

their use. And this is the practice that has now for some time past been followed in the hospital, where sponges are found only in the *post-mortem* room.

In the wards and at operations sterilised coarse cotton gauze, wrung out of perchloride of mercury solution, has altogether displaced sponges.

Possibly carbolic, or boric acid is a most suitable disinfectant in cases involving extensive lesions of the peritoneal membrane, but since the use of perchloride of mercury has not in my hands been followed by any but successful results, and as it is at the same time the most reliable of germicides, I give it, by reason of its potency, the preference over all other antiseptic solutions.

I do not mean to imply that I would flush the peritoneal cavity with a solution of perchloride of mercury, but to indicate that, short of this procedure, its application to the peritoneal membrane, in the proportion of 1 to 2000, is a perfectly safe measure. During the last 10 months I have, on five occasions, had to deal surgically with the peritoneum. One case which fully illustrates the practice advocated is, I think, deserving of record:

Moung Chit Lo, age 23, was brought to the hospital at 8 A.M., on the 10th of June 1888, with a penetrating wound of the abdomen, through which some 18 inches of intestine were protruding. He had taken his buffaloes out at daylight to plough some paddy land, when one of the brutes turned on him and gored him in the abdomen. On his admission, some hours after the injury, the escaped intestine was washed with carbolic lotion by the dresser, and then covered with a piece of lint of which the woolly side was placed in contact with the bowel. On my arrival at the hospital, two hours later, I removed with some difficulty the lint, which had in the short interval become firmly glued to the bowel, and carefully and thoroughly washed the protruded mass with copious supplies of 1 in 2000 perchloride of mercury solution, separating the coils and removing fragments of mud and bits of grass that had escaped the dresser's notice. I then freely enlarged the opening, so as to fully relieve the constriction which existed, and returned the bowel to the abdominal cavity. The wound in the parietes, now a large one, was dealt with precisely as in closure after abdominal section, excepting that instead of a flat sponge, a many-folded piece of gauze was placed inside the wounds to protect the intestine against the impact of needles and absorb the oozing set up by the introduction of the sutures.

The subsequent progress of the case need not be related; it is sufficient to note that the patient made a perfect recovery, and was dis-

charged cured on the 8th of the following month.

Probably in this, and in the other cases, a small amount of the perchloride solution found its way into the peritoneum, and some cotton fibres from the gauze likewise must have been permanently shut up within the cavity, but in no instance had I any reason to suppose that either the solution or the fibres were productive of the smallest inconvenience.

With the view of ascertaining to what degree the peritoneum would resent the undoubted presence within its cavity of these substances, two small pariah pups were made the subjects of the following experiments:—Into the peritoneum of one of the puppies 15 minims of a 1 in 1000 solution of perchloride of mercury, and a few days later two drachms of a similar solution were injected by means of an hypodermic syringe. The animal exhibited no symptoms of inconvenience whatever, and did not, so far as could be determined from observation, suffer in the smallest degree.

With the second puppy the abdominal cavity was opened by a small incision in the median line, a little below the navel, and two fragments of perchloride gauze, each a quarter of an inch square, were introduced deeply within the peritoneum. The following morning the little dog appeared to be perfectly well, and was seen at play with its companion. Only one deep suture was introduced, which was removed on the sixth day when the wound made, had completely healed. The fragments of gauze are, I presume, still inside the animal's peritoneal cavity, but up to the present time, 21 days having passed by, no indication of their presence has become apparent.

I hope the perusal of these remarks will not lead any one to think that cotton gauze can approach sponges in usefulness. Necessity has taught me that gauze is a safe substitute, and to an operator not having at hand a sufficient supply of reliable sponges, I would recommend its use.

The gauze used in this hospital is made of common country grown cotton, spun and woven in the jail, and converted into perchloride gauze after the method advised in that useful note on cheap antiseptics penned by Dr. K. McLeod, and published in the August issue of the *Indian Medical Gazette* for 1886.

#### NOTES ON AN OUTBREAK OF CHOLERA IN THE TOWN OF BARISAL IN DECEMBER 1888.

BY SURGEON D. G. CRAUFORD, M.B., I.M.S.,  
*Officiating Civil Surgeon, Backerganj.*

BARISAL is the sadr station of the district of Backerganj, the most easterly of the districts

comprised in the Gangetic delta. In it, as in all the other districts of the delta, cholera is endemic.

The town is situated on the right or west bank of the Barisal or Kirttackhola river, which there flows nearly from north and south. It is about 75 miles south of Dakka, and 183 miles almost due east of Calcutta. The area of the town is nearly six square miles (five square miles and 588 acres), and includes five villages, Barisal, Bogura, Kannia, Amanatganj, and Alekanda. As in most Eastern Bengal towns, of course, by far the greater part of this area is not occupied by houses but covered by gardens, jungle, and rice-fields. The population, at the last census in 1881, was 13,186, and consisted of 244 Christians, 6,041 Hindus, 6,828 Musalmans, and 73 others. According to sex, there were 4,485 females and 8,701 males, the latter being nearly double the number of the former.

The most northern part of the town, or Amanatganj, lying north of the Shah road or first part of the Amanatganj road, consists for the most part of mat and thatch huts, built on mud platforms and surrounded by thick jungle of palms, plantains, and bamboos, in which the houses are almost concealed. Behind these are rice-fields. On the river side, going northwards, are situated successively brick kilns, the *post-mortem* house, and then the trenching grounds.

