.

One of the first letters is addressed by the "Head Surgeon, Cawnpore, dated 23rd December, 1786, to James Ellis, Esq., Physician General, &c., Member of the Hospital Board."

He advises the board to sanction provision of quarters for the gentlemen who attend the general hospital at the station, and recommends the purchase of a house (for Rs. 1,500) well situated between the European and Native hospitals, so that they could give the earliest attendance in either hospital on all cases of emergency.

The post must have been well arranged; for on 2nd January the board reply that "as the surgeons in the field are on the same footing with the officers," they deem your request inadmissible.

The first appointment of a surgeon to the medical charge of a jail would appear to have taken place about this time under a Board's letter to the Governor-General in Council of 11th January, (replied to by Government on the 15th January,) "as we think the charge of visiting the sick prisoners in the jail (at Futtehghur) would be better executed by a person particularly appointed for that purpose than by the hospital mates in turn, as is the case at present, we further request your lordship's permission to recommend Mr.—— to be appointed to do that duty under the direction of the Head Surgeon."

A week later may be noted as the origin of medical certificates. E. Hay, Secretary, writes from the Council Chamber, Secret and Military Department, by direction of the Right Hon'ble the Governor-General in Council, to the "Physician General and other members of the Hospital Board," "that I am also to intimate to you a resolution passed by the Right Hon'ble the Governor-General in Council that, in future, any application of surgeons or assistant-surgeons to proceed to sea on account of their health, will not be admitted unless accompanied by the testimony of a surgeon at the place of their residence, shewing the necessity or expediency of it; or, if no such testimony can be had, owing to the circumstance of no surgeons being on the spot, that you are to send in such evidence in support of the application as will justify an acquiescence in it."

The Surgeons of Artillery represent to the board that there are six companies of Lascars attached to each of the battalions of European Artillery, and that as the hospital allowance has recently been "restored to the surgeons of the sepoy corps to supply them with bazaar medicines and other necessaries," so some proportionate allowance should be granted for the Lascars: this to the Board on the 29th January, and the Governor-General replies to the Board on the 31st January, that, on their recommendation, the sum granted for each company of corps of Artillery Lascars shall be twelve sonat rupees a month, to include all medicinal charges except doolies.

A surgeon at Junanpore on being appointed to the 6th battalion of Europeans at Dinapore writes to the Board that as his present appointment hardly afforded subsistence for his family "he had entered into concerns of a private nature," and begs he may remain for twelve months more at his old station. This arrangement (without pay) is eventually sanctioned by the Governor-General.

The surgeon of the "new Fort" (the present Fort William) forwards a list of the Engineer corps employed on the works. Exclusive of 18 European officers, it shows—

Lascars ...	110	Caulkers ...	3
Coolies ...	110	Sawyers ...	[illegible]
Carpenters ...	31	Plumbers ...	[illegible]
Bricklayers ...	36	Brass-smiths ...	2
European Supernumeraries ...	4	Iron-smiths ...	[illegible]
Draftsmen ...	4	European Writers ...	2
Painters ...	3	Bheesties ...	12
		Total ...	[illegible]

Additional { 10 Lascars / 10 Coollies } in the rainy months.

A petition from two assistant-surgeons, representing a grievance of twenty-four of their body, here takes up 27 pages of the demi-royal paper, on which the Board's proceedings are written.

A list of surgeons, dated 1st March, 1782, gives the Bengal complement at—

1	Surgeon-General.	54	Surgeons.
2	Surgeon-majors.	34	Assistant-Surgeons.

The following is perhaps the first instance of the substance of sanitation or at all events provision for the sick being mooted. The writing is a copy of the original, from Mr. Hamilton, Head Surgeon at Futtehghur, to the Board, dated 3rd March, 1787:—"The sick at this station are placed in one of the cavalry ranges which is only tiled and not above 9 feet high; in the warm season from the lowness of the roof and retaining heat of the tiles, it will be as close and hot as an oven, which will render their situation extremely unhealthy, and increase their fevers, and prevent the cure of disorders in general. Another great inconvenience attending the hospital being there, is that the other ranges are converted into barracks which makes it almost impossible to keep the sick from mixing with the other men and getting drunk, the fatal effects of which are too well known; besides the place itself is equally as unhealthy as a fixed camp, from the filth, &c., occasioned by the great number of people necessarily around it. From hence permit me to represent to your consideration the urgent and indispensable necessity of a hospital, with other conveniences being built on a healthy situation, and walled in for the reception and preservation of the sick."

The next letter more immediately concerns sanitation of British and native troops. It is from Mr. Ross Munro, Head Surgeon at Chunar; March. He reports the accommodation provided is unfit for sick Europeans, and that there is no provision whatever for native sick, and begs the Board to represent to Government that both from motives of expediency and humanity a set of proper buildings should be erected. Many of the European sick are obliged to be attended in tents, the others are lodged in a very low-roofed, confined apartment round the burial place of a large mosque, and it is equally incapable of being rendered a comfortable habitation in the cold, or a well-ventilated one in the hot season; and he goes on to say, this "building in which many disorders have already put on putrid appearances is so inconveniently placed at the eastern extremity of a cantonment, near seven miles long, that the winds must blow on it with the accumulated heat which they will have acquired by passing over a range of rocky hills of several miles to the westward, the cantonments, and the fort, so that the air within must be almost insupportable to the patients during the hot months."

(To be continued.)

Review.

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Disinfectants and Disinfection, by R. A. SMITH, P. D., F. R. S., Edinburgh: Edmonston and Douglas.

This little volume contains a record of Dr. Angus Smith's experience in attempting to obtain results by exact method hitherto untried. Most of it, the author tells us, has already appeared in print in his report to the Cattle Plague Commission, and in articles contributed to different journals.

After a short introductory history of disinfection, the author, under the head of "the dangers to be averted," gives such information as is necessary to make the general reader acquainted with the modern theories of epidemic disorders in their relation to the part played by decomposing animal and vegetable substances, and the extraneous introduction and development of the seeds or germs of disease respectively. The chemical and the theories of Liebig and Pasteur are incidentally touched upon, and the rationale of the action of disinfectants is also [illegible] explained. The author then proceeds to consider, separately, gases and vapours, acids, including the [illegible] from tar, lime, metallic salts, soil, manure, charcoal, and filtration of [illegible], &c.

The comparative power of disinfectants when water is used, the prevention of sulphuretted hydrogen, the relative values of different disinfectants as deodorizers, and the action of volatile oils and perfumes, forms the subject of a series of experiments, which are recorded in a tabular form, with a text of commentary; and in a paper written originally with special reference to cattle plague, the author affords a summary of his reasoning on the use of disinfectants. A short appendix contains a very useful enumeration of these agents in their application to various domestic uses. The book is clearly written, and may be consulted with advantage by the general as well as the professional reader.—*Lancet*.

NOTICE OF REMEDIES.

WE have received from Messrs. Bathgate & Co. a bottle of Norwegian Cod Liver Oil prepared solely by Peter Moller of Christiania, member of La Société de la Pharmacie, in Paris, &c., &c., author of the pharmaceutical section of the Pharmacopœia Norwegia.

A printed sheet accompanies the bottle with information as to the origin of Cod Liver Oil as a medicine, the fisheries established on the Coast of Norway for obtaining it, the common mode, and his own peculiar way of preparing it. This is prefaced by a short account of the evident estimation the process is held in by his countrymen.

Reports of its purity, freedom from unpleasantness of taste and smell, its efficacy, its easy assimilation by delicate persons and children, without creating nausea or disgust, is borne strong evidence to by Dr. Hassall, professor Boeck of Christiania, Dr. Abbotts Smith, the Norwegian Medical Society, the *Lancet*, Dr. Cregeen, and Dr. De Besche, Physician in ordinary to His Majesty the King of Sweden and Norway.

The estimation, it is evidently held in, by these high authorities, is a sufficient guarantee for its excellence.

In its limpidity, clearness, and delicacy of taste and smell, it is superior to any we have ever seen.

Local Correspondence.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

DEAR SIR,—Will you please insert, for the benefit of your numerous readers, the answer to this important query?

What are the conditions or qualifications upon which the transfer of rank from Sub-Assistant Surgeon to that of Uncovenanted Medical officer depends?

Yours,
CONSTANT READER.

A Sub-Assistant Surgeon must have qualifications as a Medical Officer, superior to the average attainments of his class; he must possess a certain amount of literary acquirements, and he must be a gentleman. There are no special conditions to be fulfilled.—ED., *I. M. G.*

Extracts.

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NEW AND GIGANTIC PLANT.

WITHIN the last few days, living specimens have been forwarded to England from Sumatra of one of the most gigantic plants of the vegetable kingdom. It is closely allied to the arums (or "lords and ladies") of the hedges, and, until the present time, has wholly escaped the notice of our travelling botanists. It produces but one flower nearly 14ft. in length, supported on a stalk 10ft. long. The stem of the flower is a foot in circumference, the [illegible] over 2ft. long, purplish blue in colour, with [illegible]. As this remarkable species of Arum is quite new to science, it has not yet received a name.—*B[illegible]*.

SOUR BREAD.

LAST year's growth of wheat is so good that bakers have found it possible to use with their best flour a certain portion of aged inferior stuff, and some have used too much of the old and too little of the new, and the result is, that such bakers are providing their customers with sour bread.

"Sour" is not, perhaps, the proper designation, for the best bread will become sour if kept in a close damp place for a short time; but the proper term should be mildewed, attributable to the use of mildewed flour which is not only unwholesome, but poisonous.—*London City Press*.

THE LOCK HOSPITAL SYSTEM IN MADRAS.

UP to the last report, 750 women have been registered as prostitutes, and of them 630 have been sent from time to time to hospital for treatment.

It is roughly estimated that there at least 1,200 pagoda women, but of these the health officer has no power to bring them under the Act.

Madras, to carry out the Act, is divided into six districts, in each of which there is one hospital, and two or more apothecaries attached.

"Every registered prostitute has, under certain police penalties, to appear once a week at the office in the district in which she resides, and brings with her a book in which her freedom from contagious disease or the reverse is registered. If, in good health, she receives a given ticket, if in doubtful health, a ticket with a qualifying report is given her; while, if decidedly ill, she is sent off at once to hospital.

"Dr. Stanborough, the health officer, has exhibited great activity in organizing the department."—*Indian Daily News*.

☞ This not being a medical report of the Lock Hospital Rules, we will forbear to criticize. Madras deserves well for having organized the working of the Act within its confines.—ED., *I. M. G.*

AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA; MEETING 17TH MARCH.

THE Society at their last meeting heard that Dr. Forbes Watson of London had despatched nine different kinds of quinoa seed from Arequipa. Messrs. A. Gibbs and Sons write with these samples:—"We understand that all the kinds contained in the small bags are commonly used in the Sierra as an article of food, but the *Amarga* as a medicine only, both internally as an emetic, as a substitute for quinine in the case of ague, and externally as a poultice for cancer, grangrene, contusions, &c., its chief property for the latter purpose being its great astringency." We are informed that though the Quinoa plant flourishes at altitudes where no ordinary cereal can be cultivated, and even higher up than the potato, it is, in some respects, rather delicate, requiring a good deal of moisture, but unable to stand any great degree of frost. In the Sierra, it is sown about the beginning of the rainy season in September or October, and harvested from January to March, according to season and locality.

BABOO SHAM CHURN MULLICK has, we understand, given another instance of the liberality and enlightenment for which he has been so long noted, by bestowing a gold medal to be annually competed for by the students of the Medical College.—*Englishman*.

SELF-ACTING PUNKAH.

THE *Madras Athenæum* says that a self-acting punkah, on the principle of the clock pendulum, has been invented by Captain C. J. Jennings of the 3rd Regiment Palamcottah Light Infantry. The machinery is simple in the extreme, consisting of a few cog wheels and an escapement of a somewhat novel construction. In this latter the merit of the invention consists. The machine is now working in the Arsenal at Fort St. George, and notwithstanding that it has been made and put together in rather a rough manner, as must be the case in most first attempts, its action is satisfactory, and promises, when made on a larger scale, to meet every requirement. One advantage is its extreme portability, as both punkah and machine can be packed away in a very small compass. The motive power is derived from a weight, and the punkah is intended to work for eight hours for each winding up.

HYPOSULPHITE OF SODA IN AGUE.

Mr. Sauger, Surgeon to the Convalescent Hospital, Leaford, writes to the *Lancet* :—

"The theory of the cause of ague and typhoid fever being due to the germs of a fungus having entered the system, appears to me proved by the following cases :—

In the spring of 1868, I had a very intractable case of ague in a boy eleven years of age, which resisted all the remedies usually employed in the treatment of that disease—these being given until the boy said his stomach could not bear any more. Following out the fungus theory, I gave the patient a scruple of the hyposulphite of soda, three times a day, which, in a very few days, got rid of the ague, and he has never had it since.[*]

In the autumn, three sisters, and the mother of the lad became the victims of a very bad tertian ague, which resisted the administration of emetics, quinine, bebeerine, and arsenical solution, but gave way to a very few doses of the hyposulphite of soda."

Short Notices of Recent Books.

Atlas of Venereal Diseases.—By M. A. Cullerier, translated from the French by F. J. Bumstead, M.D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York. Philadelphia, H. Lea, 1868.

Dr. Bumstead, who had for some time contemplated producing an atlas of venereal diseases of his own, was prevented by the great cost of labour in America. He, therefore, determined on translating the splendid atlas of M. Cullerier, and this he has now done in the work before us. The distinctive character of the translation being that the plates are executed by chromo-lithography, instead of being done by steel engraving and hand-colouring as in the original. This work is certainly the most luxuriously got up and elaborate thing of the kind we have ever seen. It extends over 326 pages of 4to., and contains ten handsomely colored plates, embracing nearly a hundred figures of different forms of the disease. In most cases the hue of the integument recalls the general features of French plates rather of the real texture, but the diseased portions of skin are brought out with considerable truthfulness. The illustrations of the Syphilides being in our mind remarkably life-like. The Editor and Translator has appended numerous notes of his own, and on those points on which he differs from the Great French Authority, he expresses his divergence of opinion, distinctly and emphatically. Dr. Bumstead believes in two distinct forms of syphilitic poison, and gives very cogent reasons for his belief. The historical portion of this fine work is especially good, and indeed altogether it is comprehensive in its treatment of a most difficult subject. We look upon it as a work of reference which every medical man, Physician, and Surgeon should possess, and while we must compliment the translator on the manner in which he has discharged his portion of the task, we must also thank the publisher who has been enterprising enough to undertake the production of so large and costly a work.

L'Origine de la Vie.—Par Le Docteur George Pennetier, 3rd edition. Paris, Rothschild, 1868.

This little volume is prefaced by M. Pouchet to the great champion of the doctrine of spontaneous generation, and is written by one who has done good work in this branch of science; and it is very well illustrated with wood-cuts, scattered through the text. As might have been expected, it deals with the different experiments carried on by M. M. Pouchet and Pasteur to determine how low vegetable organisms come into existence. M. Pouchet says that moulds and bacteria and vibrions are formed of the molecules which proceed from decomposing animal matter—he is the leader of the Heterogenists. On the other hand, M. Pasteur affirms that the ova or spores of these organisms exist abundantly in the air, and falling into decomposing infusions of organic matter, find there the materials and a proper radius for their complete development—he is of the orthodox or Panspermist School. The book under notice is, of course, to be read with this qualification, that it is written by an acknowledged supporter of M. Pouchet's views. But it must also be borne in mind that both Professors Owen and Dr. Hughes Bennett, of Edinburgh, are convinced of the force of M. Pouchets' opinion. M. Pennetier, however, it seems to us, has not given too much force to his leaders, arguments, and in stating the experiment, he alleges facts which are unquestionable. We therefore urge our readers to take up this little volume, and read it for themselves. In the present state of the controversy, it would be out of place for us to express any opinion on either side.

Cases of disease of the nervous system in patients, the subject of inherited Syphilis. By J. Hughlings Jackson, M.D.

In this brochure, Dr. Jackson reprints a paper read before the St. Andrew's Graduates Association. The author gives cases of extreme interest to prove that by working out family history, we often come upon syphilitic taint as the cause of nervous disease, where otherwise we should never have dreamt of associating the nervous disease with anything like venereal poison. Dr. Jackson is working in the field opened up years ago by Hutchinson, and with very excellent results.

Conservative Surgery in its general and successful adaptation in cases of severe traumatic injuries of the limbs. By Albert G. Walter, M.D. Pittsburgh. U.S. Johnson, 1868.

This is a very remarkable work by an American Surgeon. It details a new process of dealing with injuries and amputations, and gives a multitude of cases which, as their records shew, were most successfully treated by this new method. The basis of this method, so far as we can comprehend it, consists in exposing the wounded part, and making deep incisions to set free discharged blood, and then poulticing the parts. He gives a suppositious case, that of a limb very much injured by machinery. It is of the utmost importance in cases of this kind, he says, that "free vent be given by long and deep incisions for the escape of effused blood confined under the fascia, between muscles, and in the cellular tissues of the skin, and that all attempts to bring the soft parts together, when lacerated or cut, by stitches, be strictly and absolutely discarded." "A limb thus injured should be placed without delay in its whole length on a well-cushioned sheet-iron or tin splints, and the detached pieces of bone removed. The wound should then be freely enlarged or if no breach of surface exists, a free incision on the long axis of the limb should at once be made through dermis and fascia," etc., etc. The author who is rather wordy in his description, then proceeds to state that poultices should be applied to the parts or fomentations, and he says that, under the genial influence of these, benign suppuration commences, and healthy cicatrization takes place.

A Practical Treatise on Perimetritis and Parametritis.—By J. Matthews Duncan. Edinburgh, Black, 1869.

Dr. Duncan has given us a very elaborate little treatise on two of the most serious affections of the womb, and by adopting the very useful terms which form the title of his book, and which we believe originated with Virchow, he has done something towards exactness and precision. He thus defines those two expressions: "*Perimetritis*, then, will strictly imply inflammation of the uterine peritoneum. *Parametritis* will imply inflammation of the cellular tissue in connection with the uterus. The symptoms and diagnosis of the two affections are shortly but very clearly described under the separate heads of fulness, hardness, tumour, fluctuation and fixation. But we do not find that the writer states anything more than is to be found in recent treatises like Hewitt's and other works. The chapter on treatment is perhaps the best in the work, and yet it strikes us as singularly deficient in detail. For instance, we find not a line in it suggestive of the value of tonics and stimulants in these affections. But on questions of poulticing and bleeding, the author gives much advice. In reference to the effects of distant blood letting as from the leg or foot, he states that the profession in Great Britain have lost all faith in this treatment, as well as in the corresponding doctrine, regarding venesection of special veins of the upper extremity in disorders of the head. But, he says, "enough remains in the well known and, it appears to me, well-founded belief in the virtue and efficacy of the pediluvium in menstrual affections to prevent us from regarding these therapeutics as absurd." He advocates leeching especially, and believes that four leeches

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[*] A simple attack of ague will generally wear itself out in "a very few days." Such, at all events, is the natural history of a mild and first attack in India.—Ed., *I. M. G.*

[illegible] to the cervix [illegible] as good as three times that number [illegible] externally. In [illegible] system [illegible] often adopted [illegible] applying leeches [illegible] with the [illegible] over [illegible] strongly condemns this [illegible]. Such [illegible] a great a discharge of blood [illegible] at the time, but [illegible] the [illegible] indefinite period [illegible] removed [illegible] of the vessels [illegible] and [illegible] produces [illegible] of the parts [illegible] by the operation [illegible] book should be [illegible] read by [illegible].

Progress of the Medical and Collateral Sciences.

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Faradization in Aphonia. [illegible] March [illegible] by Dr. M[illegible] [illegible] this [illegible] operation [illegible] only [illegible] often [illegible] Cases [illegible] readily [illegible] Galvanism [illegible] and cases, after [illegible] of the [illegible] be kept up by [illegible] and by [illegible] such as [illegible] Dr. Mackenzie [illegible] that he [illegible] in some cases [illegible] when all other means failed.

Look to your Sub-cutaneous Syringes.—In a paper which [illegible] the French [illegible] for 1868, M. [illegible] a very important [illegible] syringe [illegible] trying [illegible] quantity of [illegible] This [illegible] to explain the [illegible] M. [illegible] that [illegible] required [illegible] M. [illegible] may [illegible] H[illegible] of the solution.

Thoracentesis in Pleuritic Effusion.—M. [illegible], who [illegible] ordinary [illegible] operation [illegible] a very fine [illegible] trochar, [illegible] removed. By [illegible] he can draw off [illegible] of the [illegible] blisters. [illegible] he recommends [illegible] made by means [illegible] *Revue [illegible]*, January.

A Growing Slide for Microscopists. [illegible] who are engaged [illegible] Multi[illegible] [illegible] have [illegible] 7 inches long [illegible] with [illegible] the object uppermost, with [illegible] (that nearest the [illegible]

resting against the bottom of the vessel on one side and the [illegible] resting upon the edge of it. Sufficient water is put into the vessel to admit of the liquid reaching to within a quarter of [illegible] inch of the glass cover on the uppermost side, when it will be found that, by capillary attraction, the water on the [illegible] centre of the slide, and consequently [illegible] with which it is placed. In this [illegible] will remain moist so long as the trough contains a sufficient quantity of water.

The Undulatory Movements of the Intestines.—It is [illegible] to study every [illegible] animals [illegible] to learn [illegible] investigating the contractions of the [illegible] H[illegible] has been enabled, by means of an [illegible] series of wave [illegible] rhythmical the contractions [illegible] This paper, which is very [illegible] and [illegible] illustrated, will be found in the [illegible] of February.

Nerves of the Bladder and Sphincter ani.—[illegible] of a [illegible] recently presented to Belgian [illegible] by M. M[illegible]. It will be found in the [illegible] of the Academy, second series, Vol. XXV, No. 2.

The Dinornis.—In a paper recently communicated to the [illegible] Academy of Sciences, Dr. Julius Haast, of New Zealand, states [illegible] which the bones of this monster [illegible] have [illegible] must have existed before [illegible] many [illegible] animals. Dr. Haast thinks that, had it not been for man, the giant bird would be still living.

The Rouleaux of the Blood Corpuscles.—Why is it that [illegible] is allowed sometimes to stand on a glass slide, [illegible] accumulate in rows like a number of coins? [illegible] peculiar adhesiveness of the [illegible] conditions of the [illegible]. This is a very [illegible]. Professor N[illegible], of Queen's College, Birmingham, has tried to [illegible] In a [illegible] February before the Microscopical Society of [illegible] he [illegible] the phenomenon is one due to [illegible] comparable to the ordinary effects of [illegible]. We [illegible] illustration. A number of [illegible] as to be partially submerged when [illegible] water, immediately arranged themselves [illegible] they failed to do so. W[illegible] in water, and then [illegible] arranged themselves in rows just as [illegible]. He thinks that the phenomenon is explained [illegible] properties. This [illegible] in the blood by the action of [illegible] in those cases of disease in [illegible] observed."

The Origin of the Globe.—Mr. Sorby, in a paper before the [illegible] Society of [illegible], on the 18th of February, shows that, [illegible] the centre of sapphires and rubies, [illegible] the substances they contain [illegible] high temperature.

Transfusion and its Effects.—The [illegible] *Times* of February [illegible] an account of some observations recently published on [illegible] of Griefswald. The [illegible] has been performed [illegible] cases of haemorrhage, in eleven cases of which [illegible] Of the remaining eighty-eight [illegible] twenty [illegible] unsuccessful, and [illegible] performed twelve times in cases [illegible] in three the doubts [illegible] unfavorable. It has been tried [illegible] forms of disease, in which there [illegible] of which an unfavorable prognosis had [illegible] the results were favorable in twelve, [illegible] twenty-one, and doubtful in nine. These results [illegible] very good.

ORIGINAL COMMUNICATIONS.

ON PUNCTURE OF THE KNEE-JOINT IN THE TREATMENT OF SYNOVITIS.

By J. Fayrer, M.D., C.S.I.

Wounds communicating with the cavity of the knee-joint have always been regarded as extremely dangerous, as they are so frequently followed by destructive inflammatory changes which result in excision, amputation, or death.

The access of air to the opened synovial membrane is regarded as a great source of danger, as it is almost certain to set up irritation, followed by inflammation, which, passing into the suppurative stage, rapidly induces disorganization of the tissues that enter into the formation of the joint, and gives rise to constitutional disturbance, the precursor of surgical fever, which, if amputation be not performed, either wears out the patient by hectic and exhaustion, or destroys life more rapidly by the toxæmic changes due to osteomyelitis or other sources of pyæmia

Notwithstanding the danger of opening the knee-joint, it has long been resorted to as a surgical operation for the removal of foreign bodies, such as loose cartilages from its cavity; but the opening has been made in a valvular form, and with every precaution to exclude the air. It has, moreover, been found necessary to prepare the patient for this operation by rest and confinement to the bed or couch, for it has been observed that, when the operations were performed without taking these precautions, dangerous and even fatal inflammation has followed. Some surgeons, to avoid actually exposing the cavity of the joint to the chance of the entrance of air, have effected the removal of the cartilage by a double operation. The first fixing it by a sub-cutaneous incision to the parietes of the joint, the second performed after the first wound had healed, removing it altogether. In the so-called hydrops articuli of the knee, a form of chronic synovitis, the joint has been tapped like a hydrocele, and a solution of one part of tincture of iodine and four parts of water injected, with similar results to those with which the same method of treatment has been practised in hydrocele, the excitement of a moderate and modified form of inflammation, and the consequent absorption of the fluid.

The chief source of danger, however, appears to be the access of air, or perhaps, according to more recent views, not so much the air itself as the organic germs that pervade the air, and that if this can be avoided, the risk of destructive inflammatory change is much diminished. If such be the case, the use of carbolic acid, on the antiseptic principle, seems likely to be of service, and may render a wound of the knee-joint a less formidable accident than it has hitherto been considered.

That the method of treating effusions into the joints by paracentesis and the injection of iodine is a good one we can understand from the analogy of hydrocele, and it is fortunate that this particular agent, iodine, seems to have comparatively little tendency, even when exciting severe inflammation, to cause suppuration. But still we cannot but feel that it is attended with great risk in the case of an important organ like the knee-joint, and as yet I have not ventured to test its merits. My experience, however, enables me to speak with confidence of simple paracentesis of the joint in the treatment of inflammation, and as I believe it is capable of affording great and rapid relief from pain, as well as of expediting recovery, I have no hesitation in recommending it; but it must be borne in mind that the operation is to be performed with the greatest care, and that every precaution be taken to exclude the air. I append notes of some cases in which I have found it to be of benefit, and in which I believe not only was relief conferred, but recovery expedited.

That the knee-joint may be opened and perfect recovery take place has been amply proved in many cases. Though such accidents, even when caused by sharp, cutting instruments, do in many cases give rise to flagrant inflammation, rapidly terminating in destruction of the joint and often of the patient. A wound of the cavity of the knee-joint must ever be regarded as an accident of the most serious character, and the prognosis of a doubtful character. It is satisfactory to know that, as in the cases here recorded, recovery may occur, and the joint retain its functions. Therefore, with whatever anxiety we regard a wound of the knee-joint, we know that it is our duty in the first instance to try, by careful management, rest, and the exclusion of air, to procure union of the wound, and obviate destructive inflammation of the articular cavity. It is not less important to keep a watchful eye on the patient's condition, that we may recognize and deal with the earliest symptoms of those inflammatory changes which, beginning insidiously, are apt to extend, and end in destruction of the joint.

CASE I.

Shurno, a Hindoo female, aged 32 years, was admitted on the 24th May, 1868, with sub-acute idiopathic synovitis of the left knee, of one month's duration. Had had gonorrhœa about three years prior to admission. At the time of admission, there was general fulness and swelling of the joint, with a good deal of pain, most troublesome at night. Fluctuation at the upper and outer part of the joint distinct. Patella quite loose, motion of the joint impaired; it was in a semi flexed position. The limb was put up in a *MacIntyre's* splint. Bowels opened by a dose of castor oil, quinine and iodide of potassium in five grain doses, administered thrice daily, and a blister applied above the upper and outer part of the joint. On the 28th May, the knee was tapped at its upper and outer side with a small trocar and canula, and three ounces of sweet oil-coloured fluid let out, puncture sealed by guttapercha. A day or two after, the knee began to inflame, attended by febrile disturbance. On the morning of the 31st May, the knee having been swollen and painful, the guttapercha was removed, and the joint was again tapped in the same place, and six ounces of thin puriform fluid drawn. The canula was kept in for a time, and the discharge allowed to drain away freely. Since this opening has been made, the joint has gradually improved, the discharge diminished, swelling subsided, and wound had healed by the 22nd of January. In the course of the treatment, the patient had a large abscess at the upper and outer part of the left thigh, and a severe attack of diarrhœa; the former was opened, and the latter was checked by astringent mixture. From the day of tapping, that is, from the 28th May, up to 1st July, 1869, daily record of temperature and pulse were kept, the range of the former varying from 99 to 100 in the morning, to 102 in the evening, and that of the latter from 81 to 116. Internally quinine and iodide of potassium were given; subsequently astringents when she had diarrhœa, lastly ferruginous tonics. As regards external applications, cold lotions were applied during the existence of inflammatory symptoms after tapping, and subsequently when matter formed in the thigh, carbolic acid injection and dressing. The patient was discharged on the 15th October, 1868, much improved in health, but with the knee partially anchylosed, and some thickening about the joint; embrocations were ordered to be used freely.

CASE II.

Tajurdhal Hossein, aged 28 years, policeman, admitted on the 24th July, 1868, for scrotal elephantiasis and double hydrocele, of five years' duration. This was removed by surgical operation on the 29th of July, and he did well after the operation; the wound cicatrizing healthily, until the 16th September, when he began to complain of pain in the left knee. On the following day, both knee-joints were affected, and on the 18th, a collection of fluid had formed in the knee-joints. Purgatives were given and tincture of iodine applied to the joint; iodide of potassium was administered, and under this treatment, the left knee recovered. The right, however, remained distended with fluid, and was painful. The tincture of iodine was again applied, and iodide of potas. administered. On the 30th September, the swelling still remaining and there being no fever, the right knee-joint was tapped with a small trocar and canula, and nearly four ounces of yellowish and somewhat viscid fluid drawn off. The puncture was made valvular, and the opening having been carefully protected against the ingress of air, was closed by lint soaked in a solution of guttapercha in chloroform. The removal of this fluid gave great relief, and no unpleasant consequences followed.

On the 4th October, it is reported that "both knees are nearly well;" neither fever nor inflammatory mischief followed. There was no re-secretions of the fluid, and the swelling did not recur. He continued to take the iodide of potas., and for some days the knee was kept at rest. Some stiffness and weakness of the joint that remained were gradually removed by friction with camphor liniment. He was discharged cured on the 5th January, 1869. The knee had perfectly recovered in November, but he was detained until the complete cicatrization of the operation wound, which was not complete until January, 1869.

CASE III.

Kally Doss Sircar, a Bengalee, aged 32 years, was admitted on the 31st January, 1868, for pain, swelling, and impaired power of motion in the right knee, of four months' duration. For the last four years he had been subject to similar attacks, for which he had undergone a variety of treatment. There was no history of syphilis.

The joint was found to be distended with fluid, and was contracted. The limb was extended under chloroform, and placed on a splint, and the extension gradually maintained. Iodide of potassium was given, and blisters applied in the vicinity of the joints. Strapping of the knee was subsequently tried. He made slight improvement under this method of treatment, but soon fell back again. On the 2nd May, no real improvement having taken place, I tapped the knee-joint, and withdrew ℥viii of fluid of a thin sanguinolent appearance with flakes of lymph floating in it. The opening as in the first case was made valvular, and immediately closed against the access of air by lint soaked in guttapercha and chloroform. The knee was then placed at rest on a splint, and the iodide of potas. continued. The swelling and pain were much relieved by the operation, and on the 14th he could bear his weight on the limb, which had so long been completely crippled and contracted.

Some swelling still remaining, either from re-accumulation of more fluid, or some of the old not having been removed, I again, on the 26th, drew off about ℥iii more fluid just like the first. The wound was closed, and the same precautions observed as before. He was again relieved, neither pain nor inflammation followed. The knee was subsequently strapped. On the 7th June he was able to walk, and bend the knee in doing so. On the 27th June the strapping was removed, and camphorated oil rubbed in. On the 17th July, he was discharged, able to walk and much improved in all respects. The joint is still stiff, with some thickening of the surrounding tissues.

CASE IV.

K. C. Mookerjee, aged 30 years, was admitted on the 9th April, 1869, an opium eater, with chronic synovitis of the right knee. The iodide of potassium with his usual quantity of opium was prescribed. On the 10th the knee was tapped, and about four ounces of viscid puriform fluid drawn off. The wound was closed in the usual way, and the knee placed at rest on a splint. He was much relieved by the operation, and the improvement was permanent. On the 14th the joint was strapped. On the 17th he is reported as much better. On the [illegible] pain [illegible] entirely gone; joint rather stiff, but much diminished in size. He is now nearly well, and walks without much difficulty.

CASE V.

Aboojan, a Mahomedan girl, aged 26, admitted with synovitis of the left knee, and also in a slighter degree of the left ankle-joint. This came on about two months ago, after an attack of fever, and for which she had been treated with blisters before admission. The knee was much distended with fluid. There was little or no constitutional disturbance. On the 21st March, 1869, the day after admission, the joint was tapped on the outer side, and about eleven ounces of straw-colored fluid drawn off. The wound was closed in the usual way, the limb placed at rest on a splint, and lead lotion applied. There was no fever in the evening, but pain came on for a short time. On the 1st April the pain and swelling had subsided. On the 4th April the knee was strapped, and she has since been gradually recovering, having been somewhat thrown back by an attack of diarrhœa. She can walk fairly with the aid of a stick, and the swelling and pain in the knee are almost gone.

These cases all prove that the knee-joint may be punctured without severe inflammation being a necessary result, and that if a moderate degree of synovitis should happen, it may be subdued by ordinary antiphlogistic remedies and perfect rest. A certain amount of inflammation, indeed, seems to have the beneficial effect of so far modifying the condition of the synovial membrane as to prevent a re-secretion of the fluid.

It is with this object, as in hydrocele, that tincture of iodine has been recommended, and even used by some surgeons; but I confess I should feel no little anxiety in thus interfering with so delicate and important a cavity as that of the knee-joint. I should note that, in the closing of the puncture made into the joint in these cases, guttapercha dissolved in chloroform was used by saturating the lint applied over the spot, thus forming a protection through which no air could penetrate. The wound, if it did not immediately close, was subsequently dressed with carbolic acid in the usual way.

The result of these cases has been so far satisfactory as to encourage me to repeat the same treatment in future cases of synovitis.

In chronic effusions, no doubt it could be resorted to with the greatest impunity; but in acute synovitis it may equally be practised, and with the greatest relief, although probably with more risk.

SELECTIONS FROM OPHTHALMIC PRACTICE.

By J. B. Scriven,

Principal, Lahore Medical School.

Congenital Cataract.—The following three cases are, I think, worth recording: first, because congenital cataract, though by no means rare, is much less common than other forms, and secondly, because the variety about to be described seems to occur in England only in one eye. See Mr. Critchett's paper in the Royal London Ophthalmic Hospital Reports of July 1864, page 188.

If I be right in its accuracy, there certainly are exceptions to this rule in India, for, in these three cases, the cataract was in both eyes.

CASE I.

Alfred [illegible], a healthy man, aged 22, (Hospital Register IV, page [illegible]7.) Up to the age of 16 his sight was sufficient for ordinary purposes, though, from his earliest childhood, he could not see minute objects, such as needles, letters, &c., distinctly, without [illegible] with the left eye. About five years previous to admission, he began to find his vision getting worse: when he looked with the right eye, objects appeared double, though still distinctly defined. After about two and half months, objects became indistinct, the light of a candle appeared as if surrounded by stars, and, at last, the flame itself appeared as if divided into stars, and he could not see any distinct line of demarcation between the sunshine and shade. The left eye began to fail at the same time as the other, but for about five months the effect was that, to see minute objects, he had to squint more and more. At the end of the five months, however, this eye also became dim, so that he could see the circumference of objects, but not their centres.

When admitted on April 9th, 1867, both pupils acted well to light, but were each occupied by a dense white cataract. With the right eye he could see persons standing before him, but could not count the fingers: with the left eye he could count the fingers, and find his way about in the evening, though not in the day time. Both eyes were in a state of continual involuntary motion. There was no strabismus. When the pupils were dilated with atropine, he could count the fingers with the right eye, but he denied that there was any improvement in the left, with which, however, he was now found to have a very imperfect perception of some Persian letters, equal in size to about XL. Snellen: to examine these he brought them within three inches of the eye. The left eye was therefore the better of the two. The appearances, now that the pupils had been well dilated, were as follows, copied nearly verbatim from the case-book :—The right pupil was occupied by a dense, white, nearly circular body, which did not fill its entire area, but left a dark clearing around it: it was of a bluish white colour, the circumference being much more opaque than the centre, and a dense yellowish spot was observed just outside the centre, joining the circumferential part.

Beyond the white circular mass, very fine radiating lines could be seen, with concentrated light and a magnifying lens, extending from its margin into the clearing around it. The white body itself also appeared as if made up of radiating lines. The anterior chamber was very deep, probably from there being no lenticular substance. There was no perceptible tremor of the iris

The left pupil was occupied, at its upper and inner side, by a dense white mass, becoming thinner and bluish at its upper part. A large crescent of clear pupil was left below. Two small dense white fragments were seen somewhat anterior in position to the larger mass. The anterior chamber was as deep as on the other side, and the iris of this eye (left) was tremulous. On the 12th of April I operated on the right eye, under chloroform. Two shouldered needles were introduced through the cornea, and the opaque mass that occupied the pupil was completely detached from its connexion. An opening was then made at the outer margin of the cornea, through which the canula forceps was introduced, and the membrane drawn out. Some small fragments remained, which were removed by a spoon. Considerable irritation followed, but, by the application of leeches, fomentations, and atropine, this gradually subsided, and he left the hospital, with considerably improved vision, on the 30th April. 1867.

In May, 1868. he came again, with the view of having the left eye operated on. In this eye, as the opacity extended right up to the upper margin of the dilated pupil, and probably under the iris, I was afraid to adopt the same proceeding as in the other, lest I should fail to remove the whole of it. Chloroform having been administered, I therefore proceeded in the ordinary method of scoop extraction, making the upper section, about one-fourth of the circumference of the cornea, and removing a portion of iris; I then passed the point of the pricker round the opaque body, in order to separate it from its connexions, and afterwards introduced Bowman's scoop behind it; I was surprised to find that only the posterior capsule came away. the anterior capsule which remained, I drew out with the iris forceps. There was evidently no lenticular substance. No vitreous escaped. The pupil now remained perfectly clear.

A little pain and irritation followed this operation, and was subdued by the same remedies as before. The corneal wound healed favourably. On the 13th of July it is noted that this man had a perfect recognition of persons, with both eyes, tried separately. Could distinguish the individual features, but said there was a slight mistiness of the left eye. The involuntary movement of the eye balls remained, but nearly ceased when he looked at any object.

With the right eye he could read No. XX. Snellen at seven inches, with the left at five inches; with No. 4 convex glasses he could read the same type at thirty-two inches, and ordinary Persian type at five inches and a half; for this purpose he used the right eye, but when this was closed, read the Persian type with the left eye at a three inches and a half.*

He was discharged on the 14th of July. He came again in November for a pair of spectacles, which I had procured for him from England. Both pupils were quite clear, and the vision continued as at the time of his discharge; the involuntary movements of the eye had greatly diminished.

Thus the eye, which originally had least vision, became the best after operation, because, I imagine, the pupil was central and intact.

CASE II.

Devee Dial, aged 24, (Hospital Register XIII, page 199.) admitted on January 18th, 1869, on account of excessive distension of the left eye with fluid, which rendered the cornea very prominent, and had altered the shape of the whole eye-ball. This was of about six months' duration, but it was obvious that, in both eyes, there was a dense opaque capsule, occupying the inner half of each pupil. The depth of the anterior chamber of the left eye was fully half an inch, and both iris and lens were tremulous. The right eye had a decided internal strabismus.

It was found that there was very little difference between the vision of the left and right eye. He could see the hand in front of him, but could not count the fingers. The left (distended eye) was slightly more misty than the right. He said that his vision had been the same as long as he could remember, but he now complained of pain and smarting in the left eye, which induced him to come to hospital.

Both eyes were in a state of continual involuntary movement, and there was a good deal of photophobia, in consequence of which examination was exceedingly difficult.

A section of the cornea was made in the left eye, with the view of relieving the tension, removing a portion of iris, and extracting the cataract. Bleeding, however, came on from the fundus of the eye as soon as the section was completed, and nothing further could be done.

CASE III.

Allayar, aged 30, (Out-patient Book, March 6th, 1869). Blind from birth.

With the right eye he could barely count the fingers; with the left eye he could not do so. Had slight internal strabismus, sometimes of one eye, sometimes of the other. Eyeballs in perpetual motion. Pupils acted well. On dilating them with atropine, the following appearances were noted :—

The anterior chamber in both eyes was very deep. The cataract in the right eye consisted of densely white capsule, occupying the greater part of the area of the pupil, but leaving a narrow crescent below. This crescent was comparatively clear, yet appeared to have a thin membrane, like a bit of gauze, at one spot in its inner half, marked with several small white specks.

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* On examination by means of a prism, it was found that the man had not the power of binocular vision; and I learn that now (March [illegible] has a distinct external strabismus of the left eye, the same eye that, according to his own account, used to squint internally.

[illegible] at firm[illegible] [illegible] was a [illegible] the [illegible] what [illegible] regular[illegible] the disease. Occasional [illegible]

The anterior chamber [illegible] was equally deep, the cataract [illegible] like a [illegible] extending from [illegible]

Along the [illegible] lower margin of the pupil, [illegible] was a slit in the membrane, passing across that part of the pupillary area, and turning up on both sides. Below this slit the membrane appeared to be thicker than at other parts.

It was impossible to find out how much this man's vision was improved by the atropine, as he was very unwilling to give any information, lest further treatment should be proposed—a proceeding to which he would not consent, believing that nothing could be done for a man that had been born blind.

The following sketch, made at the time, will give some idea of the appearance of his eyes, after the instillation of atropine:—

Right eye. Left eye.

All these three cases had the same kind of cataract, that is to say, membranous, with little or no lenticular substance; all had the same oscillation of the eyeballs, and a similar increased depth of the anterior chamber. Cases 2 and 3 had been practically blind from birth. Case 1, Ahmed Deen, for the first 16 years of his life had tolerable vision, but there is no doubt that the disease was congenital in him as well as in the others.

A very interesting question, however, arises here, viz., what was the condition of this man's eyes during these 16 years? It certainly was not that which existed when he applied to me, for then he was practically blind, whereas, formerly, he could see sufficiently for ordinary purposes. Nevertheless, he was [illegible] "squint" in order to examine minute objects. It appears that this [illegible] gradually increased, and that at last he became aware of [illegible] disorder of [illegible] diplopia, followed by division of the candle flame into stars, and, on the left, by a [illegible] of the centres of objects. This history suggests a central opacity in each lens, more dense in the left, accompanied possibly by some original deficiency, though not total absence, of lenticular substance.

In the [illegible] of lenticular substance [illegible] the man could scarcely have had the amount of vision which he assured me he possessed when he was [illegible] there certainly was none in the left eye.

It seems, therefore, most likely that a [illegible] central opacity existed from birth, and that it [illegible] increased, at the expense of the lenticular substance, [illegible] was the [illegible]

As to the treatment of these [illegible] Ahmed Deen's case [illegible] pretty fairly. The [illegible] point [illegible] Any fragment [illegible] have [illegible] operation [illegible] should be [illegible] well worked by the [illegible]

Some of the [illegible] features of the [illegible]

[illegible] had [illegible]

No [illegible] significancy [illegible] of the cases.

ON LUNAR INFLUENCE OVER MALARIOUS FEVERS.

By W. J. Moore, L.R.C.P.,

[illegible]

A belief in lunar influence over disease has prevailed from the earliest ages, as evidenced by the writings of Hippocrates, of Galen, by the Hindu [illegible], by the 121st Psalm. At a later period, the plague was ascribed to celestial changes, by Diemerbroeck, Hermanus, and others. In the last century, asthma, fever, hysteria, epilepsy, periodical hemorrhages, were all supposed to be under lunar influence. We have no less firmly expressed belief in lunar agency, by such authors as Mead, Darwin, [illegible], Grainger, Balfour, Jackson, Coldstream, and others, both in temperate and tropical climates. But the supposition that the moon influences the progress of diseases generally, appears to have been gradually abandoned, while the impression that [illegible] diseases, affections of the eye, and rheumatism are thus aggravated, especially in tropical climates, remains, and has even gained strength. Thus we find Annesley stating, "he has frequently observed the influence of the moon upon fevers, and found it necessary to regulate his practice accordingly." Johnson, speaking more decidedly, remarks, "however sceptical people may be in England, with regard to planetary influence in fevers, it is too plainly perceptible within the tropics to admit of doubt." In 1839, the late Dr. Murray, of Bombay, published "cases illustrative of the influence of lunar agency as an occasional cause of periodic disease." Dr. Wise, formerly of Calcutta, remarked: "the moon may be observed to have a remarkable influence in producing the paroxysm." Dr Geddes wrote less decidedly, but still in belief, that the lunar agency was often apparent. A Doctor Bell, physician to Her Majesty's mission in Persia, during 1834, attributed "marked effects" to the influence of the moon. Goodeve, in describing the fever of Midnapore, observes "the accessions of this fever were evidently influenced by the changes of the moon, and however sceptical many people may be on that point, I am persuaded by close observation of this much-disputed object, that the human body is nearly as much controlled by the lunar changes as the tide and weather; and in confirmation of this opinion we find that the periods of new and full moon are those at which the paroxysms of this malady recur, and that with the utmost regularity." Leith, of Bombay, speaking of the fevers of Quetta (Scinde), states "the effect of sol-lunar influence in fevers is experienced to be as great here as in India." Moorhead remarks: "to find those who have suffered from malarious fevers experiencing recurrence at the periods of the new and full moon is a fact familiar to both patients and medical men in India."

Sir Ranald Martin mentions, in more than one publication, the influence of the moon as "very remarkable." Mr. Day of Madras, in an able statistical paper on tropical fevers, arrives at the conclusion that there is a sol-lunar influence which is greater at the equinoctial period than in the respective intervals. Mr. Day, moreover, states that severity of attack is also traceable to lunar influence. In 1862, after ten years' observation, I thus expressed my own opinion: "Indeed, a very short residence in the tropics will convince the most sceptical, that individuals who have suffered from malarious fever are more or less affected at the full and change of the moon. Many experience return of fever at these times, other feelings of uneasiness or *malaise*, but not amounting to actual ague, and this predisposition to become periodically affected may remain for months, or even years, and may recur at uncertain periods, the intervals being passed in perfect health." Lastly, Dr. Peet, who, in 1843, published a *resumé* of the subject, besides mentioning several of the various author's opinions as above referred to, quotes also, "report on the diseases of the Indus Flotilla," by Mr. Floyd; "a statistical report on Sukkur," by Mr. Jephson; another report on Sukkur, by Mr. Edwards; a report on the 46th Regiment, by Assistant-Surgeon Dhean; Dr. Bankier's work on cholera; Dr. Murray's account of the Mahableswar Hills; in all of which evidence in favour of lunar influence is stated to be forthcoming. Dr. Peet also mentions that, in 1839, the following conclusion was drawn from cases watched at the European General Hospital of Bombay: "that, in intermittent fever, a modification of the symptoms, chiefly by exacerbations, does occasionally take place about the period of the principal lunar alternations." Thus, it must be admitted that, however ridiculous the subject may to some minds appear, there must be at least some cause for a belief so common among the general public, and shared more or less firmly by so many eminent members of the medical profession.

But, as a matter of course, the supposed lunar influence on malarious disease has not been permitted to remain without contradiction and doubts. Dr. Peet informs us, the first attempt to decide the question by proof was made by Dr. Stokes, of Dublin. But the fevers watched were the famine or relapsing fevers of 1817. These Irish statistics, therefore, neither relating to malarious disease nor to tropical climates, may be regarded as worthless. In a report drawn up by order of the Madras Government, respecting the fever prevailing in 1809-11, the authors remark: "with regard to the moon producing relapses of fever we cannot speak with much confidence." But the most telling material brought forward by Dr. Peet is a statistical table, arranged by the late Assistant-Surgeon Cruickshanks, of cases of malarious fever occurring in China, the conclusion being, that neither in the first attacks nor relapses does the moon seem to have exerted any perceptible influence. On this negative evidence, which would certainly appear weak in comparison with the wide-spread belief, Dr. Peet, in 1843, decided against the influence of the moon, and more than twenty years afterwards reiterates his opinion.

But, notwithstanding Dr. Peet's able enquiry into the subject in 1843, the impression that lunar phases influence certain forms of disease remained much as before. This is evidenced by the later writings of Martin, Moorhead, Day, myself, and others, previously quoted. And among the general public, especially among Anglo-Indians, the belief even became more confirmed. Among natives of the better class also the idea extensively prevailed. Accordingly, with the view of authoritatively deciding the question, His Excellency Sir W. Mansfield, when Commander-in-Chief of Bombay in 1860, directed that records of paroxysms should be kept in every medical charge in the presidency. At the end of the year, records of 56,175 paroxysms were made to Dr. Girand for report. The conclusion arrived at by this officer, was a balance of 618 against the theory of lunar influence.

Dr. Girand, moreover, proceeds to argue that, as the once reputed influence of the moon on plague, asthma, insanity, periodical hemorrhages, and cholera, is not now entertained, the idea of connection between lunar phase and malarious fevers, should also be discarded. As exemplifying the strength of popular fallacies, he remarks that, although the astronomers Arago and Airy deny any connection between the lunar phase and the weather, people still predicate changes from the moon's age, just as they habitually connect the latter with fever. The springs are said to be noted periods, and therefore the recurrence of fever at such times is presumed to be more recollected than when it happens on other days. Hence the popular belief. The following simile is also given. People in Bombay generally entertained the idea that the English mail came in oftener on a Sunday than any other day, simply because Sunday being a marked day its events were more noticed. Lastly, Dr. Girand quotes Bacon, to the effect that "men mark events where they are fulfilled; but where they fail, though this happens much oftener, neglect and pass them by."

But Dr. Girand's ingenious arguments did not suffice to prevent objections being advanced to both the statistics, and to the manner in which they were manipulated. While some observers classed all their cases of intermittent fever under the head *primary attacks*, others classed theirs as *secondary*, the latter only being supposed to be influenced by lunar agencies. The statistics were almost entirely formed from cases among soldiers, in whom debauch, exposure, fatigue, or other conditions incidental to military life, must often times have induced recurrence of paroxysm. Also the practice of administering quinine as a prophylactic was more prevalent than now, and this must, if there be any truth in the generally accepted opinion regarding the powers of quina, have interfered with the natural periodicity of the disease. Lastly, Dr. Girand made the periods of the springs to extend from two days before to two days after the date of the new and full moon. Thus, ten days in each month was assumed as the time in which lunar influence exists. But it was objected that this interval is too long, and that 36 hours should have been the limit.

Under these circumstances, the belief in lunar influence remained pretty much as before among the non-professional public; and, as far as I am aware, few medical men, previously admitting lunar agency, changed their opinions on the subject. Holding in mind the many disturbing agencies in operation against all statistical evidence on the point, individual testimony must be regarded with respect, and of this we may meet with instances almost daily. My attention has long been directed to the matter, and, on first arriving in India, no one was more incredulous. Observations of individual cases soon, however, changed my opinions, and, as I wrote in 1862, "practice in the tropics will convince the most sceptical that individuals who have suffered from malarious fevers are more or less affected at the full and change of the moon." So I now believe; and this, notwithstanding that my own statistics, now recorded, do not support my views. As officiating general superintendent of the Raj Dispensaries in Rajpootana, I asked for and received[*] daily records of fever cases from twenty-six institutions for six months, and from twenty-four for the whole year 1868. Reports from several dispensaries were not included, as I felt some doubts regarding their correctness. The total number of cases recorded is 15,973. From enquiries, which need not be here detailed, I have reason to think that 80 per cent. of the natives of India suffer from one or other variety of malarious fever before the age of puberty, or say 15 years. The number of children presenting at the dispensaries was 20 per cent. to the total treated. It is therefore obvious that the great majority of the fever cases reported must have occurred in adults, and were, therefore, *secondary attacks*, or paroxysms coming under that description (afterwards more particularly referred to), not due to malaria, but to atmospheric vicissitudes consequent on lunar changes exciting malaria, already present in the system, into renewed action. But an examination of the daily statement for twelve months shows that no connection is to be traced between the phases of the moon, and the greater prevalence of

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[*] I take this opportunity of expressing my obligation to the Medical Officers who responded to the circular calling for daily fever reports, viz., Dr. Harvey, Bhurtpoor; Dr. Burn, Joypoor; Dr. Cunningham, Odeypoor; Dr. King, Jodhpoor.

[illegible] that [illegible] day before [illegible] however, [illegible] anything, must be regarded as [illegible]

REMARKS ON CYST INFECTED MEAT AT MEEAN MEER; ITS NATURE AND PREVENTION.

By J. [illegible], M.D., F.R.C.S.,

[illegible]

Any [illegible] which [illegible] the health [illegible] cyst-infected [illegible] Meean Meer, [illegible] other parts of [illegible] Punjab, [illegible] ways, with [illegible] to the public [illegible] the kindness [illegible] executive [illegible] Station, it [illegible] that 2,51[illegible] during the year 1868, [illegible] 235 were found [illegible] a percentage of [illegible] the years 186[illegible] 1867 [illegible] are shown to have been [illegible] from [illegible] the month of January, [illegible] 137 were [illegible] 125 were found cyst-infected, being a percentage [illegible] the month of February 58 were [illegible] and 104 [illegible] same cause, giving a percentage of 27.2[illegible] Therefore, the total number of cattle [illegible] cyst-infected [illegible] up to, and for the month of February, amounts to 164, which, calculated at [illegible] Rs. 8-8 [illegible] a total loss to Government [illegible] Rs. 3,944. From [illegible] but [illegible] inversely [illegible] Executive Commis[illegible] from every [illegible] cyst-infected, [illegible] which [illegible] of the [illegible] and between [illegible]

[illegible]

[illegible] remedy. [illegible] as the [illegible]

I [illegible] and should, if possi[illegible] annoyance [illegible] symptoms often [illegible] cases are recorded, both in [illegible] country [illegible] which [illegible] the human body, and caused [illegible] to believe that many cases reported [illegible] may have been owing to the deve[illegible] in the brain, or in some vital organ. [illegible] which, in many cases, [illegible] tapeworms, and many instances [illegible] the expulsion of the worm from the [illegible] was followed by a complete cure of epileptic convul[illegible] [illegible] of immature [illegible] in the brain, [illegible] at present is beyond the reach of medicine [illegible] surgery. [illegible] cause an [illegible] be imagined, [illegible] the way in investiga[illegible] sets of symp[illegible] diagnosis, [illegible] with [illegible] or imbecility. The development of the cysticercus [illegible] cellulosæ in cattle [illegible] add to the nutritious value of the meat, but rather the contrary, while it serves admirably to propagate an abominable disease in man.

The [illegible] of a subject which bears such a direct refer[illegible] to the health and well-being of a European and Native population is very [illegible] and should induce steps to be taken [illegible] a disease which naturally tends to increase rather than to diminish. The [illegible] of the inhabitants of Iceland, Russia and Abyssinia, [illegible] practical lessons, from which [illegible] It is reported that in Iceland [illegible] the deaths of the population is caused by [illegible] of a tapeworm which infests the dogs, and even in this country it is most [illegible] to see the great number of [illegible] cattle, otherwise apparently healthy, whose livers [illegible] especially [illegible] by masses of these im[illegible] [illegible] as the latter is called, [illegible] in this country, but [illegible] however, [illegible] the relatively [illegible] villages, [illegible] cattle and sheep. From [illegible] and develop[illegible] and the knowledge is not a [illegible] of actual experiment and of observation, [illegible] prophylactic and [illegible] carried out, would have the effect of [illegible]

The [illegible] of the nature of immature [illegible] cannot be looked [illegible] of bad sanitation in the [illegible] I will not say that [illegible] of the villages and towns of the Punjab [illegible] other parts of India, but [illegible] that the [illegible] of some of the [illegible] the Punjab, through which I have passed, is a [illegible] professing to have for its object the [illegible] and welfare of the population. To anyone who has the [illegible] the interior and [illegible] of some villages, it will be [illegible] that the most [illegible] rules of sanitary science are utterly [illegible] during the course of the day [illegible] the calls of nature [illegible] some pond, [illegible] cattle [illegible] to drink and [illegible] pond, which probably already contains, in its water [illegible] beyond human calculation. Thus,

[illegible]

then, is the true source from which cattle become cyst infected, whether they receive the eggs from the water or grass; since the human body is the host for the mature parasite. If an enquiry should be instituted, I would expect to find full-grown tape-worms amongst the population in the towns and districts which furnish cyst-infected cattle, and there also a particularity in the water used by the latter.

As our knowledge of the natural history of this class of parasites or entozoa is tolerably perfect, it enables us to suggest plans for their destruction, before they arrive at the cystecercus stage—

First.—Find out the districts which supply the cyst-infected cattle, and let there be a thorough examination for tape-worm amongst the inhabitants of those districts.

The mature worms, when found, should be expelled from their hosts by some powerful anthelmintic medicine, and the ova destroyed.

This plan, if properly carried out, would be most successful, and the propagation of the disease would thereby be entirely prevented.

Second.—Examine microscopically the water, &c., of those infected districts, for the ova of the tape-worm, so that, if it is found to contain them, it should be avoided when practicable.

Third.—Establish a system of latrines in every village, under the superintendance of the chief zemindar, who should be accountable for the general sanitary condition of the whole neighbourhood. By such a plan, at all events, attended with little or no expense, there would be less tendency for the ova to pass into the water or food used by the cattle, or to be washed by the rains over the whole district; but, on the contrary, the ova would be localized, and, perhaps, be destroyed in a short time by slight decomposition.

It has been suggested to organize cattle farms under the management of the Government, and thus insure a supply of good, well-fed cattle for the use of the troops; but it might be rather difficult to carry out, and would certainly be attended with great expense, besides checking, in some degree, the trade of the country, and preventing local enterprise. Neither would such a system produce less cyst-infected cattle, if the sanitary arrangements already proposed were to be neglected.

REPORT ON THE MEANS ADOPTED TO STAMP OUT SMALL-POX AT UMBALLA, 1869.

By Surgeon T. E. Tuson, M.D., F.R.C.S.,

Officiating Staff Surgeon.

The following measures were adopted at Umballa, during the time that small-pox was raging at Delhi and other surrounding stations, and I am induced to bring forward the subject, as it appears to me that the suggestions made by Sir James Simpson, to stamp out small-pox on its first appearance, are most important.

I think the results of the precaution adopted at Umballa are instructive and encouraging, as the results were satisfactory, and the deductions are, that this fatal disease may in a measure be warded off, if not [illegible].

When the disease threatened to become epidemic in the station, I instituted the following arrangements, and by personal supervision took care that they were efficiently carried out, and, with the aid of good and reliable assistants, the duty was properly performed. The disease never gained ascendancy, and although a few cases occurred from time to time, still it never became epidemic, which was the result I was most anxious to attain:—

1st.—Carefully segregating the patients affected.

2nd.—Disinfecting the houses where small-pox patients were taken from, with sulphurous acid, McDougall's powder, and by relaying floors.

3rd.—Instituting vaccination throughout cantonments, officer's compounds and those of other residents, and having a staff of vaccinators to operate through the Melelee Bazaar. All children and adults were vaccinated without delay, who were in an unprotected state.

4th.—All patients affected with the disease were at once conveyed to the Small-pox Hospital, and those patients belonging to different regiments were carefully kept apart in tents, and no intercommunication allowed.

I would wish to draw attention to the beneficial influence that McDougall's powder exercised by sprinkling it on the floor of the Hospital, and also on the patient's bedding and clothes. All bad smell was avoided, and the patients appeared to me to recover quickly.

CASES FROM PRACTICE.

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CLINICAL NOTES OF CASES RECENTLY TREATED IN THE GENERAL HOSPITAL, CALCUTTA.

By W. J. Palmer, M.D., F.R.C.S.L.,

First Assistant, Presidency General Hospital.

In these days, when so much intellectual energy is expended on the study of what is called the "natural history of disease," when the more obtruse details of chemical and spectroscopical analysis are rigorously applied to the discovery of alterations in the fluids of the body, both healthy and diseased; when the highest magnifying powers of our microscopes are zealously applied to unravel minute pathological changes; and again when the thermometer, the ophthalmoscope, sphygmograph, the laryngoscope, &c., &c., are rapidly becoming recognised as aids to correct diagnosis, not less necessary to us in our day than the stethescope was to our fathers, it is not surprising that the one great end of all our learning, *viz.*, the cure of disease, or the alleviation of suffering, should appear to be somewhat overlooked and forgotten; a visit, however, to the wards of our hospitals will suffice to reveal that many new and valuable discoveries are constantly being made and applied to the treatment of disease, and also afford strong evidence that therapeutics is not less successfully pursued than any other branch of medical study. A few examples in illustration may not be considered unworthy of publication.

Bromine and the bromides were scarcely known as therapeutic agents, until the last few years, during which time bromide of potassium has gained a great reputation as a nervine sedative, its marvellous influence in some forms of epilepsy has been amply discussed, and fully brought to notice, but very recently the curative effects of this salt, in cases of delirium tremens or acute alcoholism, have appeared so remarkable and worthy of observation, that I am desirous to bring to notice the results of its action on some cases of that disease treated in this hospital, during the past few months.

The first case was that of a well-built muscular young man; he was brought to hospital early one morning in February, in such a violent condition, that it was considered advisable to place him at once in a room fitted with iron-bar-doors, which is kept for such patients. He shouted and screamed incessantly; tore the clothes on his back into tatters, and broke every breakable article within his reach. His arms, face, and legs soon became bruised and excoriated by rough contact against the bars of the doors; in short, he behaved generally in as wild a manner as is ever seen. He could at any time be subdued and made quiet for a few seconds by the influence of a commanding eye and voice, but he again relapsed into his former wild and unmanageable condition.

His medical history was never made out quite satisfactorily, there was reason to believe that he had not been in the habit of indulging to excess habitually, but having become suddenly depressed by misfortune, he had drunk deeply to drown his cares.

In addition to the usual treatment of fluid foods he was, [illegible] him of [illegible] he [illegible] half [illegible] The effect of the [illegible] he slept the [illegible] suffering from [illegible]. This was a very [illegible] case [illegible] the remedy.

Case II was a large man [illegible] he was almost [illegible] was so far [illegible] as [illegible] twenty-four hours. [illegible] the same [illegible] was [illegible] the good effects of the [illegible] about six hours after he had [illegible] taking it, and he was not restored to tranquility [illegible] day.

Of the remaining eight cases treated, only two others were [illegible] above two, the [illegible] effects of the remedy were [illegible] the first [illegible]. In a disease [illegible] summary [illegible] effects of [illegible]; for the continued use of alcoholic drinks, [illegible] at least, to a [illegible] cause of it. [illegible] reason [illegible] the second case above quoted, had been in the habit of indulging [illegible] in large quantities of [illegible] for a long time previous to his admission; so that he was suffering, not merely from undue excitability of his nervous system, but all the [illegible] of his body had become thoroughly deranged, his excreting and secreting glands were also more or less disorganised; hence there was great difficulty, on the one hand, in eliminating the poisonous [illegible] and absorbing the remedy, and on the other, in preparing new [illegible] for the repair of the damaged nerves by the ordinary processes of digestion and [illegible].

The remaining eight cases treated were variously influenced by the remedy, according as the disease was less than at present in cases I or II above quoted, but in all of them its beneficial effect appeared to me to be so far superior to that of any other remedy, that I hope others may be induced to give it a fair trial, and make the results of their observations known. The plan of giving large doses frequently repeated, appears to be essential to the success of the treatment.

2. The beneficial effects of belladonna where large doses of opium have been taken.—

A [illegible] was brought from one of the ships in the river to the hospital between the hours of six and seven A.M., on the 8th April, suffering from all the usual effects of poisoning by opium. It was reported that he had taken about two ounces of laudanum three hours before; he had been kept from sleeping [illegible] by constant walking up and down the deck, and [illegible] with cold water; when, however, these [illegible] to keep him awake, he was brought to the [illegible]. No [illegible] evidence could be obtained whether the man had vomited since he took the [illegible]; he probably [illegible]; however, he was so much under the influence of the narcotic, that it was scarcely possible to [illegible] him by the constant influence of brisk [illegible] with a wet towel and [illegible] with cold water. [illegible] treatment [illegible] stomach pump could [illegible] have long ago been [illegible] reason [illegible]. [illegible] was given [illegible] any good [illegible]. The [illegible] effects [illegible] effects on the system [illegible] made known to the profession [illegible] of the [illegible] *Journal of* [illegible] this kind was known [illegible]. [illegible] appear to afford [illegible] in these cases. It was [illegible] the extract of belladonna [illegible] a quarter [illegible] dryness of the [illegible] and [illegible] of the pupils [illegible] was given [illegible] a quarter of a [illegible] ordered to be given [illegible] patient [illegible] to be repeated every half hour. [illegible] keeping him awake [illegible]. After [illegible] doses of the belladonna had been administered, the patient appeared better, he [illegible] while trying to answer [illegible] put to him, [illegible] more [illegible] appearance; it [illegible], however, thought advisable [illegible] hourly instead of every half hour. He continued to improve steadily [illegible] he could be [illegible]. By [illegible] M., all sleepiness [illegible], and [illegible]. He [illegible] however, so far [illegible] to walk about [illegible]. He was urged every [illegible] between times, and the [illegible] again, the pupils having [illegible]. He remained under observation two [illegible] recovered.

[illegible] which illustrate the great advantage [illegible] which has [illegible] total [illegible].

[illegible] of what is [illegible] sympathetic influence [illegible] has [illegible] the [illegible] with [illegible] inflammation [illegible] other, [illegible] but the great [illegible] the other [illegible] way [illegible] has [illegible] been quite recently [illegible] it was not clearly [illegible] which occur in any [illegible] almost always [illegible] way, not well [illegible] on the second eye, [illegible] that [illegible] removal of the [illegible] organ affords [illegible].

[illegible] of extirpation was sufficiently retained [illegible] to the latest [illegible] moment [illegible] the eye ball [illegible] by dividing successively the muscles [illegible] and the optic nerve, [illegible] against removing a [illegible] done away with.

[illegible] who have paid much attention to this [illegible], recommend that an [illegible] eye should be removed the moment that [illegible] evidence that it cannot again [illegible] as an organ of vision; if, however, this be [illegible], there can, I think, be no doubt [illegible] of removing it as soon as the second eye [illegible] in any way affected.

Case I.—A well-formed, healthy [illegible] received a [illegible] April 1868. This caused severe inflammation [illegible] this time till April, 1869, he suffered from frequent attacks of severe pain [illegible] eyes, with [illegible] inflammation of the right [illegible], and was admitted into hospital suffering from severe pain, and a considerable amount of inflammation [illegible]. Temporary relief was obtained by the ordinary treatment, but the swelling and suffering [illegible] with still greater severity. [illegible], the left eye was enucleated, the severe frontal and [illegible] pain ceased immediately, and as the chances of the other eye [illegible] was [illegible] from the arrest of [illegible] by the inflamed state of the [illegible], the [illegible] freely, and has [illegible] improving daily.

Case II.—The relief afforded in the other case was still more [illegible] the seat of the [illegible] to give place [illegible] as the operation is performed, [illegible] after the operation, both patients [illegible] to constant [illegible] that they were not allowed to go about the wards in the light amongst other patients.

3. *The remarkable* [illegible] *possessed by the* [illegible] *the formation of pus in the urinary bladder.*—Whenever the bladder fails to empty itself completely either from insufficient contractile power in itself, as seen in cases of spinal injury and disease, or from any impediment in the passages of exit, as the various forms of urethral stricture, the [illegible] retained urine, being in the presence of mucus and other putrescible matter, such as decomposition [illegible] urea, by a [illegible] of its molecules and absorption of water, becomes carbonate of ammonia, thus:—

$$CH_4N_2O + 2H_2O = (NH_4)_2CO_3$$

This newly-formed product is highly irritating to the mucous [illegible] of the bladder, it [illegible] gives rise to increased blood supply, and formation of cells, which, however, are not gradually built up into the normal scaly epithelium but are hurriedly thrown off in the form of pus cells, constituting that troublesome complication of paraplegia and stricture, called purulent-urine.

Till within the last few years, the tedious and troublesome process of washing out the bladder daily with weak acids, by means of the double catheter, was the most effectual known mode of treating these cases. A real improvement in the treatment was made, when chemists proclaimed that benzoic acid given by the stomach was converted into hippuric acid while passing through the system, and also that this acid was excreted through the bladder; this indirect supply of acid to the urine was found to be much more effectual in preventing the formation of pus than any mineral acid previously given had been; still, however, it was only in very mild cases that it controlled the formation of pus entirely: some more powerful remedy was still a desideratum, and this has, within the past year, been found in the alkaline hyposulphites. The first case in which I had an opportunity of observing this treatment was so remarkably striking, that it is worthy of mention here, though it occurred in London. An old man, who had been paraplegic for years, was nearly worn out from bed-sores, and the constant drain of from six to ten ounces of pus from the bladder daily. Half a dram of hyposulphite of soda was administered to him every three hours; after continuing this for six days, his urine became clear, and quite free from pus or putrescence. This result appeared so marvellous as to be scarcely credible; the urine, however, continued to be free from pus; the remedy was now stopped, and after four days there was again as much pus in the urine as ever. This appeared to be good evidence that the remedy had caused its disappearance in the first instance; if its re-administration again arrested the formation of pus, this evidence would be conclusive. Similar doses were then again ordered and with similar results, *viz.*, a total disappearance of pus after four days. The patient was too near death to be materially improved by this treatment, still it would appear that, if the remedy had been administered at an earlier stage, his life must have been prolonged.

No case so favourable for trial as this has occurred in the general hospital. One man, however, was admitted in January last, suffering from three strictures in different parts of his urethra: these caused so much impediment to the passage of urine, that pus was formed in the bladder to the extent of from four to six ounces daily. Half-drachm doses of hyposulphite of soda were given to him every three hours, and the strictures were treated by gradual dilatation. The amount of pus in the urine decreased rapidly, in five days it had entirely disappeared, though it was six weeks before the patient made a perfectly free stream of urine. What is the *rationale* of this treatment?

The researches of Pasteur and others have shewn, within the last few years, that a drop of sulphurous acid would cause the immediate arrest of fermentation taking place in a mixture of yeast and sugar. If this particular kind of fermentative action is so suddenly arrested, it is not improbable that other kinds are also similarly prevented. It was previously known that although a pure solution of urea in water would not form carbonate of ammonia, yet if a little mucus or other putrescible matter were present, this decomposition would take place. In urine, whether inside the bladder or out of it, putrescible mucus is at all times present and ready to initiate the ammoniacal fermentation unless prevented; it therefore appears that the presence of sulphurous acid, or a hyposulphite, in the urine is sufficient to arrest this action. All who have experienced the tediousness and inadequate results of the old mode of treating these cases, will be able to appreciate the great advantage of such an addition as this to our therapeutic agents.

CYSTIC TUMOUR OF THE LEFT LABIUM.

By Dr. Hutchinson,
Civil Surgeon, Patna.

Gorubun, a prostitute, applied for relief at the dispensary early last month. States that, a year ago, she suffered from primary syphilis, and was cured. Three months ago she first noticed a swelling of the left labium, to which her attention was drawn by the intolerable itching, and for it she was leeched and cupped, but without benefit. She then applied to the dispensary, and the sub-assistant surgeon, diagnosing elephantiasis of the labium, treated her with iodine applications.

On seeing the case, there was certainly from the appearance of the tumour, which was about the size of a hen's egg, a ground for the idea about elephantiasis: but on careful examination, I detected fluctuation, and passing an exploring needle, let out two ounces of an extraordinary fluid, exactly like mud and gum, a glairy fluid of a rich brown colour, and irritant withal, for my hand sensibly smarted under its influence. The microscope revealed nothing but pigment granules with a few epithelial cells here and there: whence came the strange colour of this secretion? I thought it might be a disorganised hæmatocele, but certainly never heard of the brown colour being assumed. Was the colour due to an abnormal collection of the ordinary pigment of the skin? if so, why should so strange a locality be chosen for the freak. I confess I am nonplussed and unable to explain the phenomenon.

ELEPHANTIASIS OF THE BIG TOE, LEFT FOOT.

Lal Behari Koormee states that, four years ago, he noticed a pea-like swelling on the lower aspect of the toe; this gradually and steadily increased until it has attained the present dimensions, which are those of a child's head, the circumference of the mass being 15½ inches. The leg rests upon the heel; and the tumour, the lower aspect of which is tender and vascular, bleeding freely on any irritation. As the cellular tissue of the big toe alone was involved, I removed the mass with the two phalanges, and finding sufficient material for flaps, did not cut through the head of the metatarsal bone. The tumour weighed 25 oz.

DEATH CAUSED BY SWALLOWING NATIVE TOOTH-STICK.

By G. A. Watson, Esq.,
19th Bengal Cavalry.


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The following case is interesting, as showing the careless way in which natives sometimes clean their teeth, as well as the necessity of proper precautions being taken in selecting the wood, from which their tooth-brushes are made. In this instance, the man was not content with scrubbing his teeth and tongue with his dantum, but was in the habit of thrusting it back into the pharynx, in order to clear away any phlegm that might have collected there, and to excite the act of coughing to clear his larynx. The wood generally preferred by natives for cleaning their teeth is the root of the peeloo (salvadora), or branches of the babar, or neem tree, but when these are not at hand, almost any tree that may be most readily procurable is made use of. In the following case a branch of the common willow was used, the wood of which is very brittle.

Jhunda Singh, Sowar, 19th Bengal Cavalry, aged 23, came to hospital on 23rd July, stating that, whilst cleaning his teeth with a piece of wood, it had broken in his mouth, and that he had swallowed a portion of it. At first he complained of some difficulty in swallowing, but it was evident that the wood had passed into the stomach, and on the following day, as he appeared to be suffering no inconvenience from it, he was discharged to duty. On August 15th, he was re-admitted into hospital suffering from fever, and complaining of pain in the right hypochondrium. When questioned about the piece of wood, he did not attribute his present sufferings in any way to it, but said that he had digested it, "hazm hogiya." He continued to suffer from fever, together with increased pain and tenderness over the region of the liver, and a tympanitic condition of the bowels, until the 28th August, when decided symptoms of jaundice showed themselves. On September 6th, the tenderness over the liver was much increased, and a distinct hardness and slight swelling was felt there. During the same day he passed a large quantity of blood from the bowels, and he died at 6 A.M., on the 7th September, forty-six days after he had swallowed the piece of wood.

A *post-mortem* examination was made, and a piece of stick of the willow, six inches in length, and about one-fourth inch in diameter, was found lodged in the duodenum, one end of it was projecting through the coat of the duodenum into the under-surface of the liver. The liver was inflamed, and some puru-

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* Reduced to one-fourth of the original size.

[illegible] The [illegible] was a [illegible] [illegible] [illegible]

ABSCESS OF THE SPLEEN

By Assistant-Surgeon [illegible]

A [illegible] [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible] [illegible] [illegible] with fever. [illegible] poultices [illegible] [illegible] great [illegible] [illegible] [illegible] tender and [illegible] [illegible] [illegible] and blistered. A few days after, the [illegible] [illegible] the spleen and the [illegible] [illegible] poultices were applied, and as [illegible] [illegible] [illegible] [illegible] was tapped [illegible] [illegible] [illegible] for some days.

A [illegible] compress was applied [illegible] [illegible] a perfect [illegible] [illegible] [illegible] for three months [illegible] [illegible] general health [illegible] [illegible] [illegible] and the patient who was emaciated [illegible] [illegible] [illegible] before [illegible] flesh, and [illegible] healthy appearance [illegible].

PASSAGE OF A CALCULUS FROM THE FEMALE BLADDER

Sub-Assistant Surgeon [illegible] in medical charge of the Dispensary at [illegible] [illegible] interesting account of [illegible] [illegible] from frequency [illegible] for the last seven years [illegible] [illegible] of late, and she had [illegible] [illegible] the last two months. Calculus vesicæ [illegible] diagnosed, but an examination was not permitted.

Some days after her last visit, it was reported at the Dispensary that she had passed a large stone while straining at stool under the influence of a purgative. An examination was [illegible] permitted, and the urethra was found dilated sufficiently to admit my four fingers; it was bruised, and there was an offensive [illegible] discharge." An excellent and complete [illegible] [illegible], however, made.

The stone [illegible] [illegible] [illegible] phosphate, weighing [illegible] 2 [illegible] and 2 lines [illegible] 2 lines broad, [illegible] [illegible] where the [illegible] 2 [illegible]."

GUINEA-WORM TREATED BY THE LOCAL APPLICATION OF CARBOLIC ACID

By J. M. [illegible], M.D.

[illegible]

SIXTY patients [illegible] [illegible] of this troublesome parasite were treated during the past year at the [illegible] Dispensary, by the local application of carbolic acid. Of these 57 were cured and 3 [illegible]. The average duration of the treatment was [illegible] days, but, in some [illegible] the worm was extracted entire after the first [illegible] application.

The [illegible] [illegible] [illegible].

[illegible] of the worm [illegible] [illegible] [illegible] [illegible] poultices [illegible] applied and the [illegible] opened with a [illegible] [illegible] portion of the worm [illegible] [illegible] [illegible] [illegible] the thicker portion [illegible] [illegible] and treated with [illegible] a little cotton [illegible] [illegible] made, when [illegible] [illegible] [illegible]. Another [illegible] [illegible] [illegible] usually got out in this way [illegible] the first day, which [illegible] then rolled [illegible] [illegible] [illegible] by a piece of adhesive plaster. [illegible] repeated each day, until the whole has been extracted.

The immediate effect of the carbolic acid is to destroy the vitality of the [illegible], which become white and opaque, and considerably firmer in texture, [illegible] to be so readily broken [illegible] the natural state. It is also worthy of remark that [illegible] [illegible] breaking, which happened in one or two [illegible] [illegible] inflammation, the carbolic acid evidently [illegible] the usual injurious results.

As a detail of numerous cases in which the same treatment was [illegible] [illegible] valuable space, I shall give only the two following, in the first of which a dracunculus measuring 5 feet 3 inches was extracted at the *second* application; and in the other, four dracunculi were extracted from the same [illegible] at the first application, another at the second, and a third and a fourth after 18 and 24 days respectively.

1st.—A[illegible], aged 25, Mussulman.

27th October, 1868.—Came to hospital as an out-patient, [illegible] of a soft fluctuating swelling above the left ankle. On opening this [illegible] of guinea-worm came out. This was touched with carbolic acid, and gradually extracted to the extent of 4 feet 8 inches. The rest being firm, this portion was tied with a thread, and coiled.

28th October.—Came back this morning; carbolic acid again applied, and the remainder of the worm measuring 7 inches drawn out, total length 5 feet 3 inches.

2nd.—D[illegible] M[illegible], aged 32, Mussulma[illegible].

25th June 1868.—Admitted with rheumatism and guinea-worm [illegible]. The foot is slightly swollen, and a watery discharge issuing from two small openings.

27th.—The extremity of a guinea-worm visible at each opening. Worm No. 1 touched with carbolic acid, and 16 inches extracted; worm No. 2 similarly treated, and 14 inches drawn out.

28th.—Carbolic acid again applied, and 3 inches of each worm extracted.

29th.—4 inches of No. 1 extracted; No. 2 firm.

July 1st.—[illegible] complains of throbbing pain above ankle; carbolic acid to be discontinued and poultices applied.

7th.—An abscess above ankle opened, giving vent to a considerable quantity of pus, *and the extremity of a third guinea-worm*. This was touched with carbolic acid, and *fully one foot* at once extracted.

8th.—Worm No. 3 completely extracted, measured 1 foot 6½ inches; also 4 inches of No. 1, and 2 inches of No. 2.

15th.—Worm No. 1 entirely extracted, measures 25 inches.

19th.—Worm No. 2 continues firm; an abscess forming [illegible] to be poulticed; omit carbolic acid.

21st.—Worm No. 2 extracted, measures 13 inches.

24th.—Abscess at knee opened, when a coil of a *4th worm* appeared; carbolic acid freely applied, and *the entire worm*, [illegible] 27 inches, extracted without much difficulty.

Notices to Correspondents.

◆

M[illegible] [illegible] [illegible] [illegible]

A[illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

A[illegible] [illegible] [illegible]

[illegible] [illegible] received from—

[illegible] P. A. Mi[illegible].
[illegible] W. [illegible] F[illegible], *[illegible] General Hospital.*
[illegible] J. B. S[illegible], *[illegible] M[illegible] S[illegible].*
[illegible] [illegible], *Medical C[illegible].*
Dr. M[illegible] [illegible].
Dr. [illegible], *[illegible] General Hospital.*
[illegible] [illegible].
[illegible] B. [illegible].

[illegible] [illegible] received—
[illegible] Society [illegible], Vol. II, Part II.
[illegible] Commission for February.
[illegible] Report for 1868.
[illegible], Medical Times and Gazette, and British Medical Journal.
Report [illegible] of the Excise administration in Bengal [illegible] 1867-68.

The Indian Medical Gazette.

It is particularly requested that all contributions to the "Indian Medical Gazette" may be written as legibly as possible, and only ON ONE SIDE *of each sheet of paper.*

Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, else delay must inevitably occur in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman & Co.; and all professional communications to the Editor, direct.

THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

> "You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history: and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

AFLOAT OR ASHORE.

IT is reported that immediate steps are to be taken to begin the building adjoining Prinsep's Ghat, which is to be used as a "River-side Dispensary."

We have not space to review the whole question, but we would wish to state, as shortly as possible, what we consider are fatal objections to such an institution.

It is officially stated that the object of the building is not to be in the form of a Hospital, where the patients can permanently remain; but "it is to be a Dispensary for out-door patients from any ship, and a receiving house only for cases of cholera and sunstroke, &c., where men can at once be treated, and kept until fit to be moved to one or other of the hospitals."

The utility of such an Institution for "out-patients," is very questionable; but we will leave that subject for the more important part of the matter.

The two diseases of urgency, for which the building can be of any use, are Sunstroke and Cholera: let us take a case of the former, occurring on boardship during the heat of the day; a man is struck down at work, would he be bundled off to the River-side Dispensary?

There are directions on board every ship for such sudden attacks, and every officer knows that flushing with cold water, air, and quiet, are the means to adopt until the medical aid of the ship can arrive.

To move a man while under the "stroke," or even while he is partially recovering from it, would be murder.

For Cholera, the building would be of use as a place for early reception; but, what then? grant that you have the experience and appliances of a real hospital, which, under the present scheme, you would not have at this "out-ward," and the patient is to be moved to the main hospital itself, as soon as it is cool enough; at a stage of treatment, perhaps, when any motion would be dangerous, or at all events could not fail to be hurtful.

Thus the institution will practically be a Cholera Hospital, which is going to be placed on the "Course," next to a much frequented "Ghât," and amidst a crowd of passers-by, on land and water; the place is so public, that the latrines and conveniences must actually be placed inside the building.

In fact, you place on the strand shore a very focus of the disease, for which you endow an Institution to treat curatively.

When the question was formerly referred to the head of the Medical Department, he set his face against the *temporary* nature of the scheme: but his letter was not understood, and he was deemed to be against the plan altogether.

What he did mean was, that if you have not enough accommodation for your sailors, give it them by all means, but do not adopt measures which only temporize with the whole question.

It appears to us, therefore, that no adequate good can be gained by the expense about to be incurred. The building is not wanted for cases of Sunstroke, and it is very doubtful whether it should be permitted in such a central, public, and crowded position, for cases of Cholera.

There is, no doubt, but that more hospital accommodation is required for the sailors of the port. Applicants for admission are often refused at the main Hospitals, and the question as to the best way of providing more wards, is not answered by the provision of a River-side Dispensary.

We believe the answer to be a floating "Dreadnought"—a hulk for instance, like the old *Feroze*, moored to swing in the stream at the most convenient point; if this was found to answer, a second might be established, which would then render the accommodation approachable in every tide and weather.

The tendency to death is rapid in all severe tropical diseases; it is of essential necessity to get a patient settled, as soon as possible, in his hospital bed, and under the surgeon who will likewise have the after-management of the case.

In this River-side Dispensary, neither of these important objects will be obtainable; the patient may have to be moved at a critical stage of the disease, and he will not have the advantage of the best advice on his admission.

But, we think, the question is answered by the establishment of a Floating Hospital, and if we had more space at our disposal, we would enlarge on all the details of the scheme.

EDUCATION IN NATURAL AND PHYSICAL SCIENCE.

WE have reason to believe that the Asiatic Society of Bengal are endeavouring to move Government to provide facilities for the teaching of natural and physical science in the school and colleges set apart for general education in this country. This movement must, if successful, result in raising the qualifications and status of the native *alumni* of Indian medical [illegible] Unless [illegible] difficult to exaggerate the disadvantages [illegible] native students [illegible] study at college [illegible] whatever [illegible] Tanner's [illegible] various [illegible] sufficient capacity [illegible] successively [illegible] defect in [illegible] primary education [illegible] situation [illegible] the medical [illegible] experimental and physical science. The [illegible] this deficiency, [illegible] the educational system of the country [illegible] responsible, [illegible] the students [illegible] for a medical [illegible] the medical schools [illegible] the three Presidencies, [illegible] in what seems [illegible] that which a pupil does, who enters upon the study of a language without having been first thoroughly well drilled and grounded in the elementary principles of the grammar of that language. He is [illegible] in the position of a person who endeavours to master the higher branches of mathematics, without having first learnt the primary and rudimentary principles of the same. It follows, therefore, that the students of the medical colleges, in this country, have to combine primary or elementary, with secondary or advanced education at the same time; whereas, in the medical schools of Europe, it is considered that the former should have been completed at the general and preparatory schools, and that the whole of the student's time should be devoted to the latter during his college career. It is this necessary combination of *general and special education*, [illegible] that mars, to a considerable extent, the endeavours of our students, and utterly prevents them, as a general rule, from competing for the higher medical degrees of the university, viz., the Bachelorship and Doctorship of Medicine. It has much more to do with the comparatively mediocre position which the practitioners, who have qualified in India, occupy in the great republic of medicine, than is generally supposed.

It is impossible to over-estimate the surpassing importance of primary education in all the professions. But in none is this more essential than in medicine. Neglect this, and the professional superstructure, however ably erected, is always [illegible] from want of a solid and substantial foundation. It, therefore, behoves those who are responsible for the medical education of the youths of India to look this question of defective primary instruction, in natural and physical science, fairly in the face, and to make such representations to the authorities as may be needed for its rectification. For it may be safely said that it is unreasonable to expect the medical students of India to assume, in large numbers, the highest positions attainable in the noble and honorable profession of medicine, until their preliminary or primary education has been elevated to the standard of excellence reached in Europe and America. This remark is especially true in respect of primary instruction in experimental and physical science. Is it not in great measure due to such education in Europe that the devotees of science, and the followers of medicine, have now attained a degree of eminence—altogether unparalleled in the previous history of civilization? Is it not owing to the fact of the University of London having exacted, at its matriculation examination, a knowledge of [illegible] and physical science, that her medical and other graduates have gained for themselves a position [illegible] unequalled in a given [illegible] by [illegible] graduates, which have [illegible] university in Great Britain?

The Calcutta, [illegible] Indian Universities at Madras and Bombay have, to a certain extent, been constructed on the model of the University of London. But, in regard to the matriculation examination, [illegible] an acquaintance with natural and physical science, [illegible] with the [illegible]—the Indian Universities are woefully behindhand. To prove this point we have only to refer to the regulations of the University of Calcutta, as promulgated in the Calendar for 1868-69. We are told, at page 5[illegible], that any undergraduate of the university, who can produce a certificate of [illegible] passed his nineteenth year, of having been engaged in medical studies for three academical years, after having passed the *First Examination in Arts*, and of having attended certain courses of lectures, may be examined in—(1) Descriptive and Surgical Anatomy, (2) Chemistry, (3) Botany, (4) Materia Medica and Pharmacy, (5) General Anatomy and Physiology, and receive a certificate testifying that he has passed the [illegible] of the examination for the *First [illegible] of Medicine and Surgery*, provided he, the said undergraduate, has satisfied the examiners that he has given evidence, oral, written, and practical, of coming up to the required standard of qualification. Any candidate who has been successful at this examination, after a two years' further study, and compliance with the curriculum, may be examined in—(1) the Principles and Practice of Medicine, (2) the Principles and Practice of Surgery, (3) Ophthalmic Medicine and Surgery, (4) Midwifery, (5) Medical Jurisprudence and Practical Toxicology, (6) Practical, Surgical, and Medical Anatomy, (7) Clinical Medicine, (8) Clinical Surgery, &c., &c., and will, provided the fixed standard of excellency be attained, be granted the certificate of having qualified for the *[illegible] Medicine and Surgery*.

Thus it is manifest that the passing of the *[illegible] Examination in Arts* is all that is necessary to enable the student to gain admission to the colleges. According to the rules of the university, he can do this immediately after having completed his *[illegible]* year in any school or affiliated institution. After complying with the curriculum, he can obtain his *First [illegible] of Medicine* and Surgery in *three years*, and his second Licentiateship in *two years* more. He may, therefore, finish the medical curriculum in *five years*, and end his studies and pass all his examinations, before he has arrived at the age of *twenty-two*. Now the diploma of Licentiate of Medicine and Surgery is intended to be a good one, and represents the qualifying for the duties of a general practitioner. Few of our students go beyond this qualification, principally because we have good reason for thinking the want of sound preliminary education in natural and physical science renders success, to an overwhelming majority, perfectly hopeless. We feel convinced that neither *time* nor *money* is at the foundation of the smallness of the numbers who even attempt to gain the M. B. and M. D. degrees of the university. We are more inclined to believe that imperfect primary training of our students in natural and physical science, in the general educational institutions below, is at the bottom of the reluctance or inability of our *alumni* to go up for the highest medical degrees, the university has it in its power to bestow. Be this, however, as it may, we have the extraordinary fact staring us in the face that, at the end of 1868, out of 119 medical graduates borne on the rolls of the University of Calcutta, 93 are *Licentiates of Medicine and Surgery*, 11 are bachelors ot medicine, and 4 are doctors in medicine, and out of these 4, one (Dr. Carter) is a distinguished member of Her Majesty's British Medical Service. These figures are striking in the extreme to anyone who understands their real significance. They plainly prove that the absence of primary instruction in natural and physical science is absolutely fatal to the student's success in obtaining the highest degrees of the university in medicine, excepting in a few instances, which may be viewed as the exceptions going to prove the rule. The bachelorship of medicine is a step towards the M. D., and it is in every way doubtful, whether, for the reasons we have already assigned, one of the eleven bachelors will ever venture to encounter the ordeal of an examination for the doctorship in medicine.

Many of our readers at a distance may, by this time, be curious to know in what this *Entrance Examination in Arts*, the passing of which is a certain passport to the Medical College, consists. If any of them expect that it contains stringent provisions for testing candidates in the truths and rudimentary principles of natural and physical science, we at once prepare them for disappointment. At page 36 of the calendar it is laid down as follows.—"At the Entrance Examination, every candidate shall be examined in the following subjects —

I.—Languages.

English and one of the following languages —

Greek
Latin
Arabic
Persian
Hebrew
Sanskrit
Bengali.
Ooriya.
Hindi.
Urdu.
Burmese.
Armenian.

Any other language may be added to this list by the syndicate."

II.—History.

Ancient History, History of India, General Geography, especially of India.

III.—Mathematics.

Arithmetic.—"The four Simple Rules, Vulgar and Decimal Fractions, Reduction; Practice; Proportion; Simple Interest; Extraction of the Square Root."

Algebra.—"The four Simple Rules; Proportion; Simple Equations, Extraction of the Square Root; Greatest Common Measure; Least Common Multiple."

Geometry.—"The first four books of Euclid with easy Deductions."

This is all. Not one qualification is exacted in natural and physical science properly so called. Yet it matters not what career or profession a youth may select at or after *sixteen*, no other portion of educational training is more calculated to expand the intellect to cultivate the mind, to sharpen the faculty of observation, to train the mind to utilize facts according to the inductive and deductive methods, and to invigorate and strengthen the memory. These remarks are generally true in regard to every profession or occupation which demands, in its pursuit more than ordinary intellectual development and cultivation, but they are more demonstrably so, in respect of a profession like medicine, which rests on a profound knowledge of several important branches of science—exact and inexact. Even the *First Arts Examination* which those students must pass, who intend to go up for the M. B. and M. D., only demands so much of *Mechanics*, as relates to the "Composition and Resolution of forces; Equilibrium of forces at a point in one plane; the Mechanical Powers, and the Centre of Gravity." The knowledge required to pass either of the Arts Examinations would appear to be arranged with special reference to the exclusion of any particular acquaintance with natural and physical science. The knowledge demanded is one of books, and not of things. The memory is overtaxed beyond all conception at the expense of the reasoning powers, of the faculties of observation, induction and deduction, and of the intellectual power of assigning to surrounding phenomena the proper place to cause and effect. The truth is that the parrot system of the university encourages book learning, and places practical learning at a discount. The power of memory may accordingly be said to become gigantic at an early period, because it is highly exercised; whilst the other powers of the mind and intellect become proportionately dwarfed, because they continue disproportionately unemployed or unexercised. The result is, as far as the medical colleges in India are concerned, that instead of these institutions being flooded with students possessed of an overflowing abundance of practical knowledge of "Common Things," as in Europe and America, they are swamped by a supply of talented bookworms endowed by nature and art with long memories, but with the other faculties of the mind and hands in a most rudimentary and incipient state of existence and development.

And all this is attributable, *not to the students*, but to the university and an imperfect system of preliminary Education. The idea of admitting students to study medicine up to the Licentiateship, without any previous training in natural and physical science, seems to us so monstrous that we wonder why attention has not been attracted to the subject before. It will not do to say that it is unnecessary to convey this instruction in the schools below, because it can be given at the medical schools above. The impracticability of combining primary and secondary education in science, of uniting the school master and the professor in one individual, has already been demonstrated in this article. We know of nothing, not even mediocrity of intellect, which interferes so much with a thorough system of medical education as deficient primary training in the natural and physical sciences lying at the foundation of medicine.

In drawing this article to a close, we would venture to indicate the urgent necessity for appointing a teacher of natural science, in all the important schools and colleges. This will be expensive no doubt. But if the greatest efficiency be the greatest economy, the measure will eventually repay any expenditure laid out on it. Almost any reasonable amount of money spent in converting the *present book-worms* of the university into *practical men*, would be well expended. We would require the teacher of natural and physical science to [illegible] *concentrated and popular instruction*, by *teaching, lectures, and*, [illegible], *by illustration and* [illegible], in Botany, Zoology, Comparative Anatomy, Mechanics, Hydrostatics, [illegible]

[illegible] Chemistry, Comparative Anatomy, Human Anatomy, Surgery, [illegible] having to learn the [illegible], when [illegible] lectures delivered on the [illegible] communicated in [illegible]

NOTES ON THE JOURNEY HOME.

A Correspondent who has favoured us with a few rough notes of his recent journey to England, [illegible] in the *M[illegible]*, he draws [illegible] that even [illegible] "a fact which, you will [illegible] especially to invalid passengers." [illegible] sense of [illegible] at the hands of [illegible] who [illegible] may see how such [illegible] treated." "I [illegible] the food on board the *M[illegible]*, and express [illegible] the kindness of an invalid in sitting down daily at a gentle[illegible] table and not being disgusted with the sight or flavour of greasy and unsavoury provender."

One incident occurred, which [illegible] temporary [illegible] to the 30 or 40 [illegible] on board [illegible] and that [illegible] the body of a [illegible]. Such accidents have happened, and been the cause of [illegible] to many, [illegible] fortunately, however, turned out to [illegible]; but the question [illegible] why there should not be, on board these ships, a hospital [illegible], separated from the rest of the cabins, where contagious diseases could be kept [illegible] and cared for as they required."

[illegible]

except that no more men were to be put in the ward than could cover the floor, though careful measurements had evidently been made of each room, by some one who must have given the question a thought.

Ventilation also was of the most imperfect character I have ever seen; the bedding was very inferior to that supplied in [illegible]. The dry earth system found no place in the prison, and the approach to a [illegible] place was a formidable undertaking.

The high mortality which necessarily attends such arrangements was worthy of note, and a warning to us not to retrograde from our present position in India; 115 per 1,000 was the death-rate during the last year, and for the year before it was close upon 300 per mille. This is as near as I could make out the mortality, after enquiry in more quarters than one.

I found the jail at Colombo a far different place, indeed, in most respects, a model prison; there, separate cells on an extensive scale are used as a means of punishment; these are carefully ventilated, and in the moderate and equable temperature of Ceylon, where there are no hot winds, they seem to answer admirably; there are also some good barracks, and great cleanliness is observed.

The [illegible] here [illegible] is good, however, and the death-rate which the year before last was, I was told, 117 per 1,000, is still 70 per 1,000, and that, too, independent of epidemics.

The evil of overcrowding is well understood here, and to prevent it, prisoners free from sickness were located in the hospital, a measure which was not attended apparently with any mischief, as no contagious disease was in the place; though, of course, this is a hazardous and objectionable arrangement.

Shot drill was in use in both jails, and would seem to be just the thing for our Indian prisons. The objectless tediousness of spending three or four hours each day in carrying from one spot to another a heavy lump of iron, appears more suitable work for prisoners than carpet weaving, or any of the other [illegible] occupations that make money, but do not act as preventives of crime.

The singular plan of placing the shot on a tripod, about two feet high, was adopted, I was told, at the recommendation of [illegible], who objected to the men stooping to [illegible] necessity and value of the [illegible] where the whole population [illegible] to rest the baskets and [illegible] to their heads in [illegible] every day [illegible]

I [illegible] labour of stooping to pick up [illegible] of [illegible], and have [illegible] of prisoners, and keep [illegible] maintenance which falls on the [illegible]

We [illegible] the horrors of the Railway passage [illegible]. There is a word that few [illegible], as most people are happy and [illegible] approaching home. To the [illegible], however, it is a great trial to be set [illegible] carriage, with no power to rest or sleep [illegible] where the luxury of the Indian Railways [illegible] forgotten, where no lady or sick person [illegible] in the recumbent posture.

The charge made by the Egyptian Government for the special train which the P. and O. service obtain, is just about double the ordinary rates for the passenger going from Suez to Alexandria; it would, therefore, be but a small boon for that Government to grant to the P. and O. that, on the recommendation of the medical officer on board the steamers, all invalids should be supplied with room to lie down at full length. This could readily enough be granted, if one or two of the present second-class carriages were made over for the purpose, as in them the seats are padded, and there are no divisions as in the present first-class. If, however, carriages like those in India, with the folding-up bed, were used by the Egyptian Government, the difficulty would be got over without much trouble or expense. This subject should be taken up by the medical authorities in India, as many invalids are now sent round the Cape often merely to avoid this part of the homeward route.

At Alexandria, through the kindness of Dr. Mackie, Surgeon to the British Consulate, I saw all the hospitals, or most of them, both European and Native.

It would repay medical travellers through Alexandria, to visit these, and see what is being done professionally.

One of the most interesting diseases here, to us in India at least, is "hepatic abscess," which is unusually frequent among some portions of the community, especially the Greeks, who form quite a colony of foreigners in this city.

In a small Greek hospital, I saw three cases doing well, that had been operated upon successfully, and so common is the disease, that in the autumn months, 50 per cent. of the cases under treatment are hepatic abscess.

What particularly struck me was the freedom with which operations on the liver were talked of and performed. Dr. Mackie told me that, some three years ago, on reading a paper on hepatic abscess, in the *Lancet*, by an Indian surgeon, he was impressed by the remarks there made, on the immunity from evil efforts, that followed surgical interference with the substance of the liver. The paper insisted on the safety and necessity of *early* operation in abscess of the liver. Immediately after, some favourable cases presented themselves, and were successfully operated on by Dr. Ogilvie (Bey), his late colleague, and himself. Since then numerous cases have been operated on, and they have established the practice in Alexandria of proceeding to evacuate the matter immediately it is believed to have formed. Their experience has led them to conclude against the advisability of waiting till fluctuation is distinct, or the occurrence of the abscess pointing externally, before putting in the knife. Indeed, they believe that, at such a stage, operation is little likely to be successful in saving the patient.

Dr. Lancaroli, a Greek physician, has made some valuable statistics on this subject, which he proposes publishing shortly. Some of these are that, out of cases operated on, 50 per cent. are lost, while of those not operated on, 85 per cent. die.

His observations on the rate of mortality on the abscess bursting into the lungs is singular, and certainly are not in accordance with my Indian observations; he states that only seven per cent. of these cases prove fatal. It would be a great matter if this should turn out to be a true statistical fact also of what occurs also in Indian practice, as it would give some clue to the cause of death after operation; to theorize upon it, it looks as if the antiseptic character of the air in the lungs acted as a purifier of the external atmosphere, and would lead to an extension of the practice begun in Calcutta of opening such abscesses under the influence or syringing out with carbolic acid.

As liver abscess is shewn to be one of the most fatal diseases in India by Bryden's Tables, and one in the cure of which we have made no progress of late years, the subject is surely peculiarly interesting.

The opportunities in India are but too numerous of studying the disease, especially in the European army. This mode of attempting a cure is also essentially belonging to India: it was originally essayed in that country by Dr. Murray, Inspector-General of Her Majesty's army, and it has been successfully and largely practised by his nephew, the present head of the Bengal Medical Department, who, over a long series of years, has been most earnest in inculcating his opinions and practice.

In Alexandria the disease is by far the most common among one class of people, the ill-fed Greek population, who are addicted to "Rakki" the native liquor of the place; the better class of Greeks do not suffer; nor do the Greeks of the lower orders suffer in Corfu, and the other Greek islands, which are close to Alexandria. There is plenty of malarious ground near Alexandria, but there is the same in Corfu; drink and malaria appear, however, to be the two grand combinations best suited for the generation of abscess of the liver in Egypt; is it not so also in India.

Spleen disease is rarely seen when the liver is enlarged in Alexandria, and most of us have witnessed the same fact in India.

VACCINATION IN THE PUNJAB.

Dr. Garden, the Superintendent-General of Vaccination in the Punjab, states in his report for the year 1868 —

The total number of cases vaccinated by the Punjab vaccine establishment and dispensary vaccinators was 2,33.862, of which 203,881 were successful, at the cost of each successful case of two annas seven pie and a fraction.

It is worthy of remark that the percentage of successful cases is increasing year by year, and that, too, under more efficient superintendence.

An assistant, Dr. Newton, having joined Dr. Garden in November as Superintendent, "the inspection of work done is now much more satisfactory," and, again, "the work of all the vaccinators can now be inspected, which before was often impossible."

The whole report is very interesting, but we have not space for details. During the summer, the hill territories of Chamba, Pangi situated on the further side of the snowy range, and numerous villages bordering on Lahoul were visited, and their inhabitants vaccinated.

We are glad to note the success of the operations on the Trans-Indus Frontier line, and the increase that steadily goes on there year by year.

Dr. Garden says, "on several occasions I tried to inoculate horses with small-pox matter; the Hindus, however, always objected to its being done, and I did not attempt to press the question."

Drs. [illegible] and Johnston, at Peshawar and [illegible]

[illegible] I [illegible] early [illegible]. My [illegible] was [illegible] obtained [illegible] now [illegible] of Eng[illegible].

[illegible] the strange [illegible] is now very [illegible] in the [illegible] Trans-Sutlej. I [illegible] more generally [illegible] parts. I am [illegible] by the [illegible] to visit their [illegible]

[illegible] is [illegible] should be entirely [illegible] diseases, but is [illegible]. Some [illegible] to strength [illegible] and the discussion [illegible] the present divided state of feeling on the [illegible].

[illegible] Lieutenant-Governor of the Punjab, in acknowledging [illegible] medical officers [illegible] who have taken [illegible] letters to a full [illegible] *khilats* of Rs. [illegible] 25, [illegible] *parwanahs*, are given [illegible] receive a donation [illegible] pay.

NEW WORK ON ANATOMY IN OORDOO.

Mr. S. P. Johns, Sub-Assistant Surgeon and Lecturer in Anatomy in the Agra Medical School, proposes to bring out an illustrated work on the above subject.

The idea originally suggested itself to him by finding his lectures, printed for the use of his pupils only, sought after by students in many parts of Northern India, and the work has now grown to some 800 pages.

It is to contain [illegible] illustrations copied from the last edition of Quain's Anatomy, and he hopes to be able to sell the work [illegible] six rupees a volume.

There is no question that a work of this sort would be of great practical value to the native student and practitioner if it [illegible] comes up to the standard required. We will await its [illegible] before saying more on the subject.

PROFESSOR SYME'S RECENT ILLNESS.

With the view of expressing sympathy for the distinguished Professor of Surgery in Edinburgh, his former pupils at the Presidency have addressed a letter of condolence to him.

It [illegible] signed by fifteen British and Indian medical [illegible], and was forwarded on the [illegible] of May, to save delay, [illegible] there are many of his old pupils in all India, who would [illegible] to have an opportunity of expressing their feeling towards their old master, the names of those hereafter transmitted will be attached to a supplementary letter.

Dr. D. B. Smith, Sanitary Commissioner for Bengal, Barrackpore, has very kindly consented to collect names, and [illegible] in the public [illegible] to him, he will [illegible] in question.

Official Selections.

EXTRACTS FROM THE RECORDS OF BENGAL MEDICAL DEPARTMENT.

(Continued from page [illegible].)

In April, 1787, sanction is accorded for building an hospital for sepoys at Chunar Cantonment. "The dimensions 200 feet by 18 feet wide, 14 feet high, clear of foundation, walls 2½ feet thick of *cutcha* [illegible] verandah 10 feet wide. The roof and verandah posts, &c., of jungle wood covered with a *chuppur* of bamboo and straw." A necessary and storeroom, &c., also provided for; the estimate for it was Rs. 5,0[illegible].

Lieutenant Lionel Bulkeley, of the Invalid Corps, makes a tender of his house in three biggahs of ground, to the Board, for a European hospital at Chunar. It cost Rs. 3,000, and its description may be copied as a sample of building and its cost:

"Large, handsome and commodious bungalow entirely *pucka* built (except the roof), of the best materials, consisting of a hall 22 × 18 × 21 high, pannelled and corniced; 2 rooms, each 18 × 14; 2 others 14 × 14." "The whole well fitted with remarkably large airy doors and windows, 24 of each, made of *saul* and *sissu* timbers with locks, hinges, and bolts complete. Verandah in front 60' long and 18' wide, supported on ten round *pucka* pillars. The back verandah is 22 long and 14 wide on pillars also. There is a cook room, *bottle-khana* and necessary."

Hospital Board, 21st May, send a letter to the Governor-General in Council, suggesting "having a convenient house in the neighbourhood of Calcutta, for 3 or 400 rupees a month, the proprietors to surround it with a wall six feet high" for insane officers and soldiers; a proposition which was agreed to on the same date.

In connection with this, which must be the origin of the present asylum at Bhowanipore? Mr. Dick, Assistant-Surgeon, recently appointed to the charge of insane patients at Calcutta, writes to the Board, proposing to build a two-storeyed house, the upper rooms for officers, the lower for privates, for reception of patients, and wishes Rs. 400 a month to be given for it, and a contract given to occupy it for 12 years. "Each room will have a large window to the southward with iron bars and fixed venetians, and a door to the northward, which will be equally well secured. Each room will be 20 feet long by 10½ wide, and the verandah northward will be 13½ long by 16 broad" for exercise, &c.; wall round the estate and offices in it are provided for; it is not stated for what number of patients it was to be built.

The Board send it on to the Governor-General with their recommendation.

The Governor-General in Council accepts the proposition, and directs the Board of Revenue to "select spot of waste land in the neighbourhood of the hospital on which a house may be erected."

16th July.—Hospital Board report to the Governor-General that, after several meetings with the Commissary-General, submit regulations for the proper accommodation of the sick, and their being supplied with every necessary and comfort, to put a practicable check on any unreasonable expense, and apply as much economy as compatible with the preservation and comfort of the patients.

(Surgeons in former years under the contract system were obliged to buy and keep up their own instruments, and on this system being put a stop to, the H. E. I. C. bought them.)

The Board in their recommendation say "render the purveyor as independent as possible of the gentlemen of the medical line."

That the distinction of hospital and regimental mates should be abolished, and that the whole corps of assistant-surgeons should be put on the same footing, *i.e.*, Lieutenant's pay and batta.

No other wine but Madeira to be used, and that only of the Honourable Company's, six dozen per mensem is the outside limit [illegible] twelve [illegible]. No spirits allowed except for external use. Presidency [illegible] madeira, Rs. 12 a dozen. Futtyghur rate for madeira Rs. 2[illegible]. Intermediate stations according to distance from Calcutta. As this allows the Purveyor profit on the original cost [illegible] breakage and leakage.

Requirements [illegible] firewood, milk, bread, flour, oil, vinegar, sugar, [illegible], [illegible], benjamine, vinegar for fumigating, shall not exceed the rate of Rs. 70 per mensem for every twenty men.

Contingent bill to include petty repairs of building and articles for use of the sick, stationery, lamps for the wards, keeping necessaries clean, and carrying away the soil, &c., no sum can be fixed for; but every surgeon must be responsible to the board that his charges are not exorbitant.

11th September.—By letter dated 27th March, the Court of Directors advise the Governor-General of their having sent out 50 tracts of the Royal Humane Society, and two drags and apparatus for Bengal and Fort St. George, and recommend the said institution to the particular notice of each Government.

As far back as this year (1787), the Court of Directors inculcate the use of indigenous drugs, and the tinctures that can be made from them (24th September).

Separate "nurses" allowed for infirm patients at Chunar by the head surgeon, and sanctioned by the board.

A G. O. by Earl Cornwallis, dated Futtyghur, 13th October, "Mr. Fleming (Junior Member of the Board) is ordered to inspect the hospitals at the different stations of the army, and to report to the Commander-in-Chief the state in which it appears to him that the business of the respective hospitals has been carried on" (7th November).

22nd October.—Assistant-Surgeon of Berhampore hospital reports that the expenditure of peruvium bark has been very considerable for some days past, and indents for more.

(Year 1788.)

4th January.—The Hospital Board is ordered to assemble about this date for the examination of European invalids, of whom there are about 100, so that "they may be in readiness to proceed to Europe in the ships now under despatch."

Mr. Purveyor Birch addresses the Hospital Board about adjustment of account and details. "The wine used during the last month of the rains exceeded the regulations (six dozens per mensem for twenty men) by 13 dozens in September, and by 3½ dozens in October;" this would seem to show that treatment by alcohol, or rather keeping up the system at the most depressing season was not neglected at this date.

8th February.—Mr. Dick, the Surgeon of the Lunatic Hospital, writes to the board to sanction expenditure for clothing, cots, and other necessaries for the use of the sick and among other articles detailed are 12 iron chains for the legs with jointed hoops to go round the waist, and shackles to confine the hands at Rs. 3 each.

He gives a list of officers and men in the insane house at this date. The numbers were—

Officers of the Army, 5; of ships, 2; not in any service, 4; soldiers, 14, sailor, 1.

The monthly charge of soldiers were defrayed from their pay and batta; for gentlemen Rs. 50 a month was charged, for which they are allowed "tea, bread and butter, and wine twice a day." One sergeant and four private soldiers were allowed to attend the insane patients, and that they might do their duty "with diligence and humanity" an allowance of Rs. 10 a month was granted, and for every insane patient one cooly was authorised at Rs. 4 a month.

The Brigade Major of Artillery, dating Camp Dum-Dum, 29th February, writes to the Board:—

"I am directed by Colonel Pearse, commanding the troops at the Presidency, to acquaint you that the Right Honorable the Commander-in-Chief having authorised the inoculating of the men belonging to the corps of artillery and infantry in garrison, who have not had the small-pox, at Dum-Dum, under the surgeons there, a bungalow has been built for the reception of the whole, to prevent the expense of separate establishments;" and concludes by requesting the surgeons may be supplied with what medicines and necessaries as may be requisite.

It was a matter of will, apparently, on the part of soldiers whether they would undergo it or not, as those who wished for it were to give in their names, they would be struck off duty, "and are not to pay stoppages out of pay or batta as is usual for other sick."

About this time (4th March), the Government had sent to the Board a comparative statement showing the different cost of soldiers in hospital per mensem at different stations, and require explanation of the difference. The Board, in a long letter of six pages, go into the whole subject, and give the following broad views of the treatment of the sick:—"Although we deem economy a most important point in the management of a military hospital, we are far from judging it the only, or even the most important consideration. One of still more consequence is the proper treatment of the sick, and the taking care that they may not be deprived of, or even supplied scantily with, any article essential to their welfare and speedy recovery." And they decry the system of comparative statement as being liable to make a Surgeon in charge captious, and they deprecate that "the sole test of the good conduct of the surgeons" who have charge of the sick, should be lowness of the monthly charge for patient." "Were such a principle admitted, it might tend to operate in a manner that would give your Lordship the sincerest concern, by tempting persons, in the management of hospitals, to endeavour to make the dear purchase of character for frugality and economy at the expense of tenderness and humanity to the sick."

In April, Mr. John Peter Wade, assistant-surgeon at Chunar, forwards to the Board a scheme for a Medical Library. It is a long letter of six pages, employing arguments for its utility that would hold to this day. The proposals are submitted to the Surgeons of the Establishment for the purchase of recent publications on professional subjects, and the collection of the most approved of the ancient and modern authors on medicine, surgery, and chemistry.

The Board (24th April) return a very curt reply disapproving of the plan

On May 21st, the Secretary to the Military Board requests the opinion of the Board (by order of Governor-General), "whether fumigation in barracks is conducive to the health of the men," and if so, to point out the best articles for use, &c.

The Board on the 23rd submit a memorandum on the subject, thus: "although the practice of fumigating barracks may, in some particular cases which we shall afterwards point out, be of service and even indispensably necessary, we are of opinion, that where the buildings are sufficiently dry and properly ventilated, where too many men are not crowded together, and where proper attention is paid to cleanliness, fumigations are altogether unnecessary, and that the expenses of them may very properly be saved. Of these circumstances, the last as it is the most in our power, so it is by far the most essential: where cleanliness is neglected, other preservations will avail very little, where it is observed they will in general not be necessary." When necessary, they recommend a red-hot bar of iron put into a bucket of tar. Steam of boiling vinegar, for using which a machine had been recently "invented by Mr Day of Maidstone, and which is now much used in the gaols and hospitals in England." "Upon the principle of absorbing fixed air depend the good effects of washing the walls and ceiling of hospitals and barracks with lime—a practice which is found highly beneficial, and which ought, therefore, to be used very frequently."

(To be continued.)

The Annual Meeting of the Bengal Branch of the British Medical Association,

The annual meeting of the *Bengal Branch of the British Medical Association* was held in the theatre of the Medical College on the 16th March, 1869.

Dr. Norman Chevers in the chair.

Dr. Chevers said that, before resigning his appointment as President of this Association, he could not but speak with regret of the falling off in attendance, which had occurred—especially during the latter part of the year. The members had begun well, but gradually had ceased to attend, and latterly there was scarcely any meeting at all. The younger members of the association were chiefly in fault, the seniors attended more frequently. The object of the Society was, that young and old should meet for the free discussion of various interesting medical points.

He resigned the chair as president with pleasure to one who was so ably qualified to fill it as his esteemed friend Dr. Ewart, with whom he never entered on any friendly discussion on professional matters without improving his own knowledge.

Dr. Ewart having taken the chair, addressed the meeting:—

Gentlemen,—I regret that I have had no leisure to enable me to prepare a written address on assuming the honorary position and duties of president of the *Bengal Branch of the British Medical Association*. I hope, however, to [illegible] in the observations I am about to offer, [illegible] has been now [illegible] of interest in the welfare and prosperity of the branch. I [illegible] venturing [illegible] with [illegible] made such [illegible] Dr. Norman [illegible] Strong, notwithstanding [illegible] and [illegible] I [illegible] the association [illegible] I have been able [illegible] to present to the [illegible] medical profession [illegible].

The [illegible] brought [illegible] has been persistently [illegible] good [illegible] have contributed largely to the [illegible] the museum. [illegible] various parts [illegible] of the human body [illegible] to the pathology [illegible] upon this [illegible]. The preparation [illegible] taken out [illegible] has a short [illegible] history attached, and [illegible] employed [illegible] and [illegible] of the [illegible].

[illegible] contained [illegible] museum, [illegible] in 18[illegible], it is demonstrated [illegible] probably the [illegible] must have been [illegible] to the [illegible] yet the total [illegible] then existing did not amount to more than fifteen [illegible] and twenty-two [illegible]. When, therefore, [illegible] that the collection [illegible] within the [illegible] sixty years [illegible] the professional [illegible] who are members [illegible] we have [illegible]. We [illegible] that we have been [illegible] activity in the [illegible] of industry [illegible] begun by members of the *[illegible] M[illegible] Society*. Many of the preparations are [illegible] less [illegible], but with [illegible] foresight such can [illegible] be [illegible], and where [illegible], the English language in which their histories are [illegible] recorded is indisputable. In this way, even though [illegible] natural [illegible] every specimen [illegible] beyond all hope of redemption, the records would [illegible] available, inasmuch as copies of the catalogue have [illegible] exchanged with all the important pathological museums [illegible] Europe and America, and have been distributed to every [illegible] station in the three Presidencies, and to the Straits Settlements.

[illegible] developmental stage of the museum, sufficient [illegible] was not paid to entering the particulars about the [illegible] in the registers. The consequence is that some of the [illegible] valuable of the early contributions are destitute of history, [illegible]. [illegible] example [illegible] there are, doubtless, [illegible] illustrations of the effects of the combined [illegible] syphilization [illegible] upon the long and [illegible] bones, yet there is not a single line of writing in the registers [illegible] the fact. [illegible] excavations made in [illegible] of bones in our collection, it may now be [illegible] to the results [illegible]. But there is no [illegible] to prove [illegible]. And this [illegible] more to be [illegible] which [illegible] is given [illegible], or not [illegible] rarely see [illegible] of the [illegible] of the bones [illegible] observed, [illegible] to push the [illegible] superseded. No [illegible] vitiate or deteriorate [illegible] the specimens [illegible] during the past few [illegible].

[illegible] that, [illegible] there may be [illegible]. But [illegible] estimation, in [illegible] of such a patho[illegible]. [illegible] medical museums is [illegible] encouraging the [illegible] social, intellectual, [illegible] and in Calcutta [illegible] by the [illegible] Indian museum [illegible] the institution [illegible] and science, [illegible] importance [illegible] took in hand [illegible] make that [illegible] in the [illegible] which the [illegible] every member [illegible] association, [illegible] indeed [illegible] illustrating [illegible] which flesh is heir to in tropical countries and [illegible].

It is [illegible] uncommon [illegible] from certain quarters of the [illegible] that [illegible] and saying that [illegible] as law; and it is [illegible] satisfactory, as regards certainty, than politics, [illegible] what can be more disappointing than the [illegible] of history. The truth is that, [illegible] uncertainty in the application of medicine and [illegible], this is not so great in degree as the uncertainty [illegible] to witnesses in law [illegible], and history. All [illegible] professions, in their practical application, are [illegible] the element of uncertainty [illegible] distinctive [illegible] in medicine than in [illegible] other [illegible]. And [illegible] for this greater [illegible] founded [illegible] branches of science which in themselves may be viewed as exact. The [illegible] of anatomy, chemistry, and that portion of physiology which [illegible] with [illegible], is not open to question or doubt. Our experience in physics [illegible] and improvements [illegible] of investigation have taught us that even the practice of physic may, in some of its departments, become [illegible] as an exact science. Nay, the certain results of some [illegible] are so well pronounced, that we [illegible] to anticipate [illegible] even therapeutics may also take rank as an exact department of medical science. When, therefore, we are twitted by our kind and good friends in the other learned professions with the [illegible], we [illegible] in [illegible] them [illegible] that [illegible] wholly [illegible].

I now wish to say a few words on a subject which concerns the [illegible] as members of the medical profession [illegible] within a few years, that [illegible] has been restricted, with few exceptions, of the European and Native medical servants of Government. Medicine, in its most comprehensive sense, comprising all branches of the "healing art," and as practised in England and America, and the British colonies, has hitherto been in the hands of the English, Scotch, and Irish gentlemen, who have [illegible] the ranks of the medical services of the three Presidencies, and, since the foundation of the various medical schools in this country, also, European medicine has been well represented by the graduates of the colleges and universities, so that Dr. C[illegible] was perfectly correct when he remarked, some time ago, that the old East India Company's and Her Majesty's present Indian Medical Service was not only the Military Medical Service specially set apart for Indian duty, but it constituted, so far as the European system of medicine was concerned, the most important portion of the "medical profession of India." The remainder is made up of the native graduates [illegible] Government employ and of their brethren who have settled down in private practice in this and other cities.

I [illegible] that the native medical profession is [illegible] that the [illegible] with [illegible] educated [illegible] of the country is an [illegible] demand for [illegible] and by the establishment of [illegible] the provinces. There are now many [illegible] permanently [illegible] populated towns and districts [illegible] members of the [illegible] from the Medical Schools at Calcutta, M[illegible] B[illegible], the B[illegible] class of the Calcutta Medical College, is constantly supplying a number of native practitioners, [illegible] upon the *Licentiates* [illegible] the licentiates of the university.

At present there [illegible] want of organization or cohesion among the members of the [illegible] medical profession. This can only be [illegible] to Government, but with incalculable benefit [illegible] by the passing of a Medical Act, so moulded as to [illegible] contemplated, without inflicting any [illegible] on the medical men, *[illegible]* and *[illegible]* [illegible] have [illegible] the confidence of the public. As [illegible] part of the Act, a Council of Medical Education and Registration would have to be formed, and it would be the duty of this body to superintend medical education [illegible] qualified men, who may pass the required [illegible], in the medical register. [illegible] well to give the council full power to [illegible] in each Presidency. So that [illegible] through one common examining authority. It would be optional to each practitioner to register his name or not as he may deem expedient. But the protection of the law would only be extended to him, who had secured for his name a place on the register.

With regard to the hereditary indigenous practitioners of the country, the same principle might be adopted as was done with the established practitioners in England, at the passing of the Apothecaries' Act, and the Medical Act. If so, then every *kobeeraj* and *hakeem* would be entitled to register; but the column exhibiting his qualification would plainly show the class of practitioners to which he belonged. It is from among the sons of these men that many of our students now studying at the college, are really recruited. But even if it were not so, I would not hesitate to give the present generation of these gentlemen, a place in the medical register, on the payment of the prescribed fee, whatever that might be fixed at.

In seeking from the Legislature, "A Medical Act for India," the Association would not be asking for anything unreasonable. On the contrary, the liberal and broad views which the association would enunciate would, if practically carried out, benefit the public more than the medical profession. We should ask for a measure, the whole expense of which would be borne by the profession—a measure which, while conferring great advantage upon the people, would tend to harmonize, unify, and consolidate the medical profession in India.

At the late convocation of the university for conferring degrees, it was truly remarked by the Chancellor, Lord Mayo, that a time existed when, among influential people, it was considered right that the natives of this country should not be educated on too liberal a scale; but that now all doubt had been dispelled, and Government had determined to educate the natives of this country on a scale of magnitude and liberality not exceeded at home. Now, gentlemen, whatever doubt may have existed among politicians as to the propriety of imparting the general knowledge of the West to the teeming millions of British India, I can bear witness from a conversance with the records of medicine in the East, that no such doubt ever existed among the disciples of Æsculapius. They have always struggled manfully to disseminate the principles and practice of Medicine to their brother Aryans in India. How could it be otherwise? Medicine is the personation of liberality, generosity, and charity. It is cosmopolitan in its aims for doing good and relieving the pains and pangs of suffering humanity. The true physician and surgeon lays open to the whole of his profession everything new which promises to be beneficial to mankind. He has no secrets. His knowledge once in print becomes the common property of all. Need I cite examples of these truths? If so, let me point to the discovery of quinine, morphia, ether, and chloroform; all of which have conferred vast advantages on the human race either in mitigating the consequence of disease, or in altogether preventing pain being felt, during the most heroic and appalling surgical and obstetric operations.

