

again relaxed, two motions and flatulence, weight 10st. 1½ lbs., pills discontinued. Liq. hyd. perchlor. = t. a. 11th December, one formed motion daily, light and partly coloured, weight 11st. 1½ lbs., 21st December, bowels regular, once a day, colour yellow, weight 11st. 3lbs., continuing only pepsine. 2nd January 1892, kept well till 31st December when motions became relaxed and light in colour, weight 11st. 2lbs., liq. hyd. perchlor. and pepsine. 7th January 1892, quite well; motions good, dark-brown colour, and consistent.

It would, however, be unreasonable to expect in dealing with such complicated chemistry as that of the digestive organs, that by merely supplying one of the agents necessary for digestion, and to some extent preventing intestinal sepsis that every case should be so cured, and the following are instances in which other means had to be resorted to—

Lady—always had diarrhœa in the hills, never able to go to breakfast or to 11 o'clock service. Had dysentery in November 1880, and suffered from the epidemic of diarrhœa in the same year. Had diarrhœa in Lahore all the cold months, where she was under the treatment of Dr. Lawrie. Always had much flatulence and headaches, when diarrhœa stopped by astringents. Came under treatment in May 1881, had been taking mineral acids and large doses of bismuth and chloric ether. The acids were continued, but the bismuth stopped. Pills of iridin and taraxacum were given at bedtime, acids before each meal. On this treatment there was great improvement, diarrhœa was reduced to one to two nearly formed motions before 11 A.M. and no more during the day. Was able to come to prayers and breakfast, and to go to the 11 A.M. service, which she had never done before in Simla. Became worse on the rains beginning in the middle of June. Pepsine 12 grains after each meal continued for a week, did no good. On reverting to the iridin pills and acids, improvement again took place.

The Hon.—suffered from the epidemic in 1880, took it with him to Calcutta, and had exbilious diarrhœa all the cold weather. Returned to Simla in March 1881; had three or four exbilious motions daily, at intervals of about six hours; acids, enonymin, iridine failed to do any good: he was becoming weak and white in appearance. Pepsine and Pulver-macher's belt over the liver in the beginning of June; stools almost at once reduced to two in number, pultaceous in consistency, and reddish orange in colour. Has not had formed motions for many years; improved in health very much, and was apparently much benefited by occasional doses of Fredichshall or Carlsbad water. This gentleman was of gouty habit, and the pepsine, though it did not restore a completely healthy condi-

tion of the bowel, gave marked relief and led to greatly improved health.

The following three cases are interesting, as showing the distinct relationship between the peculiar form of dyspepsia which occurs in the hills and urticaria.

Capt. T.—had light-coloured motions without diarrhœa all through the rains, till the end of October 1880, with persistent urticaria of the lips and cheeks coming on every morning and passing off towards evening. His liver was slightly large, but not congested, and he was hereditarily disposed to gout. Mineral acids, colchicum, arsenic, liq. potassæ persevered in separately, did him no good. The cyclical manifestation of the skin eruption pointed to a very close relationship between it and the peculiar dyspepsia, both occurring in the early part of the day. Pepsine would have no doubt relieved his symptoms, but the discovery of its value in the treatment of this kind of dyspepsia had not then been made.

Dr. O.—arrived in Simla in October 1880 from Kabul. After a few weeks he was passing chalky white motions without diarrhœa, and was seized with very violent urticaria all over the body, which persisted for a week and disappeared with the return of colour to the motions. Acids and hepatic stimulants did no good. It is not improbable that he was also gouty, but I have no note to that effect.

Mrs. T.—a lady of strongly gouty family history, herself suffering from uric acid diathesis, with a deposit in the urine, and suspected calculus in the kidney. These symptoms disappeared under the use of lithia and bicarbonate of potash. In April and May 1881 she suffered very greatly from urticaria, coming on suddenly and irregularly, and causing great distress, it recurred at uncertain times for several weeks, she had at the same time light-coloured motions, but not invariably. Iridine, colchicum and taraxicum did her good for a little while, and after a time the urticaria ceased.

NOTES ON AN EPIDEMIC OF CHOLERA IN PURNIA DISTRICT.

FEBRUARY—JUNE 1891.

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(Continued from p. 103.)

Purnia municipality contained a population of 15,016 according to the census of 1881. It consists of several distinct and widely-scattered divisions. (1) The City Proper, on the left bank of the Saora river. (2) The civil station, on the west and north of the Ganges-Darjiling Road, which here bends at almost a right angle. (3) Madhubani, a suburban village west of the

civil station. (4) Khazanchi Hât or Line Bazar, south of the G. D. Road and of the eastern end of the civil station. (5) Bhata or Bengali-tola, east of the G. D. Road and of the southern end of the civil station merging eastwards into Khazanchi Hât. (6) Lal Chaoni, the site of the old civil station, abandoned half a century ago, lying on both sides of the Saora river, east of the civil station, south of the City, and more or less between the two. (7) Maharajanj, a small village on the west bank of the Saora, opposite the northern end of the City, and some distance north of the civil station. There is a great deal of jungle-covered ground round every side of the City, while Lal Chaoni is almost covered with jungle, and contains very few inhabitants now. From the N.-E. end of the City to the S.-W. end of the civil station is fully five miles.

Purnia town suffered very severely from cholera in 1889, 80 deaths being registered in March, 64 in April, and 9 in May. A large proportion of the mortality occurred in Madhubani, but the deaths were distributed over the entire municipal area. Since June 1889 cholera had hardly been present until April 1891. In 1890 only three cholera deaths occurred. In January 1891 there was one, in February three, in March none.

In February 1891 several cases of cholera were imported into the town. (1) A child of 12 went with its parents to Manihari on February 7th, returned to Madhubani on the 9th, was attacked the same evening, but recovered. (2) A Hindu male, of Bhata, aged 30, went to Manihari on the 7th, returned on the 10th, was attacked on the 12th, but recovered. (3 and 4) Two Hindu males, aged 18 and 14, went to Karagola on the 7th and returned on the 11th, they were attacked on the 12th and 13th, the former recovered, the latter died on the 17th. On the 18th I made enquiries at the police outpost and the registering office in Madhubani, but no cases of cholera had been heard of at either. Three deaths from cholera were, however, subsequently registered in Madhubani during February. No more cases occurred until April.

During April cholera broke out in the City with some violence, 35 deaths being registered, the first on April 3rd. In May 17 deaths occurred, the last being on the 18th of the month. Of these 42 deaths 4 occurred in the dispensary, 6 in the City itself, 1 in its western outskirts, 35 in its northern suburbs, 1 in Lal Chaoni, 1 at the railway station, 2 in Madhubani, and 2 in Khazanchi Hât. In the beginning of June there was another small outbreak in Bhata and Khazanchi Hât, 4 cases (2 in each) being fatal between the 3rd and 6th June. From 6th June to the end of August no more cases have occurred in Purnia town.

During the month of April I visited several of the places in the district where the epidemic was most fatal. On 19th April I visited the villages of Sultanpur, Matiari, and Pokhur, in Matiari thana. The first cholera cases registered in this thana were 5, on 19th February, in a village called Hanskora, ten miles south of Matiari. In Matiari itself 1 case died on 21st February, and 10 on the 26th and 27th. All these were Hindus. In only one case was it known for certain that the deceased had been to Manihari, but it was said that a great many people from this part of the district had gone by train to Manihari. However, though there were a good many deaths from cholera after the return of the pilgrims, the disease soon died out and did not become really epidemic until a month and a half after the bathing festival. Civil Hospital Assistant Johurulla Biswas was employed on special cholera duty at Matiari from 12th April to 26th May, and did very good work, treating in all 806 cases, with 425 recoveries, 379 deaths, and 2 cases remaining ill when he was recalled.