As a consequence of the catholicity of sentiment, which has ever characterized a preponderating majority of the medical profession, we see the spread of medical education going on not only in our colleges and schools, but in every hospital in the country from Peshawur to Ceylon, from Rangoon to Bombay. The progress being made is rapid. It is also successful. This is greatly facilitated by the immense advantage which the country enjoys. India, as regards medicine, (and it may be said as regards other things also,) is now reaping the benefit of the culminated results of progress extending over eighteen centuries and a half. We are endeavouring to transplant the medical knowledge of the West, which has taken eighteen hundred years and upwards in arriving at its present state of advancement into India. Hence, the unparalleled rapidity with which medicine is spreading among the learned *alumni* of our colleges and schools. And hence, the urgent necessity for organizing the followers of medicine by legislative enactment on the principles embodied in the English Medical Act; but yet in so modified a form as to embrace all the practitioners of legitimate medicine, and so tabulating their names that their qualifications may be open to the inspection of the public and the profession in the *Indian Medical Register*.

In concluding my remarks on this subject, I would wish it to be understood that in drawing the attention of the members of the association to this subject, I have only alluded to a few leading principles; and that should the Legislature be disposed to entertain the proposition for an Indian Medical Act, all the needful details might afterwards be collected and arranged without difficulty. Whatever may be the result of these observations, one thing is certain, that India cannot wait much longer, until her indigenous imported medical profession is placed before the law, the public and themselves, in a position analogous to that which their compeers enjoy in Great Britain and her other great dependencies.

Before bringing these desultory remarks to a close, I am desirous of briefly approaching another question of great interest to our profession. I have already pointed out how much India can be made to benefit by the transplantation of the work of 18 centuries of western civilization in a comparatively short period of time. It is owing to this extraordinary start, if I may so use the term, that, out of the three coroners at Calcutta, Madras, and Bombay, two are medical gentlemen. Prior to the writings of the late Mr. Wakley, the founder, proprietor, and editor of the *Lancet*, himself the first medical coroner in Great Britain, this post of coroner—one the prime object of which is to ascertain the cause of death in all cases of suspicion or foul play, was invariably filled by a non-medical authority. The influence of Mr. Wakley's writings and example, as a coroner, have created a revolution in this respect; for, in almost every case, where the profession are united and true to themselves, a medical man is selected to fill the post of coroner, whenever that office now falls vacant in England. The time is approaching when, a coroner unhampered, unfettered with judicial or magisterial work, a knowledge of which has nothing to do with such a medical education as would assist in the elucidation of the cause of death in cases of suspicion or sudden death, will be required for every station and town of importance in India. And until this is done, that full measure of security to life, which can only be afforded by having a medical coroner in every important station, will remain comparatively in abeyance. When, however, that time does come round, the fact that, out of three coroners now in the Presidential cities, two are medical gentlemen, augurs well for the chances of success by our brethren, in any other coronerships, which may be created, in the interior of the country.

Finally, gentlemen, I beg to thank you most heartily for conferring upon me the distinguished honor of electing me to be your president for the ensuing year, and to promise that no effort of mine shall be wanting in endeavouring to promote the interests of the association, and through that, the profession of medicine in India.

Dr. Chuckerbutty then rose and proposed a vote of thanks to Dr. Ewart for the very excellent address with which he had favoured the association.

Moulvie Tameez Khan, Khan Bahadoor, presented a specimen of the Lall Chittra which was taken from the uterus of a woman after death, having evidently been introduced for the purpose of causing abortion. It was situated in a common cavity made by the sloughing of the posterior wall of the uterus, and the anterior wall of sigmoid flexure of the colon. The piece of wood was covered by an incrustation of the phosphates and carbonates of lime, and throughout the substance of the wood, there appeared to be crystals of the carbonate of lime. It evidently had been in the body for some time.

Dr. Chevers also presented a very interesting and instructive specimen of aneurism of the arch of the aorta illustrating the possibility of cure of aneurism of the arch. He considered it the best specimen he had ever seen of perfect cure of aneurism of the arch of the aorta by the filling up of the sac with an organised clot. The patient had been for a long time under observation. his first symptoms were those of pressure on the right bronchus by an aneurismal tumor, but under treatment, the symptoms of pressure disappeared, and the symptoms of aneurism after a time became nearly quiescent. He died from chronic dysentery combined with a low form of pneumonia. The aneurism after death was found situated at the arch of the aorta involving all the large branches given off. It was filled with a firm organised clot, but the channel of the aorta was quite free, as also the orifices of the various branches given off by the arch, and the whole of the artificial canal thus formed had a polished membrane-like surface.

The particulars of this case will be published hereafter.

13th April, 1869.

Extracts,

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FARADISM AND THE MONSTER [illegible]

Many years have passed away since Fa[illegible] discovery of "induced electricity," [illegible] vanic current, when [illegible]

[illegible] Bunsen's, formed [illegible] with the negative pole of the battery. This wire is called the primary coil, and around it is wound another, formed of longer and finer wire, also insulated. This is the secondary coil, and [illegible] the induced current passes [illegible]. In practice these extremities are separated, and the induced current makes itself manifest by crossing the space between them, when this is not too great, [illegible] in the form of an electric spark that can be seen, or of a current that can be felt. For use the extremities of the wire are connected with the terminals or electrodes by which it is discharged, and which vary with the purpose for which it is required. In order to display sparks to advantage one of these electrodes is a metal point and the other a polished metal disk. In order to pass a current through any part of the human body, the electrodes are metallic knobs or cylinders, [illegible] or covered by wetted sponge.

The induced current in the secondary coil is not a continuous phenomenon, but is only manifest at the moment when the galvanic or battery current is allowed to pass through the primary coil, and again at the moment when it is cut off. In order to obtain an induced current that is practically continuous, it is necessary to [illegible] an arrangement by which the connexion between the battery and the primary coil is rapidly interrupted [illegible] "contact breaker," usually [illegible] which completes and breaks the primary circuit in [illegible] alternation.

[illegible]

[illegible] a Leyden battery of 40 [illegible] and the discharge [illegible] Leyden battery [illegible]

[illegible] of the Polytechnic, the new coil [illegible] light [illegible] Professor Pepper to [illegible] effects, [illegible] such as have never been seen before, but it will have [illegible] uses than [illegible] Sir Humphry Davy's great galvanic battery was the immediate cause of the discovery of many previously unknown metals, and every marked increase in the power of [illegible] apparatus has been followed by a corresponding increase in the growth of knowledge. The coil will not merely amuse audiences, but will be diligently used at other times to promote the researches of electricians and of physiologists. The [illegible] of every fact they discover, and the clearing [illegible] of every doubt they remove, will come in time [illegible] to be instrumental in promoting man's convenience or [illegible] man's suffering. The coil is a [illegible] of skill and [illegible] which English science may be justly proud; although [illegible] will be tempered with [illegible] that Faraday did not witness this [illegible] discovery.—*The Times.*

DRY EARTH TO WOUNDS.

[illegible]

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE POISON, AND ON THE INJECTION OF LIQUOR AMMONIÆ INTO THE VENOUS CIRCULATION AS AN ANTIDOTE.

By J. Fayrer, M.D., C.S.I.

Since my last report on the subject of snake-poison, I have received a communication from Professor Halford of Melbourne, whose researches have already thrown so much light on this interesting pathological question. In a paper of which he has kindly sent me a copy, read before the medical society of Victoria, he strongly advocates the injection of ammonia into the circulation; he also details several interesting experiments as well as cases of snake-bite in which the results were satisfactory.

This mode of treating poisoning not only by snake-bites but by chloroform, hydrocyanic acid, and other toxic agents, among which pyæmia is mentioned, and cholera suggested, has evidently been received with much confidence in Australia, and the matter is fully and ably discussed in the paper in question. The subject also of the structural changes in the blood to which I have frequently adverted in former papers, and which were described by Professor Halford in 1867: *Vide British Medical Journal*, July 20th, and December 21st, 1867,* is also referred to with some further explanations, and which so far, as I can understand it, modifies the views as at first expressed by Dr. Halford. In the paper to which I have referred, Dr. Halford says of those corpuscles, "he had never seen those cells *before death*, but he believed the organic germinal matter of the serpent's poison to be the efficient agent, and the *post mortem* changes in the blood to be in some way connected with a metamorphosis of the fibrine of that fluid which so far as coagulation was concerned, appeared

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British Medical Journal July 20th, 1867, *Page* 43.

* When a person is mortally bitten by the cobra-di-copella, molecules of living "germinal" matter are thrown into the blood, and speedily grow into cells, and as rapidly multiply, so that in a few hours millions upon millions are produced at the expense, as far as I can at present see, of the oxygen absorbed into the blood during inspiration; hence the gradual decrease, and ultimate extinction of combustion and chemical change in every other part of the body, followed by coldness, sleepiness, insensibility, slow breathing, and death.

The cells which thus render in so short a time the blood unfit to support life, are circular, with a diameter on the average of one seventeen-hundredth of an inch. They contain a nearly round nucleus of one two thousand-eight-hundredth of an inch in breadth, which, when further magnified, is seen to contain other still more minute spherules of living "germinal" matter. In addition to this, the application of magenta reveals a minute colored spot at some part of the circumference of the cell. This, besides its size, distinguishes it from the white pus, or lymph-corpuscle.

Thus, then, it would seem that, as the vegetable cell requires for its growth inorganic food and the liberation of oxygen, so the animal cell requires for its growth organic food and the absorption of oxygen. Its food is present in the blood, and it meets the oxygen in the lungs; thus the whole blood becomes disorganised, and nothing is found after death but dark fluid blood, the fluidity indicating its loss of fibrine, the dark color its want of oxygen, which it readily absorbs on exposure after death.

Let it not be thought that microscopic particles are unable to produce such great and rapid changes. It is well known, and I have frequently timed it with my class, that a tea-spoonful of human saliva, will, when shaken with a like quantity of decoction of starch, convert the whole of the latter into sugar in a little less than one minute. If ptyaline, the active principle of saliva, exerts this power at most in a few minutes, then surely the active principle of the secretion of the serpent's poison-gland many exert an infinitely greater power in as many hours. It results, then, that a person dies slowly asphyxiated by deprivation of oxygen, in whatever other way the poison may also act, and so far as the ordinary examination of the blood goes, the *post mortem* appearances are similar to those seen after drowning and suffocation.

I have many reasons for believing that the *materies morbi* of cholera is a nearly allied animal poison. If so, may we not hope to know something definite of the poisons of hydrophobia, small pox, scarlet fever, and indeed, of all zymotic diseases?

British Medical Journal, December 21st, 1867. *Page* 563.

The following was the result of numerous experiments on dogs and cats. Blood soon drawn from an animal bitten by a snake contains a larger amount of nebulous or finely granular matter than is usually seen. After the lapse of one hour this nebulous matter is much increased in quantity, lying in the intervals of the red corpuscles, and presently it breaks up into small masses, out of which the cell is gradually evolved. In two hours after the bite, the cells may be seen in great numbers, but very indistinct. From this time every further microscopic observation shews them in great abundance; and from the sixth to the twelfth hour they may be seen in perfection, macula and nucleus included. Whilst this is taking place the nebulous matter disappears; the nebulous matter must, therefore, be regarded as the germinal matter out of which the cells are formed. At this time the cell-wall is extremely delicate, the macula very plain as a bright particle, and the nucleus either single, reniform, double, triple or multiple.

It would appear that the cells are now increasing in number by division of their nuclei, and the minute particles, having the vibratory movement of molecules in fluid, may be seen between the nucleus and cell-wall. On one occasion we watched for upwards of half an hour a constant revolution within the cell of a particle corresponding in all particulars to a macula. This particle passed regularly round the nucleus at an uniform rate, revolving both in the direction of and against the current of the fluid in which the cell was flowing, reminding one of the movements seen in valisneria, &c. Twenty-four hours after the bite, the cells attain their greatest size, and, supposing the animal then dead, have probably ceased multiplying, and are simply living or perhaps growing, the nucleus being usually single, the macula extremely distinct, and the cell very large. It is not uncommon at this time and later to see a cup shaped hiatus in the cell-wall from which the macula has escaped. The cells may be seen in the blood for many days, their presence seeming to be preservative against putrefaction. Where they have most room, as in the venœ cavœ, cranial sinuses, and cavities of the heart, they attain the greatest size and most circular form. In every instance the cell-wall is very elastic, and accommodates itself to surrounding pressure.

To ascertain how soon after inoculation these cells appear, is a matter of some difficulty. It is not necessary to suppose that at first they are very numerous; and, in order to detect them so early, it might require fifty or a hundred microscopes and observers at work at the same instant. Still, from their having been seen two hours after the bite, and from all we know of the rapidity with which new formations occur, both in health and disease, it is doubtless extremely soon. Of one thing we are sure, *viz.*, that the nebulous germinal matter from which they spring is within a few minutes diffused all over the body; for supposing an animal to die in five minutes, and hence all circulation stopped, the cells are as readily seen in its blood a few hours after death as if it had lived as many hours as we say minutes. The macula is, doubtless, a particle of germinal matter; but, whether it is to be regarded as that from which the whole cell has sprung, or whether it has been detached from the nucleus and is destined for independent existence, it is difficult to say. The fact that it is almost invariably large when the cell is small, and small when the cell is large, favors the first view. Perhaps the most important point must be left still undecided. Has the blood built up these cells, directly or indirectly, from the germinal matter of the serpent? The answer to this question the professor would endeavour to give at a future meeting; but in either case the result was the same, storing up of force in the new growth, at the expense of the nutritive properties of the blood, and by perversion of those chemical changes necessary to the maintenance of the life of the infected animal.

That the germinal matter exists in a state of extreme minuteness, the following experiment shows:—A cat, being with young, was inoculated with the poison, and, dying in three hours, her four kittens were removed from the womb. They were dead, and the blood of all contained the foreign cells, as did that of the matter. To pass from the cat to the kittens, the germinal matter must have penetrated the delicate membrane covering the tufts of the fœtal vessels. If the poison of serpents can thus readily be traced through the body, and from parent to offspring, why should not the path of all infections be tracked? Some months ago, it was stated that it was conjectured that a child had been bitten by a snake. No doubt need ever exist for the future; a drop of blood will always furnish the necessary evidence. He trusted the subject would not be let fall to the ground in Victoria, for it would assuredly be taken up at home. It had been to him a matter of surprise that, while this colony very properly appoints men to survey her coasts, explore her skies, and the ground beneath her feet, no one systematically explores her diseases, a subject in which the rich and poor, the living and those about to live, are equally and deeply concerned, and in comparison with which many other subjects that excite her people are trifles.

[illegible] I w[illegible] death from [illegible] Dr. Halford's [illegible] examination, [illegible] experience of the [illegible] I have the [illegible] and clear at [illegible] corpuscles, [illegible] I [illegible] Dr. Halford describes [illegible] the cells as in [illegible] and the [illegible] in the later [illegible] these cells are [illegible] death. My ex[illegible] the life [illegible] I confess, I have [illegible] to find them [illegible] changes, they are very important and interesting, and I shall certainly search [illegible], but as such I think they can hardly be regarded as the cause of death.

My [illegible] is still very strong that death from snake-bite, when it takes place within a short period as it always does in an animal thoroughly bitten by a cobra, is due not to any organic change in the general matter or cellular structures of the blood, for [illegible] there is often not time. But as life may be suddenly [illegible] by such poisons as hydrocyanic acid, before any blood change can possibly occur, so in the case of the bite of a vigorous cobra in a small animal, death occurs almost, if not quite as instantaneously, but by its direct influence on the centres of nerve force, by exerting an antagonistic force, one that is incompatible in short with those which regulate and govern the phenomena of life. I have already expressed the opinion which I repeat, that when death occurs more slowly, and when time is given for blood changes to take place, that death probably occurs as in other [illegible], and that the man or animal dies therefrom in a similar manner to that in which he or it might have perished from any other form of blood poisoning.

Experiment No. 1.

Present: Dr. Fayrer, Dr. J. Ewart, Professor of Physiology, Mr. [illegible]

20th May, 1869, at 2-48 p. m.—The femoral vein of a middling sized healthy dog was carefully exposed and 7[illegible] of liquor ammonia sp. gr. 959 B. P., was injected into it with the hypodermic syringe. The dog lay still for a moment, and was then raised, he [illegible] and fell on his belly, the legs being unable to support his weight. Lay in that position in a general state of tremor, involuntary [illegible] and micturition taking place.

2-50.—Lying on his side; convulsed and twitching in every muscle [illegible]; pupils widely dilated.

2-52.—Lies on his side in a state of unusual muscular twitching; unable to rise or to walk when raised.

2-55.—Starts up and tries to run; falls down, is unable to rise [illegible] the head taken only on one side.

2-57.—Lying quiet, cannot stand when raised; no tremor now; breathing hurried and deep.

3-0.—Seems to be recovering; raises his head, and tries to get up; breathing hurried and deep.

3-10.—Recovering; raises his head, makes efforts to get up; pro[illegible] and frothing at the mouth.

3-13.—Sitting up, licking the puncture; refuses water when offered [illegible].

3-30.—Is apparently well again; walks about as if nothing had [illegible]. The object of this experiment was to test the effect of [illegible] the poison [illegible] sp. gr. 959 B. P., as [illegible] Professor Halford, and it was injected into the femoral [illegible] suggested by him. The impression produced [illegible] was that the dog had a very narrow escape from [illegible] effects of the ammonia had nearly proved rapidly [illegible]

Experiment No. 2.

[illegible] exposed and [illegible] integumentary fold of the left thigh, at 3-6 p. m.

3-8.—Began to show signs of the effect of the poison; staggers, [illegible], micturated.

Forty minims of the liquor ammonia, sp. gr. 959 B. P. were now carefully injected into the femoral vein already exposed, with the hypodermic syringe.

3-9.—Was [illegible] convulsed, but raising the head and trying to rise. There can be no doubt that whatever the latter effects [illegible], the immediate consequence of the ammonia injection was [illegible] much worse.

3-10.—[illegible] breathing very rapidly; salivation profuse.

3-12.—Breathing hurried; sitting up and looking more intelligent.

3-13.—Is [illegible] to stand alone.

3-15.—Lies down; salivation very profuse.

3-20.—Is certainly better; walks, but drags the injected legs; is sluggish.

R[illegible] in this condition, very restless; lying down and rising; drowsy; at 3-30 thirty drops more of the ammonia injected.

3-31.—Lying down; is drowsy.

3-40.—Is lying down; being sluggish with hurried breathing.

3-43.—Was [illegible] hypodermic injection of the ammonia, forty drops under integument of foreleg.

3-44.—No apparent effect; twenty drops more injected in the same place.

3-50.—Is worse; convulsed.

3-53.—Lies in a state of prostration; breathing catching, and rather slow; seems quite exhausted, pupils widely dilated, lips [illegible].

3-54.—Dead.

Bitten at 3-6 p. m., dead at 3-54, in 48 minutes.

The results of this experiment are not favorable to the ammonia theory. Death took place in about the usual time in which it occurs in a dog after a bite from a vigorous cobra. The effect of the first injection impressed one with the idea that for a time the influence of the snake-poison was in abeyance, but the later symptoms were rather unfavorable than favorable to the ammonia.

Experiment No. 3.

A fowl was bitten by a cobra in the wing at 3-36 p. m. Half a minute later, I injected twenty minims of the Liquor Ammoniæ into the femoral vein which had been previously exposed.

3-38.—Violently convulsed; the convulsions passing rapidly into a state of general tremor and death. The fowl was bitten in the wing, where the parts were not very vascular, that the poison might not be absorbed so rapidly as if bitten in the fleshy part. The poison had not time to commence its effects, for the injection of the Liquor Ammoniæ was followed by immediate convulsions and death.

Experiment No. 4.

A fowl had ten minims of the same Liquor Ammoniæ diluted with twenty minims of water, injected with the hypodermic syringe under the skin of the thigh.

3-44.—Apparently not affected.

9 p. m.—No change.

30th, 6 a. m.—No change.

31st, 8 a. m.—The fowl keeps the leg drawn up, but is not otherwise affected.

Apparently beyond slight local inflammation, no effect produced.

Experiment No. 5.

The dog of experiment No. 1, having perfectly recovered, had the left external jugular vein exposed, at 3-55 p. m., of the 29th May. He was then bitten in the right thigh by a fresh full [illegible] cobra.

[illegible].—[illegible] lies down, rises and walks about limping on the [illegible].

3-58.—[illegible] but roused, walks about.

4 p. m.—[illegible] lies down, walks unwillingly, [illegible]

4-2[illegible].—Rises and walks about with uncertain gait.

4-3[illegible].—Lies with the head on the ground, apparently in [illegible] state.

4-6.—Stands, but is unsteady, head hanging down, and with salivation.

4-11.—Staggers in his walk.

The dog had only one bite, and the poison is now evidently taking effect: so 40 minims of the Liquor Ammoniæ were carefully injected with the hypodermic syringe into the jugular vein, the greatest care being taken not to admit any air with the fluid. The dog was immediately convulsed violently, fell over, was quite unable to stand; the convulsion passed into rapid jactitations of all the muscles.

4-15.—Perfect muscular exhaustion, hurried breathing.

4-18.—Injected twenty minims more of the Liquor Ammoniæ into the vein. Convulsive movements again became universal, pupils dilated, involuntary micturition, twitching of the mouth, lips drawn up, exposing the teeth, lips pallid, breathing catching and slow.

4-20.—Dead.

In this instance unusual care was taken to perform the experiment with exactness. No air was allowed to enter the vein, and the ammonia was most carefully injected with the hypodermic syringe. The steps of the operation were most carefully carried out by Dr. Ewart and myself.

The dog was bitten only once in the fore-leg. The poison did not manifest its effects so quickly, or in so marked a manner as in dogs bitten twice or thrice in the muscular part of the thigh, and this was purposely done that we might watch the progress of the action of the poison, and inject the ammonia at the right time. The ammonia was injected at 4-13 p. m., or in 18 minutes after the bite. Convulsions came on immediately, and these were followed by complete muscular prostration: at 4-18, or five minutes later, twenty more minims of the ammonia were injected into the jugular vein; a repetition of the same phenomena followed, and the dog died, completely exhausted, at 4-20. That is two minutes after the second injection, or seven minutes after the first, or in 25 minutes after the bite.

There can be no reasonable doubt that the injection of Liquor Ammoniæ into the external jugular vein in this case hastened, if it did not cause death; and whatever other deduction may be drawn from the experiment, this is inevitable that the proceeding is a dangerous one. In this case death occurred, in the first experiment the animal's life was in peril. The result is very different from that obtained by Professor Halford in his experiments, where he injected Liquor Ammoniæ not only into the jugular vein but into the heart itself, though I must at the same time confess that I cannot regard the latter experiment at all satisfactory or conclusive as to the beneficial effects of the ammonia. It proves the absolute necessity for many and most carefully repeated experiments, before one can come to an absolute decision on a subject where there are probably several sources of error to be encountered.

EXPERIMENT No. 6.

The following experiments were made with the view of determining the influence of one poisonous snake on another. I have already made many experiments on this interesting question, and though so far the weight of evidence is in favor of immunity of the poisonous snakes to the poisons of their own species, and those of others, yet I cannot regard it as a matter settled, but one about which there is still doubt. I must have further and more convincing proof before I can accept as a fact what I even now hardly believe, that a venomous snake, whilst it has the power of quickly destroying innocent snakes, has no power over its own, or the other poisonous species. Of this, however, there can be no doubt, that the effect of the poison is much less active on a venomous snake, than on an innocent one.

A Bungarus fasciatus about six feet in length, was bitten about a foot from the tail by a full grown fresh and powerful cobra, at 3-18 p. m. Again, at 3-19; a third time at 3-20 p. m. All the bites were within a foot of the end of the tail. The object of selecting this part of the Bungarus was to avoid the possibility of death being caused by injury to the viscera. The Bungarus was then put into a cage.

4-40 p. m.—It seems quite well.

9 p. m.—Appears sluggish; the part of the tail below the bites appears partially paralysed; on pressing the tail with a sharp pointed instrument but little sensibility is manifested.

30th May, 6 a. m.—Very sluggish: skin contracted into a longitudinal crease along either side of the body.

9-40 a. m.—Dead.

The Bungarus was a very large specimen, it was moulting at the time it was bitten; but still I think its death must be attributed to the influence of the cobra poison.

EXPERIMENT No 7.

A full grown spectacled cobra was bitten within a foot of the tail, by a Daboia Russelli, about half grown, but which was said to be fresh, and had been brought that day by the snake-men There was some difficulty in making the viper insert its long slender fangs into the tough skin of the cobra, but it did so, finally, in several places. No evil result followed, and on June 3rd the cobra was quite well.

EXPERIMENT No. 8.

A Daboia Russelli was bitten by a fresh cobra near the tail, about the same time as that of the last experiment: the bites were several, and fangs well inserted. But no evil result followed, and, on the 3rd June, the viper was unaffected.

EXPERIMENT No. 9.

Some cobra poison, taken from the poison-gland, several months ago, by Mr. Seeva, had been kept, and had coagulated in the glass-tube in which it was kept, into a white caseous-looking solid mass, with an intensely fœtid odour. Some water was mixed with this in which it was only partially soluble. Ten drops of the opaque fluid were injected with the hypodermic syringe into a pigeon's thigh, at 4-20 p. m. No immediate result followed.

4-25.—Ten drops more of the same fluid injected as before.

9 p. m.—No apparent change in the bird.

May 30th, 6 a. m.—Lying down; wings drooping.

10-5 a. m.—Dead.

This experiment shews that decomposition and coagulation of the poison, does not, even after a long time, deprive it of its poisonous properties.

EXPERIMENT No. 10.

5th June, 1869, at 3-2 p. m the right external jugular vein of a healthy dog was laid bare. Chloroform was then administered until the dog was insensible, though still whimpering with a peculiar cry. Forty drops of Liquor Ammoniæ sp. gr. ·959 were carefully injected into the jugular. Immediate restlessness followed; limbs convulsed; howled loudly as though it felt acute pain, and when placed on the ground was unable to stand, the legs being powerless.

3-16.—Lying quiet.

3-17.—Pawing his mouth and face in a semi-paralytic manner; makes unsuccessful efforts to stand.

3-18.—Lying prone; unable to rise on his legs; paws the face; when put on his feet cannot stand; seems quite sensible and intelligent.

3-20.—In just the same condition; crawls, but is unable to stand on his legs.

3-21.—Sat up, but fell over again.

3-23.—Forty drops more were injected. It was doubtful, this time, whether the ammonia entered the vein, probably into the areola tissue about it.

3-25.—Forty drops injected this time certainly into the vein; the dog at once passed into a state of violent convulsion, and from that into a state of general tremor.

3-27.—Able to rise, and stagger a few steps.

3-30.—Recovering; the dog is and has been for some minutes profusely salivated.

3-33.—Running about the room; seems to be intelligent, but has peculiar nervous twitchings of the mouth and face.

4-30.—The dog had perfectly recovered; the crural vein exposed, and forty minims of Liquor Ammoniæ sp. gr. ·959 injected, almost immediately succeeded, by violent convulsions.

4-33.—Howling as if in pain or fear, legs paralysed; struggles in the prone position, but cannot stand.

4-40.—Breathing hurried; pulling of buccinator muscle; twitching of orbicularis

4-42.—Can walk but with a very staggering gait.

4-45.—Has recovered but is weak.

In this case the animal recovered; but each injection of ammonia was followed by violent convulsions, muscular tremors and other paralyses to such an extent as to make it appear that life was in extreme danger.

The effect produced was unsatisfactory, and suggestive rather of danger than safety.

EXPERIMENT No. 11.

3-37 P.M.—A large dog had the right external jugular vein laid bare; at 3-42, it was bitten in the right hind leg by a spectacled cobra, that had been in confinement for some time. The punctured leg and the neighbouring parts were lubricated with the snake's saliva.

3-47.—Sitting down; rises and walks with rather a tremulous gait.

3-48.—Lies down; deep inspiration: breathing hurried.

3-58.—Symptoms of poisoning not at all pronounced—there is reason to doubt the vigour of the cobra.

4 P.M.—Bitten again by a vigorous cobra in the same place; the leg immediately partially paralysed.

4-1.—Uneasy; licks the wound.

4-2.—Whines, and is very restless.

4-3.—Head drooping.

4-4.—Breathing very rapid; (100): tongue hanging out; whining; uneasy; lies down; is restless.

4-5.—Walks about whining; droops his head, and lies down; still strong on his legs.

4-8.—Can walk but is evidently under the influence of the poison; staggers, pants, and droops his head.

4-10.—Forty minims of the Liquor Ammoniæ ·959 injected into the jugular vein; vomited; micturated violently whilst passing into a state of violent general convulsion.

4-12.—Stood up; breathing was hurried; is salivated.

4-15.—Shows weakness in the hind legs; lies down; is purged.

The symptoms of snake-poison becoming more marked.

4-17.—Injected forty drops more into the jugular vein; staggers, convulsed, and falls prone with the legs spread out.

4-20.—General paralysis; pupils widely dilated; tries to vomit; twitching of muscles.

4-22.—Twitching of all the muscles.

4-23.—Gasping; completely paralysed.

4-24.—Catching respiration; involuntary micturition.

4-25.—Dead.

HEAT APOPLEXY.

BY W. K. WALLER, M.R.C.S., &c., FEL. U. C.

THE mortality from heat apoplexy, as shown by Dr. Bryden's returns, has averaged in the 10 years, 1858 to 1867, 51·37, or more than half the cases attacked. The proportion of deaths from cholera is little more. It is not my intention, in the observations I propose to make, to enter into the causes and pathology of this disease. These have been discussed in the pages of the *Indian Annals of Medicine*, and by Morehead, Aitken, and Maclean: to their pages I refer you. My object is to direct attention to a mode of treatment hitherto apparently unknown, and I shall subjoin a list of cases occurring between 1856 and 1867, the majority of which were treated by the method I propose to speak of.

It may be thought that the result, judging from past experience, is too successful, or that slight or doubtful cases have been taken. It is not so: the subject has engaged my attention for years, and every case of heat apoplexy that occurred. Only those fatal were treated otherwise than as I propose.

The simplicity of the means and the result shown should commend the method to all concerned in treating this severe disorder. I am certain that whoever tries it will corroborate my statement, and that mortality tables will no longer show over 50 per cent. of deaths.

The treatment proposed is simply large doses of quinine by the mouth, or hypodermically, if the patient is unable to swallow. Probably the hypodermic method may prove to be the best and most convenient means in all cases, it is at least applicable to all in any stage.

I am enabled, through the kindness of my friend Dr. Hall, R. A., to give a case of recent occurrence in which its success was most marked. The precise means of applying the remedy will appear from the cases cited. I have as yet said nothing of cold affusions. I use it in almost all cases where there is great heat of surface: that it is not absolutely necessary is seen from Dr. Hall's case, and another which I shall give from my own experience. In cases of the cardiac variety, with cool and moist skin, it is of course inadmissible. Cold affusion is a valuable aid, but the remedy pure and simple is *quinine*. I give two cases of the cerebro-spinal form:—

H. B., gunner of the *Golconda*, admitted into the P. & O. Hospital at ½ past 6 P. M.

26th May, 1868.—He had fallen from his seat whilst at tea. The surgeon who was called to see him, applied ice to the head, leeches to the nape of the neck, and gave a powerful purgative which took no effect. I saw the man almost directly after admission. He was speechless, his skin burning hot, pulse running, hardly to be counted, he could still swallow. I gave him ℈j of quinine at once, and ordered 10 grains to be repeated every hour till he spoke. I considered him a most unpromising case; after the second 10 grain dose he spoke: nevertheless my apothecary continued the quinine, so that, by the time I paid my early morning visit, the man had taken 70 grains. He was then cool, sensible, able to sit up or even walk about, could speak, and complained of headache; the quinine was continued in five grain doses, at gradually increasing intervals, and the man was discharged on the 9th June to his duty. The *Golconda* sailed for Suez that morning, the man had been kept in hospital, though well some days before, as a matter of precaution on account of the great heat. For the following case I am indebted to Dr. Hall, R. A., whose notes I abbreviate:—

T. B. Driver, R. A., being in the hospital for ague, and being treated for this disorder by cinchonine, was attacked at 5-30 P. M. on the evening of May 15th, with heat apoplexy. Dr. Hall found him perfectly comatose, pupils rather dilated, (a sign of approaching death), skin burning hot, pulse full, 134, convulsive movements of arms and legs, grinding of the teeth, and gurgling in the throat. Three grains of quinine were at once injected under the skin near the deltoid, one and half grain into each arm; in half an hour the convulsive movements were less, and he seemed better. In an hour he was able to swallow, and had 10 grains quinine given in water. At 8 P. M. he had 10 grains more, the convulsive movements had then ceased, pulse about the same. At 10 P. M. 10 grains more. He was then conscious, and said he felt better.* At 1 A. M. he was sleeping quietly. On the 17th, says he feels all right, has no headache, is to have five grains of quinine three times daily.

27th.—Up to date no bad symptom, no return of ague, is quite well, and discharged to light duty.

Now both these cases are remarkable, because in them the quinine was the only remedy used. In both cold water was very partially employed, but in no such manner as could be classed as cold affusions. Quinine and that only saved these men. The three grains hypodermically injected may be taken to represent 12 grains given by the mouth.

I will now briefly give two cases of the cardiac form of insolation, in which the remedy was equally successful.

In March, 1858, the 2nd Officer of my ship *Nubia* went on shore at Galle with the Captain to take sights by means of the artificial horizon. He was on shore about two hours, exposed to the early morning sun with a small cloth cap only as a head-dress. Returning on board, he went to his cabin, and sent for me. He complained of intense headache and inability to sit up or stand, his pulse was slow and laboured, his skin cold and clammy, he was very pale. I gave him 10 grains quinine at once, and repeated the dose in two hours. He was quite relieved by the afternoon.

Again, an artilleryman marched with his comrades from the artillery station at the Mount into Madras for embarkation on board the *Nubia* in January, 1858. The march took place between 3 P. M. and sunset. The men were all in thick cloth clothing and forage caps. This man was brought to me at once on coming on board. His symptoms were identical with those given above. He had two ten grain doses of quinine at an interval of two hours, and was well the following morning.

How does quinine act in these different forms of illness, produced by the same cause, the direct application of the sun to the human body? Whether is it a direct nervine tonic as has been suggested to me by Dr. Chevers, or does it first act by relieving local congestions about the lungs and medulla oblongata, and afterwards exert its influence on the nervous system?* I confess, I do not feel competent to explain this; but that my inability to do so need not, and ought not to lead to the rejection of my proposal without enquiry, may be granted, when we reflect that "the *modus operandi* of iridectomy in glaucoma is not yet understood; but it has proved the remedy by which the largest number of patients suffering from glaucoma are relieved." "Bader on the Human Eye," preface page 7. Then, I say, in any case try the remedy, give it boldly, confidently, and I have no doubt that all who *do* try it will be as gratified as I am with the results.

The following cases, given in a tabular form, have been treated in the Hospital of the P. and O. Company, in Garden Reach, chiefly by myself, and, except the fatal cases, on the principles I have proposed:—

	Rank.	Date of Admission.	Date of Discharge.
1	3rd Officer	12th September, 1856	30th September, 1856.
2	Clerk	31st December, 1856	5th January, 1857.
3	Boiler Maker	8th June, 1858	Admitted 4-30 P. M., died 8 P. M.; Dr. L.'s case.
4	Steward	23rd April, 1859	29th April, 1859.
5	Moulder	16th May, 1859	23rd May, 1859.
6	Steward	7th July, 1860	13th July, 1860.
7	Steward	9th April, 1861	16th April, 1861.
8	Plumber	24th June, 1861	27th June, 1861.
9	Boiler Maker	2nd October, 1861	12th October, 1861.
10	Quarter Master	21st April, 1862	27th April, 1862.
11	Fireman	31st May, 1862	3rd June, 1862.
12	4th Engineer	9th September, 1862	13th September, 1862.
13	Carpenter	25th September, 1862	29th September, 1862.
14	Engineer	8th June, 1863	15th June, 1863.
15	Boatswain	1st July, 1863	17th July, 1863.
16	Carpenter	24th June, 1864	27th June, 1864.
17	4th Officer	3rd May, 1865	5th May, 1865.
18	Gunner	29th July, 1865	9th August, 1865.
19	Gunner	26th May, 1866	9th June, 1866.
20	Engineer	30th May, 1866	3rd June, 1866.
21	Steward	8th June, 1866	15th June, 1866.
22	Plumber	5th September, 1866	9th September, 1866.
23	Steward	26th May, 1867	Admitted 63-30 P. M., died 11-20 P. M., not seen by me, treated by calomel and croton oil. Dr. H.'s case.
24	Steward	29th May, 1867	2nd June, 1867.
25	Engineer	19th August, 1867	23rd August, 1867.
26	Gunner	2nd September, 1867	Admitted 6-5 P. M., died 6-30 P. M., no quinine given. Dr. M.'s case.
27	Steward	28th May, 1868	3rd June, 1868.
28	Steward	26th June, 1868	30th June, 1868.
29	Engineer	26th June, 1868	30th June, 1868.
30	Fireman	20th March, 1869	23rd March, 1869.
31	Steward	20th April, 1869	22nd April, 1869.

These cases are put down in their order of occurrence; there have been other instances of less importance, which I have not noticed. The above were all true cases of insolation, chiefly from exposure, or working in close stifling atmospheres; the treatment of all was uniform—cold douche and quinine.

The three fatal cases I did not see at all. In concluding these brief remarks I urgently and earnestly ask my medical brethren to try this great remedy for this terrible disease. Can you doubt that your success will equal mine? I hope not, I think not, try it and time will show.

POST PARTUM HÆMORRHAGE; DEATH FROM SHOCK.

By J. Fayrer, M.D., C.S.I.

On Sunday morning, 23rd May, 1869, I was sent for to see Mrs.——whose expected labour (primipara) had commenced. I found that she had been suffering more or less since the previous evening; the pains were irritating and fatiguing, and had disturbed her rest throughout the night. I made an examination during one of the pains, and found the os uteri high up and pointing towards the sacrum; it was not dilated sufficiently to admit the point of the finger. The bowels were confined, so I ordered a dose of castor oil, and an enema if necessary. I saw her again later and made another examination; the pains were continuing as before, there was no change. The oil had caused sickness; the enema had proved effective; the bladder had also been emptied. Her pulse was natural, her skin cool and moist. The tongue was moist but slightly coated in the centre. I saw her again during the day, little or no progress had been made, by evening, in the dilatation of the os which was rigid, with its margin thin and tense. There was no change in the position of the head which presented, and was as high as ever. She complained much of the fatigue and worry of the incessantly recurring pains, but constitutionally she was unaffected. Her pulse, tongue, and skin were all as they were in the morning. The passages were moist and cool. The fœtal heart was distinctly audible and there was no indication of constitutional disturbance of any kind. During the day she had been sick after the oil, and had vomited some bilious matter. She had taken a sufficient supply of fluid nourishment, and a little wine and water occasionally. To give rest, I ordered, after the bowels had acted, liq. opii, min. xxv. It was repeated at bed time, but she had, on the whole, a restless and disturbed night. I found her on the morning of the 24th looking tired and anxious, but all her symptoms were good, pulse about 86; tongue moist and clean; skin cool and moist. The os uteri was now found to have dilated to about the size of a shilling, and was rigid. I prescribed small doses of antimony, $\frac{1}{4}$ grain to be given every hour with the view of causing relaxation. After taking three or four doses, she was sick, and it was discontinued; I also put her under the influence of chloroform for a few minutes, on two or three occasions. During the day she took an ample quantity of nourishment; the bowels were relieved, and constitutionally she was as well as ever. Towards evening I became rather uneasy about the non-dilatation of the os uteri, and I expressed my intention to her husband, if, by 9 P. M. more satisfactory progress was not made, to have a consultation. At 9-30, I made another examination, and ascertained that some progress had been made. The os was now about the size of a rupee. She had slept at intervals, and her pulse kept steady; the tongue clean, and the skin was cool and moist. I saw her frequently during the night, as I remained in the house, and was satisfied that progress, though slow, was being made. At 10 A. M. of Tuesday, the 25th, the os had dilated to the size of the rim of a wine glass. As all her symptoms, beyond the delay, were favourable; the pulse under 100, tongue clean and moist, skin and passages moist and cool, fœtal heart vigorous; interference was uncalled for. The pains continued, but, perhaps, with more rapid succession, and by 12-30 the second stage of labour had commenced. The head was now well down, and the character of the pains changed. The expulsive efforts continued at regular intervals, and at 5-40 P. M. when partially under the influence of chloroform, she gave birth, with little difficulty, and without the least laceration of the perineum, to a large male child.

The infant was partially asphyxiated, having the cord twice round its neck; but on releasing the cord, using artificial respiration, and dashing cold water on the face and chest it soon breathed and cried vigorously. The cord was then tied and divided. The uterus meanwhile had contracted firmly, and in from fifteen to twenty minutes the placenta was spontaneously expelled; up to this time she had not lost an ounce of blood. I should have noted, that the membranes ruptured at about 10 A. M., and that the liquor amnii trickled away with each pain, but there never was any protrusion of a bag of membranes to aid in dilatation. Soon after the placenta had come away, the uterus being firmly contracted, the pad

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* Dr. Headland considers its first action is on the blood; see his book on the Action of Medicines, p. 147, also op. cit. Article, Quinine.

[illegible] were applied. She was [illegible] and looking well, and was in high spirits at the birth of her child. Her pulse was peculiarly [illegible] and firm. Indeed it was remarkable how well she bore the second stage of labour; her strength which had failed slightly towards the close of the first stage, returned; the restlessness passed away, and her pulse which had quickened, though never over 112, [illegible] almost the normal standard. I then left the room at about 6.45 P.M., whilst the nurse arranged her bed and dress. In a few minutes I went into the room again to see that all was right before leaving. Whilst I was speaking to her she said she felt uneasy, and had a violent pain in her back. This was about thirty-five to forty minutes after the birth of the child. I put my finger on her radial artery, and found the pulse had suddenly quickened. I immediately had the binder removed, and found that hæmorrhage had begun. The uterus had relaxed and was distended with blood. I immediately removed the clots with the right hand, grasping the womb with the left; applied ice, and *douches* of cold-water externally, and injected cold-water into the uterus. I gave liquor ergot, ʒss., and powdered ergot shortly after, and applied the magneto-electric current, the instrument being brought immediately. The child was also put to the breast. With these measures the uterus contracted firmly, and remained so to the last. The quantity of blood lost could not have exceeded two pounds. She was considerably depressed, but did not at this time lose the red colour of the lips and eyelids; the pulse was rapid and irregular, but her voice was good, and she seemed free from alarm, when in reply to her query she was told that the bleeding had been controlled. She did not faint, neither did she manifest, at this time, the usual symptoms of dangerous hæmorrhage. She was quiet, and spoke calmly and cheerfully about herself. I gave her brandy and water freely, beef-tea, and brandy; mustard poultices over the heart, solar plexus, and on the back. Brandy was also given in the form of enema, and hot bottles were applied to the extremities; but her condition did not improve. The pulse became weaker, and more rapid, and irregular; she was restless, and the surface of the body bedewed with a cold sweat. The countenance began to change, and signs of collapse rapidly set in. These symptoms did not make their appearance for fully half an hour after the hæmorrhage had ceased. I had, meanwhile, sent my carriage for assistance, and Dr. Chevers, who was the nearest, came at once. There was no return of hæmorrhage, the womb remaining firmly contracted, and not parting with the smallest quantity of blood. During the application of the magnetic battery, and whilst other measures were being taken to ensure uterine contraction, she was in good spirits, held the wire with her own hand, and laughed at the nurse who held the other wire. Reaction never properly set in, she seemed to have no power of rallying, and notwithstanding every effort, she gradually sank. The pulse occasionally rose slightly, giving a delusive hope of reaction, and for a few moments she slept; but at last the breathing became hurried, as though pulmonary obstruction was taking place from coagula forming in the right side of the heart. She had become intensely restless, talked for a short time incoherently; and then sank and died quietly, at about 9.30 P.M., three hours and fifty minutes after the birth of the child, and about three hours and a quarter after the occurrence of hæmorrhage.

There are some points of interest to be considered in a review of this sad and interesting case. The patient was a young English lady, age 23, who had been married about ten months, and been in India four months. She was of a tall and sufficiently vigorous, though rather slight frame, her general health good, nor was there anything in her appearance suggestive of deficiency in vital force. She was said to have suffered severely from [illegible] shortly before her marriage, and was considered to have been somewhat constitutionally weakened thereby. She had passed through the period of her pregnancy without much inconvenience, and had completed the full time when labour commenced.

The progress of the first stage of labour was unusually slow, for commencing on Saturday evening, it was not until Tuesday at noon that the fœtal head passed through the cervix and entered on the second stage of labour.

But as her constitutional powers were not depressed, no interference, beyond small doses of antimony to facilitate dilatation, opiates to procure rest, and chloroform occasionally was considered necessary, and the result proved that such was the case, for the second stage of labour was completed within six hours, and she gave birth to a vigorous and healthy child without much difficulty, and with less suffering [illegible]. After the expulsion of the placenta the womb contracted firmly, and up to this period there had been no loss of blood. The relaxation of the womb that caused the loss of blood was sudden, but it was rapidly arrested, and though, in the first gush of hæmorrhage, a considerable amount, about 2lbs. of blood was lost, there was no repetition of it; the uterus, after being relieved of the clots, contracted firmly, and there was no recurrence of hæmorrhage.

The amount of blood lost was not so great as to give rise to dread of impending death. Much more has been lost in other cases and yet perfect reaction and recovery have followed. But there are certain constitutions that seem to be endowed with but little power of rallying from a shock, even though slight, and in whom the vital energy though equal to all the ordinary emergencies of life, is inadequate to the task of recovery, when any serious cause of depression has affected the nervous centres.

In such, no doubt, the great heat of a Calcutta May, and its terribly depressing influence must be an additional cause of weakness, and a most important obstacle to recovery, when any such shock to the nervous system has taken place.

That death should occur from syncope, or from great exhaustion in profuse hæmorrhage, either when the blood is flowing, or immediately after it has ceased to flow, is, though fortunately uncommon, yet sufficiently intelligible, and needs no explanation in any real or fancied constitutional defect in the sufferer, but that death should follow a comparatively moderate loss of blood, and when all else was apparently free from defect or disease, is more remarkable, and forces one to the conclusion that, in a constitution naturally inert as to vital power, the influence of climate, such as that of Calcutta in the hottest season of the year, must have had a prejudicial effect in preventing the reaction which, in other cases, under ordinary circumstances, might have been hopefully anticipated.

I am satisfied that the labour itself had nothing to say to the unfortunate result. The first stage was certainly very tedious, but it was neither attended with, nor followed by, any failure of constitutional strength. The second stage was accomplished with vigor, and after the birth of the child, the patient was, in all respects, as well as one could have desired to see her. I have frequently noticed that loss of blood in a surgical operation that would hardly affect one person, prove almost, if not quite, fatal, to another, each being to all appearance equally strong; the difference is due, no doubt, to different degrees of vital energy in the individuals, so, in the case I have described, I can only ascribe death to a similar cause.

APOPLEXY.

By T. Farquhar, M.D.

“Apoplexy” has carried off 1,662 soldiers within the decade noted in the margin, nearly half of whom, however, fell victims to it in one year, 1858, the year of the first arrival of a large body of men from England, and of the mutiny campaign. A year, as Dr. Bryden expresses it, “of the experience of an unclimatised army in its first year of service in India.” Up to 1864 the cases were all registered by Dr. Bryden in his returns as “heat apoplexy,” for that year and since, “apoplexy” is the term used.

Years.	Deaths.
1858	778
1859	228
1860	125
1861	61
1862	51
1863	[illegible]
1864	[illegible]
1865	118
1866	55
1867	84
	1,662

In this disease we require, for sanitary purposes, a more distinguishing classification of the causes of death, for the term apoplexy implies to the English reader solely an affection of the substance of the brain, and though some of the deaths enumerated in these tables may be instances of the disease so common in England, it is undoubtedly not of common occurrence among the young soldiers of India. For practical purposes, we may assume, therefore, that the deaths from apoplexy here recorded are from “heat apoplexy,” the term used for all apoplectic cases down to the year 1864.

But again, though “heat apoplexy” is the best name yet applied as a general term to all the fatal cases that occur under this head (for extremes of heat are the real causes of death), yet we must sub-divide the disease still further, and have in the returns two distinct terms, *viz.*, *coup de soleil* or sun-stroke, and ardent fever. The necessity for this will be acknowledged if we are to understand aright the preventive measures required to save life from this deadly disease.

But first of all the symptoms of these two diseases are not identical, nor is their cause the same. A man struck down by the sun, while exposed to its direct rays in a hot day in India, falls to the ground in a faint, and dies almost immediately, or in an hour or two, of syncope. The body may be hot, but there is at first pallor, and afterwards congestion of the face, from impeded circulation in the blood.

"Ardent fever," on the other hand, comes on more gradually; a sense of oppression and giddiness with all the distress which accompanies the hot stage of fever is complained of, or sometimes stupor comes on rapidly, and terminates suddenly in apoplectic symptoms. One other symptom is prominent above all others in this form, *viz.*, intense heat of the body.

The cause of the one set of cases is the direct influence of solar heat in an intensely hot atmosphere. The cause of the second is extreme heat without necessary exposure to the sun, but apparently the effect of an exacerbation of fever while surrounded by a very high temperature.

Both causes may sometimes be operating on a body of men at the same time; but fortunately no opposing preventive measures or medicinal treatment have to be recommended for the relief of the sufferers. Bearing in mind these two forms of the disease we have a ready clue to the differences observed in the mortality during the different months in the decade under review.

While the army was in the field in 1858 and 1859, and but poorly housed in 1860, we see a very high death-rate from heat apoplexy. The most remarkable loss was in May, 1858, when 426 deaths occurred out of 929 cases. Many of these must have been instances of *coup de soleil*, as the men had to be continually in the sun.

This as a cause of mortality cannot be avoided in times of war, but the records of many instances of loss from sun-stroke point to several causes through which some corps lose many more than others. One of these is exhaustion from (1) over-exertion, (2) want of sleep, and (3) want of food: it may not be possible in the face of the army to avoid the first of these. Great care to prevent unnecessary disturbances and alarms in camp at night will provide against the second cause, this is attended to in some regiments and disregarded in others, but should be impressed on all commanding officers as a point of the first importance in the preservation of the efficiency of a corps, and warding off this and other sickness. The third is, perhaps, the most important and most easily provided against cause of *coup de soleil*. In some regiments the men before leaving camp in the early morning have something to eat and drink. In such corps *coup de soleil* is, as a rule, very rare, while men who march in a hot sun on an empty stomach are very liable to fatal faintness on the march, or soon after their arrival in camp.

I cannot help believing, too that the belt across the chest assists in that congestion of the lungs from which death occurs in these serious cases. The sooner the new belts, like braces, are introduced into India, the better for the men, as the constriction they now suffer from over the chest will thereby be relieved.

The second form of heat apoplexy, called very appropriately "ardent fever" from the fierceness of the heat of the body of the patient, is seen to occur inside barracks and hospitals, and during the night as well as during the day. From the returns it is seen that after 1860, when the exposure in tents on the campaign ceased, this form of apoplexy occurred most severely, not in May, as it did in the years of campaigning but in June and July. The numbers standing thus for four months from 1861-67:—

May.	June.	July.	August.
49	140	149	46

In May the heat is untempered by the falling of rain, hence in camp life we can understand how the sun is then most powerful in destroying life *per se*. In June and July fevers are more abundant, and the heat still very great, hence we see fever once developed passing into the "ardent" form, and destroying life with apoplectic symptoms. The comparative immunity of cholera camps during the rains, from the so-called sun-stroke, is no doubt accounted for by the absence of the fevers so prevalent in barracks: we have also exemption from those fatiguing marches and want of sleep and food, that are so destructive to life on a campaign.

The month of June also, is by far the most apoplectic time for native soldiers and prisoners, as the following table shows:—

Total deaths from apoplexy in the years 1864-65-66-67.

		Sepoys.	Prisoners.			Sepoys.	Prisoners.
January	...	2	9	July	...	3	17
February	...	1	10	August	...	5	8
March	...	2	5	September	.	1	6
April	...	1	8	October	..	2	10
May	...	4	9	November	.	..	12
June	...	5	44	December	..	2	6

Average strength for the four years in question.

Sepoys ..	... 36,485.	Prisoners ..	... 51,802.

We can easily understand this when we think of the steamy heat of the first part of the rains, especially at night, when a dense hot stillness and utter stagnation in the atmosphere prevails.

It is remarkable to note in the above table, the difference between the seizures of the sepoy and the prisoner; the former is not pent up in a barrack, breathing vitiated air as the latter is; any one who has visited a jail barrack in the early morning succeeding a hot still night will understand what risks the prisoners run who breathe such tainted air.

We find in Dr. Bryden's tables such numerous examples of heat apoplexy accompanying increase of fever in barracks, that for a diminution of this form of death the same recommendations would apply to preventive measures for each.

1. Subsoil drainage.
2. Segregation of the men.
3. More perfect means of keeping the barracks cool.

This last is the essential in the disease, and can certainly be aided by a diminution in size of barrack rooms. Artificial ventilation for three months of the year, such as is given to prisoners in solitary cells in the Agra jail would effect this, and doubtless save many lives.

The importance of sanitary and preventive measures, probably of the nature above noticed, is doubly urged on our attention by the characteristics of this disease. Next to cholera this is the most fatal form in which death attacks either Europeans or natives in India, and like cholera, this disease can be effectually dealt with only in its first stage, and then it is very amenable to treatment.

When, however, apoplectic symptoms have fairly set in, or have lasted for some time, no means yet tried are effectual in rousing the patient. The insidious or sudden character of the onset of this, as of all forms of apoplexy, and the inability from insensibility of the sufferer to give notice of his state, is the most frequent cause of death.

Seeing this is the case, the principal means of saving life are to be supplied in the barrack room, rather than in the hospital.

As regards the disease and its treatment, it appears that the cases that occurred from sun-stroke were less deadly than those from ardent fever. The accompanying table for the decade shews that before the troops were housed in barracks, that is during 1858, 1859, and 1860, the mortality was less than it subsequently became.

From 1862, the deaths to the proportion of men attacked has materially lessened, though still very high. The hope is that a general improvement in the treatment has effected this change, though the reduced amount of remittent and continued fevers, which are so intimately connected with the more severe form of this disease, may account in a measure for the good result. Many of the cases, too, that occurred were doubtless from "sun-stroke," as a large number of men had to go into camp on account of cholera.

Year.	Heat apoplexy; deaths to admission.
1858	41·36
1859	47·28
1860	41·52
1861	61·22
1862	64·58
1863	47·87
1864	67·73
1865	62·36
1866	48·67
1867	41·09

SUMMARY OF FIFTY POST-MORTEM EXAMINATIONS OF INHABITANTS

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.

(Continued from

TABLE

No.	I. General Condition.	II. External Appearances.	III. Cranial Cavity. Scalp & Skull.	Membranes.	Brain, &c.	IV. Thoracic Cavity. Larynx & Trachea.	[illegible] Pleuræ.	Right Lung.	Left Lung.	Pericardium.	Heart, &c.
21	Exceedingly emaciated.	Bed-sore on left trochanter, feet œdematous.	Healthy.	Pia mater congested, with effusion.	Congested.	Healthy.	Right pleura extensively inflamed, and largely distended with serum; left [illegible].	Collapsed and carnified.	Congested and œdematous.	Contained a large quantity of serum.	Contained white clots.
22	Much emaciated.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	Slight adhesions on left side (old), extensive on right recent.	Congested; emphysematous anteriorly.	Upper lobe hepatized; engorged.	No fluid; membrane punctated.	White clots in auricles, and ventricles empty.
23	Well nourished.	Nothing noted.	Healthy.	Great congestion, with considerable effusion.	Much punctated.	Healthy.	Healthy.	Hypostatic congestion.	Hypostatic congestion.	Healthy.	White clots in right cavities, walls, &c., healthy.
24	Excessively emaciated.	Feet œdematous.	Healthy.	Considerable sub-arachnoid effusion.	Pale and œdematous.	Healthy.	Old adhesions on both sides; serum in both sacs.	Pigmented and œdematous.	Pigmented and œdematous.	Contained a small quantity of serum.	White clots in cavities, walls fatty, & valves normal.
25	Much emaciated.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	Right pleura inflamed, considerable effusion of fluid in left pleura.	Upper lobes hepatized; lower engorged.	Congested.	Healthy.	Small white clots in cavities, walls, &c. healthy.
26	Extremely emaciated.	Nothing noted.	Healthy.	Considerable sub-arachnoid fluid.	White substance punctated.	Healthy.	Old adhesions on right side.	Hypostatic congestion.	Hypostatic congestion.	Healthy.	White clots in right cavities, walls, &c., healthy.
27	Well nourished.	Nothing noted.	Healthy.	Nervous congestion, with sub-arachnoid punctated.	Healthy.	Healthy.	Right pleura inflamed and covered with lymph.	Engorged.	Upper lobe engorged; lower hepatized.	Healthy.	White clots in cavities.
28	Rather emaciated.	Nothing noted.	Healthy.	Nervous congestion, with serous effusion.	Healthy.	Healthy.	Old adhesions on both sides, recent inflammation.	Middle and lower lobes hepatized; rest engorged.	Congested.	Healthy.	White clots in cavities, walls &c., healthy.
29	Well nourished.	Nothing noted.	Healthy.	Healthy.	Healthy.	Healthy.	Pleuritic adhesions on both sides.	Engorged and partially hepatized.	Slightly congested.	Healthy.	White clots in the cavity of the heart.
30	Considerably emaciated.	Nothing noted.	Healthy.	Chronic congestion, with much effusion.	Healthy.	Healthy.	Fluid in both cavities.	Congested and very œdematous.	Congested and very œdematous.	Healthy.	Filled with fibrinous clots; walls, & healthy.
31	Rather emaciated.	Hands and feet sodden; joints bent.	Healthy.	Venous congestion with considerable effusion.	Punctated.	Healthy.	Healthy.	Congested throughout.	Congested throughout.	Healthy.	White and dark clots in cavities, walls, &c., healthy.
32	Exceedingly emaciated.	Bed-sore on each ankle, small abscesses all over body.	Skull thin.	Considerable effusion of serum.	Pale and slightly œdematous.	Healthy.	Contained a small quantity of serum.	Engorged and very œdematous.	Engorged and very œdematous.	Healthy.	Amber-coloured clots in cavities; valves and walls healthy.

OF THE JESSORE DISTRICT, PERFORMED IN THE JAIL HOSPITAL.

Civil Assistant-Surgeon, Jessore.

Vol. IV., page 71.)

No. III.

V.

Abdominal Cavity.

Parietes and Peritoneum.	Stomach.	Small Intestine.	Large Intestine.	Liver.	Spleen.	Right Kidney.	Left Kidney.	Pancreas, &c.
Filled with serum.	Contracted.	Healthy.	Healthy.	Adhered to diaphragm; contained enormous abscess; tissue fatty.	Enlarged; pigmented.	Large; white.	Large; white.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Nutmeg.	Enlarged and engorged.	Cortical substance slightly degenerated; pyramids congested.	Cortical substance slightly degenerated pyramids congested.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Soft and friable.	Congested.	Congested.	Healthy.
Healthy.	Contained coffee-coloured fluid.	Portions congested; mucous membrane atrophied.	Atrophied; small circular ulcers near rectum.	Very fatty.	Small and firm.	Misshapen; cortical substance degenerated and atrophied.	Misshapen; cortical substance degenerated and atrophied.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged, hypertrophied, and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Contracted and empty.	Mucous membrane of a slaty colour; acute and chronic congestion in patches.	Contracted; ulcers, recent and old, with pigment deposit.	Fatty.	Capsule thickened; organ enlarged and hypertrophied.	Contained cysts; cortical substance atrophied and degenerated.	Contained cysts; cortical substance atrophied and degenerated.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Healthy.	Enlarged and engorged.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Fatty and slightly cirrhotic.	Enlarged and engorged; capsule thickened.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy.	Slightly fatty.	Capsule thickened; strong adhesions around.	Healthy.	Healthy.	Healthy.
Healthy.	Healthy.	Healthy.	Healthy	Congested.	Dark and friable.	Atrophied and degenerated.	Atrophied and degenerated.	Healthy.
Peritoneal fluid viscid and scanty.	Distended with undigested food; mucous membrane sodden.	Filled with a brown fluid; mucous membrane soft and sodden; Pyer's glands distended.	Contracted; mucous membrane soft and slimy.	Healthy; gall bladder distended.	Congested.	Healthy.	Healthy.	Healthy.
Contained a large amount of fluid.	Healthy.	Healthy.	Healthy.	Soft and friable; fatty.	Much enlarged; capsule thickened; substance indurated.	Pale and degenerated, with black deposits.	Enlarged; contained tubercles, soft and friable.	Healthy.

THE INFLUENCE OF COLD IN PREVENTING THE ANÆSTHETIC EFFECT OF CHLOROFORM.

By H. Cayley,

[illegible]

[illegible] at a low degree [illegible] when [illegible] temperature below 45° [illegible] anæsthetic [illegible] what I was [illegible] them will [illegible] in a very [illegible]

[illegible] chloroform was very practically forced on my [illegible] Ladak. In the month of May, when the thermometer [illegible] about 45° [illegible] I was operating for [illegible] stumps of fingers of a man whose hand had [illegible] bitten. The operation was performed under [illegible], where the air was warmer than in the house, [illegible] the thermometer stood at 45°. I first attempted to produce anæsthesia by chloroform, and having warmed the bottle, gave [illegible] usual way, on a handkerchief, but without any effect whatever [illegible], although more than an ounce was administered. I [illegible] that the chloroform had hardly any smell when poured [illegible] it evaporated rapidly enough; not even intoxication was produced and I had to perform the operation when the man was fully conscious. I was partly under the impression [illegible] that the chloroform was bad, especially as it had been [illegible], or else that the man was constitutionally insusceptible to its effects. A few weeks afterwards, however, when the temperature in the tent where I operated was over 70° F., I again administered the same chloroform to the same patient for a corresponding operation on his other hand, and insensibility was produced rapidly and completely, thus proving that the failure on the previous occasion was due to the coldness of the air. This fact [illegible] worth noting by any one likely to be called on to perform operations in a cold climate where there are no conveniences for producing [illegible] in hospitals [illegible].

CANTHARIDES IN CHOLERA.

By C. R. Francis, M.B.

If cantharides [illegible] that it may be [illegible] a plan of treatment is [illegible] but surely commending itself to the judgment of medical [illegible] cannot fail, I firmly believe, to diminish the [illegible] which [illegible] where European soldiers are [illegible]. I mean the plan of administering [illegible] and not [illegible] of milder therapeutical agents [illegible] the very [illegible] cantharides. The plan of [illegible] cantharides in cholera is not so recent as some would suppose. I have lately seen a [illegible] on the disease, written by a Madras medical [illegible] Assistant Surgeon [illegible] in 1851, in which he states that he had employed the [illegible] in combination with [illegible] and that the [illegible] were always [illegible]. Dr. Ford speaks [illegible] and the [illegible] the 7th [illegible] of which he was also in medical charge. Whilst Dr. Ford [illegible] states that, in his own [illegible], the [illegible] was not [illegible] than what it [illegible] his native climate [illegible].

It would appear that in Madras cantharides [illegible] recognised as an [illegible] remedy in cholera [illegible] No. 728 of 25th [illegible] 1867, [illegible] from the [illegible] report [illegible] of [illegible] in that presidency [illegible] in which it is an ingredient [illegible] for [illegible] outbreak amongst the [illegible] the well known admirable pill originally advocated by Dr. John Murray [illegible] supplied to non-medical public functionaries [illegible] Bengal. This pill, however, contains opium. There are two kinds of cholera pill [illegible] used in Madras, one with the other [illegible] opium. The latter [illegible] the former [illegible] one which [illegible] whilst the other may be given much more freely [illegible] the opium [illegible] danger [illegible] this point is dwelt upon by the M[illegible]

[illegible] as follows:—

[illegible] Acet.	[illegible] and [illegible]
[illegible]	ʒj and ℈j
[illegible]	ʒj and ℈j
[illegible] powder	ʒj and ℈j
P[illegible] Canth.	[illegible] and [illegible]
[illegible] Aromat.	[illegible]

[illegible] cantharides in [illegible] when they are [illegible] rubbed up with the [illegible] the chalk, the aromatic powder, and a sufficient quantity [illegible] divided into [illegible] pills. One or two for a dose.

Two or three years ago, cantharides was, for the first time in Bengal, [illegible] introduced by Mr. F. Walker, when Civil Surgeon of Assam. He reported that his success was [illegible], and I am convinced that the remedy will become a favorite one [illegible] with the profession, from the fact of its being occasionally met with in prescriptions even now. I have, more than once, addressed the profession in the columns of the *Indian Medical Gazette* on the subject of the treatment of cholera, with, I rejoice to say, more or less success.

If, by my present communication, a few more of those who have to deal with this frightful pestilence, will be induced to prescribe cantharides [illegible], I am sure they would be gratified with the results. It will be observed that other ingredients which I have recommended for the treatment of cholera, and especially for the collapsed condition, are included in the prescription, though they are not recommended to the full extent I have recommended them.

It is nevertheless a step in what, I venture to think, the right direction.

NOTE ON THE ANTISEPTIC TREATMENT OF WOUNDS.

By James Irving, M.D.,

Civil Surgeon of Allahabad.

The [illegible] dressing wounds lately introduced by Mr. Lister of [illegible] known, and its advantages are great. In order to form the plaster which he employs in the dressing for the purpose of excluding [illegible] the professor uses whiting and carbolic acid made into a sort of [illegible] about the consistence of putty. Dr. Newton, of Subathoo, [illegible] November number of this *Gazette*, suggests as a substitute a compound of wheat flour and "kelo oil," which appears to be a turpentine [illegible] product of the Cedrus Deodara, and is said to be rich in [illegible]. My present object is to draw attention to another substitute for the putty, which I have found to answer very well in the dressing of wounds, [illegible] a mixture of bees-wax and coal tar. In the cold [illegible] a small quantity of linseed or other oil may also be added; the composition should be of the consistence of a firm ointment. It is employed as follows:—"The wound is first of all thoroughly washed with a watery solution of carbolic acid, and the edges are to be carefully stitched or brought together accurately. A piece of [illegible] cloth is then to be soaked in a mixture of carbolic acid [illegible] linseed [illegible] parts. This dressing is not to be removed at [illegible] dressing, but allowed to remain perfectly undisturbed for several days. It should, therefore, be secured by a slight bandage, tape, or by adhesive strapping. Over this a piece of old linen or common native cloth soaked in oil and carbolic acid as before is to be laid. It should be larger than the first piece of dressing, and [illegible] to be secured lightly. The mixture of coal-tar, and wax is to be melted over a gentle fire, and when liquid, is to be poured all over the outer dressing by means of a spoon or spatula, until a complete covering of about ⅛th, to ¼th of an inch in thickness has been formed. Over this tinfoil, sheet-lead or gutta percha is to be laid, and the whole secured by a few turns of a bandage.

According to the quantity of the discharge the outer cloth, smeared with tar and wax is to be changed every day, every second, third, or fourth day. The dressing next the wound is on no account to be disturbed, but some fresh oil and carbolic acid may be poured over it; then a piece of lint or cloth soaked in the same mixture is to be applied; then the melted tar and wax: and then the tin-foil as before.

In this way I have treated many wounds and several cases of compound fracture, both at the Colvin dispensary and Railway hospital, and I have now under treatment a case of amputation of the fore-arm which did remarkably well under the above dressing, a considerable portion of the flaps healing by the first application.

Among the workmen in the shops of the East Indian Railway, numerous wounds of the fingers occur almost daily, and these being well washed with the solution of carbolic acid, covered by the oily solution, and lastly by the plaster or ointment of coal-tar and bees-wax, and gutta percha tissue, heal rapidly, and only require to be once dressed if the patient is careful to prevent the dressing being disturbed. From the last number of Braithwaite's Retrospect of Medicine, I observe that Professor Lister now recommends, instead of carbolic acid and whitening, a compound of lead plaster mixed with a fourth part of bees wax. To this carbolic acid is added in the proportion of one-tenth of the whole.

ON LUNAR INFLUENCE OVER MALARIOUS FEVERS.

By W. J. Moore, L.R.C.P.,

Surgeon, Rajpootana Agency.

(Continued from page 114).

I now proceed to give my reasons for still believing in lunar influence over malarious fever, in the face of so much recorded negative statistical evidence. As before mentioned, I consider the disturbing agencies, which must be present, sufficient to prevent the preparation of any trustworthy statistics. For instance, people very frequently do not apply for relief for attacks of fever. Malarious fevers having once occurred in any individual, may be *re-excited* by exposure, debauch, errors of diet, fatigue, solar heat, cold, or mental emotions (*a*). Medicines previously taken, must often interfere with the natural periodical return of the disease. 2ndly.—The evidence of individual cases appears strongly affirmative. Many, both medical men and others, have assured me, they find tendency to, or actually have secondary recurrences of ague, at the period of the springs. Moreover, I could cite a score of instances where I have watched cases of the kind, and the liability to recurrence of either fever or anomalous sensations, not only presents in the tropics, but also, for long after return of the individual to Europe. 3rdly.—Notwithstanding the assertions of Arago and Airey, that the moon exerts no influence on the weather, I confess a leaning to the more popular belief, that she does do so, and in this I am supported by the declarations of other astronomers. Mr. Howard has ascertained, that the barometer suffers a depression of about one-tenth of an inch at the new and full moon, "the consequence of the greater influence of these phases, in comparison with the first and third quarters in the production of regular lunar atmospheric tides, on which the fall depends." If, as appears undoubted, the moon's attraction is the chief cause of the oceanic tides, it certainly seems not unreasonable to suppose, that such power must in some way influence the less dense fluid of the atmosphere. That lunar influence or its consequences will excite fever in any person, not already poisoned by what we call malaria, I do not believe. To me it appears, that a *primary* attack of malarious fever has nothing to do with the question of lunar influence. But what I submit is this, that an impression having been once made by malarious poison, paroxysmal returns of fever, or other anomalous symptoms coming under the head of that condition, I have elsewhere ventured to denominate, "marked malarious fever," are liable to appear in apparent connection with the phases of the moon. The moon influences the weather, either as regards change of temperature, or moisture, or force and direction of winds, or in some more subtle manner, with which we are unacquainted (in the matters of light electricity, magnetism), and the disturbance of our medium thus resulting, re-excites malarious influences into renewed action.

Holding these views, it will be evident that I do not place any confidence in the attempted explanations of the connection between lunar changes and malarious diseases by the laws of *periodicity*. It has been supposed that there is an ebb and flow in the circulation, corresponding with the phases of the moon, the flood flowing more rapidly, and the *vis vitæ* being more stimulated at the flood, and full, than at the ebb, when a reaction takes place proportionate to the previous excitation. In support of this theory, it was noticed by Dr. Mead, that most deaths occur at the ebb of the tide; and indeed this would appear to be an observation of no very recent date as Shakespeare, who was almost as great a physician (according to the lights of his period) as a poet, makes the death of Falstaff to take place "just at the turn of the tide." But notwithstanding all that can be advanced on the subject of *periodicity*, to argue that as the moon's changes are periodical, *ergo*, she exerts influence over a periodical disease, is not logical. It might as well be asserted, that lunar power extends over the healthy system, because there is a well ascertained periodical daily disturbance, or rather evening exacerbation, as indicated by the arterial pulse. Or that the moon is paramount over the gestation of animals, or the phenomena of hybernation, or the moulting of birds, or the loss of the first teeth, and eruption of the second set, or the menstrual period, or the flowers of the monthly rose, or any other of the numerous periodical occurences of animal and vegetable life. The simple explanation of atmospheric changes, influencing the malarious system, appears to me sufficient, without involving ourselves in a maze of theoretical arguments regarding *periodicity*.

Neither do I concur in the explanation which has been attempted, to the effect that during low ebb tides, a large amount of mud surface is exposed, and consequently more malaria extracted. It is indeed doubtful, if salt marshes, especially those subject to periodical inundations, evolve malaria at all. If the connection between the moon phase and malarious fever were only noticed near the sea-coasts, there would be reason for further observations. But persons suffer, perhaps, more at the changes of the moon hundreds of miles up-country, than they do at or near the ocean.

From the foregoing it will also be evident that I do not believe in the *direct* influence of the moon. I propose considering the question of alleged *direct* influence as a cause of certain maladies, *viz.*, nyctalopia, paralysis, swelling of the face, &c., in a second communication.

(*a*) I was very recently assured by a medical officer of standing, that the only time he suffered from ague was immediately (within an hour), after being subjected to great annoyance. In this instance, malaria must have been dormant, and excited to action by the mental disturbance.

CASES FROM PRACTICE.

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CASES FROM OPHTHALMIC PRACTICE.

By J. B. Scriven,

Principal, Lahore Medical School.

HERPES ZOSTER FRONTALIS.

Herpes zoster of the face, though not an exceedingly common form of this disorder, is now recognised as one of by no means rare occurrence, and often productive of serious consequences to the eye. It has been described by Mr. Bowman and Mr. Jonathan Hutchinson, in the Ophthalmic Hospital Reports Vol. V. page 191, and Vol. VI., pages 1 and 181; a case is figured by Hebra, and the subject is touched upon by Macnamara, in his valuable Treatise on Ophthalmic Surgery just published. Macnamara does not say, however, that he has met with any cases in this country, nor have I seen any recorded in the Indian journals.

In the majority of cases, the first, or ophthalmic division of the fifth nerve alone, has been affected by the eruption, and hence the disease has generally been called herpes frontalis, or ophthalmicus. Mr. Bowman however, mentions three cases, in which the second division was also affected; and Mr. Hutchinson, in his paper in the last number of the Ophthalmic Hospital Reports, already referred to, relates one, the first he had ever seen, of the eruption extending to the cheek.

The following case, which was under my care, in the Medical School Hospital in 1867, affords an additional instance of implication of the superior maxillary nerve. It also illustrated another important fact, noticed by Hutchinson as newly established, *viz.*, that the side of the nose may show vesicles to its tip, and yet the eye be only transitorily inflamed.

[illegible] Native [illegible] Hospital Register [illegible] 1867 [illegible] days [illegible] well by [illegible] application [illegible] returned with severity, and small [illegible] When [illegible] left side [illegible] the parts [illegible] the upper [illegible] and the [illegible] of the malar [illegible] the lower lip [illegible] The patient [illegible] made him

—M[illegible] the face [illegible] swelling [illegible] the conjunctiva. [illegible] unaffected [illegible] the lower

—M[illegible] The pupil of the left [illegible] The inflammation [illegible] complains of slight [illegible]

—[illegible] general haziness of the cornea, which [illegible] irregular. [illegible] are all dried up: [illegible] the face cornea [illegible] side of the forehead [illegible] nothing but [illegible] slight [illegible] uncommon amongst [illegible] in this country. [illegible] consider it [illegible] would appear [illegible] stricken [illegible] by the special affection [illegible] Mr. Bowman [illegible] the pain was [illegible] application of [illegible] Bowman and Hutchinson [illegible] may extend to the [illegible] lower lip.

CASE OF CUTANEOUS ANÆSTHESIA.

By Assistant-Surgeon E. Eyles,

18th Regiment Native Infantry.

[illegible] very seldom come under [illegible] in the hope of [illegible] regarding its true pathology from my professional [illegible]

[illegible] 18th Native Infantry. She is 22 years [illegible] a year.

For the last two years [illegible] and I saw [illegible] herself [illegible] a martyr to [illegible]

[illegible] 1867, and [illegible] a year after [illegible] experienced short sharp pains in the [illegible] swelling, nor was there any [illegible] ever been attacked by [illegible] rheumatism.

About six months after [illegible] symptoms first appeared [illegible] from ulceration [illegible] the [illegible] arms.

It was [illegible] this time that she first noticed a white [illegible] in which [illegible] was [illegible] about an inch [illegible] internal [illegible] right leg. The anæsthesia spread [illegible] and now [illegible] a space of [illegible] inches [illegible] last five [illegible] however [illegible] has [illegible] The [illegible] the parts supplied by [illegible] internal saphenous nerve and its branches. In the early stages of the disease the short sharp pains were almost constant [illegible] present [illegible] free from them. She, however, complains of pain in the back [illegible] above the posterior superior spine of the [illegible] Motor power [illegible] the limb is perfect, and [illegible] she says [illegible] as strong as the other." The skin in the diseased part is [illegible] thickened [illegible] slightly roughened [illegible] cular [illegible] The nails are not in any way affected.

Her [illegible] always been in apparently good health [illegible] Her menstrual [illegible] The temperature of the part affected is 92 [illegible] same [illegible] In the [illegible] natural [illegible] 94 [illegible] the [illegible] trunk rather over 97 F.

The [illegible] sensation in the diseased part is [illegible] I can [illegible] not the [illegible] history of anything like [illegible] injury [illegible] nothing that [illegible] possibly [illegible] referred to pressure in the course of the nerve.

The question therefore [illegible] Is the disease [illegible] peripheral [illegible] the loss of sensation should extend [illegible] the distribution of the nerve. If purely peripheral, how [illegible] the portion of nerve below the affected part retains its function? [illegible] the internal saphenous nerve, as we all know, passes well on [illegible] dorsum of the foot. Might not the retention of sensation [illegible] parts be [illegible] to the musculo-cutaneous nerve [illegible] branches of which unite with those of the internal saphenous [illegible] the pain [illegible] back in any way connected with the affection [illegible] How is the loss of temperature to be accounted for? [illegible] simply [illegible] upon impairment of nerve force [illegible] circulatory [illegible] the [illegible] arteries [illegible] in the [illegible] in any way [illegible]

Professor M[illegible] that came under [illegible] to draw attention to the [illegible] of the disease [illegible] the last two months my patient has noticed a whitish spot [illegible] sensation [illegible] disappearing on the left leg, just above the [illegible] malleolus [illegible] she says, that it was exactly in the same way [illegible] disease [illegible] in the right leg. This seems confirmatory [illegible] learned Professor's observation.

The disease [illegible] certainly [illegible] leprosy [illegible] will give me great pleasure to receive any suggestions as to the treatment [illegible] in this case.

CASE OF CHIONYPHE CARTERII.

By Honorary Assistant-Surgeon Minas,

Civil Surgeon, Mozufferghur.

This case, inserted in the hospital returns by the Native Doctor as "caries of the foot," I found to be the same disease as prevails in the sandy parts of Bhurtpore and Hurriana, accounts of which were given in the *Indian Medical Gazette*, during 1868.

Fuzzu [illegible] aged 60, Mussulman cultivator, admitted 12th December. About 30 years ago a small abscess formed under the [illegible] of the left foot, it continued to discharge after being opened, and about a year after another abscess formed in the middle of the heel; gradually the [illegible] extended to the malleoli and dorsum of the foot, discharging matter which the patient describes as "something like the white of an egg mixed with a small bluish grain-like substance."

Up to within the last year he has been able to walk about with the aid of a [illegible], but latterly has been confined to his [illegible], and the pain in the affected part has been agonizing day and night.

The leg was amputated below the tuberosity of the tibia by a single flap. [illegible] secondary hæmorrhage occurred, and [illegible] retarded [illegible] but he was discharged with a good stump on the [illegible] day.

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* See Mr. Bowman's and Mr. H[illegible] papers.

NOTE ON DRY EARTH DRESSING.

By Surgeon T. Mathew, M.B., *Darjeeling.*

I have tested within the last week, the plan published in the last *Indian Medical Gazette*, extracted by the *Lancet* from the American journals, of remedying the fœtor from gangrenous sloughs by the direct application of dry earth. I tried it in a case of sloughing flaps after a thigh amputation, after I had failed with the usual carbolic acid formulæ, in arresting the sloughing or remedying the stench. I found that, on throwing a handful of earth, thoroughly pulverized and dried, upon the sloughing surface, all evil smell ceased in a second; but, the moment the layer of dried earth became saturated with the discharge the fœtor returned. This was only what was to be expected. I then tried a thick layer of dried earth lightly bandaged over the stump, and when the smell returned had dried earth applied outside the bandage, but without succeeding in destroying the fœtor. The dry earth seemed to produce no effect upon the sloughing. Under these circumstances, I was glad to resort to the old charcoal poultice. Immediately on applying it, whether *post* or *propter*, the sloughing ceased, and healthy granulations appeared.

ANTISEPTIC TREATMENT OF NECROSIS.

By G. D. McReddie,

Civil Surgeon, Hardoi.

A lad about fourteen years of age, was admitted into the dispensary 9th November, 1868 suffering from necrosis of the right tibia: numerous sinuses led down to the bone, and the limb presented a most unnatural appearance from the combined presence in it of portions of nearly two shafts of tibiæ, the newly formed bone, and part of the dead one in course of absorption. The lad's general health was good, but walking was painful. The history given is that four years ago he sprained his ankle, and has ever since been suffering more or less acutely from the accident. Now in this case, nature was evidently effecting a cure by causing *gradual* absorption of the dead bone; the only question seemed to be—whether the drain in the system, caused by the sinuses, would not be too much for the patient's constitution, and eventually destroy life; or at all events, the process of cure be so far prolonged as seriously and permanently to impair his health. If the sinuses could be got to close up, with average care, the limb might be safely left to itself, and the process of absorption go on to completion. Shortly before seeing this case, I had perused a most interesting publication by Professor Lister in the number for August 1st, 1868, of the *British Medical Journal*, giving a case of acute necrosis treated as the antiseptic system. With such a record before me, and the history of the case which was undergoing a natural process of cure, operative interference, by attempting removal of dead bone, was quite out of the question. I determined only to endeavour to close up the sinuses, and do nothing else. The oily solution of carbolic acid (one part of acid to four parts *til* oil) was used, a piece of cloth wetted with the solution being placed in the limb, and moistened two or three times a day, the dressing was changed every third day. Subsequently the oil dressing was covered over with tin-foil, and as this procedure prevented evaporation of the acid, dressings were renewed only once a week. Under this treatment the sinuses all fairly closed, the skin completely cicatrized, and the patient was discharged on the 22nd February, 1869. The limb had become much smaller, walking was painless, and he was stout in appearance. It was evident that the dead bone was undergoing absorption.

A CASE OF RUPTURE OF THE HEART.

On the 5th April, the body of a man, aged about 45, was sent in for *post mortem* examination from an out-station. The appearances observed were as follows:—Body apparently that of an able-bodied, healthy man, hair greyish, no marks of violence on the skin; but in cutting down on the sternum an ecchymosis, passing through cellular tissue, and muscles, was seen over the 3rd and 4th costal cartilages on the left side. On dividing the pericardium the sac was found full of clotted blood. On examination a *rent*, with jagged edges, size of an eight-anna piece, *was observed in the left ventricle*: the heart was large and flabby, with an abundant deposit of fat on its walls which were thus weak: extensive pleuritic adhesions on both sides, not, however, of very late date; lung-tissue compressed and congested; stomach empty; spleen in a state of maceration, it broke down completely on being removed, liver perhaps somewhat enlarged, but otherwise natural; intestines natural; valves of heart natural; no atheromatous deposits on aorta. The brain was not examined.

Nothing certain is known regarding the circumstances under which death took place. The man was found dead on his threshing floor which he had been watching. It is probable that he was attacked by thieves; that a struggle ensued in which he was struck over the heart and spleen; that with his heart undergoing fatty degeneration, the excitement so very unusual thrown in the organ, and the direct violence inflicted on it, caused rupture of its wall, and sudden death. As subsidiary causes of death there were the pleuritis and its results, compression of the lungs, a more or less loaded state of the right side of the heart, circumstances thus tending materially to impair health; and intermittent fever with its result, a softened spleen which was easily ruptured. These were *two* fatal accidents, but that affecting the more vital organ must be mainly taken into account in tracing the cause of death.

DEATH FROM SWALLOWING A MISWAK, OR TOOTH-STICK.

By Dr. Hutchinson,

Civil Surgeon, Patna.

Mr Watson's case in the current number of the *Indian Medical Gazette*, recalls to me an extraordinary case, which occurred to me while civil surgeon at Futtehpore, before the mutiny. An old woman came to me with most painful and urgent dyspnœa, exaggerated by a frequent cough. With great difficulty she unfolded her story, which struck me as marvellous and beyond belief. After cleaning her teeth, she was in the habit (like all natives), of passing the miswak far down, with the object of promoting retching, and thereby clearing the fauces of the mucus accumulated during the night. While so engaged three days previously, the stick became impacted, and eluded her hold; frightened out of her wits, she had not the sense to withdraw it, nor would any one in the house assist her. Gradually the stick disappeared, and the present urgent symptoms as gradually set in. According to the old woman's description, it must have been nine inches long. What had become of it? It was preposterous to think that it had bodily entered the trachea, but a fragment might have found its way thither, and occasioned the urgent and distressing symptoms present in the poor woman. It must, therefore, have slipped into the œsophagus, but, if so, why such distinct indications of bronchial mischief? The finger passed down into the pharynx could detect nothing, the pharyngeal forceps could grasp nothing, and an emetic, which acted freely, brought up no foreign body. I then opened the trachea and passed a pair of dressing forceps carefully up and down, but could detect nothing.

In the course of the day, the poor woman died asphyxiated and unrelieved. A *post mortem* revealed the miswak, nine inches long, lying quietly in the œsophagus, and resting on the lower margin of the stomach, where there was a patch of congestion, the size of an eight-anna bit, nothing else whatever. The lungs were stuffed with mucus, and presented the appearances to be expected in death from acute bronchitis.

In this curious case, I could only say that death was due to bronchial complications, induced by the presence of a foreign body in the œsophagus: but I never heard or read of a similar instance.

CASE OF LODGMENT OF FOREIGN BODY IN THE BLADDER—EXTRACTION BY PERINEAL INCISION—RECOVERY.

By Kenneth McLeod, A.M., M.D.,

Assistant Surgeon, 6th B. L. I.

Nazir Mahmood Sheik, aged 27, a resident of Hazrabatty in the Jessore District, came to the Jessore Charitable Dispensary, on the 24th of May, 1868, stating that he had got a piece of bamboo into his perinæum two months before, that it had lodged, and wishing to have it extracted. The man was placed in the position for lithotomy, and his perinæum was carefully inspected and examined. No fistula existed, and the only indication of previous injury was a small cicatrix about an inch to the right of the anal orifice. A careful exploration per anum was made without revealing anything unusual, and the man's story was discredited.

Further questioning drew attention to the bladder, and a sound was introduced which impinged on what appeared to be a stone, and seemed from the extent to which the instrument passed over its surface to be a large one. The sensation and ring were quite characteristic, and lithotomy was determined upon. On the 9th of June, the patient's condition being favourable, the operation was performed. A semi-lunar incision was made in front of the anal orifice after the method proposed and practised by Sir William Fergusson. This terminated in a lateral incision of the prostate and neck of the bladder. The fore-finger of the left hand was now introduced, and, instead of a stone, a pointed body like a slate-pencil was discovered; its long axis was transverse to that of the bladder. Urine had been voided during the spasmodic stage of chloroforming, and the ends of the foreign body indented the empty bladder on each side.

To attempt extraction, while it was in this position, was madness. Owing to the primary incision being central, the finger could be carried well into the viscus. One end of the foreign body was pushed backwards, and the other gradually moved forward by getting the point of the fore-finger beneath and a little behind it. After manœuvering thus for some minutes, the point was got into the wound, and it was laid hold of by a pair of dressing forceps, and easily removed. On examining the foreign body, it was found to be a pointed bit of bamboo 2[illegible] inches long, [illegible] inch in diameter at the point, and [illegible] inch at the base. The three middle fifths were covered [illegible] crust of deposit, and the extremities were smooth.

[illegible] ry. There was no [illegible] in the first passa[illegible] He walked about [illegible] We enquired [illegible] the following [illegible]

He [illegible] bladder. One [illegible] called a [illegible] strong [illegible] through a thatched [illegible] and it. It [illegible] the [illegible] pointed, and [illegible] point was [illegible] On the day of [illegible] was [illegible] a hut by a [illegible] and [illegible] he was [illegible] slipped and he [illegible] which [illegible] stuck into the ground, point [illegible] entered his person on [illegible] the site of the cicatrice. It [illegible] He pulled the [illegible] wound. There was a small amount of bleeding, but [illegible] He was [illegible] by two men. He [illegible] frequently with pain. During the following night, [illegible] suppression, but next day he urinated freely, and [illegible] coagulated blood passed. The wound healed up in [illegible] without swelling [illegible] He continued to [illegible] of blood [illegible] two days. He subsequently [illegible] discharge from the [illegible] an fever, pain [illegible] the perinæum [illegible] stoppage of water. [illegible]

R[illegible] clear from the history that the fragment of bamboo [illegible] and th[illegible] into the bladder. Otherwise [illegible] extravasation, or at least fistula. The [illegible] must have contracted and obliterated the orifice [illegible] the foreign body was at the time of extraction in [illegible] the nucleus of [illegible] calculus.

In [illegible] case, [illegible] very precise, and therefore [illegible] the man's statement, which is confirmed by the [illegible] the cicatrice and the position of the fragment which [illegible] the marks of [illegible] I am aware that foreign [illegible] description have not unfrequently been removed from the [illegible] urethra and bladder very often from the female. I have [illegible] a large sized knitting needle from the urethra [illegible] at the deep [illegible] through the rectum. S[illegible] H. Barnes, M. D., records a case of extraction of a [illegible] pencil 2½ inches long, by [illegible] inch in diameter, from the [illegible] (*Indian Medical Gazette, Volume II, Page* 244). I [illegible] Mr. Syme of Edinburgh take a hair-pin out of the bladder [illegible] but in all [illegible] the foreign body has been introduced [illegible] urethram. In this case, the introduction was accidental, and [illegible] the thickness of the perinæum.

[illegible] operation. Had the expedient [illegible] I should have divided the fragment in two with a [illegible]

I [illegible] W[illegible] operating gave a greater [illegible] operation would [illegible] in which I have practised a [illegible] internal one, and, in [illegible] there was a facility of manipulation and rapidity [illegible] the operation favourably. [illegible] the bladder with [illegible] I can [illegible] when the patient came to be treated for gonorrhoea [illegible] which [illegible] in the bladder.

I [illegible] chapter in minor surgery [illegible] the [illegible] of thorns, spikes, &c. [illegible] frequently [illegible] natives and sometimes [illegible] secondary effects [illegible] spike of the [illegible] the Argemone Mexicana [illegible] to the [illegible] the readers of the *Indian Medical Gazette*.

CASES OF HEAT APOPLEXY.

Case [illegible] by Surgeon *G. H. De*[illegible] *Officiating Garrison* [illegible] 26th [illegible] the following [illegible] 1-30 [illegible] with heat apoplexy, [illegible]

At [illegible] symptoms were pre[illegible] without [illegible] pulling, [illegible] heat [illegible] dilated pupil [illegible] every hour [illegible]

At [illegible] burning hot [illegible] when [illegible] with diluted [illegible]

At [illegible] taken [illegible] grains of quinine [illegible] frontal headache [illegible] but [illegible]

At [illegible] he was so much improved that he was sent to the g[illegible]

A[illegible] S[illegible] Carpenter, 26th Foot was good enough to [illegible] following morning [illegible] skin, pupils, &c., natural [illegible] complains only of dizziness when he sits up. No [illegible] and strength gradually returned.

Abstract of two cases of Heat Apoplexy treated with Quinine. By [illegible] Surgeon *E. O'S*[illegible], 26th *Regiment*.—Since the [illegible] part of May last up to the present date, [illegible] cases of heat apoplexy occurred amongst the men of H. M.'s 26th Regiment [illegible] at Dum-Dum.

[illegible] cases were treated in the usual way [illegible] applications [illegible] Both the cases were fatal.

Cases treated with Quinine. No. 1. [illegible] R. Private, 26th Regiment, brought to hospital at 6 p. m., 10th June, from the Main Guard, where he had been confined for a couple of hours; had been [illegible] in the bazar, where he was found drinking; he was [illegible] state, and spoke with difficulty when aroused; complained [illegible] pain in his head.

6-40 p. m. [illegible] pupils dilated [illegible] pulse [illegible] 130 [illegible] 10 grains of quinine [illegible] every second hour. A solution of [illegible] grains of quinine was [illegible] and at 7-30 p. m. one-half of this solution was injected [illegible] right arm at insertion of the deltoid muscle, the other half [illegible] left arm [illegible] repeated every hour.

[illegible] had [illegible] grains of quinine and twenty grains by the mouth, and at 10-30 p. m., the patient was conscious.

11 p. m. [illegible] speak; had some lime juice and water.

12 p. m. [illegible] sound sleep.

11th June. [illegible] slight headache, otherwise pretty well.

22nd June. [illegible] well.

No. 2. D. S. Private, 26th Regiment, was on sentry at the hospital. About 5 p. m. 13th June, he suddenly left his post and rushed [illegible] the hospital guard room, where he was arrested, and brought [illegible] hospital.

6-30 p. m. Quite insensible; nearly outrageous, requiring three or four men to keep him in bed; pupils very much dilated; extreme sensitiveness of the body; eyelids open; muscular spasms frequent, and very powerful, with grinding of the teeth; pulse small, 140; skin [illegible] dry; unable to swallow. A solution of quinine, same strength as in the case No. 1, was immediately injected, [illegible] grains [illegible] arm; this was repeated in half an hour.

7-15 p. m. Spasms completely disappeared; lying quietly; cannot swallow. [illegible] of quinine to be repeated every hour.

10-30 p. m. Patient slightly sensible, but upon being roused, falls into [illegible] stupor.

11 p. m. [illegible] complains of great pain in his head and extreme thirst; had some [illegible] and water.

[illegible] there were twenty-five grains of quinine injected.

14th June. Much better; pain in head still continues; ordered [illegible] and antimonial powder.

15th. [illegible] being [illegible]

22nd. [illegible] very well; can walk about the ward.

B[illegible] cases, previous to my arrival at the hospital had [illegible] cathartic enemas, and [illegible] opinion that the cure is due to the quinine.

Case [illegible] *Dr.* [illegible] J. S. Steward admitted 10th June [illegible] had been walking in the sun with a thin straw hat on [illegible] the deck [illegible] to the bottom of the ladder. [illegible] struggling, clenching his fists, and [illegible] his lips [illegible] pupils contracted [illegible]

[illegible] was applied, and ten grains quinine given by the mouth [illegible] hourly for three doses.

On the [illegible] morning he was sensible [illegible] with a good pulse, but he [illegible] his speech which was not a natural condition. He complained of headache. A large mustard [illegible] was applied [illegible] in five grain doses given. On the 18th [illegible] and was discharged on the [illegible]

Acknowledgements.

◆

[illegible] *M*[illegible] of Surgeon G. King.

[illegible] *M*[illegible]

[illegible] 1868.

[illegible] 1867-68.

[illegible] March, 1869.

[illegible] *Medical* [illegible]

[illegible] *India*, [illegible]

[illegible] Dr. Moore.

[illegible] John Murray, M[illegible] *Medical Department*.

The Indian Medical Gazette.

Notices to Correspondents.

A "**Justice Seeker**" *should be rather gratified at having the opportunity given him of performing such good work, than cavil at there being no scale of remuneration.*

Mr. Ram Chunder Mitter, *Sub-Assistant Surgeon of the Civil Station, Saugor, sends us an interesting account on the nature and treatment of ulcers, as they occur among the prisoners of the Saugor Jail. We much regret that we have not space to publish it. He states the sores are produced by the tricks of the men themselves; that they soon assume a sloughy character; and that the treatment that answers best is perfect rest, and opium. The introduction of some measure of preventive discipline would appear to be desirable.*

Sub-Assistant Surgeon **Cheytun Shaw** *at Peshawur, sends us a paper on the advantages of Borax as an antiperiodic in cases of intermittent fever; as he remarks, borax being a very cheap medicine is very economic, and is not so nasty or heating a medicine as quinine. Several Sub-Assistant Surgeons, from different parts of the Punjab, record favourable opinions to him of the good results of the treatment, and this encourages him to pursue his investigation. He re-marks, "as far as I can learn, borax has never been employed by English, or English-educated practitioners, in the treatment of intermittent fever."*

Mr.——sends us the particulars of a case of carbuncle, rescued, he says, by the patient returning to legitimate treatment after having been led astray by other advice; personal matters are introduced, which it would be as well always to avoid in detailing medical cases.

Communications have been received from—

Civil Assistant Surgeon, *Bhawulpore.*
Assistant Surgeon **F. M. Mackenzie**, *Presidency General Hospital.*
W. Campbell, Esq, *Assistant Superintendent of Police, Midnapore.*
Surgeon **G. K. Poole**, *18th Bengal Cavalry, Peshawur.*
Dr. Waller, *Calcutta.*
Assistant-Surgeon **A. Neil**, *Civil Surgeon, Loodiana.*
Inspector-General *of Hospitals Office, H. M.'s British Forces, Simla.*
Dr. Mathews, *Civil Surgeon, Darjeeling.*
Dr. Francis, *Deputy Inspector-General of Hospitals.*
Dr. Ratton, *Civil Surgeon, Nursingpore.*
An Enquiring Sub-Assistant Surgeon.
Surgeon **W. J. Moore**, *Rajpootana Agency.*
Dr. Munro, C.B., *Deputy Inspector-General of Hospitals.*

SPECIAL NOTICE.

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TREATMENT FOR HEAT APOPLEXY.

We would direct the attention of our readers to a new treatment for heat apoplexy—or apoplexy as all cases are called now—brought to notice in this number by Dr. Waller. He has employed the remedy for many years; its success is remarkable, and it is well worthy of being generally tried.

Through the kindness of the Deputy Inspector-General of Hospitals, British service, at the Presidency, we are enabled to give the details of five cases: three recovered in which quinine was used, two died, in which it was not used.

If any officer should be induced to give the remedy a trial, it is hoped they will communicate the results to this journal.

NOTES FROM A SURGEON-MAJOR ON FURLOUGH.

The stimulant and non-stimulant modes of treatment in disease are occupying greatly the thinking minds in Edinburgh. All seem agreed as to the necessity of supporting the system during the exhausting stages of fever, and ascribe a diminished mortality to the "high-fed fevers" of the great Dublin physician.

There is, however, a growing conviction that stimulation proves hurtful during the early days of an attack of fever, and that in some chronic diseases of the digestive system, and in phthisis, you may cause a great deal of uneasiness, and accelerate a fatal result, by drenching the system with alcoholic liquors, and over-loading the blood with the rich products of butcher-meat.

White meat, with puddings and milk diet, abundantly supplied as the patient can bear it, have proved peculiarly fitted for those severer cases of diarrhœa that return from India in an exhausted state. Some cases were related to me, where serious and fatal mischief followed attempts to restore the constitution rapidly by frequent and full diets of butcher-meat. This is no news to us in India where the value of a milk diet is so well understood; but I write it to show the direction which professional thought takes at present in Scotland.

I have been frequently asked if the treatment of dysentery by ipecacuanha in large doses is really of such undoubted value as is represented. It is difficult to give an unqualified answer, as the questioner's mind may have received a too favourable impression, but I have not hesitated to express in the strongest terms, the inestimable good that follows large doses in acute attacks of a tonic form, besides being very valuable in some other forms of the disease. The good effects of ten grain doses in injection seems less understood, though we know, in cases of great irritability of the stomach, how valuable it is. Children, too, get great relief, as you know, in dysentery, from this mode of exhibiting smaller doses.

[illegible] from a [illegible] beginning [illegible] have [illegible] truth that we [illegible] which [illegible] professional belief [illegible] we regard the [illegible].*

[illegible] extension of the Contagious Diseases Act [illegible] of Aberdeen has been strongly voted by the [illegible] where only one [illegible] was lately raised in behalf [illegible] visions. [illegible] know the evils that [illegible] with into a race [illegible] and old age [illegible] sufferings [illegible] mothers and infants who [illegible] of this inexorable and loathsome disease. Let us [illegible] a [illegible] sympathy, and less distrustful confidence, may [illegible] our populations at home, and that the stamping-out [illegible] with the disease may prosper in all parts of our great [illegible].

[illegible] give you soon an account of some interesting cases of [illegible] the [illegible] which I [illegible] old Indians. [illegible] been half murdered at home by attempts to cure their [illegible] by blisters to the spine, head, chest, &c. Dr. G. [illegible], a venerated member of our services, in speaking of this the [illegible] that he remembers Twining being accused of [illegible] that every one in India had something the matter with [illegible]. I am not surprised at his finding it very [illegible] frequently affected, for the number of sufferers from dyspepsia arising [illegible] affections of this viscus are very common in my experience.

ANEURISM IN THE ARMY.

In our May number, we drew attention to Mr. Myers' observations [illegible] frequency of aortic aneurism in the army, published [illegible] *Lancet* of 20th February, and in doing so, we reproduced some [illegible] data derived from Dr. Bryden's tables, exhibiting the prevalence of heart disease and aneurism, among British troops, serving in [illegible] country, from 1858 to 1868 inclusive. If we place the ratio of deaths from aneurism in the Foot Guards and Line Regiments at home and British soldiers in India, and sailors in the Navy, side by side for a [illegible] of consecutive years the preponderance or excess [illegible] the two former classes of men is very striking:—

	Ratio of deaths per 1000 of strength in Army at home	Ratio of deaths per 1000 of strength in British Army in India.	Ratio of deaths per 1000 of strength in Royal Navy.
1862	·28	·12	·11
[illegible]	·47	·31	·05
1864	·37	·14	·18
[illegible]	·35	·43	[illegible]

It has [illegible] been proved that aneurism of the aorta is eleven times more [illegible] in the army than in the civil population. What [illegible] of this remarkable excess of mortality from aneurism in the [illegible] army at home and in India? It cannot, we presume, have much to do with the mode of recruiting. It can scarcely [illegible] that [illegible] care has been practised in the selection and passing of recruits for the army than for the navy. We take it that the [illegible] has been guarding the portals of admission [illegible] and that no amount of skill that can be commanded at the [illegible], has been wanting to prevent the enrolment of [illegible] in the army and navy.

It [illegible] must [illegible] that the excess of mortality from aneurism [illegible] army cannot be fairly attributable to want of [illegible] recruiting [illegible] it must be granted that the value [illegible] services are [illegible] equal [illegible] that [illegible] some way or other connected with the calling of a soldier. In thinking over this question, it has occurred [illegible] that [illegible], a few more men are invalided with aneurism [illegible] than from the army. It is evident that a sailor with aneurism of the thoracic aorta must become unfit for his work, which [illegible] an extraordinary taxation upon the respiratory and circulatory organs, at an earlier date than the soldier, who is seldom called upon to use such violent exertion. Suppose, for example, a man [illegible] admission to the navy with an incipient aneurism, which [illegible] detection. Such a man could not remain [illegible] active employment without his aneurism undergoing rapid development [illegible] degree which would quite incapacitate him for the performance of his duty, [illegible] the physician's attention, [illegible] diagnosis of the disease. [illegible] would be the natural consequence. No physician would [illegible] the risk of permitting a sailor [illegible]. On the other hand, we can understand how a soldier [illegible] a case may remain much longer in the army, before the disease became so [illegible] pronounced, as to impede respiration and circulation [illegible] to lead to its diagnosis. Hence, he may remain at his post with the aneurism advanced to a stage which would [illegible] the sailor among the candidates for discharge [illegible]. Whilst, therefore, the sailor's death from aneurism in this hypothesis would, probably, have a place in the mortuary returns of the civil population, that of the soldier would probably be credited to the account of mortality in the army; because he might have remained long enough in the ranks to have allowed the aneurism to reach [illegible] advanced stages prior to detection, or at all events to any arrangement having been proposed for his being invalided.

There can be no doubt but that the sailor is constantly exposed to much more strain upon his organs of circulation than the soldier. This is the natural result of his occupation. We also know from the labours of [illegible] and others, that the progress of any given case of aneurism of the aorta to a fatal termination, is, *ceteris paribus*, in the [illegible] ratio of taxation inflicted by the occupation or exertion. For, whilst a man leading a quiet sedentary life, provided with every comfort and luxury, with nothing to augment the ordinary power exerted by the left ventricle, may live some years in the enjoyment of moderate health with aneurism of the thoracic aorta, a person in the position of a sailor, who is not over-burthened with luxury or ease, and who is repeatedly compelled to bring his extraordinary muscles of respiration into play to enable him to arterialize the blood coming to the lungs from the right ventricle as rapidly as it is sent thither, conditions which impose corresponding activity in the left ventricle and arterial system generally, may, and often does perish, in a few months, either directly from the sudden giving way of the aneurismal sac, or indirectly from complications in neighbouring and important organs. The only hope for the prolongation of life, in the latter instance, is early invaliding. It is, therefore, we submit, possible that a portion of the difference in the mortality from thoracic aneurism in the army and navy may be attributable to earlier invaliding of the subjects of the disease in the latter service. But we are far from believing that this explains the whole discrepancy.

Aitken, at page 7[illegible], vol. II, fourth edition of his work on *Practice of Medicine*, though recognising the influence of gout and rheumatism in the causation of aneurism, declares that out of 26 *post mortems* of soldiers in each of which a distinct history of syphilis was present, associated with unmistakable syphilitic lesions, "17 had the coats of the thoracic aorta impaired by characteristic

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* [illegible] formed the subject of an able paper by Dr. Kennedy, read [illegible] the Medical Society of the King and Queen's College of Physicians, Ireland.—Ed., *I. M. G.*

changes—changes which are uncommon at an early period of life, and which I have every reason to belive are due to syphilis. The changes are obvious from cicatrical-like loss of substance of the under coats.; small local dilatation of the artery, and in several cases aneurismal expansions, one as large as an orange which proved fatal." It is highly probable that the influence of syphilis in the production of aneurism has been greatly over estimated by Aitken and others. In no class of persons is syphilis so common as in prostitutes, and yet, as Myers observes, aneurism is almost unknown among them. Moreover, syphilis is about equally prevalent in the army and navy, though there is a marked difference in the prevalence of aneurism. Though, therefore, it may be granted that syphilis, like any other constitutional poison acting upon, and leading to degeneration of the blood and certain structures, may exercise its share in the causation of aneurism, there is no good ground for believing that it is more effective or potent in the army than in the navy.

Mr. Myers considers that the "mechanical obstruction to the circulation is the chief cause of the excess of aneurism in the army." He expressly states that this obstruction is directly produced by the tunic which encases the soldiers' chest and neck so tightly as to interfere materially with respiration and circulation. By some experiments made with the spirometer, he found that recruits "standing at 'attention' with their tunics buttoned up, without their arms and accoutrements, suffer a loss of about twenty cubic inches on forcible expiration." The diminution of air expired may be regarded as a measure of the interference with the inspiratory act. The beginning of the evil is the impossibility of expanding the thorax sufficiently for the admission of the requisite quantity of atmospheric air. Not all the power of the ordinary and extraordinary muscles of inspiration can overcome the resistance of the regulation tunic, tightly fastened and fitted to the body by the ingenuity of the tailor, during tranquil respiration and circulation, without special reference to anything except extreme neatness. These muscles have been most beautifully contrived by the Creator to expand the chest, rythmically, in every direction, to the necessary extent under ordinary and extraordinary circumstances; but they were never designed or intended to oppose successfully the resistance presented by a well-fitted and neatly-made regulation tunic.

If a sufficient quantity of oxygenated air does not penetrate the pulmonary cells, at each inspiration, a serious impediment is at once interposed to the free circulation of the blood through the lungs. For a diminution in the respiratory changes implies imperfect arterialization of blood in the lungs: and deficient arterialization signifies proportionate interruption to the transit of the circulatory fluid from the right to the left side of the heart. In extreme cases, in the asphyxia consequent on drowning, or immersion in carbonic acid, we see these effects produced to the fullest extent possible; so that the united forces of the right and left ventricles, aided by all the auxiliary powers of circulation, are totally unable to overcome the resistance opposed to the onward flow of the blood by the cessation of the pulmonary respiration.

The *first* effect of a too tightly fitting tunic is to interfere with the due aëration or oxydation of the blood. The *second* effect is to derange the normal harmony and equilibrium subsisting between the respiratory and circulatory systems. The *third* result is to disturb the balance of the circulation itself. There is, in all human probability, no part of the circulation which is not more or less affected by this state of things. So long as degeneration, or disease has not done its work in any of the vessels, these are capable of meeting and overcoming great emergencies. Nature constructed the arteries, like the lungs and heart, to perform, with a certain amount of impunity, extraordinary as well as ordinary functions. How admirably she has succeeded in her design is illustrated by the health enjoyed by men who undertake great exertion, or by the impunity which most men can, by running, double the work thrown upon the circulatory organs. In no case do we see the law more beautifully demonstrated than in the sailor on active duty. When, however, any impairment, in structure or elasticity happens, then the evil effects of overtaxing the circulation become patent.

It is, we think, in every way probable, that an overwhelming majority of thoracic aneurisms are caused by pre-existing atheromatous, or other degeneration of portions of the inner coat and elastic structure of the vessel. How the abnormal life of the soldier is calculated to favour such a condition of the arteries has been proved by the *post mortem* revelations of Aitken and other authorities. With an atheromatous aorta, there is no difficulty in understanding the injurious effect, which must take place, from frequently repeated and continued interference with the process of respiration, on every occasion, the soldier puts on his tunic for passive or active duty. In addition to a deficient oxygenization and arterialization of the blood in barracks, must be reckoned the limiting action of the tunic by means of which the respiration is impeded, and an obstacle to circulation established in such vitally important organs as the lungs.

Herein lies the great distinction between the soldier and sailor, in reference to the subject of aneurism of the thoracic aorta. The soldier, both on and off duty, is placed under circumstances which interfere with respiration. The sailor, perhaps, may be subject to close and badly ventilated sleeping accommodation, but during the day, and hours of duty, he breathes the purest air of heaven, and is never exposed to restriction in the action of the muscles of respiration. The artificial, and, doubtless, unintentional interference with the respiration and circulation of the soldier is unknown to the sailor. In addition the sailor enjoys an amount of fresh and unadulterated air for purposes of respiration, to which the soldier is at all times a foreigner, excepting when he is voyaging between one colony and another: he is consequently less liable to degeneration of the inner arterial tunics, and to aneurismal disease. But, when he does contract a degenerating condition of the inner coats of the aorta, the very nature of his occupation must lead to a rapid development of aneurismal dilatation and to early incompetency for duty.

Now, what is the true pathological signification of atheromatous or fatty degeneration of the inner coats of the thoracic aorta in the soldier encased in a tunic which embarrasses healthy respiration? In other words; given an aorta, portions of which have lost their elasticity and contractility from fatty or atheromatous disease in the inner coat encroaching upon the circular or elastic coat, and a more or less perpetuated disturbance in the balance of the circulation, such as to call for more than the ordinary exertion of force by that vessel, what will be the probale order of events? The answer is not difficult. In a healthy state, the elastic power of the aorta after the completion of each systole, is competent to restore the natural calibre of the vessel before the semi-lunar valves are re-opened by the next systolic contraction of the ventricle. To do this effectually, the elastic tissue must be in a state of absolute integrity. When, however, portions are atheromatous or fatty, these are deprived of their elasticity. During the recoil, subsequent to the systole, these diseased parts fail to re-assume their original position. As time rolls on, dilatation and attenuation preponderate over the elastic power of the vessel. *Here* is a condition favouring the formation of an aneurism. If a man, under such circumstances, be moving in the higher circles of society, with no imperative demands upon him, for the exercise of violent muscular exertion, nothing more serious than moderate dilatation of the aorta may ever result.

B[illegible] at [illegible] upon [illegible] use extraordinary power such as bringing [illegible] his extraordinary muscles of respiration, without the [illegible] giving full effect to them, as is the case with the [illegible] of the elastic fibres become extremely attenuated, [illegible] way [illegible] an aneurismal sac becomes established.

[illegible] as has already been stated, no interference with [illegible]. His chest is free and unshackled. Not only [illegible] necessary, but he can even when undergoing the most [illegible], bring his extraordinary muscles of respiration [illegible] and thus maintain the equal balance between the respiration and circulation, and by so doing, altogether prevent any [illegible] of the circulation so long as the lungs and heart are healthy and competent. Moreover, the sailor enjoys a great [illegible] of pure air. Partly on this account, and partly [illegible] the unembarrassed condition of his thorax, [illegible] the sailor's blood is less prone to impairment, his nutrition [illegible] performed, and his arteries are consequently less liable to [illegible] of structure which, in our opinion, underlie the commencement of all thoracic aneurisms, and nearly all others not of traumatic origin.

D[illegible] the manner in which the [illegible] is fitted round the neck [illegible] embarrassing. The collar is fitted too tightly. It must exercise undue pressure on all the soft structures in front of the [illegible] spinal column. As the collar is generally fitted when the soldier is at rest, it follows, when he is under active exercise, when every artery, vein, and capillary is distended with blood, it must then be a great deal too tight. The compression [illegible] interferes with the return of venous blood from the [illegible] brain. It must also partially contract the calibre of the [illegible] by causing congestion of the brain, and by interfering with [illegible] arterial supply, it must produce "the faintness in the ranks after [illegible] exertion."

It will have been gathered from the foregoing observations that all the [illegible] which result from the employment of a too tightly fitting [illegible] are avoidable by the simple alternative of having [illegible] made so as to allow the freest play to all the muscles of respiration and the uninterrupted supply of blood to, and return of blood from the face, neck and brain. With reference to the knapsack it may be said, that that which interferes least with the normal movement of the chest, must also be most useful and least conducive to the formation of aneurismal disease of the the thoracic aorta.

MEDICAL MISSIONARIES IN INDIA.

(Continued from page 82.)

THE M[illegible] despise the Franks, but not the *Frank* physician, [illegible] appears true, not to one part of the world only, but wherever the preaching of the Gospel and the practice of European medicine are [illegible] in barbarous and exclusive lands. In no country has this truth been more strikingly illustrated than in China, from the year 1807, when "Protestant Christian philanthropy first broke ground there," under the auspices of Dr Morrison, an agent of the London Missionary Society, to the present day, when Dr Dudgeon, the zealous agent of the same society, is meeting with the tacit approval of the authorities, who consider that the good which he does to the body countervails the evils of his preachings.

It is [illegible] happy union and Dr Harvey has in the last number of this journal, well pointed out the political necessity which existed that our Saviour when he came into the world as a teacher of religion, should at the same time assume the character of a h[illegible] of diseases; and the same necessity exists still (though not, [illegible] recognised) where the missionary goes forth to preach his master's doctrine to nations steeped in ignorance and cruelty. It was abundantly recognised by Dr. Morrison when he set himself, with the assistance of Dr. Livingstone, a surgeon in the service of the old East India Company, to endeavour to evangelise the Chinese people, through the medium of the healing art. With the same object Dr. Colledge established his eye infirmary at Macao in 1827, and treated, in 10 years, 4000 patients. Stimulated by such successful examples, America, in 1835, despatched the Rev. Dr. Peter Parker to labor in the same sphere, and through his instrumentality, the "Medical Missionary Society" in China was established. Ever foremost in good works, the new world has sent at various times, through the agency of several societies, the American Presbyterian Board, the Baptist Board of Foreign Missions, the Southern Baptist Convention, the Missionary Society of the Methodist Episcopal Society, and the Board of Foreign Missions of the Protestant Episcopal Church, launched forth her medical missionaries into the barbarous land. The bread, thus cast upon the waters will surely be found after many days.

Whilst some medical missionaries were thus being sent to China at the expense of Societies and Boards, others went at their own. In 1844 Lockhart and Benjamin Hobson, M. B., Agents of the earnest London Missionary Society, appear upon the scene. Then we have Drs. Cumming, McGowan, Devan, Ball, Happer, Burton, and Hepburn, all at work in the one favored land. So successful were the results of these several laborers in their Lord's vineyard that, in 1846, Dr. John Wilson, Inspector of Naval Hospitals in China, could not refrain from recording his high sense of the value of the medical mission work which was slowly but surely producing its intended effects upon the Chinese minds, and he paid a high compliment to the professional, as well as to the missionary zeal of the laborers; thus bearing testimony to what may ever be observed of the medical missionary wherever he may be, namely, the high view which he takes of his profession, studying it as a science as well as a mere art, taking a pride in the condition of his Hospital or dispensary, the welfare of his subordinates, and in every way, bringing credit upon the noble calling which he has espoused. And now Scotland begins to shew her interest in what Professor Simpson characterised as the "mighty and magnificent mission," an interest which has never flagged, nay which has rather become intensified with time and which is now becoming extended to other countries.

This first notable expression of this interest was contained in an oration delivered at a meeting of the College of Physicians of London in December, 1831 on some of the results of the successful practice of physic," by Sir Henry Halford, then president of the college. After pointing out to his audience, that "he did not wish by these to mean pecuniary results but the moral influence, which the cure of the ills of the body has upon the minds of patients, the deference to the physicians judgment on other subjects—and that gratitude and attachment which is the sweetest reward of our anxious and laborious life." He dwelt upon the necessity of the missionary, after having gone through his theological course, attending to anatomy, and chemistry and other courses of medical lectures; and for a certain time frequenting some one of the great hospitals, so as to qualify himself to practice physic and surgery as if, *(note this) he was to prosecute our profession as his means of living.* This last was important advice, as there is too great a tendency to believe that a *smattering* of medical knowledge, added to the religious, is sufficient for the missionary. After Sir H. Halford's lecture, medical missions received an impetus at home. Articles on the subject were published in the Scottish Christian Herald. Dr Parker left Canton and went to London, Edinburgh, Glasgow, Liverpool, and other large cities. His reception was most cordial. The subject was warmly taken up. The

Royal College of Surgeons of England resolved to educate, at their own charge, such Chinese youths as might be sent home for medical education. Three scholarships were founded in Kings College, London, for the education of medical missionaries. Edinburgh formed a committee of her sons "to co-operate with the Medical Missionary Society in China." And public meetings were held in New York, Washington, Philadelphia, and Boston. Those were the halcyon days of medical missions in India. But soon, alas! differences of opinion arose between the American and British medical missionaries, the end of which was that no help was forthcoming to the latter from the society in China. Then Dr. Parker appears to have—not altogether, perhaps, left his first love, but to have admitted the world to a share in his affections. He became first Chargé d' Affaires, and then Chief Commissioner for the United States Government with China! The conjunction was peculiar, and we venture to say to be regretted.

And now comes an important epoch in the history of medical missions. The Edinburgh Committee, which had been hitherto intimately and exclusively associated in the Medical Missionary Society in China, now enlarged its sphere of operations, and became the "Edinburgh Association for sending medical aid to foreign countries." The society in China, and "Syrian Medical Aid Association" of London (whose cause had been advocated by Sir Culling Eardley), were to be the first to receive pecuniary help; but the great objects of the association were, "to circulate information on the subject of medical missions; to aid other institutions engaged in the same work; and to render assistance, at missionary stations, to as many professional agents as the funds placed at its disposal will admit of;" and these, we believe, are its objects still. Dr. Abercrombie—honored name amongst those which are renowned for benevolence and religious deeds, was the first president, and promoted, we may be sure—to the extent of his ability—the noble work of the association.

The first operations of the society in *India* occurred in 1853, when Dr. John Owen Evans, a graduate of the University of London, in connection with the missionaries of the London Missionary Society, set foot in Mirzapore, and there commenced within our own recollection, his glorious mission. The Hon'ble Mr. Thomason was, happily, Lieutenant-Governor at the time, and he—if we remember right—withdrew the Government sub-assistant surgeon from the Government dispensary, in which Dr. Evans was allowed to practise. The field was a wide one. There, in one of the greatest commercial towns in India, had the enthusiastic medical missionary full opportunity, unfettered by any restrictions, for finding his way to the hearts of the large Hindoo community who came to him gladly. As before urged, an inferiorly educated physician will not answer. But, alas! where are men like Dr. Evans to be found when sought for? He, poor man, soon lost his health, and was compelled to return home to recruit it. The work of medical missions in India then received a check which still exists. Medical missionaries should be men of a high stamp in every way; and such men are not easily found. Work, however, is being done in India on a limited scale, to which we shall advert hereafter.

THE NEW NOMENCLATURE OF DISEASES.

In our number of the 1st March, we briefly referred to the introduction of this new system. In the British army, the classification has been in use since the 1st January, and it is now adopted in all returns by the military medical officers of the Indian. It has not yet been introduced for the civil branches of the service.

The great art and science of this nomenclature is its simplicity and uniformity. The index of the book is a dictionary, in which every disease is to be found, and referred to its proper position; from its copiousness, including all varieties of disease and injury each complaint, &c., is appropriately distinguished; one name as recorded must signify that disease, and can be mistaken for no other.

The possibility of error is thus reduced to a minimum, and this is the great object of classification; it is the introduction, we would fain hope, to the world, of a registration of truthful diseases, which eventually must throw light on their causes, and tend greatly to discover how they are to be prevented. By the amplitude of the vocabulary, "other diseases," that bane of former medical returns, will be avoided, and mistakes in recording diseases can hardly occur, except in such minds who would not return a case of ague under intermittent fever.

The looseness of the former nomenclature had often been regretted, and led to grave mistakes and inconvenience in the mercantile and political world. Take the instance of Spain last year, who, because the Registrar-General's return reported cases of "cholera" in London, imposed ten days quarantine on every vessel arriving from the Thames at a Spanish port; this was obliged to be submitted to until it was pointed out that the word merely intended English or bilious cholera, choleraic diarrhœa, or cholera infantum, &c., but not the epidemic form of the disease.

A later example, however, and one which concerns us more nearly occurred in April last, when the passengers by the P. and O. Steamer *Behar* found themselves liable to ten days' detention at Suez, because the Health Officer of Bombay had reported "cholera" was present in that town. This was not the first difficulty either that had occurred in the Red Sea ports from the wording of the health certificate. The matter was settled at Suez by the authorities deciding, that as the word "cholera" in the certificate meant merely its "sporadic" form, quarantine need not be enforced, as the presence of that disease did not affect the public health.

In all these cases the difficulty has arisen from the incompleteness or insufficiency of the former classification of disease.

Now, when the Indian health returns are organised on the new nomenclature, such misapprehensions can rarely arise. Two names for cholera are given: 1st, simple; 2nd, malignant; the first is never absent, more or less, from the seaport towns of India, and, as affecting the public health, is known to be comparatively harmless; the presence of the second would always indicate that quarantine must be enforced.

The system although, in reality, so simple, has to be studied: there are several diseases, for instance, which at first sight would appear to be omitted from their not appearing in the index. Cephalagia, accumulation of wax, epulis, &c.; but they are all to be found under the headings, neuralgia, diseases of the ear, gums, &c., and several more could be named of the same character: then, again, ebriositas is really omitted, and would have to be recorded under febricula perhaps, as it could not be noted under alcoholic poison or delirium tremens; vesiculæ pedis also does not find a place, and yet has frequently to be noted in military returns: many other cases will, doubtless, occur in practice, but all of so slight a nature as hardly to deserve notice, except that often, practically, it is these little things that cause the most trouble.

TEMPERATURE OF THE BODY IN HEALTH AND DISEASE.

We would draw the attention of the Profession to the admirable lecture of Dr. B. W. Richardson, on the "Increment of Animal Heat, in the *Medical Times* of 8th May.

Observations on the heat of the body in health have never yet been made in India; to any officer who has leisure and opportunity, every barrack room thus offers a wide field for the practical study of the question of how much the normal heat of man (or animals) is in-

[illegible] with the temperature of this country. Such experiments should be made at different times of the day on a great number of men.

On this subject Dr. W. Palmer of the General Hospital writes:—"My [illegible] daily thermometric observations on patients who had been [illegible] was often continued during the whole of their convalescence [illegible] and that there was no increase of the temperature of the [illegible] corresponding to increased temperature of the air [illegible] remarkable [illegible]; but such observations as mine are not to be compared with those which might be made in a barrack of healthy men.

"In almost all depressing diseases the temperature of the body [illegible] regularly till mid-day (not till evening as is commonly said, but [illegible] probably because no observations are not made as a rule [illegible]) [illegible] height until evening, and then falls till the next morning. If the same or similar changes take place in healthy bodies, it will give a clue to periodic changes and diseases which is yet missing."

The following few sentences from Dr. Richardson's lecture would show the direction such investigations should take; attention should be paid to his method of conducting the observations:—

"We not only want to learn the bare fact that in such and such a malady there will be manifested such and such a temperature, but we want to be profoundly acquainted with the meaning of the whole subject. We want to know whether the rise or the fall of temperature, from the natural standard, is a cause of the other attendant phenomena, a coincidence, or a sequence. We want to learn, above all things, what variations from the natural thermal standard, above it and below it, the animal body will sustain; what symptoms will run with each variation; what extremes of temperature will impede or stop the animal mechanism."