On 21st, 22nd and 23rd April I visited Raniganj thana, and a large number of surrounding villages, Gidnas, Hansa, Kamalpur, Rampur, Basaiti, Gunmanti and Bansi. No cases had occurred recently in the three last, but the four first, as well as Raniganj itself, had suffered severely. In Rampur, out of a population of 803, almost all Mussulmans, 20 deaths had occurred, and the inhabitants had abandoned the village. In one house I found the headman and five or six other men, who had all sent their families to Raniganj, and in the rest of the village merely a few very old people and very young children, not 20 in all. The place, in fact, had been deserted, though the mortality was not very great, not greater, indeed, than in the surrounding villages. From the thana registers I found that the first deaths registered in this thana from cholera had been three in Basaita village on 18th February, and two on the 21st, in Kamalpur two on 19th February and one on the 22nd, in Hansa one on the 25th and two on the 28th. These were all Hindus, and it was said that they had all been to the bathing festival at Manihari. The disease, however, did not become epidemic at that time. All the men I questioned were unanimous in saying that after a few deaths cholera had died out, and had only sprung up into an epidemic a month later. The number of deaths registered also bears out this statement, only 168 being registered in March, but 1,512 in April. The great majority of the deaths were low caste Hindus, but such men form also the great majority of the population of the thana. Civil Hospital Assistant Tasaduq Hosein was working in this thana from 29th April to 2nd June, and during that time treated 593 cases, with 274 recoveries, 305 deaths and 14 remaining.

On 29th April I visited the head-quarters of Gondwara thana, and on 30th April that part of the thana which had suffered most severely from cholera, the extreme S.-W. corner, between Jaunia Factory and the confluence of the Kosi and Ganges rivers, including the villages of Jaunia, Gobrahi, Jarlai, Lachmania, Batadia, and Karsila. By this time, however, the worst of the epidemic was over. Civil Hospital Assitant S. C. Sen was working at Jaunia from 10th to 30th April, during which time he treated 110 cases, of which 75 recovered, 33 died, and 2 were still ill when he was transferred to Gundwara on 1st May. He remained there until the 14th and saw 22 cases, of which 14 recovered, 6 died, and 2 were still sick when he left. In this part of the district cholera was only epidemic during April, and with much diminished severity in May. It did not break out with any severity until a month and a half after the bathing festival and nearly a month after the end of Karagola fair, which is held in this thana.

As stated above, previous to the 8th of February, the whole of the western half of the district was free from cholera, with the single exception of Araria thana. On the other hand, sporadic cholera was occurring more or less throughout the eastern half of the district, except in Manihari thana alone. At the same time, there was nothing like an epidemic anywhere, the total number of deaths from cholera registered in the district during the month of January being only 88. The epidemic undoubtedly broke out among the pilgrims assembled at Manihari for the bathing festival of 8th February. All the conditions which favour the development of epidemic disease, with the single exception of moist heat, were there present; fatigue, overcrowding, exposure, insufficient and unsuitable food. The epidemic first broke out at Manihari, and from there rapidly spread into the neighbouring thanas of Kadwa (Katihar) and Bulrampur, with which railway communication is direct and easy; and so on into the districts of Dinajpur and Rangpur.

At the same time, it is evident that this pilgrimage was not the sole cause of the epidemic. Though the pilgrimage was immediately followed by an outburst of cholera, especially in the three south-eastern thanas, and the disease was imported by returning pilgrims, into, I believe, almost every part of the district, yet in most places it did not at this time attain any very serious epidemic form. It was not until the end of March and the beginning of April, some six weeks after the pilgrimage, that cholera in an epidemic form was prevalent almost all over the district. My personal enquiries show that after the pilgrimage the disease was imported into many places; but, after causing a few cases and deaths, died away for the time. This occurred in Purnia town, and in the villages around Matiari and Raniganj; and also, on a larger

scale, in Manihari itself, where cholera, after being prevalent for about a month, almost died out by the end of the first week in March, to recur with much greater severity in April. I am therefore driven to the conclusion that the epidemic would have occurred in this district this year, even had no pilgrimage taken place. The only difference would probably have been that it would have commenced some six weeks later, and would have caused some 2,000 fewer deaths, or roughly a mortality some ten per cent. lower than that which actually took place. The fact that the district has suffered from epidemics of cholera, almost every other year, for the last thirty years, is also in favour of this view.