"It is a common idea that all warm-blooded animals possess and maintain a given standard of animal heat under different conditions. This is an error which repeated experiments soon puts right. Thus I find in pigeons kept with every care, well fed, well protected, there are variations of temperature ranging from 106° to 109°. This range of full three degrees extends to all other animals of warm blood which I have studied, and we may, I think, note as a fact that in animal bodies there is an allowance made for fluctuations of temperature, an allowance for expansion and contraction, if we like to express the matter so, of three degrees on Fahrenheit's scale."

"In considering the temperature of the animal body in different individuals of the same species, age must be carefully taken into account. I believe it will be found, in the course of further experimental inquiry, that each period of life is marked by a distinct thermal range, and that what would be a natural thermal reading at one period of life would be unnatural at another."

"In the human subject a sufficient number of observations have not been conducted to enable one to speak with precision on the ranges of temperature according to age; but the general fact that there is a variation, and that there is persistent decrease in the advanced period of life, is proved."

"The condition of the body in respect to fatness or leanness is another modifying influence to be remembered in estimating animal temperature. As a rule, a body in good condition has a higher standard of temperature than a body which is badly nourished, or than a body which is unduly loaded with fat; and one very important observation deserves to be made in relation to the presence of fat in young and active bodies. The observation is this—that whenever in such subject there is, within the organism, a cause at work leading to an undue accumulation of heat, there is, owing to the imperfect conductive power of the sub-cutaneous layer of fat, a more rapid increment of heat."

Let me urge the importance of watching the influence of season on the thermometrical readings of the animal body. In [illegible] states [illegible] there will be always a slight increase of mean temperature of the body during the heat of the summer, and a decrease of mean temperature during the cold of winter. It is true that nature does much to equalize, that the free action of the skin and lungs in the hot, and the slow action of the same organs in the cold months, specially tends to equalization. But a difference ranging from 1½ to 2° F., must still be allowed, and it must be borne in mind that an extreme increase of animal temperature in the cold months is a much more serious matter than the same increase in hot months of the year. Further, there are some months which are specially critical in these respects; there are months when animal waste is [illegible]; there are months when animal increase is [illegible]."

THE ROYAL SANITARY COMMISSION

A RECENT *Gazette* contains an order by Her Majesty revoking the Commission appointed last November for inquiring into the operation of the sanitary laws, and appointing a new one with fresh powers.

The new Commissioners are directed to inquire into the operation of the sanitary laws, so far as they apply to sewerage, drainage, water-supply, removal of refuse, control of buildings, prevention of overcrowding, and other means of promoting the public health, and further to report upon the operation of the laws for preventing the introduction and spreading of all infectious diseases, and other kindred subjects.

The Commission will probably specially consider it its duty to inquire into the propriety of extended legislation to prevent the spreading of syphilitic disease.—*British Medical Journal.*

INDIGENOUS FOODS

DR. MOORE, the Superintendent of the Raj Dispensaries in Rajpootana, notes the following aliments in use among the inhabitants of that country during the late season of scarcity (1868).

"Atta being scarce and expensive, I found the inhabitants of Rajpootana use the following materials, ground up and mixed with various proportions of flour:—The roots of a peculiar coarse grass called *Ney Moth*, found growing near tanks, jheels, and wells. Of this there are two varieties, one sweet and soft, consumed by the people, the other hard and pungent, and given to cattle.

2ndly. The long roots of a rush, or cyperus, also found in the beds of tanks. This contains a large mass of pithy substance, looking like coarse arrowroot.

3rdly. The kernels of the wild plum, where it grows, as for instance, in Sickawatty.

4thly. The inner bark of the tamarind and neem trees. The two latter substances are not used except as a last resort.

5thly. When produced, the kurree or linseed cake, formed of the seeds after removal of the oil.

Thus the country supplies a larger amount of aliment than could have been supposed."

THE JAILS, AND JAIL SYSTEM OF INDIA.

(Continued from Vol. IV., page 103.)

7. *Finance.*—"The gross annual cost of prisons and prison establishments, exclusive of building charges incurred in the Public Works Department, amounted in 1867 to Rs. 47,08,691."

The following table shows the expenditure, &c., in the several administrations:—

Year 1867.	Total annual expenditure.	Net receipts from prison manufacture.	Total net cost to Government per prisoner.
	Rupees.	Rupees.	Rs. A. P.
Bengal ...	13,14,243	4,41,238	53 4 8
Bombay (1867-68) ...	5,90,079	2,17,930	63 14 9
Madras (1867-68) ...	8,82,362	7,618	89 0 0
N. W. Provinces ...	7,35,770	4,35,072	45 12 0
Punjab ...	5,44,595	71,815	47 5 2
Oude ...	2,47,921	18,323	35 4 0
Central Provinces ...	2,44,572	53,650	51 12 0
Hritish Burmah (1867-68)	2,54,571	53,916	56 15 9
Byderabad ...	75,806	2,811	83 0 8
Mysore ...	2,37,918	16,325	78 12 4

"The next table shows the average charge per head in each province in 1867, under the chief item of jail expenditure.

Year 1867.	Establishments.	Diet.	Clothing.	Medicine and Hospital charges.	Contingencies.
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Bengal ...	22 0 0	32 6 8	4 11 7	0 12 8	3 2 8
Bombay ...	43 0 1	41 14 1	5 12 8	2 4 9	7 1 3
Madras (1866-67)...	27 4 0	50 9 9	4 3 2	0 6 11	6 12 6
N. W. Provinces...	19 0 6	17 5 5	2 14 2	0 8 2	3 14 7
Punjab ...	21 3 10	22 8 9	3 13 6	1 4 1	2 3 7
Oude ...	19 7 2	13 7 0	1 14 6	0 10 0	2 10 0
Central Provinces	26 11 8	23 14 1	5 8 2	3 15 0	3 5 4
British Burmah ...	34 15 0	30 4 2	2 12 7	0 1 5	3 9 11
Mysore ...	29 11 7	42 1 5	4 10 1	0 15 4	7 2 10

"This statement shows very large and curious discrepancies. It is not clear why the cost per prisoner, on account of establishment, should in Bombay be nearly double that of almost every province in India. Why a prisoner can be fed in Oude for Rs. 13-7, whereas, in some other provinces, the same charge amounts to Rs. 30-4, 32-6, 41-14, and 50-9 for the year? Why the charge for clothing in the Central Provinces should so far exceed that in Oude, the Punjab, or the N. W. Provinces? Why in the Central Provinces again, the charge for medicines and hospital charges should be more than seven times that of the North-West? or why in Bombay and Mysore, contingencies so far exceed the same item elsewhere?"

"If the remunerative theory be discarded upon the more important ground of real efficiency in prison discipline, it is obvious that to counteract the growing and rapid tendency of all charges to increase, the Government must look to the minute and careful supervision which may be expected from the recently sanctioned arrangments for placing the district jails in all provinces under special officers."

"It will be for future reports to show how far this last measure effected the two great objects for which it was sanctioned: firstly, the improvement in prison discipline as tested by a decrease in committals, not for any one year, but for a series; and secondly, an immediate reduction in those charges which a comparison with other similar provinces shows to be excessive."

8. *Reformatories (for juvenile offenders).*—In 1862, the Government of Bombay submitted a plan to the Government of India for the establishment of these institutions; referred back to Bombay, an amended bill was re-submitted the following year. On the first occasion it was disallowed, "its provisions being inconsistent with the Penal Code," and on the second, it was disallowed by Sir Wm. Denisou "on the general ground that reformatory institutions in India stand altogether on a different basis from that of England," and from his experience in Madras he doubted their necessity.

"India," says the note, "is not yet sufficiently civilized, even where it has come most under European influence, to breed up the large vagrant population, the offspring and heirs of poverty and crime, that under some such name as street Arabs infest most of the large cities of Europe."

In Ireland in 1866, ont of a population of six millions, there were 1,060 juveniles (under 16 years of age) committed to prison, while in the same year, in the whole of British India, with a population of over 150 millions, but 2,000 committals of the same age took place.

The Government of Bombay re-opened the question again in 1865, and similar applications have from time to time been submitted from Oude, the Punjab, Mysore, the North-West, and Central Provinces; but "in each case the Government of India has replied that reformatory institutions on the English model are not adapted to this country: all that is necessary being the strict separation of regularly convicted juveniles from adults.

"The question was urged by Miss Carpenter in 1866, and a circular, explaining the views of the Government of India, was issued in 1867. The Government of Madras, in January 1868, protested against the views," but their application was negatived.

The arguments on which the Government of India has based so many negative replies to proposals coming from all the different administrations, are given at full length in the note, and need not be reproduced here, the main heads having been noticed.

The Committee of 1864 entertained "great hopes that the provisions of the Whipping Act will prove of eminent service in thinning the juvenile population of our jails," and they were unanimous in recommending "that in every jail means should be provided for separating juvenile offenders from adults, and that it is moreover highly desirable, wherever such an arrangement is practicable, that separate sleeping accommodation should be provided for every juvenile prison inmate."

Therefore, "it should not be supposed, because the Government of India has withheld its sanction to the establishment of reformatory institutions on the English model, that no practical steps have been taken towards the reformation and instruction of juveniles regularly sentenced to imprisonment;" and accordingly, we find that under all the administrations the prison regulations for juveniles conform to the above practical rule for guidance; and as jails are multiplied, and some accommodation given for separation and instruction, the above principles will be carried out. On the whole, then (says the note), "it would seem that in all the provinces such measures as are suited to the circumstances of the country for the treatment of juvenile offenders have been sanctioned, and in most provinces are in operation."

(To be continued.)

Local Correspondence.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE.

Sir,—Although your journal is medical, it is widely circulated amongst men who, having received a scientific education, would be able to contribute much valuable information on Indian questions of scientific interest, which are at present by no means well understood, and which are only likely to be elucidated by numerous simultaneous observations in different parts of the country. Isolated observations of great value are often made, and as frequently forgotten for want, either of knowledge of what others have done, or of some stimulus to create an interest in the enquiry, and make the observation appear worthy of record.

[illegible] suggestions to me [illegible] —

W[illegible] saltpetre?

2. Is it [illegible] that the Indian soil [illegible] by the application of artificial manures, guano [illegible]?

In most parts of the world where a high temperature coexists with great dryness of the atmosphere, there is a great difference [illegible] temperature of night and day. What is the observed [illegible] in the Upper Provinces during the hot season? Is [illegible] temperature? If not, why?

If [illegible] in different parts of India would make [illegible] any or all of these subjects as elucidated by the [illegible] their several districts, and make the results known through [illegible] of your *Gazette*, much light would be thrown upon [illegible] which great ignorance at present prevails not [illegible] but also in this country.

I am, Sir, yours truly,
W. J. PALMER.

Official Selections.

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

(Continued from page 251.)

[illegible] 1788 *continued.*—Reorganization of the Hospital Board which seems to have taken place about this date (24th June). The Board were directed to fix the attendance of clerks at 6 hours daily, either morning or evening as they liked, but limiting the evening work to 9 p.m., and should the office be called on to work over extra hours, it would be no claim for extra allowance. Two Hindoo writers were to draw Rs. 50 a month as the "standard of limitation for writers of this description," and the limit of office house rent was Rs. 250 per mensem.

The Government order the Board, (4th July) in conjunction with the Adjutant General, to prepare a list of Assistant Surgeons, "that the same may be issued in General Orders, and their rank permanently fixed." The list is published, and they number 86.

(This would appear to be the first official list, and probably will stop the endless references about rank which certainly hitherto has taken up one-third of the Board's correspondence. The records are now not concisely kept, duplicates and even triplicates of the same letters exist, and many letters on trivial subjects which need not have been copied in full.)

The Head Surgeon at Berhampore reporting (12th July) on an excess of expenditure of wine in his district beyond the authorized allowance, states—"since the arrival of the 3rd European Regiment the number in the Hospital is remarkably increased, the average of the month being 191: amongst these many desperate cases occurred, which rendered the prescription absolutely necessary in low fevers, fluxes, and the most obstinate venereal, requiring a restorative and strengthened regimen, which happily effected the recovery of many who were sinking under these disorders."

The Head Surgeon then points out the causes for so much disease to be drink and venereal, "that if any means could be adopted for the prevention, in a situation of itself healthy, or might tend to remove these unfavorable impressions that naturally are formed from seeing a thin parade, and an heavy hospital report."

Two European battalions apparently were at this time stationed at Berhampore, and the admissions from venereal alone in the general hospital were stated to be—in April 163, May 172. And the surgeon brings the inadequacy of the hospital accommodation to the notice of the Board.

(18th July).—Mr. J. P. Wade submits a treatise on fevers to the Government, who copy it and send it to the Board for report. The treatise is to be copied in full in the records, and [illegible] 75 pages! His principle seems to have been "fever [illegible] derived invariably to [illegible] from the bowels and [illegible], and curative means must be derived from such [illegible] as operate on these parts by evacuation or otherwise, [illegible] purging."

[illegible] may be gleaned from this treatise concerning practice [illegible].

[illegible] Surgeon of Jessore writes an appeal to the Board (12 [illegible]) in justification of his large indent for medicines, [illegible] the very great demand for medicine on all [illegible] engaged in the Salt Department in the Sunderbunds, [illegible] prejudices which the natives in general [illegible] European medicines and practitioners do not exist here—experience having convinced them of their superior [illegible] for the sake of humanity, and his own pocket, [illegible] before, it appears, he had supplied salts and bark [illegible] that his indent will be complied with.

27th October.—The Apothecary applies to Government for permission to retail medicines to the public of Calcutta, whereby a profit of 25 per cent would accrue to the Company; they apply for the opinion of the Board, who say it can be "done so far as it respects the supplying the inhabitants of the settlement with medicines that may be prescribed for them by the surgeons at the presidency," but not to Captains of ships, or other persons, as the medicine in such quantity might not be able to be spared from our stock.

G. O. by Lord Cornwallis (11th November).

1. Resolved and ordered that all medical gentlemen employed in the Company's service under this presidency be formed into one general list, that they have commissions granted to them agreeable to their proper ranks as Army Surgeons, and that whenever employed in the civil line they be considered for the time as lent only to that department, and liable always to be recalled to their duty as Military Surgeons, &c.

That the number of full surgeons be fixed and limited to 28, who are thus disposed:—

2 Stationary Members of the Hospital Board.
6 For General Hospitals.
3 For the Corps of Artillery.
6 For the Corps of European Infantry.
1 For the Garrison of Fort William.

CIVIL STATIONS.

5 For the Presidency.
1 For Lucknow.
1 For Benares.
1 For Patna.
1 For Moorshedabad and Cossim bazar
1 For Dacca.

28

The Hospital Board is to consist of 3 members. Title of Physician General of the senior members to be abolished, and he is to be denominated President of the Hospital Board. The Chief Surgeon the 2nd Member, and the 3rd the Head Surgeon of the General Hospital at the presidency station.

That these stations be always filled up by selection from the most capable practitioners, without any regard to seniority, and no person to be eligible thereto who has not served two complete years immediately preceding the time at which they might be candidates for such appointments, either as Presidency Surgeon, Surgeon to a European Battalion, or to the Garrison of Fort William.

Full Surgeons to be increased or diminished, should circumstances demand an increase or decrease in the number of European battalions on the establishment.

Eighty Assistant Surgeons were detailed for Military duties as follows:—

6 General Hospitals, reckoning 6 to the Presidency and 4 to the other	26
3 Battalions of Artillery	3
4 Battalions of European Infantry	6
6 Regiments of Native Cavalry	2
36 Battalions of Sepoys	36
Chunar and the European Invalid Buxar, Monghyr, Budge-budge, Insane Hospital, to each. 1	5
Prince of Wales' Island	2
	80

It was resolved that should any officers not be required to fill up some of these appointments, they might be employed at the pleasure of the Board "with Collectors of Revenue, Commercial Agents with embassies," &c., &c., subject to certain regulations which required them to accept promotion when offered, or else they would be passed over for the higher appointments of the service.

The 15th paragraph is as follows, and it would be well for the service if its provisions could be again acted up to:—

"The Governor-General in Council deeming the practice and regular attendance upon General Hospitals to be the best school for initiating and instructing the junior medical servants, is pleased to direct with a view of qualifying them for the performance of their duty in every rank and station to which they may afterwards be succeeded in the medical line:—

[illegible].—That every Assistant Surgeon, upon his first admission into the service, shall be appointed to a General Hospital, where he shall be obliged to bestow all his time and attention to the practice of the Hospital, for at least three months, merely as a pupil under the immediate eye and direction of the Head Surgeon.

2ndly.—That any pupil who has recommended himself properly to the Head Surgeon by his attention to the hospital practice for three months shall be considered as sufficiently qualified for the duty of hospital mate.

3rdly. That every hospital mate who shall have discharged his duty in that capacity for eighteen months, shall be considered as eligible to succeed to any other medical charge his rank may entitle him to hold, but that the order of his future progression shall be from the duty of an hospital mate to that of a regimental assistant, and from the duty of a regimental assistant, to that of a sepoy battalion or civil station, and that no Assistant Surgeon shall be competent to an appointment to a subordinate civil station who has not served the period prescribed in a General Hospital, and become thereby entitled to succeed to a situation, which is generally considered of more ease and emolument than the duties of the Military Department."

A return from Chunar General Hospital (4th December) shows the following articles in use and store :—

100 Cotts.
99 Mattrasses.
130 Pillows.
230 Pillow cases.
196 Quilts.
286 Sheets.
400 Caps.
226 Gowns.
224 Shirts.
300 Trousers.
159 Coverlids.

1789.

(Pro., 13th January).—"The Secretary to Government writes to the Board acquainting them that Mr. Head Surgeon S. is permitted to resign the service and to proceed to Europe, and will be recommended to the Honorable Court to allow him *to return to Bengal without prejudice to his rank on his application* to them. "Upon the request made by Mr. S. that in the case of his being shipwrecked on this side of the Cape of Good Hope, he may not be considered as out of the service, you are desired to inform him that it cannot be acceded to as a stipulation, but that in the possible circumstance for which he writes to provide, he may be very certain that proper attention will be shown to the distress of the case."

(Pro., 26th January).—Government having asked the Board for a report on the Insane Hospital and whether any reduction could be effected, they reply that there are 5 classes as patients.

1. Subaltern officers in the service of the Company—For these the Surgeon is allowed the pay and batta of their rank; *viz.*, for Lieut. 173-8; Ensign 134-8-4 a month.
2. Sergeants and Privates in the service, the surgeon draws their pay and batta, &c. (Sergeants 26-6-6; Privates 16-6-6.)
3. Persons not in the service of the rank of gentlemen, for each of whom the surgeons receives the pay and batta of a Lieutenant.
4. Poor Europeans not in the service, for each of whom the pay and batta of private soldier is allowed.
5. For Ladies, for each of whom a Lieutenant's pay and batta is sanctioned.

Besides these sums the Surgeon is allowed Rs. 4 a month for one coolie to each patient. Contingent bills for beds, clothing, &c., all in addition to house rent and his pay.

The Board recommend as a reduction that the payment of Rs. 100 a month should only be given for patients of the 3rd class, that Rs. 10 a month should be allowed for coolies for 4 European patients, that the contingent bill should be discontinued, and the articles supplied by the Surgeon. To all of which the Government agree. At the time the report was written there were the following patients in the Asylum, and the list shows the monthly income of the institution.

	Rs.	As.	P.
1 Lieutenant, and 6 of class 3	1,253	0	0
1 Ensign	134	8	4
2 Sergeants	52	13	0
1 Matros of Artillery	18	6	6
7 Privates and 5 of 4th class	199	7	0
1 Lady 179, and 1 ditto 144	323	0	0
Allowance for servants	141	0	0
Add contingent bill on an average per mensem	186	0	0
This exclusive of house rent and surgeon's salary	2,311	2	10

And, at their suggestion, people not in the service are not to be admitted without special application to, and permission from, the Governor-General.

(Pro., 20th Feb.).—Mr. Lynd, head surgeon to the General Hospital of the presidency, applies for venetian blinds for the wards instead of the wooden shutters in use, which "being obliged to be kept shut in bad rainy weather greatly obstructs the free circulation of air," &c.

Extracts.

Wholesome Drinking Water.—"Only let the drinking water wells be properly placed as regards distance from buildings and evident sources of pollution; let them be provided with ridge, platform, and drain to lead away waste water; let them be provided with a flooring of perforated stones or tiles, which will allow of the accumulated mud at the bottom being thoroughly removed; let each well be placed under a dome-shaped roof supported by pillars; exclude from the well all pots, lotahs, and ropes; let the water be drawn by a windlass provided with a chain and metal bucket, or still better, let it be raised by a pump, and there will be no difficulty in providing for the troops at almost every station in the presidency, perfectly safe and good drinking water. If a pump is used, the well's mouth may be closed, and light altogether excluded; if the windlass is used, the mouth of the well should be shut as nearly as possible by the application of a dome-shaped iron or wooden cover, having an aperture in the centre just sufficient to allow of the passage of the bucket."—*Dr. F. Macnamara's 5th Report on the Analysis of Potable Waters.*

Podophyllin versus Calomel in a case of Jaundice.—G. H. aged 32, labourer, admitted 16th October. Had acute rheumatism ten years ago; otherwise has always been in good health; three months ago he noticed his urine got gradually darker and his stools paler. After one or two days he suffered from very sharp pain in the right hypochondrium, and then became yellow. The jaundice, which is very marked, and attended with much itching, has existed ever since. On admission he had sickness and headache, and pain below the right ribs increased on pressure. Liver not much below ribs, its superior dulness limit is a little below horizontal nipple line. Pulse 56; temperature 99°·8. urine, spec. gr. 10th of dark color, gives a well marked play of colors with nitric acid. Six leeches to right hypochondrium. Magnes sulphat ʒj, Succ. Tarax. ʒj, Tartarised Ant. gr. ¼ ter. die. in water. The leeches removed the pain and tenderness; he improved; appetite was good; he was up and about, but the jaundice remained, and was not altered by Ext. Colch. Acet grs. 3 in pill for five nights, with nitro-muriatic acid during the day. October 26th and 28th, he had in place of Colchicum, Calomel grs. v; but on the 29th the stool was pale and clayey, the urine dark with bile, and the skin deeply tinged. I now ordered Podophyllin gr. i, every night. On 31st the urine was much paler, contained very little bile, the stools were greenish yellow, much more colored than they had yet been, and the skin less yellow. November 4th, the improvement was maintained as regards the urine and stools; the yellow tinge of skin was still evident.

The jaundice was dependent in this instance I think, originally on catarrhal swelling of the lining membrane of the duodenum and lower part of the common chol. duct. Subsequently, perhaps, some inspissated bile may have contributed to keep up the obstruction. The superior effect of Podophyllin to other cholagogues was strikingly evident. I am in the habit of regarding this drug as an expeller of retained bile more than as a promoter of biliary secretion, in which respect, I think, it is surpassed by Calomel and Colchicum. The former is most serviceable, I believe, in those rare conditions where bile seems to be no longer formed, where there is no jaundice, but the stools are of a dirty grey color, and where there is distressing vomiting. Colchicum is, I am sure, often a useful cholagogue, mostly, perhaps, in persons who have a dingy muddy eye and complexion, without being distinctly yellow. Sulphate of Manganese seems to act much the same as Podophyllin. It certainly causes sometimes a copious bile flow.—*Dr. Handfield Jones in the Practitioner.*

Remarks on Tænia, and treatment by ethereal extract of male fern in the Abyssinian Expedition.—An article on the above subject is published in the *Edinburgh Medical Journal* for March, by Dr. Currie, Inspector-General of Hospitals, and Principal Medical Officer of the Abyssinian expedition.

The subject is of such interest to many in India that we make no scruple of extracting largely from the paper.—

"All travellers in Abyssinia have represented the prevalence of tape-worm amongst the inhabitants of that country, and it was reasonable to expect that the troops of the British expeditionary force would likewise become affected with the parasite, at any rate if they should remain any length of time in Abyssinia. It therefore occurred to Professor Christison to suggest to the Director-General of the Army Medical Department that a supply of the ethereal extract of male fern, as prepared in Scotland, should be sent with the army; and Dr. Currie received eighty small bottles of the extract which were distributed amongst the British and Indian troops.

"That tape-worm is very prevalent amongst the natives of Abyssinia is, beyond all doubt, a well ascertained fact; and they themselves believe that the great prevalence of the parasite is to be ascribed to one cause, i.e., the habit of eating raw beef, *brundo* as it is called, and this opinion appears to receive confirmation from the circumstance of nearly all the European prisoners who indulged in the luxury of raw beef having suffered from tape-worm.

"Abyssinians, it may be remarked, are as fond of raw beef as the Chinese are of opium; both are confirmed national habits, and universally practised. Their custom is to eat the beef soon after the animal is killed, and the flesh still warm, or not more than 24 hours killed; while meat that has been longer killed is cut up in a peculiar fashion into long strips, like sausages, dried in the sun and cooked as required.

"*Kousso* is the national remedy for tape-worm, and of this the Abyssinians are said to take a dose once a month. The *Kousso* tree, *Brayera anthelmintica*, was not found until we arrived at the great Wandatch range of mountains, 10, or 11,000 feet high, in the Alpine province of Lasta, and about 80 miles north of Magdala. There it was observed in great abundance, occupying the valleys on both sides of that magnificent range of mountains.

"The cases of tape-worm which occurred in the expeditionary force were not very numerous, and as the troops, European and Native, came direct from India, where tape-worm is common, it was impossible to conjecture whether the instances of it were of Indian or Abyssinian origin. A certain length of time, no doubt, is necessary for the development of the parasite, and it is probable, therefore, more cases may have occurred after the breaking up of the field force.

"In the cases that occurred amongst the troops, the extract was fairly tried, and all the reports made to me were unanimous in favour of its efficacy as a vermicide. The desired effect was generally obtained with a dose of 24 grains, but in an instance, when this failed, the quantity was increased to one ounce, and this over-dose, it is proper to mention, brought on severe dysenteric symptoms."

From the experience Dr. Currie gained in the campaign, he believes himself justified in stating that, "this drug in the form of ethereal extract, besides possessing the advantages of being easily taken, and in moderately-sized doses, is more certain in its therapeutic effects than any other anthelmintic with which I am acquainted."

VACCINATION FROM THE HEIFER.—Dr. Blanc of Abyssinian renown has established a stable for calves at his residence in London, where they are received and vaccinated, and dismissed when the disease is over.

"Dr. Blanc has constructed an operating table on which the calf is securely fixed, then the lower part of the abdomen round the teats is shaved, and from 40 to 50 punctures or scratches made in rows, with a lancet charged with cow-pox, which lymph was direct from the cow, and had not passed through human veins. We saw there a calf which had been vaccinated ten days ago. The animal seemed in perfect health, cool, and playful. We then saw the first three children who had been vaccinated from this calf. One infant presented six vesicles on the eighth day, one of the ninth, and one of the tenth. For the vaccination of the inmates of schools and institutions, the operation direct from the calf offers many advantages."—*Medical Times & Gazette, 22nd May, [illegible] 29th May, and Lancet [illegible].*

PRESERVATION OF SPECIMENS.—A simple way of preserving animal specimens for fine dissection is described by Dr. Alcock.

The method adopted is to prepare a saturated solution of corrosive sublimate in alcohol, and when a dissection in water is in progress, a small quantity, as half a tea-spoonful, of the solution, is to be added from day to day if the slightest appearance of putrifaction is observed, but no more if it is to be used than is absolutely necessary; and by the time the dissection is completed, the specimen has become imperishable from the union of the corrosive sublimate with the tissues, and it may then be kept in pure water, either open, or mounted in the usual way.—*Quarterly Journal of Science.*

A NEW STYPTIC COLLODION.—M. Carlo Pavesi gives the following recipe:—Collodion 100 parts, carbolic acid 10 parts, tannin 5 parts, benzoic acid 3 parts.

Agitate until a perfect solution be formed. It is of a brownish colour, gives a pellicle similar to ordinary collodion, and instantly coagulates blood.—*Gazette de Turin.*

TREATMENT OF THE VOMITING OF PREGNANCY.—Mr. John Harris recommends that in these cases hypodermic injection of morphia be tried. He gives the report of a very decided and serious case in which nearly every conceivable remedy had been employed in vain. He then tried the subcutaneous injection of acetate of morphia, in doses of one-sixth of a grain, three times a day, and this instantly arrested the vomiting.—*Boston Medical Journal.*

CINCHONA BARK.—At a recent meeting of the Pharmaceutical Society, Mr. J. E. Howard, at the request of the president, made a few observations on certain specimens of Cinchona bark cultivated in the East Indies, specimens of which were placed upon the table, and expressed a hope that at some future time he should have an opportunity of going more fully into the subject. He said that the number of varieties and species now cultivated in the East Indies was somewhat embarrassing, many of them being exact reproductions of the barks found in South America, whilst some varieties did not appear to correspond exactly with any that they were as yet acquainted with from South America. The subject, therefore, still required investigation among these new varieties. Mr. Broughton had quite recently found a variety which was quite new to them, possessing lanceolated leaves almost approaching in appearance to the *Cinchona lancifolia*, the bark differing entirely from the characteristic of the bark of the *lancifolia*, and pertaining more to that of the best species of Pitayo or of Loja. Mr. Broughton had found this variety to be so extraordinarily rich in quinine that he had obtained from it the almost incredible quantity of 10 per cent. of sulphate of quinine. Though this fact had only been communicated to him (Mr. Howard) in a letter from Mr. Broughton, there could not be any objection to his mentioning it at that meeting. He had himself examined a small portion of the bark, and his examination fully confirmed Mr. Broughton's analysis. This circumstance, together with other collateral observations, showed the great importance of attending with even minute accuracy to discrimination of the species and varieties which were already growing luxuriantly in the East Indies, some of which were so very much more productive than others. The neighbouring plants too, that he had mentioned, did not produce one-third of the amount of sulphate of quinine. In Mr. Broughton's last report he mentioned the circumstances connected with finding this species and his analysis of it, and he stated then that he had found 8·5 per cent. of sulphate of quinine, but since then he had obtained what he (Mr. Howard) had just mentioned. One specimen on the table was this extraordinarily rich bark. There was another specimen, which was the third harvest of bark renewed from the same tree, the *Cinchona succirubra*, or red bark of commerce. The bark had been three times stripped from the tree and then renewed, and certainly it was greatly improved from the original bark. Some species of wood on the table were transverse sections of some of the trees of *Cinchona succirubra*, which had been stripped of their bark and had replaced it. They would observe the lines representing the first, second, third, and fourth growth, the old part contrasting with the appearance of the new.

It appeared that the effect of cultivation was to increase the value of the product. There was one thing to be noticed, and that was that perhaps the quantity of cinchonidine was rather larger in East Indian bark than in Peruvian bark. The greater warmth and dryness of the atmosphere in the East Indies probably tended to the production of this alkaloid.—*Pharmaceutical Journal.*

ORIGINAL COMMUNICATIONS.

EXPERIMENTS ON THE INFLUENCE OF SNAKE POISON AND ON THE INJECTION OF CERTAIN FLUIDS INTO THE VENOUS CIRCULATION AS ANTIDOTES, AND ON THE APPLICATION OF THE LIGATURE AND ACTUAL CAUTERY.

By J. Fayrer, M.D., C.S.I.

Present: Dr. Fayrer; Dr. Ewart, Professor of Physiology; and Mr. Sceva.—June 12th, 1869.

Experiment No. 1.

A fowl was bitten in the thigh by a spectacled cobra that had been kept in confinement for some weeks, had bitten before, and was, therefore, not fresh. The fowl was bitten at 3 p. m.

At 3-1·50.—Fowl staggering; fifteen drops of strong Condy's solution, furnished by Messrs. Scott, Thompson and Company, was injected with the hypodermic syringe into the fowl's thigh.

3-2·50.—Fell down paralysed.

3-4.—Lies almost dead; just breathing.

3-5.—Convulsed.

3-7.—Dead.

Death occurred in seven minutes; but the bird was evidently unconscious after the first 2½ minutes. I could not recognise any good effect from the injection.

Experiment No. 2.

The left crural vein of a dog was exposed, ready to receive the injection. The dog was then bitten by a cobra in the right thigh at 3-20 p. m. The cobra was not fresh, it had been in captivity for some time, and had bitten before; but it was tolerably vigorous.

3-23.—Dog is excited and restless.

3-24.—Same condition; whining.

3-27.—Much excited; trying to break loose; is salivated; breathing hurried.

3-37.—Is beginning to show signs of the influence of the poison; is slightly convulsed; falls over.

3-37-30.—Injected 60 drops of liquor ammoniæ sp. gr. ·959, into the crural vein; followed immediately by convulsive twitchings of mouth and limbs.

3-42.—Lying down, very low, almost motionless; irregular action of the heart; injected 40 drops more of the liquor ammoniæ.

3-43.—No change; heart's action very feeble.

3-44.—Lies perfectly still, as though dead; no respiration; heart beats very irregularly; 35 pulsations in 30 seconds.

3-45.—Dead.

Post-mortem examination of body at 4-20 p. m. Lungs, pallid; no congestion. Heart, right side much distended with black clots. Left ventricle contained a little dark fluid blood. The viscera generally were pallid; but the liver was somewhat congested. Brain,—cerebral substance free from congestion; vessels on surface slightly distended with blood. The blood generally coagulated firmly.

Experiment No. 3.

The external jugular vein of a dog was exposed at 3-31 p. m.; 40 drops of the liquor potas: permanganat: (Condy's) was injected into the vein at 3-35.

No effect produced at the time; the dog did not appear to take any notice of the injection.

3-40.—Dog apparently not affected.

3-45.—Seems rather depressed, but this is not marked; it may be fear.

3-48.—Bitten by a large cobra (not fresh, for it has been some time in captivity, and has bitten before) in the thigh. The fang punctures were at once washed with the Condy's solution, which was well rubbed in.

3-49.—Bitten leg partially paralysed.

3-50.—Lying down; when raised can stand, but quickly lies down again; is quite intelligent.

3-51.—Droops his head.

3-52.—60 more drops of the fluid injected into the vein.

3-54.—ʒii injected into the bowel; is able to sit or stand, but is very weak. The injection of the Condy was not followed by convulsions as in the case of the liquor ammoniæ.

3-58.—Lies down; head falls over; breathing hurried; rises and staggers a little, and sits down again.

4. p. m.— Lies sluggish and dejected; can walk when raised, but staggers and soon sits down again.

4-5.—Can still stand and walk with staggering gait.

4-7.—Lying down, but gets up and walks a few steps; head drooping, and look dejected; twitching of muscles generally.

4-8.—When put on his legs can still stand; breathing hurried; coat staring.

4-12.— 40 more drops injected into jugular vein.

Slight twitching of muscles generally; lies down on his side, cannot rise; limbs paralysed; pupils dilated; slight convulsions of extremities, and muscular system generally; breathing catching and rather slow.

4-22.—Motionless; heart still beats 50 in the minute; no respiration.

4-24.—Heart still felt.

4-25.—Dead.

Bitten at 3-48—Dead at 4-25; in 37 minutes.

Death occurred in about the usual time, and with the usual symptoms in which it occurs, when a dog is bitten by a cobra. I do not believe the effects of the poison were in any way influenced by the permanganate.

Post-mortem at 4-40 p. m. Lungs much collapsed and very pallid. Both sides of heart full of fluid blood; great vessels distended. The blood coagulated firmly when let out of the heart and vessels. Abdominal viscera not so pallid as in the other dog. Brain vessels on surface, full of blood: cerebral substance pale, scarcely any puncta.

Experiment No. 4.

A fowl bitten by a cobra (not fresh) in the thigh, at 4-45 p. m; 20 drops of liquor ammonia having previously, at 4-43, been hypodermically injected into the thigh, no apparent effect produced by the ammonia thus injected. Bitten by the cobra at 4-45 p. m.; in 30 seconds it was in violent convulsions.

4-46.—20 more drops injected.

Dead before it could be placed on the ground.

Experiment No. 5.

The following experiments were tried with the object of again testing the effect of the cobra poison on itself, or on an another cobra.

A cobra was bitten sufficiently near the tail to avoid the chance of injuring any of the viscera, by another full-grown, fresh, and vigorous cobra. The snake bit deeply, plunging its fangs twice or thrice into the flesh of the other cobra, which was then put aside in a separate cage, and watched.

13th,	6 a. m.	...	...	no change.
,,	7 p. m.	...	...	do.
14th,	6 a. m.	...	...	do.
,,	6 p. m.	...	...	do.
15th,	6 a. m.	...	...	do.

The snake evidently has not suffered.

Experiment No. 6.

A vigorous and fresh full-grown cobra, with one occellus in the hood (Keautiah) of the natives, was made to bite himself [illegible] four times near the tail at 4·48 p.m. He bit himself as freely as he would have bitten another snake, brought [illegible], and smeared the surface with poison; put into a cage and watched.

Was not the least affected on the 15th, three days after [illegible].

These two experiments, which were very carefully performed, seem to prove that the cobra cannot poison itself or its own [illegible].

[illegible] Drs. Fayrer, Ewart, Waller, and Mr. Sceva.—June 19th, 1869.

Experiment No. 7.

A full-grown cat was bitten at 2·43 p.m. in the right thigh, by a large daboia. The snake had been long in captivity, and was, therefore, most probably not vigorous, though active and vicious.

2·49.—Twitching of the muscles; restless.

3·12.—The cat appears to be unaffected.

3·15.—The daboia again made to close his jaws on the cat's thigh, though evidently unwilling to bite.

3·44.—The cat seems sluggish, and is evidently now feeling the poison.

3·47.—Bitten by a cobra on the thigh.

3·46.—The cat is unsteady in its gait; breathes hard; looks distressed.

4·7.—Cat is restless; tries to rise, and staggers.

4·10.—Tries to stand, but falls over.

4·18.—Respiration very hurried; cannot stand; twitching of the muscles.

4·24.—Lies quite paralysed; pupils dilated; breathing hard.

4·27.—Convulsed.

4·30.—Dead.

The cat was bitten by the daboia at 2·43 p.m., and again at 3·15. The snake was old and feeble; it has been in captivity for more than six months, during which time it has touched neither food nor water, and yet it was active and vicious, hissing fiercely at any one who came near it; that it was capable of secreting poison was evident in later experiments.

The cobra bit at 2·45; and death occurred at 4·30; that is, in one hour and forty-seven minutes. The cobra was also not fresh, and its poison was weak, perhaps scanty. There was nothing whatever in this experiment to make us think that the cobra's poison proved antidotal to that of the daboia; on the contrary, it rather expedited death.

Experiment No. 8.

A fowl was bitten in the thigh by the same daboia at 3·40. The snake would not bite until his jaws were closed on the bird's thigh.

3·41.—The fowl, whilst walking about with rather a sluggish gait, suddenly sprang off the ground, and fell over in convulsions. It was immediately bitten in the thigh by a cobra. It continued unconscious and convulsed, and was dead at 3·46; that is, in six minutes after it was bitten by the viper. Had this viper been fresh, the bird would probably not have lived one minute.

Experiment No. 9.

Another fowl bitten by the same daboia at 3·56 p.m.

3·58.—It limps, has a dejected look, and its comb droops.

3·59.—Bitten by a cobra in the thigh; lies down.

4·2.—Slight convulsions.

4·3.—Comb livid; convulsed and unconscious.

4·5.—Dead, in nine minutes.

These three experiments, I think, dispose of the question of the poison of one family of venomous snakes being antidotal to the other.

In these cases, the viper was old and exhausted, and yet his poison was deadly. The poison of the cobra, which was also a partially exhausted snake selected on purpose, had no counteracting effect. The only thing proved is the terribly deadly nature of the daboia, which after such long confinement, without food or water, yet retained the power of causing death.*

These experiments were made in reference to certain suggestions that have appeared in the journals, but not with any expectation on my part that any other result than that which occurred could take place. The poison of the deadly snakes, of whatever family, kills by paralysing the nerve centres, and it appears as reasonable to expect Prussic acid to prove antidotal to nicotine, as the cobra poison to be so to that of any other form of venomous snake.

Experiment No. 10.

A fowl was bitten by the same daboia in the thigh at 4·7 p.m.

4·10.—Sitting down; looks sluggish.

4·15.—Rises and runs about, but is lame.

4·27.—Walks, but is very lame on the bitten leg.

4·45.—Still walks about, but is sluggish and lame, and looks very dejected.

The fowl, after this, began to recover, and on the 21st, two days later, was quite well. The snake was evidently all but quite exhausted when he bit this bird.

Experiment No. 11.

The external jugular vein of a dog was exposed at 3·4 p.m., and four drops of cobra-poison were injected; at least one drop was lost, the other three entered the vein.

3·10.—Dog looks dejected, and ears drooping; he lies down.

3·33.—Beyond being sluggish, no symptoms of poisoning.

3·46.—Very sluggish; lies down.

3·47.—Liquor ammoniæ, sp. gr. ·959, 60 drops injected into jugular vein; dog lies quiet. Heart beating rapidly; respiration very feeble.

3·54.—Heart's action very rapid; breathing rapid; muscular twitchings.

3·57.—Injected 60 more drops into the vein; muscular twitchings continue.

3·59.—Dead.

Poison injected at 3·4; death at 3·59. Death in 55 minutes. The quantity of poison was very small from a weakened snake; no effect was produced by the ammonia.

Experiment No. 12.

The jugular vein was exposed in a dog; it was then bitten in the thigh by a fresh cobra at 3·27.

3·28.—Staggering; excited, springing; howling violently; and trying to break the cord by which it is tied.

3·29.—Quiet; sitting down.

3·30.—Head drooping.

3·33.—Lying on its side, slightly convulsed; sixty drops of a solution of quinine, of the strength of one grain in eight drops was injected into the jugular vein.

3·34.—The dog lies on its side, still slightly convulsed.

3·35.—Dead.

Bitten at 3·27; dead at 3·35, in eleven minutes. The quinine evidently did no good.

Experiment No. 13.

Equal parts of cobra-poison and liquor ammoniæ, sp. gr. ·959 were mixed together, and fifteen drops of the mixed fluid were injected with the hypodermic syringe into a pigeon's thigh at 4·30 p.m. Pigeon crouched immediately; at 4·31 was unable to stand; the beak resting on the ground.

4·32.—Convulsed; peculiar convulsive movements of the tail continuing.

4·32.—Dead.

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* The daboia was not intentionally deprived of food or water; it would take neither.

Injected at 4-30; death at 4-32, in two minutes. This experiment is very unfavorable to the theory of the antidotal action of liquor ammoniæ.

Experiment No. 14.

The external jugular vein of a large and powerful dog having been exposed, ten (10) drops of fresh cobra-poison were injected into it at 4-21 with the hypodermic syringe.

4-24-30. The dog staggered, was convulsed, and fell over foaming at the mouth.

4-25.—Violently convulsed, but with no out-cry or sign of suffering.

Sixty drops of liquor ammonia, sp. gr. ·959, injected. Dead. Death occurred in about 70 seconds; shewing the frightful virulence of the poison when it finds entry by a large blood vessel.

How can such a death be explained otherwise than by exhaustion of the nerve centres? Any theory of blood-change is surely totally inapplicable here.

Present: Dr. Fayrer, Dr. Ewart, Professor of Physiology; and Dr. Sceva.—June 26th, 1869.

Experiment No. 15.

A Pariah dog was bitten in the fore-arm by a cobra (kalla keautia) at 3-2 p.m.

A ligature had been thrown round the limb above the bitten part, which was immediately tightened; a pointed steel, heated to a red heat, was then, at 3-3 p.m., inserted into the punctures, and the wounds were thoroughly cauterized.

3-7.—The dog is restless, and is apparently under the influence of the poison.

3-12.—Staggers as he walks.

3-14.—Forty drops of liquor ammoniæ sp. gr. ·959, diluted with three parts of water, were injected into the jugular vein.

3-17.—The dog runs about excited; he was partially convulsed during the injection of the ammonia; now sits up, and then falls over backwards; breathing quickly.

3-20.—Lies down; is salivated.

3-27.—Sits down; paws the air; muscular twitchings.

3-38.—Lying on his side; convulsed.

3-44.—Lies paralysed; heart still beats, but no respiration.

3-45.—Dead.

Notwithstanding the ligature, which was tightened immediately, the actual cautery, which also immediately followed the cobra's fangs, and the injection of ammonia into the venous circulation, the snake-poison proved fatal to a full-grown dog in forty-three minutes.

Experiment No. 16.

A dog was bitten by a fresh cobra (kalla keautia) in the fore-arm at 3-38 p.m.; a ligature was immediately tightened round the limb above the wound. The actual cautery was at once applied, until the fang wounds and the adjacent parts were completely disorganized.

3-42.—The dog is sitting, but reels as though he would fall over.

3-49.—Rises and walks with a staggering gait.

3-54.—Sits down; attempts to get up, and falls over backwards.

3-57.—Is convulsed; falls over, cannot stand; hurried breathing.

4-4.—Cannot move; lies paralysed; heart still beating; respiration almost ceased; pupils widely dilated.

4-6.—Lies on his side; convulsed.

4-12.—No respiration; but heart still beats feebly.

4-13.—Dead.

In this case also, notwithstanding the ligature which was applied as tightly as two persons could pull it round the leg, and the deep and thorough actual cauterization, immediately after the bite, the snake-poison found entry into the system, and proved fatal in thirty-five minutes. The dog was much smaller than that of the first experiment.

Nothing, it seems to me, can more strongly demonstrate the extremely subtle and virulent nature of the cobra-poison than those experiments; nothing, I think, is more significant of the improbability of anything proving to be an antidote. If the poison find entry into the blood vessels, and be carried to the nerve centres, I am inclined to believe that nothing can prove of any avail, excepting in those cases where the bite is imperfect, the quantity or the quality of the poison diminished or deteriorated, or the snake itself is young, weak, exhausted, or is one of less poisonous family; such, I believe, are the only cases in which recovery occurs through the inherent vigour of the animal or person bitten, perhaps aided by stimulants and excitement. The favourable result is attributed, and naturally enough, by those who do not understand the *modus lædendi* of the venom, to the treatment and the so-called antidote. That we can aid in such recoveries, and that we may do much to help the sufferer through the troubles arising from general disorder and secondary blood poisoning, I have no doubt; and I would offer every encouragement to all to persevere in their attempts. But I must state my conviction that nothing that can properly be called an antidote to cobra or viper poison exists; and the more this is known the better, for mistaken notions on such an important matter can only do harm, and may be the cause of losing, rather than of saving, life.

My belief is that, if an animal, and probably a man, be fairly bitten by a fresh and vigorous cobra or daboia, it, or he, will inevitably succumb; unless some immediate and direct method of arresting the entry of the poison into the circulation be practised.

That such may be done I will not deny; but the two experiments just recorded, performed with the greatest care and speed, by two surgeons accustomed to such operations, shew that, at the least, it is very difficult. The moment of time that intervenes between the injection of the snake-poison by the powerful maxillary muscles through the tube-like fang, into the minute blood-vessels of the part, and the application of the ligature and actual cautery is sufficient to allow of the entry of the poison into the circulation, and this reaching the nerve centres even in a small quantity, may prove fatal. The ligature is evidently very unreliable when applied to large parts of the body, such as the limbs: for it is almost physically impossible to compress the part so tightly as to stop the circulation; and unless this be done to the depth of the penetration of the snake's fangs, it is obvious that it can only be of very partial effect in preventing the entry of the poison. On a finger or a [illegible] ligature might be of more service, as the smaller part might be thoroughly strangulated; but unless the ligature were applied immediately, it is obvious that it would be useless even there, for the poison would have already entered, and be on its course towards the nerve-centres. How quickly this occurs is proved by those experiments in which the poison was injected directly into the jugular vein. What took place there, with the hypodermic needle inserted into the jugular vein, has its exact counterpart in the case of the cobra's fang, inserted, as it must be, when it penetrates a vascular part, into the minute veins.

The same may be said of the actual cautery. Unless the hot iron enter the puncture directly after the fang has been withdrawn, the poison is already far on its way towards the centre, and the burning, though it destroys the tissues and such of the poison as may not yet have entered the circulation, can have no influence on that which is already beyond its reach. But as the ligature, if tightly and quickly applied, and the actual cautery, if promptly and thoroughly inserted, must limit to a certain extent the entrance of the poison, both should be had recourse to as speedily and efficaciously as possible, in the hope that the amount of poison left to find, or that may have already found, its way into the system may be less than is sufficient to cause death.

To conceive of an antidote, in the true sense of the term, to snake-poison, one must imagine a substance so subtle as to follow, overtake, and neutralize the venom in the blood, or that shall have the power of counteracting and neutralising the deadly influence it has exerted on the vital forces. Such a substance has still to be found, and our present experience of the action of drugs does not lead to hopeful anticipation that we shall find it.

But I repeat that where the poisonous effects are produced in a minor degree, or when the secondary consequences are to be dealt with, we may do much to aid the natural forces in bringing about recovery. This is not, however, what is meant by an antidote.

Experiment No. 17.

A large and powerful dog had the right external jugular vein exposed. Twenty drops of a mixture of fresh cobra poison, taken from the snake the same day, one part, and liq. ammonia sp. gr. 959, forty drops or two parts, was then injected with the hypodermic syringe into the vein. The time of the insertion of the fluid was 4-27-30. The effect was instantaneous; the dog struggled, howled, and was convulsed on the table; he was immediately released and placed on the ground, but was already almost unconscious and convulsed. He made an effort to rise on his legs, and fell prone on his belly. Within one minute respiration had ceased, though the heart's action continued faintly. This ceased, and at 4-30 a.m. he was quite dead. The action of the poison with the ammonia was frightfully rapid in this case. Death occurred in two minutes and a half, complete unconsciousness within a minute; and only by the faint beating of the heart, which only continued for two and a half minutes, was any sign of life manifested. This surely is fatal to the theory of ammonia injected into the circulation being of any benefit in snake-poisoning. In this case the poison and the so-called antidote were injected synchronously, the result was almost instant death.

The experiment was performed by Dr. Ewart and myself with the greatest care, and certainly no air entered the vein.

Experiment No. 18.

The cobra that bit the dog in the first experiment bit a fowl in the thigh, at 3-46 p. m. The bird immediately began to run, and then crouched, and then fell over.

3-47 — Head fallen over, beak resting on the ground.

3-49 — Convulsed; dead.

Death occurred in three minutes.

A second fowl was bitten by the same snake at 3-50 p. m., in the thigh.

3-51 — Drooping his wings.

3-55 — Sits down, beak resting on the ground.

3-57 — Is convulsed.

4 p. m. — Dead in ten minutes.

A third fowl bitten by the same snake in the thigh at 3-51 and shortly after drooped.

3-58 — Convulsed.

4-2 — Dead.

Death in 11 minutes.

A fourth and larger fowl bitten in the thigh by the same snake at 4-3 p. m.

4-8 — Crouching; wings spread out; stands up; tries to run, and fails; head droops, beak resting on the ground.

4-10 — Convulsed. 4-17. — Still convulsed; comb livid.

4-20 — Dead in 17 minutes.

A fifth fowl bitten in the thigh by the same cobra at 4-13 p. m. 4-20. — Crouches; comb drooping.

4-24 — Head drooping; resting on beak. 4-29. — Quite paralysed; convulsed.

4-35 — Dead in 22 minutes.

A pigeon was bitten in the thigh by the same cobra at 4-37. p. m.

4-47. — The pigeon is drooping, and when he stands, it is on one leg, and then falls over again.

5-22 — Dead in 45 minutes.

This was the ninth animal bitten by the cobra in rapid succession, and still it is apparently not quite exhausted.

A sixth fowl bitten in the thigh by the same cobra at 4-32 p. m.

4-35. — Crouching. 4-47. — Staggers.

5-45 — Lying down insensible.

6-5 — Dead in 93 minutes.

A seventh fowl bitten by the same cobra in the thigh at 4-34 p. m.

4-37 — Crouches. 4-47. — Seems sluggish, and limps.

27th June, 5-30 a.m. — Lying down, and eyes half closed; unable to walk.

28th June, 6 a.m. — Is recovering; walks sluggishly and limps, but is evidently regaining strength.

The object of this experiment was to test the extent of power possessed by the cobra. It destroyed one dog, six fowls, and a pigeon in rapid succession, but the intervals between the bite and the death of each was prolonged, showing the gradual diminution of power at each bite. The seventh fowl poisoned was only slightly so, and recovered.

The cobra was neither a very large nor a very vigorous one, and yet how deadly! Eight creatures destroyed by a rapid succession of bites. The experiment proves that the snake becomes weaker by biting until quite exhausted.

Experiment No. 19.

A daboia was bitten by a fresh cobra (kalla keautia) near the tail, sufficiently far from the viscera. The scales were previously scraped off. The snake bit fiercely and repeatedly at 4-54 p. m.

6 p. m. — No change.

On the 28th June, at 6 a. m., there was no change.

The object of this experiment was to repeat the test of the influence of the cobra-poison on the viper. The result tends to show that it is innocuous.

DEATHS FROM SNAKE-BITES: A TRIAL CONDENSED FROM THE SESSIONS REPORT.

Communicated by Dr. Fayrer, C.S.I.

Poonai Fatmah and Joomun Fatmah are brought to trial for having, "on or about the 11th day of October, 1868, at [illegible], Zillah Purneah, committed culpable homicide not amounting to murder, by causing the deaths of Titroo, Monghoo, and Jakoo."

1. Tewaree Mussahar, son of Dhunpat, aged 20 years, Mussahar of Bacha, Pergunnah Soorujgurrah, Zillah Monghyr, labourer. I cannot recollect day or month. I came to Chattapore, Zillah Purneah, being engaged to make bricks for the Darjeeling and Caragola road, and was learning how to charm snakes from the two prisoners, Poonai and Joomun. At length, on a Sunday, the prisoners wanted to make the snake bite me. I did not wish the snake to bite me on any part of the body. They then

pulled my ears in a tyrannical manner, and said, Why are you afraid? If the snake does bite, we will charm you, and recover you. Then they brought three snakes, two keraits and one keantiah; the latter a young snake, but all were poisonous. The two smaller snakes they put aside, and one large kerait two *haths* long, they placed in front of us, and made Titroo place his right hand on the ground, and made the snake crawl on to his hand; but at first the snake did not bite him, then Poonai struck the snake with a cane, and the snake immediately bit Titroo on his right fore-finger. After this, in the same manner the snake was made to bite Menghon on the right hand, and then in the same manner the right hand of Jikree. After this, in the same manner the snake was made to bite me on the right wrist: the snake then appeared to be dead. After this, the prisoners having made incantations over the snake brought it to life again, and having placed some vermilion on its head, let it go free in a paddy field. After the snake had bitten Titroo he was attacked with great thirst, and began to foam at the mouth: he became senseless. At one *pahur* of the night remaining, Titroo was bitten, and he died half an hour before daybreak. Menghon and Jikree appeared well after Titroo's death; the poison did not seem to have affected them. The prisoners then ran away, Menghon and Jikree returned to their houses, and I heard they died there at mid-day. I was then senseless after I was bitten, my body and head began to turn round, and great perspiration commenced, with severe pain in the stomach, and my eyesight became dim, then I became senseless. I was brought from Bahadurpore to the Hospital, and remained there five or six days, when I became sensible again. All this took place at Bahadurpore in the court-yard of Moosum. he is not related to the prisoners, neither did he assist them. Some five or six other men besides we four were made to sit down by the prisoners in order that the snake might be made to bite them; but owing to the snake becoming weak, they were not bitten. Seeing all the above, they ran away.

2. Bechoo Sirdar, son of Dookhun, aged 22 years, Moosahar of Manikpore, Pergunnah Secundra, Zillah Monghyr, labourer.—The prisoners Poonai and Joomun were, in Assin, teaching Titroo, Menghon, Jikree, Etbari, Laloo, &c., some ten men, snake incantations, and I was also being taught by them. At length, on a Sunday night, the prisoners produced from an earthen pot two keraits and a keantiah, snakes, and began to teach us the incantations, and began to make the snakes move about in front of us all. We became afraid, whereupon the prisoners said, Why do you fear? If the snakes bite you, we are *gooroos*, and will soon restore you. After this they made us place our right hands on the ground, and began to make the big kerait snake move towards our heads, we immediately from fear raised our hands. Upon this the prisoners struck us with rattans, and when the snake moved to a distance we again placed our hands on the ground. Then the prisoners took the snakes near to Titroo, Menghon, Jikree, and Etwarree, and made the snake, by striking it with a rattan, bite Titroo on the fore-finger of the right hand; the throat of Titroo immediately became dry, and he became senseless; then the snake was made to bite Menghon on the fore-finger of the right hand, but Menghon did not suffer or become senseless. After this the snake was made to bite Jikree on the right hand, he did not either become senseless, but remained talking. Then the snake was made to bite Etwaree on the right wrist, he did not appear to suffer. Then Titroo died two hours before dawn, and the prisoners then ran away. We went in search of them, and at 10 a. m. we found them and seized them in a rice field at Gurnabaree, west of the road, and took them to Bahadurpore. We told them to restore Titroo to life again, but they could not do it, but went and sat down at a distance. Then the police came, and we made the prisoners over to them.

I heard Menghon and Jikree died on the day following; Etwarree was placed on a cart and brought to Hospital. When Titroo became senseless the prisoners tried to recover the snake, which became torpid after biting Etwarree. The prisoners took the snakes with them when they went off. I did not see them let go by the prisoners. We were to pay one or two rupees for being taught; we were told that if we were bitten by a snake, in repeating the incantations, and fanning the snake, we should recover.

Two other witnesses are examined, but they give similar evidence to the preceding.

The information and deposition of Dr. David Picachy, Civil Surgeon of Purneah, taken before me, J. R. Muspratt, Sessions Judge of Purneah, at Purneah, on this twelfth day of January, 1869, who being put on his oath, saith as follows:

Ques.—Did you examine the bodies of Titroo, Menghon, and Jikree?

Ans.—Yes I did, and found that they had died from the effects of snake-poison. There was nothing abnormal about their internal organs, which could be said to be the result of disease.

Ques.—In what way did the three bodies exhibit the effects of snake-poison?

Ans.—Externally there were the marks of snake bites on their hands and arms, and internally the blood was in a fluid state, and the brain vessels deeply congested; the former state—*viz.*, the fluid state of the blood—being particularly indicative of snake-poison.

Ques.—Did you examine the wound of Etwarree?

Ans.—Yes, and found a scratch on the fore-arm; he was partially senseless when received into Hospital, but could reply to questions I put to him. His wound or scratch looked like that which would be inflicted by a snake. I treated him with ammonia for three days, when he recovered.

Ques.—How do you account for the escape of Etwarree, the other three having died?

Ans.—He was the last person bitten, and must have received less poison than the others.

Ques.—Was he in your opinion suffering from the bite of a poisonous snake?

Ans.—Yes, he was lethargic and depressed; there was very slight swelling about the scratch. The wounds on the three dead bodies presented a livid appearance, and the corpses were swollen and in a semi-decomposed state, resulting from rapid chemical change after death by animal poison.

Ques. by prisoners.—None.

These men were sentenced to five years' imprisonment by the Sessions Judge of Purneah, which sentence was confirmed on appeal by the High Court of Calcutta.

The snakes, as described by the witnesses, are two keraits (Bungarus Cœrulus) and one keautiah (Cobra di Capella), the variety with one ocellus on the hood. The larger snake, said to be a Bungarus, bit four men; three died, one appears to have narrowly escaped.

REPORT ON TYPHOID FEVER IN THE 92ND GORDON HIGHLANDERS.

By W. Munro, M.D. C.B.,

Deputy Inspector-General of Hospitals, H. M. F.

The following report on typhoid fever was compiled (under instructions from the Inspector-General of Hospitals, British Forces) from information supplied by the Surgeon of the regiment in his answers to a series of written questions forwarded to him by myself on the subject.

In the report I gave a short history of the regiment for two years before arrival in India; described the composition and strength of the corps at the time of departure from England; stated the diseases prevalent amongst all classes from the date of embarkation up to the month of August, 1868; and, lastly, gave my opinion as to the character of the fever which had appeared and become more or less prevalent in the regiment, and endeavoured to explain its origin.

The following pages contain my remarks on these different points, abbreviated and condensed :—

For twenty-one months prior to embarkation for India, the 92nd Gordon Highlanders had been serving in Ireland, and had done garrison duty in Dublin for fifteen out of the twenty-one months. For the remaining six, the regiment had been in camp at the Curragh, undergoing a course of camp instruction, and one wing had been detached from head-quarters for a short time to afford assistance to the civil authorities of the counties of Tipperary and Cork, during the Fenian disturbances. During this service of twenty-one months there was no special sickness in the regiment, but in that portion of the corps stationed in Cork one case of typhoid fever occurred immediately before embarkation, but which case was left behind in hospital when the regiment sailed.

During eighteen of the twenty-one months there was no change in the composition of the regiment, which was as follows, including the depôt :—678 Scotch, 137 English, and 58 Irish. Of this strength, 216 were under 20 years of age, 518 under 30, and 139 above 30 but under 40.

The regiment while serving in Ireland underwent a good deal of exposure and fatigue, but the men continued apparently robust and healthy.

About three months before embarkation, 135 general service recruits joined the regiment, of whom 123 were English and 12 Scotch; the former of the labouring classes, from the Leeds, Liverpool, and Bristol districts. The average age of these 135 recruits was $19\frac{7}{12}$ years, but some of them were much under that age, and the majority of them, though without physical defects which could have been causes of rejection, were pronounced by the Surgeon of the regiment to be not only deficient in physique, but pale and sickly-looking.

The regiment embarked at Cork 727 strong, and the ships (new transports) in which it sailed were roomy, comfortable, and well-ventilated; and the food supplied during the voyage was good and sufficient in quantity.

There was little sickness amongst the men during the voyage, but there were five cases of measles, and three of *simple fever*, and there was one fatal case of pneumonia. This was the only death amongst the men during the voyage and until after arrival at Jullunder.

Some time before embarkation, and with that portion of the regiment at the Curragh, several cases of measles occurred amongst the children; and the Surgeon, fearing if any cases of the disease were embarked, that it might become epidemic on board ship, recommended that the women and children should be left behind, and the recommendation was followed to this extent, viz., that no child suffering from measles or any member of the same family should accompany the regiment. No cases of measles, therefore, were actually embarked, but five days after sailing one case occurred, and the disease spread rapidly amongst the children, and a few cases occurred also amongst the soldiers and men.

During the prevalence of the measles the greatest care was bestowed on the cleanliness, ventilation, and fumigation also, of those parts of the ships occupied by the families.

There was no overcrowding of the married people on board; on the contrary, the accommodation was good, and there were [illegible] and the Surgeon states that they were well and abundantly fed.

Besides measles, whooping-cough, bronchitis and diarrhœa became prevalent amongst the children; and before the termination of the voyage "the children became emaciated to a painful degree." Under this complication of disease, we have seen that the regiment, including men, women, and children, embarked free from disease apparently; that during the voyage the men continued healthy, and the children alone sickened and suffered; and on arrival at Bombay even, early in the spring, the men were reported to be still healthy.

From Bombay the regiment proceeded in the transports to Kurrachee in the month of March; from thence up the Indus to Mooltan in river flats towed by steamers; and from Mooltan to Jullunder, chiefly by rail.

The regiment was divided into wings on the passage up the river, and in the head-quarters wing diarrhœa broke out amongst the men almost immediately after leaving Kotree. With this wing (head-quarters) two-thirds of the recruits and the greater number of the women and children were sent.

The Surgeon of the regiment thought that this outbreak of diarrhœa might have been caused by the use of the river water, before it was allowed to deposit its mud or other impurities possibly contained in it; and also to the want of alum to purify the water. He thought that such was almost certainly the case, from the fact of the left wing of the regiment having been free from bowel complaint, though they made use of the same river water, but purified by alum; and, further, from the disappearance of diarrhœa amongst the men of the head-quarters wing after a supply of alum had been procured and mixed with the water.

On the passage up the river, men, women, and children were much crowded in the flats, so I was informed by the Surgeon and other officers of the regiment, though, from a memorandum attached to my original report by Major-General Harris, commanding the Sirhind Division at the time, it would appear that the accommodation was in excess of regulation. However that may have been, the men occupied the decks of the flats day and night, protected only by an awning, while the women and children were placed below, and packed closely together; but every effort was made to keep this space clean and well ventilated.

At the season of the year when the 92nd came up the river,—viz., in the month of March,—the heat by day had become considerable, and the sun must have beat down with great power on men who had nothing but a thin awning to protect them; and as day closed and night set in, these men, still protected by the awning only, must have felt keenly the cold chilly night breeze as it swept along the river. In addition to this exposure to sudden changes of temperature, the men were twice drenched to the skin during the night, and had to remain in that state until the sun dried their things, and warmed their bodies on the following morning.

At the same time that diarrhœa prevailed amongst the men, fever cases also appeared; and as fever cases became more frequent bowel complaints became less so. But the women and children also suffered from diarrhœa, caused (as the Surgeon thought) in the former by the use of river water. The younger children, however and some even of those at the breast, suffered from bowel complaint, the result of, or consequent upon, measles. These children, therefore, did not suffer from the use of river water, or at least their complaints were not caused in the first instance, by it, for they had all been ailing and suffering from diarrhœa before arrival at Kurrachee.

Early in April the regiment reached its destination, and at once occupied the European Infantry Barracks in Jullunder.

and almost immediately after arrival there, diarrhœa again broke out with greater severity than before, no class escaping, but the young soldiers suffered most. This outbreak was at first attributed to the large draughts of cold water which the men drunk when over-heated.

The barracks at Jullunder did not afford sufficient accommodation for the whole regiment; detachments were, therefore sent to Phillour and Govind Ghur, and a party of 70 men, consisting of the youngest and most delicate, was sent to the convalescent depôt at Kussowlie; but even after these reductions the regiment was crowded in barracks, and the superficial space per man during the whole hot season was only about 67 feet. During the latter part of April and beginning of May, diarrhœa amongst the men gradually became less, but many simple fever cases began to flock into hospital, especially at Jullunder; and as the month wore on the cases of fever admitted assumed a graver character. On the 24th of May a case of typohoid fever was reported—the first at head-quarters; and very shortly afterwards "many of the cases of what, on admission to hospital, appeared to be simple fever, assumed, or showed a great tendency to assume, the *typhoid* character."

I could not ascertain the exact number of such cases, as only those that were decidedly cases of *typhoid fever* were recorded; but in his letters and reports the Surgeon of the regiment remarked that "numbers showed a tendency to run into a *typhoid state.*"

Previously to this, however, two cases of typhoid fever (a man and a woman) occurred in the detachment of the regiment at Phillour, and early in May two cases of the same fever occurred in the detachment at Kussowlie. These two last-mentioned cases I saw several times, as I happened to be making a spring inspection of the hill stations at the time.

Up to August 2nd there were 247 admissions to hospital for fever alone, and of these 56 were lads under 20 years of age. 123 over 20 but under 25 years of age. Of the 247 cases, 12 were distinctly *typhoid*, and reported as such,—5 of them under 20 years of age, 6 over 20, and 1 over 25 years of age. Of these 12 cases, 7 proved fatal, and of these fatal cases one was 15, two were 18, one was 19, two were 20, and one was 23 years of age.

From date of embarkation up to 2nd August there were five deaths amongst the women, from common fever, from typhoid fever, from puerperal fever, and from heat apoplexy; and in the same period there occurred *thirty-nine* deaths amongst the children, from measles, from diarrhœa, and exhaustion, and *three* from *common fever.*

Besides 247 admissions amongst the men for fever, there were 86 admissions for diarrhœa and dysentery after arrival at Jullunder and up to August 2nd,—that is to say, within three months and a half; and all the men admitted under these two diseases were between 18 and 22 years of age. The number 86 refers to men only, and does not include any cases which occurred during the passage up the river, for none of these were admitted to hospitals, as the accommodation for sick on board the flats was very limited; and even during several weeks after arrival at Jullunder, cases of bowel complaint (slight ones, of course) were not taken into hospital, so that it is impossible to ascertain to what extent bowel complaint prevailed; but from the fact of the Surgeon having especially alluded in his reports to the prevalence of diarrhœa on the passage up the Indus, and again after arrival at Jullunder, we may conclude that the complaint prevailed to an unusual or considerable extent, and at the same time we may conclude that the 86 admissions were severe cases.

During the same period (three and a half months), out of a strength of 79 men at Phillour, there were 30 admissions to hospital for fever, and 5 for diarrhœa, and only *one* of the thirty admissions was a case of *typhoid fever.*[*]

At Kussowlie, out of a strength of 80 men, there were in the same period only six admissions for fever, and two of these were well-marked cases of *typhoid enteric fever*; and only four cases of bowel complaint, one of which was a case of dysentery contracted on the way up from Jullunder to Kussowlie. The two cases of enteric fever in this party were boys 19 years of age.

Altogether, including men, women, and children, there were 17 decided and recorded cases of typhoid fever in the regiment, not confined to one, but reported from three different portions of the regiment at long distances from each other, but all occurring about the same time, though in the distant detachments first. The strength at Jullunder was 600, and out of this number there were 333 admissions to hospital for two diseases only within three and a half months,—that is to say, upwards of half the strength suffered from fever and diarrhœa in this short period. Of the 333 admissions, 83 were boys under 20 years of age, 166 lads over 20 years of age, and only 84 above 25 years of age. Of the 15 recorded cases of typhoid fever amongst the men, 14 were under 20 years of age, 9 were English, 2 Irish, and 5 Scotch.

From these figures it will be observed that the young men were the chief sufferers, and that typhoid fever was more fatal amongst the English recruits than any other class.

The following is a description of the typhoid fever as furnished me by the Surgeon of the regiment:—

"The cases of typhoid fever which have occurred were all young men, only one being over 21 years of age. In these the symptoms of ordinary fever merged into those of low typhoid fever, the typhoid symptoms setting in when the patients were apparently recovering. The symptoms were low muttering delirium and a tendency to coma; eyes sunk in; breathing oppressed; pulse small and quick; teeth covered with sordes; tongue brown, dry, and glazed; restless twitchings of face and hands; bowels bound (?) at first, except in a few cases, were afterwards moved involuntarily; urine thick and high-coloured, and in a few cases entirely suppressed (?); a rose-coloured eruption was apparent in three cases, but obscured by prickly heat. There was hæmorrhage from the nose in three cases and from the bowels in two, and there was deafness in several cases.

"In three out of the *seven* fatal cases, enlargement of Peyer's glands was found, and in all the mucous membrane of the stomach and intestines presented patches of ulceration in a greater or less degree. In one case no ulceration could be detected, though before death the patient had passed a very large quantity of blood. In one case an abscess was found in the liver; and in another, peritonitis set in shortly before death."

In the two cases seen by myself at Kussowlie in May, 1868, the rose coloured spots on the abdomen were distinctly seen; and in both of these cases, and in another lately under treatment at the same station, there was a remarkably livid, dusky appearance about the face—a symptom not noticed, or at least not mentioned, by the Surgeon of the regiment, or by the other Medical Officers.

I attach detailed statements of these three cases, and the *post-mortem* appearances in one which ended fatally only a few days ago.[†]

It may be worthy of remark that the two cases treated at Kussowlie in 1868 were both admitted with fever of the intermittent type, which on the sixth day after admission became

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[*] I do not include the sickness of women or children in these figures.

[†] Will appear in the next number.—Ed. *I. M. G.*

distinctly typhoid. The man who was treated at Kussowlie this year, and which proved fatal, most probably had suffered very lately from intermittent fever, for, on examination of the body we found the spleen much enlarged and congested.

There have been many cases of intermittent fever in this regiment, which I consider remarkable for a corps that has been so short a time in India; but this fact may form the subject of future remarks.

From the description of the fever given by the Surgeon, and from the cases seen by myself, I have no doubt that the seventeen recorded cases were severe attacks of typhoid *enteric fever*; but I am by no means satisfied that those seventeen were the only cases of this fever in the regiment; indeed, I am of opinion that the *many cases* reported as showing a tendency to become typhoid were mild but still genuine cases of *typhoid enteric fever*, and that this type of fever was at that time epidemic in the regiment.

I shall now endeavour to explain how this *typhoid enteric fever* may have been originated in the regiment.

The solitary case which occurred at Cork may be looked on as accidental, but still it shows that the regiment, or at least members of it, may have been exposed to the poison of this disease. No other case, however, having occurred in the corps until after an interval of three months, may induce us to believe that none of the men who embarked had already come under the influence of the disease. We have seen that measles had appeared amongst the children while the regiment was at the Curragh, but that no child suffering from the disease or any member of a family in which this disease had made its appearance, was allowed to embark, and yet that, in a few days after sailing from Cork, measles again broke out amongst the children and became epidemic; and also that at the same time whooping-cough, bronchitis, and diarrhœa became prevalent also.

All the children who embarked were apparently in good health, but in a few days after sailing were attacked by measles, &c., they must therefore have left Ireland laboring under the poison of this disease.

In the same way it is quite possible that some, nay many, of the men, and particularly the young recruits who joined just before embarkation, may have imbibed the poison of enteric fever while in Ireland, or even before they joined the regiment, and that the disease did not come into active operation until the men had been exposed to the exhausting climate of India. Several circumstances, though remote, are in favor of this opinion, viz., the facts of one case having occurred at Cork immediately before embarkation; of the fever having first appeared, shortly after arrival in India, amongst the young recruits who had joined the regiment shortly before it left Ireland; and of the disease having been confined almost entirely to these recruits and to the youngest soldiers.

I will not, however, insist upon this opinion, as it is barely supported by more than supposition, but shall endeavour to explain the possible origin of the disease otherwise.

On board the transports the women were placed in a part of the ship by themselves. They had their own sleeping-berths, bath-rooms, and water-closets, and I am informed that the ventilation of the ships in every part was *admirable*. As soon as measles, &c., appeared, the families were put into quarantine, confined to their own parts of the ship, and the soldiers, except the husbands and the sentries, were excluded from these parts of the vessels. But however well ventilated ships may be, and however clean, sleeping-berths, bath-rooms, and water-closets may be kept, I do not believe it possible to preserve the air between decks pure and fresh, especially in a transport full of men, with their wives and children; and however carefully sick may be secluded and the part of the ship occupied by them cleansed and fumigated, disease, capable of being communicated from one person to another, or by the medium of the air breaking out in one class of persons, may—nay, most probably will—be communicated to all classes on board. Such was the case in the present instance, for though the sufferers from measles and their attendants were confined to their own part of the ship, the disease prevailing amongst them extended to both officers and men.

If, therefore, the poison of measles was not swept from between decks by means of the admirable ventilation, we may conclude that the air between decks was rendered still further impure by emanations from the bodies of sick children, by effluvia from diarrhœal discharges and from the water-closets used by children suffering from diarrhœa, and very probably from their dirty linen and clothes also; for at sea these articles cannot be washed every day, and the children of soldiers have not generally many changes of apparel.

Under such circumstances, therefore, it is more than probable that the conditions were originated on board these ships, under which *typhoid enteric fever* was likely to be developed.

As already stated, during the passage up the Indus the women and children were placed below, and the men occupied the open decks above them at the time the young children were still suffering from diarrhœa, which complaint extended to the elder children and women, and became prevalent amongst the men also. True, the prevalence of diarrhœa amongst the men was attributed to the use of the Indus water, and the second appearance of the complaint in the regiment, after arrival in Jullunder, more universal than the first, was supposed to have been caused by the men drinking too freely and often of cold water when they were heated. I think, however, that the use of Indus water had little if anything to do with the appearance of diarrhœa amongst the men, and that exposure on the decks of the flats, without proper covering, to the sudden changes of temperature and weather, was a much more probable cause; and, further, the children who had been suffering from measles, whooping-cough, and diarrhœa, and who with their mothers had been carefully separated from the regiment on board ship, were, on their arrival at Kotree, still suffering from diarrhœa, put into the same flats, women and children all crowded together in the ill-ventilated space between decks of the flats, while the soldiers occupied the decks immediately above them. This, I think, was a much more probable cause of diarrhœa amongst the men than either of the others, for all were suffering alike—those who drank river water and those who did not, and those who were exposed on deck and those who were sheltered between decks;—and here again on board these crowded flats, where all classes were suffering from diarrhœa, were present the conditions under which *enteric fever* might have been developed.

Taking what I have stated into consideration, and knowing that neither fever nor bowel complaint was prevalent in the European or Native Regiment, or amongst the prisoners in the civil jail, or amongst the civil population in and around the city of Jullunder, immediately before or since the arrival of this regiment in that station, I think I may conclude that this typhoid enteric fever originated within the regiment itself, and that it followed an outbreak of diarrhœa which commenced on board ship amongst the young children, and extended on board the crowded river flats to the elder children and women, and lastly to the men, and to the young men especially, amongst whom bowel complaint and fever have been most prevalent, and to which class typhoid enteric fever has been almost exclusively confined.

Several unfavorable circumstances were connected with this regiment on its arrival in India:—

1*st.*—It was to so great an extent composed of boys or growing lads.

2*nd.*—It arrived in the country at the beginning of the hot season.

There were 239 boys or growing lads in the corps on its arrival at Jullunder; and as it is an established fact that European children who remain in India grow up physically weak, so we may expect and believe that undeveloped lads or boys coming to India to serve as soldiers will never, even if they survive, grow into well-developed or vigorous men.

This regiment, then, composed of boys to such an unusual extent, arrived in India at the beginning of the hot season, was thrust suddenly into a climate inimical to the European constitution at the very worst season of the year; for the men, being children of a cold, damp climate, were suddenly exposed to the discomforts and dangers of intense dry heat, and naturally the weak undeveloped lads could not withstand its debilitating influence. The boys or young lads—in fact, the least vigorous class in this regiment—have been the chief sufferers, and the following figures will show the amount of sickness and mortality for five months after arrival:—Men, 721 admissions, 19 deaths; women, 89 admissions, 5 deaths; children, 127 admissions, 39 deaths.

I believe it is acknowledged to be a fact that all regiments suffer more during the first than during any subsequent year of service in India, except when epidemic disease breaks out in a corps. I cannot show, have not the means now of showing, this in figures, but speak from memory and experience, having landed with a regiment in 1857, and remained with it till 1867. During the first hot season of our service in the country, sickness and mortality were very great—greater by far than during any subsequent year, except 1862, when cholera swept off nearly one hundred of our numbers.

It is a question of the greatest importance whether this sickness and mortality in regiments on first arrival might not be avoided. I think they might, and the remedy would be to send all regiments to the *hills* for the first two years of service in the country.

My experience of the value of the hills is this: "Go thither to *keep* well, not to *get* well."—*Communicated by the Inspector-General of Hospitals, H. M.'s B. Forces.*

HYPODERMIC INJECTION OF LIQUOR AMMONIÆ IN CHOLERA.

By Surgeon A. G. Young, *60th Royal Rifles, Bellary.*

For the last month or six weeks, cholera has been hovering about the towns and villages in the district round Bellary. A considerable number of cases have occurred in the latter town, and many native travellers have suffered from choleraic seizures, after their arrival from infected villages.

On its first appearance at Bellary, measures were adopted to check its spread amongst the natives, and its extension to the cantonment, where two batteries of Royal Artillery, one European and three Native Regiments, are stationed. By the careful administration of sanitary laws, these desirable objects have been all but attained, as evidenced by the great diminution in the seizures among the bazaar inhabitants, and the non-existence of the disease, in an epidemic form, in the garrison.

On the afternoon of the 19th June, three men and several children of the battalion under my charge were brought to hospital, suffering from severe choleraic diarrhœa. The disease appeared so suddenly, and almost simultaneously in all of them, that a suspicion of some more tangible origin than "atmospheric causes" at once arose. But a careful scrutiny, and the simple fact that these cases occurred in parts of the barracks so widely separated from each other that they could not possibly be ascribed to a similarity of dietetic errors or accidents, convinced me that the dreaded enemy was threatening an invasion. About 3 p. m., half an hour after these cases were admitted, and while I was watching them, another man was brought in, from an entirely different set of barracks, with unmistakable cholera. He had all the characteristic symptoms of that worst form of the disease, where coma supervenes so rapidly, and purging and vomiting are slight. From the first, the animal heat was excessively low, pulse rapid and very small, the countenance shrunken and anxious; there were lividity of the lips and tongue, dulness of intellect, constant cramps and choleraic voice. Diffusible stimuli, frictions, hot turpentine stupes, and hot-water bottles, freely applied, were at once resorted to. Dilute sulphuric acid was given freely as a drink, mixed with water, and arrowroot and brandy in small quantities. Two copious rice-water stools were passed within the first hour, and similar matter was once ejected from the stomach. After this the symptoms, with the exception of purging and vomiting, rapidly increased in severity, and it became too evident that coma was rapidly supervening. Three hours after the commencement of the attack the patient was almost insensible; he could only be roused by a good shake, and then only replied by signs—articulation was impossible. When left alone he at once relapsed into a comatose condition, with eyes fixed, glassy, and totally devoid of intelligence. The pulse could just be felt at the wrist as a thin, faint wave, without distinct tonicity. The skin was cold and clammy, the features sunk, lips almost blue, and breath cold. I now determined on using the hypodermic injection of liquor ammoniæ. The nozzle of the syringe was inserted under the skin on the back of the left hand, the patient remaining perfectly quiescent, and about eight minims of the ordinary dilute liquor ammoniæ were injected slowly. The effect was magical. A few seconds after the injection, a slight twitching of the muscles of the forearm and contraction of the fingers were observed, and the man slowly turned his head to the left, and regarded the wounded hand, with a dull, vacant look, certainly, but one that also inspired hope in those who witnessed it. There was no intelligence in the look; but the mere fact that it was directed towards the seat of injury and pain shewed that consciousness, however feeble, was not altogether extinct. I carefully watched and noted (20 minutes after the injection) the gradually returning strength of the arterial wave, and with it a perceptible increase of temperature. The eyes slowly regained their intelligence, and the shrivelling of the countenance and lividity of the lips began to disappear.

Arrowroot and brandy in small quantities were now given at short intervals, and hot-water bottles were kept about his body and limbs. At 9 p. m., three hours after the injection, the pulse was soft and moderately full, heat of skin re-established, except in the feet and legs; but even they had lost their extreme coldness; face and lips natural, and the respiration free and regular. Drowsiness existed to a certain extent, but he could be readily roused, and he spoke with a thick utterance. No more vomiting or purging; and he has not voided urine since admission. There is a small dark patch on the back of the hand, where the ammoniæ was injected. Ordered a little arrowroot and brandy, a blister to nape of neck, and five grains of calomel with one-eighth grain of opium [illegible] contrary [illegible] the 29th, slept during the [illegible] fluid [illegible] slightly [illegible] passed [illegible] 3 a.m. General condition favorable; pulse moderately [illegible] and soft; skin warm; intellect slightly clouded, but is quite conscious; deafness exists to a slight extent, which increases his stupidity of expression. Reaction has come on very gradually, and there is no secondary fever.

Continued arrowroot and brandy; gave two grain doses of calomel at intervals; and kept blister open. Vesp. had two fluid [illegible] stools and micturated freely during the day. General condition seems most favorable; no secondary fever. The [illegible] back of the head has got darker.

Subsequently the patient made steady progress, and recovered without any untoward symptoms. Some slight inconvenience was caused by the destruction of the skin and the formation of a small slough at the seat of injection.

No other case of cholera has occurred in my charge, and I have had no further opportunity of testing the efficacy of the plan of treatment which was, in this solitary instance, followed by such signal success. I send you these rough notes, in the hope that their publication may induce some one or more less fortunately circumstanced, to try the expedient on a more extended scale.

CARBOLIC ACID IN SMALL-POX.

By C. R. Francis, M.B.,

Officiating Deputy Inspector-General of Hospitals, Saugor.

In the *Lancet* dated January 23rd, 1869, appeared a letter from Mr. Keith, of Normanby, eulogizing the therapeutical effects of carbolic acid in the treatment of scarlatina, measles, and *small-pox*. The "physiological effects" of the acid are, in Mr. Keith's experience, as follows:—

1. It is a powerful sudorific.
2. It lowers the pulse so rapidly that the latter will fall from 120 to 80 in twenty-four hours, the skin becoming cool and moist with [illegible] evidence of fever.
3. The tongue will soon become clean and moist, and the sore throat, in scarlatina, will be much diminished.
4. The appetite becomes improved.
5. He believes that carbolic acid carries a patient through any one of the diseases mentioned much more quickly than any other treatment that he is aware of.

Attracted by this letter, Dr. D. McEwen, an intelligent Assistant Surgeon of Her Majesty's British Forces, in medical charge of the Artillery at Saugor, determined to make use of the agent in any suitable case, and he has kindly favored me, for publication in the *Indian Medical Gazette*, with the particulars of a case of small-pox in an officer of the Royal Artillery, where the [illegible] effect attributed to carbolic acid by Mr. Keith [illegible] been most distinctly observed.

The patient was a young officer, aged 28, suffering, before being attacked by small-pox, from chronic scurvy. He had been laid up with a severe attack of scurvy five years previously. His gums were still very tender, and apt to bleed on pressure. He had not been vaccinated apparently—at least he has no recollection of ever having been told of the operation, and there are no vaccine marks. He was not a favorable subject to be attacked by any form of eruptive fever.

The [illegible] fever ran high, and the pulse was quick and [illegible]. On the [illegible] day, the pustules assumed a purple, livid hue (owing to minute effusions of blood—scorbutic diathesis). The eruption [illegible] body was very profuse.

From the first appearance of the eruption, which occurred on the evening of the third day, a pill containing blue pill, podophyllin, and extract of hyoscyamus, was given, followed by free evacuations. When the eruption fairly appeared, carbolic acid was administered as follows, in the dose recommended by Mr. Keith:—

R Acid. Carbol. Acetic. ana .. .. ʒj
[illegible] Opii, Ext. Calumb. ana .. .. ʒj
Aquæ .. .. .. ℥viij
A table-spoonful every 4 hours.

After taking this for 12 hours, the pulse was reduced by 18 beats, the skin became cool and moist, the tongue cleared, and the appetite returned.

The treatment was continued till convalescence had become fairly established, followed by mineral acids and vegetable tonics, &c., &c.

On the 7th day the eruption began to dry up, and on the 8th the scabs fell off. Convalescence was established on the 9th day. There was no secondary fever. Liniment Calcis was applied to the pustules, those on the face being opened with a needle. There was very little prospect of any *pitting* on the face.

Dr. McEwen has used carbolic acid in other cases of small-pox, and he is quite satisfied as to its power to cut short the duration of this class of eruptive fevers, whilst it allays restlessness and promotes sleep. I have brought the case forward in hopes that other medical officers may be induced to give this remedy a fair trial when similar opportunity offers itself.

PREVENTIVE SANITATION IN THE BHAWULPORE STATE.

By the Civil Assistant Surgeon.

Every additional instance that is made public of a successful check to the spread of contagious disease will tend to strengthen the hands of executive Medical Officers, by forcing upon the attention of our rulers the value of "Preventive Sanitation" in the management of epidemic disease. This record is therefore offered of recent experience in this direction.

In February of this year, small-pox invaded the Bhawulpore State from the side of Mooltan. Two cases appeared in the city of Bhawulpore on 6th February, and measures were at once taken to segregate the families of the afflicted beyond the city walls, for which purpose grass huts were erected at a safe distance. Three more cases occurred *in the same week*, and these were also removed.

In the city of Ahmedpore, thirty miles southward, three cases of small-pox were reported *late* in the month, whilst the Civil Surgeon was visiting there. Their whole families were segregated as in the former place. Two more cases were seized in quick succession, and were quickly removed outside. The houses of those afflicted were either purified with sulphurous acid or were fumigated by burning *luban* (frankincense), which is commonly used as a *disinfectant* in the Levant. At the same time, our vaccine operations were vigorously pursued; and in both instances the disease was *signally* checked and extinguished.

This subject has recently been pressed upon the notice of the Punjab Government by the Superintendent-General of Vaccination for the Province; and if it be the *paramount* object of Government to save human life, it seems reasonable to desire that all other considerations (such as the danger of oppression to the people) should be made subservient to our *one* grand object.

CASES FROM PRACTICE.

◆

CASE OF PROFUSE HÆMORRHAGE OF WHICH THE CAUSE WAS UNCERTAIN.

By W. K. Waller, M.R.C.S., Fel., U.C.

Called to see W. T., stated to be spitting blood. Examination of chest convinced me the hæmorrhage was not from the lungs, yet it had not the character of hæmatemesis. There was a slight cough, which might be accounted for by a slight dulness on percussion beneath the angle of left scapula, and the respiratory murmur here was not perfect; but there was no pulmonary disorganization, no sign of cardiac discord, no previous history of rheumatism, no heat of skin; pulse between 80 and 90, and decidedly not hæmorrhagic in character. No pain except in the left hypochondrium, and in remarking this, the patient with his hand described me greater curvature of the stomach. He stated that he had a peculiar sensation of uneasiness and distension there *before* the blood flowed.

About the 6th day of attendance, being very undecided as to the cause of the hæmorrhage, which continued in spite of treatment (large and repeated doses of gallic acid), I asked Dr. Ewart to see him; he was convinced that the lungs were not the seat of hæmorrhage, and suggested the possibility of the flow arising from the posterior nares. I plugged them accordingly with a sponge soaked in tincture of matico. For thirty-six hours after the plugging, there was no bleeding, and I began to hope that the hæmorrhage had been stopped; but at the end of the time stated, the bleeding returned with great violence. When it had ceased, I removed the plug, which was perfectly unstained. I tried a few doses of acetate of lead, but this had no better effect than the gallic acid. I had given turpentine, but a very few doses produced bloody urine, and it had to be given up. The bleeding having lasted now many days, and the patient becoming very blanched, and his pulse showing signs of irritability, it was determined, about the 14th day of treatment, to give large and frequent doses of the tincture of sesqui-chloride of iron. He accordingly took 40 minims every 4 hours from the 18th of April, until the 1st of May, when he left for Europe in the French steamer; there had been no return of hæmorrhage. The iron was continued all this time. During the whole illness, he was freely supplied with ice, which he swallowed in large quantities. Ice was also supplied externally to the left hypochondrum. Beef-tea and milk were given freely by the mouth. We tried the administration of nutrient enemata, but he invariably get sick after them, and they had to be discontinued. During the whole illness the bowels were rather constipated; there was never a trace of blood in the stools.

Where did the blood come from? Certainly not from the lungs. I think as certainly not from the stomach. Aneurism was considered, but there were no signs by which it could be detected. I always fancied the œsophagus the seat of disease, but of what nature I am not prepared to say, in the absence of all pain in the course of the channel, and perfect freedom from dysphagia. It remains a mystery to me, but it is a fact that for nineteen days this man discharged by the mouth several pints of blood: I saw him myself fill a China-ware spittoon holding at least a pint, and then about ⅓ of an ordinary wash-hand basin; and quantities like this were of daily occurrence. He was so reduced and anæmic, that we expected his death *must* take place, yet apparently he recovered, and left Calcutta after 12 to 14 days of progressive improvement, to all appearance likely to do well.

If the course and origin of the malady is clouded with mystery, the result may suggest the advisability of persistence in treatment, even in such desperate cases, to the last.

ABSTRACT OF A CASE OF ENTERIC FEVER.

By Surgeon A. Ross, M.D.,

92nd Gordon Highlanders.

Private William Innes, aged 27, total service 9 years, service in India 1½ year, a small man, of spare habit, light complexion, lymphatic temperament, somewhat dull appearance, and steady habits, was admitted to Hospital, on the 23rd May, suffering from continued fever, from which he so far recovered that I had recommended him for two months' furlough to Kussowlie with the view of regaining his strength, and lest he should have a return of fever, a sharp attack of which I feared would carry him off.

On the evening of the 29th May, he was up and looking well. On the morning of the 30th, he had a return of fever of a low type, which rapidly merged into decided typhoid. He had a strong tendency to coma; eyelids drooping, and raised sluggishly when roused; inclined to deafness; lips and teeth covered with sordes, tongue dry and glazed, and resembling a piece of polished mahogany; pulse weak, thready, and rapid, sometimes fluttering; he was occasionally delirious, muttered low, and had twitchings of the hands; breathing hurried and somewhat oppressed; a distinct rose-coloured eruption on the abdomen; no pain on pressure over the liver or bowels. At first there was a tendency to suppression of urine, which afterwards was passed incontinently; bowels inclined to looseness; stools sometimes bilious, sometimes brown and watery, and without blood.

His treatment embraced the shaving of the head, which was blistered and dressed with Ung. Hyd. and Ung. Sabinæ; the cold douche; counter-irritants over the chest and liver, and internally, tonics, diffusible stimulants, diuretics, &c., accompanied with wine, beef tea, &c.

He died at 10 o'clock a m, on the 2nd of June.

Post Mortem Appearances, five hours after Death.

External appearances.—Body badly developed, anæmic, and small posterior conjestion with imperfect rigor mortis.

Brain.—Small, weighed 2lb 10 ozs., the veins on the surface conjested, as also the substance. Ventricles contained about ℥i of fluid, and from the base of the organ about 2 oz. of clear fluid escaped The sinuses were not conjested, but the blood that they contained seemed extremely thin and dark.

Heart.—Small, pale, but firm in substance, weighed 9 ozs., contained blood of the same color and consistency found in the sinuses of the brain; otherwise organ normal.

Lungs.—Emphysematous; posteriorly congested. They weighed when taken together only 1lb 7 ozs.

Spleen.—Large and nodulated; of a dark chocolate color, and feeling soft to the touch. It weighed 14½ ozs.

Kidneys.—Right slightly congested; they weighed, taken together, 11 ozs.

Liver.—Pale in substance. Iodine reaction showing it to be slightly albumendid; weighed 3lbs. 13 ozs.

Stomach and Intestines.—Stomach slightly congested at the lower part of the jejunum. Here and there spots representing loss of tissue, existed, and on examination of the next portion of the intestine there was found unmistakeable ulceration of the peyer glands, one large, 1½ inch by one inch in size (so far advanced as to be on the point of perforation) and towards the ileo coecal valve there were numerous points of ulceration, but, beyond this, not a single speck of congestion. The large intestines throughout were perfectly free from disease.—*Communicated by Deputy Inspector-General of Hospitals, W. Munro, C.B.*

CALCUTTA NATIVE HOSPITAL.

EXCISION OF THE ELBOW; RECOVERY UNDER THE CARE OF DR. BAILLIE.

Reported by Mr. J. Hinder.

Peerun, a healthy native woman, aged 25, by occupation an ayah, was brought to the Hospital by the Police on the 6th October, 1868, having been murderously assailed by her paramour. She was insensible from loss of blood, having received no less than seventeen wounds (some of them very severe) inflicted with a butcher's knife, the principal cut, about 3 inches long, being over the back of the left elbow-joint, which it fully laid open, exposing the condyles of the humerus, the olecranon, and the head and neck of the radius. An attempt to save the limb having been determined upon, the wound was enlarged, and the ends of the three bones sawn off by means of the chain-saw. Not an artery required to be tied or twisted, nor were any nerves interfered with. A few sutures brought the wound together, which was covered by a pledget of lint dipped in carbolic oil (1 part to 8). The subsequent treatment was that usually employed in similar cases; no bad symptoms followed, and the patient left the Hospital on the 25th March, 1869, with a fair and flexible false joint.

AMPUTATION OF LEG FOR CARIES: RECOVERY UNDER THE CARE OF DR. BAILLIE.

Reported by Mr. F. [illegible]

Noyon Chunder [illegible], Bengalee, aged 2[illegible], admitted [illegible] 1869, [illegible] tibia [illegible] sinuses [illegible], and [illegible] patient was reduced to a [illegible] was extremely weak. [illegible] it was considered that [illegible] removing [illegible] him a chance of life. Accordingly after [illegible] iron and quinine, with [illegible] at night, [illegible] diet, amputation [illegible] of the tibia was performed on the 18th Ma[illegible] semi-circular [illegible] the bones, [illegible], and then [illegible] method, [illegible] and muscles [illegible] consolidated [illegible] and [illegible] brought into [illegible], the [illegible] days it had almost healed by adhesion, the middle portion only discharging a little. [illegible] was dressed with [illegible], and within the month the wound was closed, and the patient left the Hospital, looking [illegible] sleek.

HERPES FRONTALIS

By Assistant Surgeon F. M. Mackenzie,

Presidency General Hospital.

This skin disease has lately been investigated by Messrs. Bowman and Hutchinson, who have reported their cases in the Ophthalmic Hospital Reports, Vol. VI, Part I.

Mr. Hutchinson collected notes of twenty-eight cases, and one of his opinions drawn from them is supported by the following case which was admitted during the last month at the General Hospital. Mr. Hutchinson states in the report referred to, that "it is only when the side of the nose is affected that any serious inflammation of the eye ensues." The scars produced by the [illegible] and show well how it must have been [illegible] nerve it followed.

J[illegible] H[illegible], aged 30, states that for three months after fever [illegible] 1866 he suffered severe pain in the right side of his [illegible], and at the end of that time an eruption [illegible] appeared on the right side of his forehead. His right eye was not influenced by it, and the eruption [illegible] the side of his nose. The pain in [illegible], and the eruption [illegible] in three weeks or less; [illegible] time.

The [illegible] extending from the foot [illegible] half of the forehead, [illegible] up to the [illegible] line on the forehead, but [illegible] and they are [illegible] and confluent at [illegible] of the right [illegible] the distribution of [illegible] a few scars on the side of the [illegible] to the roots of the hair.

CASE OF DISLOCATION OF THE PATELLA INWARDS.

By Dr. Lyons.

[illegible]

[illegible] evidently from his [illegible] complained of a tending [illegible] immoveably fixed [illegible]

[illegible] the knee, found [illegible] joint, pressing on the [illegible] tibia, to which it [illegible] immoveable, the foot [illegible] patient [illegible]

[illegible] proper position, it [illegible] inwards, it [illegible] and [illegible] by a sense of great [illegible]

The day after the accident the knee was swollen to nearly [illegible] of its [illegible] the [illegible] day [illegible] quickly [illegible] however [illegible] the [illegible]

The [illegible] is now doing well, though considerably swollen [illegible] A[illegible] and [illegible] from [illegible] Erichsen's Surgery [illegible] recorded [illegible]

A CASE OF SHOULDER PRESENTATION; SPONTANEOUS EXPULSION.

By Cassy Kisore Mitter,

Officiating House-Surgeon, Midwifery Wards, Medical College Hospital.

When the shoulder presents, the child, of course, lies across the [illegible] axis, with the head in one iliac fossa, and the breech in the other. Delivery is impossible while the child remains thus. It becomes absolutely necessary, therefore, that the position of the child should be changed before it can be expelled. In the majority of cases, we are called upon to bring about this change; but in some cases *Nature* herself effects this, without any assistance from our hands. During uterine contractions under favourable circumstances, the abnormal presenting part may go up, and the breech may be substituted, or it may remain so, while the body of the child is doubled up, and so expelled; the breech being the first to be born.

As no such cases appear to be on record in this country, where this occurrence is perhaps more frequent than in Europe, in consequence of the slender and diminutive size of many of the Bengalee children, the case given below, which occurred in the Midwifery Wards of the Medical College Hospital, will be found interesting, as illustrating one method of natural termination of shoulder presentation:—

K[illegible], a Mohamedan woman, aged 20 years, was admitted into the Midwifery Wards of the Medical College Hospital on the 13th of March, 1869, at 8 a.m. She was advanced nearly to the full term of her first pregnancy. Labor pains commenced at 3 p.m. in the afternoon of the previous day (12th March); membranes ruptured at 9 p.m. The pains continued steady, and at 1 a.m. next morning an arm protruded from the vulva. Two native *dhais*, who were attending the case, endeavoured to deliver the child by traction at the arm, but could not succeed. The humerus was fractured at about its middle.

On admission the patient was very restless; pains were coming every 15 minutes or so, but were not strong; pulse 120; fœtal heart's sounds not audible; right arm of the child was hanging out of the vulva; a portion of the umbilical cord was prolapsed with no pulsation in it; the child was in the abdomino-anterior position, with the head towards the right side of the mother; the shoulder was very low down, and so firmly jammed up behind the pubes, that the examining finger could not be made to pass it. Turning was thought necessary, and the obstetric physician of the Hospital was sent for. Unfortunately, I was away from the room for five minutes or so, and on my return after this short interval I found, to my surprise, the child was being expelled, the right arm remaining much in the same position, as when I left her. I hastened to the patient and assisted her as circumstances required, the upper part of the thorax and the head of the child having been expelled while I was by her side.

The child was still-born. Its right arm, shoulder, and the right side of the posterior aspect of the chest, were discoloured, the discoloration extending a little beyond the mesial line towards the left. There was also an ecchymosed mark along the mesial line of the anterior aspect of the neck, about [illegible] inch broad at its widest part; the right humerus was fractured at about its middle, probably during traction by the *dhais* before admission; the neck was curiously elongated.

Weights and measurements of the child.

Weight of the child	...	2lbs. 10[illegible] oz.
" " placenta	...	10 oz.
Length of the child	...	16 inches.
" " cord	...	22 "
Transverse diameter of the shoulders		[illegible] "
" " hips	...	2[illegible] "
Circumference round the shoulders	...	9[illegible] "
" " pelvis	...	6[illegible] "

There was slight uterine pain for two days, after which it disappeared; the uterus was found well contracted, and there was no unusual symptom present. On the 17th of March, 1869 (5th day after delivery), she complained of tenderness in the uterine region: pulse 120; breasts painful. In a few days, however, uterine tenderness disappeared, and breasts became normal, but the pulse and temperature kept up a little higher than usual during the whole time she was in the Hospital.

On the 22nd, she left the Hospital at her own request.

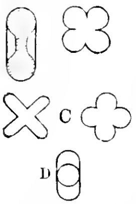
OXALURIA, AND A CASE OF ALBUMINARIA.

By Assistant Surgeon F. W. DeFabeck,

Deolee Irregular Force.

(Extracted from Annual Regimental Report.)

My record of chemical urinary examination supplies me with notes of an observation of the characters of the usually called "dumb-bell" crystals in oxaluria. Examining a specimen of such deposit under the microscope, I observed a large epithelial cast filled with crystals of oxalate, and oxalurate of lime, and portions of uric acid crystals. By carefully manipulating the upper glass, I succeeded in rotating this tube, which thus had all the appearance of a transparent cylinder, with the crystals adhering to its inner surface. The exact shape of the different crystals was thus made distinctly apparent. There is now no doubt on my mind that the oxalurate crystals are in the form of an oval disc, depressed to the centre on both sides, having a longitudinal section as figured at A in the margin, from which they derive the dumb-bell appearance. Some of these crystals are double as at B, and sometimes when seen on edge appear like a perfect cross as at C, whose edge has the appearance shown at D.



This same record furnishes me with details of a case, exhibiting in addition to the ordinary phenomena of albuminaria in a very high degree, others which are sufficiently interesting for description here. The case was that of a relative of one of our sepoys, of which the notes taken at the time of admission are as follows.

Sirdaro, husbandman, aged about 40 years, admitted November 25th, 1868. Complained first three years ago. Attributes his complaint to the carrying of a heavy weight of Kurbee one day in the hot weather. Felt pain in his stomach after this. The swelling in the abdomen and legs is only of about a month's standing. Has felt pain in the loins from the first, gradually increasing in severity. Has noticed nothing particular about his urine, but a slight increase in quantity.

There is no diarrhœa, but rather habitual constipation. Complains much of dyspeptic symptoms, especially of flatulence after eating. No headache. Feels much debilitated.

There is slight tumefaction of the abdomen, and œdema of the legs, from below the knees downwards, sometimes of the hands, and also of the face. Has no appetite and does not sleep well. There is no abnormality in the action of the heart or lungs. The latter act but feebly. The hepatic dulness is removed very much to the right side. The ventral tympanitis extends over epigastric and both hypochondriac regions; Splenic dulness begins in the seventh intercostal space, and is merged in that of fluid accumulation in the abdomen. Hepatic dulness begins in the sixth intercostal space, and is similarly merged below. Pulmonary percussion sound does not extend more than two inches below the inferior angles of the scapulæ. There is a sense of tumefaction in the loins with dull pain. There is also dull pain on pressure in inferior splenic region. There is slight œdema of the abdominal walls, but no complaint of scrotal œdema.

He was for five days under observation, after which period, disgusted, I imagine, at not finding himself cured *instanter*, he returned to his village.

The observations of the urine were as follows:—specific gravity ranging from 1,005 to 1,010. Almost neutral but slightly acid. Very pale, slightly turbid, depositing a little white sediment. Very densely albuminous. The sediment under the microscope exhibited numerous pus-cells in a greater or less degree of disintegration, renal and vesical epithelium, and granular casts, in which small oil globules are numerously distributed. Agitation of the urine with ether proved the presence of much fatty matter. So dense indeed was the stratum of fatty extract thus formed that the tube could be inverted without the fluid escaping. In 100 grains of urine it was found that there were 2 of fatty extract and 2·5 of albumen. On addition of colourless nitric acid to heated urine, the precipitate became grey and the fluid amber colored. On adding nitric acid to cold urine, the fluid gradually assumed a ruddy color in the upper stratum, a purple one in the middle, and a yellow one below. A portion of the sediment becomes green, another yellow, this latter exhibiting a peculiar tenacity to the sides of the glass.

These chromatic phenomena are not produced in the urine filtered after agitation with ether, nor with the filtrate. They are, therefore, due to the action of the nitric acid upon one or other of the chemical components of the fatty matter while in a state of solution.

It is very much to be regretted that opportunities were denied me of pursuing my observations on this case; but it is only one of hundreds which must occur to every practitioner in India, and dishearten him in his practice amongst natives.

SEVERE INJURY TO THE WRIST JOINTS. RECOVERY.

By Surgeon G. K. Poole, M. D.,

18th Bengal Cavalry.

An Afreedie thief was caught by some villagers in the act of house-breaking, and summarily dealt with as follows, and afterwards sent in by the police for treatment in the civil station. The right hand was severed from the forearm just above the wrist joint, apparently by a single blow from a sword. Radius and ulna irregularly cut through and amputation higher up rendered essential, the left wrist joint was opened, the whole of the flexor tendons, with the radial and ulna arteries divided, and the dorsum of the hand drawn back by the extension, so as nearly to touch the forearm.

The right forearm was amputated at its middle third by the circular method, the three arteries were respectively drawn out of their sheaths by Dr. Keiller, R. A., who kindly assisted me, held at a short distance from their cut ends, which were then seized and firmly twisted for some seconds, so that a kind of knot was formed between the portion of the artery held and the end twisted, the proceeding was most effectual in sealing the mouths of the bleeding vessels. The cut surface was then sponged over with a solution of carbolic acid (ʒj to ℥8, the edges brought together with wire sutures, and no dressing whatever applied; the stump was simply placed in a loosely-fitting muslin bag, which was drawn over and tied so as to keep away flies, &c.; in ten days the wound had perfectly healed, and the man has a capital stump.

The wounds of the left hand required careful adjustment, they were first of all sponged out with the carbolic acid solution, the dislocation reduced, the clots removed from the still oozing vessels, which were treated in the same way as before, except that the superficial palmar branch was secured by a needle passed in and below it, and out on to the surface of the skin, and left there for 12 hours.

The edges of the wounds, as there were two distinct sword cuts, one through the palm, and the other through the wrist joint, were brought together with horse hair and wire sutures, and the fingers doubled over a roller, a back splint put on, and lint dipped in blood applied over all. The hand was placed in a muslin bag with a light roller to keep the splint in position, &c. No bleeding took place, and the man made a rapid recovery; in three weeks' time the wounds were all healed up, the splint was removed, and passive motion of the wrist joint enjoined. There is, however, still a good deal of stiffness about the joint, and partial anchylosis, which, is however, diminishing daily. The man has a very fair use of his hand, which would probably have been removed by any one little experienced in the treatment of these sorts of injuries in arteries.

It seems worth while to publish this case, seeing that daily the old plan of silken ligature to arteries, silken sutures to wounds, cold-water dressing, pads, and bandages—are in use in many hospitals, and have some very strong advocates. In this case, the suppurative process never occurred; the man's sufferings were less, and all the offensive discharge (kept up it may be in many cases by sutures) avoided. The above plan of treatment is quite worth trying, especially by those in charge of native patients, and if others will publish the results of their practice under similar circumstances, there will be good evidence in favour of the simple treatment above detailed.

The man in question, I may remark, is now undergoing a sentence of two months' imprisonment on account of his thieving propensities, and is quietly at work in the Peshawar Jail, with a strap round one shoulder, drawing water from the jail well.

The Indian Medical Gazette.

Acknowledgements.

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A[illegible] C. M. [illegible]
C[illegible] C. M. [illegible]
S[illegible] M[illegible]
I[illegible] Medical Times [illegible] Gazette.
Medical Press and Circular.
[illegible]

Notices to Correspondents.

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C[illegible]

Dr. Farquhar.
A Justice Seeker again.
S[illegible] S. C. Chatte[illegible], Az[illegible]
An E[illegible] S[illegible]
Dr. T. D. O. Partridge, C. S., B[illegible]
Dr. Fayrer, C. S. I.
S[illegible] M[illegible] H. Baillie, P[illegible]
S[illegible] W. J. Moore, R[illegible] Agency.
Assistant Surgeon Mathew, Civil, F[illegible]
S[illegible] J. B. Scriven, Principal, Lahore Medical School.
S[illegible] J. Ince, Civil, M[illegible]
Sub-Assistant Surgeon Amrend Chunder Mookerjee, Sh[illegible]
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Assistant Surgeon B. Evers, 18th N[illegible]

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"You have [illegible] on the path, not [illegible] Among [illegible] which have preceded you in it, and in [illegible] particular department, [illegible] brightest ornaments of [illegible] and I [illegible] who would not [illegible] the reputation of Harvey or the Hunters [illegible] that [illegible] in which [illegible]."—Sir Benjamin Brodie.

In the Press.

A TREATISE ON ASIATIC CHOLERA.

BY

C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

Messrs. Wyman & Co., Hare Street, Calcutta, will be glad to receive early orders for this work, so as to enable them to procure copies from England, immediately on the issue of the Book from the Press.

PROFESSOR SYME.

Dr. Fayrer has received the following reply to the letter printed in our number of the 1st June, for communication to the Professor's pupils in India.

To

My Old Pupils in India.

Gentlemen,—The remarkable expression of good feeling cherished for so long a period and in such a distant region which you have had the kindness to send is in the highest degree gratifying to me, and I beg to assure you that the sentiments expressed are fully reciprocated on my part. You will be glad to hear that my health is now nearly quite restored, so that I may perhaps still be able to do something for maintaining the honour of the profession and diffusing sound surgical principles.

With sincere thanks and best wishes,

I remain,
Millbank House, Edinburgh, 25th June, 1869. Very truly yours ever,
(Sd.) James Syme.

DR. JOHN MURRAY ON CHOLERA.*

(Communicated.)

The Governor-General in Council has caused the thanks of the Government of India to be conveyed to the author of this treatise on cholera in the following terms:—"I am to request that you will convey to Dr. Murray the thanks of the Government of India for his able paper, and for the zeal with which he has undertaken the collection and analysis of the opinion of the medical profession in India; and devoted his time, attention, ability, and protracted experience to the laborious consideration of a question of such momentous importance to the well-being of all the inhabitants of India, native as well as British. * * * * The Governor-General in Council does not venture to pronounce on the degree of weight and authority which should be attached to it; but, as a careful analysis by a professional man of Dr. Murray's special experience and long study of the disease, the Governor-General in Council is satisfied that its promulgation cannot fail to stimulate all those whose duties call them to combat cholera to an earnest study of its nature and treatment."

Such are the words the Government of India addresses to its oldest medical servant, now the head of the Bengal Medical Department—a fitting position for a man who, throughout his service, has brought zeal, energy, and talent to bear in every walk of his profession. To him only and solely are we indebted for the present decrease in the mortality of cholera, his theory of moving troops from their barracks when attacked with cholera having proved so successful; to him we owe a much more extended knowledge of the propriety of opening abscesses of the liver—a practice first introduced by his uncle, for many years the head of the British Medical Department in Madras; to him Agra owes its medical school, and the introduction of a ventilating apparatus into its jail—still the only rooms in Bengal where a constant current of fresh air can be maintained; and in his long tenure of the post of Civil Surgeon there, he earned the friendship of many of the neighbouring chiefs, whose sons and descendants to this day keep up communication with him.

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* Note the very able review of this work at page 171.—Ed., *I. M. G.*

To end his services with what perhaps we might have commenced. Let us note him as a military officer nearer the commencement of his career.

After the battle of Alliwal, on the 30th January, 1846, in which those who were present can well remember the apparently hopeless state of confusion the army was in, he reduced *his* department to order, and earned this notice from Sir Harry Smith in his despatch written in the field:—

"Owing to the judicious arrangements of Dr. Murray, field-surgeon, every wounded officer and soldier was placed under cover and provided for soon after dark; and for the zeal displayed by this able and persevering medical officer, and to the several regimental surgeons, are the wounded and our country deeply indebted."

If ever officer earned a C.B. for service before the enemy, John Murray was the man; but C.B.'s were not then granted to medical officers. His services then and since would now warrant a higher title, and we still hope that Government will not forget to reward its honest servant, and labourer in war and peace, of 36 years' standing, by a more honourable and lasting token than mere thanks.

ENGLISH TRAINING FOR NATIVE DOCTORS.

We do not think Professors of medical colleges and schools are generally amenable to advice from the outside world, but we would like to put forward this subject for their consideration, and our columns would be gladly open for its correction, if the plan is not practicable.

We would suggest to them to institute an English Class for the teaching of native doctors (hospital assistants as they will eventually be called), so that whent hey pass into the service of Government, they will not only reap advantages themselves in the increased pay for the accomplishment, but they will be much more useful servants to the State, and to their immediate masters.

At Calcutta, the students in the Military Class of the Medical College have advantages that do not exist elsewhere. They can attend an English school in some of their spare hours, and many of them do so; but the greater number either learn English of their own accord before entering the college, or acquire it after passing their examination. The recent substantial advantages for the acquirement of such knowledge will, no doubt, spur the young hands; and in future we expect very few men of this class will pass into the service from Calcutta without having a fair smattering of the language.

At Agra and Lahore it is different. English is not learned there with the ease and cheapness that it is in Calcutta; at these schools particularly, therefore, we should like to see English introduced in the curriculum of the studies, and enforce passing an examination in it, as a part test of their ability and training before entering the service.

At both these schools, which are still under the old system, and pupils have to pass three years in study, young men enter the school fairly educated and with the acquired art of having learnt something. They are obliged to undergo an examination, and to prove that they are able to read Oordoo fluently, and to write it from dictation; also to be well acquainted with the first four rules of arithmetic—Addition, Subtraction, Multiplication, Division—before they are admitted into the school at all. To give them all an hour a day, during their school course, for the study of English, would not be a hard burden on them, and the result would be well worthy of the labor.

The teaching might be done very cheaply. There are well-educated men turned out of the first or English Class at each school, who would gladly become masters in that language, for a small emolument.

In future years more time could be spared for this branch of education, perhaps, than at present. There is every probability of the education at these schools being brought under the new system, which lays down that native medical pupils are called so on passing a preliminary examination; that they are then to be attached for two years to a regimental hospital or civil dispensary; and then they are to attend a college and school for two years, from whence they emerge as hospital assistants, after passing the required examination. Pupils will thus come to the schools in future somewhat trained in the rudiments of their future profession, and would be able to give more time to the acquirement of language and to their improvement in it, should they have been studying it previously.

The advantages of the education to these lads need hardly be dwelt on; but it may be as well to show the material boon Government holds out to them as an inducement to learn.

During their course of four years' education, those who possess a certain knowledge of English receive two rupees a month more than the others, while on entering the service an English scholar draws five rupees higher for his first seven years, ten rupees more for his second, and at fourteen years' service and over, the rate is fifteen rupees more than his less educated or useful compeer.

THE MEDICAL SERVICE AND THE NEW FURLOUGH RULES.*

We observe, with much regret, that the new Furlough Rules have been again unfavorably modified with reference to the Medical Service.

Only a short time ago, the medical charge of a regiment was ruled to be not an appointment, and therefore not to be retained by a regimental officer proceeding on furlough. We now learn that the Governor-General in Council, having considered the views expressed by the several local governments and administrations, is of opinion that a medical officer in charge of a civil station should, when proceeding on furlough, retain a lien on some similar appointment, *i. e.*, the charge of a civil station of the same class, or some other civil charge of equal emoluments; but that he should not, as a general rule, have any claim to re-appointment to the same station.

One of the great boons of the new Furlough Regulations was the security apparently given to holders of staff appointments and regimental charges. Under the old rules, when a period of six months' absence involved the forfeiture of appointment, men hesitated to take furlough unless compelled to do so by sickness. The holder of the medical charge of a regiment was unwilling to separate himself from his old corps, or to run the risk of finding himself on return to India condemned to remain for weeks or months on unemployed pay. The Civil Surgeon attached to his varied work, his pet hospital, or his opportunities of emolument, would not leave his appointment, knowing that once

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* There is another side to the question; we should like to hear what would be said by a man who did *not* hold a snug appointment.—Ed. *I. M. G.*

[illegible] him for ever. [illegible] new Furlough [illegible] other [illegible] themselves, [illegible] Royal Horse [illegible] the [illegible] Indian [illegible] by post [illegible] immediate [illegible] illness [illegible] appears that they [illegible] appointment.

A [illegible] the manner in which the new Furlough Rules [illegible] with [illegible] medical [illegible] there [illegible].

We [illegible] the action [illegible] in this matter by the Governor-General in Council. [illegible] criticise or [illegible] of the head of the Government, but [illegible] general [illegible] of the Medical Service [illegible] within its ranks, [illegible] that feeling of distrust which has so long [illegible] among medical students, and has [illegible] many good [illegible] entering the Medical Service of Government.

We observe that the English medical journals have taken up the subject.

The *Lancet* of the 24th of April last has a leading article on the hardship entailed on regimental medical officers by their being excluded from participation in the privileges granted by the new Furlough Rules, and from this, in a subsequent number, brings a recital of all the wrongs the Indian Medical Service has endured, and the disadvantages it is now supposed to labour under.

The effect of such articles cannot be otherwise than discouraging to those who should recruit our ranks, and disastrous to the future prospects of the service.

We fail to see any reason for special modifications of the new Furlough Rules in their application to the Medical Service. The advantages conferred by them were given to the army, of which the service forms part and parcel. We cannot see how it can be maintained that the medical charge of a regiment is not an appointment, or the justice of obliging a medical officer taking furlough to forfeit his post, while a military officer, in like circumstances, retains his command.

That it should have been thought wise to deprive a civil medical officer proceeding on furlough of his appointment is a puzzle to us. There seem to us to be many and obvious reasons for thinking that such appointments should be permanent, and we believe that had the head of the Medical Department been consulted, a different decision would have been arrived at. We do not, however, care to pursue the subject in this [illegible]. The point on which we wish to lay all stress is, that the benefit conferred on the army at large has been, by a kind of special legislation, explained away, so as to become valueless to the medical branch of the service. We [illegible] on his return from furlough [illegible] have a [illegible] appointment similar in value to that which he has [illegible]. He [illegible] appointment [illegible] value vacant [illegible]. Surely the [illegible] which [illegible] relinquished his appointment to take [illegible] would have been under the [illegible] might always look forward to the appointment [illegible].

THE DRAINAGE AND CONSERVANCY OF CALCUTTA

The Sanitary Commissioner for Bengal has published a very complete sketch of the above subject, and we have no hesitation in saying that it is the most useful and practical report that has yet issued from his pen. He has embodied the whole history of the rise and progress of Calcutta conservancy from the earliest to the present time, and, having thoroughly investigated the scheme now in progress, honestly gives his adhesion to it; he has evidently, however, been convinced against his will, and he tenderly lingers over what might have been done with the "Dry-earth System"—the present fashion of the day with his masters—if the same amount of money had been spent on it.

From our own knowledge of the subject, and with Dr. Smith's guidance and assistance, we will shortly tell the tale of the Calcutta Drainage, and what is to be expected from its completion.

In 1855, Mr. Clark, the Civil Engineer who drained the town of Hull, pitted his English experience against Indian theory, and worked out a complete scheme for the drainage and sewerage of Calcutta. He was officially appointed to carry out his ideas in June, 1857, by the Government of Bengal; and although he has had much opposition to contend with, there is no doubt but that his scientific experience will prove successful.

"The system is throughout one of under-ground covered drainage, extended to the whole extent of the town. Five deep receiving sewers will extend from W. to E. in converging lines from the river to the direction of the Circular Road. Every portion of the entire area of the town will be within 1,000 feet of one of these sewers. With them will communicate the secondary sewers throughout the city, and continuous with these again will be the whole system of minor collateral and capillary sewers."

The whole drainage thus arriving at one spot will be conveyed by one large under-ground sewer to sump pits, "whence, during the dry weather, it will be pumped up eleven feet by steam power (in the wet season this lift will be reduced to 0 (zero), when the floods will pass off by the gates through the canal) into a high-level covered sewer 8,100 feet long, extending to the western border of the Salt Lake, where the outfall of the system is to be found. The outfall will be a constant one, the level of the Salt Lake being from 10 to 17 feet below that of the surface of Calcutta, [illegible] the fall is 14 feet in a distance of 4 miles."

The future water supply of Calcutta is intended to be subservient to the flushing of these sewers, and forms part of the whole plan; we almost wonder Dr. Smith did not give more extended notice to the undertaking, which is now so near completion. To Mr. Clark belongs the credit of the original design, which has subsequently been carried out by Mr. Smith, who is now superintending the work.

The main features of the water supply are these:—

The water is taken from Palta Ghât, about two miles above Barrackpore or eighteen from Calcutta. Here the river water is comparatively pure, the filth poured into the Hooghly at Calcutta is not carried so far up by the tide, and the brackish water generally present in the lower parts of its course is here absent. At this point the water is pumped up into reservoirs, where it remains till the muddy particles have subsided; it is then passed through filter beds, and conducted by a 42″ cast-iron pipe to Calcutta, where it will be received in reservoirs, and be pumped up from thence under a pressure sufficient to command the top floors of the highest house in the city, passing to every part through iron pipes.

Not only is an efficient water supply thus provided for the dwellings in Calcutta, but the public tanks will be kept filled with clean water, smaller tanks and drinking fountains will be everywhere in use, and street watering will be accomplished by hydrants inserted in the water pipes at distances of 150 yards; the overflow from all of which will assist in flushing the sewers.

One of the most important results of Mr. Clark's engineering will be that Calcutta will have its sub-soil water carried away; and it will then be the only city in India to which "sub-soil drainage" has been applied. It has been stated that, if a hole is dug in any part of the town, it will speedily fill with water drained from the neighbouring soil, and will so remain until the dry season evaporates a large portion of the moisture, and allows another part to soak away, through a sub-soil more or less porous, to the natural drainage of the country.

If the foundations of a house, for instance, be laid in trenches cut in the soil, similar in depth to the hole alluded to, it is evident that during the wet season they will stand in water. Absorption takes place, damp rises to the floors and up the walls, and it becomes an unhealthy habitation; in England this state of things would be obivated by a few pottery tubes laid a little deeper than the foundations, and carried on to drain into some channel with fall enough to receive it. The same will now take place in Calcutta; the sewers will be laid at sufficient depth from the surface for the entire carrying out of the sub-soil drainage of the ground.

We look upon this as quite an era in the history of Calcutta, nay of India; for the experience gained here in a place presenting the greatest difficulties, and yet certainly requiring it most, must have an important bearing on the public health of the country.

For the last few years scientific enquiry has been directed to the investigation of the bearing of sub-soil damp in relation to disease. There are many towns in England—Salisbury for instance—where the mortality has been reduced by 25 to 40 per cent. by attention paid to sub-soil drainage.[*]

To Calcutta, in the future, it will be a most interesting question. Professor Pettenkoffer, the Professor of Hygiene at Munich, whose theory at present is that the infecting matter of cholera is not a product of the human intestines, but of the soil, formed his opinion from his observations during an epidemic at Munich, by noting that the situation of houses on a porous and undrained soil ensured a greatly increased rapidity and energy in diffusion of the disease. This is quite the question of the day now in England, and in no city could its truth be more effectively demonstrated than in Calcutta, "the hot-bed of the disease."

Professor Pettenkoffer convinced himself by ample evidence that the penetration of the soil by the discharges of cholera patients was the first essential link in the chain of propagation, and the coincidence of this part of his theory with Snow's affords a strong support to it. The Bavarian Professor considers, however, that the further stage is not the defilement of the drinking water, but in the formation of a miasmatic vapour from the decomposing matter, which vapour conveys the poison by inhalation to the lungs of the inhabitants of the houses.

The question of sub-soil drainage, as applied to India, is a very large one; generally speaking, the most unhealthy stations of the army in the Bengal Presidency are those that stand upon a retentive and undrained sub-soil. Enough has been said, however, to show the importance of the subject, and to glance at the relation damp and undrained ground may bear to disease.[*]

The drainage thus having been satisfactorily accomplished, the sewerage has to be considered. It is intended that all the house and street sewage should be carried off by channels of proper size and levels. These will all be so flushed that the much dreaded evolution of sewer gas cannot take place, from there being nothing left in the sewers to generate it. The present works will allow 12 millions of gallons of water, and in addition a ¼ inch per hour of rain-fall to be passed daily through the sewers, and there are only about a dozen days in the year when the tide of the Hooghly cannot assist.