The cause, therefore, must be sought elsewhere, and I can only conclude that the disease spreads partly by general insanitary conditions, and partly owing to some atmospheric condition, which at present cannot be defined. Not that I mean that this district is specially insanitary more than any other district. But to the best of my knowledge, every district in the country offers a plentiful supply of insanitary conditions as pabulum for any epidemic which may spring up. This district, like other Bengal districts, is never at any time entirely free from cholera, so that the cholera germ, if germ there be, is always on the spot, ready to flourish and to spread, as soon as the conditions which favour its growth come in contact with it, like powder with a spark.

As far as sanitary surroundings go, it would naturally appear that the western half of the district, with its sandy soil, comparatively high and dry, and its water-supply from wells, was in a more healthy condition than the eastern half with its lower level, swampy soil and water-supply from rivers and tanks. Yet the western half suffers far more from cholera than the eastern, and though in 1891 the eastern half has suffered comparatively more than in 1889, yet it still shows a much smaller mortality than the western half.

What I should consider the chief, or one of the chief, causes of the spread of epidemics, the utter carelessness of the lower classes of the population, is as common here as elsewhere. I have seen people, in the most abject terror of cholera, yet calmly sleeping, while in health, on the same bedding as a person suffering from the disease, or in the clothing, still unwashed, of persons who had just died of it. I have also seen people using for drinking and cooking purposes water in which, as they well knew, the bodies of persons dead of cholera had been thrown, when unpolluted, or at least apparently unpolluted, water was obtainable at a little further distance, with a little further expenditure of trouble.

The usual insanitary conditions to be met with in this country are all found here, as elsewhere. The water-supply being chiefly from flowing

streams and from wells, there is not, however, the same opportunity for using the rapidly drying up water of filthy little tanks, as there is in Eastern Bengal. The water in the wells, however, sinks to its lowest level in the hot weather. I saw a large *pukha* well at Gondwara on the 29th April with only some six to nine inches of water at one side of the bottom, the other side being dry, a bank of sand being exposed there. This particular well was cleaned out very soon after, but of course the same lowering of water level must go on in the hot weather in all the wells in the district. There is, I think, a sufficiency of wells in most places. The difficulty is to protect public wells from pollution. Something has been done this year by the District Board, in putting up lifting apparatus (bamboo and bucket) in most of the wells along the G. D. road. But even when lifting apparatus is provided, it is impossible to make people drawing water use it. The greater number of the people who use the well may lift water with it; but if even one prefers to use his own *lota* and string, which *may* have been previously standing in any filth, down it goes into the well, washing itself while drawing water for him, and thus *may* do as much harm as if no lifting apparatus was provided. It has been proposed to obviate such an occurrence by posting a *chokidar* over every well. But in my opinion this would be a sheer waste of money. So long as the rule, which the watchman is supposed to enforce, is beyond the comprehension of both the watchman and the watched, as it undoubtedly would be in this case, such an appointment would only be a means of enabling the former to extract small fees from the latter.

In this connection I may observe that the Deputy Sanitary Commissioner of the Darjiling Circle in his report on the cholera epidemic of 1889, notes that almost all the deaths occurred amongst the lowest classes of the population. This he attributes to the fact that those who are more well-to-do have private wells of their own, which they take care to keep free from pollution. In this year's epidemic also it is noticeable that the mortality has been almost entirely confined to the lowest classes, and the reason given seems likely to be true. I only know of one native of any standing who was attacked. This man died: his constitution was shattered by drink. No Europeans nor Eurasians were attacked, though there are about 200 in the district.

Other practices which may be considered likely to help in spreading disease are eating unripe fruit, and fishing in muddy water. As tanks and pools dwindle, it of course becomes easier to catch the fish in them, and one sees crowds of men and boys running about in shallow water ankle deep, of course stirring up the mud till the water becomes of the consistency of cream, sipping this liquid mud when thirsty from their

exertions, and afterwards eating fish whose flesh is impregnated with mud.

The people themselves for the most part attribute the outbreak of epidemic cholera to the ravages of a malignant demon, who stalks through the country, more especially at night, seeking whom he may devour. This idea has some practical importance, as it causes them to shut up their houses at nightfall as completely as possible, a practice which, in the hot weather, is far from being conducive either to the preservation of the health of the healthy, or the recovery of the sick. I have more than once heard the taking of the census in February given as the reason for the excessive activity of the cholera demon this year.

At first, as reports of the prevalence of cholera came in from the various police stations, cholera pills were supplied in large quantities to the police for distribution. These pills are composed of *asafoetida*, black pepper, and camphor, one grain each, and are supposed to be used in the treatment of preliminary diarrhœa. Complaints are frequent that they are of little or no use, and indeed, when one considers how they are distributed, it could hardly be expected that they would be of much service. From the police stations they are given out to the village *chokidars*, and by them given to the sick, or to the friends of the sick. The usual complaint is that a man is purged, and ceases to pass urine, pills were given to him, but he did not pass water again, and died. At this stage it could hardly be expected that pills would help much.

There happened to be two Civil Hospital Assistants on supernumerary duty in Purnia when the epidemic broke out, and two more were obtained from elsewhere. Thus four in all were employed, or if we take the employment of one man at two different places on two different occasions as two, eight. They treated in all 1,904 cases, with 997 recoveries, 854 deaths, and 53 cases remaining sick on the different occasions when they were transferred to other places, where their services were more urgently needed.

Judging from the number of deaths, which is more trustworthy than the number of cases reported, it appears that less than five per cent. of the whole number of cases came under treatment, for the number applying for treatment at the three dispensaries in the district is too small to be taken into consideration. After all, a man can only cover a very limited amount of ground even when deputed on cholera duty. If he can manage to visit personally all the cases within two or three miles, when there are a large number of such cases, it is about as much as he can do, when he has also to dispense medicines to crowds of applicants, the relatives and friends of those sick at a greater distance, and ten miles may be taken as about the furthest distance from which friends will come for medicines. To visit

cases within two or three miles sounds very little, but it means covering personally 16 or 36 square miles, and dispensing medicines for a tract of 400 square miles. And even this is only from two-thirds to the whole of a single thana.

The estimation in which the treatment of a medical man is held varies widely in different places. When inspecting the cholera work at Forbesganj, (Matiari), I found people anxiously requesting the services of the C. H. A. for the sick near by, and medicines for the sick further off, so that he was almost overwhelmed with work. When visiting villages near Jaunia, in company with the C. H. A. deputed there, he told me of numerous instances in which the sick, or their friends for them, refused treatment as useless, even in the very village in which he was staying. The usual answer was that "they knew a man who had taken medicines, and he died." In one village, Batania, a sick man, the only case I saw that day, gave the same reply to me. In another village, Kursila, only two miles from the C. H. A.'s head-quarters, I heard, on enquiry from the village headman, of several deaths in cases which the C. H. A. had not heard of, even when making enquiries in that very village. It is hard to say what can be done to help people who are so utterly callous or stupid as absolutely to refuse to make any effort to help themselves or their friends, and the difference in appreciation between Jaunia and Forbesganj was almost entirely due to the inhabitants, and not at all, or very little, to the difference between the two men employed in the two places. The whole of the expenses, moreover, of the deputation of a C. H. A. to Forbesganj, as well as the cost of medicines, were met by local subscription; while all the expenses at Jaunia were paid by the District Board. Certainly the population at Forbesganj could better afford to pay the cost than the inhabitants of the villages near Jaunia.