The only apparent chance of failure in the whole scheme is deterioration of material. It has been said that the brick work of these sewers will be influenced by the soft, or quick, sand through which they pass, and that they may break their back from not resting on any firm foundation; that the action of the contents of the sewers has in India a very corroding effect; that rats will be very destructive, &c., &c.; but there is no reason to suppose that the practical experience gained in England, under *the same conditions*, will be at fault here. If anything, the bricks and masonry work is superior to that of England, and the talent is identical; and supposing even the worst that could happen, *viz.*, that a fracture took place, there would be no escape of sewage, because in such localities the sub-soil is always saturated with water, the head of which must be above the sewage head, consequently the stream would be inwards of water, not outwards of sewage.

At present there is no sign of deterioration or failure throughout the whole length of the sewers, and sufficient time has elapsed to test many of the contingencies feared.

The ultimate disposal of the sewage must be glanced at; there are two plans proposed,—1st, by reclamation of part of the area of the Salt Lake, which Dr. Smith urges should be begun at once; 2ndly, by conveying it still further off, and discharging it into tidal creeks, far from the dwellings of man, whence it will be eventually carried out to sea by other and numerous channels, care being taken that the channels should not silt up, and that there could be no sanitary evils inflicted on the neighbouring country.

The Sanitary Commissioner concludes by proposing a scheme for altering the present sewage system of Calcutta.

There is doubtless much in the present system most offensive and hurtful. For instance, the night-soil carts, in passing

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[*] Mr. Clark was consulted on the drainage of this very town by the Engineer employed on the works.

[*] Arrangements are now in progress to test the level of sub-soil water, daily, for a year, throughout all the stations of the Bengal Presidency.

through the streets cause a most dangerous nuisance; they have no springs, the lids of the tubs are loose, and the contents pollute the streets; in fact, they are so constructed as to cause the greatest possible nuisance and danger to health in their passage to the river.

Colonel Hyde, R.E., has favored us with a paper on this subject, which we gladly quote from. He remarks, that night-soil can be conveyed through the town without practically creating a nuisance, is evident from European practice, and looking nearer home, at the practice in Fort William, or in any barrack square where proper precautions are taken, and the Conservancy Department properly supervised.

Night-soil carts are common in England, and a very little thought and intelligence is required to produce a good efficient, air-tight cart for Calcutta. The cart should be of iron, what is called a tumbling cart—*i.e.*, the body is made to turn and can be inverted on the axle, so as thoroughly to empty its contents. It should be on springs, that its contents might be disturbed as little as possible in transit; its shape should be the frustrum of a cone, the lid should be screwed down, and furnished also with an air-tight apparatus. In fact there is no cause why the present nuisance should continue, except the want of attention on the part of the authorities.

While, however, we should like to see more care taken with the present arrangements for the disposal of the sewage, which, bad as they are, are a great improvement to the means employed formerly, yet we would not care to see any expenditure incurred for any radical change. The main scheme, now so nearly completed, is so grand in conception and character, and will be eventually such a credit to the City, that we would rather see all its science, money, and labor put to complete it efficiently, than be turned aside for any temporary project.

CAPTAIN JENNINGS' PUNKAH-PULLING MACHINE.

The Government of Madras are according its support to this invention, and if it proves successful, they will, indeed, deserve the gratitude of all India. At present, however, the Government sees no reason to think that the difficulties which prevent the successful working of full-sized punkahs, at a suitable velocity, by means of machinery moved by a descending weight, have been overcome by Captain Jennings, "but, recognizing considerable merit in the mechanical arrangements proposed by that officer, His Excellency the Governor in Council sanctions an experiment being made at the public works workshop at Chepauk, to test Captain Jenning's invention as applied to a full-sized punkah." We hope in our next number to be able to give a sketch of the invention and the result of this trial.

LAHORE MEDICAL SCHOOL.

We have been lately favored with a copy of the annual report of this institution for the past official year, but want of space prevents our giving more than a passing glance at its contents at present. In a future issue we hope to deal more fully with the subject. We have watched for some time the working and progress of the Lahore Medical School, and desire now to state that, although there is, doubtless, much to be said in its praise, there is likewise much to compel us to receive with caution the partial report now before us. Dr. Scriven, the principal, describes the progress of the school as steady, though in the face of considerable difficulties; and he is entitled to considerable praise for the energy which has enabled him to maintain the existence of the institution at all hazards. The Lahore Medical School was established for the purpose of giving to natives of the Punjab a medical education equal to that which can be obtained in Calcutta, Madras, or Bombay; but, with the present educational staff, such a result is impossible. We think also that, by a more judicious distribution of the very liberal amount of money allowed by Government for the support of this institution, the former efficiency of the educational staff need not have suffered, and that the success which is so largely dwelt on in the present report is almost entirely due to the efforts of former years, when the educational staff was in a more efficient state to command it.

Irish Correspondence.

Dublin, June 12th, 1869.

So many Irish names now grace the lists of both the British and the Indian Medical Departments in the Bengal Army List, that I am tempted to send you occasionally a little medical news from the capital of the Green Island, in hopes of its proving of interest to many of your readers. No fitter opportunity for commencing the practice could be found than the present, when the great event of the year, *quoad* the Irish College of Surgeons, has just taken place. On Monday last (June 7th), being the day appointed in the charter, the election of office bearers for the ensuing year took place at the Royal College of Surgeons in Ireland. There was a goodly gathering of Fellows from all parts of the country, and the number of votes recorded was 137, which is, I believe, considerably above the average of late years. Mr. Rawdon Macnamara was unanimously elected president; and Messrs. A. J. Walsh and William Colles were chosen respectively to fill the posts of vice-president and secretary. Of the existing Council but one was not re-elected; and in addition to the gentleman chosen in his stead, two others were elected to fill the vacancies caused by the lamented death of Dr. T. L. Mackesy, and the resignation of Dr. S. G. Wilmot. The three new names thus added to the Council are those of Messrs. George H. Porter (ex-president), Edward Hamilton, and Edward J. Quinan.

Advantage was, as usual, taken of the great influx of country practitioners on this day to hold the annual meetings of the Royal Medical Benevolent Fund Society of Ireland, and of the Irish Medical Association. The accounts of the former excellent society shew a sum of £13,250 in the funds, the interest of which is applied to the relief of distressed medical men and their families. In addition to numerous branches throughout Ireland, this society possesses a flourishing tributary in the Bombay Presidency, and the formation of another is contemplated in Madras. Why should Bengal, the largest, and, in some respects, the richest of the three presidencies, be the last to take so desirable a step? One of the speakers, at the meeting on Monday, suggested that there would be few better ways of doing honour to any deceased member of the medical profession in Ireland than by contributions to the Medical Benevolent Fund. I should say that, among the many ornaments of our profession of whom Bengal can boast, there is not one who would not prefer having his name associated with a branch of the Medical Benevolent Fund Society, to any of the more usual ways of perpetuating his memory. The clergy of the diocese of Calcutta, who have their Bishop Wilson's Memorial Fund, set a good example to us in this respect. Lest any of your readers should console themselves with the notion that the interest of £13,250 must be more than enough to satisfy all the claims on the bounty of the fund, I may state that one of the managers declared on Monday that the assigning of relief to applicants was one of the most painful duties which devolved upon him, so utterly insufficient were the resources of the fund to meet the demands upon it.

At the annual meeting of the Irish Medical Association, which was held in the "Albert Hall" of the College of Surgeons, at an earlier period of the day, Dr. James Martin of Portlaw and Company, Waterford, was installed as president, and the

Council and vice-presidents for the ensuing year appointed. The report of the Council was adopted, and resolutions were carried in favour of an increase of salary and a superannuation allowance for medical officers of dispensaries. Dr. Morrough of the Madras Army proposed, and Dr Nugent seconded, the following resolution, which was carried unanimously:—"That we most respectfully press on the authorities the propriety of adopting in the Queen's service the same rule of promotion after 12 years' service as has been adopted in the Indian Medical Service." The members of the association dined the same evening at the exhibition building. Dr. Martin, the president of the association, being unavoidably absent, the chair was occupied by his predecessor in that office, Dr. Rawdon Macnamara. A very agreeable evening was spent by all present.

An unfortunate case of poisoning by cyanide of potassium occurred here on the 5th. The subject of it, a gentleman well known in Dublin, and brother of a distinguished medical practitioner recently dead, took a dose of a mixture supposed to contain carbonate of ammonia, complained of a choking sensation in the throat, and died in twenty minutes. At the inquest it was ascertained that the store-keeper of a very respectable firm, at whose shop the mixture was compounded, had filled a bottle labelled "carbonate of ammonia" which was used on this occasion by the dispenser, with cyanide of potassium!

A good deal of excitement has been caused in medical circles here by the discussion as to the effects of lying-in hospitals, on the production of puerperal fever, which has been going on for the last two months at the Dublin Obstetrical Society. At the meeting of this society, on the 13th March, Dr. Evory Kennedy began to read an elaborate paper on this subject, which occupied the entire of that meeting, and of the following one on the 10th April. His views were contained in the following 13 propositions:—(1 Puerperal metria is due to absorbtion of poison by the parturient female (2) Any parturient female may generate this poison, which may, under favourable circumstances, be absorbed by the generator, or by any other parturient woman. (3) The generation and absorbtion of this poison are in direct proportion to the number of women lying in together, or breathing the same atmosphere while lying in. (4) This disease find its *habitat* in lying-in hospitals, in which it appears and re-appears at uncertain intervals. (5) Its appearance in lying-in hospital is often traceable to the occurrence of other zymotic diseases, or to a bad state of the hospital, in which, for some time before it breaks out, the labours are succeeded by bad recoveries. (6) It is contagious, following the steps of certain practitioners, and not those of others in the same locality. (7) It is epidemic, confined to certain localities. (8) It is confined not only to certain hospitals, but to certain wards of those hospitals. On the other hand, (9) zymotic metria is comparatively rare among women delivered in their own houses; or, (10) in small hospitals or cottages containing only one or two beds. (11 Hence the conclusion that large lying-in hospitals cause numerous deaths from metria, which would not occur were parturient women treated separately. 12) But the advantages, without the dangers of large hospitals, might be secured by groups of detached cottages, each containing not more than two beds. 13) The mortality among lying in women would be greatly reduced by an alteration in the construction of our lying-in hospitals. Dr. Kennedy supported these propositions by a formidable array of figures, derived from the returns of the Rotunda and Coombe Hospitals of Dublin, and other lying-in hospitals in Great Britain and on the Continent, and contrasted the death-rate of these with that of the "cottage hospitals' for parturient women at Limerick, Waterford, and New Ross. He recommended that the Rotunda Hospital should be closed to parturient cases, and devoted altogether to the treatment of diseases of women; and that round the garden (Rutland Square) to the north of it a number of separate pavilions should be erected, each to contain only two beds, for the reception of lying-in women.

In a city which boasts of the oldest and finest lying-in hospital in the three kingdoms, and where extensive additions are being made to a second hospital of the kind (that in the Coombe), these revolutionary doctrines, coming from an ex-master of the former institution, and one of the leading obstetricians of the day, attracted general attention; the more so as, it followed out, they apply equally to *all* large hospitals. The discussion of Dr. Kennedy's paper was adjourned till the next meeting of the society, on the 8th May, and has been continued every Saturday night since. I believe, that the debate is now concluded, except for Dr Kennedy's reply (or defence, as one might almost call it), which is to be read hereafter. As yet all the speakers, with one exception, have been on the conservative side, but what the general verdict of the society will be remains to be seen. Dr. Churchill, Dr. Beatty, and especially Dr. M'Clintock, advocated the cause of large hospitals most ably; on the other hand, many of the speakers damaged the cause which they meant to serve by the feeble arguments which they used (such as that metria *must* be more common among women delivered in the squalid purlieus of Dublin, than among the patients in the magnificent well-ventilated wards of the Rotunda, a complete *petitio principii*), or by adopting a jocular (not to say scurrilous) tone towards Dr. Kennedy. Both parties, it seemed to me, were too fond of bringing up statistics as infallible arguments on their own side, and at the same time meeting those quoted on the opposite side with the old assertion that "figures can be made to prove anything one pleases." The conservatives as yet have the best of it in point of numbers, as is always the case when reforms or revolutions are first mooted; but it is certainly remarkable that the leaders of the anti-hospital movement should be two men of such high repute and such well-secured eminence in their profession as Sir James Simpson and Evory Kennedy.

On the 3rd, a full length statue of Sir Dominic J. Corrigan, in his robes as president, was unveiled in the new hall of the College of Physicians. This hall, with its portraits of the various presidents, the marble statues of Marsh and Corrigan, and the stained glass window presented by the latter during his period of presidentship, is now one of the handsomest in Dublin, and is worthy of the ancient corporation who have erected it. At the meeting of the Medical Society, held in this hall on the evening of the 19th May, Mr. Tufnell read an interesting case of death from diffuse inflammation, and typhoid pneumonia, following the rupture of a guinea-worm, the broken end of which had retracted within the tissues. The patient was a gentleman who had recently returned from India. Mr. Tufnell, on this occasion, referred to the plan described in the *Indian Medical Gazette* for January, 1868, of hastening the extrusion of the worm by the application of carbolic acid, and exhibited a worm which had been removed in this way in *two hours*, and which he had received from a medical officer on furlough from India. As this plan is not perhaps as generally known as it deserves, he took the opportunity of calling attention to it, and read at length the case detailed by J. N at page 7 of your third volume.

I have just heard that the meeting of the Obstetrical Society fixed for this evening, at which Dr. Evory Kennedy was to have replied to his opponents, has been postponed, so I will detain this no longer.

Golandaz.

Review.

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Report on the treatment of Epidemic Cholera. By Dr. John Murray, Inspector-General of Hospitals, Bengal Medical Department.

In order that we may dislodge an enemy it will hardly suffice simply to take a general survey of his position, but it is necessary to attack every point that he occupies. A single battle crowned with victory may weaken him, and expose his entrenchments, but to secure permanent success and complete conquest, every advantage must be followed up, until no doubt as to its issue remains. It is upon principles such as these that the author of the report now before us has, for many years past, been doing battle with one of man's most deadly enemies—Asiatic Cholera. Dr. John Murray is not one of those individuals who are content simply to examine into the circumstances of this horrible disease, and then stand paralysed and aghast at its magnitude and malignancy, on the other hand, since 1831, when he first encountered cholera in Paris, he has made constant endeavours to attack the most assailable points of this destroyer of men, and his endeavours have been crowned with no small success. Dr. Murray, early in his career, seems to have realized the fact that in cholera he had no phantom to contend with, but that whatever the active principle of the disease consisted in, it was something real and tangible,—no earth or heaven born influence which man could only hope to study in its deadly effects on his fellow-creatures; he believed that, like small-pox and other similar diseases, the cholera-producing matter was, without doubt, something that could be transmitted, and is therefore communicable from man to man, or, as he remarks, it "spreads and multiplies. It is reproduced, but whether vegetable or animal it ascertain." Dr. Murray applied these principles with benefit to the circumstances of the prisoners in the Agra Jail in 1856, and although his views at that time were considered by many hypothetical, and, if not unorthodox, certainly contrary to the opinions held by most authorities in this country, he nevertheless adhered to his views, and, in state of discouragement and opposition, has seen them at last admitted as true by almost all the members of the Indian Medical Service. This change of opinion is doubtless very much due to the decision arrived at by the International Sanitary Conference of Constantinople held in 1866, and to the influence of Mr. Simon, Dr. Farr, and other English authorities; but this fact does not, in our opinion, detract from the merit due to Dr. Murray of having advanced ideas on these matters some fifteen years ago, which are now, because undoubtedly true, admitted by most of the medical officers practising in this country. We shall look forward with no small interest to the action taken by Dr. Murray as Inspector-General of the Indian Medical Service in this presidency, with regard to preventive treatment of the disease in its endemic area. The Constantinople Conference, and more lately the Registrar-General of England, have stated their belief that the matter may safely be left in the hands of the Indian Government; but we fail to notice as yet the slightest evidence of any response to this call on the part of our rulers.

The nature of the active principle of cholera, or even its mode of action on the human body, are but briefly referred to by Dr. Murray: he evidently inclines to the theory which attributes the symptoms of cholera to the effect of the poison on the sympathetic system, inducing diminished action or total paralysis of these nerves according to the intensity of the poison. This seems to us rather a dangerous doctrine to inculcate, because we know so little as yet of the action of the sympathetic system in health, that we can hardly, with safety, speculate on the effects of the loss of its influence in disease. And yet the matter is of great practical importance, as we cannot hope to arrive at correct ideas as to the treatment of cholera until we can comprehend its pathology.

Admitting the existence of a poison as the cause of cholera, there are two theories at present which divide men's minds as to its *modus operandi*, the one party, led by Dr Johnson, and having an able advocate in this country in Dr. Cannon of Lucknow, hold that the cholera matter entering the blood acts as an irritant poison, affecting the nerves, and through them the coats of the smaller arteries of the lungs, obstructing the circulation of fluid through these organs, and thus the blood receives less oxygen than in health; this deficiency of oxygen in the circulating fluids leading to the symptoms of the algide stage of cholera. The other party maintain that in consequence of the alvine flux the blood loses its serum, the corpuscles their water of composition, and becoming dehydrated they can no longer fulfil their office as carriers of oxygen; the *vis a fronte* of the capillaries is destroyed, and hence algide symptoms are induced. These theories differ essentially as to the remote cause of collapse of cholera, but they merge very closely towards one another, and probably to the truth, in that they recognise the want of oxygen in the circulating fluids as the chief factor in the production of the collapse of cholera. We will not attempt to determine which of these theories is correct, but we may confidentially state that a number of the leading men in Europe dissent to the proposition of any blood poisoning at all in cholera. They believe the action of the poison or principle of cholera is limited to the destruction of the epithelium of the intestinal canal, giving rise to the alvine flux or drain of serum from the blood, which, in its turn, induces the consequences above noticed. Dr Murray, however, avoids all speculations of this kind, and expressly affirms that "the object of the investigation is to discover what facilitates its dissemination (the germ of cholera) and increases its reproductive power, and what practical means have proved useful to enable the human body to avoid or resist the action of the poison, and remedy its injurious effects."

In addressing himself to the solution of this most important problem Dr Murray considers his subject under three headings:—1st, the sanitary; 2nd, the precautionary measures; and lastly, the treatment of the disease.

With regard to sanitary conditions he very justly remarks that, however bad these may be, they cannot induce cholera *per se*, the germs of the disease must be *imported* into a locality before its effects can be manifested among its inhabitants. There is no such thing as self-generated Asiatic cholera. But when once the germs have been imported into a locality, it will spread among the inhabitants in proportion to defects in the purity of the air they breathe, the water they consume, and the food they eat; "bad conservancy and all sanitary defects, which act prejudicially on the general health, predispose to the action of the cholera poison." "The human body appears to be the chief medium of reproduction or multiplication and dissemination of the poison."

Our author thinks there can be no reasonable doubt as to the power which drinking water exercises in the extension of the disease. It also spreads in or near drains or sewers. "Contact with the excretions from cholera patients or with articles of clothing" may induce an attack of cholera. The poison may also, Dr Murray thinks, be inhaled into the lungs, and so enter the blood; this is particularly the case in ill-ventilated rooms occupied by cholera patients. He says the period of the incubation of cholera "in general is an interval of 12 or 24 hours after imbibing the poison, before active symptoms appear. Two days are not generally exceeded; but it is sometimes four days before the disease shows active signs." This is a most important axiom; and coming from a man of Dr. Murray's shrewdness and long experience it is of peculiar value, bearing as it does directly upon the circumstances of quarantine in relation to cholera.

We entirely concur with the other remarks above quoted from this report, but wish that Dr. Murray had become more definite with regard to the matter of contact. Does he or does he not consider that the act of touching moist or dry cholera evacuations may induce an attack of cholera? From the text we are left in doubt on this matter, and hope that in any re-publication of this report, Dr. Murray will explain his views more fully on this point.

With regard to the preventive treatment of cholera, our author bases all such measures, distinctly and clearly, on the fact that the disease depends on a specific germ, and therefore our main endeavours must be directed towards "destroying, isolating, or excluding the generating source" of the disease; consequently he advocates quarantine regulated by the circumstances of the case, and still more by the dictates of common sense. He insists strongly on the necessity for having special hospitals for cholera patients, thereby confirming the opinion formed on this subject by the Epidemiological Society; Sir T. Watson and other distinguished men protesting like Dr. Murray against the admission of cholera patients into our General Hospitals. He justly observes that "perfect isolation of the sick is impossible; but that should indicate the course to be followed."

Our author has naturally, from the opinions he holds on the communicability of cholera, been a strong advocate for the removal of infected troops from cantonments into cholera camps, and, from the valuable tables appended to his report, we learn that "the admissions in 20 stations attacked in the three epidemics of 1856-60-61 amounted to 127·17 per mille, while in the three epidemics of 1862-63-67, in 31 stations it only amounted to 47·34 per mille." Dr. Murray attributes this vast improvement in the health of the troops with regard to cholera mainly to the fact of the men having, during the latter period, been instantly removed into cholera camps, when the disease has appeared among them. The rules laid down by Dr Murray for the removal of troops under these circumstances are, like all the other suggestions contained in this report, concise, eminently practical, and decisive; there is no uncertainty in the measures he advocates, they are founded on a clear conviction of the nature of the disease; he writes of it like a man who has grasped and realized his subject; he discusses facts and conclusions formed in the best of all schools, that of experience.

With regard to the treatment of cholera, Dr. Murray divides the disease into four stages:—In the first, diarrhœa, he gives a very decided opinion against the use of purgatives; but speaks as strongly in favor of opiates "together with wine in moderation, and nourishing diet with little change from routine."

In the second stage of the disease, choleraic diarrhœa or cholerine (for the latter Dr Murray insists on very strongly is cholera to all intents, and extending the disease over the country quite as much as cholera), he still advises opium to be given, the patient's pulse being distinctly felt, but the stools having the congee or rice-water appearance peculiar to Asiatic cholera; in this condition opium "is of the utmost value in checking undue action to the bowels," "there is danger of its being continued into the following stage, however, when it would be most injurious," and hence cannot well be used except by professional men.

In the third stage, or that of collapse, Dr. Murray recommends water to be given in moderation, but like most other authors on the subject, he considers that little can be done in the collapse of cholera; in fact "powerful remedies are recommended, but in the collapse of cholera they are powerless, but may accumulate in the system to a fatal extent." Opium is always harmful, and, in most instances, stimulants also; "calomel, the old idol of Indian Doctors, is inert." He does not advocate the use of acids nor astringents, but speaks favourably of quinine as a prophylactic.

In the fourth stage of the disease, that of reaction, "careful nursing is of vital importance," and the various complications that may arise must be treated upon principles generally applicable to similar forms of disease arising under other circumstances.

Want of space prevents our following Dr. Murray through the second part of his appendix, which consist in an analysis of the answers received from a number of Medical Officers in various parts of India on the subject of cholera. We are by no means sure that data of this kind are of much value; it seems to us it is not the *amount* of evidence collected which is of importance, for when we find questions answered by a considerable number of medical men—questions which persons like Mr. Simon and Dr. Farr or Pacini would hesitate to give an opinion on; we rather doubt if the information thus obtained can be turned to any practical advantage. For our part, we prefer the individual opinions of a man like Dr. Murray, who, we know, has made the subject his special study for years; and we have no hesitation in saying this report of his is a most valuable addition to the literature of cholera. We recommend it with confidence to the study and careful consideration of medical men in India and other parts of the world; and most sincerely trust the author may be spared to initiate fresh measures, and place those he has for so many years striven to establish, upon a firm basis, and thus realize the hopes we are convinced are so near his heart—the relief from intense suffering and untimely death of many of his fellow-creatures.

A Dictionary of Materia Medica and Therapeutics. BY DR. A. WAHLTUCH, M.D., &c., &c. Churchill and Sons, London, 1868.

THIS is a very handy book, and one which must have cost infinite trouble in its preparation. It contains the Latin, English, Italian, German, and Russian synonymes; and, under the column headed "Physiological Effects and Therapeutics," there is a brief *resumé* of the modes in which the remedy is supposed to act, and the diseases to which it is applicable. Under the head of "Prescriptions" the chief formulæ of distinguished physicians and surgeons are arranged, into the composition of which the article enters.—*The Lancet.*

Auscultation of the Heart. BY T. CHURCHILL, M.B., London: Churchill and Sons.

THIS little compilation is calculated to be of great use to beginners, who have not unfrequently considerable difficulty in mastering the subject of valvular disease. Mr. Churchill arranges his materials in two columns—one dealing with the systole, the other with the diastole of the ventricles. The mitral valve, in health and disease, is first considered; then the causes of its normal and abnormal sounds are discussed, as are the characters of the pulse. The aortic valve is considered in the same way, in health and in disease, both during the systole and and the diastole. The causes of the abnormal sounds and the nature of the pulse are all taken in order.—*Medical Times and Gazette.*

Official Selections.

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REPORT ON THE JAILS, &c, OF EASTERN BENGAL, BY OFFG. DEPUTY INSPECTOR-GENERAL OF HOSPITALS, H. B. BUCKLE, C.B.

THE Dacca circle of medical inspection includes a large portion of Eastern Bengal, the Cossiah Hills (Shillong), the valley of Brahmapootra from Gowalparah upwards, and Assam as high as Debrooghur. The jails naturally follow this arrangement. Those in Eastern Bengal, namely, Dacca, Mymensing, Furreedpore, Burisaul (Backergunge), Noakhally, Tipperah (Comillah), Chittagong, those in Sylhet and Cachar; at Shillong; and those in Assam, as Gowalparah, Gowhatty, Nowgong, Tezpoore, Seebsaugor, and Debrooghur.

To a great extent the jails in Eastern Bengal are placed more or less under similar influences with regard to climate and the sanitary state of the districts. The Dacca division comprises the districts of Dacca, Mymensing, Furreedpore, Backergunge, Sylhet, and Cachar; this in its whole extent is a low alluvial tract, intersected in every direction by rivers, subject to excessive rainfall and periodical inundations; the climate damp and moist; vegetation luxuriant; added to which the habits of the people intensify the causes of disease. The healthiest localities are on the banks of the rivers, the ground there being higher, while in the interior, between the rivers from the ground gradually sloping away from the higher banks, there are large jheels communicating by khals or inland creeks with the different rivers during the rainy season when they are full; but as these subside, and the waters dry up, they are converted into stagnant jheels and marshes—a prolific source of malarious disease.

The habits of the people in digging holes for earth to make mounds on which to raise their huts sufficiently high above the inundation, surrounding the villages with a hedge of bamboos, planting fruit and other trees, then allowing the undergrowth to grow to such a degree that the village is lost and buried in a jungle, while the holes from which the earth was excavated filled with stagnant water, half putrid with rotten vegetation, now nominally become a tank, is used indiscriminately for drinking water and as a cesspool,—all add to the wide-spread unhealthiness of the districts.

The medical history of such a locality is simply to detail periodical visitations of disease—cholera and fever.

Dr. James Taylor, in his sketch of the Topography and Statistics of Dacca, published in 1839, mentions a "malignant distemper," the nature of which is not described, as having in the year 1781 carried off a large number of the inhabitants of Calcutta; and in September of that year, the Magistrate of Sylhet writes—"it was now raising with the greatest fury in Sylhet;" in the year 1797 the Collector alludes to the sickness and mortality in a Pergunnah of Backergunge, and states that in one house, 17 deaths occurred in 11 days. Dr. Taylor mentions that, in 1817, epidemic cholera appeared in the Pergunnah of Sonergong, Dacca, and that up to the period of his writing in 1839, it had appeared at uncertain intervals. "Between 1828 and 1837 only 28 cases were treated in a regiment of Native Infantry and a detachment of 30 Artillerymen; in 1825, 127 persons died from it in the city of Dacca."

Dr. Wise, the civil surgeon of Dacca, states in his report on cholera, that between 1830 and 1838 the mortality in the native hospital at Dacca was 48 per cent.; "taking the decade from 1840 to 1849, it appears that cholera was most prevalent during 1842 and 1845, but in all the other years it broke out with more or less severity."

During the next ten years the outbreak in 1855 is noted as particularly severe; "since 1845 no such sickly season had occurred;" 1857 is spoken of as a healthy year. The other years, the normal state is recorded, cholera always present with occasional outbreaks.

The history of cholera outbreaks since 1860 up to the present date is fairly complete; it is that of an annual occurrence of one or more outbreaks, the disease being always present; the years 1865 and 1867 exceptional, the disease not raging with the usual virulence: this was especially the case in 1867.

Dr. Wise, in his report to the Sanitary Commissioner of Bengal, dated April, 1868, states, "during 1867 several villages in different parts of the district were reported in which fever of a deadly type was prevalent. The fever prevalent was intermittent, but a low remittent was also met with among the adults. In several cases large quantities of blood were passed by vomiting or by stool."

The villages visited were found in the condition already described; "the houses buried in dense jungle, and each one had close to it a hole filled with stagnant water," rank vegetation, malarious exhalations, decaying animal and vegetable matter, fermenting excreta, and the drinking water if not on the banks of a river from the same stagnant hole; even if from the river that was also contaminated with decaying matters; "the villagers were very sickly, the majority being anæmic with a tendency to dropsy."

"[illegible] villagers were not exceptionally unhealthy; every year [illegible] more villages are reported as being smitten with an epidemic fever which sweeps off a large proportion of the inhabitants.

"It is only within the last [illegible] years that these severe outbreaks of fever have been heard of. Cholera and small-pox swept through the country at intervals of years, and carried off [illegible]; but the health of the population at large was better than it is now."

"Throughout the district the [illegible] of houses, of old tanks, now buried in the midst of jungle, and the traces of former cultivation in what are now barren tracks all indicate the existence of a population which has disappeared."

"Sonergong, once the seat of Government and capital of Eastern Bengal, is now buried in jungle, and the thousands who lived there are represented by a few Mahomedans living in poverty and wasted by constant fever. Bardhane and Bickrumpore were formerly the residences of Hindoo Rajahs, and of a flourishing population: these too have disappeared: the inhabitants are sickly, the children are almost all subject to spleen, and fever and cholera are yearly visitants."

From this hurried and superficial sketch of the medical topography of Eastern Bengal, it is obvious how seriously the health, both of the inhabitants and of the jail population, must suffer.

Every influence usually considered to engender endemic disease is present; the diseases, cholera and fever such as would [illegible] be anticipated under the circumstances; this all tends to support the opinion expressed by the members of the Cholera Conference, that Eastern Bengal is the birth-place of cholera. If this is so, or if there are grounds to justify this belief only in a modified degree, the sanitary state of Eastern Bengal becomes a very serious question, and likely to affect the future salubrity of Calcutta. The exports to Calcutta, and the facilities and rapidity of communication are daily increasing at the different [illegible] and railway termini, large towns will spring up; that the sanitary state of these towns more directly in communication with Calcutta should be carefully attended to, is most important. It would be better, instead of leaving this to the discretion of local communities, that a general system should, after due enquiry, be adopted, both with reference to draining larger districts, if such be possible, and also as regards the cleanliness and conservancy of towns and villages.

To give an average idea of the state of sickness in the Dacca Division, a Return (No. 1) is appended to this report, shewing the mortality from cholera, fever, and spleen for nine months. The return is deficient in not giving the months of January, February, and March; in these months the deaths from cholera would probably have been numerous. The return is copied from the [illegible] reports forwarded to the Commissioner.

Vital Statistics of the Jails in the Dacca Circle for the year 1868. The average number of prisoners or mean population of the jails was 3,866.95, the total number treated 5,603, which gives a rate of sick to strength of 144.11 per cent.; deaths 174, being at the rate of 3.10 per cent. to the numbers treated, and of 4.47 per cent. to the average strength of prisoners in jail. The average daily sick 172.63.

Zymotic diseases have been the chief causes of the sickness and mortality, [illegible] more to influences described above, acting generally throughout the districts, than to the sanitary state of the jails themselves; in fact, the prisoners in jail are more favourably placed as regards health than the population at large.

The deaths amounted to 174 among a daily average or mean population in jail of 3,866.95, which gives a rate of 4.47 per cent., or 44.70 per 1,000.

The causes of deaths were from—

Zymotic diseases	116
Constitutional [illegible]	25
Local [illegible]	25
Developmental [illegible]	6
[illegible] violence	1
[illegible]	1
Total	174

Statistics [illegible] from phthisis are recorded [illegible] with [illegible] that tubercular disease is by no [illegible].

[illegible] of the Medical Officers' Sanitary Reports, the [illegible] improvement that have been made in [illegible] are reported [illegible] the influence on the prisoners' health exercised by the diet and the clothing, and any remarks as to suitableness of the clothing noted. The conclusion is that the supervision of the jails has been carefully conducted, and the material benefit of the prisoners sedulously provided for.

Vaccination.—The number of vaccinations during the past year are 9,689, of which 7,089 are reported as successful; this is a less number of vaccinations by 324 than in 1867. In many parts of the circle, the prejudice against vaccination is very strong, especially in Chittagong, Sylhet, Cachar, [illegible] and most of the stations in Assam; and it is only in the neighbourhood of the larger stations, and where medical officers have exerted themselves, that it has made any progress.

As there has been no opportunity of acquainting myself practically with these jails, the remarks in this report are of a general character, gathered from the perusal of the several Medical Officers' Sanitary Reports, and the other records in this office, detailing the general history and statistics, both medical and otherwise, of the different districts.

RETURN No. 1.

Deaths from Cholera in the Dacca Division, from 1st April to 31st December, 1868.

DISTRICTS.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca	53	26	48	27	[illegible]	25	36	[illegible]	416	[illegible]
Mymensing	227	26	42	23	1	28	35	6	1,413	2,004
Furreedpore	497	30	58	5	1	6	22	5	195	[illegible]
Backergunge	610	240	81	48	13	28	22	67	314	[illegible]
Sylhet	153	36	22	18	13	27	59	582	1,025	1,920
Cachar	8	3	1	14	22	4	4	10	60	[illegible]
									Grand Total	8,4[illegible]

Deaths from Fever.

DISTRICTS.	April	May	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca	537	26	33	27	39	25	36	136	416	1,712
Mymensing	153	17	117	108	61	93	57	[illegible]	160	911
Furreedpore	121	14	114	82	97	84	141	572	914	2,2[illegible]
Backergunge	61	24	[illegible]	29	13	25	22	471	58	1,165
Sylhet	153	3	22	18	13	27	59	582	1,025	1,920
Cachar	8		1	14	22	4	4	10	60	135
									Grand Total	8,67[illegible]

Deaths from Diseased Spleen.

DISTRICTS.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Dacca	27	22	26	29	38	57	73	39	36	347
Mymensing	6	7	2	8	6	5	4	0	5	42
Furreedpore	5	1	27	0	7	0	26	60	1	130
Backergunge	8	4	11	20	22	13	9	20	9	118
Sylhet	1	4	5	6	2	0	2	0	0	23
Cachar	No return									
									Grand Total	6[illegible]8

H. B. BUCKLE.

Local Correspondence.

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TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—It is now more than a year past since G. G. O. No. 550, of the [illegible]th June, 1868, was issued, but nothing has yet been decided when we are to get the increased rate of pay sanctioned therein. On enquiry from my Deputy Inspector-General, I find that I am not to be called Hospital Assistant or get any advantage of the above G. G. O. for another year. It is very hard upon us, Sir, that upon the strength of that Order No. 557 we drew increased rate of pay for two or three months with retrospective effect from the 27th May, but owing to our misfortune the amount has been retrenched from our pay of subsequent months, thereby not only increased our difficulties, but makes us very uneasy. One poor old man, Sir, drew the increased pay, and has since been invalided, and they want to retrench him and make him pay back what he received out of his present 10 Rs. a month. There are many sufferers in various circumstances, but if Government would promise us the arrears of pay they would all be happy. You can easily imagine, Sir, that the bare pay of our grade, which we now get on the old scale, is inadequate to meet with the common necessaries to support ourselves and families, and as the medical subordinates whose pay and positions are also settled by the same Order are enjoying the benefits with effect from the 27th May, 1868, we, poor Native Doctors, cannot understand why our case has not been decided.

I hope, Sir, you will be so kind as to urge on Government to settle the question on an early date, and relieve us from the anxiety of mind and distress as well as pecuniary embarrassment which we are now suffering.

I remain, your humble servant,
Military Native Doctor.

Extracts.

Iodide of Potassium in Syphilis.—To obtain the wished-for effect of this medicine in syphilis, its use should be limited to a certain class of symptoms which modern Syphilographers have termed "tertiary;" such as nocturnal pains in the head and the shafts of the long bones in the extremities; nodes; affections of the bones and cartilages generally; tubercles; gummy tumors; and transition states, by which I mean foul, sloughy, and rapidly-spreading ulcers, which succeed to the softening of tumors, of gummata, or the rupture of pustules, &c.

In the primary form of syphilis, whether in the soft or hard sores, the iodide is utterly useless as a controlling or curative agent; and in the secondary forms its effects are most uncertain; but, in the tertiary, it frequently works excellent cures. To accomplish this, however, it must be administered in proper quantities, for we frequently see it powerless in a small dose, whilst it is most efficacious in a larger. The iodide of potassium appears to exert two separate therapeutical influences in cases of spyphilis. In the first it acts as a general tonic in subjects broken down and weakened by long continual disease. Combined with quinine or bark, and given in small doses for long periods, it restores the appetite and recruits the strength. In such cases the dose may range from five to fifteen grains a day. In the second forms, given in large doses (thirty to sixty grains a day) it acts as a direct antiseptic upon one or more symptoms of syphilis then present in the system. In fact iodide of potassium, although frequently failing to benefit certain tertiary local manifestations of syphilis in small doses, is very frequently curative of the same symptoms when the dose is largely increased.—*Mr. Langston Parker, in British Medical Journal.*

Sulphite of Soda and Sulphite of Ammonia in Intermittent Fever.—Dr. W. J. Chandler (Medical Record) reports twenty cases of intermittent fever thus treated in the service of Dr. Austin Flint, at the Bellevue Hospital. He draws the following conclusions:—

1. That in a few cases the paroxysms of intermittent fever are relieved, and possibly arrested by the remedies.
2. That in the large majority of cases these remedies fail entirely to arrest the paroxysm, or to lessen either their severity or frequence.
3. That these remedies require to be given in large doses for a length of time to effect any appreciable improvement.
4. That when given in doses sufficient to modify or arrest the paroxysms, they produce considerable irritation of the stomach and internal canal.
5. That as remedies for intermittent fever, they are in every respect vastly inferior to quinine.—*American Journal of the Medical Science*, April, 1869.

Glycogenic Function of the Liver.—Dr. Austin Flint records (N. Y. Med. Journal) some experiments undertaken by him for the purpose of reconciling the discordant opinions maintained by C. Bernard and Dr. Pavy in regard to the glycogenic functions of the liver. He remarks—"Although these experiments are not entirely new, my interpretation of them serves to harmonise in my own mind, at least, the results obtained by Bernard and Pavy:—

"1. A substance exists in the healthy liver, which is capable of being converted into sugar, and inasmuch as this is formed into sugar during life, the sugar being washed away by the blood passing through the liver, it is perfectly proper to call it glycogenic, or sugar-forming matter.

"2. The liver has a glycogenic function, which consists in the constant formation of sugar out of the glycogenic matter, this sugar being carried away by the blood of the hepatic veins, which always contain a certain proportion of sugar, and subserving some purpose in the economy connected with nutritions, as yet imperfectly understood. This production of sugar takes place in the carnivora, as well as in those animals that take sugar and starch as food; and is essentially independent of the kind of food taken.

"3. During life the liver contains only glycogenic matter, and no sugar, because the great mass of blood which is constantly passing through the organ washes out the sugar as fast as it is formed; but after death, or when circulation is interfered with, the transformations of glycogenic matter into sugar goes on, the sugar is not removed under these conditions, and can then be detected in the substance of the liver."—*Ibid.*

W. C. Krylow, on Fatty Degeneration of the Heart.—From his observations under the direction of Dr. Roudneff of St. Petersburg, the author concludes:—

1. That fatty degeneration of the heart is now confined to people advanced in life, but occurs more readily in them than in younger people.
2. That the typhoid processes, especially when accompanied by other severe diseases, induce it.
3. That it is frequently caused by long-standing diseases of bone, suppurations, phthisis pulmonalis, and emphysema.
4. Chronic alcohol poisoning seems to induce the extremest degeneration.—*Virchow's Archiv., in Edinburgh Medical Journal.*

Ergotine as a Prophylactic against Purulent Infection after Amputation.—M. Labat publishes an interesting paper with the above title in the Gazette des Hôpitaux. When the first began to use the remedy, M. Labat gave it only after the symptoms of poisoning of the system had appeared, and used to lose patients; now he gives it from the first to the fifteenth day, and he cures them. Under the influence of ergotine, the inflammatory swelling is almost absent, and the suppurations much diminished. There may be sleeplessness and also delay in the later stages of cicatrization. The dose of the medicine is 32 grains daily. His last series of amputations is a remarkable one—twenty major amputations, and twenty recoveries.—*Edinburgh Medical Journal.*

Case illustrating the use of Galvanism in severe Post-Partum Hæmorrhage, by Dr. Paton, Burton-on-Trent.—A stout, pale, flabby woman, and the mother of eight children. All her labors had been easy, but after the last seven there had been considerable hæmorrhage.

There was no hæmorrhage with the expulsion of the child. An assistant rubbed the abdomen gently while the cord was being tied. This was just finished when I was told that the uterus was not so hard as it had been. It was found to be relaxed, and a stream of blood was soon running over the edge of the bed, and along the floor. The uterus was immediately manipulated both internally and externally, and the placenta removed. No full contraction, however, ensued, and severe hæmorrhage continued. Cold water was splashed over the face, abdomen, and valva, but without any result. The hand, cooled in fresh water, was then introduced to the fundus of the uterus, and kneading with both hands kept up for several minutes before a moderately strong contraction ensued. Meanwhile a very large quantity of blood had been lost, and exhaustion was rapidly coming on. Whisky, ergot, and ammonia were given occasionally. The pillows had been previously removed, and the windows opened, so that she was kept as cool as possible. She was now of a deadly pallor, with gasping respiration, and extremely rapid, and almost imperceptible pulse. She complained of great sickness and difficulty in seeing things distinctly. The uterus remained contracted so long as constant pressure with kneading was kept up, but when this was discontinued for a few seconds, relaxation again took place, and a considerable quantity of blood was lost.

This state of the uterus continuing, a Kemp's galvanic battery was obtained, and a strong current passed through the uterus (this was two hours after delivery). Immediate powerful contraction was the result, but slight relaxation returned when the current was withdrawn. A milder current was therefore [illegible] for an hour, before which time perfect contraction of the [illegible] had taken place, and the hæmorrhage had entirely ceased.—*Edinburgh Medical Journal.*

CARBONATE OF SODA IN THE TREATMENT OF SCABIES.—M. Zimmermann employs a solution of 150 to 200 grains of the salt in 7 ounces of water; this is to be well rubbed into the affected parts three times a day. In two or three days, every case, even the most inveterate ones, were completely cured. There is no irritative erythema or any consequences from the frictions. Carbonate of soda may be used also as a disinfectant and deodorizer, in the proportion of 15 to 22 grains to 7 ounces of water.—*Pr[illegible]*

SOCIÉTÉ PHILOMATHIQUE DE PARIS.—At a recent meeting M. Léon Vaillant communicated a note on a monstrosity in the tape-worm which attacks the human subject. The specimen was removed from a patient at the Hôtel Dieu, and belongs either to the Tænia Solium or T. Mediocanellata. It presented some very remarkable deviations from the normal type, and is the only one since that described by Kuchenmeister, in his *History of Parasites*, that has been examined.—*Scientific Opinion.*

ACADEMY OF SCIENCES, MUNICH.—Herr Voit presented a paper by Herr Bauer on the absorption of albuminoid matters in the large intestines. The details show clearly that albuminous substances, in the case at least of carnivorous animals, are very readily absorbed by the large intestines. The proofs offered by Herr Bauer consist in a number of experiments on dogs. He proposes in a future paper to give the results of his experiments on the absorption of fatty and starchy matters by the large intestines.—*Ibid.*

A TEST OF GOOD VENTILATION.—General Morin, on giving an account at the Académie des Sciences of the successful application of his ventilating apparatus in a large weaving factory employing 400 work people, and in which were lighted 400 jets of gas, observed that its advantage might be judged of from the fact, that during October, November, and December, 1867, when the ventilation was defective, only 15,000 kilogrammes of bread were consumed, while during the same months of 1868, after it had been improved, 20,000 kilogrammes were required, being a gain of 25 per cent. for the health and vigour of the operatives.—*Ibid.*

MR. NOURSE, SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN, states:—I have observed typhoid to follow the use of foul drinking water in the following instances:—

1, 2. Typhoid (mild) in a girl aged 11, and in the same house 18 months afterwards typhoid succeeded by typhus in a man aged 22. Drinking water procured from a shallow well close to the cesspool of a privy used by the inmates of seven cottages.

3. Severe typhoid in a boy aged 8. Drinking water derived from a water-butt never cleaned out.

4, 5, 6, 7, 8, 9. Typhoid in six inmates of one house, of various ages, severe in three, one died. The drinking water had a bad taste, and came from a cistern which had never been cleaned out. No sign of the disease being communicated by infection.

10, 11. Two cases of fever (remittent type) in a house where the drinking was procured from a well, ten or twelve yards from which were two large cesspools in a sandy subsoil, in the immediate, &c.—*Medical Times and Gazette.*

In the *Union Médicale*, M. [illegible] relates a very interesting, and, as regards its site, probably unique case of cysticercus cellulosæ, which was found in an encysted tumour, the size of a pigeon's egg, in the palm of the hand.—*Ibid.*

ON THE USE OF CARBOLIZED CATGUT LIGATURES, BY MR. SPENCE, PROFESSOR OF SURGERY IN THE UNIVERSITY OF EDINBURGH, &c., &c. (*Concluded.*)—I have had some experience in tying arteries in the human subject, and I at one time conducted a very extensive series of experiments on the effects of ligature of arteries on the lower animals, but I never saw a case in which the ordinary ligature of silk or linen thread yielded or slipped, and never knew of a case in which the constricting circle gave way as in this case. Under these circumstances, whilst I believe carbolized silk or linen thread may be perfectly safe, I cannot avoid the conclusion that catgut, however prepared, is liable to become softened, altered, and disintegrated by the heat and moisture of the living tissues around it, and thus allow the delegated vessel to become again permeable. I learn also that, in a case of amputation of the thigh, in which the femoral artery had been tied with catgut, hæmorrhage occurred from the ligature slipping off.—*The Lancet.*

DR. BLANC ON ANIMAL VACCINATION.—Apart entirely from animal vaccination, I belong to the large majority of those who feel confident that the lymph now in use has lost much of its former essential qualities, and I unhesitatingly give as my opinion that it is not satisfactory. What is Vaccinia? A disease of the cow. Why is it used as a protection against small-pox? Because, on its being inoculated into man, it presents in a mild form the same evolution as that much dreaded disease. If vaccine is not deeply impressed on the system, of what value is it? None.

In these facts the whole question is summed up. The shape and appearance of the vesicle is something, but not all; the further we depart from the symptom presented when spontaneous cow-pox is inoculated, the more certain we are that the prophylactic is uncertain. What has experience taught us? That when no cicatrices are seen, the liability to contract small-pox, and the mortality, are almost on a par with the unvaccinated; and why on such occasions always throw the blame on the vaccinators and not on the lymph, the too often really guilty party.

We learn from Mr. Marson's tables that only those who have *four or more good cicatrices* can be considered as well protected, and when affected by contagion, most of them will suffer from it, only in a modified form; whilst we know, on the other hand, that Jenner and his followers only made *one puncture*, and in the great majority of cases this was sufficient to insure immunity against contagion.—*Ibid.*

An Editorial in the LANCET (12th June) states:—We have had opportunities of inspecting four patients vaccinated by Dr. Blanc from calves. Two were infants under 5 months old, one under 3 years, and the fourth a young woman of 18. The general phenomena were the same in all. The vesicles are somewhat slower in their development than those from common vaccination, and do not arrive at maturity until the tenth day, while the inflamed areola is at its height on the eleventh day. The local inflammation is somewhat more severe than that which follows common vaccination, but not severe enough to cause pain or fever, or to constitute any objection to the method.

MORTALITY AT DIFFERENT AGES.—As the question what is the average death-rate of the English population at different periods of life? occurs very frequently, and is not at all times easily to be answered for lack of the official documents in which such statistics are periodically published, we subjoin the latest authentic information upon the subject, derived from the 30th Annual Report of the Registrar-General, just presented to Parliament. For the benefit of any of our readers who may not be much accustomed to the study of statistics, it may be said that the two columns here given represent the *average annual deaths* occurring in the thirty years, 1838-67, to persons of either sex at the stated periods of age, out of every thousand persons of corresponding ages, estimated as representing the average yearly population during the thirty years.

	Males.	Females.
All ages.	23·33	21·51
0— 5	72·42	62·46
5—10	8·79	8·67
10—15	4·95	5·10
15—25	7·90	8·22
25—35	9·03	10·15
35—45	13·03	12·[illegible]0
45—55	18·16	15·67
55—65	31·[illegible]3	28·56
65—75	68·54	57·52
75—85	147·74	135·56
85—95	309·22	283·07
95 and upwards.	446·87	432·65

The supplement to the Registrar-General's 25th annual report contains, perhaps, the most valuable information on record as to the mortality of children in different parts of the country.—*The Lancet.*

ORIGINAL COMMUNICATIONS.

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EXPERIMENTS ON THE INFLUENCE OF THE POISON OF THE COBRA, THE DABOIA, AND THE BUNGARUS, AND OF CERTAIN METHODS OF TREATMENT.

By J. Fayrer, M.D., C.S.I.

Present: Dr. Fayrer and Mr. Sylva.—July 10th, 1869.

Experiment No. 1.

A large and powerful pariah dog was bitten in the thigh, by a daboia russelii at 3-22 p.m., the dog shewed signs of pain when the fangs penetrated. 3-25.—Walks, but drags the bitten limb. 3-28.—Is lying down; on rousing the dog he is unable to stand; defecation and micturation occurred; shows no signs of suffering beyond occasionally a suppressed whine; tries to stand, but is unable to do so; contents of bladder dribbling away. 3-32—Respiration hurried; pupils dilated; rolls his head uneasily, but keeps the neck turned more to one side: twitching of eyeballs: stretches out the fore-legs in a convulsive manner. Lies otherwise quite paralysed. 3-35.—Breathing regularly, but lies motionless. 3-38—In the same condition; respiration 40 in a minute; slightly raises his head at intervals. 3-45.—Still breathing, but lies perfectly still, giving occasionally a low suppressed whine. 3-53.—In the same condition; has watery purging. 4 p.m.—In the same condition; respiration 15 in a minute. 4-7.—Can just raise its head when roused, the limbs seem quite paralysed. 4-9.—Muco-sanguineous purging: other symptoms the same. 4-18.—Still breathing; more muco-sanguineous purging. 4-20.—In the same condition. 4-40.—In the same position; lying on his side; legs extended; breathing still. 4-45.—Slight twitching of the muscles generally; respiration irregular, and feeble. 4-50.—Dead: a slight tremor, but no convulsive movement preceded death.—Bitten at 3-22 p.m.; dead at 4-50, or in 88 minutes. The body was examined one hour and twenty minutes after death. The lungs were not congested. The liver was darker colored than natural. The blood in the heart and great vessels was perfectly fluid, nor did it coagulate when collected and set apart.

I examined the blood at noon on the 11th July most carefully and deliberately under the microscope, with a high power. There was no change. The red and white corpuscles were in their natural relative quantities; a very few of the red ones were crenate. But there was not a trace of any new cell or molecular matter in the blood.

The perfect and permanent fluidity in the blood was remarkably illustrated in this experiment.

Experiment No. 2.

A pariah dog was bitten at 3-28 p.m. in the thigh by a large bungarus fasciatus said to be quite fresh, and about four and a half feet long: the bites drew blood. Walking about: drags the leg slightly. 3-31.—Looks depressed and is salivated. 3-36.—Walks about; looking scared. 3-40.—Bitten again in the thigh by the same bungarus; the dog evinced no sign of suffering. 3-42.—Looks depressed; foaming at the mouth: salivated. 4-7.—The dog is sick, and has vomited a quantity of frothy mucus; vomiting repeated directly. 4-10.—In walking he looks depressed, as though excessively nauseated, and limps in the bitten leg. 4-12. Vomiting continues; lies down for the first time; breathing hurried. 4-17.—The nausea and vomiting continue; looks scared and depressed. 4-20.—Excessive vomiting of frothy mucus. Lies down; is convulsed in the hind legs; looks very ill. 4-29.—Hurried catching respiration; twitching of the head [illegible]. 4-32. Walking slowly and feebly with a dejected look; vomits frequently, and froths profusely from the mouth. 4-33.—Stands with his head drooping; still very sick; leans his body for support against the wall. 4-45.—No change. 5 p.m.—Appears better. 5-15.—Looks better; no vomiting; respiration more natural. 5-40.—Lying down; when raised on his feet, appears weak, but otherwise better. On lying down, arranged his legs in a natural position as if for sleeping. 6-40.—On being again roused, he walked about; his legs appeared feeble at first, but appeared to recover the use of them. 9-15.—Sleeping comfortably; on being roused, looks brighter and intelligent.

11th July, 6 a.m.—Remained during the night without changing his position; on being placed on his feet appears weak, particularly in the hind legs, he appears somewhat numb in the legs.

I received the following report on the 13th July:—

"The dog died at about 10-30 p.m., of the 12th. Bitten at 3-28 p.m. of the 10th July: dead at 10-30 p.m. of the 12th, or in about 53 hours. Yesterday morning (the 12th) I observed that he was very weak. During the day, and up to the time of his death, he remained lying on one side, with the legs extended, passing at intervals muco-sanguineous matter. On opening the body this morning, I found the blood coagulated in the heart and great vessels. The blood sent to me on the 13th was firmly coagulated. Under the microscope, it presented innumerable needle-like crystals of hæmato-globulin. The red corpuscles visible were very few in number, and were not, so far as I could judge, changed in any way. But I would speak with reserve about the corpuscles of this blood, as the field was so entirely filled with the crystals that little else could be seen even after careful dilution with water and agitation. It is possible that new cell forms may have been there, and escaped detection. The mass of the red corpuscles seem to have been converted into crystals. In both this and the preceding case, the blood was examined some time after death, but I failed to detect any new cell growths."

Experiment No. 3.

A young cobra, about ten inches long, was bitten at 3-45 p.m., by a fresh full-grown cobra (keautiah) near the tail, so that the viscera might not be injured. The fangs were seen to penetrate, and no doubt could exist that the poison was fairly inserted. Being put on the ground, it crawled away vigorously, seemed unaffected by the bite. 5 p.m.—No change. 11th July, 6 a.m.—No change: it is quite well and active. On the 13th July, I saw it quite well. On the 17th it was found dead; apparently it had been dead about 12 hours.

Experiment No. 4.

Another young cobra of the same brood as the last (No. 3) was bitten by a fresh daboia near the tail like the last. The fangs penetrated, and the poison was freely inserted. 5-10.—No change. 6-15.—No change, except that, when moving about, the end of the tail beyond the part bitten appears stiff, and it does not move so freely as the rest of the body. This is accounted for by the nature of the wound inflicted by the tremendous fangs of the viper. 11th July.—No change. 13th.—The snake is alive and apparently well. On the 17th, it was found dead, and decomposed; it had probably been dead three or four days. These two young cobras were of one brood; they were caught a few days ago, and are said by the snake-catchers to be about a fortnight or ten days old.

There could be no doubt about their having been fairly bitten by the cobra and the daboia; no evil result followed up to the 13th, though they died subsequently. Surely this is strong proof that the cobra is but little susceptible, if at all, to the poison of its own species. These snakes being very young may have died from want of food, and possibly from the effects of the wound, [illegible]. [illegible] was alive on the [illegible] day after being bitten.

Experiment No. 5.

A white half-grown kitten was bitten by a Bungarus fasciatus, [illegible] to be fresh, at 4-10 p.m., in the thigh. It seemed much excited directly after. 4-25.—Lying in its former position, stretching out the fore-leg in a convulsive manner. 5 p.m.—In much the same condition. 6-10.—It has been very restless; now seems inclined to sleep; appears to be free from pain. 9-15.—Does not appear now to be much affected by the poison.

16th July.—It seems better.

19th July.—The kitten was quite well.

It was evident in this case that the animal was not mortally, though thoroughly bitten, for the snake was made to close his jaws on the part and drew blood. This, I believe, is just the sort of case which probably frequently occurs when men or animals are accidentally bitten; enough venom is injected to cause symptoms of poisoning, but not enough to destroy life. And the man or animal recovers wholly by his or its own inherent power of recovery. Had I administered any of the so-called antidotes, or injected any of the proposed remedies, the recovery might have been attributed to the means used.

That a man or animal so poisoned may be benefited by the use of stimulants, or other therapeutic measures, I do not for a moment deny, but, as I have before said, this is a very different matter to that of administering an antidote that shall neutralize the poison, and by so doing save life.

Experiment No. 6.

Another kitten of the same size and age, as that in experiment 5, was bitten by a cobra in the left thigh, at 4-16 p.m. The bite was very imperfect, and was repeated at 4-20 p.m.

At 4-24.—The kitten very restless, and springing about violently. 4-25.—Hurried breathing; restlessness. 4-45.—Getting weaker; respiration irregular. 5-5.—Convulsive movements generally. 5-20.—Dead in one hour and four minutes. 6-20.—Body opened one hour after death. Lungs natural; no congestion; the blood, on being removed from the heart and great vessels, soon coagulated firmly.

Experiment No. 7.

A Bungarus fasciatus was fairly and deeply bitten by a fresh cobra at 4-27 p.m., near the tail; no doubt of the penetration of the fangs and inoculation of the poison. No effect was produced. The bungarus was well and alive on the 16th, five days after the bite.

Experiment No. 8.

A bungarus fasciatus was thoroughly bitten by a fresh daboia, at 4-32 p.m., near the tail.

No evil result followed; the bungarus remained unaffected; on the 16th July was in its usual condition.

Several facts of importance are proved, or their probability confirmed by the preceding experiments.

In death by poisoning by the daboia, and therefore, probably by all the viperine order, vipers and crotalidae, the coagulability of the blood is generally destroyed. I say, generally, because this is frequently, though not invariably so. In the experiment on the fowl, it was found that the blood had coagulated. It remains fluid after death, even on exposure to the air.

The most careful and protracted microscopic examination could detect no structural change in the corpuscular elements of the blood. Death is more protracted, but the deadly effects of the poison are even more quickly manifested than in death from cobra-poisoning.

[illegible]

In death by cobra-poisoning, the blood [illegible] firmly [illegible] from immediately to an hour or more after death [illegible] in the heart to be coagulated firmly. No changes in the corpuscular elements have been seen in any of the microscopic examinations I have made.

The poison of the bungarus is less deadly than that of the cobra or daboia, but it is very dangerous. It also does not destroy the coagulability of the blood. Perhaps, this may prove to be the case with all the poisonous colubrine snakes. No change was observed in the corpuscular elements, *i.e.*, of such as remained. But the red corpuscles had passed in the case of the blood of the dog that died from a bungarus bite, into a state of excessive crystallization of a needle-like and long tabular form, though it is slow in producing its worse effects.

It is very doubtful if the cobra and daboia are affected by each other's poison; but the evidence on this point is not yet complete.

The bungarus is also less susceptible to the poison of the daboia and cobra than *innocuous* snakes, if, indeed, it be affected at all.

Death was not caused by asphyxia in any of these cases. Everything tends to show that it is due to direct exhaustion from paralysis of the nerve-centres.

EXPERIMENTS ON THE USE OF THE LIGATURE AND CARBOLIC ACID IN THE TREATMENT OF SNAKE-BITES.

By J. Fayrer, M.D., C.S.I.

Present.—Dr. Fayrer and Mr. Silva.—July 17th, 1869.

Experiment No. 1.

A large and powerful pariah dog was bitten in the thigh, at 2-45 p.m., by a fresh cobra (keautiah). The hair had been previously removed from the part in order that the puncture of the snake's fangs might be distinctly seen. The moment the fangs were withdrawn, the punctures were scarified, and carbolic acid at once applied, and well inoculated into the bites. The tissues were whitened, and the blood coagulated by the acid. 2-53 p.m.—The dog looks depressed and dejected; breathing has [illegible]. 3-12.—Lying down; looks dejected, but perfectly intelligent. 3-15.—Respiration hurried. 3-23.—Pupils widely dilated. In convulsions, rolled over on the other side; respiration irregular and catching. 3-27.—Violently convulsed. 3-30.—Respiration has ceased, but the heart still beats distinctly. 3-31.—Dead in forty-six minutes. The carbolic acid was evidently of no service in this case.

Post-mortem examination at 5 p.m. Blood coagulated; no crystallization under microscope.

Experiment No. 2.

A fowl had the feathers removed from the thigh, so that the bites might be seen, and was then bitten there at 2-54 p.m. by a daboia. The wounds were immediately scarified, and the carbolic acid thoroughly applied to the bites. The fowl fell over in convulsions when released, and was dead in less than sixty seconds. The body was opened at 3-35, or about 40 minutes after death, and the blood was found to be coagulated in the heart and great vessels; some fluid blood escaped into the thorax. The lungs were not in the least congested. The condition of the blood was particularly noted, as it has generally been found fluid in the mammals dead from the daboia bite.

Post-mortem examination of dog, experiment No. 3.

Blood examined at 5 p.m.: fluid when removed, but coagulated on exposure to the air.

Microscopical examination: no crystals; no change.

Experiment No. 3.

The poison of a fresh cobra (gokurrah) was taken from the snake in my presence, and ten drops of it immediately injected with the hypodermic syringe into a middling-sized dog's thigh, at 3-3 p.m. The tube of the hypodermic syringe was not removed; and the syringe being filled with carbolic acid, about 20 drops were injected exactly in the track of the poison, and in the shortest space of time possible. 3-8—The dog is depressed; looks scared; hangs his head; twitching of the hind legs when he is raised. 3-15—Lying on his side almost paralysed; pupils widely dilated. 3-20—Is convulsed. 3-22—General twitching of all the muscles of the body; is quite unconscious. Respiration has ceased, but the heart still beats distinctly. 3-25—Heart still beats. 3-27.—Irregular action of heart. 3-29—Dead in 26 minutes. In this case there could be no doubt of the perfect inoculation of the carbolic acid, for it followed the poison through the same channel, and in the shortest possible space of time, in which any local remedy could be applied, and yet without producing the slightest benefit. The second of time by which the poison preceded it, was sufficient to cause death; no remedy could have been applied more rapidly, unless it had been mixed with the poison and introduced with it; in which case the venom might have been probably decomposed and rendered inert. It appears to be impossible to overtake the poison, and neutralize it when once in the circulation, however rapid may be the inoculation of the supposed antidote.

Experiment No. 1.

A fowl was bitten in the thigh by a daboia at 3-19 p m. The carbolic acid was immediately applied to the wounds which had been at once scarified. 3-19-30—Fowl in convulsions. 3-20.—Dead in one minute. Body opened. Blood in heart and great vessels had coagulated.

Experiment No. 5.

A small dog bitten in the thigh, by a bungarus fasciatus, (one used last week) at 3-13 p.m. The bites drew blood. 3-29—Looks dejected. 5-20—No further change.

18*th July*, 7 a.m.—No change. At 12, noon, the dog appears very weak; has not altered his position (recumbent) since last report. 6 p.m.—The same; refuses food; gradually drooped throughout the day.

19*th July*—Died at 1-35 p m., in about 16 hours and 27 minutes. Blood examined at 7-15 p.m.: blood clotted after death firmly; the serum paler than usual, corpuscles natural; no crystallization.

Experiment No. 6.

A fowl was bitten by another bungarus, which had also been used last week, at 3-32 p.m. 3-40.—The fowl looks uneasy, but not otherwise affected.

18th, 7 a.m.—Crouching on the floor; wings drooping. *Noon*—Unable to stand; profuse flow of watery blood from the beak. 3 p.m.—Lying on its side; eyes closed. 5-40 p.m. —Died in 26 hours and 18 minutes. Body opened at 6 p m.; blood coagulated; under microscope no crystallization had occurred.

Experiment No. 7.

A fowl was bitten by a cobra in the thigh at 3-15-30. Ran about for a moment when placed on the ground. 3-16 Crouched; resting its beak on the ground; fell over, and was dead at 3-17.

Body opened at 5-10 p.m.

Blood fluid, but coagulated on exposure to air.

Experiment No. 8.

A daboia was well bitten by a cobra near the tail, at 1-5 p.m. 18th July, noon. No change. 18th July 6 p m.—No change; no effect was produced. The daboia was alive a week after being bitten.

Experiment No. 9.

A varanus flavescens was bitten by another daboia, at 1-15 p.m. The daboia had bitten before. He did not strike his fangs readily through the hard skin of the lizard.

18th July, 3 p.m.—No change. 6 p m.—No change.

The varanus was not affected, it was alive a week after being bitten.

The daboia was not fresh; and it did not bite vigorously, hence the escape of the varanus.

Experiment No. 10.

A cobra was bitten by a daboia, near the tail, at 4-3 p.m., and was bitten again by another daboia, at 4-8 p.m., near the same place.

18th July, 5 p.m.—No change; a week later—no change.

Note.—The bungarus bitten by the daboia, on Saturday, 10th July, was found recently dead on Saturday, 24th. Death may be due to natural causes. The bungarus bitten at the same time by a cobra is alive and well on the 24th July.

Present:—Dr. Fayrer and Mr. Sceva.—July 24th, 1869.

Experiment No. 1.

In the experiments hitherto performed, the snake has been made to close the jaws on the part bitten, and not been left to strike in the natural way. With the object of ascertaining whether there be any difference in the effect of the compulsory and voluntary bite, the following experiment was performed; and I observed in this, as on other occasions, that the snake rather attempted to frighten than to bite the dog, and it was not until the cobra was much irritated by repeatedly bringing the dog near him, that he gave the fatal bite. It struck the dog twice in the hind leg, apparently without any effect, but afterwards struck, and a for a moment fastened on to the thorax. Two slightly bleeding points marked where the dog was bitten—this was at 3-32 p.m. 3-45.—The dog is affected; vomited and was purged; very restless. 3-50.—Vomiting and staggering as he walks. 3 53.—Convulsed. 3-57.—Heart still beating irregularly; respiratory moments ceased. 3 58.—Dead—in 26 minutes. Another object of this experiment was again to search in the *post-mortem* blood for the corpuscles described by Professor Halford.

The body was opened at 5 p.m., or about an hour after death. The blood coagulated firmly, and was repeatedly examined under the microscope with a high power; but I could detect no change whatever in its corpuscular elements. The lungs, as usual, were free from congestion.

Experiment No. 2.

Placed a ligature round a fowl's thigh, and tied it very tightly. The fowl was then bitten by a cobra, at 1 p.m., below the ligature. The ligature was tied as tightly as it could be drawn, and appeared to arrest the circulation completely, for the part below became livid, and the limb was paralysed. 1-13.—The fowl lies quiet, and does not seem to be affected by the poison. 4-17.—Is active and lively; hops about in the sound leg. 1 20.—Does not seem to be in the least affected by the poison; at this period, that is, 15 minutes after the bite, the ligature was removed. The limb was turgid and livid from congestion. The bird began to droop almost immediately the ligature was removed. 1-22.—Drooping; does not rise; when raised crouches again. 4-23. Head falling over; can hardly move. 1-24.—Convulsed 1-30—Still alive; faint; convulsive movements continue. 1-33. Dead. Bitten at 1-5 p.m; ligature removed at 1-20; no effect of poison being manifested.

Dead at 1 33, *i.e.*, 13 minutes after the ligature was removed.

[illegible] 13 [illegible]

EXPERIMENT.

A [illegible] 4-12. R[illegible] 4-17. [illegible] 4-22 [illegible] 4-40. [illegible] walk [illegible] 4-42. Head drooping, eyes closed, [illegible] resting on the ground.

[illegible] at 5-37 [illegible] it showed [illegible] were [illegible] in dying [illegible] the air. It remained [illegible] its side and died at [illegible]

B[illegible] at 4-10 p.m.

I[illegible]

I[illegible] 4-51, [illegible] 21 [illegible]

Died at 5-5 [illegible] 64 [illegible] after the ligature was removed. These experiments are very interesting. They prove that the poison enters, and proves fatal by way of the blood vessels.

That if a ligature be sufficiently tightly applied (the great difficulty), the entry of the poison may be much, if not altogether prevented; and that probably the application of carbolic acid or other caustic agent to the part poisoned, if [illegible], may do good by decomposing the poison in the [illegible] in which it is lodged.

But [illegible] much faith must not be reposed in the acid or [illegible] is proved by this and former experiments, where the poison was prevented from entering the circulation by means of the ligature, and was subjected to the action of the acid whilst [illegible] yet, when the ligature was removed and the [illegible] again [illegible], death followed from the [illegible] the poison which, notwithstanding the [illegible] of the acid, yet retained enough of its deadly qualities to [illegible] death.

A fowl bitten by a cobra [illegible] dies in a few minutes. [illegible] by these two experiments [illegible] the fatal [illegible] was delayed by aid of the ligature and acid.

EXPERIMENT.

M[illegible] 26th July.—The same [illegible] experiments were [illegible] again to-day. [illegible] and half [illegible] have ever [illegible] by exposing [illegible] bored [illegible] right [illegible] ordinary [illegible] at [illegible] but as [illegible] with [illegible] on the [illegible] have been [illegible]

[illegible]

[illegible] A [illegible] snake [illegible] I [illegible] was [illegible] In this case it was [illegible] the [illegible] always [illegible] fatal [illegible] a new fang takes the place of the [illegible] I have [illegible] fangs carefully removed from a cobra, and then keeping [illegible] what time the new ones come forward. In [illegible] I found that, after a fortnight, a pair of new fangs [illegible] these removed, but they were [illegible] A [illegible] whose fangs were removed with [illegible] and shortly after [illegible] death, but whether the death was due to the operation, [illegible] I am unable to say. There is at present a [illegible] that has not touched food or water for six months [illegible] every effort having been made in vain to make it eat or drink [illegible] it is vigorous and vicious as [illegible] its venomous powers are [illegible] During this period, the [illegible] has frequently changed [illegible] and there are [illegible] of [illegible] It never moves [illegible] roused, when it is very active and vicious. [illegible] it may have obtained moisture from the [illegible] and may have swallowed [illegible] or other [illegible] have found their way into the cage. But [illegible] taken food [illegible] water in any other way during this period.

ON MALADIES ATTRIBUTED TO LUNAR INFLUENCE—RHEUMATISM, PARALYSIS, OCULAR, &c.

By W. J. MOORE, L.R.C.P.,

Surgeon, [illegible]

IN addition to malarious fever, there are several other maladies over which the moon is still supposed to exert influence. These are [illegible] rheumatism, [illegible] paralysis, [illegible] certain affections of the eyes. But it is extraordinary [illegible] that [illegible] among sailors the belief in lunar power exists. Dr. P[illegible] on the authority of the [illegible] *M[illegible]*, [illegible] that "men [illegible] sleeping on deck [illegible] affected with night blindness, [illegible] swollen. By the same authority [illegible] stated, [illegible] rapidly putrid if exposed to the rays of the moon." Dr. P[illegible] mentions having [illegible] similar [illegible] The statement of "an [illegible] Commander [illegible] of the now defunct Indian Navy, is also quoted [illegible] that he had "not unfrequently [illegible] destroyed by exposure to the moon, and also observed sailors [illegible] a bright moon [illegible] The assertion [illegible] Mr. Thomson, [illegible] the Bengal [illegible] Department, are pretty much to the same effect. And [illegible] (1868) all the above [illegible] again, as actual facts in the [illegible] M[illegible]

On the [illegible] experiments made with me by Dr. P[illegible], and Mr. [illegible] did not show the existence of any lunar [illegible] And I believe [illegible] would [illegible] Although [illegible] experiment [illegible] period [illegible] In [illegible] when [illegible] time [illegible] at the [illegible] placed [illegible] of the moon. Even admitting the lunar ray hastens decomposition of dead matter, *eg* that living matter must be so affected, is certainly not a very invulnerable argument. And it would be still more ridiculous to reason, that because the moon has been supposed to exert power over vegetable substances,[*] living animals are so affected.

Hence the idea of any *direct* lunar influence may be discarded. But that the maladies named do occur, specially on board ship, cannot be denied. It has frequently happened, that persons sleeping on the deck of a vessel have found themselves more or less paralysed, when attempting to rise. Sometimes a leg or arm only suffers, at others, pains and aches—rheumatism in fact—without loss of motive power, is only complained of. In the worst cases, however, there is no real paralysis using the term as now somewhat erroneously applied in medicine. But there is inability to move a limb, as I believe, from the pain motion causes. However stiffened and contracted the member affected may be, a man of strong will is able to demonstrate that no paralysis (vital relaxation) exists. But, unfortunately for the theory of lunar influence, direct or indirect, I have known the same to occur to individuals sleeping on deck, when the moon was *not* visible. And similar remarks apply to instances of swelled face, which moreover are generally found to be connected with a carious tooth. The whole of the ailments are, indeed, simply due to cold caused by exposure to land winds, from being drenched by the falling dew, from sleeping near a sail which directs the wind on the body, or from laying in the current of air entering by a port-hole, or wind sail. A strong breeze playing on a surface wet with dew or perspiration is the real cause of the maladies named. And they present more frequently on board ship, because persons laying on deck are more exposed to changes of temperature, and draughts, from sails, and ports, and position, than people on land. But such affections do occur on *terra firma*; and at the present time I have a patient affected with rheumatism and inability to move the right leg from the hip downwards,—just the condition which has been erroneously termed paralysis,—and contracted, from sleeping exposed to the cold night winds of the neighbouring hills.

On this subject I venture to quote from former writing—"Any medical officer, who has served in the Persian Gulf or Red Sea as I have done, will admit the impossibility of a ship's crew sleeping below, although, indeed, they might be *there by command* during the night, and suffer from disease, as was the case in one of Her Majesty's ships of war some years since cruising in the waters of Iran. During my period of service in the Indian Navy, whether in charge of troops, or simply with the ship's crew, I invariably recommended awnings be spread at night during the hot months for the men to sleep under. Nautical men, however, appear to have an insufferable objection to spreading awnings at night; the reasons advanced for non-compliance with such a recommendation from the medical officers being, that a sudden squall might gather under them; that it interfered with the ventilation or working of the ship; that a spark might set fire to them; that it was not man-of-war like; that exposure to the dews of night rotted the canvas! During some portions of the year in the tropical seas, the frightful heat of day is succeeded by a copious deposit of dew during the night. Any one sleeping under the star-lit canopy of heaven only, becomes deluged with dew; if he wrings his garments, water falls from them as though just removed from a well and handfuls of fluid may be scooped from the ship's scuppers. What wonder then, that the man rises (as I have frequently done) cramped, cold, and with aching pains in the limbs! What wonder that the seeds of rheumatism, of alluminaria, and other chronic diseases enter into the system, destroying health almost before manhood is arrived at.................. Yet the capstan made of brass and solid teak wood was religiously covered with canvas every night, while tender flesh and bone—men going to fight their countries' battles—might be exposed, without remorse, to the destruction of their health, and the impoverishment of the state."

The treatment of the rheumatic and pseudo-paralytic maladies thus induced, consists chiefly in warmth, friction, stimulating liniments, sudorifics, and rest. In obstinate cases blisters may be beneficial.

The ocular maladies, *viz.*, *Amblyopia*, with its varieties *Nyctalopia*, and *Hemeralopia*, or nocturnal amaurosis, presumed to be due to lunar influence, cannot, however, be thus referred to cold. According to my experience, neither *Nyctalopia*, (blindness during the day, and vision by night,) nor *Hemeralopia* (the reverse) are so commonly met with as the mixed form *Amblyopia*, in which, although vision may be more impaired at some particular period, it is always more or less affected. The *Nyctalopia*, or day impairment of sight, is quite different from the aversion to light, or photophobia, as exemplified in the albino, or in scrofulous opthalmia, and at first no altered condition or sensitiveness can be detected. Similarly, when either *Hemeralopia*, or the mixed form prevails, there is no apparent structural change. After the disease has continued some time in *Nyctalopia* especially, there is congestion and hyperaesthesia, and the eye is unable to bear the stimulus of bright light. It is also asserted that intolerance to the bright light thrown on the retina by the opthalmic speculum, is often an index to retinal changes where there have been no previous symptoms. In all varieties of the malady in the latter stages, there may be headache, and sometimes the pupils become dilated. All forms of the disease may exist in very varied degrees of intensity, from a slight impairment of vision, of which careless people take no notice, to the appearance of mist before the eyes, to total darkness. The duration may be days, weeks, months, years. The disease is liable to recur. Natives are said to be more frequently attacked than Europeans, and it often prevails epidemically. But although more commonly observed in tropical climates, it has frequently been noticed, both as a sporadic and epidemic malady, in Europe. In one large ship, it is recorded that sixty men suffered. In some parts of Hungary it has also prevailed epidemically. In 1834, at Ofatfendorf, 138 soldiers of the Prussian Army were attacked with night blindness. At Vicennes and Strasburg, epidemics of *Nyctalopia* have occurred. It has also been noticed in Great Britain. *Hemeralopia*, or that condition in which the patient can see well in the daytime, but not at night, is more frequently found among soldiers who have passed quickly from a northern latitude to a tropical station.

It is also well known that night or day blindness, particularly the former, are often feigned. When this is the case, the diagnosis is difficult, and can only be correctly arrived at by having the patient watched when he supposes himself to be unobserved. A case of feigned day blindness was under my treatment but a few weeks back. The patient, a native, appeared, as usual, morning after morning at the hospital, apparently unable to see his path. One afternoon, I accidentally met him running along the road, gazing with the utmost pleasure at the Mohurrum Taboot. Suspicions of malingering were, of course

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[*] Dr. Peet mentions, that a wood resembling mahogany growing in Demarara, is said to be very durable and tough if cut in the dark nights before the new moon; but the reverse if felled on the moonlight nights. A similar assertion has been made with regard to trees growing in the Mauritius. Bamboos are also named as thus affected. But the latter growing hereabouts, (on the Aravallis) however much their durability may be lessened by cutting them at the wrong season of the year, are certainly not under lunar influence.

[illegible] mostly [illegible] would be [illegible] been. He [illegible] sight that the [illegible] could scarcely have [illegible] to the work.

Causes.—It appears certain that over-stimulation of the [illegible] of the eyes, probably more especially of the retina, [illegible] congestion of the vascular [illegible] is the cause of [illegible] in all its forms. It is [illegible] that great heat, or intense light, or continued exercise of the eyes on minute and dazzling objects, frequent or lengthened exposure to the glare from [illegible] reflection of the sun from water, all tend to an exhaustion of retinal [illegible] congestion of vascular textures. Where *Hemeralopia* is most prevalent, there is probably more loss of nervous power, and accompanying general debility of system. The comparatively feeble rays of the moon are not sufficient to illuminate objects to render them visible to the weakened visual powers. In *Nyctalopia* there is more congestion and hyperæsthesia, and the eye is unable to bear the stimulus of bright light. Such cases, Mr. Longmore states, are not unfrequent among soldiers invalided from India for impaired vision.

But the light of the moon does not appear alone sufficient to produce any form of *Hemeralopia*. Livingstone, who noticed the disease prevailing in Africa, does not think it caused by the moon. He remarks—"You may sleep out at night looking up to the moon, till you fall asleep without a thought of moon blindness." And I well recollect instances of the ailment occurring to persons who had not been so exposed. Still lunar light on the eyes during the hours of sleep may act as an additional excitant. The retina and choroid, from previous stimulation during the heat, glare, and brightness of the day, when exposed to the brilliant moonlight of the tropics, are not permitted any season of rest. Hence the malady, often first noticed after exposure, has been altogether attributed to lunar light.

Exactly the same condition often results, especially in the arctic regions, from exposure to the glare from snow. But as in the northern latitudes at particular seasons, there is no rest for the eye, no period of darkness, no coloured objects to relieve the dazzling white. Snow blindness, unlike the malady when due to other causes, is frequently attended with considerable irritation and pain, (Hall) often terminating in profuse lachrymations and acute ophthalmia (Cayley.)

The state of the general health has much to do with the occurrence of any form of *Hemeralopia*. The naturally weak and feeble, and those debilitated by long marches, hard work, poor diet, also persons suffering under confirmed or latent scurvy (the latter a condition very frequently present, but unsuspected) are, *cæteris paribus*, most likely to become affected.

The treatment of these cases consists in attention to the general health and prevention of exposure to the exciting causes. Blisters behind the ear, or on the temples, have been recommended, but are rarely beneficial. A similar remark applies to leeches. Tonics are always required. But the most important means of cure is confinement during the day in a darkened room. I have found this plan perfectly successful within a week, and it is highly recommended by others. Exercise should be taken after dark, and every precaution provided for the patient to regain an extent of [illegible].

As a preventive means, Jeffreys recommended "a flexible horse-hair net, enclosed in a frame of [illegible] wire," when not used to be concealed in the hat. Cayley mentions the inhabitants of East Lapland and [illegible] protect their eyes from the snow, by spectacles made of horse-hair. The wooden spectacles of Greenlanders, presenting only a minute aperture, thus preventing the entrance of much light on the retina, are also well known. For the glare of the Indian sun, I am inclined to think, blue glasses are the most serviceable, but Cayley recommended a neutral tint [illegible].

BELLADONNA AN ANTIDOTE TO OPIUM.

By J. E. Scriven,

Principal, Lahore Medical School.

That belladonna, or its active principle atropine, is antagonistic in its effects to opium has long been believed, and this, as well as the converse proposition, has been exemplified occasionally in practice, yet cases have not been sufficiently numerous as yet either to have assumed the importance of an established fact.

The idea was first propounded to me, in a paper published by Dr. Thomas Anderson, so long ago as 1854, and I have, from time to time, seen the question touched upon in the medical journals. Amongst those that I am now able to refer to, at Lahore, however, I find only a very few papers bearing upon the point. Two cases of opium-poisoning, treated by belladonna, are related by Dr. Morris of Pennsylvania. (See Braithwaite's Retrospect, Volume XLVII, page 577). In one of these, very large doses of extract of belladonna were given, the whole amounting to fifty grains. The quantity of morphia taken was enormous. The patient recovered.

In the second case, one ounce of laudanum had been swallowed. The pupils did not dilate till 17½ grains of belladonna had been administered. This was the only obvious effect, and the patient died. In both of these cases, emetics were used before the belladonna. Of belladonna poisoning treated by opium, I find in the *Medical Times and Gazette* of 8th October, 1864, page [illegible], a case related, under the care of Dr. Fraser, at the London Hospital, in which m20 of tincture of opium twice administered, was sufficient to counteract the influence of about half an ounce of belladonna liniment that had been swallowed by mistake. Part of this, however, had been previously evacuated by an emetic.

In the *Lancet* of 8th May, 1869, page 657, another successful case is related by Mr. Borlase Childs. In this, [illegible] of tincture of opium, twice administered, completely counteracted the poisonous effects of six grains of extract of belladonna. Neither emetic nor stomach pump was used in this case. I am sorry that I cannot lay my hand on Dr. Anderson's paper. From Mr. Child's case, in which none of the original poison was removed from the stomach, it appears that one drachm of the tincture of opium, equal to four grains of opium, proved an effective antidote to six grains of belladonna.

To determine how much belladonna is necessary in opium-poisoning, the cases alluded to do not assist us much; but, that it may be given in doses that would otherwise prove rapidly fatal is, I think, obvious.

Though I had borne Dr. Anderson's suggestion in mind ever since I read his paper, no case had come before me in which I felt justified in adopting a new and as yet uncertain remedy, until a few days ago. The following is the history of the case. A boy, aet. 7, suffering from ascites due to liver disease, had been given some tincture of opium to quiet restlessness. The quantity was said to have been very small, but the precise amount could not be ascertained. The laudanum was administered at 4 a.m. on 7th July, at 7 he was seen by the house-surgeon of the Medical School Hospital at Lahore, who found him deeply comatose, the pupils contracted, the face livid, the pulse almost imperceptible, the breathing difficult and stertorous. He could not be roused, could not be made to swallow, and no reflex effect could be produced in any way. The house-surgeon dashed cold water in his face, and placed some students at the bed-side, to strike continually the palms of the hands and soles of the feet. In this way the circulation improved, and the lividity was somewhat diminished, but the breathing appeared as difficult as ever, and was accompanied by a great deal of rattling in the throat, due to accumulation of mucus, which excited no coughing, and could not be displaced. In this condition I saw the boy at 8. It appeared to me that the house-surgeon had rightly judged, that to introduce the stomach pump would be dangerous in a case that had gone so far, and, indeed, as to removing the poison by its means, this, of course, was impossible, as the opium had been given at 4 a.m. in form of tincture. I therefore ordered the boy an injection of eight ounces of infusion of tea and a little rum; but, finding no improvement, I determined to try atropine. At 9 o'clock, therefore, I injected 15 minims of solution of atropine (grs. iv and ℥i) into the rectum, in half an ounce of tea. This contained, of course, $\frac{1}{8}$ of a grain of the alkaloid. I also dropped a little of the same solution into the left eye, and one drop into the mouth, and this was repeated into the eye and mouth once during the next hour. The right eye was reserved for watching the constitutional effect of the remedy. The clapping of the soles of the feet and palms of the hands was continued for sometime; but as neither this, nor pinching, pricking, nor any other kind of stimulus was in the least degree noticed by the patient, it was discontinued about half past nine. The left pupil dilated rapidly and fully, under the influence of the drop of atropine, and at 10 it became obvious that the right one was slightly larger than before. It was now observed that, on putting the finger into the mouth, a very feeble effort was made to close the teeth upon it, but, to every thing else, the boy continued as completely insensible as before. The pulse was very small and rapid, but distinctly felt; the extremities were warm. At 11 a.m. the right pupil was more dilated, the pulse had improved, but the breathing was the same. At half past twelve the injection, containing $\frac{1}{8}$ grain of atropine, was repeated, and at 2 p.m. the right pupil was fully dilated, the pulse had still further improved, but the breathing was the same. At 3 p.m. a nutritive enema was administered, consisting of eight ounces of milk and half an ounce of rum. I saw him again shortly afterwards. His pulse was now tolerably good, though rapid, and a slight reflex effect was noticeable on touching the eye ball, or tickling the sole of the foot. At 6 p.m. he was decidedly better. He occasionally moved his limbs a little; and though there was no very distinct evidence of sensation, on pricking, pinching, &c., yet he certainly felt and resisted the passing of the catheter, which was now used to draw off the urine, as he had not passed any the whole day. There was slight pyrexia.

At 8 p.m. another nutritive enema of milk was administered, half of which came away again immediately, thus affording further evidence of restored reflex action. All the other enemata had been retained. At this time the boy could speak a little, partly answered some questions, and opened and shut his eyes. At 10 p.m. he was able to swallow, and was freely fed with tea during the night. At 11 he appeared to be well, and answered questions plainly. He was a little feverish however, but even this had ceased by 2 a.m., on the 8th. At 3 a.m. he said he was hungry, and took some milk. At 6 a.m. he seemed to be quite well, but the tongue was dry, and both pupils were dilated; there was no other obvious effect of the atropine. The boy was restless and peevish, but the father said this was habitual to him, and it must be remembered he was suffering from [illegible]. On the 9th the right pupil was no longer dilated, though the left was so. The following day he was taken away by his friends.

In this case, $\frac{1}{4}$ of a grain of atropine was administered, without any symptoms, except dilatation of the pupils, and recovery from an extreme condition of opium-poisoning. We can hardly believe that so powerful a medicine had no influence, and are almost driven to the admission that its poisonous effect was counteracted by the opium; in fact, that the two poisons were mutually antagonistic, and neutralised each other. This point, however, can only be satisfactorily proved by an accumulation of evidence, though it is very strongly supported by the crucial test of Mr. Child's and Dr. Fraser's cases. Thus, much, however, I think, must be admitted from the evidence of my case, of Dr. Morris' of Pennsylvania, and, I believe, also of Dr. Anderson's, though I have not his cases here to cite, *viz.*, that the system, under the influence of opium, has a great tolerance for belladonna, and, therefore, that it may be carefully administered without danger; so that the road is at once open for further investigation.

An antidote that acts powerfully in a concentrated form is surely a great desideratum, for at best the ordinary antidotes to opium, such as tea and coffee, are bulky, difficult to administer, and, withal, not very satisfactory; while cases like mine must occasionally occur, in which the stomach pump cannot be used, and swallowing is impossible. From this case it would appear that, if the circulation continue, even though feebly, the atropine acts very well given by the rectum. With equal propriety, of course, it might have been sub-cutaneously injected in smaller quantity; and, had the circulation been still feebler, doubtless, this would have answered best.

HINTS IN PRACTICE.

By Dr. Baillie,

Surgeon, Calcutta Native Hospital.

I.—ICE IN CHLOROFORM ACCIDENTS.

In cases of syncope from inhalation of too large a quantity of chloroform, there is no means upon which I should more rely to restore the movements of respiration, than the introduction of a *good-sized lump* of ice into the rectum. This is much more easily effected than one would suppose; a little pressure with the ice being made over the sphincter causes it to relax, and the ice slips in, followed almost instantaneously by a prolonged inspiration, the precursor of natural breathing, and restoration of the heart's action. This measure, but with a *small* bit of ice, would, doubtless, answer equally well with still-born children.

II.—BURNT ALUM IN FUNGUS TESTIS.

Instances not unfrequently occur in this complaint where either the patient objects to submit to Syme's operation, or where it and pressure have failed; in such circumstances, I have seen the happiest results follow the treatment below indicated.

If the testicle be much constricted by the surrounding tissue, this should be first divided by a few stellar incisions, then the testicle and parts divided are to be thickly covered with burnt or desiccated alum, which may be retained over the parts by strips of soap plaster, and over this a carefully applied bandage. Daily dressing is required; the loose alum should be removed and fresh applied, and well pressed down, and that which adheres and cakes must be allowed to remain till it falls off, when it may be renewed; in addition to this, it is well now and then to pour tincture of iodine over the salt, nor should constitutional treatment be omitted, such as generous diet and the preparations of iodine with iron, &c. The cure is generally complete in three weeks or a month, but where the protrusion is very great, double that period may be required.

III. AT WHAT POINT IS IT BEST TO OPEN THE KNEE-JOINT FOR THE REMOVAL OF PUS?

This question, although seemingly a trifling one, is, I believe, of some importance, both as regards the result of the operation and the future movements of the joint. Of course every surgeon would avoid, if possible, incision or perforation of tendinous or ligamentous structures; but it is, as regards the opening *of the* [illegible], that I would wish to direct attention [illegible] the question to be made in the middle of the [illegible], not [illegible]

[illegible] and [illegible]

IV.—ENUCLEATION OF SUPPURATING OR DISEASED GLANDS IN THE GROIN.

[illegible] successful practice [illegible] I have [illegible] In such cases, the application of iodine or its internal administration is worse than useless; it merely serves to prolong the mischief. [illegible] the easiest way for effecting which, is to introduce a grooved director into the most depending opening, and slit up the skin so as to admit the left fore-finger, which is then to be used as a living director, and inserted with [illegible] into the various sinuses, which are to be freely [illegible] with a pointed curved bistoury, by which means all the [illegible] of the part are exposed. [illegible] examined [illegible] and such as [illegible] down [illegible] likely to [illegible] removed by passing the finger [illegible] and under them, [illegible] by which they may be removed. [illegible] follows the [illegible] and the exposed surface [illegible] warm dressing. [illegible] treatment consists [illegible] dressing [illegible] the patient [illegible] healthy glands and granulating surface.

V.—HYPODERMIC INJECTION OF MORPHIA IN THE VOMITING OF PREGNANCY.

Of all the means I have tried, this has proved the most successful in arresting the excessive vomiting which occasionally occurs during pregnancy, and which so often baffles our endeavours to [illegible] it.

A grain of the acetate is dissolved in half a drachm of water, [illegible] minims are injected at the epigastric region, and [illegible] repeated [illegible] interval, till relief [illegible] sometimes one injection [illegible] but generally [illegible] may be [illegible] grain are [illegible]. Several native practitioners [illegible] have been [illegible] of using this remedy, and speak highly of its [illegible].

VI.—DIVISION OF SPHINCTER ANI IN RECTAL ABSCESS.

I [illegible] I believe to be absolutely necessary in *every* [illegible] avoid the contingency [illegible]. The muscle should be divided at the time [illegible] and as the left fore-finger, well oiled, should [illegible] explore the abscess and [illegible] the sphincter [illegible] upon the [illegible] and [illegible] divided. I [illegible] wounds [illegible], and much unnecessary suffering caused, by want of attention to this slight precaution.

CASES FROM PRACTICE.

◆

CASE OF SLIGHT INJURY OF THE HEAD FOLLOWED BY BLOOD-POISONING, AND DEATH FROM CARDIAC APNŒA, IN AN ENGLISH CHILD AGED [illegible] YEARS.

By [illegible], C.S.I.

I [illegible] 15th [illegible] He [illegible] towards [illegible].

The wound was so trivial that I was not asked to see it, and nothing suggestive of any unfavourable consequence rendered it necessary that I should do so.

During the week following the accident he was considered [illegible] in his usual good health and spirits, but the native nurse says that for the last two days he had sometimes said he was [illegible], but he said nothing [illegible] except on the 21st [illegible] the back of his head [illegible]. He [illegible] went to sleep as usual, but he was unusually restless at night.

He went with other children to spend the day next door. Mrs. —— says that she noticed, when playing with the children, that he [illegible] and drowsy, and did not, on one or two occasions, answer to questions; she thought it odd, [illegible]. He was quite well in the evening, and went to bed in good spirits. At 3 a.m., his mother was called [illegible] and found him restless and feverish; she gave him some fever mixture, and sat by his side till he went to sleep. After this he became more feverish and was sick. When she saw him again in the morning he was very feverish, restless, and light-headed, and there was a peculiar twitching of the muscles generally. He was then taken into his mother's room. He had a calomel powder and quinine given, which acted freely. I did not see him till about 11. He was then unconscious; the muscles were constantly twitching; his skin was hot; his pulse was quick and rather weak; the pupils were dilated; and he had a peculiarly unconscious stare. I [illegible] examined the head, and found the occipital region [illegible]. It was then that I heard for the first time of the accident. My thoughts were immediately directed [illegible] meningitis, &c., to the wound. I [illegible] and examined it very carefully. A piece of [illegible] plaster was removed from the wound, and a drop or two of healthy pus followed its exit. The wound itself was about the size of a split pea, and looked quite healthy. It was deep, the probe passed down [illegible], but not quite to the [illegible]; the bone could not be felt.

The scalp all round the wound from the upper occipital curved line to the neck was swollen and œdematous; it was boggy, but *not red*; no erysipelas had as yet supervened. I examined it carefully for suppuration in or under the scalp: it was thickened and infiltrated, but no positive evidence of the presence of pus existed. I observed that the respiration was much hurried.

The symptoms rapidly became worse; the delirium and muscular [illegible] increased, and the limbs soon began to be violently convulsed. He rejected all that was given him. He passed from a state of incoherent delirium into stupor. The respiration became excessively hurried, 80 in a minute; pulse very feeble and irregular; head rather hot.

Air entered the lungs freely; but apparently the pulmonary circulation was greatly embarrassed; it was evident that fibrinous coagula were rapidly forming in the right cavities of the heart. He was quite unconscious, eyes staring; pupils widely dilated; lips at times became quite livid, again for a moment becoming red.

I had applied a poultice over the wound and swollen parts; and ordered cold wet cloths to the head; chicken broth to be given frequently, and the enema to be repeated. Stimulants were now freely given by mouth and rectum with quinine. Quinine had also been given at the first. Not the slightest benefit resulted beyond the occasional slight raising of the pulse. The child rapidly grew worse, and the embarrassed heart ceased to beat at 4 p.m.

The cause of death here was evidently cardiac apnœa, due to the formation of coagula in the right cavities of the heart. The origin of the septic condition that induced this can only be attributed to the mischief which had insidiously supervened in the occipital region. It is very remarkable that it should have manifested itself so late after the accident, and that it should have proved so rapidly fatal. The swelling of the scalp was not noticed until I accidently put my finger on it in examining his head, and there is every reason to believe that it was quite of recent occurrence.

For a moment the question of the trephine was suggested, on the supposition that pus might have formed between the bone and dura mater. But the evidences of constitutional mischief were so marked, and the chance of relief so very faint, that it was at once abandoned.

The body was examined on the 23rd July, about 11 hours after death. The back and other parts of the body were already much discolored by suggillation.

Head.—The scalp was reflected; all round the wound it was thickened and infiltrated with a dark red serum; probably partially purulent fluid. This occupied an area of an inch in each direction: beyond this and down to the neck it was infiltrated with yellow turbid serum. All this part of the scalp was œdematous. The wound itself was healthy, and reached nearly, not quite, to the pericranium, which was therefore unwounded.

The pericranium, though, was detached from the bone for about a square inch, corresponding to the site of the superjacent wound. The bone was bare, but did not appear dead. The bones of the cranium were healthy; the section revealed no suppuration in the cancellated texture.

The longitudinal and other sinuses were distended with blood and contained coagula.

The brain was much congested on the surface; the vessels between the convolutions were engorged; the surface of the base, especially over the wound, was slightly ecchymosed under the arachnoid. There was no indication of any arachnitis; nothing suggestive of tuberculosis. The brain substance, when cut, was not congested; the ventricles were normal; the membranes were also healthy.

Thorax.—The lungs were pallid, almost blanched, except just at the back. They contained little or no blood, but some air.

Heart.—Pericardium natural; heart firmly contracted; the right auricle and ventricle contained a peculiarly tough decolorized fibrinous clot, which was firmly wedged in the auriculo-ventricular opening. It did not extend into the pulmonary vessels; but it did worse by obstructing the pulmonary circulation at the very outset. There was also a small quantity of *post-mortem* clot in the right ventricle, and also in the left cavities of the heart. The pleuræ were natural.

Abdomen.—Viscera healthy.

ON THE USE OF PETROLEUM OR EARTH-OIL AS AN ANTISEPTIC IN THE TREATMENT OF SURGICAL DISEASES.

By Dr. Fayrer, C.S.I.

I have recently been using petroleum, as an external application, on the antiseptic principle, in the treatment of some surgical cases, and I subjoin a brief abstract of a few of those so treated, which, I think, so far warrant the conclusion that it has been applied with benefit; as it possesses some, if not all, of the advantages assigned to carbolic acid in this purpose. The petroleum in question was kindly supplied to me by Mr. Goodenough of the firm of Messrs. Mackillop, Stewart and Co., and is a dark oily looking fluid, with a peculiar, though not unpleasant aromatic odour. It struck me that this hydrocarbon might be as efficacious as carbolic acid for surgical purposes; and as it is produced in this country and in Burmah, it might be obtained in large quantities and at a smaller cost than carbolic acid, and I have no doubt, its use might be extended over a wide range for hygienic purposes. The present memorandum has reference only to its use as a surgical application on the antiseptic principle of purifying the air that obtains access to the affected surfaces. This petroleum is produced, I am told, in large quantities in Assam; and from this source, no doubt, an ample supply might be obtained, should it prove after experiment to be useful for therapeutic and hygienic purposes.

I have used it undiluted, or diluted with equal parts of oil, or glycerine, and whilst it certainly has some deodorising power, it appears also to have that of limiting suppuration, and of restraining the development of septic miasmata in the discharges, whose decomposition it probably retards.

It is also useful as a stimulating and detergent application in sloughing and ulcerating surfaces, and I have remarked, especially in one case of carbuncle, that it proved most efficacious as an external application. It is not irritating, or very slightly so, to raw surfaces, and I have not heard any complaint made beyond that of slight smarting, when it is applied to granulating and ulcerating wounds. The evidence of its virtue is as yet but limited, yet it is such as to suggest the advantage of making further trial of what may prove to be a valuable addition to our surgical resources, and has the advantage of being produced in the country.

CASE I.

Judonath, aged 30, had a large ulcer above the right ankle with a sinus leading to the bone. The ulcer had been treated with carbolic acid dressing. Since the 30th April the earth-oil has been applied, and the ulcer is granulating healthily, is much contracted and is cicatrizing rapidly with very little discharge. The dressing causes no pain.

CASE II.

Darai Sirdar had a cystic tumour, size of a walnut, removed from the root of the nose on the 12th April. The earth-oil dressing was applied immediately after the operation. The wound had nearly closed, without any suppuration on the 25th April. The integument being redundant however, a portion was removed on the 4th of May, and this wound dressed with earth-oil. It has healed satisfactorily, and he was discharged about the 18th. A small portion of integument sloughed; but there was almost no suppuration.

CASE III.

Degum, aged 35, admitted on the 10th May, 1869, with a deep cut in the upper and inner side of the right arm. No arteries of importance divided. The wound was dressed with petroleum, and it healed rapidly with very slight suppuration.

CASE IV.

Rajeshwary, a Hindoo woman, aged 65, admitted with an ulcer of considerable size in the right leg. There was a profuse ichorous discharge with considerable pain. It was dressed on the 30th April, with the petroleum. The discharge diminished, and the sore assumed a more healthy aspect. To remove thickening round the ulcer, liquor lyttæ was applied, and after this the ulcer rapidly granulated with very slight discharge.

CASE V.

M. M., an East Indian, admitted 12th May, 1869, aged 19, with sloughing of cellular tissue of the palm of the right hand. Petroleum applied, and the sore assumed very rapidly a healthy action. The wound is now, 8th June, nearly healed.

CASE VI.

Ghurmo, a Hindoo female, admitted 29th March, 1869, with a deep excavated ulcer exposing necrosed bone, near the left olecranon. She was evidently syphilitic. The wound was dressed with the petroleum, whilst internally potass. iod. and cod liver oil were administered. The sore healed rapidly; the diseased bone separated, and she is now nearly well.

CASE VII.

Hurrish Chunder, aged 50, had a scrotal tumour removed on the 16th March, 1869. The wound at first was dressed with the carbolic-oil dressing, under which it was doing well. On the 30th April the petroleum dressing was substituted, and the wound continues to cicatrize most favorably, and without almost any suppuration.

CASE VIII.

Mosum Aly, aged 35, had a moderate sized scrotal tumour removed on the 13th April 1869. Carbolic-oil dressing was at first used. On the 30th April the petroleum was applied. The wound is granulating healthily, and with very little discharge. He is still in hospital.

CASE IX.

S[illegible], aged 10, admitted [illegible] 14th May, 1869, with [illegible]. This was [illegible] by making holes through the [illegible] the same date. The earth-oil was applied as a dressing, and the discharge was very slight. [illegible] on the 17th, but subsequently diminished, and the boy was discharged convalescent a few days later.

CASE X.

K[illegible], aged 35, admitted 10th May, 1869, eight days after receiving a very severe sword wound on the left hand: the metacarpal bones, except that of the thumb, were all divided. The wound was suppurating when he came in. He has done well since. A collection of matter formed in the forearm, which was let out. But the wound in the hand has cicatrized; other smaller wounds in the arms were dressed in a similar manner, and they have done well.

CASE XI.

Chumman, admitted [illegible] May, 1869, for having had his left great toe crushed by a carriage wheel. Earth-oil was used from the very beginning, and the slough separated on 15th March, 1869, and the wound cleaned by the 17th March, 1869; and it is now healing up with little discharge.

CASE XII.

Babu Sheik had his ring finger removed on the 26th April, 1869, with the head of the metacarpal bone, for an injury. The earth-oil was used since the 29th. There was never any great discharge from the wound, which began to suppurate on the 30th. Granulations were so rapidly growing that by the 6th, most of the iron wire sutures were seen half-imbedded within them. Sutures removed on 7th, and cicatrization began on the 9th, and he was discharged on the 20th cured. He never complained of much pain from the oil.

CASE XIII.

J., aged 40, admitted on 10th May, 1869, transferred from the medical wards for an ulcer on the left shin. Earth-oil applied. Sore has been contracting, with hardly any discharge, and completely cicatrized.

CASE XIV.

A., aged 30, admitted 2nd May, 1869, for ulcers in his right leg. Earth-oil used from the beginning, and liquor lyttæ applied on 10th May, 1869; the sores nearly healed, though on admission they were each about two inches square. They are now cicatrizing.

CASE XV.

G. H. M., aged 28, admitted 6th May, 1869, for a cut at the popliteal space dividing some of the hamstring tendons. Earth-oil used from the beginning; and the wound has not yet suppurated, though the flaps are becoming adherent now.

CASE XVI.

H., aged 25, admitted 7th May, 1869, from incised wound below his right breast about 6 inches long. Dressed with earth-oil from beginning, and it is now very nearly healed. He complained of but slight burning at the beginning. The wound completely cicatrized.

CASE XVII.

A [illegible] had a lacerated cut about 2 inches long on [illegible], which healed up in about a week and a half without any discharge.

CASE XVIII.

J. R., aged 30, got two contused wounds on the head on 12th May, 1869, and they were dressed with the earth-oil from the next day. The sloughs separated on the 17th with some bleeding, and the wounds have since been healing with slight discharge.

CASE XIX.

A[illegible], a Christian, aged 31, came for a large carbuncle on his back, of a fortnight's duration, it is full of dark sloughs, and there is [illegible] pain. It has been dressed with the oil, and the discharge has diminished since, and the sore looks healthy. He recovered completely.

CASE XX.

A[illegible], aged about 45, was admitted in June, with a wound in the left iliac region. A bull had struck him with his horn, and opened the abdominal cavity. The intestines protruded, but were returned. He recovered rapidly with petroleum dressing, without a single bad symptom.

FIBROUS TUMOUR OF THE UPPER JAW—REMOVAL.

By Assistant Surgeon A. Neil,

Civil Surgeon, Loodiana.

The patient, of whom a faithful likeness is here given (from a drawing made by Dr V[illegible] before the operation) is a young man of 20 years of age. He was admitted into the Loodiana Charitable Dispensary early in May last, but transferred to the Dispensary at Jullund'hur, in order that I might have the assistance of Dr Warburton, the Civil Surgeon of that station, in removing the tumour.

His history states that about three years ago there appeared a slight swelling in the cheek, which gradually increased until it reached about half its present size about six months ago. At this time, from some unexplained cause, there occurred a sudden and most profuse hemorrhage in the mouth from the under surface of the tumour, and after this the whole tumour increased more rapidly in size in every direction, until it more than half closed up the mouth, pushed the nose over to the left side to a considerable extent, encroached upon the cavity of the orbit, and pushed outwards the zygomatic arch.

Such was his appearance on his presenting himself to me at the dispensary. The teeth, from the upper canine of the left side, were separated from each other and included in the tumour, here and there were studded irregularly in it. The hard palate looked red and inflamed, but there was no abrasion of surface. From the size which the tumour had attained in the mouth the soft parts of the fauces and back of the mouth could not be observed. The right nostril was apparently entirely closed up, but he could snuff with apparent ease through the left. The right eye, both from encroachment of the tumour and tumefaction of the lower eyelid, was almost invisible, but sight still remained.

On the 11th May I went to Jullundhur, and with the aid of Dr. Warburton, the Civil Surgeon, Dr. Verchere, of the 13th Native Infantry, and Dr. Tolmie, of Her Majesty's 92nd Highlanders, I removed the entire tumour. With regard to the steps of the operation there is little to tell, which would not suggest itself on looking at the above sketch of the patient's appearance. He was first put under the effects of chloroform, and the operation was commenced by removing the first bicuspid tooth of the left side. The cheek was raised by first making two incisions, one commencing from the middle line and carried upwards along the right side of the nose to a level with the orbit, the other from the angle of the mouth to a little above the expanded arch of the zygoma. The divided facial artery was then tied (the only artery that required ligature during the whole operation) and the cheek dissected up to a level with the terminations of the two incisions. The zygomatic arch and the point of junction of the malar with the frontal were then divided by the saw. The hard palate was divided by a strong pair of scissors, but only back to within a little distance of its junction with the soft palate, in order that the palatine process of the palate bone might be saved, if possible. The nasal process of the superior maxillary required no division whatever; and the cause of this will be presently explained. The whole mass was now quite moveable, and little downward pressure was required to displace it entirely from its bed. The margin of the orbital plate of the maxillary was included in the tumour and came away with it. No forcible separation from the nasal bones was required. The soft palate was carefully looked to, and it, along with apparently the whole of the palatine process of the palate bone, was preserved entire. There was no hœmorrhage while the mass was being removed from its bed, and no stoppage of bleeding by means of actual cautery was required throughout the whole operation. A plate of bone, apparently a part of the orbital plate of the superior maxillary, and doubtless the small orbital process of the palate bone, were left for the support of the orbit. Their structure appeared quite healthy, and their preservation was very desirable. The cavity thus left was cleaned and partially filled with a few folds of lint soaked in a dilution of Condy's Disinfecting Fluid. The cheek, which had of course been held up during the separation and removal of the tumour, was replaced and reunited at its borders by wire suture, and a single piece of lint soaked in the same solution placed over. The time occupied by the operation did not extend over twenty minutes. I left the lad under the care of Dr. Warburton.

After-treatment and progress.—At 10 p.m., four hours after the operation, a grain of opium in an ounce of camphor mixture was administered.

12th.—Slept well during the night. Parts cleaned externally with a fresh piece of lint, and solution applied. No hœmorrhage from the wound. Sightly feverish early in the morning, and more so towards afternoon. Diaphoretic mixture ordered.

13th.—Did not sleep well during the night. Skin still hot. Pulse hard and rapid. Lint removed from the cavity, and fresh lint soaked in diluted Disinfecting Fluid again introduced. Bowels opened. Continue Diaphoretic mixture.

14th.—Slept well during the night; bowels moved once. Has slight fever. Continue mixture.

15th and 16th.—Still slight fever.

17th.—From this date to the 7th of June the patient improved steadily. The parts healed mostly by the first intention, except near the lip, where a slight tendency to sloughing appeared, but was soon checked. On the 19th, the ligature was removed from the facial artery and the lint taken out of the cavity, in which a healthy granulation was very apparent. It was cleaned out daily by syringing with Condy's Disinfecting Fluid.

7th June.—Discharged quite well.

About a week after the date of his discharge, he presented himself at the Loodiana Dispensary and described himself as quite free from pain or uneasiness. The nose had fallen back very considerably towards its natural position. The right eyelids were as widely apart as the left. The cavity appeared gradually filling up with healthy granulations. He could articulate so as to be readily understood by those about him.

REMARKS.—This is a case in which the [illegible] maxillary bone, with the apparent exception of a portion of the orbital process, had been replaced by fibrous structure. In its general and microscopic structure there is no departure from the ordinary characters of fibrous tumours which are common to this as well as to other bones of the face. The tumour had not its origin in the antrum, which is enlarged and contained a large quantity of serous fluid, retained there by obliteration of its opening which is in the natural condition of the parts [illegible] with the middle meatus of the nose. The mucous membrane of the antrum is very much thickened and is the only structure forming its wall, if we except the portion of the orbital process which forms its roof in the natural state. None of the surrounding bones appeared at all affected, and indeed the generally smooth surface of the tumour leads to the belief that they have escaped.

A solitary instance of success in a case where the disease had attained a very formidable dimension, scarcely entitles me to speak with confidence of future successes in operations of the same kind. Yet I cannot help stating that the operation is neither so difficult nor so hazardous as one would be naturally led to anticipate, and, judging from my own feelings of anxiety before I undertook to perform it, I am inclined to believe that the formidable appearances which these tumours often present, the dread of uncontrollable hæmorrhage, and an over-estimate of the difficulties attending the operation generally, have led to many deferred and abandoned attempts.

THREE CASES OF TYPHOID FEVER.*

BY ASSISTANT SURGEON A. DOIG,

79th Highlanders.

[*Communicated by Dr. W. Munro, C. B., Deputy Inspector-General of Hospitals, H. M.'s Forces.*]

PRIVATE JAMES MUIR, 92nd Highlanders, age 26, service eight years, time in India 1 1/12, married, was sent up from Jullundur as one of the convalescents of the season. At Jullundur he is said to have had repeated attacks of fever, which so debilitated him, that a change to the hills was considered necessary for his recovery. He arrived here on the 16th April, and was on that day admitted to hospital. Then he was suffering from fever daily, with but slight intermissions. The form of fever is described as remittent. His general state was very low, and tongue and mouth covered with sordes. No further statement of his symptoms is given at this period. He was treated with quinine in full doses, and stimulants were given. On the 22nd April he is stated to have been very low and feverish, and an inflammatory swelling on right side of the neck made its appearance, which suppurated, and was incised on the 27th of the month. On the 28th April he is described as improving; no fever present; and the abscess discharging healthy pus. On the 3rd May the febrile symptoms appear to have returned, and he was in a low drowsy state with delirium at night.

On the 12th May he came under my charge. He was then suffering from a low typhoid form of fever. He was in a dull listless sort of state; had to be spoken to in a loud tone before he would answer questions. Skin had a dusky sallow hue, and was hot and pungent. Tongue brown and furred, a little sordes about mouth; pulse rapid and small, 115; slept well during the previous night; had no delirium, but most profuse sweating. There was no diarrhœa or tenderness of abdomen. Bowels were stated not to have been opened for three days; there was no eruption. Quinine, beef-tea, and wine were ordered. In the evening pulse was 118, skin very hot and pungent, had a drowsy, stupid look; bowels moved once during the day; motion loose, entirely fæculent and of natural colour; no tenderness of abdomen.

May 13th, Morn.—In a very low state; wandered a little during the night; had most profuse sweating, his whole bedding being saturated; was in a dull, drowsy state, skin dusky, very hot and dry; pulse 120; bowels moved twice during the night; motion had a greenish colour, and was about the consistence of pea-soup. There was a little tenderness and gurgling on pressure over left iliac region. No eruption present. Another small abscess on the left side of neck burst during the night. Quinine, beef-tea, and wine continued.

Vesp.—General state much the same as in the morning; bowels moved twice during the day; motion of the same colour and consistence as that passed during the night, but contained a little mucus; abdomen slightly swollen and tender all over; pulse 118; tongue and mouth very foul.

May 14th, Morn.—In a very low state; could with difficulty be made to answer questions; pulse very feeble, [illegible]; [illegible] during the night; [illegible] most profuse sweating during the [illegible]. The [illegible] of abdomen had subsided, and there [illegible]

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* [illegible]

[illegible] awake [illegible] [illegible] 2W[illegible] [illegible] he commenced [illegible] but two [illegible] discharge [illegible] and [illegible]; tongue [illegible] with [illegible].

[illegible] May.—Has [illegible] wandering during the [illegible] not to [illegible], respiration very [illegible]; would answer [illegible] was very [illegible] during the [illegible] as those formerly [illegible] or sweating [illegible], and no eruption [illegible] given [illegible] every half hour. [illegible] Gradually sinking [illegible] questions, bowels [illegible] during the day; hands [illegible] cold and clammy; [illegible] scarcely perceptible. Continued slowly sinking during [illegible] and died at 9 P.M. on the 16th May.

Result of the post-mortem examination as found on examination [illegible] of the late Private James Mann, 92 Highlanders.—[illegible] emaciated; skin of a dusky colour; two abscesses, [illegible] neck, both open. *Chest.*—Lungs collapsed. *Abdomen.*—No signs of peritonitis; bowels distended [illegible]. *Duodenum.*—Mucous membrane congested, and [illegible], no ulceration. *Ileum.*—Mucous membrane [illegible] in its lower fourth, where it was extensively [illegible] of a purple colour. There was no ulceration [illegible] whatever of Peyer's patches or solitary glands. [illegible] Mucous membrane of caecum congested. On its [illegible] was a triangular cicatrix, evidently of long standing [illegible] pale and texture. Mucous membrane of ascending [illegible] at its commencement was the cicatrix of [illegible] of circular shape. Transverse colon of a [illegible] very much congested, and the solitary glands were [illegible] deposit. There was no ulceration. [illegible] colon presented the same appearances, only that [illegible] contained more deposit, and were visible in greater [illegible] close to the rectum, the mucous membrane [illegible]. *Spleen.*—Enlarged and soft. *Liver.*—

[illegible] Taylor, 92nd, a tall healthy looking man, admitted [illegible] 1868, with fever of an intermittent character. [illegible] May, typhoid symptoms made their appearance. [illegible] according to typhoid fever, was in a low [illegible] great prostration, quick weak pulse, foul tongue, [illegible] and general uneasiness.

May 17th.—Much worse, a few spots seen on abdomen.

18th.—[illegible] with abdominal tenderness, pulse 120, [illegible] listless. Ordered brandy and bark and ammonia.

19th.—[illegible] in bed [illegible], very weak and [illegible] moderate [illegible], listless, not easily roused. [illegible]

[illegible] large quantity of [illegible] stools, which [illegible] great abdominal tenderness [illegible]. Brandy and beef-tea, &c., ordered. [illegible] less frequent, [illegible] stools only occasionally [illegible].

[illegible] good [illegible] in a [illegible] state, mouth [illegible] with [illegible].

[illegible] when spoken [illegible].

[illegible] abdominal tenderness [illegible].

[illegible] returned, [illegible] very weak [illegible] very great [illegible] and stimulants.

27th.—Would [illegible] very weak state. [illegible]

[illegible]

[illegible] August [illegible] disease was changed [illegible] 15th August he was discharged [illegible].

Private R. M[illegible], 92nd, admitted on the 1st May, 1868, with fever of an intermittent type. About the 8th May the fever [illegible] the remittent form, and on the 14th typhoid symptoms [illegible], and the case was returned as typhoid fever.

May 16th.—Symptoms: great prostration of strength, pulse 120, [illegible] dry, [illegible], bowels loose, [illegible] [illegible] sensible, but [illegible].

17th.—[illegible]. Have brandy, bark, and ammonia, &c.

18th.—[illegible] stools in 24 hours, deafness very great.

20th.—[illegible], sleeps a great deal, but easily roused and [illegible].

21st.—[illegible] heavier, stools two in 24 hours, little or no tenderness of abdomen, pulse 80, weak. Brandy and beef-tea every [illegible].

22nd.—Drowsy, pulse 76, skin cool and dry, slight tenderness [illegible], stools three in 24 hours.

26th.—Has improved a little, was livelier and more easily roused. Brandy, beef-tea, &c., continued.

28th.—[illegible] great difficulty in getting him to [illegible].

31st.—[illegible] much better, no pain or tenderness of abdomen, skin [illegible], pulse 78, stronger, hearing much improved. From this date [illegible] well, was able to sit in a chair on the 1st June; the deafness [illegible] continued up to the 20th June.

During July he progressed slowly but steadily.

On the [illegible] August his disease was changed to asthenia, and he was discharged convalescent on the 10th August.

THREE CASES OF ICTUS FULMINIS WHICH OCCURRED DURING THE LATE HAZARA CAMPAIGN.

By SURGEON F. CARTER,

20th Punjab Infantry.

THESE cases appear to me of so unusual a character as to merit [illegible] special notice. On the night of the 18th of October, during a tremendous thunder and hail storm, at the [illegible] village of K[illegible], which stands on an isolated [illegible] of the mountain, three men lay asleep parallel to each other [illegible] within the doorway of a hut, heads inwards and feet towards the door; each one had his musket alongside of him, and [illegible] side arms; one flash of lightning struck the three. [illegible] described the feeling on being struck, as [illegible] as if struck with a bullet. I am informed they were [illegible] insensible, and remained so for some two hours or more. The officer in command of the picquet, and [illegible] them down for dead and sent a sepoy to [illegible] the [illegible]; consequently I did not see them till the following morning about 6 o'clock. They were then perfectly sensible, did not complain of much pain, and had no alarming symptoms. As we had no shelter for the sick, and our movements were uncertain, they were dressed and sent in doolies to the Field Hospital at Oghee, distant about seven or eight miles. On arrival there, I am informed they all showed [illegible] of the system, and, in particular, S[illegible] Sing, [illegible]. It was suggested by several people, that the extensive burns must have been caused by the [illegible] the condition of the clothes [illegible]. The rapidity with which the burns healed, except in the case of Sepoy [illegible] Singh, is remarkable.

CASE I.

[illegible] Company, age 30, healthy. The [illegible] the shoulders down to the loins was scarred and burnt [illegible]; the burn then turned round to the front lower part [illegible] extended down the front and [illegible] part of the thigh in a sort of spiral form. [illegible] most part superficial, but there were several [illegible] deeply burnt. His haversack, which [illegible] was marked in several places. Chipped as [illegible] and having the burnt black appearance [illegible] the [illegible] of the case was torn, but showed [illegible] other cartridge case, unlined, which he also wore, was torn in several places, but showed no signs of having been burnt. The clothes he wore were: 1st, regimental coat, which was rent up the back in several places; 2nd, two light under shirts also rent up the back; 3rd, pyjamas rent down the left thigh. None of these showed any signs of having been burnt, nor was any cloth deficient. The burns were dressed, and the man forwarded to the Field Hospital at Oghee.

October 23, Camp Oghee.—Re-admitted to regimental hospital tents much reduced in strength and weight, considerable foul discharge, as might be expected from so large a raw surface, and two large patches of rather deep sloughs in process of separation. No part of the burn has yet begun to heal. Ordered tonics, brandy, and morphia at night. To be dressed with calamine ointment. The burn now healed very rapidly, and under the influence of good food, &c., and scrupulous attention to cleanliness, his health rapidly improved.

November 17.—Perfectly well: with the exception of slight contraction of the left thigh; leave for three months.

CASE II.

Jewant Sing, sepoy, No. 1 Company, age 25, healthy. The whole length of the back of the left thigh was severely burnt; he was not insensible so long as the other two. Bayonet struck in three places, presenting the same appearance as in the former case; brass end of bayonet case struck in one place. The clothes he wore were: 1st, choga (cloak), which was spread over him, was rent and torn in several places up the back; 2nd, coat and shirts, neither of them touched; 3rd, pyjamas rent and torn in front and down the left thigh; 4th, puggree torn in several places. No signs of having been burnt were apparent in any of the clothes, nor was any cloth deficient. Dressed and sent to Field Hospital, Oghee.

October 23, Camp Oghee.—Re-admitted to regimental hospital tents, showed scarcely any constitutional disturbance: the burn was very painful, and a considerable slough was in process of separation; much foul discharge. Tonics and brandy; dress with carbolic acid, one part to seven of linseed oil. This however did not seem to suit it, and was afterwards changed for calamine ointment. After the separation of the slough the burn was slow of healing, and was not complete till the 10th of January, 1869.

January 12.—Leave to proceed to his home for three months; the burn is quite healed; there is slight contraction of the leg, but not more than will, I think, be easily overcome by time and gentle use.

CASE III.

Chanda Sing, sepoy, No. 1 Company, age 30, healthy. The burn extended all over the back from the shoulder to the loins and slightly down both thighs: it was mostly superficial, but here and there were deeply burnt. The leather of the cartridge box, which he wore, was rent in several places, chiefly down the stitching, and the tin-lining of the compartment containing the caps was struck and bent. Bayonet struck near the point, and a piece of the wooden stock of his musket was clipped off. There were no signs of burning. The clothes he wore were: 1st, choga (cloak), which was spread over him, rent up the back in several places; 2nd, regimental coat rent and torn in several places up the back, and showed no signs of having been burnt on the edges of the rents; 3rd, two under shirts rent completely up the back, no signs of burning; 4th, pyjamas rent down the left thigh, no signs of burning; 5th, regimental trousers on which his head reclined were rent, and showed signs of burning over left thigh and right leg. Dressed and sent to Field Hospital at Oghee.

October 23, Camp Oghee.—Re-admitted to regimental hospital tents much reduced in strength and weight; considerable foul discharge, and over the back were three patches of sloughs in process of separation. Ordered tonics, brandy, and morphia at night. To be dressed with calamine ointment; sloughs soon separated, and the healing was very rapid. His health soon improved, and on the 17th November being quite well, was allowed to proceed to his home on three months' leave.

CHRONIC ARSENICAL POISONING—COMPLETE RECOVERY.

By A. S. G. Jayakar, L R C P., F R M S., London.

It rarely falls to the lot of the Indian practitioner to meet with cases of chronic poisoning by arsenic. This may be due principally to the large quantity of arsenic which is generally either administered or taken for homicidal or suicidal purposes in this country. Amongst the symptoms which make their appearance gradually after the administration of the poison, those in connexion with the nervous system are not very common. On the contrary, a medical man is often thrown off his guard while trying to discover the cause of such symptoms, as the notes of the present case will fully illustrate.