The two C. H. As. employed at Raniganj and at Palasi, in the Araria sub-division, under the orders of the sub-divisional officer, travelled from village to village, visiting cases in places widely separated. The others remained in one village as their head-quarters, only visiting cases within walking distance, and supplying medicines to the friends of those further off. The latter procedure in my opinion does the most good. Fewer cases are seen, certainly, but there is more chance of doing good to those which are treated.

Precautions to be adopted for the prevention, if possible, of such outbreaks, in the future, may most suitably be considered here. The only preventative of any importance which I can suggest is the provision of better drinking water, and the more careful safeguarding of the water supplies which exist, and I have said above that there is already a sufficiency of wells in most places, and given my reasons for thinking that no efficient watch can be kept over those that there

are. As there stated, the District Board has provided a large number of wells along the Ganges-Darjiling Road with lifting apparatus, and intends doing so for more. It is also intended to dig more *pukha* wells along this road. That part of the road especially from Dengra to Titalya through the Kishanganj sub-division, needs a further supply. Perhaps, instead of regular *pukha* wells, Norton's Abyssinian tube wells might be put down in many cases. They are not dear, and not difficult to manage. One at Jaunia factory has been in use for nine years, and during that time has needed no repairs, except renewing a piece of leather once. No doubt, however, it would be difficult at first to persuade ignorant natives to make use of them, and to teach them how to do so; possibly, also, there might be some caste prejudice against them. I would also suggest that the wells, which exist at most railway stations for the benefit of passengers, should be fitted up with lifting apparatus. On occasions of the assembly and transport of large numbers of pilgrims by rail, too, surely the railway, more especially if it is a State Railway, should make some provision against the outbreak of epidemic disease. In the present case, temporary hospitals should have been rigged up at both Manihari and Katihar, with a supply of medicines and a civil hospital assistant at each, to treat sickness on its first appearance, instead of letting it develop into a serious epidemic before anything is done. The cost of temporary structures of grass and thatch would not be much; there are already supernumerary civil hospital assistants in Government service, who might be deputed in duty in them; and the medicines, if not required at the time, might be utilized in other ways afterwards. Even if the cost were greater than it would be, the railway makes a large profit out of the conveyance of the pilgrims, and should be bound to do its best to provide against epidemic sickness among them. Like other officials, railway officers, I presume, cannot incur any such expenditure without special sanction; but such expenditure ought to be a matter of routine on such occasions. This year, at Katihar, the District Traffic Superintendent made such arrangements as were possible for the accommodation of the sick; tarpaulins were pitched as tents, and straw provided for bedding.

Disposal of the dead may also be considered here. This is effected in three chief ways, by cremation, by burial, and by simply throwing the body away, either into the nearest water, or out into the nearest jungle. It may sound shocking to sentiment, but my own belief is that the last, *i.e.*, throwing the body into the jungle, is really the best. At any rate, in times of severe epidemic it is the one almost universally employed. Theoretically, no doubt, cremation is the best way of disposing of a corpse. But the price of

fuel is prohibitive; indeed, in some parts I doubt if sufficient fuel could be got at any cost. As a matter of fact, the body is simply singed, or its mouth is just touched with fire, and it is then thrown into the nearest water. Burial is also a comparatively good way of disposing of a corpse, if properly carried out. But the grave is often so shallow that beasts dig up the body and devour it the next night, and when deaths are taking place with great frequency during epidemics, proper burial demands more labour than can well be spared for it. Throwing a body into water is always bad. If the water is running, it must be polluted for some distance down-stream, especially if many bodies are thrown into it. If it is stagnant water, pollution is less widely spread, but more concentrated; and while the water is less used for drinking, it is all the more dangerous to those who do use it. But when a body is thrown out into jungle, or on the open maidan, it is quickly devoured by vultures, jackals, and dogs; only the clean bones are left. They are not dangerous. These animals are not liable to cholera. If they were, they must have repeatedly suffered from devastating epidemics, and, as a matter of fact, they do not. When eaten by wild animals, the body has been disposed of without risk to other people, and this is, after all, the main point.