Fooda Mona, a cultivator, aged 35, was admitted into the Hutteesing Hospital, Ahmedabad, on the 8th of February 1869, with an extensive fungous disease of right foot, which presented a number of sinuses on its front aspect, discharging a copious quantity of black fungoid matter. On his admission he complained of anæsthesia of both the hands, which was then supposed to be due to the commencing stage of lepra anæsthetica. The fungous disease itself was of 12 years' standing, having arisen in a local injury to the sole of the foot caused by a stone. His right leg was amputated the day after his admission, about three inches below the tubercle of the tibia. The stump progressed very satisfactorily, excepting an attack of secondary hemorrhage which he had on the night following the operation. On the 11th of February, the anæsthesia in the hands having increased, I directed more attention to that symptom. The hands were found partially paralysed, and the flexors of the fingers strongly contracted. On going more carefully into the history of the case, it was discovered that, two months before his admission into the hospital, he had applied to a *Hakeem* for the cure of his foot. The *Hakeem* had applied a poultice for about a week, containing nearly three ounces of arsenic and an incredible quantity of cayenne pepper (7 lbs). This having given rise to constant vomiting and purging, the arsenic was omitted after the second application. It was followed by a burning sensation all throughout the body, which continued to be present after the operation in the extremities, the stump not excepted. The symptoms in the hands made their first appearance a fortnight after the last application. The patient was ordered to take potas. bromide, gr. xii, tinct. bellad. ♏xiv, sp. chloroform ♏xxx, aquæ camph ʒiii, ʒi. thrice daily. Under this treatment he went on gradually improving, the stump soon healed, but the nervous symptoms remaining, the treatment was continued till the 17th of April, when he was discharged cured.

CASE OF LOCOMOTOR ATAXY.

By Assistant Surgeon B. Evers,

18th Native Infantry.

Locomotor ataxy is, in my opinion, a disease that is much more common in India than is generally suspected. In almost every case, the patient complains of "shooting pains" in the extremities, and the disease may be mistaken for rheumatism. This in the early stage of the disease, but when the symptoms have progressed so far as paralysis, the case again is returned as one of pure ordinary *motor* paralysis under the head of paraplegia.

The following are the particulars of a case, that was reported by me to the Deputy Inspector-General of Hospitals of the Allahabad Circle, in April last.

A., aged 28, a sepoy in the 18th Native Infantry, was admitted into hospital on the 23rd March, 1869, complaining of slight difficulty in breathing, slight palpitation, and great weakness in the lower extremities, with a sense of tingling when the feet came in contact with the ground, that same kind of feeling which one experiences on attempting to walk, when the foot is known to be "asleep." The patient's legs trembled under him when he stood. I have seen cases of extreme tremor in the extremities induced by excessive tobacco-smoking, and thinking that the man might have indulged too much in that way, I took measures to prevent his doing so again. The dyspnœa and palpitation disappeared in a few days, but the patient still complained of increasing weakness in the legs. The limbs were well developed, and the muscles all appeared quite healthy. He did not tremble so much now when he stood. On his attempting to walk, I observed that there was a certain amount of power only so far as *locomotion* was concerned, but that all *co-ordinating* power was lost. His gait, on attempting to walk with his eyes shut, although attendants were by to support him in case of necessity, became very staggering indeed. He required to see his legs that he might *direct* them. Not the slightest anæsthesia present anywhere. Intellect quite clear.

When seated, he looks like a man in perfect health. [illegible] 1015. Pyrexial symptoms have never been present, never suffered [illegible] in that region. The [illegible] a syphilitic history [illegible]. There [illegible] of urinary [illegible] retention, not even [illegible] minutes were [illegible] of pyrexial symptoms, [illegible] in the [illegible] &c., clear [illegible] all [illegible] of myelitis. My [illegible] is not [illegible] to be [illegible] the gait as [illegible] shuffling [illegible] tendency to want of motor power, [illegible] there is a marked tendency to [illegible]. The use of the [illegible] (syphilitic) [illegible] known [illegible] potassic [illegible], but it has [illegible] with [illegible] than others in the [illegible] have [illegible].

I have [illegible] that the [illegible] of this disease find their [illegible] treatment, and [illegible] simply to [illegible] how much [illegible]. In this particular [illegible] I am [illegible] to think that atrophic changes must be going on in the centres of volition, and that these changes are [illegible] lesion.

At first I treated this patient with strychnia, but finding little good result, I then put him on small doses of calomel, applying at the same time a blister over the sacrum. I subsequently put him on the ergot of rye. He seemed to be improving under this treatment, but having got a furlough, he left hospital. I have not heard anything of him since.

CASE OF INSIDIOUS DYSENTERY.

By Dr Mathew,

Civil Surgeon, Darjeeling.

Towards the end of April last, I was consulted by letter on the case of Mr C., a tea planter, resident close to the Darjeeling Road, at an elevation of about 1,600 feet. His occupation compelled him to pass all but his sleeping hours in the Terai itself; yet for three years he had enjoyed excellent health. He is about 25 years of age, and never before had any serious illness. He complained of diarrhœa, some tenesmus, loss of appetite, and unwillingness to exert himself. I recommended by letter some simple astringent, desiring that I might be sent for should blood appear in the motions, or should fever supervene. Some eight days later, I learnt that he was no better; that some blood had appeared, and that he was becoming decidedly weak. I then went to see him and examined him very carefully. I could discover no abdominal disease; he complained of some superficial pain, unaffected by pressure, reaching from the last ribs on the right side to the edge of the ilium; his pulse was quiet, his skin was cool, but he had no appetite; there was great tenesmus, and when he did pass anything, it was black and offensive. I prescribed a dose or two of ipecacuanha, opium enemata, and light farinaceous food with port wine. The substance of the reports I received of him for the next week was, that the stools were diminished in number, and more wholesome in appearance, that the straining had ceased, but that he was losing flesh and strength, and could eat nothing, still no history of febrile excitement or rigor. I then advised change of air; he was first to try Kurseong (elevation 4,500), and if he did not improve there, was recommended to come on to Darjeeling. At this time I was only apprehensive of liver complication. He moved to Kurseong, and after a few days, wrote to say that there was no improvement. The discharge from the bowel had been checked but he gained no strength; I then ordered him to come on to Darjeeling, but the next day received a note from the friend in whose house Mr C. had put up, to say, that Mr C. had suddenly passed from his bowels a large quantity of blood, and was extremely low. I went down to Kurseong at once and found him in a very desperate condition. He had to be helped to his bed from the bath-room after the first discharge of blood, and as he lay in bed, the sphincter being apparently semi-paralyzed, the blood flowed from the rectum repeatedly during the day, exactly as it comes from the vagina in post partum hæmorrhage. I found him tossing his hands about, crying for more air, his respiration so hurried that he could only speak in jerks, pulse thready and over 140, skin pallid, covered with cold sweat, and lips blue. There was not a trace of abdominal tenderness, and the liver was of the same normal dimensions I found it to have when I first examined him. There were but two encouraging points in this most unpromising case: he craved for support, and secondly, his voice, though he could say but a word or two at a time in consequence of the extreme hurry of the respiration, had not lost its power. Not without great dread of the results, in case vomiting occurred, I gave him a scruple of ipecacuanha, preceded by twenty drops of laudanum. Port wine, yolks of eggs, and such like were freely administered when it was found that he bore the ipecacuanha well. The drug was as marvellously rapid in its action as any medicine could be. The discharge of blood ceased. I slept in the next room to Mr C., having given orders that I should be called if his bowels were disturbed, and when they were moved about 11 p.m., I saw but a few stains of blood in a dark motion. The next morning there was no more hæmorrhage, and, though in other respects there was little alteration in his state, I had more hope of him. My duties compelled me to go back to Darjeeling, but I returned to Kurseong in the evening, and found that his bowels had been moved only three times during the day. The stools were dark and somewhat fetid, but there was no blood and no change to the usual discharge of dysentery. I ordered him no medicine but ipecacuanha [illegible] every four hours, and for food, corn flour, milk, and port wine, of which he partook abundantly. Next morning I had to leave him again; the debility was still extreme, so much so, that I was afraid even to [illegible] him; the respiration was still hurried and the pulse the same; but the skin was free of cold sweat, and his lips were ruddy. Two days later I saw him again, on receiving word that he had become delirious. This delirium, as he was otherwise progressing favourably, I assumed to be the result of the hæmorrhage, and made no change in the treatment. It passed off in a day or two, and he thenceforward mended steadily. He is now convalescent.

The noteworthy features of the case are,—the great insidiousness, the absence of all abdominal tenderness, and, if any, febrile excitement, the fact that ulceration must have gone on without the usual appearance of dysenteric discharges, and lastly the wonderfully rapid success of the ipecacuanha treatment. The involuntary discharge of blood from the rectum is also, as far as I know, very unusual.

PRIMARY CANCER OF THE LIVER; SECONDARY DEPOSIT IN THE INTESTINES AND PLEURÆ.

By A. Porter, M.D.,

Civil Surgeon, Akola.

The following case of cancer of the liver is considered worthy of record, as Mr Morehead states the disease to be rare in India:—

[illegible], Mahomedan, prisoner, Akola Jail, aged fifty years, formerly a [illegible], and addicted to the habit of opium eating, consuming about forty-five grains of crude opium daily, was admitted to hospital on the 2nd December, 1868, complaining of fever, which he said he had been subject to every evening for the last month. He had noticed a hardness in the abdomen, and had suffered from dyspepsia after meals for about two months, and he attributed the subsequent fever to the indigestion following the evening meal.

His previous history evidenced his having suffered from many attacks of fever, but from no other sickness. On admission, he seemed a hale old man and in fair flesh. On examination, the liver was found to occupy the whole of the epigastric region, extending as low as to the seventh left rib at its junction with the cartilage. At this time the right lobe projected very little beyond the margins of the ribs, but within one month it had increased so much as to reach to the umbilicus.

The surface was hard and nodulated. One of the larger nodules finally became somewhat boggy to the feel, but never pointed.

The pain at first was of a wearing nature, radiating from the right hypochondrium to the shoulder and back, and the tenderness on pressure was considerable. The pain afterwards assumed a lancinating character, and was especially severe at night, previous to sleep, and the tenderness became very acute. At this time the pain was confined to the hypochondrium and back, never extending to the shoulder.

There was neither jaundice nor ascites—at least appreciable dropsical effusion; neither was there enlargement of the spleen, nor of the superficial veins of the abdomen.

The pyrexial symptoms were slight, the pulse averaging 80, [illegible] ranging 64 and 112, while the temperature (in the axilla) averaged 98°·3F at 6 a.m., 100° F. at 12 noon, and 101° F. at 6 p.m., the highest registered being 102°·2F. There was no cough, but the respiration were quickened, being on an average 26 per minute; the extremes were 20 and 36.

There was a white furred tongue with loss of appetite from the first. The stools were natural in colour and consistence till four days before death, when a dysenteric diarrhœa set in. The urine was clear, rather paler than natural, of an average specific gravity of 1015, decidedly acid in reaction. In only one instance was it cloudy from lithates, and of specific gravity 1028. The average amount secreted in 24 hours was forty ounces (nearly), the extremes being twenty, and forty-eight.

Œdema of the ankles, dysenteric diarrhœa and hiccup preceded death, which occurred at 3 a.m. of 1st February, 1869, after an illness of about four months. *Autopsy*, nine hours after death. Body rather emaciated, but of precisely 90¼ lbs, the primary weight of the prisoner fourteen months previously. Rigor mortis still present.

The peritoneum contained about two ounces of straw-coloured fluid, but was pearly and shining, and presented no signs of inflammation.

The liver was very large, weighing one hundred and fifty-five ounces, nearly one-ninth of the body weight. It was of a dull, yellowish brown colour, and had its surface studded with elevated yellowish white, moderately firm nodules, varying in size from a hazel nut to an orange. It cut firmly and exhibited sections of similar masses. One was the size of a small cocoanut, occupied the whole thickness of the right lobe, and was softened in the centre into a yellowish grumous matter consisting of fatty cancer cells and oil globules. The cancer masses were pretty uniformly distributed, and occupied nearly the whole organ. The intervening tissue was mottled greenish-yellow, the centres of the lobules being green, and the outer parts yellow. The cells of the latter were seen to be fatty under the microscope. The gall bladder was empty.

The mucous membrane of the large intestine was of a slate grey colour, more or less congested on the transverse folds. Some whitish hard cancerous deposits, half the size of a pin's head, were found arranged in irregular lines on these congested folds in the transverse and descending colon; in the sigmoid flexure these deposits were smaller and more universally diffused, and here there was œdema of the mucous membrane.

The lungs were moderately collapsed, and seemed healthy, except that the pleural surface of each was studded with hard cancerous tubercles about the size of a pin's head, at about five to the square inch on the pleurae of the base and fissures, and one or two to the square inch on that of the apex. Some of these appeared as white prominences, others as blood-red spots with yellow centres. Neither pleurae contained fluid. The spleen presented thickening of the capsule over a surface to which the liver was adherent. It was healthy. The kidneys were small and fatty. The brain and other organs seemed healthy.

Answer to Correspondents.

◆

In reply to communications from Native Doctors concerning their receipt of the new scale of pay as laid down in G. G. O. No. 550 of 5th June, 1868, we will state for their information that a classified list is being compiled in the different circles of medical administration all over the Bengal Presidency, under the orders of the Head of the Department, that when these lists arrive from the several Officers, a general list will be compiled, showing the rank, qualifications, &c., of every Native Doctor in the service, and that then, but not till then, can the whole question be settled.

Notices to Correspondents.

◆

Communications have been received from

Dr. Fayrer, C.S.I.
Sub-Assistant Surgeon Banymadub P[illegible]
Surgeon A. Christison, M.D.
Assistant Surgeon D. P. Palmer, M.D.
Surgeon A. Maclean, R.A.
Dr. Murray Thomson.
Assistant Surgeon B. Evers.

Acknowledgments.

◆

Lancet, Medical Times and Gazette.
British Medical Journal.
Proceedings of the Sanitary Commissioner, June.
Medical Press and Circular.
6th Report of Landora Charitable Dispensary.

The Indian Medical Gazette.

ADVERTISEMENT REGARDING MEDICAL WORKS.

See page 3 of Advertisement Sheet.

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, else delay must inevitably occur in their publication.

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"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

In the Press.

A TREATISE ON ASIATIC CHOLERA.

BY

C. MACNAMARA,

Surgeon to the Calcutta Ophthalmic Hospital.

Messrs. Wyman & Co., Hare Street, Calcutta, will be glad to receive early orders for this work, so as to enable them to procure copies from England, immediately on the issue of the Book from the Press.

DRINKING WATER IN BENGAL.

The fifth report by Dr. F. Macnamara on the analysis of potable waters recently published, shows that, except where drinking water is taken from the main rivers of India, at two or three stations perhaps out of the many, its source and method of supply are alike disgraceful, and unworthy of the knowledge and wealth of the country.

These reports have been publishing during the last two and a half years under Dr. F. Macnamara's superintendence, and we can now ascertain the character of the drinking water in use at fifty stations of the army, we will examine the account in the cantonments of Bengal Proper.

Fort William (Calcutta) is the only station in the Presidency where a water-supply for the garrison (one British Regiment and Artillery and one Native Regiment) is laid on and distributed by mechanical appliances. The surface rain-fall water is collected in two large tanks on the glacis, thence it is pumped into a reservoir high on the ramparts, and from this it is distributed by mains and hydrants throughout the barracks and streets [illegible] the main reser[illegible] [illegible] the purity of the water in use is [illegible] Bengal Army last:— [illegible] dirty, with a considerable [illegible] it has a mixture [illegible] yellow [illegible] human hair, [illegible] cotton, wool, linen, [illegible] station, [illegible] many [illegible] displaced them [illegible] minute [illegible] water is wrought about [illegible]

At Barrackpore, where [illegible] a hole dug in earth is the source of supply [illegible] native troops, the water [illegible] most disgusting [illegible] very deep [illegible] the gallon 075 [illegible] water taken from the river itself yielded [illegible] the same [illegible].

[illegible] standard of purity [illegible] and the [illegible] found to contain 041 [illegible] very dirty [illegible], and stinking.

At Dum-Dum [illegible] the water of the [illegible] open a par[illegible] that of the [illegible] tank on the glacis of Fort William: we [illegible] the character of that water [illegible].

At Dinapore the water-supply is at present very bad, owing [illegible] because the water of most of the wells is [illegible] from the drainage of the land on which the station [illegible] because of the faulty construction and badly [illegible] of many of the wells, and the great neglect of [illegible] the defence of each and all of them from artificial [illegible].

[illegible] the Bengal military stations is the most inimi[illegible] European constitutions, and yet at these four large [illegible] the army, what assistance does wholesome water give [illegible] health. What has been said of the above stations [illegible] very little alteration be said of [illegible] that either from [illegible] and amount of supply, or the mode of filtering and [illegible] not one station in the Presidency of Bengal [illegible] good and wholesome water for the use of its [illegible].

[illegible] "chatty filter" has long been a source of [illegible] to Dr. Macnamara and his assistants. [illegible] arrangement has long been in use in India, [illegible] in the [illegible] of Akbar Khan, and we [illegible] a very similar apparatus in his [illegible] Bengal; it has been little improved upon since [illegible] Sir H. Rose, backed by all the Regimental Medical [illegible] Army, fought the Government long and strongly [illegible] water, [illegible] in 1868, this cheap [illegible] was ordered to be used in all barracks and [illegible].

Dr. Macnamara has now devised a filter for barrack use, [illegible] depends on a [illegible] supply of animal charcoal [illegible] substance that even [illegible] is not looked upon [illegible] filtration. [illegible] and institutions [illegible] has been severely [illegible], is stated to work [illegible] that [illegible] with water and passed through the filter is harmless, and may be drunk with safety, although it is otherwise a deadly poison. But we fear that the filter is too complicated for barrack use. No [illegible] could be trusted to handle the filter according to the complicated details at page [illegible], and unless the [illegible] cleansing, airing, and changing the ingredients at every [illegible] carried out, it will become as inefficient as the present arrangement.

Since the [illegible] of Dr. Macnamara's report, Government, at the instance of the Commander-in-Chief, has [illegible] experimental trial of this filter in every regiment stationed in the Presidency Division of the Army, and also at the stations of Allahabad, Meerut, and Mian Meer. The filtering [illegible] to be supplied by Messrs. Thompson & Co., packed with animal charcoal, and [illegible] be fitted into [illegible] locally arranged [illegible]. It is to be hoped that very strict injunctions will be [illegible] that all the instructions for use may be attended to, and [illegible] filter may have a fair trial; it is very necessary also that an officer, skilled in the analysis of water, should test the [illegible] at least once in every ten days.

What has the Sanitary Commission been about [illegible] years that the above disgraceful condition of drinking water should still exist in the main stations of the army? For the last quarter of a century, nay the subject may be traced back 50 years, the Medical Officers of India have been pressing on Government the necessity for good drinking water, and trying to procure it for the men under their charge. At last, with the additional pressure of the British Medical Officer, backed up by Sir H. Rose, and urged on by the injunctions of the Royal Sanitary Commission at home, the advisers of Sir John Lawrence [illegible] him to submit to the expense of a [illegible] analysis of drinking water all over the country. The medical department wished skilled men to be got from England for the purpose, to do the work quickly and thoroughly, and to have done with it; but Government chose the youngest Medical Officers in the country to perform it at the cheapest possible rate; they performed their duties right well; they worked on minimum pay, and under many difficulties; and the result of their labours is shown in the volume under notice.

If the Sanitary Commission had been honest advisers to the Government, they would have left no stone unturned [illegible] these matters [illegible] when they first came into power; but to give good water to the men cost money; to recommend measures of expenditure was directly to lose the confidence and favour of the late Viceroy; and so practical improvements and remedies remained in abeyance.

It must be now well proved to the Government that good drinking water is absent in India. [illegible] the late Viceroy would not spend the money to rectify it, let us hope that Lord Mayo will.

If he could but examine the filthiness of the barrack supply, the filthy [illegible], the [illegible] drinking utensils, &c., all to be avoided by properly constructed wells, good pumps, and proper means of distribution, he would not wonder at the irritation it excites among [illegible] have long paid attention to the subject, who know the evil of it, but are powerless to effect a remedy.

WHAT IS CONTRE-COUP?

The term was [illegible] to explain the occurrence of fracture of the skull, or extravasation of blood within the cranium at a point opposite to the seat of blow.

The real existence as a result of direct transmission is very doubtful. The occurrence of fracture of bone, or extravasation of blood, opposite the part of the skull which has been struck, being rather attributable to the lateralization of vibrations resulting from the varied consistency of the coverings of the skull, the structure of the diploe, and the great density of the vitreous table.

The structure of the interior of the skull also favors lateral vibration of shock, rather than direct transmission; and so adjusted are its provisions that as much injury is to be apprehended from their influence where they meet, after travelling round the skull, as at the part where they were set going. Hence it is that ecchymosis and laceration of the cerebral substance is found at one of these points nearly as often as at the other. Fracture of the base occurs from the same cause; the disturbing influence of severe vibrations, the skull having given way at the weakest point, as any other body of unequal strength at different parts, would, if allowed to fall, or be in any way subjected to violent concussion, break where it was weakest. If this opinion is correct, as the writer believes, it will be seen that the term Contre-Coup is fanciful and unnecessary. That both the opposite fracture and extravasation, or ecchymosis, are the natural results of a mis-direction of what was intended to assist in securing the safety of the contents of the skull, *viz.*, lateral vibration, as opposed to direct impulse or transmission.

THE NAGPORE MEDICAL SCHOOL.

THE second annual report of this institution has lately reached us. It is peculiarly worthy of our notice, for the Chief Commissioner, in March, 1867, forwarding to Government the scheme for its establishment proposed by the Civil Surgeon, Dr. Townsend, remarks that it is prepared on the principles recently suggested in the *Indian Medical Gazette.* Government sanctioned the establishment in the following June, and the first session soon after commenced.

Thirty-three pupils were under instruction, at the close of the last session in April, of whom a large proportion are Mussulmans: by next year the majority are expected to be capable of entering the service of Government as well grounded and educated hospital assistants. English training, also, has not been neglected, for the present superintendent, Dr. Beatson, himself gives instruction in that language three times a week.

The Chief Commissioner, in his review of the year's proceedings, remarks on the importance of cultivating the adherence of the principal race of the Central Provinces, the Mahratta Brahmin; but hitherto attempts to educate them have been a failure. It appears that they object to touch a corpse, except that of a Brahmin; they possess little aptitude or liking for the study of medicine; are very prejudiced, and are incapable of appreciating information. The two men of this class who were present throughout the first session failed even to learn the names of the bones of the skeleton in that time.

The Chief Commissioner gives a hearty acknowledgment to the earnestness of Dr. Beatson's superintendence. The work of the school seems to have been admirably carried out by the three masters, sub-assistant surgeons, one of whom teaches anatomy and surgery, a second, materia medica and chemistry, and the third, physiology and the practice of medicine. During last winter, 21 bodies were dissected, and a demonstrator of anatomy was especially engaged during that time.

There appears, however, to be one great and crying want, not only for the proper clinical teaching of these pupils, but for the charitable mitigation of disease at this station, the head-quarters of the Governor of the Central Provinces: there is no proper hospital.

The city hospital now consists of two unventilated and leaky sheds, built end on to the prevailing wind, and, in every way unfit, both from space, position, and structure, for the purpose to which they have been temporarily applied. "The construction of a new city hospital is under the Chief Commissioner's consideration," but the Government appears to have long evaded the expense of proper buildings, although some support has now been promised. There seems still, however, a lukewarmness of the authorities on the subject, which can hardly be understood at this distance, in contrast with the energetic administration of the district generally.

The school certainly is prospering; and if it turns out soundly educated hospital assistants at the end of its third session, it will have admirably fulfilled the want that it was intended to supply.

BOILS.

A RECENT *Indian Public Opinion* has an article upon this subject. He asks if there is no cure for them? no course of diet or medicine that will prevent them? We think not, but much can be done to mitigate them; we believe, however, that they will ever appear in certain skins and temperaments as the result of long continuance of external heat; they are a real local inflammation in fact caused by heat, to be subdued by a few days' residence in a cooler climate. We speak merely of the ordinary and simple form; there are many varieties, some depending on a depraved state of blood from bad food, water, &c.

The article in question thus concludes:—

"Who has not heard the dictum that boils are healthy? A healthy body surely has not so much bad matter to eliminate. It is surely an insult to a man lying sick for eight or ten days with a most painful disease to tell him he is only showing signs of being very healthy. At this season of the year, hundreds all over India, both on the plains, and in the hills, are groaning under this affliction and seeking a cure. Is there no specific for it, nothing to clear the blood or diminish the pain?"

CHOLERA HOSPITALS.

WE understand that arrangements are being made for the immediate erection of a building, near the Medical College Hospital, where cholera cases can be treated separately; and also that a similar building is to be built near the Native Hospital from the private funds of that institution.

Hitherto native cholera patients have been treated in the same wards as other sick, a practice alike painful to their feelings and dangerous to their health. In the regimental hospitals of the British army such a procedure is almost unknown, but space has always been available, and perhaps the principle of segregation has been more recognized.

The difference of the two systems is shown in that since the year 1861, 66 patients (natives) in the Medical College

Hospital admitted for various diseases have been attacked with cholera, of whom 75 died; while in the Presidency General Hospital (for Europeans) which is managed on the principles of a well-ordered British Hospital, 13 cases only have occurred during the last twelve years in which cholera has attacked patients in the wards; these had been all admitted for other complaints, and the majority very probably had the cholera-poison in their systems; of these but 3 died.

For many years past medical [illegible] natives attacked [illegible] cases have been carefully segregated from the healthy, being placed in isolated huts or buildings provided for [illegible]; but we are glad to see that these measures, which [illegible] carried out "by division orders subject to confirmation," [illegible] now definitely laid down as a system by the Government [illegible] India. It is now directed that whenever cholera appears in an epidemic form among the general population of military stations, tents or temporary sheds or huts are to be placed in the outskirts of cantonments, and a very liberal establishment is granted for their maintenance.

NATIVE MIDWIVES.

Dr. Corbyn, the Civil Surgeon of Bareilly, in his report to the Inspector of Dispensaries for the year 1867, gives an account of the establishment of a school for educating native females in midwifery. There are few medical officers in India who have not witnessed most horrible and fatal scenes from the ignorance and infatuation of the present class of "Dhais," the movement, therefore, is an enlightened one and well worthy of extension. At a meeting of the committee of the Charitable Dispensary, a wealthy banker of the city, "Lalla Luchmi Narain, read a paper, setting forth the great evil and mortality that resulted in all classes of female society from the ignorance and prejudice of their midwives, and the need that was felt of trained and educated nurses, and he went so far as to state as a fact that any respectable native would rather let his wife, sister, or mother, die than permit her to be examined by any one of the opposite sex. At his suggestion the Dispensary Committee decided to try the experiment of educating a few female nurses, and as a beginning, I entertained five professional midwives who are well known in the city. The sub-assistant surgeon lectures to them daily in the dispensary, under my superintendence. They are making a very fair progress in the knowledge of the female structure. They still continue their usual avocations in the city, but every birth at which they preside is reported at the dispensary, and if this system is kept up, and the number of nurses increases, infanticide may, perhaps, in a measure, receive some check. When first they came to the dispensary, although called professional midwives, their utter ignorance of every thing connected with midwifery quite [illegible] Lalla Luchmi Narain's [illegible]tion, that thousands of lives were lost during parturition, simply for want of knowledge and [illegible]."

SUBSOIL WATER.

In March 1869, Drs. Cunningham and Lewis put in motion experiments to test the value of Professor Pettenkofer's theory of the propagation of cholera, in the neighbourhood of Calcutta, by making measurements of the level of subsoil water; they also caused similar experiments to be undertaken in Oudh.

These measurements are now ordered by the Government of India to be carried out in every military cantonment, and most civil stations, throughout the Bengal Presidency. The end of next year should give us some very curious results, or, at all events, add to our insight and knowledge of this subject, which doubtless will be very instructive as regards the drainage of the country and stations, though we doubt if it will add much to our knowledge as to the cause of cholera.

The following memorandum has been prepared, showing what the Professor's theory really is, and the means that should be employed for testing it:—

A.—PETTENKOFER'S THEORY—

1. *The infecting matter* of cholera is developed from a germ, which, as long as it remains a germ, is not capable of producing the disease.

2. *The germ* is developed into infecting matter in the subsoil, if this affords a suitable nidus.

3. *After development*, (if the superincumbent layers be permeable) the infecting matter ascends and produces the disease.

4. *The infecting* matter may enter water and render it poisonous. (?)

5. *The germ* is not capable of undergoing development in water.

6. The conditions in the subsoil rendering it a suitable nidus for the germ are—

(*a*) *A certain degree of moisture.*—A soil may be either too dry or too wet to favor the development of the germ, so that an increase of moisture in the former, and a decrease in the latter case, will produce a like result.

(*b*) *The presence of organic matter.*—In any permeable soil, it almost necessarily results that organic impurities are washed down through it, and accumulate in the subsoil water, or, in other words, over the first impermeable layer.

B.—POINTS TO BE OBSERVED IN TESTING THE THEORY—

These are various, comprising the nature of the soil, &c., but the most important is the following, *viz*:—

The association of the occurrence of cholera in any locality with a change in the amount of subsoil moisture. Is the development and decline of an outbreak coincident with alterations in the amount of subsoil moisture, and if so, what are these alterations?

C.—METHOD OF CONDUCTING OBSERVATIONS ON SUBSOIL MOISTURE—

The level of the water in wells kept exclusively for the purpose is the best means of estimating the amount of subsoil moisture.

The variations of water level in such wells can be most satisfactorily observed by means of a simple apparatus.

TATTIES AT NIGHT.*

The Government of India have issued an order directing that, when considered necessary by the medical officer of a regiment, tatties shall be used at night in barracks, hospitals,

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* Tatties.—A thin mat-like screen made up with the scented roots of the khus khus grass (Andropogon muricatum), and placed so as to fill up an open door or window. Hot winds blowing through these screens kept [illegible] the temperature of air [illegible] many degrees.

and cells, whenever at 9 p.m. the thermometer indicates a temperature of, or in excess of 95 F.; provided the wind is not from the east, when tatties can have no good effect, as then the air is already too moist to cause evaporation, and their use, in such circumstances, only adds to the distress occasioned by the excessive temperature.

FEES FOR INQUESTS.

IT has recently been ruled by the Government of India that when a medical officer, other than a civil surgeon or officer in medical charge of a civil station, is summoned to give evidence in a Criminal Court, touching the result of a *post-mortem* or other examination conducted by him, in cases not falling within the ordinary discharge of his duties, he should receive a fee of Rs. 16 in addition to the usual expenses payable to witnesses.

With such restrictions, however, the Government will not have to disburse the money very often.

JAMAICA MEDICAL NEWS.

SEVERAL interesting particulars relating to medical matters in Jamaica have reached us (*The Lancet*) by the last mail. In the first place, cinchona cultivation seems to be progressing favorably. About 20,000 young plants of the C. Officinalis, and 10,000 of the C. Succirubra will be ready for sale at the government plantations early next year. The trees grow with surprising luxuriance, as has been evinced by upwards of 1,000 plants, temporarily planted fourteen months ago, then a few inches high, being from now three to four feet in height. The Jamaica Lunatic Asylum has been much improved in its management, but it is overcrowded, and two new ranges of buildings are to be erected. Yellow fever has now left the island; good results have been obtained in the treatment of cases of this disease by the free exhibition of carbolic acid. The dry-earth system has been adopted with great success in several of the public institutions. A board of examiners is to be appointed under the Medical Act of 1859, to examine medical men wishing to practice who do not possess a British degree. The new Medical Bill has not yet been brought before the Legislative Council. What it will be is not yet known, but it is hoped that it will be of such a nature as to hold out advantages to medical men to settle in the country districts, where they are so much needed.

EXTENSION OF KNOWLEDGE IN RAJPOOTANA.

JEYPORE.—The *Indian Volunteer Gazette* remarks:—In our last we noticed the formation of the Rajpootana Social Science Congress, and placed before our readers the objects of the Association. We understand that at a recent meeting of the Congress Dr Valentine was enabled to pass a bill for bringing in all the sons of the nobles of Jeypore, from 8 to 18 years of age, into the capital of Jeypore for instruction. The bill was in abstract as follows:—

"That the nobles of Jeypore in order to feel the responsibility that rests upon them in the exalted positions in which they have been placed by Divine Providence to govern and regulate the affairs of their subjects, and that they may be taught the principles upon which all good government depends, the Jeypore Social Science Congress would recommend His Highness the Maharajah to use his influence with the chiefs to send in their sons to Jeypore for education.

"The Social Science Congress would further recommend to His Highness the Maharajah the establishment of a separate school to be entitled the Jeypore Nobles' School, with a competent staff of teachers in Sanscrit, Hindee, Arabic, Persian, Oordoo and English;—where lectures in the natural and physical sciences should be delivered, and instruction afforded in the higher branches of education not generally taught in public schools, such as social and political economy.

"That His Highness the Maharajah be recommended to establish scholarships and prizes for those students who shall distinguish themselves in their studies.

"That His Highness the Maharajah should establish a large boarding house, with ample accommodation for the pupils and their suite, attached to which there should be a riding school and gymnasium, with regular hours set apart for instruction in riding, the sword exercise, and other athletic exercises. The object being to qualify the pupils both mentally and physically for the high position which they will be called upon to occupy."

The bill was laid before His Highness the Maharajah in Council by the Prime Minister, Nawab Faiz Ally Khan Bahadoor, who is president of the Congress, and who takes a lively interest in all matters concerning the welfare of the state. His Highness the Maharajah highly approved of the recommendations of the Congress, and entered into arrangements for their being carried out.

THE *Lancet* notes that, in the Annual Report of the Coroner for Central Middlesex, Dr. Lankester complains of the imperfection of post-mortem examinations. In a case of sudden death, a medical man, having opened the head, and finding an effusion of serum, gave a certificate to that effect. The post-mortem examination was completed by another medical man, who, on examining the chest, found that a piece of meat had got into the larynx, and had caused death by suffocation. Dr. Lankester suggests that, if the Coroner could command in all cases the services of a competent expert to make post-mortems, it would contribute to the interests of justice. For ourselves we look rather to a general improvement in the qualification of medical men, and we are by no means sure that the employment of experts would not be a greater evil than the occasional miscarriage of justice under the existing plan.

THE *Pioneer* remarks that Dr. Moore's Report on the working of the Dispensaries in Rajpootana during 1868 confirms what was previously known, or at least very strongly suspected, *viz.*, that the sanitarium of Aboo suffers more from intermittent fever of a malarious type than any station in the plains, owing to the malarious nature of its climate. Among the European population, however, owing to better sanitation and drainage, this malarious fever at Aboo has been brought within more manageable dimensions.

Dr. Moore justly observes that, in adopting measures to prevent malarious fever, a blow is at the same time struck at many other diseases, such as liver complaint, dysentery, spleen, &c., which cause so much mortality in India.

[illegible] 1867, [illegible] [illegible] W[illegible] 7. [illegible] [illegible] —By arsenic [illegible] 133 [illegible] [illegible] 42 [illegible] [illegible] 242 [illegible] 17 [illegible] [illegible] 20 [illegible] 17, sulphate [illegible] bromum [illegible] nitrate of [illegible] cantharides 2 [illegible]

[illegible] Lord Napier [illegible] Commission [illegible] Dr. Rattray, Sanitary [illegible] Dr. Scott [illegible] Medical College, and Native [illegible] [illegible] discussing the [illegible] as popular [illegible]

[illegible] M. J. Berkeley [illegible] *The M[illegible]* [illegible] Dr. Hall[illegible] as to the origin of [illegible] parasitic [illegible], states that he considers [illegible] vague and unfounded. Mr. Berkeley [illegible] trouble has been taken by Mr. Thwaites, the [illegible] Botanical Garden at Peradenya, Ceylon, [illegible] intimate acquaintance with crypto[illegible] every possible information both in [illegible] All his enquiries, however, have failed to [illegible] plant, even distantly allied to [illegible]; indeed the only fungus which [illegible] differing [illegible] *herbarum*, and [illegible] an after-growth, and not a true [illegible] 7,000 [illegible] of fungi from North [illegible]."

HISTORICAL EVIDENCE REGARDING THE PRACTICE OF USING LARGE DOSES OF OPIUM AND IPECACUANHA IN THE TREATMENT OF ACUTE TROPICAL DYSENTERY.

By WILLIAM ROBERT CORNISH, F.R.C.S., FELL. U. C. MADRAS,

[illegible], Madras Medical Department.

[illegible] amongst [illegible] of the Madras Medical [illegible] some papers connected [illegible] in the treatment [illegible] of a wider [illegible] continued to [illegible] they have [illegible] With the permission [illegible] Madras Medical Department, I have made [illegible] I think, place [illegible] account of [illegible] members, [illegible] mortality [illegible] the last [illegible]

The [illegible] Madras Medical Board [illegible] the year 1786 [illegible] the correspondence [illegible] Board with Government. [illegible] way in which [illegible] which have been [illegible] is not a little curious; and this [illegible] interesting professional fact [illegible] [illegible] to us.

In [illegible] year 1867, the Commander-in-Chief sent to the Medical Board a [illegible] he had received from the Officer [illegible] His Majesty's [illegible] Regiment [illegible] that the Regimental Surgeon, Mr. A[illegible] it was his practice to use in [illegible] than usual in the treatment of diseases [illegible] the station.

The [illegible] of Mr. Abercrombie's complaint were, that he had [illegible] for ipecacuanha, which [illegible] his regular practice [illegible] dysentery, and that he had failed to get [illegible] Mr. A[illegible] that the number of his severe cases [illegible] the use of much ipecacuanha, which he had [illegible]

In [illegible], one member of the Medical Board was [illegible] to superintend the Depot of Medical Stores, and [illegible] made upon the [illegible] 1867, fell to a Dr. [illegible] Gahagan [illegible] 2nd member [illegible] Board. Dr. Gahagan would appear to have been possessed of a passion for [illegible] He made [illegible] as to the quantity of each drug that [illegible] consumed by a given strength of men, and having [illegible] in his own mind what the proportion should be, he turned a deaf ear to all applications for more.

[illegible] ipecacuanha he could not understand why Mr. Abercrombie should have [illegible] the surgeon of another [illegible] had been satisfied with a *pound and a* [illegible] The [illegible] peculiar [illegible] was not listened to for a moment. [illegible] repeated [illegible] of the Regimental Surgeon failed to [illegible] more than an additional pound of ipecacuanha, forwarded [illegible] This quantity, Mr. Abercrombie [illegible] "will not last more than three days, as [illegible]" In despair at seeing so many of his men dying, for want of the remedy he had confidence in, Mr. Abercrombie made his complaint to the Commander-in-Chief through his Commanding Officer.

The 1st and 3rd Members of the Medical Board, when the complaint was referred to the Board for report, [illegible] "cutting [illegible]" practice of their colleague, the 2nd Member, [illegible] It was shown that large quantities of ipecacuanha remained [illegible] at the very time that the soldiers at G[illegible] were dying for want of it. Dr. Gahagan, in reply, defended his system of checking [illegible], and insinuated that the quantities of ipecacuanha issued to Mr. Abercrombie had been [illegible] He formed this opinion, he says, from an examination of the hospital journals kept by Mr. Abercrombie, in which he could only find prescriptions which accounted for a pound and half of the six pounds issued to the Regiment. It was known, however, that, owing to the heavy sick list at G[illegible], not a fourth part of the cases had been entered in the journal. Dr. Gahagan, having been proved to be wrong in nearly every particular of this transaction, at last took refuge in the [illegible] that he [illegible] approve of Mr. Abercrombie's treatment, [illegible] that his (Dr. G.'s) experience being more [illegible] than Mr. Abercrombie's, he considered himself [illegible] in [illegible] remedy, the too liberal use of which in the treatment of dysentery he [illegible]

In [illegible] of the [illegible] of this worthy, who would not admit himself to be in the wrong, the Medical Board [illegible] to be [illegible] the whole correspondence on the subject of the new treatment of dysentery. But for the [illegible] between the members of the Board, and the very [illegible] proceedings of the 2nd member, no trace [illegible] whatever of the fact that very large doses of opium and ipecacuanha had been [illegible] used by medical officers in the Madras Presidency, so far back as the year 1800, would have [illegible]

In the following extracts, I have considerably abridged the original correspondence. I have, however, omitted nothing of importance.

One or two things in connection with these papers call for a word or two of remark. In the first place it strikes one with no little astonishment to hear of doses of opium, equivalent to *fifteen* or *eighteen* grains, being swallowed repeatedly without producing any ill effect. On this point, I have ascertained that the opium in use at that period was bazaar opium grown in the province of Mysore, or the Hyderabad country. The Mysore opium was certainly of good quality, as it is to this day, but I can't say what Hyderabad opium may be like Only late in the year 1807 did the Medical Board make arrangements to secure regular supplies of "Patna opium" for hospital use. But with opium of any known quality, we should hesitate in these days, in the use of doses so heroic. In the second place, we can scarcely avoid noticing the severity of the types of dysentery prevailing amongst our European troops sixty years ago We see, now-a-days, occasionally dysentery of the true hœmorrhagic type, but it is not a common thing to find, as did Mr. Heward in Her Majesty's 30th Regiment at Wallajabad, that men "on guard, at parade, or in bed, became first cognizant of the existence of their malady by passing a large quantity of fluid blood unattended with griping or tenesmus."

Dysentery in those days had more of the epidemic character than we often see in the present time. In some Regiments, I notice that the monthly returns give from 70 up to 150 cases under treatment at one time.

Flux, next to fevers, was the commonest disease of the period. Looking back to the condition of the British soldier, to his accommodation, and habits of life, and to the severity of the disorder in particular corps and stations, one cannot help suspecting that the disease at that time often assumed a contagious form, such as in modern times, with improved barrack space, and the absence of foul privies, we rarely witness.

But in those almost forgotten days, we must bear in mind that although violent "fluxes" destroyed vast numbers of British troops, they were happily strangers to that mysterious pest of modern times, against which all the resources of our, art appear to be powerless. The very name of "cholera" rarely appears in the official returns of the Medical Board, prior to the time of the great outbreak of 1817.

(To be continued)

Official Selections.

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

Pro., 1st April, 1789 —All regimental baggage would seem to be carried on elephants at this period . the 1st Battalion of Europeans was obliged to await the arrival of the animals in changing station from Dum-Dum to Berhampore.

Pro. 22nd April.—It would appear that surgeons were not allowed leave to Europe. The Board reports to the "Secretary to the Military Department of Inspection" that "there are no surgeons in Europe on leave of absence, as they were all obliged to resign the service before they took their departure from Bengal."

Pro., 30th April —The Board are informed by the Secretary to the Government "that the Governor-General in Council has passed a resolution, that the Secretary to Government should be authorized to send to the Secretaries of the subordinate Boards for any papers required to elucidate points before the Government, and that, on intimation from him, the papers should be furnished at once without waiting to copy."

Pro., 15th June.— The price of wine and empty bottles and freight is noted in the following account from Mr. John Ferguson, one of the head merchants of Calcutta.—

Average cost of 1 pipe of good madeira at Calcutta	Rs.	400
Freight to Dinapore and Chunar	,,	15
Rowana duties	,,	16
		431
Risk of the river at 5½ per cent.	Rs.	23-8
40 dozen empty bottles for drawing off at Rs. 16 per 100	,,	77 0

Pro., 24th July.—In the Boards which periodically assembled to examine recruits as they arrived, selection was always made by the officer commanding artillery of men deemed fit to serve in that corps.

Pro., 29th August —Captain Henry Grace having compiled a digest of the existing military regulation, the Governor-General directs that the work shall be revised in the several departments to which the different sections appertain.

The Head Surgeon of Berhampore writes to ask for an allowance of house-rent, as he has to pay Rs 140 a month for a house at a distance from the cantonment of the three European Regiments, which obliges him to keep a carriage ; calls it a singular case, because at the upper stations head surgeons can better accommodate themselves with habitations, and at Dinapore there is a house for him ; Rs 90 a month is eventually recommended for him by the Board.

The Hospital Board, in answer to an inquiry from the Military Board regarding extension of hospital at Cawnpore, for reception of insane or infectious patients, or whether such should be housed in separate buildings, reply that the latter place (detached buildings) is certainly best when required for the above classes ; but they do not see the necessity for incurring the expense for either, as "infectious disorders in this climate are seldom met with, except small-pox, and a temporary building for such patients can always be procured at the season when it is prevalent, while an insane hospital exists at Calcutta, to which all such patients should be sent "

Pro., 23rd Oct.—An assistant-surgeon of artillery of three years' service, in Fort William, appeals to the Commander-in-Chief against his commanding officer, "who has materially interfered with my treatment as a surgeon," apparently having stated that he had mis-treated a corporal of artillery recently deceased. The Commander-in-Chief orders the Board to assemble and examine the assistant surgeon regarding his treatment of the case, with direction to call for such witnesses and evidence as they require. The Board reports unfavourably of the treatment applied to the case, and the Commander-in-Chief orders the assistant surgeon to be removed from the artillery, and to attend the Presidency Hospital as a pupil, and not to be permitted to prescribe until the head surgeon can report favourably of him.

1790.

13th Feb.—The Board furnishes the Government (by order) with a "comparative statement of the annual expenses of the Medical Department, under the present system, and under that which prevailed before the receipt of the Hon'ble Company's regulation of 21st September, 1785. The best comparative statements we could form upon systems, &c., so dissimilar."

The total expenditure of the whole medical, military, and civil establishments for one year by the system of 1785 was Rs 5,60,773. According to the system introduced in 1788, it was Rs. 7,53,490. (The budget for the *civil* medical service only, under the Lieutenant-Governor of Bengal alone, is now Rs. 9,89,316.)

Pro., 5th April.—Explanatory of certain over expenditure in bazaar medicine, it is stated "castor oil is deemed a much more effectual purgative in most complaints which occur here (Chunar) than salts. Infusions of senna, tamarind, and cassia do not appear to excite the same heat and thirst as solutions of salt, and are consequently often preferred Thus, "while the expenditure of these medicines is increased, the far greater expense of Europe medicine on salts, &c., is saved to the Company."

Pro., 21st April.—The head surgeon at Chunar reports to the Board the enormous profits the purveyor must make ; thus "all the articles in the enclosed list (of purveyor) are at least 50 per cent. cheaper in Chunar Bazaar than in the purveyor's book of rates," and "country vinegar, of which he charges Rs. 36, only costs him Rs. 3-4, and linseed oil, for which he charges Rs. 19-8, costs him only Rs. 2-9-6."

Notice is taken of barley for making drink for the hospital, and benjamin and vinegar for fumigating and sprinkling the hospital.

Pro., 20th April.—The military auditor-general writes to the Board, being now "the season for preparing the annual military statement, for the information of the Parliament. He asks for information about the probable expenses required for the medical department during the coming year, and whether they will exceed or fall short of the last—(a regular annual budget system in fact.)

Pro., 15th Sept —Assistant Surgeons would also seem to be made to resign the service on proceeding to Europe.

In the month of August, 1790, there was a total patients in General Hospital, Presidency, of [illegible] under the diseases.—

[illegible] and [illegible] ...	78
[illegible] ...	31
[illegible] inflammatory [illegible] ...	[illegible]
V[illegible] and chronic ...	64
[illegible] of Liver, recent and chronic ...	25
C[illegible] ...	10
[illegible] ...	2
Rheumatisms, sores, &c., &c. ...	81
	337

A[illegible] expenditure of wine for them in this month is given at 59 dozens, [illegible] 2 glasses, being 14 dozens, 6 bottles, 10 glasses, more than allowed by the regulations. (114 men would be allowed by regulation 44 dozens, 8 bottles, 4 glasses.)

Proc., 22nd September.—The head surgeon at Chunar (Mr. [illegible]) applies for an [illegible], which is much wanted, and [illegible] be sent.

[illegible] forwards to Government a report from the surgeon of [illegible] relative to the state of the hospital at Diamond Harbour.

The [illegible] Mr. [illegible] remarks that the prevalence of sickness at [illegible] deaths are truly alarming, and hence his requesting a report from the surgeon.

The surgeon reports "no place intended as a receptacle for [illegible] was ever worse endowed for that purpose" than the hospital at Diamond Harbour.) The hospital is reported to have large airy and open wards, and to possess all the coolness requisite to render the sick pretty comfortable; but the chief and most grievance is (taking up 3 pages of the records) the absence of surgeon or apothecary, medicine and attendants, there being no residence for the former and no authorised supply of the latter, "or a place for medicines." And that the present want of establishment, &c., caused the sick either to be treated on board their ship or to be sent to Calcutta.

(*To be continued.*)

Correspondence.

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ON SUBSOIL DRAINAGE, BY MR. CLARK, C.E.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—It is most satisfactory to me to perceive, both from Dr. Smith's report on the drainage and conservancy of Calcutta, and also from your article of the 2nd August, that the importance of subsoil drainage is beginning to be understood and appreciated. It is too often the case that what is unseen is [illegible], and it requires especial experience to be fully [illegible]. This [illegible] facts which pass unheeded by the general public. This city, in common with all other towns built at a low elevation above the level of the sea, and only drained at all by the [illegible] depression, has naturally a waterlogged site; and it [illegible] how few persons there are who, though daily [illegible] the works in progress for its improvement, will take [illegible] to ascertain for themselves the result of the operations [illegible], compared with the number of those who [illegible] and defend it under every [illegible]. People like the Frenchman [illegible] that his theory did not agree with the [illegible] pity the poor facts.

[illegible] have proved beyond [illegible] the necessity [illegible] drainage.

[illegible] operation, which is now [illegible] might have been some years ago, still further [illegible] subsoil drainage. Heavy [illegible] a few minutes [illegible] and the water continues to flow for [illegible] not only so, but after [illegible] of the rainy season, and for several months [illegible] an enormous amount of water reaches the [illegible].

W[illegible] partly carried off [illegible] a portion is evaporated, and another [illegible]. This portion either [illegible] a damp site, [illegible] with Calcutta, or it passes through the sewers, where they are provided for its removal.

But it [illegible] time for the water to pass [illegible] that, at a [illegible] than the drains the water is [illegible] the soil during the rainy season. During the dry season it gradually sinks to a certain level, which varies with the nature of the soil, and distance from the drainage; the more permeable the soil the greater the angle of inclination, and the more extended the benefit which the drain is calculated to give.

Efficient subsoil drainage, therefore, requires that the drains should be at no great distance apart.

In the case of a town like Calcutta it is necessary to provide that the public sewers in the streets be at such a depth as to permit of the private property which they pass being efficiently drained, say, to a minimum depth of 3 to 4 feet; this has been done, and those owners of property who are fully alive to its importance will embrace the opportunity afforded them, by the drainage works, to effect this necessary improvement.

Especially in the case of tropical rains like those of Calcutta is this necessary. In England, where the rainfall is but one-third, and spread with tolerable uniformity over the whole year, longer intervals are allowed for the smaller quantity of water to pass to the drains. Here the heavy rain falls almost exclusively during 4 months, with but very brief intervals for the passing off of the absorbed portion.

There can, I think, be no doubt whatever on this subject. Let those who advocate dry conservancy, a highly desirable plan in particular cases, but not possible in large towns, try their system in an undrained soil during the rainy season; it will certainly be found that "dry conservancy," when carried out with moist earth, and a wet place of interment, is not then the [illegible] system, which it is known to be under more favourable circumstances.

It is much to be regretted that the European quarter of Calcutta, that south of Park Street, should have been deprived—unless a second considerable outlay on the part of private proprietors be encountered—of the advantages of subsoil drainage, except so far as it is afforded by the deep public sewers in the street.

Owing to an unfortunate mistake during my absence from India, a system of surface drains for the compounds of houses, and a cesspool, disguised by the name of 'gully pit' or 'stench trap,' placed near the streets, has been provided for almost every house in that large and important area.

These sources of nuisance—surface drains for fluid filth, and a large pit to contain it to overflowing—it is usually considered the express use of a drainage system to abolish; it is, therefore, a matter of great regret, and to no one more than myself, that such a mistake should have been made, and especially when it could so easily have been avoided.

By these arrangements, nuisance is not prevented to any thing like the extent it might have been; but not only so, the subsoil drainage, which the same expenditure would have gone a long way to carry out, is still undone; and that where, in consequence of the comparatively small number of public sewers in a given area, it is most required.

I may here mention an instance of the beneficial results derived from the Subsoil Drainage of Calcutta. The facts can be known to any one by enquiry. I refer to the improved sanitary condition of the Native Hospital in Dhurrumtollah.

I had peculiar reason to know something of its previous condition in the year 1858.

The drainage works were then in progress, and one day not long after their commencement, in my presence, a coolie had incautiously placed his hand on the top of a pile which was being driven by the pile engine. The men not seeing his hand [illegible] started the work, the monkey fell and crushed two of his fingers severely. The best thing to be done I thought, was to take him to the hospital. I had insisted on doing, and [illegible] what [illegible] the poor fellow went there. His fingers were first amputated, then after some days his hand, after another interval his arm was taken off, and then he died. I learned, that it was a rule, that gangrene with almost fatal certainty followed every such operation in that institution. For the authorities [illegible] there was a cause, but that cause was difficult to discover. Much had been done to put the place in a sanitary [illegible] condition; great expense had been incurred in clearing the space around the hospital buildings; and in doing every thing that cou'd be done, but without avail; and I have it from the present surgeon in charge, it was considered that nothing short of the removal of the hospital to another locality would be efficacious.

Warned by experience, I no longer insisted that the accidents, more or less serious, which occur on the drainage as on all public works, should be treated in the Native Hospital. On the contrary I studiously avoided sending any one there for a long time; however, during the years 1858 and '59 the Dhurrumtollah sewer, which is one of the main arteries of the system, was completed, and the effect was to drain the soil to a depth of thirteen feet from the surface.

When the work was *commenced* in May, 1858, a totally different state of things was discovered. I then wished to sink a trial well immediately in front of the hospital compound. The well was to be sunk in the native fashion, as had been successfully done in other places; here, however, after the road crust, about 3 feet thick, was removed, the soil below was found to be a quicksand; and the native well sinkers found it to be utterly impossible to put two of their pottery rings one upon the other, in fact impossible, with their means, to make a hole eight inches in depth. The change in the state of things, when a large sewer laid with its invert upwards of 13 feet below the surface, in a stratum composed entirely of this quicksand, will readily be understood; from enquiries I made from time to time, I found that the result of surgical cases was improving, and that the fatal gangrene gradually and entirely disappeared.

It so happened that, on almost the last day of my attendance at the Municipal Office previous to my departure for England in 1865, I heard a gentleman complaining to the secretary, of the inconvenience he was put to by the drainage of Hospital Lane, which is to the east of the building.

This led me to introduce myself to this gentleman, Dr. Bailey, the present Surgeon in charge, with whom for the first time I then became acquainted. Having heard his complaint, I replied that, in my opinion, he was the last person who had cause to complain of the undoubted, but unavoidable inconvenience of the road being blocked up; he did not see why this should be so. I then asked him if he knew anything of the history of his hospital? What, for instance, had been the result of surgical operations in the year 1858, and was there any difference then, in 1865? Yes, he knew the lamentable and fatal difficulty which had attended the practice of his predecessors, and he knew that this difficulty had now disappeared; a satisfactory but unexplained change had occurred.

Dr. Bailey had not seen the drainage operations in progress in Dhurrumtollah, and had no idea of the magnitude and depth of the sewer there; he then, however, very candidly expressed, and up to the present time maintains his opinion that the sub-soil drainage of that locality cannot but have had a most important share in the improved sanitary condition of the hospital, and that though there are surface nuisances still surrounding it, yet he now has no fear whatever as to the result of his surgical cases, arising from the crowded locality, or the sanitary condition of the building under his charge.

I trust I may be pardoned for dwelling at so great length on this subject. My object has been to illustrate somewhat one of the important results of the works which have been so generally and greviously misunderstood, and on which I have the honor to be engaged.

Your obedient servant,
W. CLARK, M. INST., C. E.,
Engineer to the Municipality of Calcutta.

19th August.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—In the *Indian Medical Gazette* of the 2nd of August, there appears an article on the Medical Service and new Furlough Rules, in which is set forth the injustice done to holders of civil surgeoncies, who, by a recent order, are made to forfeit their appointments, by taking leave under the new rules.

As the writer of that article, I take leave to object to the note you have appended to it, which appears to me to place the subject in an entirely false point of view, and I must beg of you to allow me to say a few words on the subject.

My plaint is that, whereas it was declared that leave taken under the new furlough regulations, would not involve forfeiture of appointment; a special rule has deprived medical officers holding appointments of this advantage, and that so far the new furlough rules have been made to them of none effect.

The purport of your foot note is that the loss of the appointment holder will be the gain of some less fortunate officer.

But look fairly at this other side of the question, and see what may be said against it. I presume that "snug" appointments are not given to their possessors by chance medley. Those who hold them have probably been selected for professional attainments, former good service, or special qualifications. If so, they have earned their advantages, and are entitled to retain them.

But let it be granted, for the sake of argument, that it is only fair that appointments should be vacated on leave for the benefit of others. Why should this be the case only in the Medical Department?

Let the modified rule be applied to the Military and Civil Services; there would then be no *class* injustice. *Only*, I think, a general cry that one of the chief benefits of the new furlough rules had been abrogated.[*]

I am, Sir,
Your obedient servant,
THE WRITER OF THE ARTICLE.

A HARD CASE.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—I entered the service under G. G. O. No. 1060 of 1864, which guaranteed me pay, as an assistant surgeon, under five years' service, at the rate of Rs. 450 a month, when in charge of a native regiment. Last year, I was in charge of a regiment, the surgeon having gone home on furlough, and received Rs. 450. This year, owing to the paucity of medical officers, I am sent to officiate in charge of a regiment, the surgeon of which has gone on medical certificate to the hills, under the furlough rules of 1868, and I am only allowed Rs. 362-8-9, that is, Rs. 88 less than I was promised in G. G. O. No. 1060. Rs. 362-8-9 consist of my unemployed pay Rs 286-10 and half the staff of the surgeon on leave. As I was only officiating in my last appointment, I am not allowed to draw half my own staff, *viz.*, half the difference of Rs. 286-10 and Rs. 450.

It is, surely, unfair that, because another medical officer chooses the furlough rules of 1868, Government should break faith with me, and that I should lose nearly a fourth of my whole pay.

AN ASSISTANT SURGEON.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—Seeing the subject of subordinate medical education under discussion, I am induced to submit the accompanying note.

Your proposed text books for Native Doctors, in the vernacular languages of India, would certainly be a desirable boon to them. But we understand that it would be better to insist upon the possession of English qualification, which we find is most necessary for the Native Doctors, as they are bound to keep the medical records in English, and besides it will enable them to improve their professional knowledge. Indeed, they are so poorly paid by Government, that they can hardly purchase the necessary English works for their improvement; but I see that they are equally required to possess English qualification, both when placed under Civil Surgeons and in independent charge. As far as I know, a Native Doctor under a Civil Surgeon has to keep ready all the daily Registers, &c., before his master's arrival to the Hospital; who, coming to the Hospital, minutely and attentively observes the patients, books, &c., kept by his Native Doctor under his instruction, and leaves the Hospital after putting his signature upon those books. In this way the daily works are carried on till the last day of the month. When monthly returns are due, the Native Doctor prepares them carefully and with his utmost labor, in order to submit them earlier to the higher authorities, and when ready he takes them to his master,

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[*] The medical charge of a regiment, or a Civil Station, is the normal duty of a Medical Officer; therefore such a charge is not a Staff appointment.—ED., *I. M. G.*

[illegible] Native [illegible] Native Doctors [illegible]

[illegible] and Madras Native Doctors [illegible] valuable [illegible]

[illegible] Bengali [illegible] class Native Doctors [illegible] English works [illegible] When there is [illegible] way. [illegible] lament that [illegible] Indian Medical Gazette [illegible] the Native Doctors [illegible] one of our country proverbs, which is "the goat [illegible] ate, but the eater complains that the meat [illegible] have not."

I remain, your obedient servant,
A [illegible] BENGALI CLASS NATIVE DOCTOR.

Extracts.

◆

HYPODERMIC INJECTIONS OF A [illegible] — M. Bri[illegible] this great practical fact [illegible] with hypodermic [illegible] prevention of pain from [illegible] Just before [illegible] the [illegible] to any part, he [illegible] five or ten drops [illegible] of a solution containing 15 [illegible] to one ounce [illegible] — *Practitioner.*

A [illegible] agreeable purgative [illegible] Powder [illegible] of sugar [illegible] magnesia 7½ grains [illegible] and at the moment [illegible] pour a cup of [illegible] and stir quickly. — *Ibid.*

M. B[illegible] has devised the following ointment for [illegible] which [illegible] after [illegible] sweet almond oil 2, [illegible] 1 part mix. — *Ibid.*

[illegible] IN FRANCE. — Dr. L[illegible] states, that on the 1st [illegible] for every 442 [illegible] he states to [illegible] that [illegible] it is correct to [illegible] more than [illegible] enter the [illegible] every year, and that in the [illegible] — *The Lancet.*

M. MA[illegible] has been com[illegible] the result of his [illegible] that the extremity [illegible] He has been [illegible] and he denounces [illegible] at a recent sitting [illegible] which [illegible] by the [illegible] — *British Medical Journal.*

[illegible] *Medical Gazette* for February is an interesting [illegible] Hospital, Manchester, which [illegible] the existing observations of French and English [illegible] facts, [illegible] substantiated on repeated [illegible] other [illegible] He [illegible]:—

1. The [illegible] range of temperature is greater in the healthy child than [illegible] recorded in healthy adults. His observations give [illegible] range of between 2 and 3° Fahr.; those of Davy, G[illegible], and [illegible], on themselves, gave a range of [illegible] Fahr. only.
2. There is invariably a fall of temperature in the evening amounting to 1, 2, or 3 degrees.
3. The [illegible] falling [illegible] between 7 and [illegible] p.m. [illegible] it often begins about 5 p.m., and frequently [illegible]
4. The minimum temperature seems usually to be reached at [illegible] a.m.
5. The temperature usually begins to rise between 2 and 4 a.m., while the child is still sleeping soundly, and before food is taken.
6. The variations between [illegible] a.m. and 5 p.m. are usually trifling.
7. There seems to be no very definite, or at least obvious, relations between the frequency of the pulse and respirations, and the amount of normal temperature. — *Ibid.*

At a [illegible] meeting of the *Manchester Medical Society*, Mr. S[illegible] some remarks on the movements of [illegible] worm. He said that the well known [illegible] outside the [illegible] after [illegible] detection, was owing to the power of [illegible] each [illegible] joint. He had [illegible] an opportunity of witnessing this power in a [illegible] just after escaping from the bowel. The [illegible] assumed [illegible] drawn on paper and [illegible] and contracted [illegible] and [illegible] itself completely over. When [illegible] stopped they could be re-excited by warming it. [illegible] exposed during the night, and in the morning was dead. — *Ibid.*

ALCOHOL IN LARGE DOSES IN POISONING BY MUSHROOMS. — M. P[illegible], in a communication to the Académie des Sciences, affirms that alcohol in large doses is a veritable antidote to the [illegible] mushrooms of the genus *amanita*, and he believes it [illegible] in the poisoning by other species of mushrooms. The [illegible] is that [illegible] in water, impregnated with salt or vinegar, is insufficient to render the poisonous varieties [illegible] and that the [illegible] bulbeux in particular retains a [illegible] of its toxic principle. — *Medical Press and Circular.*

[illegible] OF CARP[illegible]. — M. Bernhard-Meyer [illegible] French Academy has [illegible] of several [illegible] called [illegible], in which he finds the [illegible] the belly, and the heart nearer the tail. The [illegible] from the [illegible] glands unite in a canal which reaches [illegible]

[illegible] ORGANISMS? This question [illegible] the P[illegible] controversy [illegible] there are some germs that are not [illegible] but which require a temperature [illegible] 12[illegible] above boiling. This is a simple problem for [illegible] — *Medical [illegible] Journal.*

MARSH GAS. — M. BERTHELOT has examined the action of the [illegible] on marsh gas. When a succession of powerful [illegible] to traverse pure marsh gas, carbon is deposited, [illegible] of gas [illegible] considerably. Operating with [illegible] volume becomes 127 c. c. after two minutes, [illegible] 10 minutes [illegible] but some hours are required [illegible] destruction of the marsh gas. — *Quarterly* [illegible]

ORIGINAL COMMUNICATIONS.

◆

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON, AND THE USE OF CERTAIN REPUTED ANTIDOTES; AND THE EFFECTS OF EXCISION, &c.

By J. FAYRER, M.D., C.S.I.

Present:—DR. FAYRER and MR. SCEVA.—July 31st, 1869.

EXPERIMENT No. 1.

Mr. R——'s (of Jounpore) antidote, the powdered root or bark of a plant, name and family unknown, was tried to-day on a dog.

The drug had been sent to me for the purpose, and was fresh and potent.

Half of a powder, the quantity directed by Mr. R——, was given, having been first carefully rubbed, and mixed with about an ounce of water.

A pariah dog was bitten in the thigh by a cobra at 3·3 p.m., and was much excited by the bite. At 3·6 p.m., as symptoms of poisoning appeared, the first dose of the antidote was given, and was all swallowed. The dog was led about, and cold water dashed on its face and thorax, when it seemed drowsy. 3·8.—Lies down; very restless. 3·9.—Hurried breathing. 3·10.—Dog lies down; rises again, and runs about in a restless and excited manner. 3·12.—Restless and uneasy; head swings about as though it were giddy; breathing accelerated. 3·17.—It staggers as it is walked about; cold water sprinkled on its head and chest. 3·18.—The second dose given, that is, the other half of the powder, as directed. 3·20.—The dog is worse; cannot stand, staggers and reels when walked about, and falls over; convulsive movements of head and neck. 3·22.—Convulsed; pupils widely dilated. 3·24.—Dead—in 21 minutes.

The dog was not a large one, but it was healthy and vigorous: the instructions sent with the drug were carefully followed. The result is not favourable to the drug as an antidote in the canine race.

EXPERIMENT No. 2.

A dog had a ligature made of stout cord, *soaped* to make it knot tightly, thrown loosely round the fore-arm. It was then bitten by a cobra below the ligature, which was tightened as firmly as a man's strength could draw it. Immediately after the bite, a red hot iron was then introduced into the fang wounds, and the bitten part thoroughly cauterized, strong carbolic acid having first been well rubbed in.

Bitten at 3·31 p.m.

Ligature tightened within five seconds.

Carbolic acid and actual cautery applied at 3·33, that is, in two minutes after the bite, and one minute and fifty-five seconds after the ligature was tightened. The limb seemed to be completely strangulated, it became livid; blood oozed from the fang wounds, and the limb was all but paralysed. There could be no doubt that the limb was thoroughly strangulated, or that the bitten parts were well cauterized. 3·36.—Notwithstanding all the above precautions, the dog is already much affected by the poison; is lying prone, unable to rise or to walk; the breathing hurried; and convulsive movements occurring occasionally. 3·40.—Convulsed. 3·41.—Dying. 3·42.—Dead—in 21 minutes.

There was at the most an interval of five seconds between the cobra's bite and the tightening of the ligature, which was not afterwards relaxed. This experiment clearly proves that the poison is taken into the circulation very rapidly; certainly five seconds did not elapse between the bite and the application of the ligature, which had been previously thrown loosely round the limb, in order that no time might be lost in tightening it after the bite, and yet the dog (it was a small one) died of the poison in 21 minutes.

During that very brief interval sufficient poison entered the circulation to destroy life. It is possible that more may have entered after the ligature was tightened, but the quantity must have been very minute, as the ligature was very tight. In an ordinary snake-bite it is difficult to conceive that a ligature could be applied more speedily than in the case of this dog. So that, even this method of treatment, rational as it certainly is, can only be regarded as of doubtful benefit.

I should note, and it is a subject, I believe, that I have not alluded to before in other experiments, that the rigor mortis took place in about 1½ hour after death, in these two dogs. The blood coagulated after death.

EXPERIMENT No. 3.

A fowl had a ligature placed on the thigh loosely: it was bitten by a cobra at 3·47. The ligature was tightened at the same time that the snake bit; before its fangs were withdrawn, the ligature was thoroughly tied, so tight that the limb seemed completely strangulated, the part becoming livid and disabled. 3·50.—No sign of the poison taking effect; the fowl hops about on the sound leg. 3·52.—Actual cautery applied to the fang punctures, which were bleeding freely venous blood from the conjested limb, and the wounded parts surrounding were thoroughly disorganized.

The ligature was then divided; the fowl being placed on the ground ran about; the ligatured limb still paralysed.

3·54.—Fowl crouching, but rises and runs about when disturbed. 3·55.—Looks drowsy; is crouching, and begins to hang its head, closing the eyes. 3·57.—Head drooping, beak resting on the ground. 3·58.—Fallen over on its side, rises with a convulsive movement, and falls again. 4 p.m.—Is unable to stand or walk. 4·4.—Convulsive movements. 4·11.—Dead—in 24 minutes. Blood coagulated after death, when removed from the great vessels.

This experiment, more than ever, proves the subtle and deadly nature of the poison. The ligature in this case prevented the entry of the poison into the circulation, which was evidently retained in the congested part of the limb below the ligature. Carbolic acid and the actual cautery applied to the wounds, most thoroughly, failed to destroy it. Yet no sooner was the ligature relaxed than the poison entered the circulation, weak and altered as it must have been after the severe pressure of the ligature, and rapidly killed the bird. This proves that there is danger after removal of the ligature when it has been most effectually applied. The poison spreads itself by diffusion throughout the juice of the strangulated part; so that nothing short of destruction or removal of the whole of that part seems to offer a hope of subsequent escape from toxic absorption.

With reference to the application of a ligature above the bitten part, I would here remark that it is almost physically impossible with the power of one pair of hands so to tighten a cord round a dog's leg, as thoroughly to strangulate the limb. The experiments seem to prove this, but also to shew that it is possible completely to arrest the circulation through a fowl's leg in this manner.

With tourniquets it might be done no doubt, and a man's arm or leg, certainly his toe or finger, might be so strangulated, but, as ordinary snake-bites, do not occur where any tourni-

[illegible]s other than sticks and cords or the like, are forthcoming. The desideratum is to obtain the most perfect compression of the limb, in the simplest way possible sufficient at all events to prevent immediate entry of the poison, through the circulation; and this may be done with an ordinary cord or strip of cloth twisted with the common stick tourniquet, and the utmost extent that the strength of the hands is able to twist it. But it must be borne in mind that this compression only extends to a certain depth, and that deeper, the circulation still goes on; with this, the poison retained by the ligature in the partially strangulated portion will soon communicate by diffusion and symptoms of poisoning will supervene. In such a case we may fairly hope that the amount of poison entering the blood has been so far limited as not to be fatal, and that we may, therefore, be able to help the sufferer through the troubles caused by the reduced dose of the poison. But it is obvious that the urgent necessity is for the application of some agent that will equally diffuse itself, and neutralize or destroy the poison whilst yet retained, and only partially diffused through the strangulated part.

In this, as far as I can understand it, lies the only hope of safety in a real cobra bite.

Carbolic acid or other allied substances would probably be useful. But it is obvious that the success of this, or, indeed, of any mode of treatment, lies in the promptitude and tension with which the ligature is tied, and the decomposing agent applied.

EXPERIMENT No. 4.

Dr. W. J. Palmer, Professor of Chemistry, was present also.

A fowl had a ligature thoroughly tightened round the thigh, and was then bitten below it, by a cobra at 4-7 p.m.

4-19. No effect of the poison visible. 4-22.—Breathing rather hurried, but otherwise seems unaffected. 4-30.—Begins to shew signs of the effects of the poison, nods its head drowsily, rests its beak on the ground; it is evidently affected. 4-35.—Much the same; 30 drops of the liquor ammonia injected in three doses with the hypodermic syringe. 4-37.—Fowl is drooping fast, cannot move. 4-41.—Convulsed. 4-44.—Lies unconscious, but convulsed. 4-50.—Dead.

In this case the ligature, which consisted of a cord soaped to make it run easily and knot firmly, was tied round a fowl's thigh from which the feathers had been stripped with the greatest amount of tension that a man's hands could exert. The part below the ligature became livid, and the limb paralysed. In this condition it was bitten at 4-7 p.m. The ligature was never relaxed, and certainly did not slip, yet at 4-30, perhaps earlier, that is, in 23 minutes, it began to shew that the poison had, notwithstanding the ligature, found entry into the circulation. Its death 21 minutes later proved that sufficient poison had entered to destroy life, and this proves, I think, that it is almost beyond our power to keep it out. The question is, supposing the strangulation of the limb to have been complete, how did the poison enter? It must have passed the barrier of the ligature, how did it do so? I can only explain it by supposing that tense as it was, it was not sufficiently constricted to prevent some diffusion of the poisonous fluids through the [illegible] tissues, and, that in the course of 23 minutes, enough found its way in to destroy life.

From this experiment, I think we may fairly deduce the amount of safety that may be expected from the ligature. That it retards the entry of the poison [illegible] proved, and that it gives time, therefore, for [illegible] retarded venom [illegible]. But it is equally evident, so little [illegible] the power of diffusion, that [illegible] the most rapid and effective application of the ligature, and the immediately subsequent application of some decomposing agent, can, in a *bona fide* cobra-bite, offer any hope of safety.

EXPERIMENT No. 5.

A fowl was deeply bitten in the thigh by a daboia at 4-31. The snake had been in confinement for some time, but it was vigorous and vicious, and plunged its fangs deeply into the bird's thigh drawing blood. 4-36.—Not affected. 5 p.m.—Not affected.

No symptoms of poisoning occurred, and the fowl was alive and well on the 2nd of August.

This experiment is a most instructive one and proves that a poisonous snake may bite without poisoning. It is not in the least probable that this daboia was altogether exhausted, for although in captivity it had been at rest for many days, and had not exhausted its poison by biting; another daboia that had been six months in captivity, and had eaten nothing during that period, killed a fowl rapidly by one bite. It furnishes an explanation of some of the so-called recoveries from snake-bite, in which, when the snake has been seen and the punctures of its fangs are visible, the patient recovers from the mental alarm and prostration after the administration of one of the supposed antidotes. That such alarm does cause temporary, physical, as well as mental prostration I have had proof in the following case:—Some time ago, on visiting the hospital one morning, I was told that a man had been admitted during the night suffering from a snake-bite, and that he was very low.

I found him in a state of great prostration, he was hardly able to speak, and seemed to be in a state of great depression. He and his friends said that during the night in going into his hut, a snake bit him in the foot; that he was much alarmed, and rapidly passed into a state of insensibility when they brought him to the hospital. They and he considered that he was dying, and evidently regarded his condition as hopeless. He was in fact in that condition not unfrequently described, from which the sufferer has been snatched by the timely administration of an antidote. On asking for a description of the snake, they said they had caught it and had brought it with them in a bottle. The bottle was produced, and the snake turned out to be a small innocent Lycodon. It was alive, though somewhat injured by the treatment it had received. On explaining to the man and his friends that it was harmless, and with some difficulty making them believe it, the symptoms of poisoning rapidly disappeared, and he left the hospital as well as ever he was in his life in a few hours. Had no snake been found, and had an antidote been given, who would have been prepared to dispute its efficacy? I am sorry to destroy popular and favorite illusions, when they are harmless, but in a matter of this kind, it is well that the truth should be known.

EXPERIMENT No. 6.

A fowl was bitten by a daboia in the thigh at 4-40 p.m. The snake has been over six months in captivity, during which time it has steadily refused to take food or water. It was active, vigorous, and vicious; it plunged its fangs deeply into the fowl's thigh and drew blood.

In 20 seconds the bird was violently convulsed; in 60 more seconds it was dead.

Contrast this experiment with the preceding one and I think it confirms what I said as to the occasional uncertainty of a snake-bite. These two daboias were both old, that is to say, [illegible] in captivity. They were both, notwithstanding, vigorous, [illegible]. [illegible] recovered from the bite [illegible] death.

The blood of the fowl was examined after death. Dark colored coagulated blood was found in one of the great vessels near the heart. In others, and in the cavities of the heart it was fluid, and remained so after death.

It is worthy of notice that in the mammals poisoned by the daboia, the blood was found to be fluid, and to continue so after death. In birds it was sometimes coagulated. Could this be due to the rapidity with which life was extinguished in the bird?

Present:—Dr. Fayrer, Dr. W. Palmer, Professor of Chemistry, and Mr. Sceva.—August 7th, 1869.

Experiment No. 1.

A pariah dog was bitten by a cobra (Teturiah Keautiah, of the snake-men) in the hind leg at 3-5 p.m. At 3-8 p.m., thirty drops of liquor ammoniæ sp. gr. ·959, diluted with three parts of water, were administered. 3-12.—Dog lying down, licking the wound; when walked about, limped on the bitten leg; breathing hurried. 3-15.—Thirty more drops given as before. 3-22.—Lying down; limbs twitching. 3-23.—Thirty more drops given. 3-24.—Convulsed; lying down; unable to rise. 3-25.—Dying; limbs convulsed; pupils widely dilated; *tapetum lucidum* very brilliant. Heart still beating, no respiratory movements. 3-26.—Pupils contracted again (this is a phenomenon I have not before observed). 3-28.—Another thirty drops of liquor ammoniæ administered. 3-29.—Heart still beating irregularly. 3-30.—Dead—in twenty-five minutes.

Ammonia has long been considered one of the most potent of all remedies in snake-bites. The object of this experiment was to test its value. The result is not encouraging.

Experiment No. 2.

Mr. R——'s "antidote" was again put to the test. The powder was rubbed into a pulp mixed with water in the proportion directed; it was then administered to a dog at 3-31 p.m. The dog was then bitten by a cobra in the thigh. 3-35.—The dog is affected by the poison, looks scared, and limps in the bitten limb. 3-37.—Staggers, lies down; breathing hurried. 3-39.—Another dose administered. 3-43.—Limbs convulsed. 3-45.—Paralysed; heart beating irregularly. 3-59.—Heart still beats; no respiratory movements. 4 p.m.—Dead—in 28 minutes.

I am afraid the antidote must be regarded as inapplicable to the canine race.

Experiment No. 3.

Jugular vein of a pariah dog exposed at 3-42, and a diluted solution of liquor ammoniæ sp. gr. ·959—one part to water two parts—to the extent of 30 drops, injected. No apparent inconvenience caused to the dog by the injection. At 3-43, the dog was bitten in the thigh by a cobra. 3-48.—Dog showing signs of the poison; 30 more drops, diluted in the same way with 6 of water, again injected into the jugular vein. Shortly after this, the dog began to turn round and round in the most restless manner; 30 more drops injected similarly diluted in the other external jugular, as a large thrombus had formed in that part exposed. 4-10.—Dog convulsed. 4-12.—Cannot stand, limbs paralysed. 4-13.—Violently convulsed all over. 4-20.—Dead—in 37 minutes.

The cobra was not fresh in this case, and yet it killed in 37 minutes. The injection of the diluted ammonia was not more satisfactory than that of the undiluted, as far as its immediate antidotal effects were concerned; but it would appear that the injection of diluted liquor ammoniæ into the jugular vein is not followed necessarily by convulsions, or other violent constitutional disturbance.

Experiment No. 4.

Some of the blood of the dog killed by the cobra in the first experiment, where the ammonia was given, was removed from the body about three-quarters of an hour after death. It was found to be firmly coagulated, but some of the serum and part of the clot mixed with water, to the extent altogether of 40 drops, were injected with the hypodermic syringe into a fowl's thigh, the actual quantity of blood thus used could not have been more than a few drops. The injection was made at 4-20 p.m. 4-35.—Slightly affected by the poison. 5 p.m.—Crouching, head drooping, appears giddy. 5-30.—Lying on one side; convulsive movements. 5-35.—Dead—in 75 minutes.

What can more forcibly illustrate the extraordinary virulence and potency of the poison than this experiment? A few drops of the blood of a dog poisoned by a cobra, diluted with water, injected into a fowl's thigh, killed the bird in 75 minutes. The quantity must have been excessively minute, but it proves how it retains its power although diluted and mixed with the blood.

Present:—Drs. Fayrer, W. Palmer, and Mr. Sceva.—August 14th, 1869.

Experiment No. 1.

A gentleman residing in Rohtuck having forwarded to me the powdered root or some other part of a plant, name and family unknown, which he had found useful in the treatment of snake-bites, and having requested me to test its efficacy, the following experiment was made:—

ʒi of the powder was rubbed with six peppers into a pulp and mixed with water.

A pariah dog was then bitten by a cobra (variety *Kurris Keautiah*) of the snake-men, in the thigh at 3-13 p.m., part of the antidote was then, according to Mr. F.'s direction, rubbed into the punctures, and the remainder administered internally, immediately after the outward application. 3-18.—The dog is affected by the poison, he is restless, nauseated, making efforts to vomit; walks with a staggering gait. 3-22.—Limbs partially paralysed. 3-23.—Convulsed, unable to rise. 3-25.—Lies perfectly motionless, muscles generally twitching. 3-26.—Dead—in thirteen minutes.

The drug had evidently no effect in retarding the action of the poison. The dog, which was a medium-sized animal died even sooner than usual.

Experiment No. 2.

A Mahomedan hakeem, Mahomed Khan, presented himself with some medicine with which, he said, he had successfully treated several cases of snake-bite in men. It was a strong aromatic smelling powder, dissolved in water, but he could tell me no more than that it was a jungle root. He asked to be allowed to try it, and appeared quite confident of success. A very large and powerful pariah dog was then placed at his disposal, also a cobra, which was not fresh, having been in captivity for some time, and had bitten before. He had the dog bitten in the thigh by the cobra at 3-35 p.m. He was allowed to do, or direct to be done, whatever he liked. At 3-36 he administered a quantity of the drug, which was swallowed by the dog. 3-37.—The bitten leg is partially paralysed. 3-45.—The dog is sluggish and lying down. 3-46.—A second dose administered. 3-48.—Hurried breathing. 3-50.—The dog is nauseated and rejected some half-digested meat. 3-55.—Uneasy; hurried breathing. 4-2.—Lying down, panting, frothing at the mouth. 4-5.—Retching. 4-7.—Lying down; looks depressed, but quite intelligent. 4-15.—When roused staggers as he walks. 4-18.—Lies prone, with the legs outstretched Has very little control over the hind legs when roused 4-20.—Another large dose of the drug administered by the hakeem. 4-21. Limbs convulsed, unable to rise. 4-21.—Tries to rise, falls over. 4-26.—Convulsed. 4-32.—Is quite paralysed; pupils widely dilated. 4-35.—Heart still beats, no respiratory movements. 4-40.—Pupils contracted again (I have observed this symptom in another dog just before death.) 4-42.—Dead; pupils again dilated. Bitten at 3-35, dead at 4-42—in 67 minutes.

The dog was a remarkably powerful and vigorous animal. The snake was not fresh, and yet the dog succumbed in one hour and seven minutes.

The hakeem expressed much astonishment at the results; he evidently *believed* that his drug would prove an antidote. He said, in a somewhat depressed tone of voice, that he had other remedies. He was invited to put them to a similar test.

Experiment No. 3.

A very large and vigorous pariah dog was bitten in the inguinal fold of integument between the thigh and abdomen by a cobra at 3-55 p.m. The part was immediately cut out with a bistoury, the places where the fangs had penetrated being completely removed. The instrument was at hand, and the excision was done at once. Two seconds, not more, might have intervened between the bites and the excision.

At 4 p.m., some brandy was poured down the dog's throat. 4-6.—Another dose of brandy administered. 4-16. He is excited, and the respiration is hurried, perhaps from the brandy. 4-25.—The dog is not yet affected by the poison. 4-35.—Much the same, the breathing rather hurried. 4-42.—No symptoms of poisoning except the hurried breathing, and that may be from excitement. 4-47.—More brandy given. 4-50.—No symptom of poisoning as yet. 5-10.—Vomited; shews symptoms of being poisoned. 5-15.—Vomited again. 5-30.—Restless, breathing hurriedly; abundant flow of saliva. 6 p.m.—Slight convulsions; breathing hurried. 6-30.—Dead. Bitten at 3-55, dead at 6-30—in two hours and thirty-five minutes.

Here again the extraordinary virulence of the poison is shown. The snake bit in a fold of skin which was immediately excised. Yet in the slight interval, it could not have been more than two seconds, enough of the poison had entered the circulation to cause death in two hours and thirty-five minutes, notwithstanding the free administration of brandy. The dog, too, was an unusually large and vigorous animal.

Experiment No. 4.

A fowl was bitten in the thigh by a cobra at 4-13 p.m. The part in which the fangs had lodged was immediately excised with a sharp scalpel. 4-17.—Fowl lying down, shewing no signs of poisoning. 4-20.—Fowl rather drowsy, eyes closing, head drooping. 4-25.—Breathing hurried; drowsy. 4-28.—When roused can stand, but cannot walk, and falls over; gasping. 4-31.—Convulsed. 4-33.—Dead—in 21 minutes.

This again shows the extraordinary virulence of the poison. The entire mass of muscle into which the fangs were impressed was clearly cut away within three seconds after the bite, and yet poison sufficient had found entry to cause death. That death was much retarded there can be no doubt, for the fowl lived twenty-one minutes, instead of three or four, after being bitten. Slight as the encouragement is to be derived from such experiments as this, it yet points in the right direction in which we are to look for any rational treatment.

Experiment No. 5.

A fowl was bitten in the carpal extremity of one wing, in a thoroughly vascular part, by a cobra at 4-40 p.m. This was amputated at the carpal joint immediately the fangs were withdrawn. The scalpel was ready, and it was removed within three seconds of the completion of the bite. The amputation was about half an inch above the highest fang's mark. 4-48.—No symptom of poisoning, no bleeding from the wing. The fowl is running about quite indifferent to either poison or amputation so far. 4-55.—No symptom of poisoning as yet.

August 15th, Noon.—The fowl is alive and well; in this case, the poison has evidently not entered the circulation, the excision having been in time to prevent it. These experiments all prove that the poison takes effect chiefly through the venous circulation, and that if excision be practised immediately and thoroughly, either the whole or part of it *may be* prevented from entering the circulation. No doubt some of the poison finds way into the circulation by diffusion from the centre of inoculation, and thus all may not be removed by even very free and very early excision. The natural deduction is, that the part should be cut out as rapidly and extensively as possible; otherwise, as in the cases of these animals, delay of a few seconds may prove fatal.

RESULTS OF SANITATION IN INDIA.

By W. J. Moore, L.R.C.P.,

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Under the above heading, an article of mine appeared in the *Indian Medical Gazette* for June 1867. It was then demonstrated, that notwithstanding the close attention paid to sanitation during recent years, in spite of an almost lavish expenditure on palatial, upper-storied barracks, and in defiance of the expectations of sanitary reformers, the *total loss* of men from the European army in India, on account of sickness, had only been reduced by 7 per 1,000 per annum! It was shown, that as the *death-rate* decreased, the *invaliding list* rose, rendering *total loss* to the service in India, almost equal to the figures with which Lord Herbert's sanitary commission, in 1863, startled the Secretary of State, the House of Commons, and the home press, all of whom up to that period appear to have been ignorant of the writings of Macpherson, Chevers, Ewart, Cornish, and others, who had previously displayed similar statements. But the idea of a mortality of Anglo-Indian troops at the rate of 69 per 1,000 yearly (being the average for the first half of the present century) was nothing new to those acquainted with the writings of the authors above mentioned. Neither, that although the average of death-rate for the fifty years referred to, attains the high figure of 69 per 1,000, the first and last decennial periods show a wide difference. Up to 1820, for instance, Europeans died at the rate of 80 per 1,000 *per annum*; for the ten years ending 1856 the *ratio* was only 51 *per mille*. Tables 4 and 10,* prepared by the Royal Sanitary Commission, abundantly testify that a gradual decrease of mortality took place. Dr. Chevers also shows, that since the commencement of the present century, the mortality rates of Europeans serving in each of the three presidencies had gradually fallen. "In the Bengal Army, the annual mortality, during the 12 years ending 1853-54, was about 20 in the 1,000 lower than that which prevailed in the 12 years ending 1821." In Madras, the deaths diminished one-half from the commencement of 1800, to the end of 1842. The following table evidences the above:—

Bengal.		Madras.	
Years.	Mortality per 1,000.	Years.	Mortality per 1,000.
1812-21	85	1801-9	[illegible]
1832-41	58	1810-21	63
1842-51	65	1842-52	32

In Bombay also, as demonstrated by Dr. Coles in 1855-56, the death ratio had diminished to 10 per 1,000 *per annum*. But

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* Vide Royal Sanitary Commissioner's Report, Vol. I.

for purposes of comparison the 51 per 1,000 given by the Royal Sanitary Commission, as the mortality for the decennial period ending 1856, may be fairly taken. And this, it must be recollected, was before what may be designated the *Sanitary Era* in India. At this period, as we learn from Colonel Sykes' tables, the rate of invaliding was 29·4 per 1,000. The total loss to the service, therefore, from both deaths and invaliding was 80·40 *per mille*. This, as compared (in the article previously referred to, as published in the *Gazette*, June 1867) with the death *ratio* from 1860 to 1864, *viz.*, 26·22 per 1,000, and the invaliding of 1866, *viz.*, 46·87 for 1,000; total 73·09, gives a total gain in the loss to the service, of 7·31 only. And this, after sanitation may be said to have been initiated.

The statistics of two more years are now available, and afford further evidence, that *mortality of Anglo-Indian soldiers is principally reduced by an increase of invaliding*. For 1866-67, the death ratio for India was 21·70, and the invaliding 47·62, giving the *total loss* to the service in this country, caused by disease, as 69·32. A slight change for the better certainly, but probably only one of those fluctuations to which all figures of the kind must be periodically subject. The following table shows the death rate and invaliding, for a period of six years, by which it may be seen, that as the former decreases, the latter increases.

Years.	Ratio per 1,000 deaths.	Ratio per 1,000 invalided.
1861	36·74	31·77
1862	25·68	28·29
1863	23·64	35·
1864	21·93	44·1
1865	28·14	34·70
1866	21·70	47·62

If the statistics of the Bengal or Bombay Presidency are regarded separately, the rise under the head of invaliding is even more apparent. Thus, in Bombay, in 1866, the sick sent home were 24·9 per 1,000 of strength; the deaths 10·5 per 1,000. In 1867, as many as 60·6 were invalided, and only 15·6 deaths *per mille*. In Bengal, in 1866, the death rate was 20·11. The invaliding 49·04 per 1,000. In 1867 the mortality amounted to 30·95 *per mille*; but this was a cholera season, and subtracting the deaths from this one disease, the ratio is only 17·11 from all other causes. But the invaliding reached 47·28 per 1,000 of strength. If the average loss, from both invaliding and deaths during the six years, included in the above table, namely, 63·30, is compared with the total loss for the years ending 1856, *viz.*, 80·40, we have a difference of 17·10 in favor of the more recent statistics. But excess of invaliding accounts for 12·59 of the gain, leaving only 5·51 to be otherwise explained! Thus—

Loss to the service from both causes for ten years ending 1856	80·40 per 1,000
Loss to the service from both causes for six years ending 1866	63·30 per 1,000
Gain	17·10
Difference between the amount of invaliding for the first period, and for the last period	12·59
Gain, excluding invaliding.. ..	5·51

If the last three years ending 1866 are thus compared, or if the statistics of the Bengal Army, with its recent 49 per 1,000 of invaliding, are thus compared, the gain otherwise than from invaliding is reduced to a still lower figure! It may, therefore, be confidently stated, that the extension of the invaliding system is the principal cause of reduction of mortality, during recent periods, in the Anglo-Indian Army.

There are, however, other influences independent of pure sanitation, which will, doubtless, account for the small gain over the former total loss, which cannot be attributed *directly* to invaliding. These are—first, the system of short enlistments; 2ndly, change of medical treatment; 3rdly, the lessened consumption of spirituous liquor. A soldier now-a-days, unless in the exceptional case of a man serving nearly his full term of ten years, and again re-enlisting, scarcely ever remains in this country the full decennial period. All European soldiers arriving in India, have already completed from one to two, three or four years of their service or more. And before ten years has passed, they either return home with their regiment, or on the completion of their period of enlistment. Some may re-enlist into other regiments, but the full period of ten years in India is not often exceeded, and in the majority of instances very much shortened. And this brief period of residence tells on mortality. The old ideas of climatization, and seasoning fevers, are now totally exploded. From the day the white man enters the tropics, physical degeneration, more or less rapid in its progress, commences. It is indeed the same with the Negro or Esquimaux, removed to temperate climates. They are found by experience to sicken and die, even as the European too frequently does in India. Without entering on the *questio vexata* of the existence of præ Adamites, or the unity of all races of men, it may be safely asserted, that whether or not climate has produced the differences we now see—from the Negro to the Anglo-Saxon—climate is certainly not conducive to longevity of Europeans conveyed suddenly into the tropics. The destructive influence of age and length of residence in the country was demonstrated in Table X of the Royal Sanitary Commissioner's report, which gives the average annual mortality, at certain periods of service, of the European forces of the East India Company. And these men, it must be recollected, were very differently situated, as they enlisted for life, compared with the Queen's soldiers now, who take the shilling for ten years. From the statement above referred to, it may be seen, that whereas in the Company's forces the death rate was 47 per 1,000 among men of from five to ten years' service, it increased gradually until it reached 62·5 per 1,000 among men of 20 years' service and upwards. The difference between the figures named is 15, almost equal to the total saving effected, as shown above.

The following table taken from statistics given in the "Army Statistical, Sanitary, and Medical Report for 1866," is also equally demonstrative of the deterioration consequent on tropical life, showing that physical decay is much more rapid than in temperate climates.

Ratio of Deaths per 1,000 at different ages.	Under 20 years.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 upwards.
Anglo-Indian Army, 1866 ...	9·15	16·94	29·21	36·45	52·77	66·47
Anglo-Indian Army, 1861-64 ...	6·41	15·98	24·39	34·15	39·39	53·37
Army in Great Britain, 1859-64	3·01	6·09	8·25	12·23	15·61	19·65
Civil Male population, England and Wales ...	7·41	8·42	9·21	10·23	11·63	15·55
Civil Male population, England and Wales—Healthy Districts	5·83	7·30	7·03	8·36	9·07	9·86

From this it also appears that length of service tells on the soldier, as it did in former days, before the sanitary era in India. After 20 years' service, we have seen the old Company's Europeans died at the rate of 62 per 1,000; so in 1866, the mortality of soldiers, upwards of 40 years old, was 66 per 1,000; up to this period considerable gain is apparent, to be attributed to shorter residence and invaliding.

The change of medical practice was mentioned, as assisting invaliding, in accounting for the slight reduction on the total loss to the service. The abandonment of that system of medicine, well termed *spoliative* by Ewart, must have tended to lessen [illegible] Sir Ranald Martin's [illegible] evidence [illegible] and [illegible] which [illegible] than rest [illegible] Balfour and [illegible] Sir Ranald Martin's work [illegible] the [illegible] results of [illegible] Mr. [illegible] was [illegible] leeches applied. Lieutenant S[illegible] ten days. Lieutenant —— [illegible] 10 [illegible] days. [illegible] of work [illegible] He went to [illegible] another [illegible] the subject the patient [illegible] up a dram from the liver. Lieutenant [illegible] —— I had [illegible] from [illegible] 1849 to January 1851, [illegible] 1,200 [illegible] at the [illegible] gentleman [illegible] less than six [illegible] were formerly applied by weight, not number. Captain T—— was bled from the arm, leeched on the temples and epigastrium, and [illegible] a [illegible] course of purgatives, with a [illegible] Having become [illegible] anæmic with a pale [illegible] he was sent home. Sir Ranald Martin [illegible] "this is an example of [illegible] uncomplicated [illegible] from remittent and intermittent fevers, and [illegible] treatment, by [illegible] bleeding, mercury, purgatives, and [illegible]."

Dr. Ewart [illegible] statistical evidence, showing a gradual reduction in the mortality caused by fevers in the Bengal Presidency, from 61·58 per 1,000, in 1817, to 7·60 per 1,000, in 1854, and in the Bombay Presidency from 35·[illegible] per 1,000. Here there is undoubted evidence, that something of [illegible] of mortality must be credited to the progress of [illegible] home.

[illegible] is the [illegible] of spirituous [illegible] distinctly, every [illegible] daily [illegible] part of [illegible] Sir James [illegible] strongly, [illegible] extreme impropriety [illegible] young [illegible] a certain quantity of [illegible] spirits every [illegible] empty stomach, [illegible] demoralised [illegible] in 1849, [illegible] multiplied [illegible] European soldiers. [illegible] proportion of the [illegible] may be attributed to [illegible] all who [illegible] would be prepared to [illegible] reduction of mortality [illegible]

It [illegible] been shewn, that the [illegible] reduction of the [illegible] mortality of the Anglo-Indian Army during [illegible] may be referred correctly to the extension of [illegible] India, that [illegible] by change of [illegible] by the [illegible] and even [illegible] certain [illegible] now in [illegible] not be [illegible].

(To be continued.)

[illegible]

EXPERIMENTS ON THE ACCUMULATION OF FOUL AIR IN ILL-VENTILATED ROOMS.

By Murray Thomson, M.D., F.R.S.E.,

[illegible]

The [illegible] the results of which are given below, [illegible] ascertain [illegible] the foul air [illegible] effect [illegible]

The room in which the experiments were tried was of 1,2[illegible] [illegible]. Besides the doorway it had two [illegible] which [illegible] the [illegible] wall, [illegible] and the [illegible] the back wall, two [illegible] the [illegible] was placed [illegible].

The [illegible] of experiments were thus arranged:—Three [illegible] Regiment of the Bengal Sappers and Miners [illegible] the [illegible] was closed, and all the [illegible] door [illegible] wet clay; the men were [illegible] smoke. The thermometer was then set [illegible] slowly. It would have been [illegible] thermometer, had it not been for the [illegible]. As it was, the thermometer was arranged to [illegible] possible, and that, in fact, it did not [illegible] by a comparison with the [illegible] which the [illegible] were [illegible].

[illegible] were confined in the room between the [illegible]. At the end of this period the door was opened, and the [illegible] stopped, and while the men were still in the room, a sample of the air amounting to 1·08 cubic feet was slowly drawn off by means of an ordinary gasholder, made [illegible] by means of a long flexible tube the air could be taken from any height in the room. The air [illegible] was made to pass through an apparatus consisting of the following parts:—

1. A [illegible] of tubes filled with [illegible] moisture of the air, and [illegible] by weighing the tubes before and after each experiment.

2. The air was now passed through [illegible] of permanganate of potash, [illegible] was not [illegible] weaker, was a fairly [illegible] the decoloration of the permanganate [illegible] of the presence of [illegible] permanganate test, yet the [illegible] was very manifest to the nose. The [illegible] was heavy and unwelcome, but it was not markedly disagreeable.

3. The air was next passed through a tube filled with pieces of broken brick, broken to the size of small peas. These were drenched with strong sulphuric acid. The object of this was to dry the air before it entered the next part of the apparatus.

4. A series of three tubes, arranged like those with the chloride of calcium, were filled with small pieces of brick, [illegible] but the brick in this case was drenched with a [illegible] solution of caustic potass. By this the carbonic acid [illegible] was retained. These tubes were also weighed before and after each experiment.

5. Lastly, [illegible] it was quite probable that the air, in passing through the potass series of tubes, might carry off moisture [illegible] and lead therefore to an erroneous estimation of the carbonic [illegible] the air was made to pass through another series of tubes [illegible] chloride of calcium, which were also weighed before and after [illegible] experiment, the increase of weight being added to the potass tubes.

Through the apparatus the air was passed very slowly; it [illegible] and three quarters to pass the 1·08 cubic feet [illegible] very nearly one hour per cubic foot.

The number of experiments tried with men in the room was [illegible] the sake of comparison, two more were tried on the air of the empty room after it had been two days with the door wide open.

In the second set of experiments, no attempt was made to collect the air from the different levels. In these the sepoys were shut up as before, but the period of confinement was reduced to two hours, as no thermantidote was kept going. The sample of air withdrawn measured 2·75 cubic feet. It was taken by displacement, that is, several vessels, the aggregate capacity of which was 2·75 cubic feet, were taken into the room full of water. The water was then emptied out, and as it passed out, the air of the room passed in.

The carbonic acid in the air was determined by Petenkofer's method. A measured quantity of lime water, the strength of which was known, was poured into the vessels containing the air, and these were then well shaken, so that the carbonic acid might be fully absorbed. The fluid was then taken out and rapidly filtered, and the lime, which was in excess of that required for the absorption of all the carbonic acid, was determined in the filtrate by a volumetric process.

In these experiments the moisture of the air was not directly determined; an attempt to state its relative amount was made by observation of the dry and wet bulb thermometer, hung up in the room, with a similar instrument hung up in the verandah outside. From these observations, the relative humidity was calculated by Apjohn formula in the ordinary way pursued in practical meteorology.

The results of all the experiments are given in the accompanying table. The general conclusion from them seems to be, that the foul air of a densely-inhabited room, very badly ventilated, does not seem to accumulate at any one level more than another.

First Air Experiments.

	Date of experiment.	Number of feet from ground.	Carbonic acid in cubic inches per 100 cubic feet of air.	Carbonic acid in parts of a cubic foot per 100 cubic feet.	Aqueous vapour in grains per 100 cubic feet.
	1865.				
	Oct. 30	On ground.	197	·114	178·51
	„ 31	2	142·2	·082	201·20
	Nov. 2 ...	7½	93·1	·054	130·9
	„ 6 ..	15	150·1	·089	144·04
	„ 7 ..	18	120·8	·070	304·2
	„ 8	14	119·5	·068	301·2
	„ 9	10	128·3	·074	358·3
In empty room with door open.	„ 12	6	61·4	·035	258·6
	„ 14	18	Not determined.		251·2

Second Series, No Thermantidote.

Date.	Carbonic Acid.		Humidity in room.	Humidity outside.
	Cubic Inch.	Cubic Foot.		
1866.				
April 5	177·5	·102	47	31
„ 6 ..	291·8	·168	32	24
„ 7 ..	274·5	·115	32	23

ON THE RELATIONS BETWEEN THE VARIOLOUS DISEASE OF CATTLE CALLED "GOOTEE," AND TRUE VACCINIA, WITH SPECIAL REFERENCE TO INOCULATION AND VACCINATION.

By Kenneth McLeod, A.M., M.D., L.R.C.S.E.,

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It is perhaps necessary to offer something like an apology to the readers of a journal of human medicine, for soliciting space and attention for a discussion relating more immediately to the disorders of the lower creation. But a study of epizootics is in itself so interesting a matter, that it hardly needs the additional zest of the consideration of their relations to epidemics to render them admissible or welcome. Besides, the great group of variolous diseases and disorders has, since the grand discovery of Jenner, and the consequent practice of vaccination, acquired a peculiarly human interest. It is here that sanitary science and preventive medicine hold their trump card. There is another reason, however, which gives a claim to the admission of such discussions to these pages, namely, that, with three or four exceptions, all that has been done in the way of the observation and description of epizootic diseases hitherto in India, has been done by the practitioners of human medicine; and in any epizootic out-break of exceptional severity, medical officers are always appealed to for opinion and advice.

This results from two causes: 1*st*, the paucity of veterinary practitioners; and 2*nd*, the greater fitness which a higher training bestows upon our own profession for the investigation and study of disease. In proof of the latter assertion, which is not meant as any disparagement to the veterinary surgeon, whose scientific education is comparatively less complete and more practical, are the two circumstances that the best descriptions of former epizootics have been due to practitioners of human medicine, and that the investigations, which were conducted under the orders of the Cattle Plague Commission in England, were, with the exception of the treatment, entrusted to doctors of human medicine. The cause of this is plain. Men versed in the study of human pathology need no additional training to enable them to investigate a new field, or apprehend the true significance of analogous or homologous processes or facts presented to them. Just as the comparative anatomist or physiologist must be, in order for success, a thorough human anatomist or physiologist, so must the comparative pathologist have a profound knowledge of human pathology to start with. Indeed, it is even more necessary in the latter case, because, while comparative anatomy has come to have, to a certain extent, a language of its own, the language of comparative pathology is entirely derived from human pathology, and not only the language, but the conceptions. While, therefore, the veterinary practitioner possesses, from special training and experience, that special tact which enables him more readily to detect and identify particular diseases, the student of human medicine is prepared to take those wider views of general questions which the study of diverse phenomena and similar, or dissimilar, disease elements present.

In the poorer districts of Austria both branches are practised by the same individual, and at the Vienna Institute men are taught veterinary in addition to human medicine. In these days of specializing and division of labour, I would hardly think a system like this either desirable or feasible, but a course of instruction in comparative pathology would be a most important and valuable addition to the curriculum of all medical schools. It is not my intention, in what follows, to go very deeply into the symptoms and features of epizootics in India, or elsewhere. Any one curious in these matters will find ample information in the reports of the Cattle Plague Commission—the last of which (third) is a most valuable work, illustrated by splendid chromo-lithographs—and in the "selections of papers on cattle disease" printed by the Governments of India and Bengal. I propose, rather in illustrating a series of propositions concerning variolous diseases, to focus facts which lie scattered through a number of not very accessible publications, upon some questions relating to inoculation and vaccination, which have either been already pretty well settled by experiment, or require additional experiment or observation to elucidate them.

I.—*[illegible] cow-pox [illegible] essentially different [illegible].*

This will be rendered apparent by the succeeding definitions which present the general phenomena of these diseases. "Rinderpest" has been also exhibited in relation to "gootee" in illustration of a second proposition as to their identity.

COW-POX.	GOOTEE.	RINDERPEST.
A [illegible] eruptive fever, attacking cattle epi[illegible] [illegible] (Jenner [illegible])	A specific eruptive fever attacking cattle epizootically, contagious, [illegible], also liable to affect goats, sheep, deer, buffaloes, pigs, and horses (?)	A specific eruptive fever, attacking cattle epizootically, contagious and infectious, also liable to affect goats, sheep, deer, and other animals.
Capable of being communicated to man by inoculation. It is a [illegible] disease, attended with [illegible] systemic disturbance, and not fatal.	Capable of being communicated to man by inoculation. It is a malignant disease attended with severe systemic disturbance, and extremely fatal. The mortality varies from [illegible] per cent.	Capable of being communicated to man by inoculation. It is a malignant disease, attended with severe systemic disturbance, and extremely fatal; the mortality varies from [illegible] to 100 per cent.
After a certain period of [illegible], tenderness of the teats and udder appears, followed by patchy redness, pimples, [illegible], vesicles, pustules and crusts, which separate on the [illegible] or twenty-[illegible] day, leaving a shallow pit with surrounding induration. Constitutional symptoms are either very [illegible] absent; there may be slight fever, [illegible] and impaired appetite for a few days, but [illegible] [illegible] four weeks.	After a certain period of incubation, premonitory symptoms, functional disturbance, and increase of temperature occur, followed by a febrile stage, which is ushered in by chilliness, tremors and spasms, and characterized by severe symptoms; sooner or later, diarrhoea, followed by dysentery, sets in; the animal falls into a typhoid state and dies of exhaustion. The average duration of a fatal case is about [illegible] days and recovery is not complete in less than three weeks. An eruption appears on the [illegible] or [illegible] day, [illegible] papules, pustules or [illegible] [illegible] discharges issue from mucous membranes [illegible] [illegible] appearances.	After a certain period of incubation, premonitory symptoms, functional disturbance, and increase of temperature occur, followed by a febrile stage, which is ushered in by chilliness, tremors and spasms, and characterized by severe symptoms; sooner or later, diarrhoea, followed by dysentery, sets in; the animal falls into a typhoid state and dies of exhaustion. The duration of a fatal case is from 7 to [illegible] days, and recovery occupies weeks. An eruption appears on the [illegible] day, composed of roseolar patches, scabs and sometimes pustules and petechiae. Liquid foetid discharges issue from mucous membranes, and mucous surfaces are apt to be affected with aphthous crusts and ulcers. Congestions, ecchymoses, catarrhal and intestinal inflammation, and even gangrene of the intestinal [illegible], [illegible] are the chief post-mortem features.

The [illegible] will [illegible] what a marked difference [illegible] the phenomena of vaccinia and gootee. In vaccinia, the eruption is the main and central feature of the disease; the constitutional symptoms are of small importance, and in the latter, the constitutional symptoms are of paramount importance, and the eruption of secondary consequence. Looking [illegible] locally, they [illegible] be considered different [illegible]. The constitutional symptoms [illegible] category—[illegible] they are at the extreme [illegible]. The site of the eruption is different, the udder and teats in the one case, the whole body in the other. The character of the eruption is different. Vaccinia presents a series [illegible] stages, papulation, vesicle with depressed centre, acuminated pustule, scab and foveated cicatrix, the eruption of gootee is more an exudation or abnormal growth of sebaceous and epidermic material over a limited space with [illegible] similar nucleated cells beneath it. The cases of gootee which I have myself examined, showed only brown crusts about the size of a split pea, which could be removed by the finger nail and left a small raw pit. Other observers have described "dry patches" (Long); "pimples or scabs" (Bensley); "minute elevations beneath the skin" (Green). Dr. Short of Madras, in describing an epizootic of cattle small-pox—"Ummay"—describes the eruption as "pimples," says that the skin imparted a roughness to the feel as if small grits were beneath it, and found on dissection vascular and ecchymosed patches beneath the skin. Other observers have given more [illegible] opinions as to the character of the eruption. Dr. Coates describes it as papules succeeded by pustules, and Dr. G. Bidie, writing of an epizootic in Mysore, says that the skin became covered with a pustular eruption. He significantly remarks that the disease was more like plague than small-pox. This leads me to the second proposition which I propose illustrating, namely —

II.—*The disease of cattle called "gootee" in India is identical with the rinderpest of Russia, and the cattle plague of England.*

This identity, if established, will enable me to take advantage of the observations and experiments conducted so carefully in Europe. Dr. C. Palmer, in his report on the Calcutta Epizootic of 1864, dated 7th October, 1865, was the first to point out this fact. After carefully describing the features, symptoms, progress, post-mortem lesions and mortality of the disease, as observed in Calcutta, he states in his summary that "the symptoms, progress, and great fatality all lead to the conclusion that it is the same disease as that known as the rinderpest, which always exists in certain parts of Russia, and is the same epizootic as that at present raging in England." Subsequently, Veterinary Surgeon Gudgin, describing an epizootic disease in Burmah, states "that it is analogous to, or identical, with the rinderpest now raging in England" (1866). Veterinary Surgeon Thacker entertains no doubt that the epizootics observed by him in Madras, and which correspond closely in every respect with our Bengal plagues, were "rinderpest," and he calls them by that name. Veterinary Surgeon Farrell, in describing an epizootic of "gootee" in 24-Pergunnahs recently, expresses an opinion that it is the same disease as rinderpest. I might place the symptoms, &c., of the two diseases side by side without finding it necessary to alter a single term except in so far as the English disease has been made the subject of more accurate and complete inquiry and description than the Indian. Any one curious to verify the matter may compare the description of "rinderpest" in the reports of the Parliamentary Commission, and of "gootee" in my paper published in a Supplement to the *Calcutta Gazette*, dated 10th April, 1868, and find the two diseases accord to the minutest detail. There is, however, one point of importance which demands more special notice. Many epizootics in this country, among them the "Calcutta Epizootic of 1864," *exhibit no eruption on the skin.* The symptoms and features of these are in every respect identical with those of "gootee," with this single exception, and perhaps the greater virulence and more unsparing character of the non-eruptive disease.

It is interesting to note that, while Dr. Palmer, describing a non-eruptive disease, declares its identity with the English malady whose eruptions are described, and figured by Drs. Sanderson, Murchison and Bristowe, and which is called an exanthematous disease, and compared with small-pox, Dr. Murchison discusses the identity of the English cattle plague with "gootee," as he finds it described by Drs. MacPherson, Gibson and Brown. (Appendix to Third Report of Cattle Plague Commissioners, page 76-77). This would point strongly to the similarity of the two Indian diseases, eruptive and non-eruptive (puschima and gootee), if other evidence were wanting. Of course, if the disease is so virulent that the animal dies before the 4th or 5th day, the eruption has *not had time to develope*. Four days is stated by Dr. Palmer to be the average duration of fatal cases in Calcutta. At the commencement of the plague in England, the eruption was over-looked, and not until Mr. Ceely, of Aylesbury, prompted by the descriptions of old invasions of the disease, directed attention to the fact, was this feature detected or described. "It is now ascertained," Dr. Murchison remarks (op. cit., page 75), "that in *most cases* of cattle plague, *not fatal within 3 or 4 days*, there is an eruption on the hide in many respects resembling small-pox."

No mention is made of an eruption in the first two reports of the Royal Commission. Italian physicians, describing the cattle plague of 1811, and English physicians, describing that of 1745 and 1770, distinctly allude to a pustular eruption. Dr. Layard (quoted by Dr. Murchison, op. cit.) says that "it is an eruptive fever of the variolous kind, and, notwithstanding the exanthemata or pustules, may have been so frequently overlooked, yet *none ever recovered* without more or less eruption."

It is important to note that in both these instances the eruption was overlooked. This is not to be wondered at, when in many cases it consists merely of subcutaneous indurations, or of scabs and incrustations. Still it is of the greatest importance in determining the character of an epizootic to search most carefully for signs of skin disease, and describe them accurately. I suspect strongly that the term pustule has been used to signify what is not a true pustule. Dr. Sanderson (op. cit., page 12) quotes many continental authorities, who describe the eruption of rinderpest in "its home," and they employ terms identical with those used in England and here (tubercles, crusts, dry pustules, &c.) One observer (Falke) makes the observation that *in some, not in all*, epizootics an eruption appears. Seer speaks of a pustular eruption on the shoulders as occurring in *some* animals *after recovery* from rinderpest. Another authority speaks of their occurring frequently. Another in *certain districts*. Dr. Bristowe (op. cit., page 81) says that "a cutaneous eruption is present in *a large proportion* of cases," and compares it to modified small-pox. The eruption, then, seems from the above not to be an *invariable* feature, and to be more observable in certain epizootics and certain districts. This is clearly brought out by Professor Varnell, who visited towns around Aylesbury for the special purpose of studying the eruption. He found that it existed in some cases, and not in others, and describes those cases which he found covered with "crusts" as "mild cases." It is more probable that, owing to the malignancy of the disease at its commencement, no eruption appeared, than that the many careful and skilled observers, who had their attention continually directed to it, should not have noticed such an important feature. Continental observers speak of the "disease assuming an exanthematous character," from which we may conclude that it does not always do so.

Turning to Indian experience—Veterinary Surgeon Thacker, whose experience of the disease probably exceeds that of any other observer, describes the disease as "accompanied at certain seasons of the year with falling off of the hair and formation of pustules on the skin." Veterinary Surgeon Farrell, in describing an outbreak of gootee in and about Diamond Harbour, states distinctly that in some places no eruption was observable, and in others pustules appeared. Many observers have noticed that an eruption appears in some cases, or at one period of the disease or outbreak, and it has been stated by several that epizootics, in which an eruption is absent or slight, are more malignant than those in which it is well marked, and that cases in which the eruption is copious do better than those in which it is suppressed or absent.

Professor Simonds, in his treatise on ovine variola, says that "the formation of pustules ought to be regarded rather as an adventitious than an essential feature of the disease," (Simonds on variola ovina, page 77), and Dr. Aitken (Science and Practice of Medicine, 3rd edition, page 272), states that the virulent form of variola ovina never produces pustules. These facts and considerations would justify the conclusions—

1. That eruptive and non-eruptive epizootics, whose features are otherwise the same, are varieties of the same essential disease.

2. That suppression or absence of an eruption is a sign of greater virulence.

3. That the occurrence of a skin eruption, or otherwise, will depend on either the essential nature of the epizootic on locality or on season (perhaps on the degree of concentration of the poison.)

How do these conclusions, which seem amply supported by observation from different quarters, tally with what is known in human pathology? It is a very well founded and wide spread belief, that the suppression or residence of an eruption in an exanthematous disease is a perilous event, or the metastasis of rheumatic or gouty action from external to internal parts. The cholera poison is sometimes so pernicious that, without the development of vomiting or purging (which we may consider the homologue of the cutaneous eruption of exanthems), the victim is struck down and dies—*Cholera sicca* on the other hand, in the exanthemata, *more particularly small-pox*, the more severe the eruption the more formidable and fatal the disease. Sydenham, it is true, describes "*Variolous fever*" or *Variola sine Eruptione*, but it does not appear that it was more virulent or fatal than ordinary variola, and certainly not so much so as *Variola conflua or maligna.* I confess myself unable to solve this pathological problem satisfactorily, and with reluctance abandon the attempt, and leave it as an instance of one of the questions to which comparative pathology must eventually supply an answer.

(*To be continued.*)

CASES FROM PRACTICE.

STRICTURE OF THE URETHRA; DEATH FROM URETHRAL FEVER AND URÆMIA.

By Dr. Fayrer, C.S.I.

Some months ago I was requested by his medical adviser, to see a gentleman who was suffering severely from urethral stricture of several years' duration. The patient was about 35 years of age; a stout, flabby, pallid and unhealthy looking person.

Several years previously I had seen him, and had then passed instruments up to No. 10. He was suffering from an irritable stricture, partly organic, but greatly aggravated by muscular spasm. Again, during the rainy season of 1868, I had seen him when in similar trouble, and was unable to introduce any instrument owing to the extremely irritable state of the stricture. He was exceedingly anxious to be operated on. I advised him to wait until the cold season, unless some urgent symptom should render immediate interference necessary.

I saw him again at 2 p.m. on the 10th day of the month, on the occasion I am about to describe, and found him looking in his usual state of health, but he was very nervous, restless and irritable; the bladder constantly attempting to empty itself, and the stricture consequently causing him extreme distress.

His bowels had responded to an aperient that day.

I immediately, and without any difficulty, passed instrument No. 10, into the bladder; being conscious both of the [illegible] as well as the [illegible] of the stricture, [illegible] resistance; I [illegible] caused him comparatively little pain. Directly after it he went into the bath-room and voided some urine, which, I believe, was not even tinged with blood; whilst passing the urine he had a rigor, and I believe that he had fever during the evening. I did not see him again until the 14th, five days later, when I was requested by his medical adviser to do so, at about 8 p.m. I found him very ill; he was partially unconscious, tossing about in bed in an extreme state of restlessness and jactitation, picking and scratching at the bed-clothes; his face was convulsed and distorted; the pupils partially dilated with converging strabismus occurring at intervals; he was constantly muttering or rather moaning, and seemed to be in great suffering; the entire muscular system was in a state of irregular spasm; his pulse was quick, feeble, and intermittent; he had been very sick during the day, and, had had fever at intervals; but it was only since about 7 p.m. that he had passed into the condition in which I found him, and which was gradually becoming worse; his body was then cool, and his skin moist; and there was a peculiarly offensive ammoniacal odour in his breath and from his person; the abdomen was not distended, and the bladder was apparently empty. The bed and his lower extremities were moistened by a urinous smelling fluid; the bowels were reported to have acted during the day; there was no tenderness on pressure over the pubes, nor was there any swelling or pain in the perinæum, nor had he complained of any during the day or previously. I could get no satisfactory evidence as to the quantity of urine that had been voided during the day, nor indeed as to the exact quantity passed during the four days that had elapsed since I passed the instrument. The attendants said that if he had passed it at all, it must have been where he lay, or when the bowels acted; there was very little appearance of evidence of any in the clothes. He appeared to be partially conscious, though unable to speak; he attempted to put out his tongue when told to do so, it was dry and red at the edges, but brown in the centre.

It appeared to me that this was a case of uræmic poisoning supervening on urethral fever; the kidneys, probably, originally defective, had succumbed, and rapid blood poisoning supervened in consequence.

His hair had already been cut short, and ice applied to the head; it was now shaved and covered with ice. Hot fomentations were applied, also leeches and dry cupping to the loins; an enema of sulphuric ether with assafœtida, soap and water, also a powder of jalap and calomel was administered. He, however, got rapidly worse, the convulsions became more marked with intervals of comparative quiet, and finally, after a convulsion, he died at 10 p.m.

Until the 14th, when I was asked to see him again, there had been nothing in his condition to cause anxiety. He had feverish attacks occasionally with restlessness, and his urine had been passed until that morning. The treatment, I believe, had been chiefly sedative, with a simple and unstimulating diet. The bowels had been kept open by aperients when necessary.

On the morning of the 14th he was peculiarly restless, and appeared to be dull intellectually. The urine, as far as I can gather from those about him, had been less in quantity; and there had been unusual nausea and vomiting of bilious matter. In the evening he passed rapidly into the state of uræmic convulsions, in which I found him, and after this he rapidly sank. I do not know much of his previous history, but I have reason to believe, that his life had been somewhat irregular; and he had the puffy bloated aspect of a man, whose habits are irregular and whose general health is not good. I regard this as a case of typhoid uræmia supervening on urethral fever developed by the passage of a bougie through the strictured urethra of a person of extremely irritable constitution with defective kidneys. The state of the stricture, which was constantly threatening him, and had more than once caused complete retention and endangered his life, rendered interference necessary; and, accordingly, selecting the best season of the year, the winter, the treatment was commenced by the passage of a bougie, which I was astonished to find, was accomplished so easily. It can only be said in this case, that the faulty state of the general health was the cause of the evil consequences that followed. It indeed shows the danger that impends over any one so affected, and proves that such cases are not only the subject of great anxiety, but that they render the greatest care necessary, not only in the treatment, but in the mode of the patient's life. It was supposed, I believe, that the patient had undergone a formidable cutting operation. The only surgical proceeding was, as I have stated, the passage of a bougie, and this was accomplished with the greatest ease.

The subject of urethral fever in persons of irritable constitution, with imperfect blood making power and defective eliminating organs in the malarious climate of Lower Bengal, is one of considerable interest, and I regard this case as illustrative of it, from its most interesting point of view.

I regret that I never had an opportunity of examining the urine, and that a *post mortem* was not obtained.

A CASE OF WORMS, DISTOMA HEPATICUM, OR LIVER FLUKE, IN THE HUMAN INTESTINES.

By Sub-Assistant Surgeon Beny Madub Ghose,

Rajmahal.

NEESAN ALLY, a delicate looking man, aged 28, Chutrassie, admitted on 25th June, a.m.; no previous history could be ascertained. He was suffering from symptoms of collapse; temperature lower than natural; vomiting; passing frequent thin watery stools; great thirst; pulse firm and full; great pain in abdomen, increased on pressure. A rigor occurred after the more immediate symptoms had been relieved by treatment. In the afternoon passed three bloody stools mixed with fæcal matter, voided with much griping and straining. Reaction had taken place, and there was much fever. The stools consisted of blood mixed with shreds of gelatinous mucus; at the bottom of the vessel, there were four living worms; these were of pink color, flat and oval in shape, about 10 lines long by 5 broad. The cephalic end had a triangular mouth turned upwards, the caudate was terminated by a small notch. On the 26th, acute symptoms were much relieved, passed seven or eight stools of the same character, containing altogether 37 worms.

27th.—During the last 24 hours, has had three motions passed without griping or straining; about 70 dead worms have been passed. 28th.—Fever returned; is much exhausted. From this date up to the 15th July, he did not improve, he had no more fever, and no particular symptom except constant hiccough, which no medicine could relieve, and his appetite was bad. On the 16th, he complained of soreness in the throat; difficulty of breathing and taking nourishment; voice husky; no local appearance in the fauces. He died exhausted on the 19th, not having been able to take any nourishment for the last three days.

Post-mortem examination five hours after death.—Patches of ulceration and sloughing within the throat and larynx.

The abdominal cavity having been opened, the whole of the intestines were taken out, and opened by a pair of scissors, from the rectum up to the middle of the jejunum. The alimentary canal was empty, and without any traces of morbid signs. Cutting further up, I saw several of these worms, quite alive, and firmly adhering to the mucous membrane of the intestines by their mouth. I picked every one of them (38 in number), in a living state. Kept them in three open phials with a little water, in which they moved like leeches; but not being able to catch hold of the inside of the bottle, they caught one another, so that when I tried to take out one, all of them came out. I then applied five grains of ipecacuanha to a dozen of them in one bottle, three grains of santonine in another, and kept the rest in a third bottle to see how long they remain alive without any thing being applied to them. Within two minutes after the application of the drugs the first set of worms began to move very freely, and within three or four minutes more most of them died, exhaling out through their pores a sort of gelatinous fluid, but their red color remained unchanged. Those in the second and third bottles began to die very slowly, and an hour lapsed before they were all dead. The part of the intestines, which was the seat of these entozoa, was very much thickened, indurated and highly congested, giving in some places a knotty feel.

Duodenum and stomach, like other parts of the alimentary canal, were empty and healthy; liver and spleen normal.

The sub-assistant surgeon sent the worms to Calcutta, and the following account is given of them by Dr. Ewart, Professor of Physiology, Medical College:

I examined the entozoa forwarded for preservation in the college museum; there were no less than one hundred and thirty-three of these parasites. They are pretty full-grown trematode entozoa, genus *distomum*, species resembling *distoma hepaticum*. The largest of them is almost an inch in length, half an inch in breadth, lanceolate in shape, large and rounded anteriorly, where it is suddenly or abruptly contracted so as to constitute a short neck. There is a well marked oral aperture —and also a large and more distinctly marked imperforate abdominal sucker, about a line from the mouth. This sucker is situated more anteriorty than in the ordinary *distoma hepaticum*. The ramified intestine is distinctly traced.

This entozoon does not very frequently invade the human subject. In the mature condition it is found in the four great classes of the vertebrata. When found in man, it usually occupies the gall bladder and bile ducts; but is occasionally observed located in the small intestines.

I have never before heard of such a large number having been taken from the digestive organs of the human subject.

CASE OF HYDROCEPHALOID DISEASE.

By Dr Mathew,

Civil Surgeon, Darjeeling.

Under the title Hydrocephaloid disease, Marshall Hall grouped the symptoms sometimes observed in young children, as the result of a sudden withdrawal from the brain of its normal blood supply. I cannot find that the new nomenclature of disease recognises this title, or gives any substitute for it, so that, if I were called upon to register the case I am about to refer to, I should be in a difficulty. A child, aged six months, had, in consequence of his mother's delicacy, to be weaned. From his birth he had been fairly healthy. For the first three weeks that he was on artificial diet he seemed to thrive; but, one day in the fourth week, he was attacked with vomiting and purging without any apparent cause. The purging was checked by remedies; but by an unfortunate mistake on the mother's part, the child for thirty six hours received no food, but very thin arrowroot and water. I saw him at the end of that time. He was perfectly cool, and, except for some languor, might have been pronounced well. I ordered him milk in small quantities at a time and diluted, but his stomach rejected it instantly. Various combinations of infant food were tried with the same result, and there was a return of some watery purging. Twelve hours later he was alarmingly low. He lay with his eyes half closed in his mother's arms, breathing somewhat heavily; his pupils were found to be very sluggish on exposure to light; his extremities were cold. His head was, if any thing, cooler than natural; there was no separation or lifting of the fontanelles, pulse small and slower than it should be at his age. Altogether it was a typical case of mock hydrocephalus, as described by West, Gooch, and Marshall Hall. Strong chicken broth and brandy and water were given by the tea-spoonfull every twenty minutes. Baths of hot water and mustard were used, and a mustard poultice laid on the chest. I noticed that the child rallied, but fell back again twice every twelve hours, with a strange regularity. It is almost needless to mention, that there were no febrile phenomena of any kind. No medicine was given, except small doses of Dover's Powder. The stomach gradually became less irritable. The purging ceased; and after three or four days the child was out of danger. A *dhye* was procured; he was again put to the breast, and is doing well since.

No other line of treatment except stimulation would, I believe, have saved him. If, misled by the vomiting and sluggishness of the pupil, I had concluded that there was active brain disease, and prescribed accordingly, the result would have been very different.

PULSATING ABDOMINAL TUMOUR.

Some weeks ago, a Constable came into hospital with the above ailment. The tumour was well defined, as large as a cricket ball, and situated above the umbilicus. I desired Sub-Assistant Surgeon Soorjee Narain Singh, at that time in charge of the dispensary, to diagnose and report upon the case. He decided that it was a focal tumour, lying upon the aorta, and pointed out with great clearness and accuracy all the reasons why it could not be an aneurismal or other growth. The Sub-Assistant Surgeon's diagnosis was proved by the results of treatment to be perfectly correct, for the tumour soon disappeared. There was nothing very peculiar about the case, but such are by no means common in this country, (if I remember right, the Sub-Assistant Surgeon had not previously seen a similar case), and I consider it worthy of record as creditable alike to this officer's professional knowledge, and to the clinical teaching of the Medical College.

ABSCESS OF SPLEEN WITH EMPYEMA.

By the Civil Surgeon,

Bhawulpore State.

Mogul Merassee, aged 26 years, was brought for treatment on June 3rd last. He directed attention to his spleen, which was enormously enlarged—it extended anteriorly beyond the mesial line, and downward, nearly to the crest of the ilium. The organ was acutely tender; there was fever, anxious countenance, and dyspnœa. A puffy swelling existed in the left hypochondriac region—between the seventh and eighth ribs—where an abscess seemed to be pressing. At first, attention was addressed exclusively to the inflamed spleen, but on exposing the patient's body for closer examination, the entire left side of chest was seen to be distended and fixed in respiration—the intercostal spaces were tense, the nipple was pushed up, and there was absence of vocal thrill. In short, all the phenomena of fluid effused into the pleural cavity were complete. The man's history did not clearly explain his condition. He had had fever, followed by tumefied spleen some ten months previously. The spleen had remained quiescent for about nine months, when he was seized with symptoms answering to pleurisy of left side of chest, high up, in sub-clavicular region. Acute pain had extended downward *into the spleen*, and the entire side from chest to abdomen soon became synchronously distended. He could not define which cavity had *first* grown prominent; but all his suffering and distress were referred to the spleen. He received appropriate treatment until the 7th June, when deep fluctuation could be felt below, in left iliac region. By palpation with both hands, the fluid movement was transmitted throughout the splenic mass. An exploring needle determined the presence of pus in the iliac region, and the spleen was then tapped with a trocar in its depending part. Only two and a half ounces of clear pus escaped, which afforded hardly any relief to his distressing symptoms. Meanwhile, the upper fluctuating spot was becoming larger and more declared, and on the 10th, a trocar was introduced, which grated over the seventh rib. Healthy pus now flowed abundantly, and after one pound thirteen ounces had been drawn off, the canula was secured in situ. This operation gave marked relief to the distended chest; all the matter seemed to come from the pleural cavity, while there was little decrease in the size of the spleen. Next day, the 11th, one pound four ounces more were removed through the *same aperture*, which made a decided impression on the bulk of the spleen. The thoracic and abdominal cavities were therefore in communication. Was the communication *direct* by perforation of the diaphragm, or was it parietal, by burrowing sinuses?

Inoffensive pus continued to flow, to the amount of six pounds fifteen ounces, during the following fourteen days (occasionally missing a day); when the patient was taken away by his friends.

The compressed lung had rapidly expanded, the circumference of left chest had decreased by 2½ inches in a few days, and the heart's sounds were heard on left side of sternum. The canula was withdrawn on the 15th, as it was difficult to keep it in position. A compress was placed upon the spleen, and the patient took chlorate of potash with a little infusion. The wound was syringed daily with Condy's solution, and an *antiseptic* poultice was applied. Purulent fluid continued to be discharged to the end, by pressure upon the spleen—none seemed to come from the pleural sac—but respiration was sometimes embarrassed by inward pressure upon the diaphragm, before the collected matter was expelled. When the patient was last seen, on the 25th June, he was in a promising condition. He was free from suffering, respiration was tranquil, air was heard all over the left lung, the spleen was considerably reduced, there was no hectic, and he was making flesh.

The formula for the antiseptic poultice above mentioned, is—Gunda Biroza melted 1 part, warm linseed oil 2 parts; mix. Add a sufficient quantity to the ordinary ingredients of a poultice, freshly made. Gunda Biroza or Venice turpentine is a Terebinthinate exudation of Pinus Longifolia, common in all bazaars. This antiseptic agent will be found a cheap and [illegible] substitute for the "K[illegible] as advocated by Dr. Newton of S[illegible]athoo, and a poultice so prepared can be left unchanged for several days. It is also worth knowing that in the absence of carbolic acid for occluding a wound, McDougall's disinfecting powder, mixed with warm oil and spread over lint, is found to be quite efficacious for all ordinary purposes, and is in common use in the forces of this State.

NOTES ON THREE CASES OF CHOLERA TREATED BY HYPODERMIC INJECTION OF LIQUOR AMMONIÆ.

By Surgeon A. Christison,

Civil Surgeon, Agra.

I.—A European girl, aged 13, was admitted into hospital at the Roman Catholic Institution at Agra, on the morning of the 11th August. When I saw her she was collapsed, with no pulse to be felt in the arm or at the temples; her senses, however, were clear. The usual application of mustard plasters to the loins, stomach, and legs, and hot bottles where required, had been made, and the diffusible stimulant treatment had been steadily carried on. Having watched for some time, and seeing no progress had been made, I injected ammonia, as recommended by Dr. A. R. Young, of the 60th Royal Rifles. 10 minims were injected near the shoulder and 15 minims soon after on the back of the hand. The girl complained a little of the pain, but did not withdraw the hand. In a few minutes, she became somewhat less collapsed, and expressed herself as better, and in the course of half an hour the pulse had returned at the temples, but not at the wrist. Two hours after this the pulse was perceptible at the wrist, and the patient was soon out of danger.

The ammonia caused rapid reddening of the skin, and death of a portion, of the size of a small almond. The girl did not ultimately survive, for, during convalescence, she had violent hæmorrhage from the mouth and nose, and died from exhaustion. I observed no very prominent effects from the ammonia, but there was a very gradual improvement after the injection, which, I think it fair to believe, may have been due to that treatment.

II.—On the 13th August, I found a girl of 13 in a state of collapse in the same institution, but not actually pulseless. The usual treatment was of no use; therefore seeing that the pulse was gone, I injected 18 minims of ammonia near the shoulder in two portions. The girl was quite in her senses, and said she felt better, complaining not of the injection, but only of the mustard applications. I could trace no general effect, and no return of pulse from the ammonia.

About two hours afterwards, as she was much worse, I injected 20 minims near the other shoulder, but no effect whatever could be observed, and the patient died at 2 p.m.

III.—A native traveller was admitted into the Thomason Hospital with cholera, nearly collapsed, but with pulse quite perceptible. 20 minims of ammonia were injected near the shoulder by Sub-Assistant Surgeon Beepin Beharry Bose, in my presence, and the case was watched carefully by him, and Sub-Assistant Surgeon Doyal Chunder Shome, M.B. They observed no improvement in the pulse or in the man's general condition. The injection was repeated when he was further exhausted, but without any effect, and the man died.

Though these cases are not encouraging, I hope that further experiments will be made with ammonia, and other substances used by the hypodermic method, for it appears to me this is the direction in which we may yet hope to obtain success.

The liquor ammoniæ used was weak, the density being nearly 1,000, instead of 0·950; but I found that liquor ammoniæ fort. was no stronger, owing to evaporation due to the heat. Perhaps better results might be obtained by using strong ammonia prepared and preserved for the purpose.

STRANGULATED INGUINAL HERNIA, AS IT IS MET WITH AMONG NATIVES; ITS TREATMENT BY FULL DOSES OF OPIUM.

By Dr. H. B[illegible],

[illegible] Calcutta Native Hospital.

O[illegible] there are few [illegible] who would not, in the first instance, resort to the taxis under chloroform inhalation, especially when the strangulation was recent and acute, and failing in the attempt at reduction, would at once operate. Such at least would be the course I should adopt under such circumstances; but in Native practice such a method of proceeding would, in many instances, lead to bad results; for, in the case of Natives, our aid is seldom invoked till great delay has taken place, and much mischief been done by the unsuccessful efforts at the taxis of incompetent persons, or of the patient himself, who is often brought to us with the tumour much bruised or injured, although this may not be apparent on account of the dark colour of the skin, and the uncomplaining character of the patient. Not being aware of these circumstances in the early part of my Indian career, I generally operated soon after seeing the case, and this gave me several opportunities of examining the condition of the sac and its contents, after they had been subjected to the usual rough handling; and it was seldom that I found the intestine in such a state as would have warranted my returning it; nothing was left but to divide (with the bistoury, or tear with the fingers,) the stricture, and leave nature to repair the mischief caused by meddlesome interference, and the sequence of such proceedings was sometimes an artificial anus, than have which most natives would rather die. One old fellow to whom this happened, as I well remember, he was a Brahmin, and nothing could exceed his chagrin at the result of my interference, though he did well and lived more than fifteen years after the operation, but remedial measures proved of no avail.

These occasional misadventures led me after a time to stand over early operations, and resort to the opium plan of treatment, which was in vogue "in the days when I was young" and a pupil at Guy's; the result of this change may best be seen by a glance at the statement of cases so treated in the Native Hospital of late years.* Indeed, it is seldom that an operation is now called for, the caught intestine releasing itself generally after a few hours of the patient's being under the full influence of the drug. Should, however, the taxis be required, it is then made under the most favourable circumstances, the parts have been left alone, the patient is composed, and a very little manipulation suffices generally to return the bowel; even then, should the taxis fail, an operation may still be staved for a time, if no urgent symptoms be present. As I am by no means sure that the danger of delay is greater than that incurred by returning into the abdominal cavity, a highly inflamed intestine, indeed I opine that some of the deaths, which followed operations noted in the table, were the result of peritonitis, set up by the presence in the peritoneal sac of the returned portion of bowel.

From the above it would appear, that instead of the usual rule "*when in doubt, operate*," it would be better, (where Natives are concerned), to alter it to "*operate, when not in doubt*," *i.e.*, when all is known regarding the strangulation, that it is recent, acute, and has not been tampered with; then, should the taxis fail under chloroform, and the symptoms indicate such urgency as to require it, operate at once; but such knowledge, as I have before noted, is rarely to be expected in Native practice.

As to the mode of carrying out the plan recommended, liqr. opii sedativus (Battley) is given in half drachm doses, repeated every two or three hours till the patient is *fully* narcotized, and, if thought necessary, ice or frigorific compounds may be applied simultaneously.

Notices to Correspondents.

◆

Communications [illegible] from

Sub-Assistant Surgeon CHUNDER DUTT, M[illegible].
Dr. FAYRER, C.S.I.
Mr. W. [illegible], R[illegible].
Assistant Surgeon H. C. CUTLIFFE.
Surgeon W. J. MOORE.
An Assistant Apothecary.
Sub-Assistant Surgeon MAHOMED WAZIR ALI KHAN.
Messrs. THOMSON & Co.
Assistant Surgeon R. HARVEY.

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* The statement referred to gives a list of [illegible] cases [illegible] from 18[illegible] to 18[illegible], and shows the result of strangulated inguinal hernia treated by the plan of opium:—

5 cases were operated on and recovered.
10 „ „ „ and died.
2 „ were relieved.
39 „ recovered under the treatment by opium.

(The table is omitted for want of space.—Ed., *I. M. Gaz.*)

[illegible] Surgeon. 2. We do not know.—Ed., *I. M. G.*

The Indian Medical Gazette.

Acknowledgments.

The Lancet.
Medical Press and Circular.
New York Medical Journal (July.)
Canada Medical Journal (July.)
Proceedings of Sanitary Commissioner (July.)

ADVERTISEMENT REGARDING MEDICAL WORKS.

See page 3 of Advertisement Sheet.

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

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THE CO-OPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

"You have chosen the path, not of politics, but of science. Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history: and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

We have received a letter from Messrs. Thomson and Co., in reference to the article on drinking water in our last number, stating that the difficulties of cleaning and re-charging Dr. Macnamara's filter have been much over-rated. Messrs. Thomson are the manufacturers of the filter, and practically, therefore, may be better judges of its working than the inventor.

They state:—"The filter in the Martiniere has been twice thoroughly cleaned, and set to work in half an hour. The two at the Medical College have given no trouble, those at the Free School have been at work six months, and have not required to be touched, "and the filter used in the 70th Regiment at Agra, "has been working admirably since April."

In the course of a few months, the filter will have been well tested at other stations, and all its qualities proved.

THE SANITARY COMMISSION OF BENGAL.

We copy the following remarks from a recent article on Sir John Lawrence in *Blackwood's Magazine*:—"He (Sir John Lawrence) directed the formation in the three Presidencies of Sanitary Commissioners for the special object of searching out abuses, and proposing measures for their reform."

"These Commissioners existing in one form or another during his tenure of office have been indirectly of the greatest advantage; they have brought to the notice of the authorities evils which had long been unchecked—a state of insanitation affecting Europeans as well as Natives. At their suggestion a scientific examination of the drinking water at all the stations has been initiated, and this has already borne abundant fruit;* every sanitary question is now forwarded for their opinion, and the fruit of their counsel has been manifested in the decrease of sickness and mortality, alike in the barrack and in the jail, in the town, and in the cantonment."

It would be an interesting study from the characteristic phraseology of this article to trace it to its source. At present, however, we would rather concern ourselves with the accuracy of this and similar statements, which have of late been thrust forward on the public.

In the first place, let us refer to the instance of Simla, where the late Viceroy and his "Imperial Sanitary Officer" (*vide* G. O., 10th September, 1868) have spent a considerable portion of their lives during the past five years. In 1865, the Sanitary Commissioner reported of Simla that "the sides of the hills are everywhere studded with human excrement;—it is not difficult to understand how filth, lying in the beds or on the hill sides, from which the streams are fed, should poison the whole waters of the station." Nevertheless, every year since similar nuisances have been reported and commented on, and yet the present sanitary state of Simla and its drinking water is as disgraceful as ever.

Sir John Lawrence and his sanitary staff when absent from Simla resided in Calcutta. Does this city owe one single sanitary improvement to their presence? Dr. Macpherson, in 1861, pointed out the deadly practices then in existence, but which are to this day perpetrated with regard to the pollution of the Hooghly, &c., &c. Under the municipal system of drainage improvement will doubtless be effected in the course of time; but it only wanted a little executive knowledge and energy on the part of the Sanitary Commissioner to have put a stop to the most crying evils long ago.

We have singled out Simla and Calcutta as instances in point, because they were evidently directly amenable to the influence of the late Viceroy and his Imperial Sanitary Commissioner. If we turn, however, to any other city or cantonment of the Empire, we find a similar state of things. Take the case of Umritsur,† witness the exposures that were made of its state during the recent outburst of cholera; who can say that cause and effect were not here strongly marked? yet the Government of the Punjab is by some means able to throw the whole blame on the Government of India, and to assert that it is owing to its false system of economy, that sewerage, drainage, and water improvements were not carried out years ago.

The Sanitary Commission was organized in February, 1864, to give effect to the 39 Articles recommended to be at once introduced by the Royal Commissioners appointed to enquire into the state of the Army in India in May, 1859; their report was published in May, 1863. But what becomes of the Sanitary Commission's laudation of itself and of its voluminous reports,

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* Note the article on Drinking Water in the last number.

† See the Report, at page 221.

when it can be positively stated that none of these 59 Articles are yet in force, with the exception of Nos. 9, 10, 11, 12, 13, and 21, relative to the plan and accommodation of the new two-storied Barracks, with the designs of which the Commission had nothing to do, although they certainly were submitted to the Secretary of State with its approval?

When the Secretary of State addressed the Government (No. 14 of the 23rd April, 1868), as to the progress that had been made in sanitary matters in India, the Bengal Sanitary Commission replied by forwarding extracts from their annual reports, showing that many things were *doing*, but that nothing had been done.

Nevertheless, if the country chooses to entertain highly-paid officials to comment on the vital statistics of British troops, we may leave the subject in their hands. There is another view of the question, however, we must consider, entailing, as we believe it does, the gradual destruction, or, at all events, deterioration of the Indian Medical Service, owing to the functions affected by the Imperial Sanitary Commissioner. We can no longer view this slow but certain decay in silence, and we consider it our duty clearly to express our opinion on the anomalous position assumed by that officer with respect to the Medical Services of this country.

The first President of the Sanitary Commission, a distinguished member of the Bengal Civil Service, commenced his sanitary career in 1861, as the presiding officer of the Punjab Cholera Commission. In 1864 he joined the Bengal Sanitary Commission, in 1866 he was promoted to the Government of Oudh, and in 1868 he was transferred to the Supreme Council of India, receiving charge of the Home Office at the same time.

It was last year that the emanations from that department began, which appear to us to have been so inimical to the interests of the Medical Service. There has since been many a painful instance of a desire, in fact of a steady resolution, to exalt the sanitary above the medical administration, but none, perhaps, of such significant importance as when the Statistical Officer to the Medical Department was rudely withdrawn from it.

Under a system of this kind, the Medical Department is almost ignored. Men who, from long experience and intelligence, have been promoted to the administrative ranks, find themselves silenced, their advice neglected, and, in fact, feel themselves comparatively useless for all practical purposes; while the Civil Medical Officers, whose proper position is immediately subordinate to the Medical Department, and who look to it for advice and assistance, are enjoined to report direct to a local Sanitary Commissioner, to obey his instructions and circulars, and it may be even to prepare his reports for him. Indeed, so much has happened of late to the Service which 'a fellar can't understand,' that we confess we look with suspicion to a recent order of Government which we should otherwise have welcomed; and which runs as follows:—

"But whatever reasons there may have been when the Sanitary Department was first established for placing a Civilian or a Military Officer at its head, those reasons do not now exist. The Governor-General in Council thinks it would tend to facilitate the business of the department if the Sanitary Commissioner with the Government of India should be a Medical Officer." * * *

This is complimentary to the Profession, but well nigh destructive to the Service, for this reason: every question, small or great, medical, administrative, educational, economical, &c., &c., submitted for report to the heads of the British or Indian Medical Departments, is finally sent to the Imperial Sanitary Commissioner for his opinion, before the Supreme Government will act on the judgment of those who ought to be their medical advisers. This was objectionable when a Civil or Military Officer presided, and it is but little better when a junior Medical Officer occupies the same post.

Practically the Imperial Sanitary Commissioner has become the head of the Medical Department in India. He can overrule the advice given by the British Inspector-General in all but discipline, and he has still greater power over every branch of the Indian Medical Service. The fallacy of this position must be apparent. The sanitary administration of the country cannot be carried on without the aid and authority of the Medical Department, and the Sanitary Commissioner can only précis, or deal second-hand with, the reports which he requires from it. Moreover no one man in the service, or out of it, however great his talent and tact may be, is capable *alone* of being trusted as the responsible adviser to the Government of India, it may be in direct opposition to the Inspectors-General of the British and Indian Medical Services.

For these reasons we view with dislike and distrust the separation that exists between the medical and sanitary administrations in this country. The enhancement and elevation of the sanitary over the legitimate administrative officers has caused a gap between them which must ever be widening, unless their relative positions are re-arranged; the one is grasping for power, the other is powerless to resist; and it is the knowledge that sanitation cannot exist without the co-operation of the Medical Department, which makes the Service desire they should pull together, and not be working at variance as at present—weakness being the inevitable result of want of union.

That the sanitary office is a most convenient one to the Government no one can deny. An office created by, perhaps, the first administrator in the Civil Service, is sure to be of utility. It is the repository of sanitary matters throughout India, and it gives publicity to all interesting work in this department which had not previously been placed before the public; nevertheless, this might all have been done in connection *with* the Medical Department, and not by officers of its own branch acting in *opposition* to it. But if there must be a separate sanitary department in India for goodness' sake let it be kept to its proper sphere; keep it to sanitary conservancy, engineering, and inspection; but do not elevate and multiply the duties until it is beyond its power to perform them.

If Government have the sanitation of the country really at heart, it should follow the practice pursued in England and every other civilized country in the world, and make its sanitary service a subordinate branch of the medical. Dr. Parkes, no mean authority on these matters, does not consider it compromises his position to work under the medical authorities of the Horse Guards, but he probably feels, as every right-minded man would do, that his rare talent cannot be better spent than in supporting and adding to the influence, and thereby strengthening the Director-General, and the Department to which he belongs.

We would add one word more: it is an old but no less true maxim, and one which no Englishman living can more fully appreciate than our present Governor-General, that all successful rulers, whether civil or military, have achieved great victories, because they have had the power of gaining the confidence, and, at the same time, of being able, fully and implicitly, to *trust* those who have served them; without this feeling of mutual confidence between subordinates and their rulers, no great ends can ever be attained; and does this feeling exist at present between the Indian Government and the Indian Medical Department?

CONTAGIOUS DISEASES' ACTS.

As evidence accumulates on the working of these Acts, local and limited as they have been made, we become more and more distrustful of the enthusiastic reports by which their first introduction was proclaimed. After the glowing language in which success was announced, the sanguine and the credulous must be somewhat startled at finding themselves suddenly brought face to face with the proceedings of committees appointed to enquire into causes of failure. Yet, from all the information hitherto given to the public, it would seem that the course of events has been precisely such as might be expected from very partial legislation. No doubt, a commencement on a moderate scale was desirable. It was only prudent that the earlier attempts of authority to reduce a disorderly class to discipline and impose restriction on license, should be guarded from internal causes of failure as well as from danger of wide-spread alarm to the peculiar susceptibilities of Englishmen. It was well too that the State, acting in the interests of the public, in view of the great injury they suffered from the prevalence of syphilis in the army and navy, should direct its first efforts against the sources within easiest reach of the soldier and sailor. Military and naval stations, therefore, became the scenes of operation.

For a time all went well. The influence of detection and hospital treatment of diseased women was speedily felt in the limited communities among which the Act was enforced. Unfortunately, the necessity for exhibiting results to an expectant public, with a willingness to elevate the character of the work done, and, perhaps, to conciliate the contentions and rather cloudy-minded class of moralists who, by aimless talk, endeavoured to lead the movements in the direction of their own imaginings, induced medical officers to inflate their official narratives with a pretentious morality and a turgid style of writing, which, betraying the scanty acquaintance of its authors with the natural history and spontaneous tendencies of prostitution, confused the records, and impairs confidence now in their data, on topics which call for dispassionate treatment as questions of calm scientific truth.

Soon, however, the pictures of success began to lose some of their brighter colors. Hospital figures appeared less favourable than at first, and difficulties of working came to the surface. Explanations were copious and satisfactory enough in assigning a cause for the falling off, but less so in shewing that it arose from defects which could not be eliminated from the existing system. Local laws might reduce disease within the limits of their operation, but they could not prevent its importation from without, while places in free communication were unprotected. Organisation was wanting. There was friction in the machinery of the hospitals. The authority of individual officers was ill-defined, and discord arose where conjoint action required the greatest harmony. It was necessary to work a tentative measure with economy of money, and portions of general hospital were set apart for syphilitic cases in preference to separate establishments. In some instances the gratuitous service of the profession was called into requisition, in others well-paid officers were employed, and hence there arose a sense of inequality and injustice, and a disinclination to conceal any longer from view the evils of piecemeal legislation.

The more closely we scrutinize the printed report, the more evident does it appear, that the fundamental defect, which underlies the leading faults now brought to light in the insufficiency of a system designed to guard only a small section of the community from an evil which exists throughout the length and breadth of the land. The special object of the Act and indeed all it pretended to do, would, we admit, be accomplished if disease were reduced to a minimum in the army and navy; but we are now in a position to maintain, on the evidence of facts, that so long as our soldiers and our sailors ashore mix freely with the general population, their exemption cannot be secured by laws which are local and very circumscribed in their action. It is true that, from defective details of administration, full benefit may not have been realised from the system in use, and that measures of internal reform may yet bring about partial and temporary improvement; but they cannot touch the organic mistake of endeavouring to keep a small unisolated neighbourhood clear of contagious disease which surrounds it; indeed it is on record that the very measures undertaken for this purpose, tend to concentrate disease on the spot itself, for while a few women from outside places are drawn by a healthy attraction to the hospitals themselves, a larger number are brought into the vicinity to fill the vacancy and supply the demand created by the withdrawal of its diseased inhabitants.

The Parliamentary Committee for the present decline, on account of its magnitude, to approach the question of extending the Act to the civil population; but that they recognize in the facts before them, indications of its necessity is seen in the proposal to enlarge the limits of the present Act by extending it to a distance of fifteen miles from stations, and increasing the number of the latter. It is no disparagement to the present Acts to regard them as insufficient even for their special purpose. They have been eminently useful in shewing that very valuable results may attend this limited and imperfect working, and have silenced the clamour of pseudo-philanthropists, who hold the power of doing vital mischief to one's neighbour to be an integral part of political liberty; and if they have proved themselves incapable of perpetuating success in their restricted form, they have pointed the way to it in a legitimate and natural extension of their scope; while their results may well allay the doubts and fears of timid or sceptical legislators in dealing with the general population of the country.

The proposed reforms in hospital management are simple, and if too much be not expected of them, may effect their object; we greatly doubt, however, that civil authority will concede to a medical officer the power of discharging a woman from the liabilities of a prostitute on any resolution she may form in hospital. It is contended that many a woman, "restored to a virtuous life," would object to apply to a justice in an open court for a discharge from attendance, but would feel no such objection to being discharged by the medical officer under whose care she had been. This may be true, but the grounds of application must be more or less matter of assumption or credulity on the part of the medical officer. Proof of such a point, in the majority of cases, must be exceedingly difficult, and we are taught the great evils of clandestine prostitution by the perfected system of Paris. But irrespective of these practical objections, the power of granting discharge is not one which could be rightly vested in a medical officer under any circumstances.

We pass from doubt to a feeling of unqualified objection when we come to the recommendation of a return to the bygone practice of periodical inspection of soldiers for venereal disease. We cannot discover or conceive the grounds on which this proposal rests, and cordially endorse the criticism of the *Medical Times* upon it. If the neighbourhood around the soldier cannot be hindered by local efforts from producing disease, it seems to us idle criticism to expect that any good can result from this step, unless it be proved that the soldier suffers more severely from syphilis in consequence of concealment than he would under earlier detection. So far from this being the case, it is absolutely disproved by experience. In the first place, it is the opinion of those best qualified to judge, that voluntary concealment does not and cannot exist in the ranks to any appreciable extent. A soldier does and must report himself sick soon after he is aware of the fact; and if he unduly delays to do so, punishment follows on his discharge from hospital. And if it be contended that disease being detected on inspection may be prevented from infecting the constitution of the man, it can only be by persons unacquainted with the literature of the subject, and the undisputable evidence which modern research has produced, that the poison is absorbed long before any local sign of its reception appears. This teaching of recent science is in strict accord with the negative results which were obtained from inspection in days when it was practised, when simple observation was the only guide, and no doctrine existed to obscure it.

If it could be proved that inspection were either necessary or useful, it would not be wise to urge, in opposition to it, the great dislike with which medical officers and men regard it. This feeling has been treated lightly by three surgeons, whose testimony would appear to have led the Committee. In common with the *Medical Times*, we know the practice to be looked upon as absolutely odious in the ranks. There must be many of our contemporaries who with ourselves can recall the scene of a regimental inspection. How the line of men, exposing themselves to the medical officer at the word of command, showed by their faces the sense of their position which was engendered. The picture was not without its ludicrous features, and these were appreciated in the waggish titter of some light-hearted boys, whose merriment, there was no denying it, was mainly at the expense of the officer who was forced with a grave face to conduct the proceedings. But it had, too, its serious and more important side. Ill-humour shewed itself in many a look of sullen submission, and worse than all was the picture of degradation, which the faces of the married men presented, and which, we speak for ourselves, must have been strongly reflected in our own; for, brave it as we might, there was no escape from the consciousness that we were instruments of an offensive system.

From the proceedings of the Sanitary Commissioner with the Government of India, for June last, we derive some information on the working of the Contagious Diseases' Act in Indian cantonments. Here, as in England, results have been found unsatisfactory, and the Government has called for an opinion as to whether any further orders should be issued on the subject of preventing venereal disease, and for obtaining, in a uniform shape, returns to show the effects on the diminution of disease produced by the measures now in force." The Commissioner summarises the facts which the periodical reports present, and from them it is easy to understand the dissatisfaction of the authorities. Here, however, it is not possible to prove a case against the principle of local Acts, for the administration of them has been so loose and desultory, that no conclusion of necessary inefficiency can be drawn.

Not less loose and desultory, we are forced to observe, is the manner in which the Commissioner handles the figures he receives. He tells us that the admissions into hospital, among European soldiers, between 1852 and 1858, varied from 294 to 133 per 1,000. From the latter year to 1864 it never fell below 250. In 1861 it was as high as 369. "The occurrence of only 166 cases per 1,000 in 1867, therefore, presents a *remarkable improvement.*" We often see reason to wish our chief sanitary authority were endowed with some little dexterity in detecting the meanings of figures. Here the rate of admission varies during a period of years between 133 and 369. In 1867 it reaches 166, that is to say, it is within the range of fluctuation of the former period, nevertheless it is confidently offered to us as evidence of "remarkable improvement."

The Commissioner, in view of this remarkable improvement, had indulged in a hope "that with the development of Lock Hospitals an increased care in carrying out the rules for the prevention of the disease, a further diminution would be effected. This expectation, however, has not been realized." This is unfortunate no doubt, but if the Commissioner had based his expectation on a full knowledge of the existing laxity in working the Act, and not on a misinterpretation of the figures of 1867, he would have had to record recurring failure, but not to lament disappointed hope. A few unsatisfactory statements follow, the substance of which is thus stated.—"A great prevalence of venereal disease in this Presidency and relatively an increase of disease during 1868, as compared with 1867," and some particulars of the actual working of the Lock Hospitals are given. The number of women admitted stands in no proportion to that of registered prostitutes, nor to that of infected soldiers, and the Commissioner concludes—"it may certainly be affirmed that their cost has far exceeded any benefit which can have been derived from them."

Speaking in general terms, it is not too much to say that the Act has not yet been put into force in cantonments. No conclusions can be drawn of its capabilities from the mere pretence of administration which is all that can be discovered in a large number of stations. Registration is nominal. Hospital treatment does not deserve even the name, and until the broad provisions of the Act are put into some semblance of execution, it seems idle to issue new orders on accessory details, such as the classification of women, the multiplication of returns, &c.

In the 11th & 12th paragraphs it is recommended that all unmarried soldiers should be examined on their arrival in cantonments, to ascertain if they are affected with venereal, and that all soldiers admitted into hospital with venereal should be subjected to weekly examination for six months after discharge. In an Indian cantonment the first proposal cannot be made even to appear plausible. In the large standing camp of Aldershott, where it has been found that a limited law admits to clear the place of syphilis, and fair success has followed, it is reasonable that officers should look with some jealousy on the arrival of regiments from less guarded stations, as likely to re-infect the camp; and the same may be said of naval stations receiving ships from abroad, but there is not even a show of reason for thus treating men who arrive at a new station in India. Until the stations themselves are in some degree purified, the Commissioner surely does not affect to think they can be made worse than they are by men who have come off a journey. When the Act shall have been fairly put in force, it will be time to consider whether importation of disease impairs its success, but it is illogical in the highest degree to propose, as a working detail of a neglected law, a return to a practice which, full of objection and complete in uselessness, had perished before the law was made. It is simply an admission that the Act is essentially worthless.

Similarly, we are unable to see what good can be expected from weekly examination after discharge from hospital. It cannot be required for the detection of the common forms of secondary disease, but it may perhaps be argued that without the recurrence of specific infection, the seat of a sore is liable to a form of secondary affection which is itself contagious, these cases, however, are exceptional, and against them may fairly be set off the diminished liability of a syphilised man to contract new infection, so that, on the whole, it would be difficult to prove any special necessity for inspecting men so circumstanced. We observe, however, on referring back, that the object of the practice is the protection of the women. Now, in another portion of his paper, the Commissioner tells us that there is no particular class of women who confine themselves to the soldier, but that those whom he visits cohabit freely with civil inhabitants. Of their visitors, therefore, the soldiers are doubtless but a small numerical proportion, and the protection which this harassing inspection can afford is imaginary.

An opinion has lately been put forward in some quarters, that there is injustice in subjecting public prostitutes to examination, while the other sex are less at liberty. Space does not now admit of our discussing the subject, but the arguments on the other side are so over-powering, that we think there can be little fear of the opinion gaining many advocates. A very short experience in a town is needed to shew that the prostitute is the real infecting centre in every practical sense. The number of men who, in ordinary circumstances, may contract disease in a single night from one of these, is alone sufficient, in the cause of public health, to remove all parallel between the woman's and the man's position, and to shew the purely ideal nature of the alleged equality between them. It is contended that the woman must be infected by the man before she can spread infection. True: and the cesspool only furnishes a nidus of development to the typhoid germ which it receives from without; shall we, therefore, leave the cesspool untouched in its malignity until we are prepared to arrest the germ on its way there.

CHOLERA.

We need hardly remind our readers, that cholera raged with great fury from June to September 1867, in the valley of Cashmere, and about the same time it was imported into Cabul from British India. In the city and neighbourhood of Jellalabad, the disease was most virulent, but on the approach of the cold season cholera died away, to be reproduced in the following year (1868), when it advanced westward by rapid strides as far as the north of Persia, raging with considerable violence at Teheran, from the 24th of August to the 11th of October; it spread to the surrounding villages, but does not appear to have taken any very great hold on their inhabitants.

Early in 1869 cholera again appeared at Herat, and making sad havoc in that city, it extended to Furrah and the intermediate country; and we now hear by telegram from London, dated August, the 19th, that "cholera is travelling south from Teheran, and is raging at Shiraz and Ispahan."

As far back as June the disease was said to have made its appearance in Bagdad, but we have seen no later notice confirming this intelligence. It is well to observe, however, that the course pursued by the cholera above indicated, was precisely that which it followed from the Punjab into Cabul, and, via Herat, to the north of Persia, in 1829, 1845, and 1853; during these years the disease was imported, as it has been in 1867, into Afghanistan, and was followed by an outburst of cholera at Teheran and throughout the north of Persia, from thence extending over the Caucasus, or more commonly along the shores of the Caspian, from Rahed to Astrachan, and so into Europe and America, in 1831-32, 1848, and 1854. Whilst the Punjab cholera of 1867 has been steadily advancing westward, we have witnessed a fresh, and most virulent outburst of the disease, extending well nigh over the whole of British India.

The Central Provinces are the route which the cholera of Bengal follows when advancing directly from east to west across India, in contradistinction to its north-west passage through the Punjab, and so to Cabul, as above indicated. In 1867, it is remarkable that the Central Provinces were almost absolutely free from cholera; but in January, 1868, a gang of coolies from Mirzapore imported the disease into the Gunnesh Gungee Valley, from whence it spread southward to Nagpore, eastward to Mundlah and westward into the Nursingpore district. Dr. C. S. Townsend reports "that on the 3rd of June a heavy fall of rain occurred, which was very general over the districts of Jubbulpore and Seonee, from this time the number of villages attacked increased daily, but it was not till the middle of July that the disease reached its greatest amount of diffusion. In the beginning of August it again subsided, and by the 20th of that month had almost ceased." Nevertheless, in September, cholera was still present in the Nagpore and Jubbulpore districts; and in the following month was more severe than usual in parts of the Island of Bombay.

In April, 1869, cholera again broke out at Nagpore, and was generally prevalent throughout the Central Provinces; we hear of it at the same time far away to the west of India, on the road between Khandeish and Mhow, at Nagode, and Indore. On the other hand, our most eastern possessions were likewise under the influence of this terrible disease, for it was fearfully virulent at Akyab during the early months of the year, and it is present now in various parts of Burmah.

It is beyond our province to follow the extension of cholera over India since the commencement of 1869, but we may safely affirm that it has been prevalent throughout the Bengal Presidency, spreading over the North-West, Central Provinces, and far away into the Punjab to Umritsir (where it has been very deadly), branching off also to Subhatoo, and extending along the Thibet road beyond Simla. Cholera broke out in the city of Peshawur on the 7th of September, the mortality gradually [illegible] S[illegible] W[illegible] [illegible] and [illegible] P[illegible] G[illegible]. The [illegible] of P[illegible] Bay and A[illegible].

W[illegible] we have lately [illegible] passing during the year 1867 [illegible], it is not [illegible] necessary to recall the attention of the medical authorities in Turkey, Russia, and Egypt [illegible] in this country. There can be no doubt that a very wide-spread and virulent form of cholera has raged to a greater or less extent over a [illegible] portion of British India during the past five [illegible] from the Gangetic valley to the farthest limits [illegible] the westward [illegible] in this country, [illegible] the [illegible] of the disease has [illegible] the confines of Turkey.

N[illegible] would seem open to the fact that should the disease [illegible] westward through Russia or Turkey, a new [illegible] passage will after the close of this year be [illegible] through the Suez Canal. It is almost superfluous to remark that it will require all the vigilance and skill of the Medical Commission in Egypt to protect Europe from the [illegible] importation of cholera through this channel; we fail [illegible] from India, but the Government of Turkey is [illegible] alive to the dangers of the case, and it will demand [illegible] to prevent the Suez Canal from becoming a [illegible] to Europe, which it certainly will be, if cholera [illegible] and vessels, pass over its water, [illegible] the crowded, low-lying, and filthy [illegible].

DR. CORNISH ON OPIUM AND IPECACUANHA IN DYSENTERY.

([illegible] 187[illegible].)

MADRAS MEDICAL RECORDS.

F[illegible] S[illegible] Surgeon A. BERRY, to Dr. JAMES ANDERSON, Physician General and Member of the Medical Board, [illegible], 2[illegible] February, 1807.

GENTLEMEN,—In my letter of the 4th instant from Vellore, I [illegible] the great success Mr. McMullens, Surgeon of H. M.'s [illegible] Regiment, had with Mr. Abercrombie's [illegible] the frequent, and hitherto too fatal, species of [illegible] European soldiery, from an inflammation of the [illegible], of which he then spoke to me in the highest [illegible]; [illegible] gives me great pleasure to be able to afford [illegible] proofs of the safety and efficacy of this [illegible] the cases detailed in Mr. McMullens' [illegible], and by facts stated in the accompanying [illegible] on the subject. This proof, [illegible] I [illegible] the greatest improvement lately made in the treatment of the [illegible], not only from this remedy, far the [illegible] prevalent disease, but the one from which greatest mortality [illegible], is the more acceptable, as fully supporting [illegible] that have [illegible] to me as alone [illegible] which I have uniformly recommended to the Surgeons [illegible] years past.

I [illegible] M[illegible] [illegible] I deem of the utmost [illegible], [illegible] extracted from [illegible] cases, which [illegible] forward [illegible], as facts convincing to those who [illegible] alarmed at [illegible] a practice, by such [illegible], and to [illegible] who, as Mr. McMullens [illegible] to this country impressed with the idea of bowel affection in India being connected with diseases of the liver, in which he was confirmed on his arrival, by the concurrence of more than one practitioner of experience. The [illegible] I [illegible], yet [illegible] has [illegible] evacuations [illegible] been [illegible]. The [illegible] extract [illegible] Professor R[illegible] this [illegible] only [illegible] the principles of Mr. Abercrombie's practice, but as [illegible] that the injury from purgatives [illegible] thought necessary:—

"What I have long [illegible] as highly probable from the reasoning and experiments of [illegible], Stoll, and [illegible], I have for some years [illegible] quite certain, being well satisfied from my own extensive experience, that the dysentery does not at all depend upon [illegible] contracted acrimonies in the intestines, that it cannot at all be cured by emetics, and still less by purgatives; but that it is a rheumatic or catarrhous affection of the intestines, particularly of the great guts, and that the proper remedies for the disease are sedatives and diaphoretics."

This is exactly Mr. Abercrombie's mode of cure, for no remedies can be more sedative and diaphoretic than his large doses of laudanum, followed by a considerable quantity of ipecacuanha, which he gives till favourable symptoms appear, and in all fatal cases the great guts on dissection have been found most injured.

The inflammatory nature of this disease cannot be too particularly stated, nor the injury from purgatives too strongly pointed out. Dr. Francis Duncan, when Surgeon of H. M.'s [illegible] Regiment, first made known the disease in a letter addressed to your Board early in 179[illegible], and the first rational improvement in the treatment of it founded on that knowledge, was also at that time commenced. Its violence, as described by Dr. Duncan, shows the absolute necessity of an active practice like Mr. Abercrombie's. Dr. Duncan states it as follows:—

"Sickness in all the other forms I have met it in India has nothing so [illegible] as this disorder. I have seen no other attended with so much anguish; and so hard a struggle was so dreadful a commotion of the bowels, and accompanying symptoms so truly melancholy. While the patient labours under severe fixed pain, burning from perpetual watchfulness, and unquenchable thirst, the contents of the bowels are violently ejected without intermission, and almost in one continual stream; it is impossible to preserve him clean, his bed-clothes are overspread with blood, and he literally welters in the discharge of his own bowels.

"This disease is chiefly fatal to young men of fresh and blooming health, and seldom affects the aged, the infirm, and valetudinary. It most commonly appears among the recruits on their first arrival, especially if they are sent to the field, and they are chiefly subject to that dejection of mind and apprehension of death, which attends the disorder from its first access.

"In its course and symptoms this disease is less liable to variation than any other I know. In the field I have known it terminate on the 6th day after its access, but in general this happens between the 10th and 14th, and never in a single instance have I seen it extend beyond the 21st, and this only where the patient was advanced in life, and the inflammatory symptoms less severe. From January to April 1792, this disorder raged with the violence of an epidemic pleurisy, and I was very much struck with its falling particularly on young men of similar habits and appearance, possessed of blooming though delicate complexions, and such as you would have supposed in cold climates to be subject to phthisis pulmonalis."

The following is Dr. Francis Duncan's account of the cause and seat of this severe disease:—

"That the colon is the seat of the flux that recruits suffer most from, and the remote causes are obstinate costiveness with the application of cold. Recruits having always told him the complaint was preceded by costiveness and sleeping in the open air at night, exposed to the dew, and his conclusions on the best mode of cure were as follows:—

"That he thought he had ascertained the two following points of some importance in practice: 1st, that a flux of a mild and moderate kind, by being treated with violent and drastic purgatives, may be followed by a fixed pain at the bottom of the belly, tenesmus, suppression of urine, bloody stools, and every other symptom of inflammation and ulceration of the colon; and 2nd, that in the dreadful flux which proceeds from inflammation of the colon, where the symptomatic fever has not been very violent, nor the fixed pain at the bottom of the belly very acute, and where all the symptoms have been in a milder degree, that by the constant use of fomentations and glysters with an opiate at bed-time, but *without one single* *dose of physic*, that in this way the disorder has gradually changed from an acute to a chronic nature, and the patient recovered, but that a single dose of jalap and calomel would counteract it, and render this plan of no avail."

Mr. Abercrombie, on this subject, speaks as follows in his letter to me, dated 21st May, 1806:—

"I have just been perusing the extracts you sent me some years ago from Dr. Francis Duncan's letter on inflammation of the colon, and with the exception of the ardent burning fever which he describes so particularly as an attendant on his disease, I do not know that it can be said to differ materially from the disease we have had at Gooty. I cannot say, indeed, that we have been able, even generally, to trace the disease to have been, as the Doctor says his was, preceded by costiveness or immediately induced by cold; in all other symptoms however, and especially in its fatal termination, this disease and that described by Dr. Duncan resemble each other but too much. I have not got the Doctor's printed letter by me, so that I cannot draw a sufficiently close comparison of the diseases. Does not Dr. Duncan say that his disease chiefly, or only, affects recruits or young men during the first 18 months of their residence in India? We have lost upwards of 20 men, all of whom have been upwards of three years in the country, and none of whom survived the 11th day of the disease, some not the 7th. Notwithstanding the very general prevalence of this terrible disease at Gooty, I have not been able to trace anything like a remote cause of it, nor, indeed, the immediate cause, excepting in a few cases where the unfortunate sufferer evidently drank himself to death; this last, however, I am satisfied, cannot be admitted to any extent as an exciting cause. I am induced to suspect that affections of the bowels, and this disease in particular, must be endemic or peculiar to Gooty, for not a single case, such as I have been describing, has occurred among our companies at Bellary, nor has there been by any means our usual number even of the common affections of the bowels at that station. On enquiry I find the 83rd Regiment, and particularly the 73rd Regiment, when quartered here, suffered very much from this disease. I have remarked that of four women (Europeans) confined in child-birth within the last three months at Gooty, two have died of puerperal fever."

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Having thus shown the probable causes and the nature of the disease which are necessary to form a just estimate of the utility of the practice followed, I will shortly state that from early in 1795, the date of Dr. Duncan's letter, to May last, the practice most approved by those best enabled to judge (for mercury was, and is still, a favorite with some) was by nauseating doses of ipecacuanha and opium, blisters, warm bath, fomentations to the abdomen, warm covering, emollient injections, or ipecacuanha or opium, or sometimes acetate of lead, with a strict attention to a mild diet, bleeding when the pulse warranted, or inflammatory symptoms run high, and every means to moderate inflammation, sooth, or arrest the abrasion of the mucus, their natural defence, that the inflammation might terminate in resolution or suppuration; for if this cannot be effected, it rapidly runs into mortification and death, as numerous dissections have shown.

Mr. Abercrombie had much experience, when at Arcot, in this disease both in recruits and the men of the regiment, and had the highest opinion of its utility, and was considered a successful practitioner by it, as many of my letters to your Board will show. It was not, therefore, without the strongest conviction of the necessity of some more active practice being necessary to combat the severity of the disease at Gooty than he had yet followed, that he *adopted his assistant, Mr. Graham's suggestion of a practice pursued by a friend of his in Africa*, and has followed it up with success and confidence. It is this for which he deserves the greatest credit, in adopting and proving on himself the safety of so bold a practice, and in recommending its utility, for the indications of cure are not altered, nor the medicines, it is the *quantities of the remedies alone that are uncommon*, and which require proof of safety and efficacy to be more generally given.

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I have made this a separate report from the interest and value that must be attached to this seemingly most successful treatment of so severe a flux, which I hope you will approve, and think the knowledge of it worthy of being circulated for general information and trial; that if found effectual, one uniform practice may be adopted, which is always an object of much consequence in the treatment of [illegible].

Extract of a letter from Mr. Abercrombie, Surgeon of H. M.'s 34th Regiment, to Dr. Andrew Berry, Superintending Surgeon. Dated Gooty, 21st May, 1806.

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"Graham now informed me that a friend of his, who had been much employed in the Guinea trade on the coast of Africa, was in the constant practice of exhibiting in the dysentery of that country, *large doses of ipecacuan with a sufficient quantity of laudanum, to prevent the ipecacuan operating as an emetic*. I began and have invariably pursued this practice for a month past, and from the result, I have no hesitation in saying that I think the fairest possible trial should be given to it, and that I am confident it is in many cases productive of the best possible effects. The following are the particulars of my practice and experience of this remedy. On the patient's reporting himself, he immediately takes tinct. opii. ʒß or ʒj, and in about 15 minuts afterwards pulv. ipecac. ℈i or gr. xxv; in the evening the dose is repeated, but only of about half the quantities taken in the morning. In these proportions, and with very little variation, the remedy is continued as long as the symptoms indicate, and I have given it daily as above for 6, 7, and 8 days."

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"A very few days after I last wrote you on the subject of colonitis, I had myself very sudden and nearly as severe an attack as I ever have met with, and although by our new practice I got presently rid of the violent symptoms, I have not even now got the better of the complaint and its consequences."

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"I shall be very happy to hear what you think of the practice, and if you have yet had any opportunities of seeing it tried. At first sight the general febrile symptoms noticed above seem such as would have forbidden the exhibition of a large dose of opium, however combined. I maintain, however, from repeated experience, that the practice is perfectly safe; in my case the third dose of the medicine produced every effect required; it seldom happens that less than double the number of doses proves sufficient, and I very commonly continue the medicine, morning and evening as in my own case, for 7, 8, or 10 days. The *modus operandi* of this medicine is evidently by its powerful determination to the skin, to which I conceive may be added, what you hinted to me, a certain antiperistaltic action of the ipecacuanha—the former effect appears clear, as well from the sensible perspiration as from *an eruption*[*] *on the skin, which very commonly appears and resembles a good deal the prickly heat*; in many cases this eruption about the mouth, face and neck runs on to a kind of suppuration, and scabs are formed: in my case the lower part of my face resembled much that of a person recovering from confluent small-pox. From an account I lately read of some experiments made with opium on healthy subjects, I have no doubt that this last is an effect entirely of the remedy, and not, as I once suspected, of the disease; besides this symptom never appears except in cases treated as above. That this medicine has some antiperistaltic action or power may, I think, be argued from the nausea which it so very generally produces, and indeed from the large quantity of ipecacuanha taken. I would here make the practical observation, that if the medicines are retained for one hour, the desired effect is nearly as well answered as if the medicine was not at all to produce sickness and vomiting."

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From Mr. McMullens, Surgeon, H. M.'s 30th Regiment, to A. Berry, Esq., Superintending Surgeon. Camp at Colar, dated 17th February, 1807.

Dear Sir,—When I had the pleasure of seeing you at Vellore, I had some conversation with you upon the utility of opium and ipecacuanha in that species of dysentery most generally met with, and hitherto *too* generally fatal in India, *viz.*, colonitis.

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"Every case of any importance will be found in my monthly journals; suffice it, therefore, to say that of the casualties which have occurred, at least [illegible]ths have been cases of flux. The months of July and August were the most fatal, almost the only disease then existing was flux, and the casualties amounted to about [illegible]th of the cases; the treatment consisted of mercury both internally and by friction, bleeding where the state of the

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[*] Is this result of ipecacuanha treatment [illegible] in the present day? I have seen no [illegible] that have come before me.—W. R. C.

[illegible] salivation [illegible] and [illegible]; where the [illegible] quickly produced salivation the disease was checked, [illegible] great [illegible], with [illegible] and frequent [illegible] In every dissection the colon was the seat of the disease, inflammation had run its course and terminated in gangrene; the rectum was also much thickened and frequently in a state of mortification. In the months of September and October the number of flux cases decreased much, and when the disease did occur, it assumed a milder form. Small [illegible] doses of ipecacuanha [illegible] administered produced good effects; but [illegible] in general the disease gave way, yet it was protracted.

"It was during that period I received from you Mr. Abercrombie's first communication on the treatment of colonitis by large doses of opium and ipecacuanha. No case occurred to justify my trying the practice until the month of December, prior to which time you had favored me with a second communication from that gentleman, in which he had detailed his [illegible] cases. About the middle of the month some cases of [illegible] with aggravated symptoms, very frequent stools of blood and mucus with severe straining and tenesmus, acute pain at the abdomen, hot, parched skin and quick pulse, made their appearance. The usual objection to opium in diseases exhibiting high inflammatory symptoms, caused some hesitation in adopting Mr. Abercrombie's plan, but convinced of the propriety of changing the mercurial treatment, I soon determined. Accordingly, I commenced by giving two drachms of laudanum, which I estimate according to the Edinburgh Dispensary, contains [illegible] 15 grains of the country opium.

In the interval of ½ hour, 18 grains of ipecacuanha was given; soon after taking the latter, considerable vomiting was excited, and both it and the laudanum were thrown up. In the course of an hour afterwards, the sickness having subsided, the tincture of opium was repeated, increasing it to three drachms, the patient was enjoined quietness, and in ½ an hour he took 18 grains of ipecacuanha; both medicines were retained on the stomach, and produced an alleviation of pain, a reduction in the frequency of stools, and in the quantity of blood contained in them. In the course of 12 hours, griping having returned, the medicines were repeated with increased good effects, and by persevering for a few days in the same plan, a cure was obtained. I am not particular in describing cases, as they will all be found in my journal.

"I have merely to say that I have since the month of December treated more than 20 cases of acute colonitis in the above manner, varying the quantity and repetition of the dose according to circumstances, and that in every one of them I have been successful. The great point to be obtained is by a [illegible] dose of the opium to arrest at once the diseased action of the intestine, and the relief which the patient soon discovers is sufficient proof of its effects; the ipecacuanha is then useful by determining to the surface, and probably by restoring healthy action; it ought always, however, to be proportioned to the state of the stomach, and never given in such quantities as to excite vomiting. In general, I think from 10 to 15 grains will be retained. It will in most cases be necessary to repeat the medicine in the course of the 24 hours, and to continue the treatment for some days; but in this, the observation of the practitioner will always direct him. A copious perspiration is generally produced, and in some cases I have observed the [illegible], of which Mr. Abercrombie speaks. I never have had occasion to combine bleeding with this practice, but I have no doubt that in some cases it will be found useful, as will be [illegible] to the abdomen, the warm bath, &c., &c.

What I have now written are merely general remarks, my [illegible] you are already in possession of, and if the little experience I have had serves to confirm your opinion of Mr. Abercrombie's plan, I shall be much gratified. I have no doubt that if it is generally adopted, the lives of many excellent soldiers will be saved by it. It has been too much the custom to [illegible] almost every bowel affection in India as connected with [illegible] of the liver. I know, I came to the country impressed with that opinion, and was soon after my arrival confirmed in it by the [illegible] of more than one practitioner of experience. I [illegible], however, in all my dissections [illegible] in cases where the disease was so marked as not to be mistaken, found the liver perfectly sound; indeed, even sometimes where there are symptoms indicative of an affection of that viscus, one is liable to be deceived, as appeared in the case of a soldier lately under my care. He had dysentery, and at the same time complained of acute pain in the right hypochondrium, with inability to lay on his left side, &c., &c. He was blistered, [illegible] was administered, but [illegible] case, [illegible] recourse was had to the laudanum and ipecacuanha, which soon produced natural stools, the pain of his side subsided, and he speedily recovered."

Official Selections.

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EXTRACT FROM AN INSPECTION REPORT ON HOOGHLY BY DEPUTY INSPECTOR-GENERAL OF HOSPITALS G. SAUNDERS.—DATED 12TH AUGUST, 1869.

"One thing I could not fail to notice in my examination of the native portion of the town. All the huts of the poorer class of the inhabitants are built of wattle and [illegible] walls, or of clay, and these dwellings are either on a level with the ground or below it. During the rainy season, and that which follows it, the poor creatures who inhabit these hovels, lie on the floor of their huts at night, with simply a mat between them and a soil saturated with moisture. Can it be wondered at, that these poor and ignorant people suffer from disease in all its various forms and varieties? Is it not rather wonderful, that the race continues to exist generation after generation, when to these insanitary influences are added those resulting from insufficient food? I do not mean to say that many of these poor creatures have not a sufficiency of food to satisfy the cravings of hunger; but examine what the food consists of, and you will find that the majority of the classes, who suffer the most severely from its effects [illegible] in Bengal, are those whose daily dietary is wanting in the due proportion of alimentary aliments— [illegible] and coarse rice, occasionally a little [illegible], with a particle of vegetable oil. But compare this with the food of the labouring classes in any country where health is maintained, and the predisposing cause of disease at once becomes apparent. The governing classes in this country naturally pride themselves on the success which follows on our system of government, and on the advantages which result from opening out the communications of a province, and the lines of commerce, whether by road or rail; our exports increase day by day, and year by year large quantities of the products of the land are sent across the sea, but it is overlooked, that after some time, the prices of all articles of food, and labour, increase, living becomes year by year, more difficult and expensive to the lower classes, and (though a certain class benefits, and the producer gets a higher price for the products of the soil,) the cultivating class in every agricultural district is worse off than it ever was. In no article of export has the trade so much increased of late years, as in that of oil seeds. The poorer classes of the agricultural population used, years ago, to [illegible] a certain portion of these products of the soil, but I think it will be found that of late years, stimulated by the higher prices offered in the market for their mustard seed, and pressed upon by the higher demands in the market for all other articles of consumption, the poor agriculturist has sold his most valuable crop, and thus deprived himself of the only stimulating element of his food within his reach, of the only article, in fact, which [illegible] with the [illegible] of rice. Milk, the only other animal article of diet, is wholly out of his reach in a district where the average price is 8 or 10 seers the rupee. Every labourer [illegible] of Bengal requires two ounces of fatty matter in his food daily, and failing these, his blood becomes impoverished and his tissues diseased, and they are in such a state as to render him liable to disease of a very severe type, as soon as he is exposed to the influences which climate and other [illegible] produce in the province. I ask, where do we find the poorer classes living in such a way as to render them [illegible] of resisting ordinary miasmatic influences? My own experience [illegible] me that the diseases of Bengal, everywhere discovered [illegible] everywhere influencing one-half of the rural population, [illegible] starvation.

It is the cause which is constantly in operation in Bengal. Were we to [illegible] the cold of northern latitudes, we should then find the rural population here suffering as the poorer classes of Irishmen [illegible] from an insufficient and insufficient variety of food during the famine period.

In confirmation of the truth of what I have here stated, regarding the normal state of health of the rural population, I may add, that, on inspecting the prisoners in the Hooghly Jail I found that every second man had been suffering from scurvy, which was gradually being removed under the influence of the improved diet given them since their admission into jail.

Eight or ten fresh admissions were standing at the gateway as I left the jail, and all of these had well developed scurvy.

Before I close these remarks, I will allude briefly to the epidemic disease which has for some years past prevailed in this zillah, and place on record my views regarding its nature and origin. In the first place, I think there can be no doubt that the fever, which has caused such dreadful mortality in Hooghly during the last few years, has nothing specific in its nature, and is neither more or less than the ordinary miasmatic fever which prevails eveywhere in Bengal, at certain seasons of the year; but in the Hooghly District in an aggravated form, depending on certain conditions of soil and climate, which have been superadded to those which always existed in this zillah, as in all the other provinces of Lower Bengal. I do not believe we have ever had reliable information of the mortality which has prevailed in Bengal year by year, during the months most favorable for the production of fever. During the rainy season large portions of every zillah are submerged, an immense cultivation is carried on in the inundated districts (rice), which, consuming as it does the decaying animal and vegetable matters existing in the soil, aids with the inundation in keeping down noxious exhalations. During these months, moreover, the meteorologic changes which are everywhere observable, are less marked than they are at other seasons of the year; it is true the rain-fall is considerable, but the extremes of temperature are not excessive, the daily range of the thermometer being about five to eight degrees. We consequently find that disease is not so prevalent in the province, as it is later in the season; but when there is a considerable daily range of the thermometer, great variation in the humidity of the atmosphere, and great evaporation going on from the soil, with a certain amount of actual cold, then we have in full operation all those common but active influences which produce disease, and the rural population suffers at once from insufficient clothing and diet, as also from the climatic peculiarities which I have just indicated. Fevers are then rife, accompanied in nearly all cases by visceral congestions, principally of the spleen and liver, but occasionally of the lungs, and frequently of the articular structures. These fevers continue to prevail in November, December, January, February, and March, when the hot season sets in, and for three months the poor, destitute Bengalee experiences as much of health as his low state of vitality will permit; but on the occurrence of any sudden or unexpected climatic change, or on being subjected to special influences, he at once succumbs, and the TYPE of the disease (whatever it may be) is influenced by his low state of vitality, and the unhealthy state of the tissues. It is not uncommon to find many of these cases developing into typhoid fever, or exhibiting typhoid symptoms, the state of the system being such that any prolonged attack of disease will be associated with, and accompanied by, an adynamic state; but I am convinced that the fevers of Bengal which have caused, and are producing such mortality, and exemplarily so in the Hooghly District, are simple fevers of the intermittent, remittent or continued types, originating in common causes, but influenced by the low hygienic state in which the greater part of the population are maintained. We all know the insanitary influences which are to be found in a Bengalee village, and the absence of all conservancy arrangements, but these are not peculiar to the Hooghly villages, and they are (though destructive enough in themselves), not the causes of the Hooghly epidemic. What then, are the causes which, in addition to those enumerated here, have caused a once flourishing district to be half populated, and which threaten to throw half the land out of cultivation? The portion of the Hooghly District which has suffered most from the ravages of this fever, is that comprised between the Damoodah and the Hooghly; intersecting this tract of land from west to east, run many khalls or rivulets: these were intimately connected with the drainage of the country, and they were the means whereby the floods of the Damoodah, when they rose, found means of egress into the Hooghly. The khalls were in fact an important part of the natural drainage of the country, they were not only safety valves to the Damoodah, but they exercised a fertilising and sanitary influence on the whole surface of the district. But it was found (as many and often happens) that this process was not wholly a beneficial one, it had the inconvenience of inundating a large tract of country in seasons of great flood, and then the crops suffered, and the revenue also. A remedy was proposed and carried out, a bund was constructed on the left or Eastern bank of the Damoodah, cutting off the head waters of the khalls; and these latter, as a consequence, commenced silting up.

As long as the Damoodah floods traversed this net-work of small rivers their beds kept free, and thus afforded a certain and efficient drainage for the district after the floods had subsided. A district will suffer less from an occasional flood, than from a continuous saturation of the soil, and so it has been found in the Hooghly District,—when then, in course of time, these water-courses more or less filled up, the natural drainage of the country, which we had interfered with, was in abeyance, and we had substituted nothing in its place. There is another point of some importance: the first effect of the spring rains in this district used to be to wash all the surface filth of the district into the khalls, and the first flood from the Damoodah swept this into the Hooghly, and out to sea. Now, on the contrary, the first rainfall washes the surface impurities of the previous months into the khalls, with an admixture of alluvial matter, and then we find the silting up is a process which combines the admixture of various degrees of impurities with the soil, and the ultimate drying up of these under the rays of a tropical sun.

This latter, however, is an influence which will only injuriously affect those who live on and near the khalls, but the super-saturation of the soil, which results from the closing up of the natural drainage channels of the district, is by far the most important question, and demands an immediate remedy. One cannot however but consider that the process whereby the filth of a Bengalee district was annually scoured out, and removed from amongst the inhabitants, was a very remarkable instance of natural sanitation. The remedy is, I suppose, a point for an engineer to settle, but there can be no doubt, that whatever is done, a thorough and complete drainage of the district must be carried out; and I conceive this can only be done at a great expense, in which the zemindars and the Government might act in concert. In course of time new channels would be formed, and 20 or 30 years hence the district would again drain itself, but that, of course, cannot be permitted; and the only plan open to the Government is, I am of opinion, either to deepen the old water-ways, or to construct new ones, or flood-gates might be constructed at the head waters of the canals coming from the Damoodah, whereby a sufficient flood could be permitted to scour out and deepen the khalls, and yet insufficient in quantity to cause any submerging of the district. Though costing very much more, I think I should prefer the establishment of a new drainage system altogether, which might be arranged in connection with the irrigation canal project.

The question then arises, Will these measures, or any of them, repress the yearly outbreaks of fever? They will not, but they may be the means of improving the state of the province, so that the mortality will, in time, be not in excess of that which existed years ago.

It will still be necessary to house the rural population on some better plan than that in vogue everywhere in Bengal, (which can be done at small expense), and to ensure that the people generally shall be so instructed on the subject of food, that they may always, when earning a fair day's wage, know how to utilise it, so as to maintain life on fairly good hygienic rules.

Of course do all we can, there will be always a large section of the Native community who must suffer and die, and it is scarcely possible to drain a country, and improve the nature of its soil where the principal staple and the ordinary article of food is, and always must be, grown in a swamp. The facts relating to the drainage of the district I have learnt from Mr. Cockerell and the other civil residents, but it has been my duty to trace the relationship between these and the exceptional sickness of the zillah and the excessive mortality.

EXTRACT FROM A REPORT ON THE SANITARY STATE OF THE CITY OF UMRITSIR, BY ASSISTANT-SURGEON A. TAYLOR, CIVIL SURGEON.—DATED 28TH JULY, 1869.

DURING the prevalence of cholera I have gone into all the narrow, out-of-the-way streets and lanes, and have thus had an opportunity of ascertaining their sanitary condition, which I have no hesitation in stating is so defective, that the present outbreak of disease may be fairly ascribed to it, and which, unless rectified, may be dreaded as a constant source of epidemic sickness in future, or which may even convert disease now epidemic and occasional into disease endemic and persistent

The chief points to which I want to bring attention are :—

1st.—*The two old underground sewers* running one from Bazar Durbar Sahib through Ramgurrian ke Kutra to Gulwabee Gate, and the other from the Lahoree to Bhagutwalla Gate. Cholera has been more severe in the vicinity of these sewers than in any other part of the city. I apprehend [illegible] work is not sound, and that the sewage leaks [illegible] earth to own it, soaks its way into the wells, and contaminates the drinking water; even if this be not the case, the exhalations given off by the filth in the sewers, rising through the man holes and other apertures, are sufficient to account for the large amount of sickness. It will be unwise to meddle with these at the present time, during the prevalence of epidemic sickness, but as soon as possible, the measures which, I believe, are in contemplation for their abolition, should be taken in hand; in the meantime the drains should be flushed by the canal or some other means, at least weekly.

2nd.—The habit of placing at the sides of drains, in the streets, the filth scraped from the pucka surface drains, instead of removing it at once, is highly dangerous. This filth, which is the solid part of the sewage, when exposed to the heat and [illegible] liable to ferment and give off exhalations of a most [illegible] character, and as it most probably contains the [illegible] of cholera patients, is likely to be fertile in spreading the disease.

3rd.—The ordure from the houses is all day long lying unremoved in the narrow gullies. At whatever hour of the day I have been round the city I have been disgusted by the sight and stench of the excrement exposed by the sides of the [illegible]. Some measures for its immediate and complete removal are greatly needed.

4th.—The kutcha drains in the lanes and koonchus seem never to be clean. I have tried all I could in my rounds to get these places into a more satisfactory condition, but have failed. Black, putrid, fermenting semi-fluid matter consisting of human ordure mixed with all manner of filth and refuse, constitute the contents of these gutters, and their condition, stagnant from the nature of the ground, seems never to be changed by any attempt at cleaning them.

5th.—A condition hardly remediable, I fear, is the state of the [illegible] dwelt in by the poor, the floor often four to six feet below the ground round them—that ground being below the surface of the streets and levels of the drains; without attempt at ventilation, filthy beyond belief from the accumulation of fluid refuse, and miserably inadequate in cubic space to the accommodation of the numbers living in them: they are perfect as hot-beds of disease, especially of cholera or more fatal fevers.

6th.—The people are in the habit of washing round the wells, and of throwing water about when drawing it; cattle brought to drink, void urine and dung on the spot: the result of all this being a mixture of filth and fluid which stagnates and putrifies on the uneven soil, soaks probably into the wells, contaminating the waters, and gives off by fermentation, fœtid gases into the surrounding air.

There are other things which must be taken into consideration and which require rectification, such as hollows in the [illegible] of ground which are not built over, and which the late rains have converted into pools without outlet; the exposure of the manure, as it is carried out on the backs of asses; the broken state of many of the streets, which leave depressions acting as receptacles for liquid; the exposure for sale of ripe unwholesome fruits, such as melons of late, and now peaches, and other stone fruits. Abuses some of which may be immediately rectified, while the others require time and expenditure for their removal.

(Umritsur is a city of over 150,000 inhabitants, and in the month of August, 2,364 died from cholera.)

EXTRACTS FROM THE RECORDS OF THE BENGAL MEDICAL DEPARTMENT.

(*Continued from page* 198.)

GOVERNMENT forwards the application on to the Board for their consideration, who acknowledge the justice of the surgeon's remarks as applicable to the present season, a sickly one, but, though built 3 years before, all healthy years, it had never been brought into use, as it was not, from the nature of the country, in [illegible] situation, and sick were better on board ship or at Calcutta. But now or in a sickly season, and also for a certain portion of the year when the ships are present, it would be well to have an organised hospital; they recommend a house to be built for surgeon's quarters, and some wards for sick officers, and medicines, furniture, bedding and supplies to be furnished as usual, and an assistant surgeon to be sent there yearly, from 1st July to 1st November, or longer if necessary.

Government direct that the opium manufactured in Bengal, Behar and Benares, shall, on its arrival at Calcutta, be examined by a member of the Board, and reported on in concert with the superintendent of opium manufacture.

Pro., [illegible]—The head surgeon at Berhampore (as a reason for requesting more medicines), reports that the "recruits lately arrived have brought with them a fever that seems to be of an infectious kind, and which, I fear, will soon be the means of crowding the hospital." (No reasons for statements or details of diseases are ever given.)

Pro., 4th Dec.—G. O. by Lord Cornwallis, publishing directions of Court of Directors "that every officer who shall in future be invalided be ordered to Europe with a recommendation, if qualified, for a pension from Lord Clive's fund; also the Court of Directors, in the same letter, acquiesce in the continuance of passage money to military officers in cases only when ill health makes a return to Europe indispensably necessary, and when the pecuniary circumstances of the party require such aid.

Earl Cornwallis issues orders from Fort St. George on 21st December, which reach the Hospital Board in Calcutta on 6th January. The Board write to the Civil Pay Master to ascertain what pay and allowances "the late surgeon at the Andamans drew."*

1791.

G. O. issued by Col. Mackenzie (Commanding the Forces in Bengal), 5th March.—That in future a committee, consisting of the head surgeon, garrison surgeon, and a surgeon from the troops in Fort William, shall always examine invalids and discharged men before they embark, because no invalids, &c., who cannot proceed to Europe with safety or without evident risk that they will not be able to endure the passage, shall be permitted to embark, but kept in the hospital until their cure has been sufficiently effected to admit of them proceeding to Europe."

Pro., 28th April.—The head surgeon, Presidency (General Hospital), requests the Board to call the attention of Government to the absolute necessity of rebuilding immediately the native cook-rooms and the apartments destined for the accommodation of the European attendants, which are now in an almost ruinous state, and must be perfectly uninhabitable in the rainy season. The reply is noted on 13th August, that as money "in the present conjunction is required for more important purposes, the repairs must be deferred; suggests that as the repairs of the *Western* General Hospital will be so soon completed, the sick might be there accommodated.

Pro., 26th May.—Government appoints a surgeon to be sent with an engineer officer, and civil architect, to report on the old buildings, and projected ones, at Diamond Harbour.

Pro., 28th June.—The "Regulations" at this time are quoted by the Board to a head surgeon, "that he is responsible to the Hospital Board for any excess that may appear" under expenditure of all kinds.

Pro., 8th Aug.—An entry in the records of a marriage in camp near Cawnpore is a copy of a certificate which is signed by James Delamain, Ensign, acting chaplain, 4th brigade, and certified by witnesses.

Pro., 23rd Sept.—The managers, Orphan Society, propose to the Hospital Board a scheme for providing for boys; that 6 boys, orphan sons of officers and not under 14 years, should be placed as apprentices or pupils at the General Hospital at the Presidency and the Calcutta Dispensary (3 at each), to be bound and attached to the head surgeon and apothecary, and when deemed duly qualified for head compounder, they would be appointed to fill such posts in General Hospitals—the head compounder of the Presidency General Hospital being of similar origin. And that 12 boys, orphans of non-commissioned officers, privates, should be apprenticed to the several General Hospitals (2 at each), and when qualified, "to succeed to the assistantships as they fall vacant."

Pro., 23rd Sept.—The plan meets with the Board's warmest approbation. (The latter part of the plan would seem to be the origin of the Subordinate Medical Department).

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* The Settlement of Port Blair was founded in 1789 by a Captain Blair, who made Chatham, then called Mark Island, his head quarters. It received first the name of Port Cornwallis, afterwards Old Harbour, and finally, from the able officer who surveyed it, Port Blair. In 1792 the Settlement was transferred on account of its unhealthiness to N. E. Harbour, which was called by the name hitherto applied to the first Settlement, Port Cornwallis, a title it still retains. This was abandoned on sanitary grounds in 1796, and only re-occupied in 1857, when the necessity for a distant convict station was urgent.—*Notes from a Trip, &c., in Indian Church Gazette.*

Pro., 4th November.—Extract from the 11th Article of the Regulations for the administration of justice in fouzdary or criminal courts in Bengal, Behar, and Orissa. "He (the magistrate) shall pay particular attention to the health and cleanliness of the prisoners, and request the surgeon of the station to attend and administer to the sick."

Pro., 19th Oct.—The allowance paid to a surgeon of a ship from England to Bengal, was 10s. 6d. for every recruit landed there.

1792.

Pro., 14th Jan.—The civil medical officer would either, in the following case, seem to have sent in no report, or the routine may have been the custom of the service.

The collector of Purneah reports (21st November, 1791), to the Board of Revenue, that all the people in his district and un-adjoining have been suffering for two months past. They send the report on to the Secretary to Government (14th December), who refer it to the Hospital Board (28th December), who send it to the Surgeon of Purneah, requesting a circumstantial report of the epidemic destemper, with a general description as to situation (of town), climate, soil, and manners and customs of the inhabitants, and specifying 5 heads under which his report on the disease is to be recorded. The surgeon replies in a report, dated 5th January, in a letter which occupies 12 pages of the records. The epidemic began as remittent fever, cholera morbus, and dysentery in September. After about a month of prevailing sickness "it was judged advisable to remove all the sick officers and Government servants to Caragola on the banks of the Ganges, 18 coss (from Purneah), where they all recovered to a man."

"The malignity of the epidemic began to disappear about the middle of December, and towards the latter end assumed the form of quotidian or tertian type intermittent, which are endemical to the inhabitants of Purneah and parts adjacent in the months of November, and December to February." He then gives a topographical and sanitary description of the City of Purneah, which, entering on all the points of filth, bad drainage, jungle and stagnant water, putrid fish, &c., may probably be met with in the same state at the present time! He states also the unusual state of the climate, early cessation of rains and more rain than usual, which caused putrid smells to be blown over the town whenever the east wind, &c., blew. The Board, in sending the report on to Government, on 7th February, state—"indeed it appears to us that as the disease took its rise from the very uncommon state of the weather which prevailed during the months of July, August, and September, and the influence thereof on the peculiar local situation of Purneah, no human means could have prevented it;"—practicals anitary measures were evidently then not thought of.

Pro., 13th Sept.—A Mr. Gladwin writes to the Board to request them to forward to Government, for its patronage, a "specimen of my translation of the Alfazul Aduiah," believing that the publication thereof would be useful to gentlemen of the faculty in India.

The Board recommend it to Government. It appears Nowred-din Mahomed Abdullah was the author, and they suggest that it would prove useful in directing surgeons in their enquiries respecting the medicines used by the natives

Pro., 2nd Oct.—An assistant-surgeon commences a petition thus to the Governor-General:—"My Lord,—On your safe return from terminating a war which was undertaken and carried on entirely in the support of justice, give me leave for a moment to beg your attention to my claim for rank," &c.

Pro., 23rd Oct.—Government address a letter to the Board, taking upon themselves the maintenance in the General Hospital of "Europeans of the lower class destitute of friends or connections in this country, who are found in the streets of the town, under diseases which often become fatal merely from want of proper care and medical assistance." It would appear that previously any person finding, and sending such to the hospital was charged with his keep while under treatment.

Pro., 1st Dec.—The Board report to Government that they, on the report of the head surgeon of the General Hospital, have made an inspection, and submit the following alterations and improvements:—"We advise that the present necessaries which are constructed in the centre of the north side of each of the buildings, with the principal doors and stair-cases passing between them, be converted into *warm and cold* baths, and quarters for the orderly serjeants," &c.; new necessaries to be built to E. and W. of each of the wings, approached by a covered verandah." They dwell on the offence of the old necessaries. They recommend pipes "leaden or pottery," to carry away the water used for washing the floors into the common sewers that the old dwelling house be converted, when repaired, into a *Convalescent* Hospital. Dispensary and Cooking Rooms should be built, a Conjee house also, and quarters for at least 8 assistant-surgeons. The N. W. corner of the compound is stated as most eligible, as, "though it is within 100 yards of the Hospital, it is not exposed to the impure air that blows from it." That the tank close to the Hospital should be filled in, and the whole court levelled, and a smooth gravel, soorkhy, walk be made all round for the use of the convalescents. They recommend also the large jungle to south of Hospital to be cut down and the ground properly drained, and all the numerous small tanks filled up. "Nothing could contribute so much as this to render the situation less unhealthy, as the wind blowing over such an extent of stagnating water directly on the Hospital must be very noxious. We cannot account for such a situation having been chosen at first, except that the ground near Calcutta was then all in the same state."

Lastly, "we suggest the propriety of the Engineer being consulted respecting the practicability of deepening the ditch which surrounds the Hospital and communicates with the Nullah, in such a manner as to allow the water to flow freely into it, and be from thence conveyed to the necessaries for the purpose of keeping them constantly clean. One reason for thinking that this most desirable end might be attained, either simply by deepening the ditch, or at least by the assistance of a *chain pump*, is, that even at present the water rises a considerable way up into the ditch at spring tides."

The Government, a few days afterwards, afford sanction for part of the above, and directs estimates to be made about the remainder.

The whole letter shows great thoughtfulness about local sanitation, and the idea of pumps has evidently been prevalent from that day to this.

(Why has Government ever set its face against pumps?)

Extracts.

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At the recent Meeting of the British Medical Association at Leeds, Mr. Edward Lund read a paper "*On the use of antiseptic cere-cloth for covering wounds.*" He described this material, which he had lately used with great advantage, as a cheap and ready substitute for Professor Lister's lac-plaster. It is made of calico saturated with a composition of solid paraffin and carbolic acid, with the addition of a little oil and wax. It is prepared of three colours: red, yellow, and white, to distinguish the proportion of acid which each contains, viz., one-fourth, one-sixth, and one-eighth, respectively. It is to be used in every way as the lac-plaster, and with the same precautions. Mr. Lund showed a specimen of meat which had been wrapped in this cere-cloth, and was perfectly sweet and fresh at the end of six weeks, whereas a piece of meat covered over in the same way with waxed cloth, without carbolic acid, was perfectly putrid in less than nine days. It was suggested that the cere-cloth might prove useful for keeping pathological specimens for microscopical examination.—*The Lancet.*

Dr. B. W. Richardson read a "*Note on a new method of painless cutting in surgery.*" The author placed before the section a knife consisting of a revolving blade, and which divided with such rapidity, that superficial incisions could be made with it without pain. The revolutions were about twenty-five per second, but the speed might be greatly increased. The knife in its action illustrated that an appreciable interval of time is necessary for fixing an impression on the mind, and for the development of consciousness. He hoped he should soon be able to give to the surgeon a small pocket instrument, with which to open abscesses, and perform many minor surgical operations painlessly, without having recourse to either general or local anæsthesia.—*Ibid.*

One of the last novelties produced in the Berlin medical [illegible] is a new sedative, but which its discoverer, Dr. Liebreich, [illegible] may also prove to be an anæsthetic. This is chloral, C[illegible] H_2O, the peculiar nature of which is, that when treated [illegible] alkali it evolves chloroform. Dr. Liebreich proposes [illegible] himself of the alkalinity of the blood, and so, when [illegible] subcutaneously, [illegible] through the mouth, to produce the [illegible] of chloroform. The experiments on rabbits were perfectly [illegible] inasmuch as it produced a sound, deathlike [illegible] some eight or ten hours; and it appears to have [illegible] tage over chloroform and opium, viz., that the rabbits, on awakening, had none of the after effects which usually attend the administration of those subjects, but partook of food immediately and freely. On account of the uncertainty as to the proper dose, the experiments on the human subject have not been as yet quite so satisfactory.—*Ibid.*

IN PERIODONTITIS, Professor Abbott of New York applies equal parts of tincture of iodine and aconite root. Two or three drops of the mixture should be applied to the gums by a camel-hair brush, and the fluids of the mouth should be kept from it until the alcohol is sufficiently evaporated to prevent its being washed from the part to which it is applied. This requires about a minute."—*Medical Times and Gazette.*

CREOSOTE IN THE TREATMENT OF TYPHOID FEVER.—M. G. [illegible], of Montpelier, has lately made an extensive trial of this remedy in cases of typhoid fever. He attributes the disease to a ferment in the blood, and that the *origo mali* consists of the [illegible] produced in the animal economy by the depraved blood, and the reaction of the animal economy against this [illegible]."

"From the recognised influence of creosote in destroying same ferments, he determined on a fair trial of its power in destroying what he terms *typhoid ferments*. The *Bulletin de Thérapeutique* reports that, experimenting on sixty cases of typhoid at St. Eloi Hospital, he gave daily three drops of creosote by the mouth, and an enema of three to five drops, his object being to keep the blood under the creosotic influence. No inconvenience was caused by the administration, and the result was that in the cases where the disease was in an advanced condition, as anticipated, little or no effect was produced; but in those where the patients were got into hospital in the earlier stage, the effect was to diminish very considerably the duration and also the intensity of the disease, and he concludes that, without doubt, the early administration of creosote has the most powerful influence on the course of the fever."

It is also suggested that, during fever epidemics, creosote should be used as a prophylactic in hospitals or large institutions. Though we may doubt the power of this remedy, and in such doses in our Irish typhoid, we think the subject worth consideration and fair trial.—*The Medical Press and Circular.*

THE ACADEMY OF SCIENCES OF PARIS held its annual public meeting on Monday week last, at the Palace of the Institute.

M. Villemin obtained a prize of 2,500*f.* and MM. Feltz, [illegible], and Raciborski were awarded honourable mention and 1,500*f.* for their contribution to medicine and surgery.

The Academy recompensed the remarkable researches of M. Villemin, on the inoculation of tubercle, and on phthisis. The author had already announced this important fact last year, but the Commissioners had desired that further experiments should be made to ensure that its accuracy should be incontestable.

If a sub-cutaneous opening be made in the ear of a rabbit, and introduce a morsel as large as a pin's head of tuberculous matter taken from man or cow, a local deposit of tubercle is at once developed in the animal. The sympathetic ganglia communicating with the wound are impregnated with nodules of tubercle. The results of this method of inoculation have been examined by MM. Andral, Bouillaud, Cloquet, Longet, Nelaton, and Laugier.

From the fact of the inoculation, the virulence of tuberculosis may be concluded. Then, if it be inoculable and virulent, it is necessarily contagious. Being inoculable from men to animals, it will be so without doubt, from man to man. It will be for the future to decide in what special conditions cohabitation may render the disease transmissable.—*Ibid.*

UNGUENT FOR BRONCHOCELE.—Professor James R. Wood, of New York, extols the following formula as an ointment in bronchocele and other glandular tumours:—

℞ Ung. stramonii .. ℥ij
Ext. Conii .. ʒij
Iod. potassii .. ʒij
Iodini .. gr. x
M. Ft. unguent.—*Ibid.*

NEW RESEARCHES IN CEREBROSCOPY.—M. Bouchut, we learn from the *Union Médicale*, has just presented to the Academy of Sciences of Paris, through M. Dumas, his researches on cerebroscopy, which he has offered for competition for the Montyon Prize in Medicine and Surgery. He epitomizes his conclusions as follows:—

"The diseases of the spinal cord, such as acute myelitis, spinal sclerosis, locomotor ataxy, &c., produce usually a congestive lesion, and subsequently atrophy of the optic papilla."

"The lesions of the optic nerve produced by spinal disease are the result of a reflex ascending congestive action, and they take place by the intercommunication of the great sympathetic."

"The presence of an hyperæmia of the optic nerve, of a vascular diffusion over the papilla, and of a partial or total atrophy of this part coinciding with feebleness or numbness of the legs, indicates the existence of acute or chronic disease of the spinal cord."—*Ibid.*

WHEN TO TREPHINE.—M. Chassaignac, *L'Union Médicale*, advocates *trephining* in only two conditions: 1st, when there is a lesion situated in a definite spot, the seat of which lesion is fully ascertained, and the effects of which may be suppressed by trephining; 2nd, when there are dilated pupils, with symptoms of general compression, which symptoms are tending infallibly to produce death.—*Ibid.*

THE SUB-CUTANEOUS TREATMENT OF CONGESTION ABSCESSES.—Dr. Wertheim reports thirty-two cases of virulent bubo, congestion abscess, hydrocele, and ganglion at the wrist, in order to prove the advantages attending a plan of treatment which consists in the removal of the accumulated fluid through a small trocar, and subsequent injection of some medicated fluid. The introduction of tincture of iodine, and of other agents hitherto employed for injection in similar cases, is believed to be prejudicial in cases of congestion abscess, as these frequently irritate and set up inflammation. The solutions used by Dr. Wertheim are the following:—Hydrochlorate of morphia, gr. iv to ʒij of distilled water; camphor, ʒi, rubbed up with ʒij of mucilage of gum-arabic and ʒiv of water, and filtered; creosote water; sulphate of copper, in one or two grains in ʒi of distilled water; and chloride of lime (one to five grains in ʒi of water). An exploring-needle or small trocar is first passed into the tumour, the fluid contents of which are then forced out by gentle manual pressure; then, by means of the hypodermic syringe, ten drops of the solution of hydrochlorate of morphia, or twenty drops of one of the other solutions, are slowly introduced. During the after treatment, the tumour is repeatedly emptied of its secreted fluid by pressure, and the injection is repeated, at first daily, and subsequently less frequently. Ice compresses are applied over the swelling, and the patient recommended to keep to his bed. Dr. Wertheim has derived the following results from his extensive experience of this method of treatment. 1.—It is followed by an immediate cessation of the pain previously existing in the tumour. 2.—There is also a permanent decline of all other symptoms of inflammation, in no instance were local or general symptoms or reaction observed to follow the treatment. 3.—A thick purulent fluid is converted into an exudation which becomes more and more watery, and the quantity of which gradually diminishes up to the end of the third or fourth week, when there is complete absence of secretion, and healing without a scar. 4.—The swelling should not be punctured and injected, unless there be full fluctuation; otherwise infiltrations, which disappear very slowly, will remain behind. In conclusion, Dr. Wertheim states that the sub-cutaneous treatment seems to be indicated in cases of fluctuating buboes, and of recent and mature congestion abscesses, as, in those instances where failure occurs, this result is soon rendered evident, and the practice of incision can afterwards be resorted to.—*Wien. Med. Wochen Schr.* 87,—1868.—(*British Medical Journal.*)

POISONING OF AN INFANT BY LAUDANUM: RECOVERY UNDER SHAMPOOING AND BELLADONNA, BY A. CALKINS, M.D.—In Livingston County, N. Y., a child three months old had an enema containing a small tea-spoonfull of laudanum administered to it by its mother. The operation occurred in the morning, and by mid-day the child, after convulsions, was verging into deep coma.

A shampooing process was now commenced, relieved occasionally by jets of cold water over the body. Tincture of belladonna, about three drops per hour in water, was also administered.

This treatment was continued for three days and three nights; the child recovered.—*New York Medical Journal.*

ORIGINAL COMMUNICATIONS.

◆

EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON, AND ON THE EFFECTS OF CERTAIN METHODS OF TREATMENT.

BY J. FAYRER, M.D., C.S.I.

Present.—Drs. FAYRER, CUTCLIFFE, and Mr. SCEVA.—
August 21st, 1869.

EXPERIMENT No. 1.

A LARGE pariah dog was bitten at 3-24 p.m. in the thigh by a cobra that had been in confinement for some weeks, and had bitten before. Strong carbolic acid was immediately rubbed in, the punctures having been scarified. 3-30.—The Hakeem who administered the "antidote" last Saturday again presented himself with another, and he was allowed to administer as much of it, a fluid resembling the former one, as he pleased. 3-37.—The dog staggers as he walks; another dose of the antidote administered by the Hakeem. 3-40.—The dog is slightly convulsed, pupils dilated, and limbs partially paralysed. 3-42.—Unable to stand when raised; is convulsed. 3-45.—Quite paralysed. 3-48.—Dead—in 24 minutes.

A gentleman who had believed, from some experiments performed under his own supervision, in the efficacy of carbolic acid, witnessed this experiment, and was satisfied that the acid is powerless to counteract the deadly effects of the poison. The Hakeem also expressed his conviction that the cobra-bite is inevitably mortal. Neither of these agents, indeed, had the slightest effect, and the dog died very rapidly, considering its size and strength, and that the snake was not fresh.

EXPERIMENT No. 2.

A small dog was bitten at 3-48 p.m. in the thigh by another cobra, also not fresh like the first. A solution of the powdered leaves of aristolochia indica, for which I am indebted to Mr. ——, of Mirzapore, was then administered, the fang wounds having been previously thoroughly well rubbed with strong carbolic acid. 3-52.—The dog is staggering. 3-57.—The dog is staggering. 4-2.—Convulsed in hind legs; paralysis of limbs commencing. 4-10.—Convulsive twitchings of the muscles generally. 4-12.—Unconscious, and convulsed. 4-15.—Dead—in 19 minutes.

The antidotes were as powerless on this occasion as on others. The aristolochia has long been held in estimation as an antidote; it must, I fear, share the fate of all the others.

EXPERIMENT No. 3.

A small white dog had the inguinal fold of integument raised with two pairs of forceps to stretch it. This was then bitten (at 3-56) by a cobra not fresh, and that had been in confinement for some time. The fangs must almost have perforated the entire thickness of the fold of integument. With a sharp scalpel the fold of skin was at once entirely excised, the bitten part being certainly included in that removed.

4-18.—Looks sluggish, but no positive indication of the action of the poison as yet manifested. 4-27.—Muscular tremors. 4-31.—Deep breathing; lies, looking very sluggish. 4-40.—Very sluggish; muscular twitchings. 4-45.—Can hardly rise; staggers and lies down again. 4-49.—In convulsions. 4-55.—Dead—in 1 hour.

This was a very interesting and very instructive experiment, most clearly demonstrating the deadly nature of the virus and the awful rapidity with which it passes into the circulation. The bitten part was not merely excised as we speak of excising the parts around the spot which the fang had penetrated, but the fold of skin into which the fangs had injected the poison was removed within a second after the bite, for the knife had entered almost before the fangs had left. In fact, it could not have been done more rapidly, and yet within one hour the animal was dead from the effects of the poison. The infinitesimal portion of time during which the cobra's fangs were inserted into the tissues was sufficient to have sent the poison through the circulation, beyond the reach of incision; and yet how very small must that quantity have been. Nothing I have yet seen has so thoroughly demonstrated the deadly effects of the snake-poison.

EXPERIMENT No. 4.

Two drops of venom taken from an old cobra, that is, from one some weeks in confinement, were mixed with 4 parts of water, and injected hypodermically into a fowl's thigh at 4-2 p.m. 4-4.—Drooping; cannot rise when roused; comb and wattles becoming livid, losing their brilliant red color. 4-7.—Lying on its side; convulsed. 4-10.—Dead—in 8 minutes.

Diluting the poison with water has no effect in destroying its action. Death occurred in 8 minutes, and would have probably occurred sooner, had the poison been taken from a fresh snake.

EXPERIMENT No. 5.

A fowl was bitten in the carpus by a cobra at 4-12 p.m., the fangs were deeply imbedded. The part was immediately amputated at the carpal joint, and a ligature placed above to prevent hæmorrhage. This is the same fowl that had precisely the same experiment tried on it last Saturday and recovered. 4-55.—Fowl quite unaffected. At 7 p.m. of the 22nd the fowl was still alive and well. It had thus escaped a second time, and is probably the only living creature that ever went through the ordeal of a cobra's second bite.

It is evident that the immediate amputation of the part saved the fowl's life.

EXPERIMENT No. 6.

A small cat was bitten in the tail by a cobra at 4-27 p.m. The part was amputated above the bite in 20 seconds; this time was purposely allowed to elapse before the operation. A ligature was applied to prevent serious hæmorrhage.

4-47.—The cat still seems unaffected, except that the breathing is hurried. 4-55.—Still vigorous, runs about, but breathes hurriedly. 5-30 p.m.—Seems slightly affected; breathing is hurried. 6 p.m.—No further change. August 22nd, 8 a.m.—Appears natural, but it is evident, from the muco-sanguinous nature of the excreta during the night, that the cat has been slightly under the influence of the poison. August 22nd, 1 p.m.—Looks well; appears free from pain; no symptom of the poison beyond slight weakness. 7 p.m.—The same.

This animal has also escaped; the experiment is not thoroughly satisfactory or conclusive, as the cobra was not fresh, and the tail is not a very vascular part. Still it is suggestive of the benefit to be hoped for from early excision, and seems to show that, although the operation may not altogether preclude the entry of the poison into the circulation, yet that it may limit it to a degree in which it is not fatal.

EXPERIMENT No. 7.

Two drops of carbolic acid put into a large cobra's mouth at 4-50 p. m. 4-52.—Twitching in convulsive movements. 4-53.—Faint. 4-54.—Dead.

This acid is very poisonous to all snakes.

Present.—Dr. Fayrer and Mr. S[illegible].—August 28th, 1869.

EXPERIMENT No. 1.

I have just received from Mr. H. E. S[illegible], c.s., from M[illegible], leaves and stalks of a wild plant growing in [illegible], used by the natives [illegible] in the treatment of the bites of snakes [illegible] such as the [illegible]. The plant was brought to Mr. S[illegible]'s notice by Baboo H[illegible]. I have been as yet unable to find out its botanical name. The juice of the fresh plant was extracted [illegible] with that of the green ginger, according to instructions.

A [illegible], but strong and active dog was then bitten [illegible], at 3-7 p.m., by a cobra (kala keautia), that had been in confinement for some weeks. One ounce of the juice was administered at 3-30 and some of the juice with the bruised leaves rubbed on the fang punctures. The leg was partially paralysed almost immediately after the bite. 3-40. Staggers in his hind legs as he walks. A second dose of the juice administered. 3-50. The dog is lethargic, and breathes rapidly. 4 p.m. Looks sluggish and sick; walks feebly, dragging the hind legs. 4-2 p.m. Another dose of the juice administered. 4-10. Is sick; vomited a quantity of frothy mucus, tinged with the juice of the plant. 4-12.—Another dose given. 4-15. Sick again. 4-18. Constant retching. 4-21. Staggers [illegible] very restless; keeps his nose on the ground. 4-27.—A[illegible] retching; rises and staggers as he walks. 4-30. [illegible] his sides convulsed. 4-32.—Violently convulsed. 4-35. Slight convulsive movements in [illegible]k. Respiration has ceased. Heart still beats. 4-37.—Dead—1 hour.

This dog, though small, was full grown and vigorous. The snake was not fresh, hence, perhaps, the reason that death did not occur for one hour, instead of 30 to 40 minutes, as is usual.

EXPERIMENT No. 2.

A small pariah dog was bitten in three places in the thigh, by a full grown bungarus fasciatus, that was brought from S[illegible], in Beerbhoom, about three weeks ago. The snake seemed vigorous, and was just completing the exfoliation of its epidermis. The snake bit at 3-48 p.m.—At 5 p.m. there were no symptoms of poisoning. The dog, perhaps, looked a little depressed, but that might have been from fear. The bungarus would not strike, even when the dog trod on it; it did its best to get out of the way, as I have so frequently seen with other snakes. It was only when its jaws were closed by the snake-[illegible] on the dog's thigh that it bit. 6 p.m. No change. 8 p.m. Vomited. 9-15. Lying down; on being raised on his feet [illegible] walk; steps irregularly. August 29th, 7 a.m.—Vomited [illegible]. 9 p.m.—Lying on his side, in which position he has remained all day; refuses food. 30th, 7 a.m. Appears to have recovered partially. Noon. No further change. 6 p.m. Looks better. 31st, 8 a.m. Still improving; takes food and water. September 1st, 8 a.m. Appears to be again suffering from the poison. 2nd. Worse, unable to stand, or walk steadily. 3rd. Unable to stand. 4th. Unable to stand, tries to eat, but takes very little. 5th. Very weak, has diarrhœa. 6th. The same. 7th, 4-55 p.m. Died.

I [illegible] of [illegible] was [illegible] of the [illegible].

EXPERIMENT No. 3.

[illegible] No. 2 [illegible] severely [illegible] (kala keautia) at 3-54 p.m. At 5 p.m. there was no [illegible] bungarus was [illegible]. 29th, 7 a.m.—Sluggish; [illegible] about the head and neck.

Mr. S[illegible] reports that the bungarus died on Sunday [illegible] forenoon. He expresses a doubt as to its death being the result of the poison.

EXPERIMENT No. 4.

A fowl was bitten in the posterior part of the thigh, by a [illegible] at 4-6 p.m. Immediately the snake's [illegible] the part was cut out (the mass of muscle, [illegible] the two fang punctures, was completely excised; [illegible] two seconds [illegible] intervened between the bite and the [illegible] of the part bitten. A ligature was placed tightly [illegible] round the thigh above the part bitten, and was relaxed [illegible] before the part was excised. The object of the ligature [illegible] of the poison by the circulation, [illegible] that the fangs were [illegible] imbedded in the flesh.

4-12.—Fowl crouching; head beginning to droop. 4-13.—Head nodding; beak resting on the ground, but still easily roused [illegible]. 4-16.—Very drowsy, head fallen over on the ground. Cannot stand or walk, but can still be roused. 4-25. Can still be roused, but is very much depressed. 4-35.—In convulsions. 4-44.—Convulsive movements; weaker. 4-56. Slow respiration; occasional convulsive movements. 5-10.—Dead in 64 minutes.

It [illegible] that, although excision in this case did not save life, it retarded the effect of the poison, and prolonged life. Had the part not been excised, it is probable that death would have occurred in a few minutes, instead of an hour and four minutes. The inference is, that when the poison is injected into a muscular part, before excision can be practised, a certain amount has already entered the venous circulation, and some of it has, by diffusion, passed beyond the reach of the knife, and so more slowly enters the circulation, and kills. In cases where amputation of the whole part can be practised, the latter danger is obviated; and if done very rapidly, as in the case of the fowl, in which the carpus was amputated, it may save life. The blood coagulated firmly after death.

EXPERIMENT No. 5.

A large fowl was bitten in the thigh by the cobra (kala keautia), that bit in Experiment No. 4, at 4-55 p.m. In this case the part was not cut out. The fowl was left to its fate, the object of the experiment being to contrast the effects with those where the part had been excised, the bite being inflicted by the same snake.

5-1. The fowl is crouching, but is easily roused; has hurried breathing. 5-4. Drooping rapidly, beak resting on the ground; starts up [illegible] itself, as out of sleep; falls back into a profound state of lethargy. 5-8. Springs from the ground with convulsive movements. 5-12. Violently convulsed; and lies on the ground. 5-15. Dead in 18 minutes.

This fowl was a more powerful bird than the one previously bitten by the same snake, and yet it lived only 18 minutes, whilst the one that had the earlier, and consequently more virulent bite, lived 64 minutes. The prolongation of life is evidently due to the excision of the bitten part in the first fowl; and though it shows only mitigation, and not annihilation of the effects of the poison, it is so far encouraging, for it gives time, during which other [illegible] may be had recourse to. But it [illegible] proves, when contrasted with the experiments in which amputation was performed, that in excision, diffusion of the poison takes place through the tissues beyond the limits of the fang punctures, and that from this diffusion, fatal absorption may take place.

EXPERIMENT No. 6.

A fowl was bitten in the fore-arm, between the ulna and radius, by a cobra, at 4-30 p.m. The part was *immediately* amputated at the elbow joint; a ligature was applied to prevent bleeding. 4-40.—The fowl seems unaffected. 5-6.—Seems quite well.

7th September.—The fowl is still alive and well; it also has been saved by the immediate amputation, as in the case of the cat and the other fowl. The cases in which excision was practised all proved ultimately fatal, though death was delayed. Why is this? The reason, I believe, is, that when excision only is practised, although it may extend beyond the limits of the cobra-bite, yet does not remove so much of the poison as has already so rapidly been diffused throughout the tissues.

The inference from this seems to me very clear, that in case of a bite in the finger or toe in a human being, amputation, if performed without delay, would offer the best chance of life. It is a terrible alternative; but as it is, perhaps, the only chance of saving life, it should be done.

All the snake-men that I have seen admit that they have all little or no belief in any medicines; but that they know of instances where men have been bitten by cobras, and have recovered, by binding ligature in several places tightly round the limb above the punctures, and then by burning the bitten part thoroughly either with a hot iron, a live coal, or exploding gunpowder.

I hope on a future occasion to consider the whole question of "what may be done in snake-bite," and to summarize the results of such observations as I have been able to make myself, or to gather in a reliable form from others.

Present:—Dr. FAYRER and Mr. SCEVA.—September 4th, 1869.

EXPERIMENT No. 1.

A pariah dog was bitten by a cobra (bansbaniah keauteah, of the snake-men), in the fore-arm at 3-42 p.m. Carbolic acid was immediately rubbed into the bites and within two seconds, a strong ligature was tied as tightly as it could be drawn round the limb above the wounds.

3-44.—The dog is restless; the bitten and ligatured limb is almost paralysed from the tension of the ligature; below the ligature it is intensely congested, and dark blood is dropping freely from the fang wounds. 3-52.—Ten drops of carbolic acid, diluted with an ounce of water, were administered internally. 4 p.m.—The dog is lying down, and is very sluggish; but when he is roused he walks about. 4-5.—Lying on his side; restless; half convulsive movements of the limbs; breathing accelerated. 4-10.—Is now in the sitting posture, with fore-legs stretched out in a rigid convulsive manner. 4-11.—Rises; staggers as he walks. 4-14.—Rises; falls over again. 4-19.—Hind legs twitch convulsively. 4-24.—Convulsive twitchings; is sick. 4-26.—Cannot stand; is convulsed. 4-30.—Sick and convulsed. 4-32.—Heart still beats; no respiratory movements. 4-33.—Dead—in 51 minutes.

This experiment shows how futile the carbolic acid and the ligature are, even when thoroughly and rapidly applied. The ligature was tightened to the extremest strangulation of the limb, within two seconds of the cobra's bite. The carbolic acid was applied even sooner, and yet the symptoms of poison set in rapidly, and death occurred within the hour. The snake, it is to be observed, too, was not a fresh one, and had been some time in captivity.

EXPERIMENT No. 2.

A pariah dog was bitten by a cobra (keauteah), in the inguinal fold, which was raised and stretched for the purpose. The fangs penetrated deeply, and the part was immediately excised by a clean sweep with a sharp scalpel, the part wounded being completely removed. The cobra was not fresh, but it was active and vigorous, and bit fiercely.

4-12.—The dog is restless. 4-27.—Breathing accelerated. 4-35.—No further change. 4-40.—Looks sluggish; eyes blinking; breathing rather rapid. 4-46.—No change. 6 p.m.—No change. 9 p.m.—No change. 5th September, 8 a.m.—Looks well; takes food. 6th September.—Quite well; not affected by the poison.

This dog escaped. The excision in this case proved successful; it was done very rapidly, and extended considerably beyond the marks of the snake's fangs.

EXPERIMENT No. 3.

The poison of a cobra (teturiah keauteah), was removed, and two drops inserted between the eye-lids of a healthy and vigorous young puppy, at 4-12 p.m. The dog was examined again at 4-37 p.m., and the eye was found to have been most seriously affected. There was intense chemosis of the conjunctiva, so much so, that the eye could not be seen, and the lids well puffed out like a ball. The chemosis was very pallid.

4-46.—Dog again examined, and found to be deeply under the influence of the poison. Convulsed in the limbs; unable to stand, and salivated.; starting and whining with a short, snapping, snarling sound; chemosis intense; eye-lids swollen like a ball; the eye cannot be seen. 4-54.—Paralysed and convulsed. 4-56.—Dead—in 44 minutes.

The result of these experiments surprised me much, for it proves that absorption of the poison can take place through a membrane, and prove fatal. I am certain there was no wound or abrasion of the conjunctiva, and yet the influence of the poison was rapid and deadly. Previous experiments have not illustrated this effect of snake-poison; according to most observers, it has been thought that the poison could be applied with impunity to any surface, even of mucous membrane, provided there were no wound.

EXPERIMENT No. 4.

Having exposed the surface of the pectoral muscle of a fowl, and having raised a few of the superficial fibres, without causing the effusion of more than a few drops of blood, two or three drops of the poison, just taken from a cobra (keauteah), were rubbed into the exposed surface at 4-12 p.m.

4-23.—Apparently not affected. 4-26.—The bird is drooping: head declining; rises suddenly with a start, as if awakened suddenly from a sound sleep; head falls over again, and the point of the beak rests on the ground. 4-32.—Rises and staggers; falls over in convulsions. 4-37.—Violently convulsed. 4-45.—Violently convulsed. 4-48.—Dead—in 36 minutes.

This experiment also proves that absorption of the poison takes place through the walls of the vessels; for, although the muscular fibre was exposed, there was scarcely a bleeding point. It shows the danger of allowing the poison to come in contact with any raw or abraded surface.

EXPERIMENT No. 5.

A very large bungarus fasciatus, five feet long, was bitten by a fresh and vigorous cobra at 4-46 p.m. The bite was inflicted near the tail. 6 p. m.—Very sluggish. 7-20.—Dead.

Mr. Sceva notes that he thinks that death may have been caused by injuries inflicted from compression during handling the head being very small, compared with the cobra and viper, the snake-man grasps the neck more firmly for fear of slipping, and hence may have caused the injury. But the results of more than one experiment induce me to believe that the bungarus is, though in a much less degree than the viperous snakes, [illegible], and that it [illegible] to the cobra or viper poison. At the same time I quite recognise the justice of the doubt which is thrown on the subject by Mr. Sceva.

ON THE INFLUENCE OF SNAKE-POISON WHEN APPLIED TO UNWOUNDED SURFACES.

Present.—Drs. FAYRER, CUNNINGHAM, and Mr. SCEVA.

September 11th, 1869.

EXPERIMENT No. 1.

Some poison was taken from a cobra (tet[illegible]riah keauteah), and about a drop inserted between the eyelids of a pariah dog at 2-58 p.m.

3 p.m.—The eye is already much irritated; lachrymation profuse. The dog keeps rubbing it with his paw, and resting the side of the head against the wall; he is very restless and uneasy; chemosis rapidly increasing. 3-5.—Lying down; rubbing the eye, which is much chemosed; whining and restless. 3-16. Dog very restless; lies with his head resting against the wall. 3-28.—Eye intensely swollen; the animal is very restless, and whines. 3-35.—He is evidently under the influence of the poison, breathing deeply. 4-1.—Lying quiet; breathing very deep. 4-11.—Lies curled up. 4-16.—Gets up; is quite intelligent, is very weak and cannot stand long; the eye is intensely swollen, with a pale chemosis. 5-15 p.m. On being roused from a lethargic state, appears stupid and confused; eye intensely swollen; lies down again, and sleeps soundly. 5-31.—Breathing slowly and heavily. 6 p.m.—Sleeping comfortably. 9-30.—Walks without difficulty; looks more natural; rubs the swollen eye with his fore paw. The constitutional effects of the poison are evidently passing off.

12th September. 3 a.m.—Sleeping comfortably; breathing natural. 8 a.m.—Swelling of eyelids diminishing; appears lively. 5 p.m.—Steadily improving. 13th. Improving, opens the eyelids; the cornea is quite opaque, and there is a muco-purulent discharge from the eye. 14th. The dog is recovering. 15th. Except that the cornea is opaque, and some conjunctivitis exists, the dog is well, he is cheerful, takes his food well.

It appears [illegible] that in the case of the dog was [illegible] caused by absorption from the conjunctiva. The constitutional effects were not so severe as in the former case, but the local mischief was very serious, and for a time, at all events, have destroyed the sight of the eye. [illegible] no doubt, caused the corneal mischief. The results of these experiments show how careful [illegible] should be to protect the eyes when handling and approaching [illegible], when it is possible that, [illegible] attempts to strike, [illegible] the eye. In another experiment [illegible] was thus thrown into the eye of [illegible] in the experiments. The poison had been applied to a dog's nostril, and in the [illegible], the accident happened. The eye was [illegible], care being taken not [illegible], beyond [illegible], and [illegible] followed.

EXPERIMENT No. 2.

Some poison was taken from a spectacled cobra (gokurah), and a drop or two inserted into a pariah dog's nostril at 3 p.m. Violent sneezing and profuse watery discharge from the nostril resulted almost immediately.

3-30.—The sneezing and watery discharge continue, and seem to irritate the dog considerably. 3-45.—No constitutional effects of the poison manifested, but the local symptoms continue unabated. Two drops more of the same poison were well rubbed into the palate. 4-15.—No change. Two more drops rubbed into the mucous surface of the cheek. 4-25.—Not affected. The last applications appear to have caused no irritation. 5 p.m.—No change. 12th September, 3 a.m.—Does not appear to be affected in any way by the poison. The catarrhal symptoms have passed away. 13th.—The dog is well.

In this case, beyond the local irritation, no effect was produced.

EXPERIMENT No. 3.

A drop of cobra-poison was inserted into a fowl's eye at 3-15 p.m.

3-18.—Eye already much swollen; membrana nictitans deeply chemosed. 3-30.—Eyelids quite closed; no constitutional sign of poisoning. 3-37.—No change. 4-10.—Another drop inserted into the same eye. Much irritation immediately followed; the fowl is constantly trying to scratch the eyelid with its foot. 4-20.—Beginning to droop, nodding its head; sleeping as fowls do when they begin to feel the influence of the poison. 4-30.—Head more drooping. 5.—No further change; no worse. 5-30. Eyelid is greatly swollen, but no appearance of any constitutional action of the poison. 9 p.m.—The same. The fowl continued to improve. The eyelids and conjunctiva became less swollen, and gradually recovered; and on the 16th, the bird was perfectly well, and its eye quite right again.

In this case also, as in that of the dog, the local symptoms were very severe, while the constitutional symptoms were mild and transient. They equally showed that the poison can be absorbed through the unbroken surface of a membrane, and that the conjunctiva especially is apt to permit of this endosmosis.

EXPERIMENT No. 4.

A few drops of cobra-poison were rubbed into the mucous lining of a fowl's mouth at 3-12 p.m. 4-15.—No effect; no sign of either local or constitutional disturbance. 12th, 8 a.m.—Not affected. 13th.—The fowl is perfectly well, and does not appear to have been in the least affected by the poison.

In this case, as in the experiments on fowl and other animals, no evil resulted from the contact of the poison with the tongue and mucous surface of the mouth.

The evidence of these four experiments is not absolutely conclusive as to the extent to which the poison may operate by absorption through a mucous membrane. They prove that absorption in the case of the conjunctiva, and the schneiderian membrane really does occur, whilst in the mouth absolutely no effect was produced. But the poison was not taken from fresh or vigorous snakes, that is, they had been some time in confinement, and its action may have been impaired. Sufficient, however, is shown to prove how dangerous the contact of the poison with the delicate mucous surface may really [illegible]

ON THE RELATIONS BETWEEN THE VARIOLOUS DISEASE OF CATTLE CALLED "GOOTEE" AND TRUE VACCINIA, WITH SPECIAL REFERENCE TO INOCULATION AND VACCINATION.

BY KENNETH McLEOD, A.M., M.D., L.R.C.S.E.,

Assistant-Surgeon, 6th Native Light Infantry.

(*Continued from page* 209.)

III.—*As a rule, one attack of "gootee" or "rinderpest" is prophylactic against another.*

As regards rinderpest, the evidence of immunity against a second attack is so strong, that the proposition has passed into a current belief among scientific men both in England and on the Continent. Professor Simonds, in his evidence before the Cattle Plague Commission, says that "it is a well-known fact that an animal never contracts it twice."

The report of the Veterinary Department of the Privy Council on the cattle plague of 1865-66, affirms that "it rarely occurs more than once in the same animal." These statements are authoritative, and were confirmed in England by careful experiment by Professor Varnell. In India the matter has not been so clearly brought out. One authority, Mr. Sawers, of Culna, says that a second attack of gootee is "almost unknown." Veterinary Surgeon Farrell expresses an opinion to the same effect. The point is an important one, and should, when opportunity offers, be made the subject of careful observation. Meanwhile, there is every reason to believe that, in common with all other exanthems one attack secures immunity from subsequent seizures. This is also asserted to be the case of a disease of a similar kind, which Veterinary Surgeon Gudgin studied in Burmah. He describes no eruption. It still remains to be discovered whether the eruptive variety (*gootee*) is prophylactic against the non-eruptive variety (*puschima*) or *vice versâ*; I can find no evidence on this point. This feature of exanthematous diseases would seem to occupy a very high place among the points which determine their resemblances and differences; capable even of distinguishing different varieties or epidemic outbreaks of the same specific disease. It is the most delicate test which comparative pathology possesses, and capable of being largely employed in the way of inoculation.

IV.—"*Gootee" and rinderpest are capable of being communicated by "natural infection" to animals other than cattle.*

"In India different observers have noted that buffaloes, sheep, goats, deer, horses, pigs, fowls, ducks and pigeons are liable to be attacked both by "*gootee*" and "*puschima*." In Ceylon, according to Sir J. E. Tennant, elephants are subject to cattle "murrain."

In Europe, sheep, goats, and deer have been known to take the rinderpest, but not so easily as the cow. A curious observation is made in the second report of the Cattle Plague Commissioners (page 6.)

"It," (the rinderpest), "re-appeared in November, (in France) in the *Jardin d'Acclimatation* in the *Bois de Bologne*, having been carried thither by two gazelles brought from India, which had been for three or four days in London. From them it rapidly spread to yaks, zebus, goats, and fallow deer, and the sacrifice of about 35 of these animals was necessary to arrest its progress."

As regards sheep, the Report of the Edinburgh Cattle Plague Committee, (Appendix to Cattle Plague Commissioners' 3rd Report, page 223), after extended observation, states that "they are by no means so liable to take it as cattle, and that they do not generally take it in so severe and fatal a form.' This seems to express the general truth; but in this as in every other point there are exceptions to the rule, depending on circumstances of the particular epizootic prevailing, which, until we know what conditions determine the comparative severity of different epizooties and epidemics in different countries, districts, and seasons, we can't explain. With regard to the small-pox of domestic fowls, it is a well-known disease, but no proof exists of its being derived from cattle or man, except the general statements made by non-professional reporters. Dr. Macpherson ("Cholera in its home," page 14), says—"there is a disease among cattle, called by the natives small-pox, having some analogy with rinderpest, and also a disease among fowls, which have sometimes prevailed, simultaneously with small-pox in Lower Bengal, but oftenest quite independently of it."

I have only had one opportunity of studying this disease. The affected animals fevered, patches of scarlet appeared on the comb and bare parts of the head on which dry scabs formed, the eyes and nostrils watered, and subsequently mattered, and, they died in four or five days. I found aphthous patches on the conjunctiva, pharynx, and larynx, punched out ulcers of the stomach and congestion of the small intestine, clots of decolorized blood in the heart, and emphysematous and lobularly congested lungs. I procured a lot of healthy fowls for the purpose of making some experiments; but unfortunately (!) the disease subsided. I know no instance of the "natural infection" of man, by either *gootee* or rinderpest. There is another epizootic called aphtha epizootica, or foot and mouth disease, in this country called *khorah*, which has been communicated to man by natural infection, inoculation, and through milk (Dr. W. Balfour, in *Edinburgh Medical Journal*, February, 1863); but no positive evidence exists of the disease in question having been "taken" by man. On the contrary, there is evidence on the other side. Mr. G. G. Macpherson of Moorshedabad, writing in December, 1832, says:—"It is an extraordinary fact, and worthy of remark, that, while the cows were thus affected, no case of variola amongst the natives in the village presented itself." This is consonant with universal experience. The most that has been noticed is, that an epidemic of small-pox and an epizootic of *gootee* have prevailed simultaneously, as was recently observed in Palamow. This accords with the observation made in England, that foot and mouth disease was more common and virulent in the cattle plague year, and that "the year was peculiarly favourable to the spread of zymotic diseases generally, and to the rapid decomposition of organic matter." (3rd Report of Cattle Plague Commission, page 4.) Notwithstanding this, I am far from denying the *possibility* of communication of this disease to man by natural infection. One carefully observed positive instance from which all sources of fallacy were excluded would weigh against any amount of negative evidence.

Evidence exists that in Russia at least man is liable to be infected with the Siberian plague of cattle. In the Russian "Medical Laws," para. 1721, it is stated that the Siberian plague is sometimes communicated by cattle to man, and minute detailed instructions are contained to prevent infection of attendants upon cattle by contact with sick animals. Eating diseased food, being stung by insects which have settled on sick cattle, consuming milk, butter, or cheese derived from them, or by inoculation of cracks, cuts, or eruption.

Attendants are advised to wear tarred gloves, and surgeons specially enjoined to wash their whole body with soap and water!

Consul General Murray, writing from Odessa, states that "men are known to have caught the disease from cattle, but such instances are rare."

(Appendix to report of English Cattle Plague Commission) [illegible] *diseases, and capable* [illegible] *species of animals.*

The inoculability of a disease brings it into the same category with a large [illegible] other conditions, and affords a peculiar opportunity for experimental study. Indeed, this quality forms a well-marked mode of differentiating disease conditions, which, when the intimate nature of disease poisons is better known, will come to be of the greatest interest and value. Inoculation is not only a means of conveying contagium from one animal of the same species to another, whether the disease is capable of propagation by infection or not, but is, in many cases, the only means at our disposal of conveying it from one species to another.

Experiments on cattle in this country have been rare. Veterinary Surgeon Thacker inoculated three animals with matter obtained from an ulcer in a case of rinderpest (non-eruptive) prevailing in 1865 on the Neilgherry Hills. All these took the disease and two died of it. Veterinary Surgeon Farrell more recently communicated gootee to some cattle in the 24-Pergunnahs, by inoculation. These experiments simply prove the *easy* liability of cattle to be inoculated by both these forms of diseases. In Europe, however, experiments have been conducted on a very large scale indeed, mainly with a view to discover whether a mitigated form of disease, with little or no mortality, could be produced by any means. The English experiments proved that it was easily and with certainty communicable by inoculation to cattle of all sorts, sheep, goats, and deer. Animals other than cattle were not so easily effected. A single experiment was tried on a pig and donkey by Professor Varnell, but without effect.

On the Continent, certain communicability has been established over and over again.

Curiously enough, Indian experience is in advance of English regarding communicability by inoculation to man. Dr. Murchison (Appendix to Third Report of the Cattle Plague Commission, page 77), has the following, which, from its extreme importance, I shall quote at length :—

"In 1857, Mr. Brown, a Surgeon in Assam, inoculated four children with matter taken from cattle labouring under a very severe epizootic of *mhata*. He made use of the 'scales or scabs taken from the back or abdomen,' reducing them to a pulp with water. 'In all four vesicles in every respect resembling, in their progress and when mature, genuine vaccinia made their appearance, and went through the same regular course, the constitutional disturbance on the 8th day only being more severe than I have usually seen it in the latter. From these many other native children were inoculated, and no doubt of the genuineness of the lymph were excited until two English children were punctured from one of them, and it was then found that small-pox supervened in both of these cases; and this was more than suspected to have happened in many of the native children who had generally dispersed a few days after the operation, and were not afterwards heard of. One of the English children, unhappily died.' In 1837 another series of inoculation was performed (by Mr. Macpherson in Bengal), with virus from diseased cows, on which occasion an eruptive complaint of the true variolous nature was produced."

"The same phenomena were observed at Gowalparah by Mr. Ward. 'In several of his cases the symptoms were so severe as to excite apprehension that the disease would terminate fatally. He was so strongly impressed with this fact, that he thought it would be better to take human small-pox rather than cow small-pox for inoculation, when the latter assumes its dangerous and fatal form.' "

The foregoing is, to my mind, final, as regards the question of inoculating the human subject with "gootee." It "takes," and "takes" severely, and produces a variolous disease. Whether it is protective against variola proper or not has not been determined, and any repetition of these experiments would be unjustifiable in the highest degree. Appended to the same report of Dr. Murchison is a case by Mr. Ceely, of Aylesbury, of a cattle inspector who was accidentally inoculated while assisting in performing a *post mortem* examination of a bullock recently dead of cattle disease. A vesicle formed on the spot which went through all the stages and appearances of the vaccine vesicle, though more slowly. Both local and constitutional symptoms were, however, most severe. This case is figured by Dr. Murchison, and Mr. Ceely and others recognised the close resemblance to the vaccine vesicle.

In 1867, Professor Simonds requested some of the matter of gootee to be sent home for experiment, but Dr. Green, the late respected head of our department, strongly discountenanced the scheme, and I believe the request was not complied with. While we possess in vaccination such a mild, manageable and at the same time efficient agent, dangerous experimentation with gootee or rinderpest is obviously improper.

VI.—*An attack of rinderpest induced by inoculation is prophylactic against a second attack.*

I have not included gootee in this proposition, because clear evidence and further experiment is required to determine the point. The only experiments I know of are those of Veterinary Surgeon Farrell, who inoculated two animals with gootee. They took the disease, recovered, and subsequently had, on exposure to infection, milder attacks of the same disease. In England this point was not clearly brought out, but on the Continent, abundant experience exists in proof of it. Numerous experiments have proved that *in certain circumstances* animals once inoculated with rinderpest, which took the disease severely, resisted the strongest re-exposure to infection. The breed of the animals, and the nature of the epizootic, whether mild or severe, whether *eruptive or non-eruptive*, seems, however, to have modified both the nature and degree of severity of the resulting symptoms and the protective power of the operation. So uncertain and unsatisfactory were the results obtained by various observers in Russia at various times, and in varying circumstances, that a Commission appointed to investigate the subject could not recommend the universal adoption of inoculation.