It is an interesting question, what proportion of deaths during epidemics escape from registration, and go unheard of. The answer, no doubt, would vary in different districts. In times of severe epidemic it is almost certain that numbers of death from various diseases, not easily identified are registered under the head of the disease epidemic at the time. But, on the other hand, while a certain proportion of deaths always escape registration during the prevalence of an

epidemic, this proportion is, I think, much higher than at other times. The chokidar of each village, or in large villages of each mohalla (quarter), is supposed to report at the nearest police station or outpost all deaths which have occurred in his village since his last report. These reports are usually made weekly. But if the chokidar himself is attacked by the disease, or dies, there must be a certain interval before his successor is appointed; and in this interval doubtless many deaths go unreported and unregistered. Again, I have met with more than one case in the late epidemic in which the chokidar had simply disappeared. He had gone to make his weekly report at the police station and had never come back. It was supposed that he had been attacked with cholera and had died on the road. In such a case also the last week's report probably goes unrecorded, and again it is sometime before his successor takes up his work. Moreover, if, while the chokidar himself is in health, his wife or children are attacked—it cannot be expected that he should leave them unattended while he goes to make his report at a police station, perhaps ten or fifteen miles away. No doubt, it is his duty to go and report; he may be punished with fine or dismissal for not doing so. But under such circumstances, he is not likely to do his duty. We can hardly expect that he will. And his pay is so small that dismissal has few, if any, terrors for him. In this case there is a better chance of the deaths being registered at a subsequent report. But an ignorant man, unable to read and write, and trusting entirely to memory, is very likely to forget many of the cases he should report. On the whole, I think it is likely that, during the prevalence of an epidemic, not less than 15 or 20 per cent. of the deaths from that epidemic go unregistered.

TABLE No. II.

Deaths from Cholera in each Thana of Purnia District, January to June, 1891.

	Jan.	Feb.	March.	April.	May.	June.	TOTAL.	Ratio per 1,000
WESTERN HALF.								
<i>Sadr Sub-division</i> —Purnia Town	1	3	...	34	18	4	60	3.99
" Thana ... ..	...	16	80	579	322	4	1,001	7.21
Gondwara Thana ... ..	...	9	40	677	172	9	907	7.31
Damdaha " ... ..	...	...	2	220	782	111	1,115	10.19
<i>Araria Sub-division</i> —Araria Thana	32	99	384	1,440	783	97	2,835	14.17
Raniganj Thana ... ..	...	9	168	1,512	1,084	31	2,804	26.07
Matari " ... ..	...	16	121	1,334	1,385	201	3,557	37.79
Total of Western Half	33	152	795	6,296	4,546	457	12,279	15.56
EASTERN HALF.								
<i>Sadr Sub-division</i> —Kadwa Thana	6	264	206	536	257	21	1,340	9.97
Kasba Amur Thana	15	28	56	629	465	47	1,240	9.93
Balrampur "	17	96	236	157	42	24	572	4.97
Manihari " ... ..	...	62	92	402	140	2	698	12.81
<i>Kishanganj Sub-division</i> —Kishanganj Town ... ..	...	5	3	2	...	2	12	6.72
" Than	5	2	88	478	382	96	1,051	12.28
Bahadurganj "	5	58	384	1,386	512	65	2,410	12.28
Kaliaganj "	7	88	327	794	324	13	1,553	5.60
Total of Eastern Half	55	603	1,392	4,434	2,122	270	8,876	8.37
GRAND TOTAL	88	755	2,187	10,730	6,668	727	21,155	11.44

TABLE No. III.

Giving the area and population of each Thana in Purnia District, with the number of deaths from Cholera in 1889, and from January to June, 1891.

NAME.	AREA.	POPULATION.	CHOLERA DEATHS, 1889.		CHOLERA DEATHS JAN.-JUNE, 1891.	
	Square miles.	Census of 1881.*	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
WESTERN HALF.						
<i>Sadr Sub-division—</i>						
Purnia Town ... ..	...	15,016	155	10·32	60	3·99
" Thana	424	138,704	3,960	28·55	1,001	7·21
Gondwara ,,	421	123,945	2,032	16·38	907	7·31
Damdaha ,,	514	109,391	1,470	13·54	1,115	10·19
<i>Araria Sub-division—</i>						
Araria Thana	431	200,012	3,777	18·88	2,835	14·17
Raniganj Thana	341	107,552	1,647	15·31	2,804	26·07
Matiari ,,	272	94,115	1,227	13·03	3,557	37·79
Total of Western Half ..	2,403	788,735	14,268	18·10	12,279	15·56
EASTERN HALF.						
<i>Sadr Sub-division—</i>						
Kadwa Thana	365	134,275	1,400	10·42	1,340	9·97
Kasba Amur Thana	285	124,889	980	7·04	1,240	9·93
Balrampur ,,	323	115,031	63	0·54	572	4·97
Manihari ,,	240	54,456	219	4·20	698	12·81
<i>Kishanganj Sub-division—</i>						
Kishanganj Thana	321	158,100	185	1·17	1,063	6·72
Bahadurganj ,,	393	196,142	380	1·42	2,410	12·28
Kaliaganj ,,	626	277,059	255	0·92	1,553	5·60
Total of Eastern Half ..	2,553	1,059,952	3,482	3·28	8,876	8·37
GRAND TOTAL ..	4,956	1,848,687	** 17,750	9·60	21,155	11·44

* The census of 1891, the exact results of which have not yet been published, shows a rise in population of some five per cent. during the last ten years, or a total addition of about 100,000.

** Out of the total of 17,750 cholera deaths in 1889, the deaths from June to December, inclusive, amount daily to 536.

OPHTHALMIC CASES AT THE DARJEELING DISPENSARY.

BY SURGEON-MAJOR J. O'BRIEN, M.D., F.R.C.S.E.

SURGICAL operations on the eye are not of common occurrence in this dispensary. I gather from the records that a single case of cataract extracted in 1882 was the only ophthalmic operation of importance performed within the past ten years. This state of things is accounted for by the very large amount of general practice devolving on the civil surgeon during, what is called, "the season" in Darjeeling, and secondly by the comparative rarity of diseases of the eye requiring operation. Senile cataract so common in the plains is undoubtedly extremely rare among the hill people. During the first year of my tenure of office here as civil surgeon, viz., in 1890, though constantly on the look-out for such cases, I did not see or hear of a single person suffering from cataract. Towards the close of my second year I was more fortunate. With the aid of the popular and energetic

hospital assistant of the dispensary I succeeded in getting together a few interesting cases.

Case 1.—A blind Nepalese Brahmin, aged 31, was seen by the hospital assistant being led through the bazar and induced to come to the dispensary for treatment. I saw him on 30th August, and found that it was not a very promising case. It was a well-marked instance of congenital posterior polar or posterior capsular cataract of both eyes. A dense and brilliantly white opacity of stellate appearance occupied the whole of the pupillary space at the back of the lens. It was easy of diagnosis, being saucer shaped and obviously well behind the margin of the iris. As it was central and fully a fifth of an inch in diameter, it completely destroyed direct vision.

In civilized countries cataracts of this variety are not often met with, in adults at least, as an attempt would no doubt have been made to deal with them in childhood. I do not remember having seen a single case of this kind during