VII.—*The disease induced by inoculation of rinderpest is less fatal than that communicated by natural infection.*

This, again, while it seems to be the rule, is subject to exceptions, depending on the kind of animal operated on, on seasonal and epizootic influences. The result of English experiments is thus stated by the Commission :—"The virus of cattle plague, after transmission through bodies of sheep and goats, returned into the body of an ox, is found to have lost none of its intensity. Repeated transmission of the virus through cattle weakens its power, but in no very sensible degree. At present, the vehicle of the poison, whether it be blood serum or mucous discharge, appears also to influence its action very little, (if at all), while mere dilution has no effect whatever." (3rd Report, page 10.) On the other hand, experiments on the Continent have proved that the mortality of the inoculated disease is reduced to about 5 per cent., and that repeated transmission does modify its virulence materially. A less fatal inoculated disease seems to be unprotective. It must be remembered, however, that the English disease was most virulent and foreign to the country, and that the experiments were conducted in towns where the disease was more virulent and fatal, while the Russian experiments were conducted in the home of the disease, upon a different breed of cattle, and it appears to be a well ascertained law, that the higher the breed of an animal the more easily and severely it takes an infectious disease (Varnell.) It would be foreign to my object to discuss the value of inoculation as a prophylactic measure to be generally adopted. My concern is with its pathological value. Still it may be well to state that the conclusions of both the English and Russian Commissions were opposed to its employment; that the same arguments which hold against human variolous inoculation obtain here also; that it is only applicable to a country where the disease is indigenous, or to a limited infected area, and *that its employment must be combined with the strictest isolation and precautions against the spread of the disease by natural infection.*

On the other hand, the experience of Professor Simonds with ovine variola, and of Dr. Layard in the epizootic of cattle disease in 1780, shews that when mitigation *and* protection can be obtained, and when it is morally certain that, *notwithstanding repressive measures, the disease must spread over a certain area*, artificial induction of it within that area with careful isolation is not only permissible, but advisable. The experience of human inoculation before vaccination superseded it, and more particularly the experience of it in this country, where isolation of the inoculated is a religious duty, coincides with the foregoing.

We have yet much to learn ere we can explain the anomalies of exanthematous diseases, either as epidemic, or affecting individuals. What determines severity of epidemics, or cases, or the reverse? Why do some individuals escape attack and seem to bear charmed lives, while the majority succumb? Why do some individuals have repeated attacks of the disease, while the rule is one attack? What determines the exceptions to the laws of (1.) greater mildness and less mortality of the inoculated disease; (2.) mitigation of virulence by transmission through a different species?

The study of anomalies promises more fruit than the study of normal events, and similar anomalies occur in epizootics and epidemics.

VIII.—*While vaccination is protective against human variola, it protects neither against rinderpest nor ovine variola, nor are the latter three mutually protective.*

As to rinderpest, it was found that "the vaccine virus, whether taken direct from cows, or after passing through the human body, has no effect on cattle plague, and that human small-pox and the virus of the small pox of sheep have likewise no influence." (3rd Report, Cattle Plague Commission, page 10.) The Scotch Cattle Plague Committee further found that natural cow-pox was not prophylactic against rinderpest, nor *vice versâ*, and cite well authenticated cases in proof (op. cit., Appendix, page 221.)

As to human variola, proof is wanting that rinderpest or the proper variola of sheep, horses or camels, is prophylactic against it, while vaccination, or the virus of human variola, transmitted through cattle, sheep, horses, (?) or camels (?) has been triumphantly proved so. Finally, neither vaccination nor variolation are any protection against sheep-pox. (Simonds.)

Conclusion.

With the foregoing facts and considerations in view, it comes to be a most interesting question—which is the specific variola of cows, gootee or vaccinia? I strongly incline to consider gootee or rinderpest the pathological homologue of human variola. If this view is correct, another question of importance arises, namely, what is vaccinia? To this I should answer:—It is specific human small-pox manifested in the cow. How cases of spontaneous vaccinia arise I am not prepared to say. But the contrast between the rarity of vaccinia and its feeble contagiousness among cattle, and the extremely infectious nature of gootee and rinderpest is most marked. Then, while gootee and rinderpest are easily and effectively communicated by inoculation to cattle, the inoculation of cows by human variola is most difficult, and the result invariably vaccinia. This seems to be in obedience to the law above illustrated, that an inoculable disease is with difficulty communicated to a species to whom the disease is foreign, and the manifestation is wider. Dr. Aitkin cites a case where inoculation of a cow, from a fatal case of variola, furnished matter which produced variola fatal in three cases in man. (Science and Practice of Medicine, 3rd edition, page 270.) Besides, cattle have been observed to take human variola by natural infection, in the form of vaccinia (op. cit., page 268.) Moreover, retrovaccination, or successive transmission of vaccine matter from man through the cow, seems to weaken its power, while "after successive re-inoculations on man it regains its activity" (op. cit., page 271.) The truth seems to be, that each species of animal has its specific variolous disease; that the specific variolous disease of each species is protective against itself and not against the others; that when communicated to a species to which it is foreign, either by natural infection or by inoculation, the manifestation of the disease is modified. The conditions of modified manifestation are not well understood, and require further elucidation by experiment and observation. The contrast between vaccinia and gootee only serves to confirm the original conclusion of Dr. Jenner, that small-pox and cow-pox are *identical* diseases. It only remains for me to state, that while gootee is but too common in India, I have never yet heard of a case of spontaneous vaccinia in this country. Any one observing such a case would confer a signal benefit by publishing the fact; but the greatest care would be necessary in exactly discriminating its characteristic features. If an undoubted case of vaccinia were observed, it would be of the greatest interest to ascertain—

1. Whether the case had any relation to gootee, as a relic of an epizootic of that disease, as derived by natural infection or accidental inoculation from a case of gootee, or whether it apparently arose as a disease *sui generis*.

2. Whether the disease could not have been derived either by inoculation or infection from human small-pox.

Both in France and England the question of animal vaccination is now attracting attention.

The advocates of the system appear to proceed on the supposition that vaccinia is essentially a disease peculiar to the cow, and apart from the convenience of this system of multiplying the supply of lymph on an emergency, a reason which all must admit, plead more profound grounds of its universal adoption. If the surmise which I have thrown out, that the cow is merely the laboratory in which the virus of variola *(humana)* is tempered, and mitigated into the form of vaccinia, is correct, the practice of animal vaccination will come to have a different significance, and the variolation of cows, rather than their vaccination, will come to be the correct mode of supplying an efficiently protective lymph.

RESULTS OF SANITATION IN INDIA.

By W. J. Moore, L.R.C.P.,

Surgeon, Rajpootana Political Agency.

(Concluded from page 206.)

We were told in the last budget, that during the next five years barracks throughout India for European troops, will cost from ten to eleven millions of pounds sterling, one and a half million being set apart for the same purpose during the present year.

In addition to this expenditure, we have an elaborate sanitary supervision in every cantonment, and a commendable care exercised over every preventible disease, the shadows of which coming events were not perceptible even when I entered the Honorable Company's Service. But it is now evident, that whatever may be adopted, a heavy penalty must be paid in sickness and mortality, or in invaliding, for the British occupation of the

India plains. We have now, to a great extent, removed the heavy loss [illegible] [illegible] [illegible] [illegible] expenditure and [illegible] [illegible] [illegible], and [illegible] of men [illegible] at Netley, [illegible] from [illegible] [illegible]. [illegible] tendency of extending [illegible] sanitaria to [illegible] very great extent among Europeans [illegible] of [illegible], and under the circumstances [illegible] [illegible] [illegible] [illegible]. The native would benefit by [illegible] to the greatest [illegible] the European [illegible] degree, the latter [illegible] [illegible] against the devastating effects of the heat and malaria of the plains. Something, certainly, can be effected for Europeans [illegible], but not much [illegible] the [illegible] move [illegible] which [illegible] [illegible] maintain a reduced mortality, without an [illegible] invaliding list. And this [illegible] more extensive occupation of the elevated regions and hill ranges of India, the latter [illegible] [illegible] by Martin as "islands in the plains." Since the days of Lind, Jackson, and Hunter, medical officers have not ceased to recommend the extension of hill sanitaria. But it is only during recent years, that the value of hill climates has been mentioned in its most important [illegible], as *preventive* agency. So lately as 1861, Dr. [illegible]* wrote, "to place permanently at such elevations as Ootacamund, all the British troops in India, even if politically practicable, would not prove, in my judgment, the best method of getting the European soldier of the maximum of efficient service, with the minimum sacrifice of life and health. Doubtless, Europeans permanently residing in a hill climate, such as Ootacamund, would retain much of their native vigour, but they would not be efficient for the contingencies of military service in India. If suddenly called to the plains for service in the hot season, there would be a heavy sick list, from *seasoning fevers*,† and biliary derangements. Then the service over, and the men exhausted by heat, fatigue, and sickness, moved back to their hill cantonments, would be subjected to much mortality and invaliding from those forms of disease, for which the cold and rainy seasons of hill climates are unsuitable. Were it possible to transport, *in a few hours*, troops from the camp at Aldershot, to the plains of the Ganges, any time between March and November, use them for active service, and return them *broken in health*, in a few hours from India to Aldershot, any time between October and May, the result need not be told." But it may be well questioned, if such troops would be *broken in health*, by the supposed duty. I believe, with ordinary care, they would suffer far less than a regiment some years in India, entering on the same campaign. As a rule, Europeans enjoy the best health, during the first period of their sojourn in India, and there is no valid reason why soldiers should prove an exception.

In proof of the heavy sick list, which, it is presumed, would result, by bringing troops from the hills for active duty on the plains, the cases of the 1st and 2nd Fusiliers and 75th Regiment have been quoted. These corps hurried at the commencement of the mutinies from Dugshai, Subathoo, and Kussowlee. They made forced marches, they entered a cholera-stricken district, and the 2nd Fusiliers left [illegible] [illegible] behind. All these regiments had been some time in the country, before location on the hills, and the 75th [illegible] [illegible] been at Kussowlee one month. Doubtless, troops called on to endure similar exertions, under similar circumstances, would [illegible] suffer from cholera, sunstroke, and fever, as these [illegible] [illegible]. But I fail to perceive that this is any argument against the location of the Anglo-Indian army on the hill ranges. As I have elsewhere* stated on this subject, I may repeat:—

"I am not at all prepared to admit that every regiment moving from the hills to the plains would suffer in like manner, even on active service. On the contrary, I believe such would not be the case, and it certainly would not be so in the cold weather. Moreover, there can be no doubt, that Europeans descending from *the hills would take the field* with an amount of vigour which they would not bring with them from their stations on the plains. Their blood would be without deterioration by heat and malaria, and although some, of course, would fail, as would be the case in any European campaign, the majority would require months to bring them to that state of cachexia, which they would have acquired on the plains, before the order for active service arrived." But even granting this was not the case; even supposing other regiments, on extraordinary occasions, should suffer as those above enumerated, such instances, as the occasion calling them forth, would be exceptional.

It is that weakening debility, and preparation for organic change, the effects of malaria and heat, consequent on prolonged residence on the plains, which renders Europeans so prone to fatal maladies, on occasions when extraordinary strain is applied on the physical powers. I feel quite convinced, we shall never show [illegible] a small mortality and moderate invaliding list, until we have more Europeans in the hills. The mistake too commonly made hitherto regarding hill climates, is expecting them to cure diseases which they are only calculated to *prevent*. The true value of the climate of the Indian hill ranges and elevated regions is preventive, *not* curative. There are many maladies either not benefited or actually increased by hill climates. But the location of a regiment of healthy men, on a hill range, is a very different matter to the simple utilization of the site, as a sanitarium or summer residence. I believe a regiment fresh from Europe, placed on the hills, would enjoy the ratio of health appertaining to Europeans of similar class, in very many temperate climates. The systems of the men would not only be exempt from the debilitating effects of heat, dry or moist, during the hot or monsoon seasons, but would also experience the bracing effects of the cold weather, an advantage hitherto too much ignored, when forming an estimate of the value of hill climates. But to secure success, none other than healthy men, newly arrived in the country, should be so located. To [illegible] to send corps debilitated by lengthened exposure to the heat of the plains, and with many of their members, as must be the case, more or less diseased, or inclined to disease, would be equivalent to increasing sickness and mortality. The physiological influences of change of temperature, from heat to cold, more prolific of congestions, than the reverse, cannot be ignored in the consideration of this question. Hill climates, should, indeed, be made to serve as the preparation of the system of the European, for the latter portion of his service on the plains below. Of course, there are some localities which must be garrisoned at any cost of money or life; but with the large invaliding list, which has now replaced the former excessive mortality, it would be well again to consider, if some part of the ten or eleven millions, still to be spent on barracks at stations on the plains, could not be more judiciously expended in housing a larger number of our soldiers in the hills.

Before concluding, I have to remark that there is, unfortunately, too melancholy corroborative evidence of the fact, that invaliding is the chief cause of reduction of mortality, and therefore an additional and cogent argument in favour

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* Letter to Secretary of State for India, September 17th, 1861.

† Although Dr. [illegible] [illegible] [illegible] [illegible] "seasoning fevers," a study of the General Returns [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] by [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] tropical [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible].

* [illegible] [illegible] *Health in the Tropics; or Sanitary Art Applied to Europeans in India*, page [illegible].

of hill cantonments. Although the mortality among the men has decreased, the death ratio of the soldiers' wives and children has remained at almost the same figures. According to the best authority,* European females died in barracks in former years, at the rate of 44 per 1,000 in Bengal: with a mean for the whole of India of 35·47 per 1,000. In the four years ending 1865, the mean mortality of this class was 40. In Bengal, in 1867, the death ratio of women was 46·21, having never been less than 42 per 1,000 in any previous year, excepting one.† Years back, the mortality of children was 84 per 1,000 in Bengal, 70·7 in Bombay.‡ In 1865, the death rate in Bengal was 83 per 1,000; in 1866 it was 75 per 1,000; and in 1867 104·9 per 1,000.§

Now the secret of this continued mortality among the women and children appears to me to be continued residence in the country. Women and children are seldom, if ever, invalided. It is also the married man who generally prefers remaining in India. These two causes keep the women in the country; and they die at the same rate as before. But it is certain, if sanitary regulations, as now enforced, if expensive palatial residences, if care and attention, had materially reduced the mortality among the men, the women and children, participating in these advantages, should also show a reduced death ratio. But this is found not to be the case, and is therefore the strongest evidence that sanitation is not altogether moving in the right direction. Among other matters, it may be questioned if the massive barracks and hospitals now erected are necessary or ever positively injurious. Robert Jackson long since stated he would sooner treat his patients under a hedge row, than within the walls of a crowded building. And we all know that the most solid structures are liable to become contaminated, by prolonged residence, especially when the dwellers therein are sick and diseased. It is therefore at least worth consideration, if the cost of the most expensive sanitary work, now going on in India, *viz.*, the building of massive new barracks, may not be curtailed. Protection from the weather may be afforded, to as great an extent as desirable, in less costly, if not so durable dwellings. And a periodical change of site might not prove among the least important sanitary progress.

THE DELHI ULCERS.

By J. FLEMING, M.D., F.R.C.S.,
Staff Assistant-Surgeon.

THE pathology and treatment of the so-called boils and ulcers peculiar to Delhi have often been discussed in the medical journals both in England and this country.

Boards composed of medical officers of great experience have investigated their nature, and medical officers serving with European and Native troops in Delhi, have at various times recorded their observations, and pointed out lines of treatment, prophylactic and actual, besides advancing theories as varied and numerous as the imagination could produce, without that success which might have been expected. Still the "Delhi boils" remain a paradox. Notwithstanding all the suggestions that have been pointed out for their removal, they are yet very prevalent, and affect more than 15 per cent. of the troops stationed there. I have been induced "to record what I have observed regarding these boils and ulcers" while stationed in Delhi during the year 1865 and January 1866, and I hope that others who have opportunities may investigate this interesting subject more fully than I have done in the same direction, and thus serve to eradicate, or mitigate at least, a loathsome and unsightly disease, which is a cause of a good deal of inefficiency amongst the soldiers, and of terror to every European in Delhi. The "Delhi boil" is a misnomer, and calculated to mislead as to its real nature. It is a morbid growth, affecting the skin and subcutaneous tissue, which after some time ulcerates, and has hardly any of the characters of a boil, in fact, inflammation is conspicuous by its absence until the ulcerative stage. Its commencement, which is well known, resembles a mosquito bite in its external characters, and without any trace of inflammation. This little light-red spot increases in size slowly, is well defined, and becomes raised above the surrounding skin. The growth continues to spread for two or three weeks, or more, and its characters during that time are unmistakeable. In some cases, when about the size of a pea, it can be moved backwards and forwards under the skin; in others it is incorporated with it, and that more especially towards the ulcerative stage. As it progresses it becomes more elevated and vascular, the tortuous dilated vessels passing over it being easily recognised, and accompanied with a pricking sensation and itchiness in the majority of cases. A vesicle forms at the apex, which discharges a pale yellowish serous fluid, and then ulceration begins, and spreads rapidly until the whole of the growth is destroyed. During the growth of this tumour, and up to the period when ulceration begins, it appears relatively very transparent and often shining, sometimes rough and scaly, and if examined by a good lens will show one or more yellowish spots deeply seated about its centre. The tortuous dilated vessels, the transparency of the tumour, and the yellowish deep seated spots are characters which I have observed in many cases before ulceration. If one of these yellow spots be cut down upon with dissecting needles, a small circular yellowish body, with a glistening capsule, just able to be detected by the naked eye, will make its appearance, and can readily be removed. But great care must be taken during the operation of extraction, as the least flow of blood will be sure to carry it away and lead to disappointment. Drawings of two of these bodies are shown with the aid of the camera, magnified, from a preparation now in my possession. They were extracted from two separate tumours in January 1866 at Delhi, and I was fortunate enough to obtain others in July from patients sent to the convalescent depôt at Landour; and I much regret that those specimens obtained at Landour have been lost. Examined with the microscope the structure of both seems identical, and composed of an apparently fibrous envelope, arranged in concentric laminæ, enclosing fluid contents and probably something else. They are of a yellow colour, and not unlike in general appearance the ova of animal parasites, with the exception that they are not so transparent, and do not show their interior clearly, which may be owing to their greater relative size. They have many characters in common, and there is a considerable quantity of granular matter in the walls of the capsule. I shall at present call them ova for want of a better name, or until their real characters have been satisfactorily determined. In figure B the pressure of the thin glass cover used in mounting has burst the ova at one side, and an embryo is seen partially extruded. In figure A the presence of the glass cover has caused merely a projection at one place, [illegible] most probably, this ovum did not arrive at the same stage of maturity as the other; [illegible] it is much [illegible] [illegible] [illegible] B, [illegible]

A

× 30

B

× 30

1 [illegible]th of an Inch [illegible] × 30

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* Chevers' Indian Annals, Med. Sci., Vol. XII.

† Sanitary Commissioner's Report, 1867.

‡ Chevers' Op. Cit.

§ Sanitary Commissioner's Report, 1867.

[illegible] If t[illegible] with [illegible] 1,2[illegible] [illegible] as if they were [illegible] in the [illegible] of growth, the [illegible] and the

[illegible] of the [illegible] it is [illegible] to recapitulate the [illegible] has been [illegible] to the origin and nature of the "Delhi ulcers," since they must be sufficiently known by every medical officer serving in India. The presence of even excess of [illegible] in the waters of Delhi, nor that [illegible] term malaria, will not be sufficient to account for the symptoms and appearances of the "Delhi ulcer." If these tumours and the [illegible] in Delhi, were the manifestations of a constitutional disease, how then can the successful results of local treatment in the primary stage be accounted for? Medicines administered internally have no action on them for good or evil. The matter from a "Delhi ulcer" is said to produce, when inoculated in a healthy person, a [illegible], and it has been noticed that an ordinary [illegible] takes on the characters of a "Delhi ulcer," which could hardly be expected if the disease were of a constitutional nature. I [illegible] the [illegible] growth, but I venture to state that any progress made towards a solution of the origin and causes of the "Delhi ulcers" will be derived from microscopy. Chemical analysis [illegible] to diagnosis [illegible] acknowledged, but I would [illegible] expect it to throw any light on the nature of the "Delhi ulcers," and would [illegible] of [illegible], or the cause and prevention of [illegible] of the Punjab. [illegible] however, [illegible] I have [illegible]

[illegible]

[illegible] of Delhi, that is [illegible], the presence of [illegible] with [illegible] and [illegible] of the "Delhi [illegible]

[illegible] 2nd March, 1869.

CASES FROM PRACTICE.

◆

A CASE OF APHASIA.

By J. Fayrer, M.D., C.S.I.

The [illegible] notes were taken [illegible] of a [illegible] of aphasia [illegible] he was [illegible] 2 years of age [illegible] years [illegible]. During late years [illegible] he went to England [illegible]. He was of [illegible] active [illegible] regular and temperate habits, very intellectual, and [illegible] study. The causes of his ill[illegible] were of a [illegible]. He had, moreover, suffered much [illegible] of mind [illegible] from the illness and death of a very near relative. He had lived alone, and had almost entirely secluded himself from society since his return from E[illegible] months previous; but lately, his friends had managed [illegible] and he had apparently enjoyed the [illegible].

It was on June the 8th, [illegible] that I was called in, [illegible] his house [illegible] had just had a fit."

His servants, and one or two of his friends who saw him the day before, [illegible] he had been [illegible] up to 7 or 8 the morning. He had written [illegible] only the [illegible] just before he was taken ill, which was quite [illegible] not written [illegible], I imagine, just when the [illegible] coming on, and of which I append a copy. No [illegible] correct.

His servants say that he was lying on his [illegible] when they suddenly saw that he was convulsed [illegible] and that, on going up to him, he was [illegible]. It was 10-15 a.m. when I saw him. He was lying on his [illegible] with his eyes closed, but opened them [illegible] I spoke [illegible] he then [illegible]. He [illegible] not only to [illegible] but also had lost the memory of words [illegible], which [illegible] "played." [illegible] he tried to give utterance [illegible] very [illegible] example, [illegible] replying to my questions, [illegible] said, "I [illegible], I have played." [illegible] "I don't know what [illegible]"—"I [illegible] played [illegible]." His [illegible] was 120, [illegible] right [illegible] were [illegible] weak. I had [illegible] and the urine had [illegible] I detected [illegible]

[illegible]

I [illegible] ethereal solution of ammonia [illegible] to be applied to the [illegible] to be given [illegible], and the bowels to be acted [illegible] at [illegible] p.m., and he [illegible] well, he replied in a word or two to every [illegible] immediately lapsed into a state of incoherence [illegible] to the same word that haunted him in the morning, but he substituted his words, and seemed totally unable to grasp the one he wanted. He evidently understood all that was said to him, and tried to answer. A friend asked him to go and stay at his house: he thanked him, and was able to say he preferred remaining where he was; but he was quite unable to continue the conversation, and became incoherent. I left instructions that he should be well watched, and that beef-tea and the medicine should be given regularly.

June 9th.—He is in much the same state: pulse about 120; temperature of body somewhat high. He replies to a first question intelligently, but soon lapses into incoherence. I asked him to read; he took the book and pretended to do so, but it was the most incoherent jargon; all the time he looked quite intelligent. He has taken some nourishment, and is said to have slept. But for his shaven head, he looked fairly well. Cold had been applied to the head, and his bowels had been relieved. He was attended by a careful sick-nurse. In the evening I found him much the same; no improvement in his speech. Dr. C.—— had seen him with me in consultation at 1 p.m.

June 11th.—He remains much in the same condition: pulse from 110 to 120; skin cool, perhaps slightly feverish at times; the bowels act regularly. Takes readily all fluid food that is offered, and sleeps well. He is very quiet, tractable, and gentle; does or attempts all that he is asked to do. He walks with a peculiar gait, the body being bent forward: this is merely an exaggeration of his ordinary carriage. His tongue is slightly coated with whitish fur, and there is a peculiar and somewhat offensive odour in his breath. A small blister had been applied to the nape of the neck, which has risen well, but he does not complain of it in the least. He seems quite tranquil, and even happy; appears to recognize his friends, but he cannot tell, or rather, perhaps, he cannot remember, their names, or the words he wishes to say to them. Yesterday I asked him to name one of his friends who came into the room; he smiled and said,—"Oh that's go-up," and then he muttered some unintelligible words. He can reply to a first simple question, such as,—"have you slept or eaten well?" He answers "oh yes, or no," as the case may be; but the next question, however simple, puzzles him completely, and the reply, for he tries to answer, is the most incoherent nonsense—words without connection or meaning. I asked him to read yesterday, and gave him a book; he looked for his spectacles, put them on, then looked long and earnestly at the book, muttered a few words, and put it down. I then asked him to write a note; he sat down at his writing table to do so, put on his spectacles, took pen and ink, adjusted the paper and sat looking at it. Then, after about a quarter of an hour, repeatedly making efforts to begin, and saying,—"I can't write, oh that's just it!" he scrawled three figures of 8. To-day, the 11th, he read a few words correctly, and then became incoherent. He sat down to write at my request, and after about 20 minutes' delay, he produced the note No. 2, and then seemed so exhausted, that he was glad to go and lie down. It is difficult to say how far he knows what he is doing. In the midst of the simplest reply to a question, he puts his hand to his forehead, appearing to try in vain to recall the word or idea he wants. For example,—have you done so and so?" "Oh yes!" "Do you like it?" "Oh yes!" "Why?" "Because I—I—I can't walk a bit, because it's a tight height." I have directed that he shall be very closely watched day and night, but he is tractable and gentle in the extreme. Nourishment with a little wine to be given frequently; an aperient when the bowels are confined, perfect quiet; the head to be kept cool; the feet warm, they are sometimes cold.

June 12th.—He seems rather better to-day: pulse 84; skin moist, head cool, bowels freely opened. I tried him with reading and writing: he read a few words correctly, but others he changed altogether. His writing is appended in Nos. 3, 4, 5. He answers questions pretty well, and looks as if he understands what he wants to say, though he is unable to remember the words he requires. He saw me looking at some numbers of "Good Words" lying on the table, and said there was something in them that was very good, but he could not remember what it was, or who wrote it; but he took one of the numbers up, and opening it at Gladstone's article on "Ecce Homo," then said, "take it with you." All this was said as by one in perfect health, but he lapsed immediately into incoherence. He has eaten and slept well; is in good spirits, and answers cheerfully to any question. The same treatment continued.

June 13th.—He looks better, is sitting up; slept well; and is taking food freely. Had a pint bottle of claret, and a glass or two of sherry yesterday. I asked him if he had read the newspaper, and he replied, "Oh yes; Eyre! Eyre, Chief Justice." He then took up the *Englishman* and read that "the Chief Justice, and all the *hudges* (judges) had done so and so;" he made one or two mistakes, but on the whole had more command of words than he had yesterday. He remembered my name, and mentioned it several times, but he could not manage that of an intimate friend who had just then come in to see him. I asked him to write a note, and he at once cheerfully sat down to do so. The result is appended. (No. 6.) There is also a memo. of what he wished to have for tiffin (No. 7), and dinner, and an order that was to be sent to his wine merchant. (No. 8.) His skin and head were cool; pulse 84; bowels open; much less of the peculiar odour first noticed in his breath. Altogether, he looks much better and stronger; is cheerful, and walks with a less stooping gait. To-day I ordered a quinine mixture with tinct. nucis vomicæ.

The blister on the neck is still open. He takes a generous diet, and one pint of claret daily. On the evening of the 18th he was evidently better. He had written an order to his wine merchant, and some other notes. He read several lines with few mistakes; he seems much interested in doing this, but soon gets tired, and then he becomes quite unintelligible.

June 14th.—He is better this morning: pulse 80; has slept well; no heat of head or body; reads very well, miscalling only a few words. Talked quite naturally about many things, and especially about his illness; remembered being taken ill, but could not describe his sensation; remembered people also who came to see him, and the days on which they came, but could not always remember their names; even whilst talking he forgets words, or substitutes others of a similiar sound; at the same time he appears conscious of his defect of memory. He wrote a note (copy appended, No. 9), to a friend; he remembered his name, and appeared much amused that he did so. It had been stormy during the night, and this was evidently in his mind when he wrote; notwithstanding that he spoke so well, the wording of his written memo. No. 10 shows how far he still was from health. I should note that the handwriting from the beginning has been almost as steady and firm as when in his usual health. Dr. C—— saw him again with me to-day. He read and wrote for us; the reading had few mistakes, those mostly at the end of the sentences; the writing not nearly equal to the reading. He talked quite naturally on many subjects, and his general aspect was that of great improvement.

June 15th.—He seems to be doing well. He read a telegram in the paper, and commented fairly on it, but made several mistakes in his words; read part of a book equally well, and wrote memos. (No. 11-12) about his food; his writing falls far short of his reading or conversation. His physical health is good; bowels regular; pulse 80; temperature of body normal; his memory, in some respects, is not so good as it was a day or two ago: he could not to-day remember the names of common objects, such as a bell, a book, (the latter he called "bok"), a paper knife, or his intimate friend's name, but was quite sensible of his defect of memory, and smiled as he alluded to it. He takes his food well, and half a bottle of claret daily.

June 16th.—He is much the same, with memory, if anything, rather clearer. He reads with few mistakes, but his writing (No. 13), was not equal to his reading; he has a fair appetite, slept pretty well last night. It should be noted that during the last ten days rain has fallen, and that the atmosphere has been much cooler, which has been in his favor.

17th.—He is improving; had a good night; tongue clean; pulse 80; blister healed. He read an advertisement in the newspaper quite correctly, and spoke well, with occasional mistakes, of which he was quite conscious. I have cautioned his friends and the nurse against allowing him to sign or write cheques or letters.

18th.—He continues to improve and reads and writes (No. 14), better, forgetting fewer words. His physical health is otherwise good.

19th.—He continues to improve; conversation perfectly natural, reading almost without a mistake, writing (Nos. 15-16), improved, but still not correct. An ordinary observer would now probably not notice any peculiarity in his conversation.

June 21st.—Doing well, speaks almost quite correctly. In reading he occasionally mispronounces a word, but seems aware that he has done so.

June 22nd.—He is doing well; speaks and reads correctly, or nearly so, writing (No. 17-18), improved, but still not perfect. Does not seem to be in quite such good spirits as he has been.

June 27th.—He is quite convalescent, has been out driving. His conversation and reading are now nearly perfect. He occasionally forgets or substitutes one word for another. He has

[illegible]

No. 16. [illegible]

We have [illegible] to [illegible]

There [illegible] thing [illegible] was [illegible]

S[illegible] for Batt[illegible].

No. 17. [illegible] 21st.

I [illegible] much better [illegible] I [illegible] ordered [illegible] but nothing [illegible] tiffin [illegible]

No. 18. [illegible]

I am quite well, and I have [illegible] head [illegible] I have [illegible] T. Turner. The [illegible] breakfast we are to have tea and [illegible].

I have recorded this case in detail, as it illustrates some points in the pathology of the disease that have been much discussed by recent observers. The symptoms were exactly those described by [illegible], the loss of memory of words, even when the intelligence was comparatively good, was remarkably shown during his recovery. The incapacity to write [illegible] whilst he was able to express himself almost clearly, was very illustrative of that phase of cerebral disease which has been termed "agraphia" by Dr. Bastian.

The [illegible] at the [illegible] the [illegible] in support of the views of Dr. M[illegible] on which to withdraw the accustomed supply. A blister was applied to his neck, but I doubt if it was of any service, and I believe now he would have done just as well without it. I have strongly urged that he should never return to this country, and that his brain should not be overtaxed with work of any description.

CASE OF SYMPATHETIC ORCHITIS.

By K. McLeod, A.M., M.D., L.R.C.S.E.

The following case, for the details of which I am indebted to Sub-Assistant Surgeon Bany Madhub Tagore of this station, appears to me to illustrate an important fact in surgical pathology. No other cause of the acute orchitis could be discovered than that suggested above.

Nasura, aged 30, a Mussulman, apparently in good health, was admitted into the Julpigoree Jail on the 26th June, 1869. He was received into hospital on the 22nd July, for an abscess of the left mamma. This was opened and poulticed. Pus did not escape freely however, and on the 28th July, he became feverish, and his right testicle inflamed. The abscess was now more freely incised, and pus thoroughly evacuated. Leeches and fomentations were applied to the testicle. The fever subsided under antimonials and salines, the cavity of the abscess contracted and granulated, and the testicle, which had attained the size of a large mango, gradually regained its normal dimensions. The man denied having ever suffered from gonorrhœa, syphilis, or swelled testicles. He had no cicatrix on the penis, nor urethral discharge, and had not had the affected testicle injured in any way. Both conditions, mammary sinuses and orchitis, abated simultaneously, and he was discharged well on the 21st August. Having carefully eliminated every possible cause of the orchitis, I am compelled to the conclusion that it was caused or determined by the iritation of the mamma of the opposite side.

ANTAGONISTIC ACTION OF OPIUM TO BELLADONA.

Several instances and cases having recently been recorded in this journal of the action of belladonna in poisoning by opium, an authenticated occurrence of poisoning by belladonna, counteracted by opium, will be read with interest.

In the *Medical Press and Circular*, Dr. Bernard Kavanagh, Surgeon to the Limerick Infirmary, relates the following case, here given in a condensed form.—

A girl of $3\frac{1}{2}$ and a boy of $2\frac{1}{2}$ years had eaten some extract of belladonna thinned with glycerine: they were seen $1\frac{1}{2}$ hour afterwards, and found laboring under frantic excitement, unconscious to every one and every thing around them; their pupils dilated to the *utmost* extent, the entire skin as red as in scarlatina, and their pulses about 150. The girl had taken more than the boy, and her symptoms were the most severe. The stomach-pump was applied with good effect, and opium in tincture given both by mouth and enema, a few drops every hour. In about 12 hours both became gradually drowsy and fell asleep, waking nearly well. Dr. Kavanagh states.—"I have no doubt that these children took four times more of the belladonna than would have been sufficient to produce poisonous effects; and when it is borne in mind that at least 50 drops of the tincture were administered to the girl, and 30 to the boy, and that under other circumstances one would not like to be answerable for giving a quarter of that amount to children of their tender age, its producing none of the effects of opiumism, together with their rapid recovery, *no other remedy having been used*, there can be no further doubt of the fact that these substances are mutually antagonistic to each other."

CONTRIBUTIONS FROM THE MITFORD HOSPITAL, DACCA.

By Assistant-Surgeon H. C. Cutcliffe, F.R.C.S.

RETENTION OF URINE. DISCHARGE OF PUS WITH URINE. RAPID DEVELOPMENT AND SUBSIDENCE OF AN ABDOMINAL TUMOUR.

Ram Churn Doss, [illegible] 45 [illegible] May, 1869, [illegible]

He says that 14 days before admission (19th April), he was seized with a frequent desire to go to stool. He passed at first fæcal matter with mucus, and then mucus only. The following morning (20th April), the disturbance in the bowels had ceased, but he had pain about the bladder, and could not pass water. He then went to the hospital at Manickgunge, where he was told to apply a mustard plaister, and to take some medicine that was given to him. At mid-day he passed water pretty freely, and got relief from his pain. Next day (21st April), his urine again stopped, and he went to the hospital, where a catheter was passed, and much urine drawn off, with relief to his pain. Blood came out after passing the catheter, the introduction of which caused him great pain. In the evening the catheter was again passed, blood and matter escaped, and afterwards urine. Three or four times a day, and two or three times a night, the catheter was continued to be passed up to the 3rd of May when he arrived at the Mitford hospital. He never passed a stone nor any gravel, and he does not know that he ever had any affection of the kidneys or bladder. He recollects that he had some pain about the small of the back for 4 days before he was attacked with his present illness, and his father and mother lived to old age, and died of fever. He has had only one brother, who is still alive. He cannot recollect ever having had any injury to his abdomen or loins. He had syphilis with a supuratory bubo 4 years ago, and was treated in the Mitford hospital. Has never had alopecia or cutaneous eruptions of any kind.

On admission, the sub-assistant surgeon, Gopaul Chunder Pattuck, noted that the patient complained of severe pain over the bladder and around the anus, and complete stoppage of urine. The lower part of the patient's abdomen was tightly distended. His countenance was expressive of great suffering. He had fever, and his pulse 110. His tongue was covered throughout with a yellowish brown fur. The sub-assistant surgeon passed a No. 9 catheter through what he supposed to be a false passage into the bladder, and drew off a large quantity of offensive pus, mixed with urine and blood. The passing of the instrument caused great pain, but subsequently considerable relief was experienced. The following morning, (4th May), I saw him, and found him pretty much as the sub-assistant surgeon had described. There was no marked distension of the abdomen, which, however, in the vesical region was very tender. I could detect no tumour, though I made a very careful examination externally, and also by the rectum. He had passed, during the night, a little urine mixed with blood and pus. I now very carefully introduced along the urethra a No. 9 catheter, and found that it slid into what appeared to be a false passage about the neck of the bladder. A large quantity of pus escaped. The catheter seeming to be blocked up, I withdrew it, and having cleared it, again introduced it, and this time it passed on into the bladder, from which pus, urine, and blood now flowed. I washed out the bladder with a little warm water, and ordered the man opium, hot fomentations and a hip bath. In the evening the catheter was again passed with similar results, and the bladder was again washed out. He then had sharp fever.

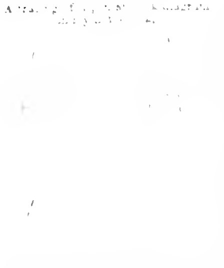
5th May.—Fever persists; pulse 104; countenance expressive of great suffering, complains of intense pain over the bladder and in the perineum in front of the anus. Perineum and rectum again examined, but no tumour or hardness was anywhere perceptible. With great difficulty he passed a little urine, mixed with a considerable quantity of pus and blood, three times in the night. The catheter was again passed, and a large quantity of pus escaped. His fever persisted through the day. Is now taking quinine gr. v and opii gr. i every four hours.

8th.—Feels better, pulse 88; temperature 95, bowels open twice during the night; motions healthy; no pain in the perinæum, but still has great pain about the bladder when he passes water, which he does frequently. There is a perceptible diminution in the amount of pus. Catheter ceased to be passed, is now taking alkalies with buchu, as well as quinine and opium.

9th.—Pulse 102, temperature 95, has frequently made water which still contains much pus. [illegible] right iliac region, where an oval, moveable, tender tumour, about the size and shape of [illegible] pretty nearly corresponding to the [illegible]

10th.—Pulse 88; temperature [illegible] bowels open [illegible]

[illegible]—I [illegible] [illegible] [illegible] [illegible] [illegible]



1. The original Tumour, May 9th.
2. [illegible] shows the [illegible] the Tumour [illegible] 21st May.
3. The [illegible] Tumour on the 15th May.

[illegible]—T[illegible] [illegible] [illegible] two [illegible] taken three [illegible] testicle [illegible] dismissed [illegible] only [illegible] long [illegible]

25th.—The [illegible] clear, [illegible] pain at the [illegible], but followed by slight pain [illegible]. The tumour is [illegible] in the right lumbar and inguinal regions. [illegible] daily at 12 p.m.

26th.—Passes about four pints of clear water free from pus [illegible] daily, and without pain. There is a [illegible] swelling [illegible] of the right [illegible] region. His fever [illegible] at 1 p.m., and at that time [illegible] pain in the tumour [illegible].

6th June.—[illegible] particularly [illegible] in [illegible]. His general [illegible] satisfactory. He [illegible] every day at [illegible] 2 p.m. This morning he has [illegible]. There is a slight [illegible] in the region of the [illegible], and this induration [illegible] comes on, urine [illegible] pus and albumen.

The patient was desirous of going to his home, where he [illegible] would [illegible] him. On the 11th, at his own request, he was discharged.

[illegible] brought [illegible] unfortunately [illegible] 12 [illegible] and left [illegible]. Nothing [illegible] this case.

It may [illegible] that I have [illegible] recorded the [illegible] very [illegible]. When I first saw [illegible] May, my [illegible] which [illegible] by Dr. [illegible] March [illegible] found [illegible]. When I proceeded to [illegible] and [illegible] the rectum [illegible] such [illegible] I might [illegible] perfect [illegible] by a [illegible] I [illegible] that it may [illegible] the inquiry to the [illegible] connected with [illegible] this case, [illegible] retention [illegible]

[illegible] it is [illegible] of making a [illegible] examination of [illegible].

ABSCESS IN THE CAVITY OF THE TUNICA VAGINALIS, &c.

———Baboo, aged 42 years, [illegible] Bazar, Dacca, first consulted [illegible] on the 25th of May [illegible] disease of the right testicle. He [illegible] past [illegible] testicle has [illegible] which [illegible] opened by [illegible] and the [illegible] ing of [illegible] way into the sac [illegible]. The fluid was [illegible] pus, which [illegible] flow for [illegible] when I was [illegible].

The [illegible] thinks that at the time [illegible] was not opened it was as large as [illegible]. When I [illegible] saw the [illegible] it was about the size of a man's head, perhaps [illegible] larger. In the [illegible] of the [illegible] surface of the [illegible] of the [illegible] testicle there were [illegible]. An ordinary probe [illegible] through [illegible] went straight backwards [illegible]. A [illegible] probe [illegible] reached the [illegible] about the [illegible] of the epididymis. About this [illegible] and from [illegible] a [illegible] fluid, composed in part of [illegible] and in part of pus. The scrotal [illegible] of the testicle were enormously thickened. The body of the testicle [illegible] distinctly [illegible]. The epididymis could not be [illegible], but the vas deferens was distinct and free from [illegible]. There was [illegible] pain and much tenderness about the [illegible] parts, and [illegible] were in an [illegible] and irritable condition. [illegible] mercury and [illegible] iodide [illegible]. The scrotum to be strapped. The strapping [illegible] the swelling and the discharge very much, but [illegible] to be left [illegible] the scrotum. [illegible] the [illegible] of the old hydrocele was injected with [illegible] and [illegible] of [illegible] discharge resulted. [illegible] of the injection was increased [illegible] was [illegible] twice as strong as the [illegible] tincture of iodine [illegible] Pharmacopœia. The mixture was continued. By [illegible] the [illegible] injection daily, [illegible] of June the [illegible] had [illegible] and the testicle had become [illegible] having [illegible] about the size of a [illegible].

Remarks.—When I first [illegible] this case, its features were very [illegible] by the [illegible] of inflammatory induration, [illegible] was [illegible] the [illegible] scrotum, of [illegible] could not be distinctly felt. It was clear, however, that the [illegible] from [illegible] that there was [illegible] tumour, which was [illegible] that the [illegible] had [illegible] of a hydrocele [illegible] and was [illegible] the [illegible] the general [illegible] which [illegible] at first, [illegible] grow [illegible] that the [illegible] formed the tumour, I [illegible] twice the [illegible] of the [illegible] British Pharmacopœia. The [illegible] was [illegible] satisfactory [illegible] the cyst shrunk up [illegible] of [illegible] tissue, and the ulcers completely healed.

The Indian Medical Gazette.

Acknowledgments.

Lancet.
American Journal of Medical Sciences (July.)
Dublin Quarterly Journal of Medical Sciences (August.)
British Medical Journal.
Glasgow Medical Journal (May and August.)
Medical Press and Circular.
Cholera Ma[illegible], by Surgeon Barnard.
Punjab Jail Report for 1868.
Calcutta Journal of Medicine (May and June.)
Canada Medical Journal (August.)

Notices to Correspondents.

Communications have been received from

JAMES TROWER *of Hazareebagh.**
Sub-Assistant Surgeon A.S., A.S.†
Dr. FAYRER, C.S.I.
Assistant-Surgeon H. C. CUTCLIFFE.
Surgeon W. J. MOORE.
E. TANNER, ESQ., C.E.
Surgeon T. RINGER.
Dr. RICHARDS, *Bancoorah.*
Surgeon G. K. POOLE.
Assistant-Surgeon F. M. MACKENZIE.
Sub-Assistant Surgeon SHAM LALL MULLICK.
Assistant-Surgeon BATESON.
Dr. C. W. WAYLEN

CHANGES OF ADDRESS.

Subscribers are earnestly requested to notify changes or inaccuracy of address, to prevent the miscarriage of copies.

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Technical expressions ought to be so distinct that no possible mistake can be made in printing them.

Neglect of these simple rules causes much trouble.

Communications should be forwarded as early in the month as possible, else [illegible] unavoidable [illegible] in their publication.

Business letters to be forwarded to the Publishers, Messrs. Wyman & Co., and all professional communications to the Editor, direct.

THE COOPERATION OF THE PROFESSION THROUGHOUT INDIA IS EARNESTLY SOLICITED.

"You have [illegible] not of [illegible] but of sc[illegible]. Among those who [illegible] and more [illegible] particular [illegible] we find [illegible] ornaments of [illegible] history, and I wish [illegible] you the [illegible] one among you who would not prefer the reputation of Harvey or of Hunter to that of [illegible]teen-twentieths of the [illegible] of the periods in which they lived."—SIR BENJAMIN BRODIE.

PROFESSOR PETENKOFFER'S THEORY OF CHOLERA.

THE extensive operations ordered by Government to note the alterations in the subsoil water all over India, show the importance attached to Professor Petenkoffer's theory of its influence in the propagation of cholera. We have hitherto had considerable difficulty in understanding the problem or theory propounded by the learned German Professor. That it coincided with many of the phenomena of the appearance and spread of the disease, the experience of India amply proved. The disease has appeared very regularly at certain seasons of the year, more especially among the European troops and in cantonments and jails, from which alone our reliable statistical information has been hitherto derived. The season of the year at which it appears in the Upper Provinces is the rainy season, when the subsoil water rises considerably towards the surface. In Bengal Proper there are two seasons: one before, and the other after the rainy season; the country during the rains being very much flooded, *or under water.* It was observed at Agra, that on four occasions the cholera appeared 20 days after the rains set in; and there have been innumerable instances of the progress of an epidemic being accelerated, or, on the contrary, being checked, after a heavy fall of rain. The apparent anomalies in its appearance in Bengal were explained by stating, that excess of water was incompatible with the development of the cholera germ. But there are other difficulties in explaining the progress of cholera by land and water, which appear opposed to the subsoil theory, and cause doubt regarding the understanding the strict definition of the Professor's theory. These doubts have now been cleared with mathematical precision by late articles which appeared in the *Lancet* during August and September. In them the data are laid down with precision under algebraical signs, *viz.*, x. y. & z.: x. meaning the germ, seed, or ovum, of the cholera-poison. It is not capable of inducing the disease in a human body, till it has undergone a change or metamorphosis in y, which consists of a porous soil, containing a certain quantity of organic matter and water. It will be more clear in discussing this question to consider $y = \frac{\xi}{1} + \frac{\xi}{2}$, $\frac{\xi}{1}$ meaning a certain degree of moisture, and not comprehending flooded lands or dry deserts, and $\frac{\xi}{2}$ meaning a porous alluvial soil containing organic matter, and not comprehending rocky or clayey soils, dry buildings or rocky mountains, or ships not within a thousand miles of land. The change which takes place in this medium y produces z, which, on entering the human body, induces the disease called cholera. Unless x pass through its change in y no active germ can be produced. In ordinary language, one person cannot catch cholera directly from the person or evacuation of a cholera patient. If the study of cholera were limited to Bengal, it would be very difficult to show the fallacy of Professor Petenkoffer's theory, as here the whole delta of the Ganges and Brahmapootra is water-logged, and the disease is endemic, and the rest of the country within easy marching distance, whilst the cholera germ is in the [illegible]. But let us examine the history of its progress over the world. Cholera has been endemic in Bengal from time immemorial. When it appeared in a very intense form in Jessore, in 1817, it was called a usual disease of the rainy season. There had been severe attacks amongst the troops on the coast in 179[illegible] and 1793, and there was a severe attack at Hardwar in 1783, where the

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* Apply to Messrs. Wyman & Co., Calcutta.
† It would not be permitted.

[illegible] registered, and [illegible] have [illegible] progress of the disease with the pilgrimage [illegible] and [illegible] that it had not spread [illegible] severe attack of 1867, the [illegible] reached [illegible] the disease appeared [illegible] 12 [illegible] Hardwar; but their progress over the country was [illegible] watched, and the spread of cholera carefully observed. The [illegible] from [illegible] among the pilgrims and the residents of the country [illegible] which [illegible] during [illegible] six weeks amounted [illegible]. The [illegible] season is important in reference to the [illegible] moisture. [illegible] of the pilgrims [illegible] every [illegible] of country [illegible] from Hardwar [illegible] the rate at which com[illegible] [illegible] by camels, [illegible] horses, [illegible] and [illegible] cultivated and well-watered countries, mountains, and barren, sandy deserts, and [illegible] by the pilgrims [illegible] residents in each [illegible]. During the month of April the country is dry, and [illegible] dry in May. The average monthly rainfall in [illegible] (with a [illegible] of 17[illegible]) extending from Hardwar to Mooltan westward, south-west to Hissar, [illegible] east to Oudh, in April and May, was [illegible] 0·25 inches, [illegible] the previous three months of the year only 0·52 inches. In the southern line [illegible] Hissar and Sirsa, the [illegible] water is [illegible] by the depth of the surface of the water in the [illegible], which varies from 100 to 300. In the easterly line, [illegible] from 8[illegible] to 90. In the Upper Provinces, the sub[illegible] water is [illegible] in September at the end of the rainy season, from which period it [illegible] the rains [illegible]. There is never more than a passing shower or [illegible] storm [illegible] the interval, with the exception that several good showers [illegible] to an inch of water, may be expected at the end of the year. There is more rain along the foot of the Himalayas and in the northern part of the Punjab, but the description of the seasons applies to the part of the country that [illegible] the seat of cholera. The influence of any [illegible] in the [illegible] water can have been but slight under these [illegible]. As the country was dry, [illegible] scanty [illegible] blade of grass [illegible] many [illegible] frequently [illegible]

In [illegible] there are two [illegible] of pilgrims [illegible] and two days after the [illegible] attacked with cholera, which had not been prevalent in one of these villages [illegible] Punjab for 21 years [illegible] of the disease.

[illegible] tanks, [illegible] the water [illegible] contaminated [illegible] into which [illegible] from [illegible]. In [illegible] apparent. The appear[illegible] [illegible]

[illegible] not apparent. [illegible] as at the [illegible] Goalundo [illegible] severe [illegible] many [illegible] patients [illegible] barracks [illegible] patients. There are many cases [illegible] funeral [illegible] with [illegible] in the [illegible] personally [illegible]. The [illegible] characteristic [illegible] *post-mortem* [illegible] in 1820, [illegible] given by [illegible] Dr. Jameson [illegible] in these [illegible] contained [illegible] the system. [illegible] page 67 [illegible] that of a great [illegible] medical [illegible] offensive [illegible] subjects, [illegible] success, [illegible] case [illegible] present [illegible] stomach [illegible] it did not [illegible] collapse. During the present year, the first case in the [illegible] was [illegible] prisoner; the next [illegible] sleeping places in the ward, [illegible] third [illegible] hospital. [illegible] attendants [illegible] patients [illegible] have [illegible] from the first [illegible] disease in India, and they are repeated after every [illegible]. These people are [illegible] surface of the [illegible] which, doubtless, [illegible] the influence of the [illegible] is not [illegible] ful as shown [illegible] of the year [illegible] all experience [illegible] materially to [illegible] the progress of cholera; but at this season there are other influences than simple moisture which require special attention, and which may have more influence than the presence of water.

Experience [illegible] that [illegible] bears an important part in the development and activity of the cholera [illegible]. It is [illegible] most probable that the germ [illegible] may retain its vitality [illegible] in a dry state for a [illegible] year [illegible] weeks. There are [illegible] of cholera after [illegible] of rain [illegible] formerly [illegible]. The [illegible] in drinking water [illegible] wells, has been alluded to, but the [illegible] here.

The [illegible] of the disease with [illegible] of rain, [illegible] water, [illegible] the altered [illegible] of that water [illegible] materially [illegible]. The disease spreads in India during the dry [illegible] winds, when [illegible] certainly absent and [illegible]

[illegible] of [illegible] water is not essential to the [illegible] and it is probable that the [illegible] by Professor Pettenkofer [illegible]

HEALTH OF THE CENTRAL PROVINCES.

IN reading over the valuable and interesting reports on the vital statistics and vaccine operations of the Central Provinces for 1868, we are struck by the amount of vigour and ability displayed in the measures initiated for the public health by Drs. C. J. Townsend and J. Brake, in their respective departments. For instance, the former officer had good reasons for concluding that the "fair formerly held annually in February at the Mahadeo Cave, in the Puchmurrie Hills, formed the most frequent focus of the disease (cholera) within the province. The stream of pilgrims is constant throughout the year; from 100,000, to 120,000 people assembled annually on the Deinwak River, in the valley below the hill. Cholera broke out in this fair in 1860 and in 1865, and the most wide-spread epidemics, of which there are any records, followed, not a single district having escaped in either year." Dr. Townsend continues: "the spread of the disease over the country in 1865 was so manifestly connected with the dispersion of the pilgrims from Mahadeo Fair, that to prevent its assemblage for the future appeared to be the measure most urgently called for. Orders prohibiting the fair were accordingly issued by Sir R. Temple, and the reasons for the measure were so obvious and good, that it was received by the mass of the people with ready acquiescence," and that, notwithstanding, the "cave is held in great sanctity through all the surrounding country."

It is certainly very refreshing to meet with an instance of this kind in India, common sense, and action, for once, in a matter of public health, taking the place of red tape, reports, and procrastination. We only wish we might reasonably hope that a similar policy would one of these days be put in force regarding the inhabitants of the Gangetic Valley, the focus, par-excellence, of Asiatic cholera, and to which subject we shall refer in our next number.

We find the same prompt and energetic spirit, as that above noticed, displayed by the authorities when cholera had become epidemic over the Central Provinces: no time was lost in twaddle about caste prejudices; there was no cry as to want of power or funds to enforce acts necessary for the public health; the officials then and there took upon themselves to obtain information as to the abode of those suffering from the disease, and they isolated the sick as far as practicable from their healthy neighbours; they destroyed contaminated articles of clothing, dug new wells, and guarded the old ones from pollution, enforced quarantine, and that, without waiting to dispute over the ways and means, but like men who felt the responsibility of their office, and having an interest in the work entrusted to them, they were able to throw their European energy and knowledge into the undertaking, being fortunately untrammelled by superior authority. The result is plainly set forth in the report before us, in a greatly diminished death-rate, from cholera during the epidemic of 1868, as compared with that of 1865 and 1860, exemplifying the truth of the old saying that "where there's a will there's a way."

With reference to Dr. Brake's vaccine report, although it shows evidence of much life and progress, 43,484 persons having been vaccinated, with a percentage of 79·34 successful cases, nevertheless, the Inspector-General of Vaccination in the Central Provinces evidently labours under the disadvantages common to all parts of India—inefficient and careless subordinates. Nor can we be surprised at the partial failure of vaccination in this country, when we remember that Jenner, Ceely, Marson, and Seaton, in fact, all authorities on this branch of medical science, insist most strongly on the fact that vaccination, to be protective, must be most carefully performed; the lymph should be drawn from the arm of a healthy person, and above all, it must be taken before the appearance of the areola. In fact, as Dr. Seaton observes, it is by a "judicious choice of lymph, the taking it only from suitable subjects, from the finest vesicles, at the proper time," that we can hope to succeed with vaccination. To enforce these conditions, stringent laws have been passed in England, but small-pox has not as yet been stamped out of our island.

We can sympathise most sincerely in the distress evinced by Dr. Brake with regard to the failure of vaccination in some portions of the provinces committed to his care; his success, however, will naturally rouse him to increased exertions, and we doubt not into a more extended field of action.

We would suggest that in these vaccine returns, some further notice were taken of the re-vaccinations. We observe Dr. J. Harrison enters 1,180 persons as having been re-vaccinated in the Sumbulpore District, but the result of these operations do not appear in the return. Surely this important part of the subject has not been overlooked, for "the utility and necessity of re-vaccination do not stand on any speculative reasoning from the local phenomena it developes, but upon broad grounds of observation and experience." (Seaton.)

It would certainly be a source of great blessing to the people of Bengal, if civil surgeons were encouraged to take upon themselves the functions of the health officer of their respective districts, rather than be tied down, as is too often the case at present, to the sudder stations, as superintendents of the jail. We trust the day is not far distant when their power for good will be appreciated as regards public health, and that we may see civil surgeons marching from village to village during the cold season on their tour inspection, supervising the work performed by their vaccinators, attending to the water supply, and a hundred other matters connected with the well-being of the inhabitants of their respective districts, which are now wholly and absolutely neglected.

CHOLERA.

IN continuation of the remarks we made last month as to the progress of cholera in India, we have since received information to the following effect. On the 16th of September several deaths from cholera occurred in the city of Cabul. The fact was brought to the notice of the Ameer, together with the prevalence of the disease at Jellalabad. There has been a fresh outburst of cholera at Teheran and the adjoining villages.

By letters dated the 12th of October, we learn that cholera had extended from Peshawur, and become virulent at Kohat. As many of the garrison as could be spared had been ordered out of cantonments into camp, and it was hoped that at so advanced a season of the year the epidemic would not be of long duration. It did not last long, but in seven days three regiments were more than decimated.

In the meantime, the disease has spread from Umritsur to Mooltan, probably by means of people travelling from the former to the latter place by railroad; from Mooltan it has passed down the Indus to Sukkur, Kotree and Hyderabad, affecting the seaport town of Kurrachee, following, in fact, its [illegible] of 1845, and on other occasions, fortunately, the fair and exhibition to be held at Kurrachee had been postponed. Sir W. Merewether has been obliged however to telegraph for additional medical men, their services being urgently required in [illegible].

THE EXPERIMENTS ON SNAKE-POISON.

It would be difficult for an unbiassed witness to find in the simple records which Dr. Fayrer has published from time to time of the experiments which he has carried on for the purpose of testing the value of alleged remedies for snake-bite, anything that could indicate a spirit of controversy in himself, or rouse the hostility of other observers. In common with his professional brethren, he has found that, ordinarily, the bite of a venomous Indian snake in full vigour has been fatal in his hands. He has heard, too, of certain methods of cure having proved successful in the hands of others. He has recognised the several sources of deception, notably the difficulty of proving in most cases of recovery that a genuine poisoned wound has been received, and he has determined to set aside all possibility of error, at least on this special point, and to ascertain by trials on animals whether any real antidote has yet been brought forward. He has neither asserted nor denied anything *a priori*, and whether the alleged remedy has been an object of belief with a professional man or the nostrum of an itinerant snake-charmer, it has been treated by him with the same care and fairness; and the result is, that medical men have now definite and tangible facts to offer in reply to any one who may feel disposed to criticise the failure of their practice, or mischievously hint that if another course had been followed in a given case, a better result might have been looked for. This is a service to the profession which the profession alone can adequately appreciate. The facts are clearly summarised by the author in a few propositions with which our readers are already familiar. They need not be reproduced in this place.

We see with surprise therefore, that Dr. Halford, of Melbourne, experimenting on the poison of a different class of snakes, and possessed with the belief that ammonia, injected into a vein, is a specific against the bite of Australian snakes, has allowed himself to use a contemptuous tone in commenting on Dr. Fayrer's results. In his eyes, it is evidently an unpardonable sin to demonstrate that an Indian snake no more resembles an Australian snake in the effects of its bite, than it does in the rest of its natural history. Instead of feeling grateful to Dr Fayrer for devoting care and time to the investigation of the remedy in a distant part of the world, as an honest enquirer earnestly desirous of knowing the truth, he chooses to throw discredit on his labours.

If it were worth while, it would be easy to show from the [illegible] Dr. Halford [illegible] in the [illegible] *Medical Gazette*, [illegible] that his [illegible] treatment is [illegible] with a little con[illegible] [illegible] Dr Bernstein [illegible] the bites of both [illegible] judgment on a [illegible] without qualification of any [illegible] into a vein is dangerous and

Dr. Halford informs the Australian public that ammonia introduced by the stomach has an intricate course to pursue, and some chemical transformations to undergo, before it can reach the seat of the poison; and that hypodermically used, its caustic character prevents its absorption; therefore it must be injected into a vein. To do this a small puncture is made. At this point Dr. Halford has misgivings. Intelligent colonists might hear elsewhere that air getting into a vein was considered dangerous by medical men, so he provides them with a ready reply. "Should any air," he says, "enter by so minute a puncture, no harm will follow." This is a novelty without doubt. We hope his readers were not blinded by it into the pernicious trust in their veins which the doctrine inculcates. This doctrine Dr. Halford puts forth with an imposing flourish of physiology. Quotation alone can do the passage full justice:—"The direct injection of caustic or liquid ammonia, mixed with two parts of water, avoiding the internal laboratory of stomach, spleen, liver, and intestines, at once mixes with the blood, which sufficiently dilutes its caustic powers. Within 20 or 30 seconds of its introduction into a vein, it passes to every part of the structure of the body. Wherever the serpent's poison lurks, there the ammonia is, and by the end of one minute has twice made the circulation of the body. It has passed in as a caustic alkali, free to exert its marvellous influence upon the inspired oxygen, or even possibly upon the poison itself, but certainly upon its products. With such physical truths as guides, let us see the result of practice: and here I may state that all practice not based on physiology is old woman's avocation, and is fast passing out of date, at least in the old country. Far from the centre of knowledge it may still flourish, but '*delenda est Carthago.*'" This is a fair specimen of Dr. Halford's philosophy and logic. The physiology consists in the announcement that ammonia reaches the seat of poison more rapidly, and in a purer state when thrown directly into the blood than when swallowed; the rapidity few will dispute, the purity many; but if both points be admitted, the curative action remains as far from proof as ever. It derives no sort of confirmation from Dr. Halford's physiology, nor is there any logical connection that we can discover between the process and the result, unless it be first proved that ammonia is a direct chemical antidote to snake-poison. Illustrating his total want of care in guarding against error, Dr. Halford makes no mention of such a doubt as this, and thus reduces his practice, even if successful, to the position of that empiricism which he so seeks to repudiate.

Dr. Fayrer, on the other hand, absolutely disproves that there is any direct antagonism between Indian snake-poison and ammonia, by mixing the two and inoculating dogs with the mixture, the only result being intensified poisonous action. The most, therefore, that can be said for Dr. Halford's position is, that he succeeds by a very hazardous process in waking the patient from the stupor and other results of nervous depression. We do him an injustice. In our crude vernacular dialect we have spoken of "waking his patient." Such homely phraseology would carry no force with Dr. Halford's lay pupils. "Quite sufficient it was for me," he writes in comment on a [illegible] case in which sluggish pupils became active under ammonia, "when reading the Doctor's letter, to know that the [illegible] into the veins of a human being, and that the nerve cells, instead of being dead to those vibrations whose reception constitutes light and sound, now responded, and the man was once more, ammonia being added to his blood, in harmony with the forces which surrounded him. Animal life in abeyance or passing away was re-manifested or brought back." There was prudence in the sufficiency; for throughout Dr. Halford's proceedings there is not a trace of scientific forethought or care, while, if his physiology be followed to its logical conclusion, it must lead him to injecting all his remedies into his patient's veins, and relegating those who do not follow him to the category of old women.

Dr. Fayrer has made the bulk of his experiments on dogs, as did Dr. Halford, and he rather ridicules one or two of Dr. Fayrer's experiments with pigeons. "Any one," he says, "possessing the least physiological knowledge would hardly expect a pigeon to recover either from the bite of a cobra or after the injection of ammonia, by such delicate apparatus is the life of birds sustained." We do not see how the delicacy of the apparatus can affect the question, whether ammonia is or is not a counterpoise to snake-bite; if it does so affect it, the vitality of a healthy pigeon is at least as great as that of one of Dr. Halford's moribund dogs, which some by-standers considered to be actually dead when ammonia was used.

We cannot devote more space for the argument. We are willing to accept Dr. Halford's facts as far as they go, but we qualify them with information derived from other sources respecting the potency and treatment of snake-bites in Australia. We regret the derisive tone he adopts in speaking of the experiments in this country, because it prevents us meeting him in the broad field of scientific inquiry.

THE *Mofussilite* states in a recent issue:—

We hear from Le (Ladak) that Dr. Cayley's dispensary at that place is becoming a great success, and we think we may add a great source of benefit to the natives of Le. The monthly average attendance of seekers of medical relief is much in excess of one hundred. There is a small hospital for in-door patients, of whom, during August, eight were maintained. Vaccination is becoming popular among the people. In August, 370 persons were vaccinated. This appears to have been in Le itself, but in the out-districts and villages, Dr. Cayley had vaccinated a goodly number.

WE are glad to announce that the Government have granted an allowance of Rs. 30 a month, to Medical Officers in executive charge of the Jails in Bengal, to pay for a writer to assist them in their clerical work.

Every endeavour is to be made to enlist educated convicts to take the post; and failing this, the pay is to be taken from the profits of the labour of the Jails, before the amount is taken from revenue.

We hope in time to see the indulgence extended to the whole Presidency; but in the meantime the Officers in Bengal require the assistance in consequence of the amount of writing their superiors demand from them.

THE Medical Officers to whom annuities are granted from the Retiring Fund, on this date, are:—Sutherland, Macpherson, Kelly, Lay, Hathaway, Warneford, Allan and Mactier.

DR. CORNISH ON OPIUM AND IPECACUANHA IN DYSENTERY.

(Concluded from page 220.)

From S. HEWARD, ESQ., Surgeon, to ANDREW BERRY, ESQ., Acting Head Surgeon, Centre Division, and 3rd Member of the Medical Board, Fort St. George. Dated Wallahjabad, 15th June, 1807.

SIR,—In communicating to you some account of the great mortality which has lately taken place in H. M.'s 30th Regiment in this station, I have to observe that dysentery was the disease from which this chiefly happened, and as the like occurrence is commonly spoken of, on the deportation of troops, particularly to tropical countries, it becomes an object, to ascertain any probable part of the many causes which are found to be thus constant and uniform in their operation and effect.

I should here premise that the men of the regiment are mostly young, the greater part of them from 18 to 30 years of age. This being kept in view will explain to you in some measure the very aggravated form of the disease we have had to combat with, arising, generally speaking, from a habit highly disposed to inflammations, and this accompanied with such a degree of irritation, as have but in too many instances baffled our best efforts to subdue them.

The cause of the disease I would refer to an existing predisposition thereto in the European constitution, which exposure to the sun, transitions from heat to cold, and other changes which induce a suddenly checked perspiration, irregularity in, or change of diet, or intoxication from the common arrack of the bazars, will in most instances be found among the more obvious causes of the disease.

I do not believe the disease was in any instance propagated by contagion, but altogether generated and kept up from the men, the women, and children of the regiment being exposed to some of the above causes; for I ought to inform you that the women and children were equally victims to the disease, which in many among them went through a course as rapid and acute, as with the strongest men of the corps; and in some of the children, I am satisfied, the sun's influence alone brought on the complaint.*

From the increasing sickness which prevailed in the regiment during the month of March, it had been recommended by you, that the men should be confined to their barracks during the heat of the day.

This measure was put in force on the 31st of March, in which month the admissions had become unusually numerous, nearly all of them dysentery, attended with so great constitutional irritation, that it was *common to receive into the hospitals from 10 to 15 of such cases daily.*

The confinement of the men to their quarters was from the hour of 8 a.m. till 4 o'clock p.m., and is still continued. This was attended with such marked effects, that in about a fortnight after, the admissions not only became fewer in number, but, what was also observable. the disease, from being highly aggravated in its symptoms, became gradually less so, and from that period took on daily more and more the character of a common diarrhœa. Now as there was not during that time any change or alteration in the diet of the men, or deviation from the established discipline of the regiment, which appears to be guided by the rules best calculated to preserve health, I am disposed to attribute this mitigation in the symptoms of the disease to the confinement of the men to their barracks; and the regulation having been found of such benefit and importance to the soldier's welfare in this instance, I trust it may at no time be overlooked on the landing of a new regiment from Europe; for I am persuaded, had the plan been adopted on the arrival of the 30th Regiment at this station, much of that distress and suffering in the first place would have been avoided, and many subsequent deaths ultimately prevented.

It might be supposed that a disease so fatal in its tendency could never originate, without previously occasioning some clear and well-marked constitutional indisposition, but this is by no means uniformly the case; for, at times the attacks are so sudden and unlooked for, that the men are on guard, at parade, or in bed when taken ill, and then the first thing complained of is passing a large quantity of fluid blood, but unattended with either griping or tenesmus.

Most frequently, however, the disease comes on in the shape of

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* I do not feel quite so certain about the non-contagion, as Mr. Heward appears to do. If we knew a little more about the sanitary condition of the barracks and privies at Wallahjabad, we might not perhaps wonder at the general prevalence of dysentery there 63 years ago.—W. R. C.

[illegible] In man, where the complaint continues so, [illegible] a strange mixture of blood, or blood and slime, mixed with his stools, and there is at this stage commonly a dull heavy weight, rather than pain, over the hypogastric region, with sometimes [illegible] and gripes; but when this happens, which is by no means constant, [illegible] a more profuse discharge of blood, the griping very often immediately ceases, leaving now and then a tenesmus and straining, which continues more or less troublesome throughout the course of the disease.

At other times the disease is ushered in by fever, headache, nausea, and vomiting, parched and burning skin, a small, irritable pulse, and sometimes full pulse, a furred tongue, often tinged of a yellow colour, but the tongue now and then assumes a red, dry, and harsh appearance.

To these symptoms may now be superadded frequent ejections of little else but pure blood, sometimes mixed with a little slimy matter, or froth, with occasional severe gripes, and tenesmus. A dejection of mind is often observable, but in those cases where the greatest irritation prevails, the patient is often in a high state of excitement, with the most apparent alarm and anxiety about him. In these more violent cases the course of the disease is not of long duration, and too frequently [illegible] a case, that nothing but the warm bath, with large and repeated doses of opium, procures the unfortunate sufferer any respite from his agonies. Having thus given you a short history of the disease, as it appeared generally in the 30th Regiment, a more minute relation would be uninteresting, and cannot come within the meaning of this communication. From the foregoing it will appear evident, that the immediate indications to be attended to in the cure of the disease, will consist of, first, a diminution or removal of every cause of irritation; and second, in restraining the determination of blood upon the intestines. This leads directly to the use of local and general blood-letting, purgatives, opiates, warm baths, blisters, &c., and to the whole of that class of medicines whose operation is known to determine to the surface of the body. In estimating the different modes of treatment which have been found the most efficacious in the cure of this affection, *I cannot withhold my decided preference, and in these sentiments Mr. Pearse, the Surgeon of the 30th Regiment, warmly concurs, in favor of the new practice which, though not* always successful, is still so in a very great proportion of the many cases in which I have now seen it employed.

In the exhibition of the medicine, two drachms and a half of the tincture, or from 10 to 12 grains of solid opium, will in general be deemed an adequate proportion for one dose. I have not myself seen the medicine given beyond the quantity of 15 grains of the common extract, though I understand some have much exceeded it. The operation of the opium appears obviously twofold: first, by diminishing pain and irritation; and second, by determining to the surface of the body.

The first effect may in every case be observed, but the second, and most important, is less certainly produced, though it is in this way chiefly, I believe, that the disease is carried off.

In the combination of the ipecacuanha with the opium, this end, therefore, should be principally had in view, and the quantity regulated, so as to occasion nausea; for this action upon the stomach seldom fails to produce a determination to the skin, which when once established is supported and kept up by the diaphoretic powers of the laudanum.

But where there is a burning skin, great thirst, small quick pulse, parched tongue, with other symptoms of general irritation, the warm bath has the best effect, and should then, perhaps, seldom be omitted. During the sweating process there will be little occasion to repeat the medicine oftener than once in 24 hours, as the flux, griping, or tenesmus seldom returns while the perspiration continues, but a recurrence of the above symptoms, it will be found, ought commonly to be the signal for repeating the medicine, though in this, the practitioner must be guided, as well as in the recurrence of other symptoms which arise in the course of the disease, by circumstances only. During the sweating stage the patient must be supported by a little warm [illegible] and wine, frequently administered, for the exhaustion he undergoes during this period is very great indeed.

The [illegible] of the diaphoresis from one dose of the medicine is [illegible] of much variety. [illegible] At other times I have seen the patient under the sweating influence of the opium, after a lapse of more than 24 hours from the period of its being taken.

When the opium fails of determining to the skin, the head is more frequently affected by it, than when sweating is produced. A rather frequent effect of the opium is [illegible], but this symptom I have never found troublesome, for it either goes off spontaneously, or is soon removed by a fomentation or the warm bath. In no instance have I seen more than ordinary sleep brought on by the opium, though sometimes the patient has complained of watchfulness and want of rest. I have very often observed those eruptions, I recollect hearing you speak of, as appearing about the lips of those men under the opium treatment; another, though less common *appearance during the same period, is large pustules, and oftentimes bags of a rather thin and yellow coloured fluid hanging to the neck and breast like blisters.*

"This appearance is commonly met with where more than ordinary sweating has been produced, and seems to be a solution of the sebaceous matter of the skin, in the common perspirable fluid, but rendered too glutinous to fly off."

In all stages of the disease where there is anything like an accession of fever or irritation, a blister applied to the belly proves of the greatest service, but by this I do not mean a blister of the ordinary size, but one which goes to envelope at once a greater part of the whole abdomen. Fomentations also are of the first utility, and injections, both anodyne and emollient, are in constant requisition. In tenesmus, that symptom so often troublesome, a fomentation to the fundament affords greater relief than [illegible] of any kind.

* * *

Mercurial frictions and calomel were in many cases extensively employed throughout the disease, but in the acute stage of it, except where a purgative was indicated, and that often consisted of a few grains of calomel, I cannot say that I ever saw any advantage from their use.

Little or no benefit, therefore, I am inclined to think, will ever be found to arise from the mercurial practice in that stage of dysentery, where the disease is attended with fever and other symptoms of irritation; but where these have been removed by other means, mercury then becomes the most powerful of our remedies, in finally overcoming the remains of every kind of visceral inflammation.

In a few of the acute cases, the disease was translated to the parotid glands, which inflamed, in some suppurated, and recovery except in one instance followed.

The men had then been confined to their quarters some days, and the disease was taking on a somewhat milder form.

In one particular case, (see Valentine Tristam's, in the journals of April and May), the disease was transferred to the knee joints, where the most severe pain was complained of, attended with a high degree of fever and irritation, which alone seemed to be the cause of his death, for the dysenteric affection did not, in my mind, occasion it. As there was something uncommon in the case, his body was opened, and on examination, the lower portion of the ileum was found slightly inflamed, the colon in a like state, and internally numerous small points, scarcely amounting to ulcerations, were scattered in many places through the course of that gut. The rectum was still less affected, other viscera sound. I notice these circumstances merely as appearing unusual, and leave you to draw your own physiological deductions from the facts. From an examination of the bodies of almost all the men who have died of dysentery in the 30th Regiment, it can hardly be said that the disease is connected with visceral derangement, for in only one man was the liver found suppurated, nor have the other abdominal viscera, in any case which I have seen, been engaged in the complaint; but where the habits and life of the soldier co-operate with a climate, too often productive of visceral obstruction, this unconnected state of the disease cannot be of long duration, when of course the present plan of treatment must be abandoned, and that by mercury principally trusted to for relief.

(The next and concluding letter is from a medical officer of the Indian Service, who was deputed by the Commander-in-Chief [illegible] to Wallajabad and superintend the medical practice of the Regimental Surgeon of the 30th Regiment, during the epidemic of dysentery which prevailed there in 1807. The Regiment had but recently arrived in India; the British medical officers had no experience of Indian diseases, and on the [illegible] of the Commander-in-Chief applied to the Medical Board for the services of an "experienced medical officer" to advise and assist the Regimental Surgeon.—W. R. C.)

Review.

Cholera Maligna. By Surgeon BARNARD.

THE voluminous literature of cholera has received a recent addition in the shape of a pamphlet, [illegible] appendix.

published by Messrs. Thacker, Spink and Co., of this city, and entitled "Cholera Maligna is a specific acute inflammation of the mucous tissue of the small intestines, by George Barnard, M.R.C.S.E.; Staff Surgeon, Eastern Frontier Brigade, H. M.'s Indian Army." The author's scheme of the pathology of cholera is succinctly stated on the title page of his pamphlet. There is nothing novel or original in the view adopted. It was held by Jameson in 1820, by Broussais and his school 10 years later, and put forward more recently by Dr Chuckerbutty in the *Indian Annals of Medical Science*, No. XXII, page 61. We therefore look for originality in the proof or demonstration. Dr. Chuckerbutty details and classifies the morbid appearances in sixty-three fatal cases, and we can sympathise with a theory resulting from a too exclusive attention to the morbid anatomy of the disease, and a too sparing consideration of its phenomena. Dr. Barnard does not give a single original observation in support of his theory, and moreover does Dr. Chuckerbutty the injustice of not acknowledging his previously recorded and almost identical opinion. His "proofs" consist of a few extracts from the writings of Alison, Watson, Hodgkin, and others, and we may look in vain for any reference to Parkes, Macpherson, Goodeve, Johnson, Murray, &c., who have made the phenomena of cholera a special study. He neither states nor attempts to rebut the arguments which may be adversely urged. He quotes Dr. Hodgkin, to show the difficulty of determining what an inflammation of mucous tissue is, as distinguished from congestion, flux, desquammation, or simple excess of functional activity, and completely shirks the discussion of this, to him, fundamental question.

His thermometer experiment (which appears to us to have been a most unjustifiable one), proves nothing. It stands alone; and until a thermometer has been introduced "upwards and backwards" into the abdomen of a healthy subject, through a canula, there is nothing to compare it with. Besides, though excess of heat does accompany the inflammatory process, inflammation does not always accompany excess of heat. Dr. Barnard has still to demonstrate that the choleraic lesion is an inflammatory one, primarily and essentially. In some cases, no doubt, inflammatory action does occur, but this would appear to be exceptional and subsequent. The choleraic lesion is as specific as that of typhoid, dysentery, scarlatina, small-pox or erysipelas—a feature of the sequence of morbid events we call cholera, and as much reason might be urged in favour of considering the specific lesion of these and other diseases as the essential and central feature of the morbid sequence, as in the case of cholera—perhaps more. The term specific is a mere sound if it does not mean a lesion peculiar to the particular disease; and there is nothing new or startling in announcing that *the* lesion of cholera is specific. How does Dr. Barnard's theory explain cases, many and well authenticated, in which the specific lesion is slight or absent? He also fails to demonstrate the relation between the intensity of the lesion and the severity of the disease, which ought to obtain if the lesion is the essential cause and substratum of the phenomena. We may also look in vain for any serious or systematic attempt to explain the symptoms and other *post-mortem* appearances of cholera, or to compare the choleraic lesion with inflammatory processes, simple or specific, elsewhere or otherwise caused.

The toxic theory of cholera will maintain its ground until a better is discovered, and, however dogmatically a stale, *effete* and incomplete doctrine is again propounded, strength of asseveration will hardly compensate for its intrinsic weakness or deficient demonstration. We would remind Dr. Barnard in passing, that the villi are not secreting organs, and that he has quite overlooked the state of the follicles in early stages of cholera as described by Parkes and others.

If the pathology of our author is second hand and eminently crude, his therapeutics are positively dangerous. He gives antimony to the amount of one grain, repeated every quarter of an hour until reaction occurs. His therapeutical theory is ostensibly antiphlogistic, but in reality the contra stimulant theory of Marryat, Rasori, and others; both weighed in the scales of experience, and found wanting. His practice is not novel; but he does not give the results of the previous trials of antimony in India, and ipecacuanha in France. His own experience consists of 28 cases and 10 deaths—35 per cent.—a result which falls well within the fluctuation of the cholera death-rate, namely 10 to 70 or 80 per cent. On the faith of this success (?) he threatens any practitioner who in future fails to adopt his practice with criminal prosecution!! The arrogance and folly of a statement of this sort preclude comment, as the the statement of the extreme death-rate of cholera as the ordinary rate (page 12, Append[illegible] compel censure. The cases are very vaguely reported; and in four of them secondary effects, after reaction, fairly attributable to antimony, occurred. (Case II, V, and two of Dr. Reed's p. 25 and 27, Appendix.) Dr. Barnard seems to be unaware, that in the collapsed stage of cholera absorption is in abeyance, and that fact, with the continuance of vomiting and purging, would explain the immunity from serious consequences, which happily obtained in most of his cases. When a patient can take 580 grains of calomel without ptyalism, 55 drops of croton oil without enteritis, 33 grains of opium without narcotism, and 22 grains of extract of belladonna without dilatation of pupils (Macpherson's Cholera in its Home, page 93), we cannot be surprised that 2 or 3 drachms of tartar emetic fails in every case to do much harm. Dr. Tayl[illegible] [illegible] cases in which 3 to 10 grains of tartar emetic caused death; and we can only explain the *tolerance* of 30 to 180 grains by the abeyance of absorption, and the persistence of vomiting and purging. There seems in cholera to be an equal tolerance of croton oil, opium, strychnia, and belladonna.

Dr. Barnard's sanitary doctrines are obtained from Moses and Moule, and are, if not very feasible, at any rate very plain, and repeated *usque ad nauseam*. He gives a lively sketch of a model city and camp, and disposes of Petenkoffer in a sentence or two.

We would strongly recommend him, if he must write, to turn to some other subject, where intuition may supply the place of induction; and we would suggest to him to study this saying of Bacon's as a motto or text for his next essay:—"If a man will begin with certainties, he shall end in doubt; but if he will be content to begin with doubts, he shall end in certainties."

Local Correspondence.

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THE WANT OF SURGICAL MECHANICIANS IN INDIA.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

Sir,—Will you allow me, through the medium of your journal, to invite the attention of surgeons in India to our want of mechanical contrivances or appliances for the relief of physical deformities, resulting either from diseases or the operations which they necessitate. This want may, very probably, not be much felt in Calcutta, and I therefore trust that the distinguished professors of our Metropolitan College will pardon me for venturing publicly to write on a subject with which some experience, as a surgeon in the mofussil, has made me painfully familiar.

If we take the annual returns of the operations performed at the different dispensaries in the North-Western Provinces, for example, we shall find that a large number of amputations of limbs are annually performed, and a large number of lives thereby yearly saved. But ought we, as surgeons, to rest satisfied with the salvation of life at the cost of a limb? Is it not extremely painful to us to see the poor wretches whose legs or thighs we have mutilated, either condemned to crawl along the ground, or to hop on one leg, or to hobble along by the aid of a stick, which has a cross bar placed at a right angle for the bent knee to rest on, and which rude and cumbrous representative of an artificial limb needs the assistance of both the arms of the patient for him to use it at all? Surgeons, here and there, I know, have constructed artificial limbs for their patients, but I speak only within my own knowledge, when I say that, though I h[illegible] on a large number of the patients of native dispensaries who had undergone amputations, I have never seen one with a properly adapted artificial limb. Practically, according to my experience, amputation below the knee joint condemns the native to a slow and laborious progression by kneeling on the stick to which I have before alluded. Amputation through the thigh restricts the patient to hopping on one leg; and after amputation, through the arm or fore-arm, I have not seen anything done with a view to improve the usefulness of the imperfect member. Most of us who have had charge of native dispensaries or hospitals must remember the difficulties which we have often had to encounter in order to get even a rightly shaped, or an interrupted splint, a swing cradle, a properly fitting truss with a suitable spring, a pair of forceps fit for what we wanted of them, a knife that would cut, a clamp that could be relied upon or a convex glass

[illegible]

W[illegible] They [illegible]

H. H[illegible] [illegible]

S[illegible]

H. C. C[illegible], F.R.C.S.

THE FURLOUGH RULES AND THE MEDICAL SERVICE.

TO THE EDITOR OF THE INDIAN MEDICAL GAZETTE.

SIR,—I cannot suppose Government, in publishing the orders afterwards referred to, clearly appreciated the real injury thereby inflicted on the Medical Service; otherwise I do not think the said orders would have appeared in the *Gazette*. If I mistake not, the Indian Medical Service has hitherto been regarded as a branch of the Army, subject, as regards Furlough Rules and other vital points, to precisely the same treatment. Certainly, the Furlough Regulations of 1796 and 1854 were equally applicable to both classes; the advantages equally available to all. And so, it seems, was it intended the rules of 1868 should apply. This is plainly evident from para. 34, which reads, "Officers of the Indian Military and Medical Services will be required generally to notify their intention to accept the[illegible] rules on the first occasion of their taking furlough." What then can be urged in justification of the order No. 1175, dated 26th December last, in which it is stated that "regimental medical charges are not considered appointments in the sense of Clauses 2, 7, 13, and 16 of the Furlough Rules of 1868?" Or in defence of No. 660 of 1869, containing resolution of Government to the effect that an officer in charge of a civil station [illegible] have any claim to re-appointment to the same station?" The Furlough Rules of 18[illegible] clearly state (*vide* para. 2) that leave taken under the[illegible] [illegible] reserved will [illegible] para. 5, that [illegible] proceeding on furlough, will be allowed pay at the rate of [illegible] *per cent.* of the salary of the [illegible] appointment. [illegible] advantages [illegible] the whole [illegible] military or [illegible] denied to the Medical Service. And [illegible] Of course Government [illegible] to give the [illegible] of every [illegible] necessary [illegible] matter as the [illegible] appointment [illegible] the most [illegible] for the [illegible] in [illegible] of necessity, the Medical Department as a body [illegible] of the public Service. And [illegible] of the Medical Service of the [illegible] advantages of the Furlough Rules [illegible] there [illegible] would be restored. [illegible] the absence of any such reasons, touching the vital [illegible] assertion [illegible] appears only evidence of that [illegible] so often remarkable.

As matters [illegible], however, I can scarcely imagine the authorities [illegible] aware of the extent of injury so harshly inflicted on the [illegible] Service. According as the order at present stands, a medical officer [illegible] going home on furlough, not only loses his right to return to his regiment, but also [illegible] £[illegible] per annum, as an assistant-surgeon of five years' [illegible] rising scale to the highest grade [illegible] as the [illegible] Department will doubtless rule, as [illegible] medical officer has [illegible] claim to retain his appointment [illegible] he has no [illegible] but the allowances, which, of course, [illegible] his pay to the half of the unemployed scale [illegible] deprived of his regiment!

But this does not represent the pecuniary loss *in toto*. Many (perhaps most) medical officers in civil employ own property, such as the house they live in. Not now being permitted to return to the appointment previously held, every thing must be sold, and re-purchase takes place on again entering on Indian Service. Even if done leisurely, pecuniary loss is almost certain. In the case of medical officers suddenly leaving on account of sickness, and so obliged to sell off at once, the popular phrase "alarming sacrifice," scarcely expresses the ruination which must so threaten many.

Again, consider the case of a medical officer who has worked and waited for years for some civil appointment. At length he is rewarded by obtaining the coveted post. But he falls sick, and is obliged to visit Europe. He therefore loses the position he has attained, and on return to India must seek his fortune afresh.

I am aware that it is ruled in the Civil Service Furlough Rules of 1868, that a civil servant taking furlough vacates his appointment. But I beg to submit that this cannot be advanced as a reason for singling the Medical from all Military Departments, for the application of this particular rule of the Civil Service. If this be just, it would be equally right to apply *all* the rules of the Civil Service to the medical officers. Doubtless, few of us would dissent from such an order. Doubtless, the whole military body would gladly participate in the loaves and fishes and disadvantages of the Civil Service; would exchange rules, furlough, pay, pension, with considerable alacrity. But the application of the most disadvantageous clause of the Civil Service Furlough Rules, to one class of military officers alone, *viz.*, medical officers in civil employ—is a procedure which, in the absence of any just reason, I for one must regard as a legitimate cause of complaint and remonstrance to the highest authorities.

In the order previously quoted, No. 660 of 1869, ruling a medical officer has no claim to return to a civil appointment, it is stated, that he may retain a lien on some appointment of equal emolument. But we all know the value of any such guarantee. Even if acted up to in spirit and letter, whenever opportunity of doing so presented, it is clear that no Government or administration would always have the opportunity. Medical officers holding appointments could not, I presume, be removed to make room for others returning from Europe with a "claim" to an appointment of equal emolument to the one they held before proceeding on furlough. For a first-class civil station, a man with a "claim" might wait years. For first-class civil surgeoncies are few and far between. The *para.* therefore of the order, stating that the medical officer, not permitted to retain his appointment, shall retain a lien on one of equal value, is not worth the paper on which it is printed!

Right [illegible] in the end. The invidious distinction [illegible] the Medical Service—the withdrawal of the [illegible] advantages of the Furlough Rules—is an exception [illegible] of right and justice prevailing, and as such [illegible] redress.

I am, Sir, Yours faithfully, SCRUTATOR.

September, 1869.

*** [illegible] does not affect the pay of [illegible] furlough. [illegible] Assistant Surgeon of 5 years' [illegible] per cent. of his pay, *i.e.*, £[illegible] a month, [illegible] a year, when on leave home.

† A [illegible] on furlough, 50 per cent. of [illegible] per cent. of his salary, should the [illegible]

Irish Correspondence.

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Dublin, September 17th, 1869.

The past three months have been rather uneventful, for though July was, as usual, distinguished by the meetings of what may be called respectively the Privy Council and the Parliament of the medical profession in the three kingdoms,—the Medical Council and the British Medical Association,—yet little of special interest has occurred in Dublin; and the great meetings alluded to have been fully reported already in the home periodicals, and in any case are hardly within the province of a "local" correspondent. The discussion on "hospitalism" in its relation to puerperal fever, which was still pending when I closed my last letter, was concluded on July 10th, when Dr. Evory Kennedy read an elaborate answer (occupying three hours in its delivery), to the objections which had been raised to his views. His answer was far too comprehensive to allow of my giving an abstract of it; but the gist of his arguments was that his opponents differed so among themselves as to refute one another, some of them accepting certain of his propositions which others denied; and that by admitting, as they all did, the contagious nature of metria, they necessarily accepted as true 12 out of his 13 propositions.

On the 30th July, at the meeting of the British Medical Association at Leeds, Dr Kennedy read another paper on this subject, in the section of state medicine. An interesting essay on hospital construction had been read on the previous day in the general meeting, by Captain Galton, C.B., and an animated discussion was called forth by these two papers. One of the "conservative" speakers gravely urged, as an argument against "too great ventilation," that "nurses said that, if they had the chance, patients would shut the windows." No doubt; and "if they had the chance, many of them would get drunk, but that is no argument for the abuse of alcohol. Some of the speakers objected to the building of *Handsome* hospitals, on the ground that an ugly building, when it became unhealthy, would be demolished when a handsome one would be spared. Those who know the Medical College Hospital in Calcutta will feel the force of this argument. This question of hospital construction has been raised opportunely enough; for recent legislation has placed in the hands of Government considerable revenues, which are to be devoted wholly to "the relief of suffering" in Ireland; and it is most probable that one use to which these funds will be put will be the re-building or enlarging of the county Infirmaries.

On the 22nd June, at the meeting of the Statistical and Social Inquiry Society, Dr. E D Mapother read a paper on "Dublin hospitals, their grants, and governing bodies," which provoked a discussion almost as warm, while it lasted, as that which followed the reading of Dr. Evory Kennedy's paper. Dr Mapother's object was to expose the present system by which the appointment of the medical officers to several of the Dublin hospitals is regulated by nepotism or party spirit, while in several others the offices of physician and surgeon are attainable by purchase. It might have been supposed that nothing could be said in defence of this state of matters, and that attention only needed to be called to it to ensure its abolition. Nevertheless, the discussion which followed the reading of Dr Mapother's paper lasted through two evenings, and the purchase system was defended by many speakers who, like Sir D. Corrigan, must be considered as uninfluenced by mercenary considerations. A reform, however, is inevitable, and I believe that it is being already carried out in some at least of the hospitals where the purchase system hitherto prevailed.

After some opposition, the "Medical Officers' Superannuation (Ireland) Bill" has at length become law. It merely extends to the hard-worked "dispensary doctors," the privilege which all other officials under the poor law authorities have long enjoyed, of receiving a pension when past their labour. The Bill lays down no fixed scale of retiring allowances, but merely permits the Guardians to assign pensions when they may see fit (subject to the approval of the Poor Law Commissioners), to medical officers, although the latter may not have devoted their entire time to the duties for which they are paid by the Guardians. It was on the ground that their entire time was not occupied by these duties, that medical officers have hitherto been excluded from the privilege of receiving pensions when too old for active service. Unfortunately, the Bill expressly declares that the pensions are to be altogether defrayed from the poor rates; thus making it the interest of the rate-payers to retain old medical officers on full pay as long as possible.

The (Protestant) Arch-Deacon of Raphoe has addressed an able letter to one of the Dublin newspapers, recommending that the revenues which will be placed at the disposal of Government by the "Irish Church Bill" should be devoted to providing salaries for medical officers. No better application of the revenues of the Church could be devised; and the only weak point in the Venerable Arch-Deacon's letter is the fact that he is influenced, not only by a wish to benefit the hard-worked and ill-paid "dispensary doctors," but also by his anxiety to prevent the clergy of other denominations from benefitting, directly or indirectly, from the funds in question.

Dr. E. Percival Wright has been appointed Professor of Botany in the University of Dublin, and the Chair of Zoology thus vacated by him has been filled by Mr. A Macalister.

On the 4th August, two workmen lost their lives in a sewer here, in consequence of inhaling sulphuretted hydrogen, which is believed to have been set free by the acid sewage from some chemical works acting on the "lime refuse" from the gas works. That such an accident should have occurred is most discreditable to the corporation, in whose hands the gas works now are; especially as by substituting oxide of iron for lime in the purification of the gas, as recommended by Drs. Mapother and Cameron, all risk might have been avoided.

Attention has been called, by a writer in one of the Dublin papers, to the dilapidated state of several ancient monuments which stand *outside* the Chapel of Trinity College, and among which is that of the celebrated Dr. John Stearne, the Founder and first President of the Dublin College of Physicians, who died in 1669. The writer suggests that a subscription should be raised among the practitioners of Dublin for the purpose of having Stearne's monument (which does not now stand in, or near its orginal site, which was in the old chapel, demolished nearly a century ago), repaired and placed either *inside* Trinity College Chapel or in the hall of the College of Physicians. When will the medical practitioners of Calcutta exert themselves to take a similar step with William Hamilton's monument, which still stands, neglected and almost unknown, in Job Charnock's venerable mausoleum at St. John's?

Golandaz.

Extracts.

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On Absorption by Wounds.—M. Demarquay *(in the Union Medicale)* terminates an account of his investigations on this subject with the following conclusions:—

"1.—It results from my researches that a substance soluble in water, as iodide of potassium, is very rapidly carried into the torrent of the circulation, and eliminated by the saliva when it is applied to a large surface of denuded dermis. In such cases elimination takes place in from four to six or eight minutes. 2.—This same substance placed in the serosity of a blister penetrates into the economy far less readily, by reason of the albuminous layer which covers the dermis, absorption not taking place then until nine, ten, fifteen, or twenty-six minutes. 3.—A solution of the iodide injected into the cellular tissue is absorbed and eliminated by the saliva in a period of time varying from ten to twenty minutes. 4.—The same solution applied to a recent wound is exhibited in the saliva in from one hour and a half to nineteen and fifteen minutes. 5.—When the wound has become "perfectly organized" it possesses great power of absorption. At the end of ten, eight, six, four minutes, or even less, evident traces of iodine are found in the saliva. In the face of such a power of absorption, we may ask whether the septic element which gives rise to erysipelas and puerperal fever may not have been absorbed by the wound itself? 6.—In that serious complication of wounds known under the name of "purulent infection," ought we not to inquire whether this power of absorption, so little established up to the present time, does not play a considerable part, and explain some of the phenomena generally referred to phlebitis? 7.—Iodine injections thrown into abscesses, active or passive, or into encysted cavities, whether inflamed or not, are rapidly absorbed. I have proved that elimination by the saliva takes place in a period of time varying from forty-five to three minutes. 8.—When such injections are employed in too large quantity, or are too often repeated, the iodine thus constantly introduced into the [illegible] may [illegible] —Iodine and bromide of potassium [illegible] economy by the [illegible] mentioned is [illegible] eliminated by the saliva and the urine in four or five days." — *B. and F. Med. Chir. Review.*

INTRATHORACIC ANEURISM.—The treatment of these complaints by means of compression or ligature of the main vessel, is cleverly discussed by Dr. [illegible], in Virchow's Archiv, vol. XLVI, part 2, 1869. All the cases reported are collected and discussed as to etiology, treatment, and results. As deligation [illegible] in several cases proved disastrous, the author is inclined to think that compression will in general (at least in limine), be preferred.—*The Lancet.*

HYPODERMIC INJECTIONS IN STRANGULATED HERNIA.—Dr. Ravoth (Berlin Wochenschr., No. 23, 1869), mentions a case of strangulated femoral hernia in a man of fifty-six, in which taxis was unsuccessful until subcutaneous injection of morphia was used. Reduction was then effected. The author mentions a second similar case in a woman of forty-five, where the same measures were followed with the same successful results. Dr. Ravoth states that he has found only two analogous cases in medical literature: 1st, Steinhaus (Wiener Med. Presse, No. 13, 1866), and 2nd, Eulenburg's work entitled "Hypodermatisch Injection," 2nd edit., 1867, p. 165.—*Ibid.*

THE *Gazette des Hôpitaux* of July 24, "contains an account of the trials which M. Richet has been making during this last year of what he calls interstitial injection of caustic substances." The caustic employed is the chloride of zinc, but, instead of using it in the solid form, M. Richet employs it after it has become liquified by exposure to the air. Being very hygrometric, it is soon converted into a liquid of a syrupy consistence. The form of tumour which has been most frequently experimented upon is the sebaceous cyst of the scalp, which the French call loupe. It is possessed of little vitality and power of re-action, and it suffices to inject into its substance, by means of a Pravaz syringe, from one to four or five drops of the liquified chloride. When the loupe is a true lipoma, consisting of nothing but fatty tissue, a few days after the injection its contents may be pressed out by the small aperture in the skin which is left by the little superficial eschar produced at the point of puncture. It has frequently happened that a single drop of the caustic thus injected has sufficed for the removal in this way of tumours of considerable size. In a case in which the loupe was formed by the transformation of some blood which had been effused as a consequence of a fall, enucleation could not be practised after the injection, and the knife had to be employed. The tumour, however, consisted of several firm, semi-transparent, fibrous-looking layers, in no wise resembling a loupe; and this is the only instance of failure in twelve months during which M. Richet has so treated a considerable number of loupes.

A week or two since M. Richet tried this injection on an enormous goitre, making several punctures along the median line. There resulted mortification of the skin over an extent of about three centimetres, and also sharp inflammation with induration, and perhaps more or less gangrene of the median lobe of the thyroid gland. It is remarkable that the two lateral lobes diminished rapidly, and became more supple during this inflammation of the median lobe. The injections have been too recently made to allow of the eventual result yet being determined, but it will be a great boon if this mode of cauterising prove efficacious, so that it may be substituted in the treatment of goitre for the [illegible] which is employed in Paris, and has in several cases been followed by fatal hæmorrhage.

In our number for May 29, we noticed the practice of Dr. Kraft Ebing, which he states as being highly successful, in producing rapid and painless [illegible] of steatomatous tumours of the scalp, and which consists in the injection into their substance of a few drops of a solution of tartar emetic.—*Medical Times and Gazette.*

ON THE USE OF STRYCHNIA IN CERTAIN FORMS OF EPILEPSY. BY WALTER TYRRELL, ESQ., GREAT MALVERN.—In a disease like epilepsy, of which the pathology is very obscure, it is satisfactory when we can say that we have established any definite fact, more especially when that fact is one bearing upon treatment. Now that bromide of potassium has a decided effect in relieving certain forms of epilepsy is one such fact, and I wish to point out in this note what I think will be established, on trial, as another fact equally worthy of notice, viz., that other varieties of epilepsy may be cured by strychnia. I do not mean to say that I can point to this or that case, and say it will be cured by strychnia; in our present state of knowledge we are unable to do this with any remedy; but I think I can point to a large class of cases in which anæmia and defective nervous control are prominent symptoms in which the administration of strychnia will be followed in the majority of cases by the most beneficial results.

My experience would lead me to believe that large doses are unnecessary, for, although I have carried the dose as high as one-third of a grain twice daily, with benefit, I am now in favour of employing smaller amounts, given more frequently. I have been using this remedy now for nearly ten years, and I can certainly show some valuable results. I am now preparing to tabulate the whole of my cases for publication in a collected form.—*British Medical Journal.*

MR. PORTER'S CLINIQUE.—NÆVUS CURED BY THE INJECTION OF CARBOLIC ACID.—Mr. Porter exhibited to his class a child named Margaret B., aged ten months, who had been admitted into hospital, about six weeks previously, for the treatment of a large nævus, situated on the lower part of the fore-head, immediately above the nose. It was venous in character, and when first seen was circular in form and as large as half a crown, projecting forwards considerably. He resolved to attempt its solidification and cure by the injection of carbolic acid, and accordingly two minims of pure acid were introduced into the nævus by means of a hypodermic syringe. Such inflammation as followed having been allowed to subside, the operation was repeated, seven times in all, an interval of several days being permitted between each injection. No untoward consequences took place; the skin was not injured; and now, after the seventh operation, the mass had become solidified, and would in due time be absorbed.—*Medical Press and Circular.*

BROMIDE OF POTASH IN DENTITION.—Dr. Salvatore Caro, in an interesting paper, read before the New York County Medical Society, on the use of this remedy in "summer complaints," remarks, in connexion with the disturbances arising from dentition,—"In the most severe cases of odontitis, either with or without ulcerated gums or loose bowels, I have never failed to relieve the child by the local application of the bromide of potassium. Almost immediately after the first rubbing, the gums, from being turgid, swollen, and red, assume their natural color, and a certain amount of ease is felt. Saliva commences to dribble; and, as if by enchantment, agitation, carpopedal involuntary motion, vomiting and looseness of the bowels disappear. As the vomiting and diarrhœa in this case are not the consequence of gastro-enteritis, but an excitement of the stomach and the intestinal mucous membrane, owing to the inflamed condition of the gums, I suppose it will never be cured either by the scarification of the gums, or by the use of astringents or anodynes; but, as I shall hereafter prove, simply by the use of the bromide of potassium."—*Ibid.*

OZÆNA TREATED BY PERMANGANATE OF POTASH.—The *Marseille Médical* gives three cases of this troublesome affection, treated successfully by irrigations of permanganate of potash, the proportion being 5 parts to 100 of water, applied by means of an irrigating apparatus, furnished with a flexible tube, the patient's head being held forward, and a copious washing of the fluid used over the mucous surfaces. After the first few days of this treatment, the abominable odour speedily diminished, and a cure followed.—*Ibid.*

NITRATE OF LEAD IN SORE NIPPLES.—Dr. Wilson, Professor of Midwifery, Glasgow, recommends the above treatment. Ten grains of the nitrate are to be dissolved in one ounce of glycerine, or brandy, and the solution applied freely to the affected nipple after sucking. Care must be taken to wash the breast before the next application of the infant. Dr. Wilson states that, in his experience, the cases were few and rare in which this remedy failed, and he is satisfied of its superiority to any other agent hitherto employed.—*Glasgow Medical Journal.*

ORIGINAL COMMUNICATIONS.

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EXPERIMENTS ON THE INFLUENCE OF SNAKE-POISON ON THE BLOOD OF ANIMALS.

Present:—Drs. FAYRER, CUNNINGHAM, and Mr. SCEVA.—September 18th, 1869.

EXPERIMENT No. 1.—A dog was bitten in the fore-foot by a spectacled cobra. The snake struck the dog in the foot, and held on for a moment, at 3-27 p.m. The snake had been some weeks in captivity and had bitten before. 3-30.—The dog wildly excited, whining and licking the bitten part, which is bleeding and swollen; keeps turning round and round; sitting down and rising again in an excited manner; breathing very much accelerated. 3-40.—Licking the wound in sitting posture, and is trembling all over. 3-47.—Staggering. 3-50.—In convulsions. 3-55.—Dead—in 28 minutes.

Body examined at 4. p.m.—Lungs not congested; cavities of the heart filled with dark blood, which reddened and coagulated firmly, directly it was removed: part was already coagulated. At 4-15, no rigor mortis.

Mr. Sceva reports that a little stiffness of the limbs had taken place at ten minutes to five, or in about an hour after death.

EXPERIMENT No. 2.—A pariah dog was bitten by the daboia that had been in confinement since December, 1868, and during that period had never taken food or water. It had been some weeks unused, and when taken out of the box was very active and vicious; it seemed in good health and condition. Its jaws were closed on the dog's thigh at 3-27 p.m. At 3-28, the dog was partially paralysed; it made no noise, seemed to feel no pain; tried to move away a few paces with a staggering gait; the bitten limb almost useless; head drooping to the ground. 3-40.—Is unable to stand; limbs extended, perfectly paralysed; breathing deeply. 3-41.—Convulsive rigidity of the limbs.—3-44.—Dead—in 7 minutes.

The poison appears to have been very active in this instance, notwithstanding the condition of the snake. Paralysis of the nerve centres seemed to follow immediately after the bite; there was no sign of pain, and the dog was unconscious almost immediately.

Body examined at 3-55.—Lungs not congested. Cardiac cavities filled with fluid blood. The blood was perfectly fluid, both in the heart and great vessels, and remained so; no attempt at coagulation occurred. The contrast with the blood of the dog killed by the cobra was very remarkable, it formed at once a firm clot. At 4-15 p.m., there was no rigor mortis.

Mr. Sceva reports that at ten minutes to five, or in rather more than an hour after death, no rigor mortis had taken place.

EXPERIMENT No. 3.—A fowl was bitten by the same daboia in the thigh at 3·49. When placed on the ground it ran a few steps, limping on the bitten leg. In 30 seconds it fell over in violent convulsions; in 20 seconds more—50 altogether—it was dead.

The blood of this fowl remained perfectly fluid after death.

EXPERIMENT No. 4.—A fowl was bitten by a small cobra (teturiah keauteah), not fresh, in the thigh at 4·8 p.m. When placed on the ground it ran about, limping on the bitten leg. 4·9.—Feathers drooping; crouching; rises and tries to run; its wings droop to the ground. 4·10.—Head falling over, beak resting on the ground, comb and wattles becoming livid. 4·11.—Nearly paralysed, point of beak resting on the ground to support the head; cannot rise. 4·18.—Violently convulsed. This continued at intervals until the fowl died at 4·23. Dead—in 15 minutes. On opening the body, the blood was found to form a firm coagulum.

The object of these experiments was to compare again the effects of the daboia and cobra-poison on the blood. They clearly prove that after death from the viper's poison, however quickly it may be caused, the blood remains permanently fluid; whereas that the cobra-poison does not destroy its coagulability. The nature of the change thus wrought on the blood, I know not at present in its chemical bearings, but I believe it to be effected through the nerve centres affecting the vitality of the blood, not by a direct chemical action. There certainly are differences in the symptoms caused in the bitten animals, but they equally point to direct action on the nerve centres, as the cause of death. I have seen as much difference between the effects produced on the cobra by different daboias, by the same daboia on different animals of the same species, as in those that had been bitten by the cobra; and, on the other hand, similar differences in the bite of different cobras, or of the same cobra on different animals of the same species. In point of deadliness, they are, when fresh and vigorous, about equal; but I think that the first effects of the poison are most rapidly shewn in the daboia-bite.

Dr. Cunningham, of the Bengal Medical Service, who is on special duty investigating the subject of cholera, and who has a microscope with high powers, has very kindly undertaken to make a most careful microscopical examination of the blood of these animals; I append his report.

General Hospital; Friday, 24th September, 1869.

MY DEAR DR. FAYRER,—Along with this I send you the drawings of the dog's and fowl's blood, which I got last Saturday. The specimens were examined, and the drawings (of which these are copies), were made on Sunday morning. In no case were any bodies seen corresponding with Halford's cells.

The blood of the cobra bitten was, at the time of examination, in a firm dark clot.

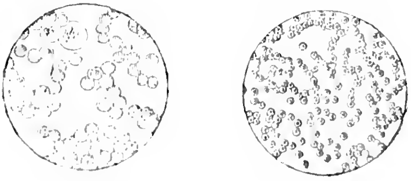
Beyond the ordinary constituents of the blood nothing could be seen, even under a power of nearly 1,100 diameters.

The blood of the dog bitten by the viper differed from the other. 1st.—In being entirely fluid. 2nd.—In being of a much lighter red colour. 3rd.—In containing numerous blood crystals. 4th.—In containing a good many large and active specimens of Bacteria.

The fowl's blood was in both cases very much broken up and decomposed, few entire red corpuscles remaining. This state of decomposition was most marked in the blood of that which was bitten by the viper. In both specimens were a few of the circular cells, which occur in fowl's blood under ordinary circumstances.

With many thanks for the opportunity which you have given me of examining the blood.—I am, &c.,

D. DOUGLAS CUNNINGHAM.



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1 2 Cobra—Dog.

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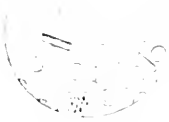

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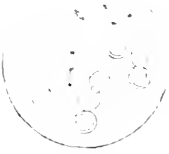

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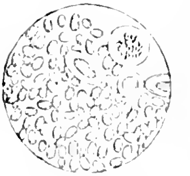

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3 Cobra—Dog.
7-8 ,, —Fowl.

4-5-6 Daboia—Dog.
9-10 ,, —Fowl.

EXPERIMENT ON THE ACTION OF SNAKE POISON WHEN APPLIED TO THE SURFACE OF THE CONJUNCTIVA, AND ALSO ON THE INFLUENCE OF EAU DE LUCE IN THE TREATMENT OF SNAKE POISONING.

Present.—Dr. Fayrer and Mr. Sceva.—September 25th, 1869.

Experiment No. 1.—A dog was bitten in the thigh by a fresh cobra (gokurrah) at 4-3 p.m.

At 4-4 p.m., thirty drops of eau de luce, diluted with water, were poured down the dog's throat. The dog was much excited, and ran about limping on the bitten leg, which was already nearly paralysed. 4-5.—Another dose of thirty drops administered. Drags the partially paralysed leg as he walks. 4-8.—Another dose of thirty drops administered. 4-9. The dog staggers as he walks; frothing at the mouth; looks much depressed. 4-12. Lies down; retching. 4-13.—Convulsed; another dose administered. He lies paralysed, and cannot move; the heart still beats; no respiratory movements. 4-14.—Convulsive gasping. 4-15.—Dead—in 13 minutes. Two hours after death the rigor mortis was complete.

I fear the eau de luce must be classed with other "antidotes."

Experiment No. 2.—Poison taken from a fresh cobra (a keautiah), and a drop inserted between the lids of a fowl's left eye, at 4-20 p.m. The eye closed immediately.

4-25. The eyelids already much swollen. 4-37.—So much swollen, that the eye cannot be seen. 4-38.—No constitutional indication of the poison. Another drop inserted; conjunctiva deeply injected and chemosed. 5 p.m.—The fowl crouches, but is easily roused; it seems slightly affected by the poison. 5-10. Crouching. 9 p.m.—Is drowsy; crouching, with wings drooping, and the point of the beak resting on the ground.

26th September, 7 a.m.—Lying on the ground with one wing extended; unable to walk. 1-30 p.m.—Lying down on one side; gasping; on being roused staggers and falls down. Has spasmodic movements; shivering; feathers ruffled. 6-9 p.m. In the same state. 6 a.m. Lying on one side, with the legs extended; frequent defecation. 9 a.m.—Appears to be improving; able to crouch on its feet. 4 p.m.—Is much better; takes food and water. 9 p.m.—Still improving.

28th September, 6 a.m.—Sits naturally on its feet; eats well; the swelling of the eye much reduced; is able to stand, but cannot walk much; the legs appear less benumbed, or to have been less ataxy; sleeps in an awkward manner. 7 p.m.—The bird seems to have recovered.

The fowl had a very narrow escape; it clearly proves that the poison acts by absorption through the conjunctiva.

Experiment No. 3.—A drop of fresh cobra-poison was put into a dog's eye at 4-27 p.m. The lachrymation was immediately profuse; rubs the eye with his fore-paw.

4-30.—Conjunctiva much injected; he is very uneasy, rubbing the eye with his foot. 4-38. Lies curled up with his head between his fore-legs. Another drop inserted into the same eye. 4-40.—Appears sluggish, but is not constitutionally affected beyond this. 5 p.m.—The dog is lethargic; lies with his head between the legs; eyelids and conjunctiva intensely swollen. 5-10.—No change. 9 p.m.—Eyelids closed, and greatly swollen.

26th September, 7 a.m.—Appears lively and free from pain; swelling of the eyelids much reduced.

27th, 9 a.m.—Eats well, and does not appear to suffer any pain. 9 p.m. The same.

28th, 6 a.m. Eyelids slightly swollen. 7 p.m.—Nearly recovered.

It is to be noted, that although most flagrant inflammation was excited in the eye, it had not, as in the ordinary form of conjunctivitis, a tendency to suppurate. The eye, although temporarily damaged, the cornea being rendered opaque, was not destroyed, as is so frequently the case in the specific form of *ophthalmia*.

This experiment, like the last, proves that the poison is not only absorbed through the conjunctiva, but that it is a local irritant. The inflammation is intense, but it subsides without treatment; and although the cornea is rendered opaque with cloudy opacity, it would evidently soon recover. It seems quite clear from these experiments, that the notion that the poison is not operative, unless introduced directly into the blood, is not tenable, and that it is capable of endosmosis.

The following incident is interesting, as it shows how one may be mistaken about a snake-bite, although the evidence of its infliction seems complete:—

A short time ago, my friend Dr.——— wrote to me, saying that a person had been to him, to inform him that he had been bitten by a cobra, and that he had prevented any evil effects by the timely use of measures known to himself. He offered to bring the sufferer, with the snake, for inspection. Accordingly my friend, accompanied by the patient, who brought with him a gurrah containing a full grown and vigorous cobra (keauteah), made their appearance the following morning, and I had the fullest opportunity of enquiring into the case. He informed me that he was fond of snakes, and was in the habit of handling them, having no fear of their bites. The cobra that had bitten him the day before, had been only recently caught in his presence, by a professional snake-catcher. He had purchased, and had been playing with it, when it bit him, through some inadvertence on his own part, on the back of the middle finger of the right hand. He immediately knocked the snake off; the punctures bled freely, and he vigorously sucked the wounds for some time, having also, I think he said, tied a ligature tightly about the wound. He felt no ill effects from the bites. There were two recent marks on the finger which just corresponded to the position of a cobra's fangs. They looked healthy and free from any irritation or mischief.

He took the snake out of the *gurrah*, putting his hand in among its coils fearlessly, although it hissed and tried to strike. He placed it on the ground, where it deported itself after the fashion of cobras, erecting its head and hood, and striking at whatever came near it. He sat on the ground and allowed it to crawl under his legs, caressing it at the same time. This, I confess, aroused my suspicions, but I warned him of the extreme danger he was probably incurring, and I asked him if he was sure the snake had its fangs; he said he had no reason to doubt it, for it had been caught wild in his presence, and he had never lost sight of it since. As there was not the slightest reason to doubt his statement, I was, I confess, somewhat astonished at his power of handling, thus fearlessly, so deadly an animal, and I again warned him of the great risk he incurred. He said he had often done the same with other snakes, and nothing had happened to him until on this occasion.

I have no doubt whatever that he fully believed all he said, and that he imagined he had prevented mischief by his treatment of the bite. To attest it, he had put himself to some inconvenience to shew me the bites and the snake that inflicted them, and there was no apparent reason for mistrusting his account of the matter.

He was about to take his leave, when, being still sceptical, I asked to be allowed to examine the cobra's fangs. He made no objection, but seemed rather to dislike opening the snake's mouth. We, however, effected this between us, and it proved that there were no fangs at all. They had long been removed, and the partially exposed roots of the broken teeth were barely visible above the sheath, leaving just rough surface enough to scratch whatever they came in contact with. He seemed more astonished than I was, and assured me, what I did not doubt in the least, that he had fully believed in the existence of the fangs, for, as he said, the snake had been freshly caught in his presence, and he had had it ever since.

I advised him to be more careful in his future dealings with the ophidiæ, as the next pet cobra might prove to have fangs, and the disposition to use them.

Had this gentleman gone away without examination of the snake's mouth, what other conclusion could have been drawn from his evidence than the most dangerous one, that the bite of a large and vigorous cobra may be inflicted, and yet that the simplest means are sufficient to obviate the evil results. It is probable, that if the details of similar stories, and they are not unfrequent, could be analysed, they would receive an equally simple and satisfactory explanation. It is not necessary, in investigating the real truth of such accounts, which are often so largely tinctured by ignorance and credulity, to impugn the veracity of those who relate them, and who are so prone to believe in the marvellous, and to deal with the improbable, simply because it is so.

I do not for a moment doubt that this gentleman, who so kindly volunteered to demonstrate the successful treatment of the bite of a deadly snake, believed in the whole story, and had not the faintest notion that he had been deceived either by accident, or by the snake-man who captured what was probably already a capture, in his presence. But the direct evidence of the snake's edentate upper jaw was more conclusive to him, as well as to us, than any amount of circumstantial testimony to the contrary.

I may here mention, shortly, another case which was related to me a few days ago by a gentleman holding an important post in one of the Bengal Railways, who was an eye-witness to what he described. He told me that he sent his servant to bring a bottle of soda water. The man went to do so, and in reaching out his hand, in what was probably an obscure or dark part of a room or godown, he must have actually placed his finger in, or close to, the snake's mouth. He came back to his master and said he had been bitten by a snake, and pointed to the two punctures on the finger as attestation of it. Further proof was not long in making its appearance, and within forty-five minutes the wretched man was dead. I hope to receive the details of the case more at length, and to learn something of the unfortunate man's condition during the operation of the deadly poison. Had the finger, in this case, been removed at once, or had a ligature been very tightly tied above the bite, the result might have been different. I say "might have been," because, in the experiments made on the lower animals, I have found that unless amputation or excision is made, with the greatest promptitude, the poison has already entered the circulation, and is rapidly running its course to the nerve centres, where it proves fatal.[*]

I would take this opportunity of requesting medical men, or others who have the opportunity of seeing cases of snake-bite in men, or even in animals, when well authenticated, to be so kind as to take the trouble of sending a brief account of the circumstances, the symptoms and the results, as they may have leisure or inclination to record; in all cases, especially noting the kind of snake that inflicted the bite.

VENTILATION IN INDIA.

By J. E. Tanner, Esq., M. Inst. C.E.

The greatest authorities disagree on ventilation, so much so, that hardly two persons are to be found who hold exactly the same opinion; yet this difference of opinion is not caused by regarding differently the physical laws which govern natural ventilation—for on that point, all are agreed; but they differ, on what may be the best means of causing artificial ventilation mechanically, and on the distribution of the in-coming and outgoing air.

Complaints are often made, that ventilation does not give as much satisfaction in India as it does in England, although the same system is adopted; with one difference to make it more suitable to the climate, (?) in that, the openings in the roof for the egress of air are much enlarged. For instance in one of the hospital barracks at Umballah—and indeed in all European barracks on the old standard plan—the opening at the roof given for ventilation is 3 square feet for every foot run of the length: thus in a barrack 100 feet long, there are 300 square

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[*] [illegible] near Calcutta, and the snake was one of the varieties of [illegible]

[illegible] while no means are provided to close such enormous openings.

If the opposite is taken to what we have to deal with in India, that is, cold instead of heat, we should find on a cold winter's night in England, such an area would render the barrack unfit for habitation, nor could we warm it by fires, where there is an opening equal to 10 doors left open in the roof for every hundred feet of its length. On a hot summer's day in England, with all the doors open, ventilation will be perfect. For as soon as the interior air is in the slightest degree heated, it will ascend to the opening in the roof and escape, to be replaced by the exterior and cooler air through the open doors. In England we have not to deal with an out-side temperature, warmer than breath when exhaled from the lungs.

That this point had been thought of by Dr. Reid is shewn in his excellent remarks on Natural Ventilation; but as he was writing on ventilation in England, he did not dwell on the possibility of the exterior air having a less density than the interior air of a dwelling further than making the remark that such a thing might be. The following is taken from Dr. Reid's remarks:—"For all ordinary purposes the natural method of ventilation will be found most eligible, that is, a process by which movements are induced or sustained in the air in the same manner as wind is produced in the external atmosphere, these movements being increased, when necessary, by the action of heat, and by the erection of a shaft or chimney, that the heat may acquire additional force." "As air constitutes, in one respect, a balance infinitely more delicate than any that man can make, and as the most trifling increase or diminution in the density of any portion of air leads it to press more or less heavily than before on that which is immediately in contact with it, circumstances almost too inappreciable at first to be considered worthy of notice, can nevertheless so alter its specific gravity, that it immediately begins to press more heavily than before on that which surrounds it, or to give way before the pressure to which it is still subjected, if its density is diminished. But though many popular misapprehensions are still entertained on the subject, it is universally acknowledged by all who have experimentally examined it, that the specific gravity of air vitiated by respiration or combustion—the two great processes that deteriorate air in ordinary buildings—is under ordinary circumstances less than that of common air; it gives way accordingly, and is pressed upwards by the denser and purer air."

"In proportion to the amount of contraction," speaking of the opening given for egress, the temperature of the air and the number of persons in the given space, "it may become necessary to increase the velocity of the discharge from the apartment. To effect this, let a shaft or chimney be extended from any opening in or near the roof, the column of warm air, which soon fills it, increases its power, and unless an extreme number of persons be crowded into the apartment, the shaft is sufficient for all ordinary purposes. It will act at all times when the density of the air within it is [illegible] than the density of the air without; and [illegible], its power can still be [illegible] by kindling a lamp or fire, or by merely increasing the temperature of the apartment for which it is supplied, as either of these [illegible] produce the necessary diminution of density or rarefaction of the column, on which its force depends."

Dr. Reid was writing only of a very crowded room in England, and showed how the chimney could be made to exert more force, or give better ventilation by drawing more cubic feet of air into the room per minute, for he would not have [illegible] that an Indian barrack during the hot weather, when its temperature exceeded blood-heat, should be heated by fire till its temperature exceeded that of the exterior air; but as it shews until that is done, or a fire is lighted in the shaft, ventilation cannot proceed. So long as the exterior air is the colder of the two all goes well, and in the barrack above quoted, it is almost needless to add that ventilation during the cold weather months is satisfactory, nor that it is a rather cold barrack on winter nights; but during the hot weather there is no ventilation, and it becomes warmer than it ought to be, with the appliances used for keeping it cool, on account of its large dimensions.

From there being no means of closing the large apertures in most barracks, the men themselves on cold winter nights prevent ventilation, for they take great care that all doors are kept closed, even should there be a broken pane of glass in one of the doors, the man whose bed may be near is sure to stop it up with a shirt or jacket, for they know by experience that an open door or any opening whatever makes the barrack colder than they like, besides the great draught that is occasioned by any small opening, such as a pane of glass forming the large opening in the roof. So that, even in the cold weather, when the men leave their beds the atmosphere of a barrack is not always satisfactory. The men know nothing about it [illegible] they went to bed when air was sweet and wholesome, but that it has become no longer so has grown upon them by degrees, and they have not noticed it, but any one entering from the fresh air cannot but feel surprised that they have not done so. Arrangements such as are adapted to England are what are required for the cold weather, viz., openings at the roof and floor, which can be opened or shut to suit the temperature at the time, yet so adjusted that the men in the barrack cannot alter them.

The same system is expected to answer equally well in the hot weather; it will not do so, it is against physical laws that it should do so, for we no longer have to deal with a barrack warmer than the outside temperature; but one having a temperature of, say, 98° while outside it is 120°, and THE COLDER AND HEAVIER AIR OF 98° WILL NOT ALLOW ITSELF TO BE LIFTED UP, AND AFTERWARDS FLOAT ON A LIGHTER VOLUME THAN ITSELF.

The laws which govern natural ventilation in a cold climate are reversed, when the temperature of the atmosphere exceeds 98°; for natural ventilation there, to produce any effect, it is absolutely necessary, that the air of the building should be warmer than it is outside, i. e., that it should have a less density; and after 98° are reached, man's breath can add nothing to the temperature.

Though the weights that have to be dealt with in proving that the laws are reversed are apparently insignificant, it must be remembered, that although they are to be reckoned only by grains,—the grains are as certain to perform their work, as the lbs. pressure per square inch on which rests the power of a steam, or an hydraulic engine.

The weight of 100 cubic inches of air when pure and dry, the barometer marking 30 inches and the thermometer 32 degrees is } 32·79 grains.

Air expands $\frac{1}{480}$ of its bulk for every 1° of heat Fah. (*Guy Lussac.*)

Weight in Grs.	Cub. inches.	Temperature.	Cub. inches.	Weight in Grs.
157	480	32	480	157
157	535	80	480	140
157	546	98	480	[illegible]
157	568	120	480	132
157	600	152	480	125

Therefore, if we take the temperature of the air in a barrack at 98° and the atmosphere outside at 120°, one cubic foot of air in the barrack at 98° weighs at [illegible] grains, while one cubic foot of the outside air weighs only 475 grains, and although the inside air is already heavier by 18 grains to every cubic foot, no augmentation of its temperature, to give it less density, can be effected by respiration (since a temperature of 98° is as warm as breath when exhaled from the lungs), indeed, it is heavier when exhaled than it was before it was respired, as nearly all the oxygen contained in the air, when it was respired, has been consumed, and replaced by the heavier carbonic acid; nor can the moisture (steam), that has been imparted to it, add to its lightness, since the steam has the same temperature as the air of the barrack.

The best way to illustrate how the difference of density affects ventilation, is to consider two tubes of equal internal diameter, 40 feet high (the height of a barrack), placed side by side, and connected at the bottom by a tube having a stop-cock, or some other means of opening or closing the communication between the two tubes. If, when the communication between the two is closed, one tube is filled with water, and the other with oil, and the communication opened by turning the cock, the water from its greater specific gravity, or density, will cause the oil to overflow at the top of one tube while the water will sink in the other, till the weight of the contents of the two tubes are exactly even. The one which orginally held water will still be only water, but will not be full, the other which was filled with oil will be full to the brim, but will have oil at top and water at bottom; and though one is full and the other not, the quantity of fluid in each tube will be exactly of equal weight, although one is not equal to the other by measure, owing to the difference in the specific gravity of water and oil. If water is gently poured into the tube that holds only water, the oil will continue to overflow its tube till it is all gone,—water has taken its place; thus water, from having a greater specific gravity than oil, is enabled to force the oil to give way before it. When the water has displaced the oil, *i.e.*, has reached the top of the tube that originally held the oil, no more can be poured in, since the density of the contents of both tubes are equal, as they both hold water; and being of equal height, one balances the other. The law thus demonstrated by liquids holds equally good with gases, and air that has a less density will give way before another that has a greater. If the tubes have an area of one square inch, and are 40 feet high as before, let one tube be filled with air of 98° and the other with air of 120°; the air of 98° will weigh 137 grains, while the air 120° will weigh only 132 grains; the air of 98° having 5 grains extra weight will force the air of 120° to give way before it.

We may therefore consider the air in a barrack and the atmosphere in the same way as the water and oil in the tubes; *but as the density of the two entirely depends on their temperature*, the air of the barrack must be the warmer of the two, if it is to represent the oil; when, as with the oil, from being the lightest, it is driven out of the ventilators in the roof, by the heavier air entering at the doors or other openings near the floor. the heavier air which has thus entered after being warmed by fires, respiration, or lamps, is in its turn driven out at the roof, and natural ventilation proceeds.

In Indian barracks during the hot weather months, the air of the barrack is colder than it is outside, therefore its air cannot be represented by the oil any more than the atmosphere can be by the water, for it is hotter, and therefore lighter than the air of the barrack. The air of the barrack, then, must represent the water, and the atmosphere the oil, consequently the colder and heavier air of the barrack seeks to flow out of all doors into the lighter atmosphere outside: as water would, if poured into a tube that was nearly touching the bottom of a glass filled with oil; the water, from its greater specific gravity, would instantly distribute itself over the bottom of the glass, in the same way; the air of the barrack, from having a greater density than the surrounding air, will seek to distribute itself, should any openings be given for it to do so. The air that thus leaves the barrack by the doors is replaced by the hot air outside entering through the ventilators; having entered the barrack, part of its heat is absorbed by the walls around. As it is no longer subjected to the rays of the sun, nor to the reflected heat from the earth's surface, what it may thus lose in temperature is not to be regained, particularly if all doors are shut, (for it is universally allowed, they let the hot air in), and what cooled air there may be in the barrack is prevented from too easily flowing out. If the doors were so well made as to hermetically seal all exit, the only augmentation of temperature that would accrue would be more or less according to the area of the openings given for ventilation, for the larger they are, the greater is the surface of contact between the colder air oft he barrack and hot air outside.

In an ordinary house, as any one who has spent a hot weather in the plains knows, all doors are shut during the hot months, from early morning till late in the evening, that the house may be kept cool; should a door be left open for any length of time, the effect is very soon felt, praticularly where no thermantidote is in use. An open door "lets the heat in;" this is caused by the colder air of the house seeking, on account of its greater density, compared to that of the air outside, to escape, which it does at the bottom of the door-way, while the hot air from outside enters at the top of the door-way to supply its place. The heat that enters, enters in this way, and not merely by the contact of the cold air of the house with the heated air outside.

It has been shewn how natural ventilation goes forward, when the barrack is warmer than the atmosphere; also what takes place when the atmosphere is the warmer.

It remains to shew what must result when the temperatures inside and outside are the same, at any degree of heat above 98°, for at that degree, heat from the body or breath cannot affect it; if the temperature is the same, the density must also be the same; so long as the air is pure, neither the outside nor the inside air has a wish to displace the other, all is balanced, and a perfect stagnation must ensue.

From the above, it will be understood how slowly ventilation must, in all cases, proceed, when the temperatures inside and out are nearly the same, for when they are equal, a perfect stagnation results; after the temperature of the outside exceeds that of the in, the openings afforded in the roof for egress become openings for ingress: if these openings are large, and the doors are left open, the barrack rapidly gets warm, and more nearly approaches the outside temperature, than it would have done had the doors been kept shut, and after a certain temperature has been reached, no further ventilation from having left the doors open is procured: unless it is by wind blowing through the building, which is quite apart from ventilation.

There is a certain amount of heat to be borne, and put up with by a resident in India, but there is no reason why in either a house or barrack it should amount to, (in the general way) and certainly should not exceed, blood-heat; after that every degree tells, and we all know how excessively languid we feel, if we have been obliged to breathe air of 100°.

Experience has taught those who have resided some time in the country to rigorously imprison the cool air of the early morning in their houses, by shutting all the doors, for it is universally allowed to be pleasanter to live in the same atmosphere during the whole day, than to allow more (than can be helped) of the hot, but uncontaminated air to enter; hence the necessity of the large and spacious rooms that are found in Indian houses. Were they not large and spacious, they would be positively unwholesome, for those who have fully experimented on ventilation have proved that each person in a room contaminates four cubic feet per minute. Notwithstanding all precautions taken to prevent hot air entering, it does so more or less, according as to whether the carpentry of the doors is good or bad; for, if large crevices are given, the cold air flows out through the lower ones, and is replaced by hot air entering either through other crevices higher up, or is drawn down a chimney, whichever may be the easiest for it to gain the supply; consequently in the afternoon, the air of the room shows a greater temperature than it did in the morning, which augmentation cannot be accounted for by the quantity of breath that has been exhaled in a room that was 90° or so in the morning; and if it was due to the heat of the walls, it would have shown itself far earlier in the day. But a barrack, however large and spacious it may be, cannot be shut up as a private house is, for the numbers in it contaminate such a large mass of air, as to put the cubic contents of the barrack out of all proportion to it; since 50 men will contaminate 12,000 cubic feet in one hour.

When the outside atmosphere has less density than the air of the barracks, it has been shown that there is a tendency for the hot air to enter, more or less quickly, according to the size of openings for ventilators, and whether the doors are open or shut. It is not to be wondered at then that barracks get warm, and that the men do not thrive well, when they have to breathe an atmosphere that exceeds blood-heat; not that doing so makes them feel languid, but reduces their stamina, for a man breathes certainly as quickly, and at each respiration takes in exactly the same number of cubic inches, whether he is breathing air at 32° or 112°, yet in the latter case he only gets [illegible] of the amount of oxygen (on which life depends) compared to what he gets when he is breathing air of 32°, owing to the air having increased its bulk from the heat. The system, therefore, lives with greater energy in a cold climate to what it does in a tropical one, and more nourishment is required during the cold weather; then the appetite is good, but it gradually diminishes as the weather gets warmer. In barracks having 300 square feet of opening in the roof, for every 100 feet of their length, it is not surprising that they get warm, and are for many days during the months of May, June, and July at a temperature above 98°, for the doors are often left open by the men in hopes of catching a breeze.

Natural ventilation will always go on, whenever the density of the air within is either more or less than the air without. Openings can be given so as to facilitate or retard the ingress and the egress, but Nature is always ready to equalise the temperature inside and out. On the one hand, warm air leaves the building and the cold air from outside enters, which if left to its own devices, that is, not obstructed in its ingress or egress, nor warmed by fires, &c., would in time so cool the walls, that the temperature inside and out will become equal; on the other hand, cold air leaves the building, that the hot air from outside may enter, which, if left to its own devices, will in time so warm the walls as to make the temperature inside and out equal. It is not necessary, that the hot air chooses a different door to enter by, to that [illegible] by the cold for entrance. If the air of a barrack is wanted to be kept cooler than the outside temperature, it is necessary to retard the ingress of hot air as much as possible; hot air must be kept out as rigorously as cold air is kept out in Canada, for not only is the heat unpleasant to the men at the time, but it heats the walls, which heat [illegible] away by heating any cooler air that may afterwards enter the barrack; and the heat absorbed by the walls during the day is given off to the colder air of the night. [illegible] the walls being heated a more even temperature [illegible] between inside and out, their densities more nearly equal to one another during a great part of the day, consequently there is less ventilation.

(*To be continued.*)

MEMORANDUM ON THE EFFECTS OF FAMINE IN RAJPOOTANA.

By W. J. Moore, L.R.C.P.,

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"Plague, pestilence, and famine" being so intimately associated, I have thought the present period of scarcity should not be permitted to pass without some attempt to note the effects of insufficient food, as regards the production of disease among the people of this part of India. I propose, first, comparing the experiences of the association between want and disease, in other countries; and secondly to mention any special maladies which may have arisen, attributable to peculiarities of climate or local circumstances. With this view, in order to supplement individual observation, I addressed all medical officers in Rajpootana, (likely from their position to have been brought into contact with the unfortunate suffering from famine) soliciting information on the subject. I have also used the reports forwarded to me, as Superintendent General of Dispensaries in Rajpootana, and the more intelligent native doctors employed in these institutions were addressed with specific questions, so that untrustworthy results, arising from deficiency of special knowledge on their part, have been reduced to a minimum.

The records of many countries demonstrate how closely plague, pestilence, and famine, have ever been related. The accounts extant, of the epidemics of the middle ages, shew it was so in those times, and without looking farther than Ireland, we find during even the present century, more than one melancholy illustration of the fact. The principal disease arising in Ireland, as the effects of famine, was a deadly contagious fever, resembling typhus, which, once originated, was conveyed into other countries, even to America, attacking numbers, although uninfluenced by the predisposing cause,—want.

Similarly there are abundant records of such disease prevailing in various parts of the continent of Europe, especially in Germany during seasons of scarcity, and popularly known in the country last mentioned under the significant name of "hunger pest." Those who escaped this most fatal form of fever became the victims of other maladies, such as scurvy, purpura, and a masked febrile condition terminating in atrophy or wasting.

Another recent example of the consequence of deficient food was the condition of the British troops in the Crimea in 1854, who, "with just sufficient food for a time of repose, and ordinary temperature, were called upon to make great muscular exertion, and to sustain the warmth of the system in the midst of severe cold."

The immediate effects of starvation as noticed in other countries are according to the best authorities as under. Hunger and pain at the pit of the stomach relieved by pressure. The hunger, however, soon ceases, and is succeeded by a feeling of exhaustion and intolerable thirst, fainting, and even loathing of food. At the same time there is a weakened condition of mental and moral feelings, and diminution of general physical sensibility to pain. Languor, despondency, listlessness, inability to think, and emaciation, are prominent symptoms. The person affected is also liable to giddiness, dimness of vision, with oftentimes temporary idiotic delirium, or mania and convulsions, terminating in lethargy and coma. The skin often exhales a peculiar offensive fœtor, and is covered with a dark, coloured excretion.

The effects of a more gradual deficiency of food somewhat differ. In such cases gradual emaciation is first noticed, with feebleness of circulation, tendency to cold particularly about the extremities with swelling of feet and ankles, the individual even, although not feeling the sensation of acute hunger is languid, desponding, incapable of exertion, and frequently very sleepy, the countenance being "forlorn and dejected." It is those reduced to this condition, who in Europe become the subjects of famine or relapsing fever, of scurvy, or purpura, or of the marked minor febrile disorder previously referred to.

But the symptoms of want of sufficient food in India, as I have noted them, differ something from what has been observed as detailed above. There is the same emaciation, the same dejected expression of countenance, thin and sharp as though the skin were drawn tightly over projecting features, the same giddiness and weakness and tendency to sleep, the same apathy and unwillingness for exertion. But in addition there has been frequently observed sickness, vomiting, cholera, diarrhœa, opthalmia, sun-stroke, in the earlier stages, with malarious fever, diarrhœa, and dysentery at a later period. *Gunj*, or scald head, is also noticed as more than ordinarily prevalent by Dr. Compignie, at Beaur, and premature labour by Dr. Murray, Ajmere. In this locality, opthalmia has been more than usually active. In no account of the effects of famine in Europe to which I have had access are these disorders noticed as prominent characteristics. On the other hand, there has been a total absence of, 1st, famine or relapsing fever, and, 2ndly, of the dark fœtid cutaneous secretion noticed in Ireland and Germany, while scorbutic affections have not been more than usually prevalent in most localities.

The prominent occurrence of weakness, vomiting, and diarrhœa among the Indian famine-stricken, must in a great measure be due to the use of various materials unsuitable for food, either alone or mixed with a variable proportion of grain. On the very first pressure of scarcity, this time last year, I received information from several sources of this result. The apthous condition of mouth so often noticed, may also be attributed to a similar cause, the whole again being manifestation of a bad form of dyspepsia.

The chief jungle products used as food during the present famine in Marwar (the same being the case throughout Rajpootana generally), have been thus denominated by Dr. King, formerly in medical charge of the Joudpoor Agency: 1, *mothee*, the root of *hymenochate gropa*, a species of rush; 2, *kegra*, the bark of the *acacia leucophlæa*; 3, *broont or bharoont*, the seed of the *ochyranthes aspera*; 4, *gokum kantee*, the capsules of the *tribulus lanuginosus*; 5, *malecha*, the seed of a grass; 6, *tilli*, the refuse of the *sesamum orientale*, remaining after the oil has been expressed; 7, seeds of various cucurbitaceous plants.

How diarrhœa is originated even among those not obliged to make use of the above material is well described by Dr. Miller, Nusseerabad: "the coolies, and others employed on Government famine works, who have had at least enough to eat, were in many places decimated by diarrhœa and cholera, though more by the former. I noticed that they ate nothing in the morning, and that at twelve o'clock they made the grain into a kind of loaf, half roasted rather than baked, washing it down with enormous quantities of water of any description. The inevitable consequence was, they were scourged by diarrhœa of a severe and intractable character, which carried off numbers."

The occurrence of sun-stroke among the Indian famine-stricken, must of course be attributable partly to climate, and tropical heat, acting on weakly debilitated systems.

Aguish or malarious fevers must also be regarded as entirely due to climate. It may be assumed that two-thirds of the adult population of India are more or less impregnated by the malaria poison, which dormant in the system, is raised into activity by all causes tending to depress the physical or vital powers, as want and fatigue. Similarly, with regard to dysentery, the action of a topical climate being to congest the abdominal viscera, explains the tendency of bowel complaints to terminate in dysentery, in these debilitated subjects.

Cholera has prevailed universally, and would appear to have constituted the chief cause of mortality. But there is no doubt, that a very large number of the cases returned as such were not true cholera. The total death-rate to treated is too small for Asiatic cholera. Cases under my care have recovered with stimulants and meat broth, amendment dating from the first mouthful of the latter. Yet these people presented symptoms, generally supposed to be distinctive of cholera, namely the white evacuations, and suppressed urine. Judging from the prevalence of pseudo cholera, during the past few months, it would seem, that among natives of India, want is capable of exciting a class of symptoms, very similar to true cholera; or in other words, the vital depression attendant on insufficient and improper food, excites a similar train of symptoms, to those following the vital depression consequent on the cholera poison. (Hence the importance of regime and diet during cholera seasons.) With respect to cholera, Surgeon Martin, Deesa, states, "I believe that all the cases I have seen have not been true cholera;" and although vomiting, diarrhœa, and collapse, &c., were present, both Drs. Martin and Galloway, attribute the symptoms to improper food.

Dr. Miller, Nusseerabad, also states, he has no doubt whatever, that the attack of epidemic cholera in May, June, and July, was in a great measure due to the famine, and consequent under-fed condition of the poorer population. "For it was very remarkable, that the cases were entirely confined to the very poorest class, and that during two months of the epidemic, not a single native of the better class was ever attacked."

The apathy and disinclination to exertion, so characteristic of starvation, has been well exemplified in the difficulty experienced in various localities, in inducing the people to work even for food. This would appear more marked among natives than among Europeans.

Scurvy and purpura, so frequently found accompanying want in Europe, do not seem to have been generally noticed. And this may probably be accounted for, by the vegetable and sub-acid nature of the supplementary food used. Dr. Miller, Nusseerabad, remarks, however, on the appearance of scurvy among the men of the 11th Bombay N. I. A class obtaining sufficient, but probably coarser and more indifferent grain than usual, but not obliged to add to the bulk consumed by the addition of the barks and roots named.

Accumulated experience is against the existence of *famine* or *relapsing* fever. Dr. Compignie, Beaur, states, "I have seen no famine fever whatever." Dr. Harvey, Burtpoor, writes "no case of relapsing fever has come under my notice." Dr. Martin, Deesa, "the type of fever has always been typhoid never relapsing. I looked out especially for this." Dr. Galloway of Odeypoor, "no cases of relapsing or famine fever have come under my own observation, or the observation of the native doctors." Dr. Eddowes, Erinpoorah, "I have not seen any famine (relapsing fever) here at all." Dr. Newman, Joudpoor, "I have heard of no disease approaching in its type to famine or relapsing fever." Dr. Miller, Nusseerabad, "I have not met with any case of famine or relapsing fever." The replies of the native doctors are also to the same effect. Lastly, I have not myself seen any instance of the disease.

The above evidence regarding famine or relapsing fever appears to me to be of great importance. It corroborates the assertion of the greatest living authority on fevers (Murchison), that famine or relapsing fever does not occur in India. It also agrees with the experience of former famines in this country, after which this most deadly form of fever has never been known to prevail. It also tends considerably towards negativing the opinions held by so many that the contagious fever afflicting the prisons of the North-West and Punjaub from 1860 to 1867, was simply famine fever due to defective diet. Lastly, it leaves a somewhat consolatory reflection that in a country like India, where so many fatal epidemics are experienced, there is at least one of the most fatal, not yet visiting the land. A malady of which it was written—"the disease found under the virulence of its action, for wherever it came it struck down a seventh of the population, and of these whom it attacked one out of nine perished."

Regarding the subject from a more purely sanitary point of view, the absence of relapsing or famine fever, is evidence that some other agent than simply want of food is necessary to the development of the disease. Most certainly the amount of distress during the present scarcity, has in many places been sufficient to establish famine fever, if the malady is caused by this condition alone. But no *fi*[illegible] of it has occurred. Hence the conclusion, that some other agent is necessary to its production; looking in recollection at the circumstances of the two countries Ireland, or rather Europe and India, it would appear that overcrowding is an essential to the excitation of famine fever.

In the former the cold of the climate induces the poor to congregate in ill-ventilated dwellings. In India the inhabitants live much in the open air, the majority of those suffering from scarcity adopting a nomadic life, and wandering off to other districts where they live pretty much *sub dio*. This view of the question should, however, result in greater caution as regards overcrowding in poor houses formed under supervision of British officers, open sheds being preferred to closed buildings. The fact of there being no evidence of the occurrence of true famine fever in India, cannot be accepted as a guarantee that such malady may not be originated. It is but a few years since the existence of both typhoid and typhus fevers was denied in India. Yet, now, the former is admittedly *endemic*, and typhus has been reported by at least three observers.

Under such circumstances, I venture to remark, that the propriety, on sanitary grounds, of assembling large masses of people at Agra during the ensuing cold season is questionable. Many would travel long distances, would commence the journey in a condition below par, would probably experience difficulty *en route* in obtaining supplies, would (as all who know what native camps are will readily admit) be exposed to crowding in small tents during the coldest period of the year, and lastly must be very likely to carry with them the germ of the cholera poison, now so extensively active throughout Rajpootana. Under such conditions, the outbreak of true contagious famine fever might terribly supplement the already heavy mortality of the present disastrous year. It is not the well-fed British soldiers or sepoys, or the chiefs and their immediate retainers, who would in the first instance at least suffer, but it cannot be ignored that two-thirds of the following of every native chief would be predisposed to the invasion of disease.

The following table, being the results of a comparison of the dispensary returns in Rajpootana for the months of May, June and July, 1868 and 1869, shows a predominance of certain maladies during 1869, and thus illustrates the foregoing observations. But in estimating the value of the table it must be recollected that the very poorest villagers, the greatest sufferers from famine, do not frequent the dispensaries:—

Showing the ratio per cent. to total treated in the Rajpootana dispensaries during the months of May, June and July, for the years 1868 and 1869.

Years.	Fevers.	Ophthalmia.	Diarrhœa.	Dysentery.	Cholera.	Abscess, Ulcers, Boils.	Sunstroke.
	Rate per cent. to total treated.						
1868	9·3	6·4	6·6	1·6	·	5·	·
1869	12·5	7·3	8·3	6·5	9·0	7·9	·3

The fact, therefore, of the diseases named (shown to be so intimately connected with famine), having acquired a markedly greater intensity among the slightly better classes, inhabitants of towns, is one of considerable significance, as tending to evidence the existence of wide-spread distress. Did the figures refer to the very indigent classes, such as inhabit the poor houses, the ratios would be much greater. The dispensary reports from Burtpore show the least difference, those from Keraolee, and Marwar, the greatest.

Before concluding, I beg to notice the various remarks in my correspondence evidencing how much has been done towards the prevention of distress, and which offered spontaneously, appear worthy of note. Thus Dr. Murray, Ajmere, writes—"in the poor houses of Ajmere, we have rescued from death a great number of poor people from the surrounding Native States, many of whom have been admitted suffering from all the symptoms of starvation." Dr. Compagnie, Beaur, "I think the people in the poor house have had a remarkable immunity from disease of all kinds," which certainly would not have been the case had they not been well taken care of. Dr. Harvey, Burtpoor, "no case of actual death from starvation has been observed. Extensive relief works have given employment to able-bodied paupers, and as above-mentioned, women and children have been relieved and supplied with food at the hospital." Dr. Galloway, Oodeypoor, "the scarcity here has been very great, but early steps were taken by the authorities, for the supply of food to the famine-stricken. At present about 9,000 people are fed daily at the expense of the Durbar.... This, although a poor diet, has no doubt been the means of saving many lives, and preventing the development of such diseases, as relapsing or famine fever." Dr. Mullens, Kharwarah, "I am glad to say the famine has touched this part of the world so lightly, that I have nothing about it to communicate to you. When it was known that there would be scarcity of food, Col. Mackenzie brought in the districts a large supply of grain, and this was retailed at a fair price to the men. The men are mainly recruited from 'pals,' within easy reach of the station, and as during the major part of the time, the quantity they were allowed to purchase was unrestricted, they were able to partly supply their families, as well as feed themselves." Several of the native doctors also remark on the good effected by the system of relief organized in the respective Native States.

NOTE ON CHOLERA.

By Surgeon A. G. Young, *60th Royal Rifles.*

In the *Medical Times and Gazette* of 22nd August, 1868, Dr. Haughton remarks.—"our hopes for the future, as to the treatment of cholera, lie, as I believe, in the direction of supplying to the body directly its lost animal heat."

That this important indication can be fulfilled, more rapidly and successfully, by the hypodermic syringe and a few drops of liquor ammonia, than by the ordinary methods in use, has now, I think, been successfully proved. Since you were good enough to publish the first case in which I tried the hypodermic injection of ammonia, I have not only succeeded with it in another case, but I have also received most satisfactory testimony of its efficacy, on a more extended scale, from Bengal.

Dr. Wright, of the 93rd Highlanders, writes from Jhansi, "since my second letter to you, I have been able, fully and satisfactorily, to demonstrate the curability of cholera by the hypodermic injection of ammonia." He then details three cases in which "the collapse in each was at a maximum, the suppression of urine complete, rice water evacuations and vomiting, cramps, &c., all present. Yet the ammonia injection has cured them all, and the good results followed so quickly after the injections, that no doubt whatever can be entertained but that the syringe worked the cure. All of them are now off the hospital books for cholera, quite convalescent."

My own observations, in the first case I treated on this plan, regarding the rapidity of action of the ammonia used hypodermically, entirely coincide with Dr. Wright's experience given above. But in the only other case in which I have had an opportunity of using it, the rapid improvement in the patient's condition was not so apparent. Still, even in this second case, I did not use the injection a second time, one was sufficient, and shortly after it, gradual and steadily progressive improvement set in. In the first of the three cases given by Dr. Christison in your October number, the general phenomena, after the injection, were somewhat similar to those observed in my second case.

My limited experience does not warrant me in attributing curative powers entirely to the ammonia, indeed, I have hitherto deprecated its being termed a "cure" for cholera. It undoubtedly gives a very powerful impetus to the *vis vitæ* when at its lowest ebb, and thus affords invaluable time for the *continued* employment of other remedies, which, had no such stimulus been administered, would have proved utterly useless. Dr. Wright's more extended observations have led him to a more definite conclusion which, I sincerely hope, will stand the test of experience; and I am greatly indebted to him for so kindly allowing me to quote his success in all the cases in which he has followed this plan of treatment.

The administration of diffusible stimulants, broths, and arrowroot jelly in small quantities, and the use of external stimulating applications ought, in all cases, to be continued until reaction is fairly established. Then, as Dr. Wright remarks, "stop stimulants, and otherwise counteract the effects that might ensue."

There can be no doubt of the greatly increased power of remedies when used hypodermically; and should ammonia prove to be only a partial success in the treatment of cholera, I shall still credit the great mystery of medicine with an efficient substitute that will find a suitable vehicle in the hypodermic syringe.

Behar, 26th October, 1869.

SMALL-POX AND VACCINATION IN BHURTPOOR.

By ROBERT HARVEY, M. B., &c.,

Surgeon to the Eastern Rajpootana Political Agency.

I PURPOSE to record briefly the late epidemic of small-pox in Bhurtpoor, in its relation to the progress of vaccination in the state, and as bearing on some undecided points concerning small-pox and vaccination in India generally. The observations and conclusions which follow are based on analyses of eight hundred cases of small-pox seen and noted by myself during last cold season; and on the daily returns of cases and deaths made to the City Magistrate. The latter returns are exceptionally accurate and trustworthy. They were tested over and over again in all manner of ways, while the epidemic lasted, and an additional proof of their accuracy is found in the fact that the results deduced from them tally in a great degree with those derived from my own figures. These, so far as they go, may be relied upon. It was of course impossible to watch the course of the disease in all cases, and, indeed, the majority were seen only once or twice, while a few of exceptional interest, and the post-vaccinal series were noted throughout. The original object of the investigation was to test previous vaccine work, and the great point being to see as many cases as possible, it was difficult to pay second visits to ordinary cases as the new ones were so numerous. On this account my notes are somewhat incomplete on several interesting points, but so far as vaccination is concerned, they give full and abundant information. All the cases except seven (entered because of their relation to others), were seen by myself. Nothing but the final result has been recorded at second hand, and I have preferred leaving some points unnoticed to subjecting my conclusions to the suspicion of being based on uncertain data. I am solely responsible for the figures, and take this opportunity of saying that if on some points my conclusions—as derived from these figures—differ from those ordinarily received, it is on *a posteriori* grounds, the questions having been forced upon me by the figures, which were not in the first instance collected with any reference to them. As I said before, it was to test the goodness or otherwise of the Bhurtpoor vaccinations that the observations were made, and they were simply recorded from day to day with no view to their future use as bearing on controverted questions. The conclusions have been gradually formed in analysing the returns long after small-pox had ceased, and I had no pre-conceived opinions to support. Besides a sketch of the progress of the epidemic, the returns give room for an enquiry into the value of vaccination in India; the alleged deterioration of the protective power of vaccination from change of climate; and the supposed greater prevalance, severity, and fatality of small-pox in hot countries, and among the dark-skinned races. On each of these points some light will be thrown, which, it is hoped, may help to reconcile conflicting statements and beliefs. As preliminary to these, however, and as tending to the better appreciation of results, I shall give a brief outline of the progress of vaccination in Bhurtpoor, from its first introduction, up to the time of the recent outbreak.

Seventeen years ago the Maharaja was vaccinated with a few other children, by the present head of the Medical Department, Dr. Murray, then Civil Surgeon of Agra; and a few cases were afterwards operated on each year; but no record has been kept of these, nor were any regular vaccinators employed, and the little work which was done can have had no effect in bringing the prophylactic to the notice of the public. So far as can be discovered, no systematic attempt to introduce it appears to have been made till the season of 1861-62. Up to that time the Agency Surgeon's operations seem to have been limited to isolated cases, vaccine work forming no part of his duty, and the operations were probably too few to make any appreciable difference in the vast number of unprotected persons. The late Dr. Stewart was the first to endeavour to remedy this unsatisfactory state of things, but there was a good deal of opposition; his cases were not numerous, and when Dr. Mott was appointed to succeed him in 1861, it may fairly be said that vaccination was only beginning, and that, practically, its introduction dates from that time. Dr. Mott took up the subject with energy, taught the Native Doctors and Compounders attached to the different dispensaries, and made them expert operators under his own supervision, and by securing the services of two good vaccinators from Agra, and instituting a series of rewards for good work, succeeded in infusing a measure of his own zeal into his subordinates. His exertions met with success from the first, large numbers of cases being operated on each year, and the opposition being less than appears to be generally the case. This may be ascribed in part to the moral effect of the Maharaja's having been vaccinated in infancy, and in part to the comparative freedom from prejudice which characterises the Jâts. There was much apathy, and little appreciation of the value of the boon at first, with occasional active resistance to the vaccinators; but year by year it became easier to get cases, active opposition declined into apathy, and apathy to some extent changed into appreciation.

It will be seen that the system which Dr. Mott introduced is in the main the old dispensary system of vaccination, and it has many of the disadvantages of that system. In an unhealthy season, for instance, the Native Doctors and Compounders being otherwise fully occupied, vaccination suffers, and at all times it is impossible for them to vaccinate villages at any distance from their dispensaries, such villages having to be left to a chance visit from a peripatetic vaccinator, whose work cannot be properly overlooked. The chief recommendation of the plan is its cheapness, no special vaccine establishment being necessary. The circumstances in which the agency surgeon is placed remove the objection which has been fatal to the dispensary system as formerly practised under the nominal superintendence of civil surgeons in British territory. Their efficient supervision was almost impossible, the civil surgeon as a rule being tied to the station, and unable to visit his district more than two or three times a year. In Bhurtpoor, on the other hand, the medical officer is constantly in camp during the cold season, and visiting the different centres frequently, is able, to a considerable extent, though by no means perfectly, to superintend the work.

In spite of this imperfect agency great progress was made during five seasons under Dr. Mott's care, and when he left in 1866, all preliminary difficulties had been to a great extent overcome, and it remained only to push on the operations, and increase, if possible, the percentage of success. This in 1865-66 had been only 71·80, a considerable decrease on previous seasons, and it seemed evident that, unless it could be raised, great discredit must be thrown on vaccination on the next outbreak of small-pox, the people, as a rule, being little able to discriminate between successful and unsuccessful cases. With this view, and in order to assimilate the Bhurtpoor system to the more perfect one obtaining in our own provinces, a native superintendent of vaccination was engaged to assist in the inspection and verification of the work, and each season as many men as could be spared were temporarily withdrawn from all other duty and put under his orders, the Native Doctors continuing to vaccinate in the immediate neighbourhood of their dispensaries. In this way great improvement was hoped for, without trespassing too far on the liberality of a State which had already done so much for its sick poor. The following medical institutions are kept up by the Durbar, which last year spent nearly fourteen thousand rupees on "Medical services"—

A general hospital, with a daily average this year of 92 in-patients.

A jail hospital.

A sudder dispensary in the city of Bhurtpoor.

Nine branch dispensaries.

The use of crusts has been gradually abolished, fresh lymph being substituted. Each vaccine centre has been frequently visited, and in distributing the rewards, regard has been had solely to the character of the work produced for inspection, numbers being looked upon as subsidiary to success. Attempts have also been made to impress upon the people the objects and advantages of vaccination. The result of these measures has been a steady increase in the percentage of successful cases, which rose to 80·04 in 1867-68, and to 86·55 during last season. While I believe these figures to be fairly correct I will not vouch for them, but there can be no doubt that each year has shown a considerable improvement on its predecessor, and it frequently happened to me last cold weather to go over a day's work—numbering thirty, forty, or even fifty cases—without meeting with a single child in whom the virus had failed to take. The increased success is due to many concurrent causes, the chief of which is undoubtedly the use of fresh lymph; but prolonged experience in the operators, more careful selection of cases, and the abandonment in great measure by parents of a practice of washing off the virus, or opening and applying drugs to the vesicles, have all helped to swell the return of successful cases. As an illustration of the progress that has been made, I may mention that when small-pox was last prevalent in 1864-65, Dr. Mott reported (annual report 1864-65), that the epidemic caused greater doubts than ever concerning the utility of vaccination," whereas during the recent outbreak, the vaccinators were eagerly sought after by the more intelligent of the people, and I personally vaccinated nearly two hundred and fifty children at the special request of their parents, and might have done many more had I always had fresh lymph by me.

It is much to be regretted that no exact estimate can be formed of the number of persons protected by vaccination in the city of Bhurtpoor at the beginning of the recent epidemic. Yet as the whole significance of the succeeding figures depends on the relative proportion of protected to unprotected persons, it is necessary to have some idea of what that proportion was. The vaccination returns cannot be made use of, as they do not discriminate sufficiently between cases in the city itself, and those in the villages around, and even if they did, they are not such evidence as would command respect. The following table gives the result of the examination of nearly four hundred children early in the epidemic. It would have been more conclusive had the numbers been greater, but existing small-pox and vaccination complicated further enquiries, and introduced sources of fallacy:—

Children under eight years of age.	Number examined.	Percentage.
Bore marks of previous small-pox	134	34·44
Had vaccine cicatrices	152	39·07
Unprotected ...	103	26·49
Total	389	100·00

This gives 59·61 children protected by vaccination to 40·39 not so protected, in every hundred who had not gone through small-pox, or as nearly as possible three to two. In my last annual report I stated that I thought this proportion too high, and that unprotected were probably as numerous as vaccinated children, but I now believe that the percentage indicated was not excessive. The numbers are small it is true, and, taken by themselves, would be of little value one way or other, but they are more than borne out by others, as will appear when we come to enquire into the number of cases of small-pox, and their proportion to population at different ages. This will, however, more properly fall to be discussed in connection with the influence of vaccination on the epidemic, when I hope to be able to show, not only that the work done in past years has been good, but that vaccination has been sufficiently accepted by the people to have had a very marked effect in diminishing the number of cases and deaths which, without vaccination, were to have been expected.

(*To be continued.*)

HINTS IN PRACTICE.

By Dr. Baillie,

Surgeon, Calcutta Native Hospital.

TITIAN's remark on his pupil's reply "that it was but a trifle," The master observed "that perfection is made up of trifles, but perfection is no trifle."

(Continued from page 184.*)*

VII.—REGARDING SOME ORDINARY APPLICATIONS USED IN SURGERY.

(a).—Tincture of iodine, B. P., 1867. Few are the external applications which surpass this as an aid in minor surgery, it is largely used in this hospital, where *sores* of almost every description derive benefit from its employment, which may be ascribed to the frequency of the scrofulous diathesis, with or without syphilitic complications, either inherited or contracted, so often met with among the lower orders of natives.

In *sinuses*, it is almost indispensable, either injected or applied after they have been laid open, and as a *prophylactic* against the formation of sinuses, which so frequently follow the opening of abscesses in moveable parts, such as the face, fingers, hand, and the extremities, I know of no better.

(b).—Tincture of perchloride of iron, B. P., 1867. For the cure of *nævi* or small *erectile tumors*, I have found nothing answer so well as the subcutaneous injection of the tincture, which can be repeated, at intervals, whether the tumor be of an arterial, venous or mixed character; the remedy, however, seems best suited to the former.

As an application in erysipelas, traumatic or idiopathic, I believe the tincture to be superior occasionally to the solution of nitrate of silver, and it has this advantage that it may be oftener repeated, and that by the patients' attendants. It also often arrests that erythematous condition of the skin, so common during the progress of carbuncles, or after cutting operations, and which, if left unchecked, not unusually terminates in erysipelas.

(c).—Warm dressing is made by mixing and slightly heating,—resin ointment 4*oz.*, cocoanut oil 2*oz.*, oil of turpentine 1*oz.*, in this are soaked pieces of gugjee cloth, which can be applied with benefit to almost any form of sore or wound requiring a slight local stimulant and occlusion from the air, and being very cheap, is admirably suited for hospital use.

(d).—Carbolic acid. Besides the ordinary purposes to which this acid is daily being put in surgery, combined with water, oil, putty, &c., its employment *in an unmixed form* as a radical remedy in maladies where the use of the knife, scissors or ligature appears contra-indicated, seems well worthy of trial.

I have tried it in a few cases of *internal piles*, some of them in clusters, and with most pleasing results, the patients having been relieved of their complaint in a short time, and certainly not with more pain than if nitric acid had been used, and with no abrasion of the mucous membrane, which after a time appeared braced, and in a condition most to be desired. Calvert's acid was the preparation applied in these cases.

In epithelioma of the tongue, it has seemed to me to answer better than any other local application that I have tried.

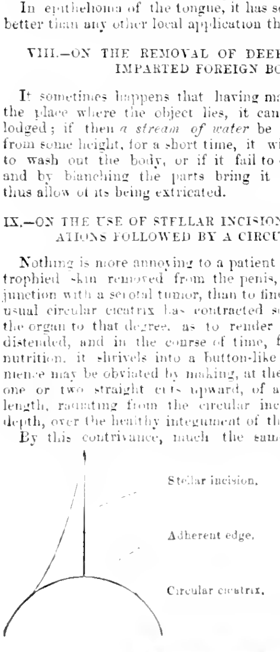
VIII.—ON THE REMOVAL OF DEEPLY AND FIRMLY IMPARTED FOREIGN BODIES.

It sometimes happens that having made a free incision over the place where the object lies, it can neither be seen or dislodged; if then *a stream of water* be poured over the part from some height, for a short time, it will probably be found to wash out the body, or if it fail to do so, it may loosen it, and by blanching the parts bring it better into view, and thus allow of its being extricated.

IX.—ON THE USE OF STELLAR INCISIONS IN CERTAIN OPERATIONS FOLLOWED BY A CIRCULAR CICATRIX.

Nothing is more annoying to a patient who has had hypertrophied skin removed from the penis, either alone or in conjunction with a scrotal tumor, than to find on recovery that the usual circular cicatrix has contracted so much, as to constrict the organ to that degree, as to render it incapable of being distended, and in the course of time, from want of sufficient nutrition, it shrivels into a button-like body. This inconvenience may be obviated by making, at the time of the operation, one or two straight cuts upward, of at least two inches in length, radiating from the circular incision, and of the same depth, over the healthy integument of the pubic region.

By this contrivance, much the same result is gained, as the tailor obtains, by letting in a gusset, for the incision gapes, and its edges eventually adhere at a little distance from the original stellar line of incision: and thus the constriction of a circular cicatrix is, as it were eased off.



Dr. J. W. Ogle, of St. George's hospital, states that the hydrate of chloral has proved a most useful and satisfactory hypnotic in doses varying from 5 to 10 grains, and no unpleasant results appear to follow its use. In an attack of delirium tremens a 20 grain dose procured sleep.

CASES FROM PRACTICE.

HEPATIC ABSCESS.

By J. Fayrer, M.D., C.S.I.

An English officer, aged 29, of tall, slight figure, and apparently of delicate constitution, came under my care on the 4th September, 1869. He had just arrived from a station in Oude, where he had suffered from the disease for which he was leaving the country. He had been in India about three years, and had had good health previous to the present attack, which commenced in July last. The following are his own brief notes of his case before he reached Calcutta:—

13th July, 1869.—"Severe headache in the morning and during the night, was exposed to the sun all afternoon; staid in the house next day and took aperient medicine. 15th to 22nd July.—At duty, but not feeling well. 21st.—Whilst riding home in the morning, got what appeared to be a stitch in the side. 22nd.—Under medical treatment; kept at home and took aperient medicine. 24th.—Pain much increased; eight leeches were applied to the side; took aperient medicine; during the evening had a shivering fit. 27th.—No better; twelve more leeches to the side. Between the 3rd and 15th August had three blisters over the liver; pain inside continued much the same. About the 18th August the original pain gave place to a diffused pain throughout the right side; counter-irritants were applied. 25th.—Observed a slight swelling about four inches from the spine and just below the ribs. 28th.—It was pronounced to be an abscess, and I was sent to Calcutta to appear before medical board. During this time the bowels never moved without medicine. 1st September.—Started for Calcutta, bore the journey very well."

He arrived in Calcutta on the 4th September, and I saw him that morning. He looked weak, anæmic and emaciated, with a sallow tinge of the skin, and the general aspect of a man suffering from liver abscess. On examination I found that the liver was enlarged downwards, posteriorly, and that just below the last rib in the right lumbar region, about four inches from the spine, there was a prominent fluctuating swelling, which was evidently a liver abscess pointing posteriorly, and rather low down. He had no fever; pulse 100; skin cool and moist; no great pain; little sense of fulness and uneasiness in the right side; breathing also slightly embarrassed. He was taking no medicine; bowels had been confined for two or three days, but he felt no inconvenience from it and his tongue was clean, moist, and the papillæ natural. His appetite was also by no means bad. It was evident that he was not now suffering constitutionally from the presence of pus.

On the 5th, after rest and a good night, I opened the abscess at the most prominent point, having made an incision through the integument, and then inserted a large trocar and canula. I drew off about 18 ounces of thick pus, which had the peculiar appearance and odour of that of a liver abscess.

I immediately syringed out the cavity with a solution of carbolic acid, ʒi in a pint of water. Left the canula in, and plugged it with lint soaked in carbolic acid one part, glycerine four parts; a bandage and tapes secured the canula in situ. I ordered him also a solution of quinine and sulphuric acid in calumba. Diet of soup, bread and milk, a little wine; the latter he did not like at first.

In the evening I again emptied the cavity of about eight ounces of pus, and washed it out as in the morning. He had no fever during the day. His pulse has come down since yesterday, but quicker than it was in the morning. He feels well; much relieved by the removal of the pus; an enema was given to-day, but it did not relieve him; ordered two aperient pills.

September 6th.—Drew off about eight ounces of pus this morning, and about four more in the evening; removed the canula, as it was irritating him; kept the wound distended with lint soaked in carbolic glycerine. The cavity is washed out on each occasion that the pus is removed with the carbolic acid lotion. Bowels have acted freely; the pills were aided in the morning by a sulphate of magnesia draught. He has taken his food fairly, and now takes beer instead of wine; slept well; looks and feels better; pulse 88 in the morning, has quickened a few beats in the evening, but there is no apparent increase in temperature.

8th.—He has been doing well, the quantity of pus diminishing daily, this morning about six ounces, in the evening not more than two. He takes food well; sleeps well, and is in good spirits.

[illegible].—He [illegible] two [illegible] went out for [illegible] He said he [illegible] fever [illegible] pulse 78 to 84.

19th. [illegible] and about [illegible] pulse 74 [illegible] ranging up to 80 in the evening. He [illegible]

11th. He [illegible] from for sailing [illegible] which was [illegible] He [illegible] He [illegible]

[illegible] liver [illegible] no history of [illegible] having [illegible] the 24th, about 12 days [illegible] symptoms [illegible] first appear. A [illegible] was an evidence [illegible] to the parietes, and thus prevented extravasation into the [illegible] cavity.

There is every reason to hope that the abscess is a single one, the history of the case renders it probable [illegible] that it was due to [illegible] from previous dysentery [illegible]

His progress [illegible] he had been free from any constitutional fever such as would be caused by extension of the suppuration, and the rapid contraction of the cavity, after evacuation of the pus, evinced the tendency to repair by contraction. The injection of the cavity with carbolic acid lotion was attended with the best results, as I think that the [illegible] was beneficial in aiding the rapid contraction of the cavity.

I believe that his chances of complete recovery are enhanced by the voyage home, as whatever the capacity for repair might be, I feel assured that it must be increased by the change of climate, and is more likely to proceed to perfect recovery at sea than in the damp and exhausting heat of September in Calcutta.

Note.—A report from Galle says he is nearly well, and that he was able to go on shore for exercise with other passengers.—J. F.

COMPOUND FRACTURE OF THE LEG—DEATH FROM DISTURBED INNERVATION INDUCING JAUNDICE AND ISCHURIA.

By J. Fayrer, M.D., C.S.I.

Mr. S——, a Swiss gentleman, aged 27, of stout frame and [illegible] complexion, who had been only a few years in Bengal, during which time he had enjoyed fair health, met with a severe accident on the 9th of October, 1869, at [illegible] p.m.

He was driving in a buggy with a friend, when, observing that [illegible] had become detached from the bit, he jumped out without putting his foot on the step, to stop the horse, which was starting off at speed. [illegible] as he alighted, [illegible] a few inches above the ankle [illegible] about two inches [illegible] protruded. [illegible] for about two inches [illegible] but did not protrude.

On examining the wound it was found that the lower fragment [illegible] comminuted [illegible] There was [illegible] The anterior tibial artery could be felt [illegible], but the posterior tibial did not pulsate. [illegible] was hanging out [illegible]. He was much depressed by the shock, his pulse was feeble and rapid.

I [illegible] the protruding bone, and as it was [illegible] I removed the most [illegible] portion, about 1½ inch in length, and then [illegible] by a small vertical incision. I returned the bone, dressed the wound, and placed the limb in a splint [illegible] the outer side. There was no further hemorrhage.

Stimulants were given to rouse him, warmth applied, [illegible] chloroform administered during the operation.

[illegible].—He is still depressed, but is free from pain. [illegible] tolerably well, but his pulse is feeble and rapid, showing that the shock still continues; stimulants and warmth and [illegible] have been administered during the day. Very careful examination has been made, but no injury of any other part of the body could be detected. He was perfectly conscious, and said he knew of no other injury, and described the accident as having been caused by his ankle twisting just as his foot touched the ground. A sedative draught was ordered at bed-time.

10th, 8 a.m.—He slept at intervals; there has been no haemorrhage [illegible] of any consequence [illegible] water has been applied [illegible] to prevent bleeding. His pulse is still [illegible]; the surface of his body cool; there is no proper reaction. He looks [illegible], says he feels weak and depressed, but [illegible]. Bowels to be relieved by a simple enema; stimulants to be given, and warmth applied.

[illegible].—He has been restless during the day and vomiting frequently, but he is free from pain, and is rational and [illegible]. There is some tympanitis, and jaundice is setting in; the conjunctivae are already tinged with yellow; pulse [illegible] depressed and rapid.

11th October.—A restless night, perfectly conscious; jaundice well marked in the whole body, but especially the upper part. [illegible]; pulse rapid, but somewhat fuller. There is an attempt at reaction.

The wound looks as it did when first dressed; there is no change in it; ordered an aperient, as the bowels have not been [illegible]; ordered stimulants to be continued in moderation. He is restless, abdomen tympanitic, and the breathing is rapid. He expresses his fears that he would not live long, to his friends.

5 p.m.—Much worse; nearly quite collapsed; breathing very rapid, skin cold, and clammy; deeply jaundiced; feet [illegible] deadly cold; great toe apparently in the point of becoming gangrenous. Stimulants, hot bottles, sinapisms over the [illegible].

The jaundice rapidly deepened, and the condition of collapse became more complete. He retained his consciousness almost to the last moment, and died at 8 p.m., that is, [illegible] hours after the accident.

No *post-mortem* examination was made, but the cause of death was evidently the shock, which was most intense, and [illegible] the nerve centres, caused such suspension of innervation in the ganglionic system as to induce jaundice and ischuria. I should have noted that no urine was voided or secreted after the accident), and apparently the formation of coagula in the right cardiac cavities.

The rapid supervention of jaundice is a somewhat unusual result of shock to the nerve centres in accidents of this nature, and I am not aware that it has been much alluded to by surgical authorities, but I have seen it before and also after capital operations, and I regard it as a most fatal symptom. The rapidity and intensity with which it comes on show that it is not due to congestion of the liver or to obstruction of the ducts, but point to disordered innervation by which the natural metamorphic processes, that should go on in the blood, are seriously compromised, if not suspended. The condition of the patient in such cases as this is clearly one in which the nervous system is seriously injured, and those portions of it which govern the hepatic functions seem most of all to suffer.

It is more than probable that had this fatal shock not supervened, amputation would have been ultimately necessary. As it was, his condition was never such as to admit of the operation. He was seen in consultation by my friends and colleagues, Professors Partridge and Ewart.

NOTE ON FOURTEEN CASES OF CHOLERA TREATED BY HYPODERMIC INJECTION OF STRYCHNINE.

By Surgeon G. K. Foote, M.D., 18th *Bengal Cavalry,*

Offg. Civil Surgeon, Peshawur.

The cholera hospital for patients from the city, (Peshawar), cantonments and regimental bazars was opened on the 5th September, and up to this date (14th October) [illegible] cases have been admitted, of which 180 have been fatal. An uniform plan of treatment has been followed, *viz.*, the saline plan known as Stevens's saline treatment, and, considering that all the cases, or nearly all of them, were desperate ones, as natives will not go voluntarily to a cholera hospital until they are in the last stage, I think the figures shew a very fair amount of success, further details shall be sent to you for publication in a future number. I merely wish to bring forward a few cases treated by the hypodermic method of injection, in continuation as it were, of three published by Surgeon Christison in the Gazette of the 1st October treated with ammonia.

The solution of strychnine employed was $\frac{1}{15}$th of a grain, dissolved in 10 minims of rain water acidulated with one minim of dilute hydrochloric acid. The success was not encouraging, and as cases became more numerous, the hypodermic method was discontinued, and the saline plan persevered in.

I.—Suntoo, syce, admitted from artillery lines in a state of complete collapse; injected hypodermically with the strychnine solution three times at intervals of four hours; re-action partially established. Death from uræmia three days after admission.

II.—Buksee, dooley-bearer, admitted on the 13th September; injected three times at intervals of four hours, re-action established and secretion of urine partially established. Died on the 20th, six days after admission.

III.—Membode, syce from royal artillery lines admitted on 13th September in a state of profound collapse; strychnine was hypodermically injected as a "forlorn hope:" the effect of the first injection was striking. Tetanic spasms were slightly visible, but the man got into a comatose state after the second injection, and complained of pain in the arm at the point of puncture. He passed urine the third day, and took food on the fourth day, but he remained in a weak sickly state, and at last a low form of typhoid fever set in, and he died of diarrhœa, &c., on the 30th. This case may be called a favorable one, and a cure from cholera, the low fever being a post hoc, and prevalent in Peshawur at this time of the year.

IV.—Gool Ahmed, coolie from the city, admitted on the 13th; injected three times; skin became warm, and pulse become perceptible, but he died of uræmia on the 19th, six days after admission.

V.—Dookee, syce from artillery lines, admitted on the 13th; injected three times as a forlorn hope; was in a profound state of collapse; re-action established on the 14th; urine passed on the 15th; and recovery was complete on the 20th, seven days after admission.

VI.—Ghinow, dooley bearer, admitted on the 13th, not very profoundly collapsed, injected four times without much effect. Died on the 16th, three days after admission.

VII.—Mahomed Rajuck admitted in a moribund state on the 14th; injected twice, but without much effect, though it apparently preserved his life till the 16th, when he died.

VIII.—Lutchman, jeweller from sudder bazar, admitted in a state of profound collapse on the 14th; was injected three times; re-action was established; pulse became perceptible, but urine was not secreted in spite of blister and diuretics, and he died on the 18th, four days after admission.

IX.—Goomanee, an old man, admitted from the city on the 14th; injected six times with the above solution of strychnine; re-action established on the third day; urine passed, and recovery complete on the 19th, five days after admission.

X.—Soobhan Khan, aged 20, admitted on the 18th; injected twice; on 18th once, on 19th re-action fully established; urine secreted, but diarrhœa of a bilious nature set in, and he died on the 25th.

XI.—Sooltan admitted from the city on the 18th; re-action and secretion of urine established after four hypodermic strychnine injections, recovery complete on the 29th, though he still remains weak, and subject to diarrhœa.

XII.—Rampaul, syce, admitted from sudder bazar on the 19th; injected three times, no re-action whatever was established. Died on the 21st.

XIII.—Mahomed Aseem, admitted from the city on 22nd September, injected four times, re-action came on the third morning, urine passed, and he made a complete recovery by the 2nd October; left the hospital of his own accord.

XIV.—Shewchurn admitted from 18th cavalry on the 22nd; was in a state of profound collapse, injected three times; re-action established on the 24th.

Remarks.—In looking over these cases it must be borne in mind that they were all of the most virulent type of cholera; recovery seemed and was almost hopeless, or such a violent remedy as the injection of $\frac{1}{15}$th of a grain of strychnine would not have been resorted to. I cannot say I am satisfied with the plan of treatment; however, it did not injure the patient in any way, and in most cases re-action was established and death did not occur in the stage of collapse as has been so common in the late epidemic here, in publishing these cases I do so with a view to shew the value or otherwise (leaving others to judge) of the treatment.

CASES OF AMPUTATION AT THE HIP-JOINT.

By Dr. Baillie,

Surgeon, Calcutta Native Hospital.

I.—AMPUTATION BY THE CIRCULAR METHOD FOR INJURY; CARBOLIC ACID NOT USED; DEATH ON THE TWENTIETH DAY FROM HÆMORRHAGE.

Nogendronath Dutt, a boy aged 7, admitted 22nd August, 1867, having fallen from the roof of a high house, and sustained compound comminuted fracture of the right thigh bone at its upper third, which protruded nearly two inches from the wound, the surrounding soft parts being much bruised. After waiting a few hours till re-action had set in, amputation at the joint was performed under chloroform; the operation was well-borne, and progress good till the fifth day, when diarrhœa occurred, and the stump opened out; however, this in a few days became filled with healthy granulations, which were guarded by warm dressing. The pulse, however, which was very rapid on admission, never fell below 150, although he was well supported and had tonics. After this he went on fairly, the wound granulating and contracting till 9th September. Diarrhœa with fever then set in, and continued more or less till 11th September, at 4¼ a.m., when, whilst straining at stool, arterial hæmorrhage occurred from the bottom of the wound, but not in a jet; the bleeding was speedily arrested, not more than four ounces of blood having escaped, the little patient, however, rapidly sunk, and died a little before six o'clock the same morning. No *post-mortem* examination could be obtained.

Remarks.—The injury to the muscles surrounding the joint was so great in this instance, that I was induced to adopt the circular in preference to the flap operation, so as to enable more of the muscular structure, and less of the integument to be removed; had this alternative not been called for, probably the boy's chances of recovery would have been greater; and they would also have been still more increased, had carbolic acid been applied at the time of the operation, as I believe thereby adhesion might have followed, and the long suppurating process been averted.

II.—AMPUTATION BY ANTERIOR AND POSTERIOR FLAPS FOR DISEASE; CARBOLIC ACID FREELY USED; STUMP HEALED IN SIX WEEKS; DEATH FROM EXHAUSTION, THREE DAYS AFTER A SLIGHT ATTACK OF CHOLERA.

Becharam Bagh, an emaciated Hindoo lad, aged 16, was brought to the hospital on 12th August, 1869, by bis mother, who immediately afterwards decamped, thinking probably that his case was hopeless; and certainly the poor boy's appearance justified her fears. He was suffering from a large osseous tumour of the left leg, its greatest circumference just below the knee being 26 inches; the entire thigh also was much increased in size; the plate taken from a photograph by Mr. Rust, of the Calcutta Photographic Company, hardly gives a fair idea of its dimensions, the part having been out of focus; it was hard, and large distended veins were seen meandering tortuously over its surface, giving it a most malignant aspect, and, indeed, the history and period of the growth (scarcely eight months), tended to confirm the view of its malignancy; the accident that originated the disease was a slight one. Whilst walking the left foot got into a hole, and he fell upon his left side, the limb being tightly twisted under him, soon after he felt a severe pain about

head of the femur, when a tumour formed which rapidly extended downwards and upwards, until the thigh, nearly to the groin, became involved in the disease; and his strength and general health failed so much, as to make it manifest that unless the affected parts were soon and entirely removed, he could not long survive. Accordingly with his consent, on the 18th August, amputation at the hip-joint by double flaps, was performed, Dr. Macnamara, Surgeon to the Ophthalmic Hospital of this city, kindly assisting, the arteries having been secured with but little loss of blood, a solution of carbolic acid, 1 part to 21 of water, was freely applied to every portion of the wound, which was then brought together by iron wire sutures, and the whole stump covered with lint soaked in carbolic oil.

An hour after the operation he was very low: pulse could not be counted, but this was the case before the operation, so reduced was the patient; his respiration was also very hurried.

19th.—Pulse and breathing still very rapid, but aspect improved; towards the afternoon he rallied a little, and a few of the sutures were removed, and a considerable quantity of serous discharge, evidently mixed with carbolic acid, escaped, causing a burning sensation to such parts of the hand with which it came in contact; the line of incision was supported by straps of adhesive plaster, and air excluded by application of warm dressing mixed with carbolic oil.

2[illegible].—Progressing well; pulse 132, respiration 26; stump healthy looking. From this date there is nothing to chronicle, save that the patient gradually, from day to day, gained strength and improved without drawback, except occasional slight attacks of dyspeptic diarrhœa, which were easily checked by small doses of muriatic acid and ipecacuanha with bitter extract; he had afterwards at different times pepsine, syrup of lactate of iron, [illegible] grain; the latter alone seemed to suit him very well.

On the 30th September, being the day of the quarterly meeting of the governors of the hospital, the patient was seen by Dr. [illegible] Murray, the Inspector-General; the stump was then consolidated, and healed, save a small sinus (at the outer extremity of the line of cicatrization), which could but just admit an ordinary probe, and from which about half a drachm of healthy pus escaped daily. Pulse 84, at which figure it had been for the last three weeks.

On 3rd October, all having gone on well previously, he had several copious conjee-like stools, but unaccompanied by cramps or vomiting; this purging was checked in the after part of the day, and in the course of the next two days, the stools, although watery, became smaller in quantity, and began to assume a yellow tinge, and I hoped he had got over the attack, but during the night of the 5th, without any increase of diarrhœa, he became very faint and gradually sank, dying early on the morning of the 6th October, just seven weeks from the date of the operation.

A *post-mortem* examination was made the same morning; all the viscera were in a healthy condition, the stomach, however, was much distended with a grumous fluid, and the gall bladder was full; but the examination disclosed positively nothing to account for death; the stump was cut into, and found solid throughout, even the acetabulum was quite filled in, and the little sinus mentioned above, which admitted only the small blow-pipe commonly seen in dissecting cases, was traced to the back of its outer edge.

The whole of the amputated parts were sent to the Medical College Museum for examination, but owing to a misadventure, the soft structures were unfortunately not examined, so that Professor Ewart could but report upon the osseous part of the growth, which he considered to be of the nature of osteo-[illegible].

REMARKS.—In this case nothing short of the removal of the limb at the joint would, I believe, have offered a chance of recovery, and the correctness of this opinion may be said to have been confirmed by the result of the operation; for so far as the wound of the amputation was concerned, nothing could exceed the steady progress of the healing process, unattended as it was by a single "*contretemps*" during its whole period, not even hæmorrhage or other adverse incident having occurred. Then as to the death, there can be but little doubt that in consequence of the low state of the boy's health, to which the disease had brought him, combined with the demands upon his strength, had expended so much of the vital force, as to leave an insufficient amount of it, to enable his system to rally from the shock it sustained from the attack of cholera, slight though it was.

It is singular that in this, as in the successful cases of hip-joint amputation, reported by Drs. Fayrer and Partridge, the age of the patient was 16.

CONTRIBUTIONS FROM THE MITFORD HOSPITAL, DACCA.

BY ASSISTANT-SURGEON, H. C. CUTCLIFFE, F.R.C.S.

ENLARGED SPLEEN CONVERTED INTO A HÆMATOCELE; WHICH WAS PUNCTURED, RECOVERY.

NAIM RAM, aged 40, native of Sylhet, came to the Mitford Hospital, May 19, 1869, with intermittent fever and an enlarged spleen. He is a man of large and muscular frame, but thin and feeble. He states that he has suffered from fever continuously for four months. About 10 or 12 days ago, he first noticed a swelling in the left side of his belly under the ribs. This swelling was preceded for two or three days by a very acute pain under the left hypochondria. The tumour occupies the ordinary position of an enlarged spleen, which it closely resembles on examination. It was hard, even, and free from tenderness.

24th May.—The tumour to-day felt more like a big cyst containing fluid than a solid spleen. The edges of tumour reached across the middle of the epigastric and umbilical regions downwards below the umbilicus, and thence in a curved line across the upper part of the left iliac region into the left lumbar region. There was no jaundice or œdema. He was ordered [illegible] mixture three times a day, and unguentum hydrarg. biniodid. to the tumour.

28th.—The tumour has become more distinctly prominent below the ribs; it clearly contains fluid; it was punctured; several ounces of dark fluid blood escaped, evidently old blood with broken down cells; there was no pus. The patient complained a good deal of smarting pain after the needle had been withdrawn, and said that the fluid which escaped burnt him very much.

29th.—Fever has come on with pain in the abdomen; he now lies on his back with his knees drawn up; his abdomen is hot, tender, and tympanitic.

30th.—Abdominal symptoms less distressing; the leeches afforded great relief; the tumour is subsiding, and there is no discharge.

2nd June.—All pain and tenderness have gone; the abdomen is flaccid and soft; the only remains of an abnormal tumour is an indistinct firmness below the ribs in the splenic region. Discharged on the 8th.

RÉSUMÉ.—On admission nothing more than an ordinary enlargement of the spleen could be detected. In five days fluctuation was distinct over the whole of the enlarged spleen. On the ninth day it was punctured below the ribs, nothing but blood escaped; symptoms of peritonitis appeared the following day, but quickly subsided. Eight days after it had been tapped, nothing of the tumour could be felt.

HYDROCELE AND HÆMATOCELE EXISTING TOGETHER AS DISTINCT CYSTS WITHIN ONE TUNICA VAGINALIS, WHOSE CAVITY HAD BEEN DIVIDED INTO TWO PARTS BY A SEPTUM.

AHMUD KURREEM, aged 70 years, shop keeper, residing in Dacca, was admitted into the Mitford Hospital on the 21st July, with a painful swelling of the left testicle.

The patient, a healthy old man, states that for two years past he has had a hydrocele of the left testicle, which, however, has never been in any way operated on, and has never caused him any pain. Eight days since, when sleeping on a bed raised about four feet from the ground, it gave way and he received a severe blow from a bamboo over the left groin and upper part of the left cord. This blow was followed immediately by acute pain about the external ring, and swelling in the scrotum. Both the swelling and the pain continued to increase for eight days, when he came to the hospital.

On admission, a large ovoid tumour in the left side of the scrotum was observed; fluctuation was distinctly perceived, and it was surmised that an effusion of blood had occurred into the cyst of an old hydrocele. There was great tenderness on pressure over the upper part of the tumour, where much hardness was perceived to extend over a circumscribed area, and in such a manner as to suggest the possibility of an inflamed and swollen testicle being there located.

22nd July.—The fluctuation being distinct at the lower part of the tumour, a trochar was introduced, and about one pint of clear serous fluid perfectly transparent, and free from all traces of blood, was withdrawn. A circumscribed hardness remained still at the upper part of the scrotum, and the condition of the parts now suggested the idea that the fluctuating tumour had been an *encysted* hydrocele, and that the hardened mass remaining at the upper part of the tumour was the testicle inflamed and swollen from local injury.

26th.—The pain in no way has diminished; the hardness and swelling remain unchanged. Bichloride of mercury and iodide of potasium mixture; leeches to ease the pain.

27th.—The pain is very severe: there is no change in the character of the tumour. Through the upper part of the scrotum I made an incision down to the tumour, and then cut into it, and evacuated about six ounces of dark clotted blood; no fresh hæmorrhage occurred. By passing the finger into the hæmatocele, for so what I had cut into proved to be, I found that it consisted of a cyst situated over the anterior surface of the epididymis (globus major) and testicle, and that the cyst did not extend to the lateral or under surfaces of the testicle. Upwards the cyst reached along the cord for about one inch above the epididymis, and was there limited. The cyst seemed to have been formed immediately over the tunica albuginea. The hydrocele cyst was now clearly to be made out, as it was partially again filled with fluid. Its situation was limited above by the hæmatocele, and was confined to the inferior and inner surface of the testicle. From these surfaces it hung pendulous downwards. The two cysts were thus clearly distinct from one another, and each was limited to a portion only of the surface of the testicle, which organ was situated above the hydrocele and behind the hæmatocele.

28th.—The laying open of the hæmatocele has given him relief from all pain; has had no hæmorrhage, fever, or other bad symptom.

5th August.—Has had no more pain; the cavity of the hæmatocele is fast closing, and is now discharging healthy pus; the hydrocele is very slowly re-filling with fluid. Its relative position is now clearly demonstrable to be as I before described it, *viz.*, confined to a small part only of the anterior surface, some of the outer, all the lower, and a little of the posterior surface, of the testicle. The cyst of the hæmatocele was entirely confirmed to the upper and anterior portion of the testicle, and was probably the upper part of a septal division in the tunica vaginalis, into the lower part of which the hydrocelic fluid had been effused.

10th.—The hydrocele is slowly re-filling; the sac of the hæmatocele is granulating, contracting and closing.

16th.—Discharged.

Remarks.—The hæmatocele was not distinct from the cavity of the tunica vaginalis, for the tunica vaginalis testis formed the posterior wall of the cyst, which, however, was clearly limited to the upper portion of the cavity of the tunica vaginalis. Between the cyst of the hæmatocele and that of the hydrocele there existed a distinct wall or septum, and looking to the fact that the hydrocelic cyst in its connexions generally corresponded with the lower part of the cavity of the tunica vaginalis, it seems to me that the wall between the two cysts was a septum which had formed in the cavity of the tunica vaginalis anterior to the commencement of the hydrocele, and had divided that cavity into two parts, of which the lower had become greatly enlarged from the accumulation of the serous fluid which had there formed a hydrocele, and that the upper portion of the cavity had been recently converted into a hæmatocele by the sudden effusion of blood which had been poured into it from some vessel ruptured by a blow. Having laid open the cavity of the hæmatocele, I thought that it would be prudent to leave the hydrocele to future treatment, and this was accordingly done.

PRIMARY AMPUTATION OF THIGH; RAPID RECOVERY UNDER ANTISEPTIC TREATMENT.

By Charles W. Waylen, M.R.C.S., England, &c.,

Surgeon, E. I. R., Jubbulpoor Line.

The *Lancet*, in its issue of August 14th, while reviewing the opinions expressed by Mr. Nunneley during the course of his address in surgery at Leeds on the "antiseptic treatment of wounds," very justly observes "that, on the septic-germ theory the success of the treatment would depend entirely upon the precise observance of many precautions." If by such observance of precautions, not many, but few and simple of execution, we can act with the certainty that definite results will follow, no further arguments or proofs can be required to establish the immense superiority of such treatment over any subject to influences not to be foreseen, nor otherwise combated, whether atmospheric or telluric, dependent on constitution, mental, or physical, habits of life, age, or mode of injury.

Mr. Nunneley bases his disbelief in the benefits of the antiseptic treatment on the fact that freely exposed stumps have also healed up "readily and well" without any covering upon them. That the two plans of treatment are, as he says, "wide as the poles asunder" is indeed most obvious, but are they not those respectively of cure and prevention? if so, which of the twain is better? True, by the most assiduous attention to a freely exposed stump we may, perchance, happily remove or remedy any morbific action induced or caused by such exposure, but, in the hands of many, carbolic acid has proved an absolute safeguard against the ingress of any poison germ, a sure preventive of any such morbid action, and an agent the careful use of which renders us independent of all external influences.

In my own experience I have found carbolic acid not only powerful to prevent the incursion of suppurative infection, but to stop and alter septic action set up in a previously unprotected wound. The following notes of a recent case very satisfactorily illustrate its primary preventive action:—

Kwalee, a Khol woman, aged 45 years, the mother of five children, was, for four months preceding her admission to hospital, one of a crowd of some 1,500 beggars congregated at the Sutna station on the Jubbulpoor line of railway, where they have been barely kept alive by a small daily dole of grain; this was only given to those who were too weak and infirm to be employed on the regular relief works, such as making tanks, roads, &c. On the 22nd July, she, with three of her children, had crept for shelter from the heavy rain, under a truck in the station yard; there was occasion to move this truck: this was accordingly done by an engine. On seeing it move she, instead of remaining quietly between the rails, and so escaping injury, first hurried out her children, and then, whilst attempting to creep out herself, her left leg was caught by the wheel and completely smashed. She was brought to me about an hour after the accident occurred in a very low state of shock, from which, when with difficulty roused, she only as it mechanically asked for food. Pulse very small and weak. Both bones of the left leg were broken and splintered in several pieces, the patella was wrenched from its position, the lower part of the femur laid bare, and all the soft parts of the leg and thigh as high as its middle were lacerated and crushed out of all shape. Her weakness and prostration were excessive, both from the shock itself and the long course of semi-starvation that she had been enduring.

With as little delay as possible she was put under chloroform, and I amputated with very scanty anterior and posterior flaps at the junction of upper and middle thirds of the femur. Two arteries were tied. The cut surfaces were then quickly and carefully smeared with carbolised oil (1 part in 4), the flaps were then accurately brought together, and united with ten sutures of silk saturated with carbolised oil. The wound was covered with a double fold of lint, previously soaked in carbolised oil (1 part in 12), overlapping the end of the stump by three inches on all sides, the edges being included in the folds of a firm bandage embracing the whole of the stump; over the double fold of lint another single strip was laid also saturated with the oil. Immediately after the effects of chloroform had passed off, she was given 15 drops of aromatic spirit of ammonia with 20 drops of laudanum. To be given alternately strong venison soup and milk, of each 1 oz. every hour. The opiate to be repeated in the evening.

23rd.—Had three hours sleep at night; pulse still small and feeble; no sign of fever; complains of pain in the wound. All the dressings to be left *in situ*, the outer piece of lint to be smeared with the carbolised oil every four hours. The opiate draught to be continued every four hours. Diet, soup and milk alternately every hour, with rice twice in the day.

24th.—General symptoms the same as yesterday; complains of great pain in the wound; no increase of heat or tension in the stump; carbolised oil, opiates, and diet to be continued as before.

25th.—Had a tolerably good night, pain less in wound, pulse feebler and firmer, but not increased in frequency; no inflammatory swelling, nor abnormal heat in stump, at her own request she was given bread and dhal, instead of rice; these with soup and milk to be given in three meals during the day. Opiate draught to be given only at bed time. Under this treatment she continued steadily to improve. On the 25th the whole of the dressings were removed. The wound was healed through more than half its extent, the rest was perfectly clean and healthy. Fresh dressings of the same kind to be applied. The outer piece of lint to be renewed every morning.

On the 10th day after operation the whole was healed with [illegible] half an [illegible] of [illegible] On the [illegible] day [illegible] wound was [illegible]

I [illegible] I have [illegible] tion, [illegible] was [illegible] and [illegible] progressive, unchecked by [illegible] symptoms. [illegible] I attribute [illegible] the protective [illegible] of [illegible]. Beneath [illegible] was [illegible] should otherwise have hardly dared to count [illegible] mental and physical, was against her, [illegible] time before [illegible] starvation [illegible] of her [illegible] dysentery a few days after her admission [illegible] her [illegible] weakness, [illegible] to support her [illegible] of suppurative action, I believe she must have succumbed.

As it was, her work lay in nursing, and feeding a half [illegible] woman [illegible] health and strength, whilst, under the [illegible], Nature quietly worked her own cure of the [illegible].

When on such an occasion as the annual meeting of the British Medical Association, such a man as Mr. Nunneley [illegible] exalted [illegible] of [illegible] of women [illegible] was [illegible] to record his only trial experience [illegible] two [illegible] of proof [illegible] of its being [illegible] of the greatest boons conferred on mankind through modern surgery.

Whether this [illegible] germ theory be correct or otherwise I [illegible] in what way. I [illegible] content to use empirically [illegible] agent that I have proved so highly beneficial.

ABDOMINAL ANEURISM BURSTING INTO THE LEFT PLEURAL CAVITY.

By Assistant Surgeon F. Morell Mackenzie.

D'Cruze, by birth a Portuguese, aged 40, formerly Quarter-Master of the S. S. *Mooltan*, was admitted into the Presidency General Hospital on July 12th, 1869. He was then ill-nourished, but gave a history of having been well and healthy, till about five years previously, when he had passed blood by the bowels. No history of fever or dysentery could be obtained from him. He stated that "the tumour he was suffering from commenced five years ago, when he first saw and felt a small lump in the left iliac region;" this slowly increased until three months ago, when he suddenly felt pain in the epigastric region, and the tumour appeared for which he was admitted. On examination there was found a large tumour protruding from the epigastric region to the extent of one inch and a half from the level of the anterior surface of the body. It was moderately soft and situated in the epigastric region between the divergence of the ribs, immediately below the ensiform cartilage. It was about the size of a *bael* fruit, round and regular, with the exception of the upper border on the right side, where there was a distinct protuberance. The tumour pulsated synchronously with the heart's action, and an expansive impulse was conveyed to the hand when placed over it. The inferior border of the tumour could be felt through the walls of the abdomen to some distance. On attempting to auscultate it, the stethoscope was driven with such violence against the ear that nothing could be heard. The heart sounds were normal, and the other viscera healthy; urine contained no albumen, and was of fair [illegible] gravity.

He complained of pain and jerking in the tumour occasionally, but did not suffer from sickness, or anything else. He was kept quiet in bed, sedatives were ordered for him, and he remained in this condition until August 24th, when the pain and jerking became worse; the tumour was also visibly larger, and he began to suffer from headache, nausea, sense of suffocation, and dyspnœa.

26th August.—At night all these symptoms became aggravated, and on the following morning he was found dead in his bed. For the notes of the examination I am indebted to Dr. Coull Mackenzie. *Post-mortem*.—Four hours after death; rigidity of lower extremities. On opening the chest the left lung was found completely collapsed, and the pleural cavity contained a large mass of clotted blood. The aneurism occupied chiefly the epigastric region, but extended inferiorly to the hypogastric, and on the right side nearly to the iliac fossa.

Behind, it was [illegible] so extensively adherent as to require much dissection. On removing it, the bodies, pedicles, transverse processes, and [illegible] of the last dorsal, and the first and second lumbar vertebræ were found absorbed down to the spinal canal. The aneurism was attached superiorly to the diaphragm, particularly on the left side, where an opening was found about the size of an [illegible] in diameter, communicating on one side with the left pleural cavity, and on the other with the aneurism.

The sac of the aneurism was very thick anteriorly, in some parts an inch or more, and consisted of layers of fibrine. Heart contracted; other viscera healthy, except kidneys, which were congested.

CASE OF SMOTHERING.

By Kenneth McLeod, A.M., M.D.,

Assistant Surgeon, 67th N. I.

The following case is rather unusual, and as I cannot find its counterpart in books, I think it worthy of record:—

On the 27th of October, 1869, the body of a female, aged about 25, was brought to me for examination with the following history. She and some other females had gone on the afternoon of the 25th to dig up clay from under the bank of a river. While doing so the bank gave way, and buried two of them; one completely, and the other up to the shoulders. The rest of the party ran to give the alarm in the village, about half a mile off. After about half an hour's delay the villagers came to the rescue. One of the women who had not been completely covered was disinterred alive, and has suffered no bad consequence from her mishap. The other, the subject of notice, was found dead under the sand and mould.

The body was rather decomposed; face swollen; tongue protruding; head and shoulders more livid and decomposed than the lower part of the body; skin and hair covered with sand; no wound or bruise anywhere; body robust and well nourished; scalp infiltrated with sanguineous serum; skull entire; brain not examined; mouth filled with sand and earth; tongue and pharynx plastered with a layer of the same; œsophagus studded with sand; larynx contained a large quantity of earthy sand of finer grain; mucous membrane acutely congested, of a bright red colour; trachea, bronchi, and larger bronchial tubes filled with still finer and moister sandy matter, which did not penetrate into the smaller sub-divisions of the bronchial tubes; lungs uniformly and intensely congested; heart flabby, dilated and *empty* (from *post-mortem* causes?); stomach filled with a recently eaten meal of rice, &c., a few streaks of dirt on the mucous membrane near the cardiac orifice; liver congested; kidneys normal; spleen in a state of chronic enlargement; intestines healthy.

The foregoing is a case of [illegible], if I may be allowed the expression. The *post-mortem* appearances were such as might be expected, but I hardly anticipated that the spasmodic gasps of asphyxiation could have sucked the debris so far down the air tubes, and I was somewhat surprised to find a small quantity of it in the stomach. I have examined at least two cases of drowning in muddy water, and found mud in the air passages and œsophagus, but it is much more difficult to realize the passage of dry sand and earth so far in such quantities, and in such circumstances.

CASE OF SUFFOCATION.

Commd. by Surgn. Major [illegible] Moorhead, 26th Camns.

No. 1[illegible]2, Private Thomas Carmichael, of the 26th Cameronians, aged 28, when in his bed in the Dalhousie Barracks, Fort William, on the night of the 8th November, 1869, about 20 minutes past 10 o'clock, was discovered by the man lying in the next bed to him to be breathing loudly and with great difficulty, as if there were some obstruction about the lower part of the trachea. He was at once removed to the dispensary in Fort William, where he died in about 15 minutes, and was found dead on the arrival of the medical officer. At the *post-mortem* examination on the 9th November about nine hours after death, several small pieces of potatoe were found in both bronchial tubes, where they sub-divided into small branches. There was great œdema of the glottis, no doubt from the irritation caused by a foreign body. The epiglottis was remarkably large, and so thickened in structure that it probably performed its functions very indifferently. The trachea and bronchial tubes contained matter similar in character to the contents of the stomach. Lungs greatly engorged with blood. In the stomach were found several small pieces of potatoe of the same character as those discovered in the bronchial tubes. Assistant-Surgeon Cunningham, who was in the dead house at the time of the *post-mortem* examination, verified the nature of the foreign bodies by means of the microscope. It appeared that the deceased had drank some beer and also rum in the course of the evening before retiring to rest. He had been sick and vomited when in bed; and about this time, no doubt, portions of the contents of the stomach passed down the trachea into the bronchial tubes, thus causing asphyxia.

The Indian Medical Gazette.

Acknowledgments.

Lancet.
British Medical Journal.
Fifth Annual Report of the Sanitary Commissioner.
The Practitioner (October.)
Calcutta Journal of Medicine (July.)
Medical Press and Circular.
Records of Geological Survey of India (Part 4, 1869.)
Canada Medical Journal (September.)
Epidemic Cholera in the Bengal Presidency. By Dr. Bryden.
Treatise on Spasmodic Cholera. By Dr. R. O'Connor, Assam.

Notices to Correspondents.

Communications have been received from

Dr. Fayrer, C.S.I.
Dr. Francis Day
Dr. Baillie.
M.D., *Madras.*
Inquirer, Punjab.*
Assistant-Surgeon S. Coull Mackenzie.
Dr. T. D'O. Partridge.†
Apothecary J. C. Ellis ‡
Assistant-Surgeon J. Fawcus.

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The co-operation of the Profession throughout India is earnestly solicited.

> "You have chosen the path, not of politics, but of science Among those who have preceded you in it, and in our own particular department, we find some of the brightest ornaments of British history; and I will not do you the injustice of supposing that there is any one among you who would not prefer the reputation of Harvey or the Hunters to that of nineteen-twentieths of the courtiers and politicians of the periods in which they lived."—SIR BENJAMIN BRODIE.

THE PHYSIOLOGICAL ACTION OF QUININE.

We re-print below an extract from a Review in *The Practitioner* for August last, of das *Chinin als Antiphlogisticum*, Inaugural Dissertation der Med. Facultät zu Giessen, Von Adolph Martin, bearing upon the influence which the disulphate of quinine is supposed by some to possess in modifying, mitigating, or preventing the inflammatory process:—

While Binz and Scharrenbroich had produced a very large amount of evidence apparently proving that quinine, and a number of other remedies, have specific influence in checking the vital amæboid movements of the white corpuscles, it was left an open question by the former *Ueber das Wesen der Chininwirkung*, Berlin, 1868, whether or not this influence extended to actual prevention of the passage of the corpuscles through the vascular walls in inflammatory conditions. Dr. Martin addressed himself to the consideration of this further question. His experiments on frogs were conducted on the model of Cohnheim's famous researches; the animals being paralysed with curara, the mesentery was drawn through a wound in the abdominal wall, and spread out upon perforated slices of cork for microscopic examination. In a preliminary series of studies the author thoroughly familiarized himself with the phenomena, first described by Cohnheim, which occur when the inflammatory process is allowed to develop itself unchecked. He then began comparative experimentation: two frogs of equal size being simultaneously paralysed with curara, in one the inflammatory process was allowed to run an uncomplicated course, in the other quinine was injected subcutaneously; every stage of the subsequent changes was in each case sedulously watched. This double experiment was repeated with several pairs of frogs; and, besides this, the effect of directly painting the mesentery with a solution of quinine was tried in several instances. The results were very decided. In the animals not treated with quinine the characteristic dense agglomeration of white corpuscles along the walls of the vessels was strongly marked, and the migration processes went on freely; simultaneously there was notable dilatation of the vessels and slackening of the stream. In the frogs treated with quinine, all these phenomena were invariably much more feebly developed, sometimes they were only present in trifling degree. In the sixth experiment, the direct application of quinine to an already inflamed mesentery, in which extensive migrations had already taken place, produced evident and notable changes in the white corpuscles; these did not cease to migrate, but became dark, granular, and indented, and lost their vital movements as soon as they had passed outside the vessels.

Besides these experiments, Martin made some observations on dogs, in order to test the assertion of Binz and Scharrenbroich as to the effect of quinine in diminishing the number of white corpuscles. As with the frogs two animals of equal size were simultaneously and comparatively experimented upon. The result of this research was very remarkable, the difference between the numbers of white cells being far too great and too constant to have been the result of accident, and, moreover, it was evident that, as the action of a single dose of quinine passed away, the white cells began to multiply again with great rapidity.

The final series of experiments made by Martin were directed to the novel object of testing the cause of events in parenchymatous organs; and, after expending much trouble, he succeeded in following the cause both of the simple and the modified inflammatory process in the liver of the frog. Here, again, the effect of the quinine was unmistakable.

The general results of the whole inquiry conducted Martin to the following conclusions:—1.—Quinine limits the pathological migration of the blood corpuscles into the tissues of the membraneous and parenchymatous organs exposed to the air, both when it is given subcutaneously and when it is directly applied to the part. 2.—It produces this effect, (a) by impairing the vital properties of the existing white corpuscles, (b) by hindering the generation of the new white corpuscles, and (c) by restraining the dilatation of the vessels. 3.—Quinine acts as an antiphlogistic, by

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* We can reply for certain that Dr. Bryden makes out the statistical tables himself, but whether the running comments on them, which constitute the 5th Report of the Sanitary Commissioner, are written or suggested by Dr. Bryden, we are unable to say. You can send the Review if you like.

† No.

‡ This is the only communication received.

[illegible] at the site [illegible] of suppurative inflammation. 4. The use and the efficacy of [illegible] in other pathological conditions distinguished by multiplication of white cells, e.g., typhus, leukæmia, &c., is based upon and explained by its relations to the life and the formation of these corpuscles.

Many of our readers experienced in the management of tropical fevers, their complications and consequences, will recognize in the experiments of Adolph Martin, a confirmation of the practice which since 1847 has been very prevalent amongst medical practitioners in India. Ever since Mr Hare proved that large doses of quinine could be given in malarious fevers, complicated with inflammation of any of the important organs, not only with impunity but with positive advantage, no one has hesitated to administer it in every form and type of malarious fever, regardless of the accompanying or complicating inflammation. That quinine when used in malarious countries, and especially at seasons when malaria abounds, does materially contribute to the reparation of the injury inflicted by the inflammatory process during attack of marsh fevers has been acknowledged, and taught by the medical profession in India for more than twenty years. Hence, during that period, the drug has been employed boldly, and with the best effect at all stages of malarious fever here, in complete disregard of the existence or non-existence of inflammation. For it is well known that the disulphate of quinine, so far from being contra-indicated, in the inflammation accompanying or following malarious fevers, is inculcated as the sovereign remedy, not only for the cure of the fever, but also for the amelioration of the inflammation.

Whether the explanations of its mode of action tendered by Adolph Martin are correct delineations of what actually happens, when quinine is administered in diseases associated with inflammation we are not prepared to say. The powers of the drug over inflammation predisposed to, or aggravated by malaria and its fevers, will retain its ground in the minds and convictions of the medical profession in this country, quite irrespective of any theory which from time to time be advanced as to the supposed physiological action of the drug. We think it right, however, to place our readers in possession of Martin's physiological experiments conducted with a view to illustrate the effects of quinine upon the inflamed mesenteries of frogs poisoned with curara, and to record the general conclusions at which the author has arrived.

THE EAST INDIAN RAILWAY.

This Company employs about 2,000 Europeans and East Indians, and some 20,000 natives. These men are scattered along a line 1,500 miles in length, and on this it is their business to keep up communications day and night all the year round.

The drivers, station masters, guards, and electric telegraph clerks must look well to their work night and day. Neglect is certain of detection, and punishment follows. If a man would keep his place, he must work well. In the discharge of duties, so rigid and exacting, risks to health must necessarily be incurred, and not a few diseases contracted. Dysentery and fever abound amongst railway servants; on the north-west division heat apoplexy and sunstroke kill or ruin the health of many men, and the history of the East Indian Railway proves that not a few firemen and engine drivers have been taken off their engines dead or dying, victims to these affections. A good number of the Company's servants, after continuous service, fall into a bad state of health, the result of exposure to climate. This condition is made up of rheumatism, paralysis, and loss of appetite mixed in different proportions, in different instances, and they who suffer from it are afflicted with pains in various parts of their bodies, more or less muscular weakness, and with inability to digest the little food they take. This condition is common, so is abscess in the liver, so is Bright's disease, so is phthisis. In a word, diseases of vital exhaustion prevail largely amongst the servants of the Company, and the question which we wish to ask here more especially is this,—"Might this waste of human life be lessened by means at command?" We think it might.

The Company in the main is humane and considerate to its servants; its rates are fair, and its regulations for sick leave are liberal (when acted on); its contributions to institutes and charitable institutions redound to its credit, while its efforts to establish swimming baths and other places meant for re-creation, and the preservation of health are praiseworthy; still much remains to be done. For instance, the Board should not rest satisfied till every European in the line is housed in comfortable railway quarters, leased to him at a moderate rent. At present many of its servants have to pay exorbitantly for unwholesome houses, or they have to seek for wholesome houses at a long distance from their work. It would pay the Company to house their men well. Further, the Board would find that to provide good drinking water all along the line, and to establish a good market at every changing station, would prove highly remunerative, indirectly if not directly. Now, at many of the stations, the men with their families do not see beef or mutton from week's end to week's end, while at others fresh bread is a rarity. It is unfair, to say that the servants themselves ought to establish markets; it is unfair because they are so shifted about that few stations have any settled residents.

More care should also be taken to make men comfortable at the changing stations: indeed, we look on the present system of changing stations as radically bad, and eminently conducive to vital exhaustion and disease. At present the men in charge of the train have long periods of labour, alternating with long periods of rest. The men themselves do not complain of this, because they get extra allowance for what is called over time; and in their wish to gain money, they not unfrequently lose life, or at least health. We feel sure that the waste of life and health could be much lessened, if superintendents would manage to let the men sleep in their own houses every night. This could be done by adding to the number of changing stations. Two journeys a day of 60 miles each, with a rest between, and rest at home daily amongst their wives and children, would be more in accordance with the rules of health, than is one long journey of 120 miles, 4 or 6 times a week, entailing as it does irregularity in daily occupation, and absence from home two or three nights in every seven. Great efforts are too often followed by great indulgences, and the system of long beats, we are assured, leads to drink and immorality. At any rate, the Board should see that engine drivers, guards, and firemen are changed every 50 or 60 miles in the North-West in the hot months at all events.

We most strongly deprecate the practice of enlisting and discharging men as the traffic ebbs and flows. Such a pratice is allowable in England, and there it is not cruel; but in India it is different. To invite a soldier or sailor to take service when the traffic is good, and then to discharge him when it is bad, is to spoil the purpose of many men's lives, and to fill the country with loafers. The Company has as yet no pension list, but this should make superintendents all the more tender in discharging men who have got worn out in the service. We believe the East Indian Railway to be the most intelligently managed railway in India, and we feel sure that to have abuses remedied, it is only necessary to point them out.

EDUCATION OF NATIVE DOCTORS.

A VERY important class of lectures have recently been instituted at the Medical College, which will tend much to improve medical education. The Government have sanctioned an arrangement by which instruction on Chemistry and Medical Jurisprudence is to be provided for the students of the first, or military, and the apothecary or Bengali classes; lectures on the latter subject have already commenced. If the class becomes permanent, of which there can be very little doubt, each pupil of the Bengali class will have to pay a small fee for attendance, as is the rule in the midwifery class that was established for them last year. One rupee is charged per annum for attendance on these midwifery lectures, and since their commencement they have been largely attended. The propriety of this fee has been questioned, but we think it ought even to be made higher: it is only fair that the men educating themselves for general practitioners all over the country should now be required to contribute something towards the expenses of their education. The military class of Native Doctors, on the other hand, being educated solely for duty in military and civil hospitals, are supported by Government, and receive their education without any payment.

CESSATION OF SMALL-POX IN IRELAND.

SMALL-POX has temporarily disappeared from Ireland; stamped out the authorities hope.

The secretary of the Poor Law Commission reports in September,—"the returns of the Registrar-General for the quarter ending 30th June last, contains no death from small-pox; and the dispensary medical officers have reported no case of small-pox as having occurred since June last."

Dr. Cameron, of Dublin, states that during the ten years ended in 1841, 58,006 persons died from small-pox in Ireland. During the decade ending 1851, deaths numbered 38,275, and in the following ten years 12,727. Thus for some years previous to the introduction of the compulsory Vaccination Act in 1863, the annual mortality from the disease was over 1,000. In the following years the decrease has been well marked. In 1864, the number of deaths 854, in 1865, 347, in 1866, 187, in 1867, 20, in 1868, 19, in the first quarter of 1869, 3, in the second quarter none.

Whether or not, says the secretary, "small-pox remains in the country, and may be expected to break out under less favorable circumstances, it is quite clear that every part of Ireland is at all times exposed to the introduction of the disease, either accidentally or by design, and, therefore, that the only security lies in a steady maintenance everywhere in the protective means afforded by vaccination."

IMMUNITY OF A MONKEY TO STRYCHNINE.

SURGEON THEOBALD RINGER, of the 7th Cavalry at Nowgong, communicates an attempt to poison a Lungoor (presbytis entellus) with strychnine. One grain was concealed in a piece of cucumber, which the animal eat; after waiting some time and finding no effect produced, three grains were given in the same substance, and the monkey appeared to relish the meal.

Afterwards some cyanide of potassium was mixed with sugar and placed between pieces of bread, but on smelling, the animal threw it away, and nothing would induce him to touch it.

To test the strychnine, which had been some time in his possession, Dr. Ringer administered three grains to a dog; in twenty minutes the usual symptoms commenced, and it died in forty minutes after swallowing the poison.

We know there are many vegetable poisons that act very differently on the lower animals to their effects on man. For instance the immunity of pigeons to opium is pretty well established; goats can eat tobacco in large quantities, and rabbits can be fed on leaves of belladonna, stramonium, and hyocyamus without detriment; but the toleration of this monkey to strychnine is novel. We have not yet been able to gather any information on the subject beyond a few lines in a local paper, in which it is remarked of a mischievous monkey,—"a druggist tried to poison the brute, but could not, as it seemed to eat all sorts of poison with impunity."

We hope shortly to hear the results of other experiments; but we should be very glad to hear more on the subject from any officers who would take up the question.

MEDICAL EDUCATION AT DISPENSARIES.

THE class of students attached to the Umballa Dispensary reassembled for winter work on the 1st October with an opening lecture by Dr. Bateson, the Civil Surgeon. Dr. Gray, Inspector-General of Prisons, was present. This is the seventh season this class has been in operation. The students are sons of respectable people of the district, who are subsidized by monthly sums drawn from local funds. There are two hakeems in the class; and one hakeem of the city, after studying for two years, has become superintendent of vaccination for the district. One of the old students is now engaged in private practice.

When sickness breaks out in a neighbouring village one of the advanced students proceeds there with suitable medicines, and one or more attend at the district fairs. At the great Thanesur Eclipse Mela of last year, these students were a feature of the place, as with a scarlet band round the right arm, they were distinguished as doctors.

Recently, when all the approaches to the cantonments and city of Umballa were in a state of surveillance, these students were on the cordon posts, and sent in intelligence as to the health of travellers and neighbouring villages. The students help in the daily works of the dispensary, and the older ones are clinical clerks, and keep the cases of the house patients. Dr. Bateson lectures in Hindoostanee on anatomy, medicine, and surgery. The Native Doctor of the Dispensary lectures on anatomy to the junior class of students, and the Police Native Doctor lectures on materia medica; books and other materials for medical study are obtained from the Agra Medical College. We hear there are similar classes at Kurnal.

It would be well if the system was more extensively encour-

The presence of native practitioners [illegible] ugly but effi- [illegible] educated as these men are, is a crying want all over India. The enterprise and energy of the Surgeon who originated the plan, and of those who follow in his footsteps, will be productive of much good to the people of the country, and we would like to see the experiment tried on a more extended scale.

FRENCH MEDICAL SERVICE.—M. Bertillon, the eminent medical statistician, is thus quoted by the foreign correspondent of the *Medical Times and Gazette*:—

"From 1846 to 1865, the annual mortality of the officers of our army has been 6·1 per 1,000, but that of the medical officers has been 15 per 1,000! Whence comes this enormous excess? Is it from difference of ages? By no means. Many of the civil careers quite equally so unhealthy a profession; and, in fact, whereas, in the army, one year with another, there are but 2·3 resignations in 1,000 officers, among the medical officers there are as many as there are deaths, *viz.*, 15 per 1,000. In the time of war the mortality is not less. During the Crimean campaign, the English army, which, for an effective that did not reach a third of ours, had 448 medical officers, had the good chance not to lose one of them, (?) while of our 450, we lost 82, or more than 18 per cent. Thus, prolonged studies, greater danger, miserable pay, a subaltern position assimilated to that of the commissariat and paymasters, a long preparation and the incessant danger incident on visiting patients, remunerated and esteemed on the same scale as the keeping of books—such is the practice of the profession which it behoves our young *confrères* to meditate before joining.

THE JAIL AND JAIL SYSTEM OF INDIA.

(Concluded from page 149.)

TRANSPORTATION is the second punishment prescribed in the Penal Code, which came into operation in 1862; and it would seem that being thus considered second only to death, "the law intended this punishment to be more severe and deterrent than any subordinate punishment."

The advantages of transportation for Indian convicts are very clearly put by the Committee of 1836; their words are here given in full, with their reasons for assigning the punishment for life only:—

"We have ready made to our hands a weapon of tremendous power. The horror with which the people regard transportation is a feeling born with them, and the questions whether it be a wise or foolish feeling, whether it be a just deduction from true premises, or the result of ignorance and superstition, are nothing to the purpose. We have the extraordinary opportunity of punishing, with extreme effect towards deterring others, with sufficient effect in incapacitating the criminal for future crime, with the chance (obtainable in no other way) of rendering him a useful member of society; and all this with the infliction of less real pain than that which is inflicted by other punishments not half so much dreaded.

"We are of opinion, partly for reasons of a general character, and partly for reasons peculiarly applicable to this country, that transportation ought never to be inflicted except for life. Whenever the speedy reformation of a criminal is an object, the temporary discipline of a penitentiary has great advantages over the temporary discipline of a penal settlement, and the constant return of a great many natives of India from transportation would soon destroy that peculiar feeling of dread which this punishment now so happily inspires in India."

These opinions were written in 1836, but have not since been acted up to; for with the limits of transportation assigned by the Penal Code, other than life, *i.e.*, for fourteen or for not less than seven years, the convict settlement has been disturbed by the presence of short term prisoners; there is no account, however, of how many, if any, convicts have yet returned to this country after having served their short term transportation.

"Of late years the numbers sentenced to transportation have depended rather upon the capabilities and requirements of Port Blair than on a consideration of the effect of transportation upon the penal administration of India." Since the publication, however, of the "note," the Government of India have in effect gone back to the expressed opinions of 1836, and in a resolution of December 1868, pass fresh orders on the subject.

The Government of India now thinks that transportation for less terms than for life has lessened the deterrent force of the punishment; and that it will be better, and certainly more economical, to provide prisons on the continent of India for prisoners sentenced to transportation on terms short of life; it therefore orders that "no convicts shall henceforth be sent to Port Blair from any part of India, except those who have been sentenced to transportation for life."

Certain legal difficulties have thus been got over, Madras has already declared certain jails to be places of transportation, and the Bengal Government has now recently decided that certain jails in Assam should be made available for transportation too in like manner; and they suggest that the convicts there should be utilized for the labor which is so much required, and which is so scarce in that country.

Prior to the mutiny, native convicts sentenced to be transported had been sent to Singapore, Penang, and Malacca. Bengal employed in addition a station or two in the Tenasserim Provinces, and Bombay sent men to the Mauritius, while from the Straits' Settlements such prisoners were sent to Bombay.

Port Blair, on the south-east shore of the South Andaman, in the earlier years of British India, had been a naval station, but was abandoned in 1793, on account of its extreme unhealthiness; the islands were not again occupied until the deputation there, in March 1858, of 1,000 convicts, the products of the rebellion. Since 1858 all sentences of transportation recorded in Hindustan have been carried out at Port Blair, except in British Burmah, where, from the facilities of escape the Andamans afford to natives of those provinces, convicts are sent to Bombay.

Under the extramural system of the island, discipline among the convicts is very much less severe than in the central jails of the continent, and this is one great reason for restricting the prisoners from any return to civilised life; their punishment is in the banishment, and although the prisoners are probably happier in themselves than they would be in a central jail, yet they thus lose the power of being able to relate their happiness under the deportation to their friends in India: but rules of discipline, &c., are now being drawn up for the "introduction of that system of convict management which for many years worked so successfully at Singapore."

When the rules were in force, which permitted men to be transported for shorter terms than life, the convict was an enormous expense to the State: "there is no comparison between the cost of keeping a convict in India, and of sending him to Port Blair;" and each one is calculated to have cost "not far under Rs. 30 a month, which cost, however, did not include the charges involved in taking him there."

There are now 7,000 convicts on the island, and it is considered that this number will be about the average jail population for the next six years, the annual importation being reckoned at about 700, and the decrease by death or termination of sentence, about balancing the incomings. At the end of that time, when many discharges of prisoners will have ceased, the subject will have to be considered de novo, as the incomings then will far exceed the outgoings, and the island, even as if 7,000 convicts were not enough in one place, could barely find place for much over that number.

"But 10,000 life convicts would be a very much more manageable charge than half that number composed of convicts sentenced for different terms, because in the former case, the same kind of treatment might be employed for all. All that would be necessary to ensure in their treatment would be—perfect security; a discipline sufficiently severe at starting to be necessary for the sake of example without being more severe; and, that they should be employed in such a manner as best to re-pay the cost of maintenance."

It may be stated that the present resolution of the Government to abolish transportation except for life, will not only effect an immediate and very considerable saving of expenditure, but will at the same time greatly increase the efficiency, and the deterrent nature of the penal administration of the country.

Conclusion:—The last section finishes the history of the jail system of India. The note concludes with an extract: a paper by a Mr. W. C. Bannerjee read at the National Association for the promotion of social science, held in June 1867. The extract is given "to suggest a contrast between the facts given in the precedings chapters, and some views that obtain in England concerning them;" the paper is described as a tissue of incorrect statements and rash representations.

Forming a short appendix is an article copied from an Edinburgh paper of October 1867, on "Miss Capenter and our mission work in India;" we extract few lines to shew tho tenor of the whole, in reference to the facts she saw in India.

"Will it be credited that after a settlement of nearly a century and a half in India—after &c., &c., after we have sent out so many Governors, so many civil servants, so many missionaries; and after India itself has grown so largely in financial wealth, and progressed so rapidly in material resources and powers, that at the present day criminals of all classes, old and young, male and female, are in our ordinary Indian prisons mixed and mingled together, rather like brute beasts, than human beings; one cell in many cases common to all; one treatment the lot of all; one common neglect and disregard the fate of all; no ragged schools, no reformatories, no classification of prisoners; no provision as to moral proprieties; no education of any kind, either as to the world that now is, or as to the world that is to come." Such is the editorial trash commenting on some accounts of Miss Carpenter's writing, and which Mr. Howell most judiciously prints as an appendix, but otherwise passes it by, without remark.

Native newspapers on the subject of jails are sometimes amusing. In a recent paper the editor enumerates the hardships of prisoners, in their clothes being coarse, and not suited to keep out heat or cold; food the worst of its kind; the labor is too severe; prisoners soon lose absence of decency and modesty; and he concludes by enquiring, "whether out of the 20 crores of inhabitants of India, there is not a single person with friendly intentions towards the prisoners, to rise like the English Howard and effect their amelioration."

A comparison of native editors' ideas of what is, and of Miss Carpenter's account of what ought to be, the customs and practice of Indian jails would present some amusing features; the one dilates on matters with the absurdity of ignorance, the other works with an excess of philanthrophy, which causes her to see facts with a coloring that no common people can understand, and to give opinions on subjects with which she is practically unacquainted.

If we do err at all in the state of our jails, it is in the excess of over-care, and one great object should be, to make a prison a real one, and not like a club to live in. It is a cry here, as it is in Europe, that we treat our prisoners better than our rural population, but we will now conclude in Mr. Howell's last words:—"The Government of India and every Local Government have admitted that much remains to be done before the prisons in this country can be placed upon the satisfactory footing which has been attained within the last two or three years in England; but if blame is to be attached to short-comings, what has been effected should not altogether be ignored."

⁂ The conclusion of this article was written in May last, press of matter has hitherto prevented its publication: it will now complete the subject in the volume for this year. While it is in type, however, a new Resolution has been taken by the Government of India, the substance of which we extract from the *Friend of India* of 25th November:—

> For years it has been a first principle of jail administration, in Northern India at least, that no prisoner should be allowed to work outside the prison, as English convicts do. Much labour has thus been lost to the country and punishment to the convict, solely because it was found difficult to establish a proper organization for the purpose. Once more, under a new Governor-General who has ideas of his own on the subject, the employment of convicts on extramural labour has been ordered. Something of the kind has become inevitable, since, two years ago, the transportation to Port Blair of any but life-term convicts was forbidden. If all the convicts sentenced to transportation were sent to Port Blair, there would be an annual importation of 3,000, and the settlement would be over-crowded. Moreover, apart from the expense of sending convicts there, each costs thirty rupees a month, and the settlement is popular. Henceforth, criminals sentenced to penal servitude for a shorter term than life are to be sent to the Central Jails. There all sentenced for more than one year will be employed in large bodies, under European supervision and rigid rules, on public works. Desperate characters and men of weak constitution will still be confined within the walls. For every year spent on out-door labour the convict will receive a remission of sentence not exceeding one month, and thus the inducements to escape will be diminished. On all grounds, moral, financial, and administrative, the experiment is well worth careful trial.

Asylums for Inebriates.—Canada is following the States in providing these institutions. In the United States it has been estimated that fully 80 per cent. of those treated in such Asylums have been reclaimed. The experience of them in England has not been so favourable.

Review.

[illegible] Cholera [illegible] Bengal Presidency. By Dr. Bryden, [illegible] Sanitary Commissioner with [illegible] India.

A[illegible] cholera has been [illegible] Bengal [illegible] in 18[illegible] we [illegible] the present is a hopeful time, as regards [illegible] knowledge touching [illegible] the causation of [illegible] the [illegible] of the disease. [illegible] is a curious spirit of enquiry abroad among [illegible] in India, amounting well-nigh to a determination [illegible] the mystery, which has so long existed in this [illegible] which must in time bear fruit. The [illegible] it is apparent to us in the publication of Dr. Murray's [illegible] report on cholera, which has been closely [illegible] by Dr. Bryden's work on the same subject. The contrast between these reports, however, is very remarkable; the one, [illegible] of the head of the service in this Presidency, [illegible] and who has spent a long life in the active [illegible] of his profession, advocates in most decided terms [illegible] of the disease and its consequences. Dr. B[illegible], on the other hands, is a comparatively young officer, [illegible] years has left the legitimate work of his [illegible] devoted himself to the statistical department [illegible] Commissioner's Office. There can be no doubt [illegible] indisputable internal evidence of the [illegible] have [illegible] Dr. Murray's being [illegible] of one who has grasped and realized his subject, he [illegible] facts and conclusions found in the best of all [illegible] experience." Dr. Bryden, on the other hand, [illegible] that, however perfect our sanitary arrangements, [illegible] against cholera. According to him, [illegible] powerless to stop the advance of the disease, [illegible] cholera [illegible] therefrom, and therefore [illegible] security against cholera; he can "form [illegible] estimate of the practical utility" of disinfectants, [illegible] treatment of the disease; in fact, he has [illegible] conclusion that "the epidemic [illegible] control." Page 2[illegible]3.

[illegible] in favour of these premises, Dr. Bryden [illegible] practising brethren the fact, that their [illegible] or cure the disease, have been unavailing; the [illegible] within the last few [illegible] is doubtless true; nevertheless we cannot accept [illegible] Bryden's propositions on the subject, when he asserts [illegible] it would facilitate much the study [illegible] could we hold as a truth and not [illegible] constant or frequent presence of the cholera [illegible] situations, and could we trace to this source the [illegible] or the poisoning of the water-supply, [illegible] the [illegible] in the transmissibility [illegible] manner, *and the precautions used against [illegible] affection from such sources have been [illegible]* [illegible] and yet it is a melancholy truth that the [illegible] cantonments and regiments to cholera in its [illegible] now as it has been at any time during the [illegible] [illegible] of [illegible] year, [illegible] from the [illegible] of water contaminated [illegible] But when we [illegible] that not a single [illegible] that we are [illegible] [illegible] been [illegible] cholera, [illegible] from [illegible] data [illegible] the best [illegible] Bryden's [illegible] that we [illegible] matter, for [illegible]

of pr[illegible] experiences." Dr. Bryden remarks at an early stage [illegible] the enquiry "it became evident that it was from an aggregate [illegible] statistical facts, and from these facts alone, that the subject would fall systematically into order," and he gives force to this assertion by reiterating its substance; in other words, he says, "the study of cholera from an adequate, well-connected, and thoroughly authenticated aggregate of statistical data, can alone lead to accurate generalization, and to a due appreciation of the weight of facts, in a systematic enquiry." after using such positive language as this, it is somewhat startling to find Dr. Bryden in the same paragraph assuring us, that among "the various circumstances that have concurred to retard our knowledge of the laws regulating epidemic cholera none has exercised so [illegible] an influence as the narrowness of view" of those who have studied the subject, for not only does he refuse, as in the above passages, to accept aught but the statistician's results as to the matter under consideration, but he farther lays down the law, that "he who holds that cholera is essentially dependent for its growth and spread on its relation to man, and declines to entertain the doctrine of aerial transmission and reproduction in the soil, cuts himself off from what I believe to be the primary fact which must be received, before any adequate idea of the natural history of cholera can be taken in." Surely this savours somewhat of the prejudice which Dr. Bryden blames others for indulging in, and we would beg to bring the following maxim forcibly to his notice:—*qui aliquid statuerit parte inaudita altera, æquum licet statuerit haud æquus fuerit.* The more so, because in truth, he appears really to doubt the breadth of his own doctrines; for when concluding his report, he informs us that after all, this "is but a small contribution towards the perfection of a system, the commencement of a study, which it will take years of research to elaborate." If we had only been prepared for this statement at the outset of our labours, we should hardly have thought it necessary to attempt to master the very abstruse matter contained in this report, but would have been content to wait in hope for the final results of Dr. Bryden's labours, in the meantime resting assured, as he does, that "some at least of the inferences which he has made, will be found available in the future, when the laws of the cholera of India shall have been framed into a system." We devoutly trust, however, that Dr. Bryden will bring his researches to a close within a reasonable number of years, for in the meantime cholera is annually carrying off a fearful number of victims.

We naturally turn to this report for information as to the communicability, or otherwise, of epidemic cholera; the former doctrine as we have before remarked is discarded to a great extent by Dr. Bryden; he observes, as to the "theory of the distribution of epidemic cholera by human intercourse, and its multiplication in the human economy. No observer in this country has ever held exclusively the doctrine so much in favour at present; and, were we now to accept it as satisfactory and explanatory of the entire series of observed facts, it cannot be doubted that the progress of the study of cholera on a true, because a natural basis, would be indefinitely retarded." With reference to this statement, we cannot but think Dr. Bryden is somewhat in error as to the views held by medical men in this country regarding the communicability of cholera; so far from none of them having accepted this doctrine, we find that, since 1817 up to the present time, a succession of Indian medical officers have consistently advocated this principle. In the Madras reports of the cholera of 1817-18, Mr. Keane remarks that "in observing the progress of this dreadful malady, I am still more confirmed in my opinion, of its contagious nature. Does not the striking [illegible] characteristic symptoms, the uniform [illegible] of the disease, argue a conviction, the operation of a [illegible] poison? How then is this poison produced? Is it generated in the place, or is it brought into it? If generated [illegible] its operation would be confined within certain [illegible] and [illegible] upon a gale, [illegible] somehow with [illegible] of these, it has [illegible] from village to village, [illegible] and in the very route of [illegible] from Z[illegible] to Aurungab[illegible] M[illegible] and from [illegible] to Bom[illegible] I[illegible] villages he would [illegible] H[illegible] have lately taken [illegible] I[illegible] attended [illegible] of the [illegible], and [illegible] B[illegible] then do not [illegible] we [illegible] the word [illegible] plague?" We would [illegible] Dr. K[illegible] chapter [illegible] or to Dr. Ha[illegible]'s work.

later time to the clear and positive statements on this subject put forward by Dr. Murray.

We notice this point particularly, because an assertion such as we have quoted from Dr. Bryden's work if uncontradicted, might lead to false impressions among those unaquainted with the existing feeling of the medical profession in India, on this very important subject.

Nor can Dr. Bryden himself escape from the dilemma which his rejection of the doctrine of the extension of epidemic cholera from man to man places him in, for he is obliged to admit its substance, although enshrouding it by the mystery of language common to the fathers of medicines; he says "there is yet another group of cases which occurs during an epidemic period, and then only, which has not its origin primarily from an air-conveyed cholera. *This group is made up of cases of cholera transmitted from those who have been subjected to the choleraic influence, or from fomites impregnated with the virus of cholera.* The instances of the dissemination of cholera by such agency may be comprised in a group termed "dependencies of outbreaks." But this is to be observed, that while the aggregate of a certain number of outbreaks of soil-born cholera constitutes a reproduction, which again has its place in an epidemic, there is no evidence to shew, that, in this country, any aggregate of cases of cholera derived secondarily from true outbreaks through human agency, has ever, by the combination, produced the phenomena distinctive of a reproduction, that is, a provincial manifestation of cholera; and consequently, it never can have given rise to an epidemic." We direct the reader's attention to this passage, as it will give him a good idea of Dr. Bryden's style. And further, we would point to the sentence we have italicized above for it seems to us to contain the very pith of the whole matter. If, as Dr. Bryden there admits, cholera is transmissible from man to man, why in the name of goodness should he call this communicability of the disease it "dependencies of outbreaks;" this is decidedly one of the most unaccountable perversions of the English language we ever met with, a use of our mother tongue which few ordinary mortals will comprehend; but we live to learn, and Dr. Bryden may yet prove to be correct.

Our own view of the matter is, that having seized the fact of the transmissibility of the disease from one person to another, he might have applied this doctrine to the splendid array of facts and figures, which have been thrown in his way, and which point in an unmistakable manner to the extension of cholera in all directions, with man, from its endemic area over this country. He would have recognised in the monsoon, not an agent which bears some mysterious earth-born cholera inducing influence over the country, but the means by which men, and merchandize, are carried along our great rivers, bearing the disease from Dacca, Calcutta, and other large cities in Lower Bengal; first to Bhangulpore, then to Patna, and so on to Benares, Mirzapore, and Allahabad, and away up the Jumna to Agra, and Delhi. From Mirzapore he might have traced the progress of cholera into the Central Provinces, with the vast traffic carried on in this direction, and from Nagpore to Bombay, which is, however, another centre of cholera; we cannot but feel there is not one single fact or argument, in the whole of Dr. Bryden's report, that tends to shake our confidence in these opinions, but a vast deal, which had we space at our command, goes to prove the truth of these views.

Dr. Bryden, however, thinks otherwise: he is of opinion (p. 87) that "the essentials for manifest epidemic progress are three—(1), the presence of the cholera miasm; (2), the humid atmosphere, which is in every case its vehicle; and (3), the prevailing wind to give direction and limitation to this humid atmosphere." Of this mysterious miasm, Dr. Bryden gives us very hazy ideas, it is true he writes with confidence about its "invading districts;" its "perennial existence;" its "life period;" it is "revitalized" and "reproduced," which is "equivalent of the budding of a tree or the flowering of a plant," but then, strange to say, it also swarms, "it is thrown off one swarm, up to the date of the exit of the swarm succeeding." In fact, if the reader can form a definite conception of the nature or properties of the cholera inducing matter, as described by Dr. Bryden it is more than we have succeeded in doing, although we have read every word of his report from beginning to end.

Much of the history of cholera in India given by Dr. Bryden was published last year in this journal, from the original documents at present in the office of the Inspector-General of Hospitals; it will be unnecessary, therefore, for us to weary the readers of the *Indian Medical Gazette*, by a reproduction of the facts so lately brought to his notice in the pages of this periodical.

From the above remarks, it is evident our views as to the nature of cholera are diametrically opposed to those of Dr. Bryden, and we have felt it to be our duty to write without reserve on so important a subject. At the same time we cannot conclude this Review without cordially thanking Dr. Bryden for his work on cholera; as a compilation of statistics bearing on the circumstances of the disease in Bengal, the report is invaluable, and will be eagerly consulted by professional men in this country, and even more so by those in Europe, for it contains a mine of information on the progress of cholera in India.

Extracts,

MODERN PHYSIOLOGY has been enriched by a number of ingenious instruments for assisting us in the study of the motions which take place in the body. By means of the ophthalmometer, the movements of the crystalline lens have been accurately measured, and the changes it undergoes when we look at near or distant objects absolutely determined. Nerve force, which until lately was supposed to travel with such wonderful rapidity, that "quick as thought" actually became a proverb, has, by means of Helmholtz's myograph, had the rate of its transmission along a nerve accurately estimated; and it turns out that, after all, this mode of energy moves with snail-like slowness when compared with the rate at which light and electricity travel. The movements which take place in the respiratory and circulatory systems are now being studied by means of numerous instruments of great ingenuity. We no longer trust our easily misled sense of touch when we want to accurately ascertain many obscure facts with regard to the pulse. In performing an experiment upon the circulatory system, we no longer estimate the force of the heart's action by merely feeling the pulse, or by observing the distance to which the blood is projected from a divided artery; we accurately measure the force and record the movements of the heart by means of suitable apparatus. These various instruments have been called "instruments of precision," inasmuch as they have rendered definite what could be only conjectural, or at best doubtfully ascertained, before their introduction. A great feature in many of them is the employment of a graphic method, by means of which the facts ascertained through their aid may be recorded. Thus we have the myograph, for recording the movements of muscles; the spirograph, for the respiratory movements; the cardiograph, kymograph, and sphygmograph, for registering movements which take place in the circulatory system. By means of these instruments, movements are recorded on revolving cylinders or on flat surfaces, so that a tracing or writing, indicating the character and extent of the motion, may be preserved. A very important advance has taken place in physiology since this ingenious method was introduced. We owe it to our countryman, Thomas Young, who invented it while prosecuting some researches in physics; but to Vierordt and Helmholtz in Germany, and Marey in France, must be awarded the credit of having introduced it into physiological research.—*Dr. Rutherford's Introductory Lecture on Physiology, reported in the Lancet.*

HYPODERMIC INJECTION OF SOLUTION OF MERCURY.—M. Bouilhon gives a formula for a solution of mercury, which is free from the ordinary disadvantages attending the injection of the soluble salts of this metal, such as suppuration, sloughings, &c. The salt he recommends is a double compound of iodide of mercury and sodium, the watery solution of which, in the proportion of 1·66 to 100 of water, can be injected subcutaneously to the extent of twenty drops, with a pure silver syringe, without danger. The salt is obtained by the saturation of a boiling hot solution of iodide of sodium (1 : 4) with iodide of mercury, and subsequent dilution with twenty times its weight of cold water. Iodide of mercury is precipitated, whilst the double salt remains in solution. The crystals are evanescent, and possess a yellow colour when hydrated, but assume a lively red tint when dried.—(*Centralblatt, No. 35*)—*The Practitioner.*

WE learn from Mr. Wharton Jones that his opinion is in favour of a complete physiological antagonism between calabar bean and atropine; an antagonism which is much more direct than that between atropine and morphia, which seems largely accidental, while the opposition between atropine and calabar bean is essential and specific. (Mr Jones had recently successfully treated a case of complete paralysis of the third nerve of a rheumatic character with the bean, and deduced some important results on its action, which are to be published).—*Ibid.*

CHLOROFORM AND COMPOUND TINCTURE OF CAMPHOR IN COLIC.—The medicine sold under the name of "chlorodyne" is a compound of chloroform and morphia, &c., but is not nearly so effectual as this combination. In twenty minims of chlorodyne there are, I believe, only two minims and a half of chloroform; whereas I often find the smallest quantity of chloroform that will produce an appreciable effect. I have given as much as one drachm in a single dose, but ten to twenty minims is in most cases an effectual and safe dose. With the chloroform, one or two drachms of compound tincture of camphor should be prescribed if pain be moderate in severity, or ten, twenty, or forty minims of "Battley's" solution of mur. morphiae, if more severe. This combination generally relieves pain, and induces sleep *within a few minutes*, and its effects are more lasting than those of an opiate alone. It ought to be given in some thickish solution, such as mucilage, otherwise the chloroform will fall to the bottom.—*Dr Marshall of Mortlake, in the Glasgow Medical Journal.*

SPONGE TENTS.—Knowing the fact that absolute or *strong* alcohol will quickly *set* the fibres of common sponge, after having been moulded or compressed into any given size or shape, I was led to the following quick and easy method, of preparing sponge tents, tampons, &c.:—

The sponge is first thoroughly moistened with water and pressed as dry as the strength of the hand will permit, then having formed it into the desired shape and size by the hand, or by pressing into a quill or any other tube or mould, it is immersed into the alcohol. If the spirit is sufficiently strong (90 to 100 per cent.), the sponge is immediately set into the given shape, which it retains perfectly after the pressure or mould is removed. It is then hard, firm, and inflexible, and may be trimmed to a sharp point or any other desired shape. To restore it to its former size and shape, it is only necessary to moisten it with a few drops of water. The alcohol sets the sponge perfectly, whether the amount of compression be much or little, so that the degree of dilatation, attainable by use of tents thus prepared, will, of course, depend upon the size after moulding, and the degree of pressure used. As this process of preparation works perfectly and without delay, its advantages are obvious.—*Dr. J. B. Hough, in Cincinnati Lancet and Observer.*

DR. T. D'A [illegible], of the McGill University, gives the following résumé of the course pursued by trichinae:—Introduced into the stomach in a semi-developed condition, it passes at once into the small intestine, where it becomes freed from its cyst, and increases rapidly in size; here the generative apparatus becomes apparent, and in from three to thirty-seven days it brings forth its brood; having accomplished this function [illegible] its course, it then perishes and passes off with the faeces.

The young trichinae, liberated within the small intestine, immediately pierce its walls and pass to the striated muscular tissue throughout the body, the heart excepted, by the process of vermiculation, unaided by the current of the circulation; here they increase greatly in size, and their intestinal canal becomes recognizable. In the course of twenty to twenty-five days from the period of birth of the young trichinae, by an unknown process, perhaps as the caterpillar forms its cocoon as suggested by Langenbeck, they encyst themselves, retaining the power of reproducing their dangerous progeny for a great many years.—*Canada Medical Journal.*

MEDICAL SCIENCES.—*The relation of the osseous medulla to blood.*—*The British Medical Journal*, in abstracting a recent paper, by Herr Neumann, in the *German Centralblatt*, calls attention to the fact that Neumann's startling theory that marrow develops blood-cells, has received confirmation by the observation of M. Bizzozero. Among other things, this observer says that the condition of the marrow in the bone of frogs in winter, as compared with the summer, furnishes an important argument in favour of the theory, that marrow is a blood-[illegible]. In winter, the white corpuscles in the blood of the frog are not half so numerous as they are in summer, and in winter the marrow consists almost entirely of fat cells, whilst in summer it contains hardly anything but white cells. He examined the costal marrow and the sternum in five cases of death from typhus fever, and observed in these situations an enormous increase of cells containing blood corpuscles.—*Popular Science Review.*

THE USES OF CARBOLIC ACID.—Mr [illegible], F.G.S., believes that this great fact in a dilute form, is an antidote to all parasitic life; it is known now to destroy all the low forms of life, whether animal or vegetable. It is now certain, he says, that carbolic acid will kill all septic germs, and thus remove many *causes* of disease; that glycerine is a very powerful healing agent; that carbolic acid is freely *soluble* in glycerine, and that their *united* application has resulted in the speedy cure of some of the most dangerous diseases. The following are directions for use:—As a rule, it is better to dissolve the crystallized carbolic acid (Calvert's) in the proportions of one part by weight of the acid to six of glycerine (*carbolate of glycerine*). In this state it can be equally diluted to any degree of strength. In general, a *dose* of carbolic acid is one grain in an ounce of water. As a *gargle*, one or two grains to an ounce of water. As an *injection*, one grain to four ounces of water. As a *lotion*, 15 grains to an ounce of water. As an *ointment*, 16 grains to an ounce of benzoated lard. As a *liniment*, one part to 20 of olive oil. As a *plaster*, one part of carbolic acid to three parts of shellac. The crystallized carbolic acid to be used as a caustic. The carbolate of glycerine, as above, use in one or two drop doses, internally. Antiseptic oil for abscesses, one part of acid to four of boiled linseed oil. Antiseptic putty, six spoonfuls of the antiseptic oil mixed with whiting. Aqueous solution of carbolic acid is one part of acid to 40 of water, (one ounce of acid to a quart of hot water well agitated and filtered.) Sick-rooms, to *disinfect*, place a portion of the dissolved crystals in a porcelain dish, and float it in a larger vessel of hot water. *Disinfecting purposes* generally, one pound of *crystals* to six gallons of water. *Fluid*, one part to 80 of water. *Powder*, one ounce of crystals with four pounds of slaked lime. For *drains*: one pound of the fluid carbolic acid to five gallons of warm water. *Tooth-ache* is often cured with one drop of carbolate of glycerine, and *diarrhœa* arrested in half an hour with two drops in a wine-glass of water. In all cases of *parasitic* life it is advisable to commence with very dilute carbolate of glycerine. Inasmuch as carbolic acid will destroy the power of *vaccine virus*, it becomes an interesting inquiry as to the possibility of using carbolic acid internally as a preventive, so as to fortify the human system against the incoming of zymotic diseases.—*Pharmaceutical Journal.*

THE TELEICONOGRAPH: an instrument invented by M. Revoil, the French architect. It is a combination of telescope and prism, and presents great advantages over the camera lucida. As the name implies, the new instrument enables a draughtsman to reproduce objects at a great distance on a large scale.—*Scientific Opinion.*

A NEW and very easy method of acquiring and preserving talent and intelligence has been discovered. Simply to eat fish. Our authority is the celebrated Agassiz, who, in his report to the Legislative Council of Massachusetts on the preservation and propagation of fish, writes as follows:—

"It enters largely into the requirements of the human organism. It is an aliment refreshing to the system, especially after intellectual fatigue. No other aliment provides for the outlay, so to speak, of the expenses of the head, so completely as fish, and the proof of the fact may be found all over the world. The inhabitants of places close to the sea are always the most intelligent.

"Fish contain phosphorus in great quantity, a chemical element required by the brain for its healthful development. It is not to be said that the extensive use of fish can make a wise man of a fool; but it is certain that the brain ought not to be allowed to want its essential elements."—*The Medical Press and Circular.*

THE statistics of transfusion of blood, which have been published by Professor Landois of the University of Greifswald, state that this operation has been practised 99 times in cases of haemorrhage. Out of these 11 cases were so grave, that no favourable result could be hoped for. In the 88 remaining, in [illegible] the result was satisfactory, in 3 it was doubtful. The operation has been performed in 12 cases of poisoning, in 3 of which the results were favourable.—*Ibid.*

THE INDIAN [illegible]