The central portion of the town, or bazar, or town proper, lies along the river from the Amanatganj road to the cutcherries, and extends westward from the river to about one-third of a mile west of the Jail Road. Through it the first part of the Jail or Lakhutia Khal runs in a double curve. North of the khal lie two daily markets and the Kotwali Thana, a number of good-sized pucca houses, two or three streets, and little jungle. Immediately south of the Jail Khal lies the central part of the town, which consists of one large street, Daghapati, out of which run at right angles several smaller streets, Maidapati, Chamarunpati, &c. These streets are built like those of an English town, with a regular row of houses, mostly pakka, on each side, and the first has a good pakka drain on each side. Between these streets and the river lie smaller houses, and the market-place, in which a large *hât* or market is held bi-weekly. The Jail Road also runs north and south through this part of the town, from the civil station to the Jail Khal, which it crosses by the Jail Bridge. East of it are situated the jail, dispensary, and police lines. Along each side of it lie two regular rows of houses, many pakka, and a number of tanks. West of this road the houses are mostly kacha, and are buried in jungle, like those first described. They gradually become fewer and fewer, until,

before the west Bogura Road, which runs in irregular curves along the west of the town, is reached, rice-fields are the predominant features of the landscape.

Barisal proper, the original village of Barisal, is chiefly taken up by the various Government cutcherries, and lies on the river bank, immediately south of the regular streets of the town. South of it again lie the houses of the civil station, and beyond them rice-fields with a few houses among them. Through the civil station another large khal, the Bhata Khal, curves irregularly, being gradually lost westwards in Bogura, but sending a small offshoot northwards along the east side of the Jail Road, to meet a similar channel running southwards from the Jail Khal.

The west part of the town is called Bogura, and consists of kacha houses in jungle, as described before, lying on the west of the West Bogura Road. These again pass gradually into open rice-fields. At the northern end of this part of the town lie the pauper burial-ground and Hindu burning ghât, on opposite sides of the Lakhutia Khal; and a little south of them is situated the Musalman burial-ground. The European cemetery is in the civil station.

The fifth part of the town is a populous suburb, called Alekanda, consisting entirely of kacha huts in jungle, as before, and separated by rice-fields from the civil station on the north.

Kannia, the last of the original villages composing the town of Barisal, lies in its north-west corner, north of the Lakhutia Khal.

For municipal purposes the town is divided into five wards—(1) Katwali ward, south of the Jail Khal; (2) Kalabari ward, bounded on the north by the Jail Khal, on the west by the West Bogura Road, on the south by the South Bogura Road, and on the east by the Jail Road; (3) Church ward, lying east of the preceding, between the Jail Road and the river, with the Jail Khal on the north and the Collectorate Road on the south; (4) School ward, south of Kalabari ward, with the South Bogura Road to the north, Alekanda Road to the west, Shagurdi Road to the south, and the Jail Road to the east; (5) Kutibari ward, bounded by the river and Bund Road on the east and south-east, the Collectorate Road on the north, the Jail Road and the Shagurdi Road to the west and south-west, the Shagurdi Road gradually coming round to meet the Bund Road. Each ward, however, is not a homogeneous whole, but includes localities of very different characters; thus the Kotwali ward includes part of the town proper, with the jungle villages of Amanatganj and Kannia; the church ward comprises the main part of the

town, sandwiched between the jail lands on the north and the open space round the cutcherries on the south; and the Kutibari ward includes, along with the civil station, the jungle village of Alekanda.

Along the northern part of the town, north of the Shah Road, the river does not appear to be either alluviating or diluviating. In the northern part of the town proper, immediately north of the mouth of the Jail Khal, the river is cutting away the town rapidly. In Mr. Beveridge's history of Backerganj, published in 1886, it is stated that within the last twenty years one-third of the bazar had been washed away. South of the Jail Khal again the river does not appear to be either advancing or receding. From the cutcherries southwards, however, it is receding rapidly, a large chur being gradually formed along the river face of the civil station and of Alekanda, which gets quickly broader towards the south, till Shagurdi, at the southern end of Alekanda, which thirty years ago stood on the river bank, is now more than half a mile from it.

As previously stated, two large khals, or tidal watercourses, pass through the town into the river. The most northerly of these is called the Jail Khal, where it passes through the town, and the Lakhutia Khal outside the town. It curves first to the north-west round the jail, then to the south-west, and finally at the western part of the town turning at almost a right angle passes away to the north-west, to Lakhutia, six miles off, where it joins a larger river. It is navigable throughout its length by boats up to the size of a large dingy, larger boats being unable to pass under the bridge in the Barisal bazar, and forms a short cut to Gaurnadi and the north of the district. The other is called the Bhata Khal, and passes irregularly westward through the civil station. It is navigable for small dingies for about 500 yards. A long channel along the east side of the Jail Road joins the two, passing through two large tanks on the way; this is not navigable at all.

The water-supply of the town is from two sources: (a) the river, khals, and tanks flushed by them; (b) from tanks not connected with the khal system. Two such tanks are set apart for supplying drinking water. One, which is public property, lies among the cutcherries, to the east of the church. I do not think its water is much used. The second, known as Scott's tank, belongs to one of the houses in the civil station. Its water is used by almost all the Europeans, by a large number of the natives, and by the jail and dispensary. The water of this tank is, I believe, the best in the station, much better than that of the river or khal system. That of most of the unconnected tanks, however, is probably worse than the river water, no care being taken of these tanks; their water,

while fouled in all sorts of ways, is not flushed by the tide, as is the water of all the tanks connected with the khal system. It may be mentioned here that there was a very heavy fall of rain on the 6th and 7th of October 1888. Between 6 A.M. and 6 P.M. of the 6th 1.32 inches of rain fell, and between 6 P.M. of the 6th and 6 A.M. of the 7th 5.32 inches, or 6.94 inches in 24 hours. There was also a very high tide and a strong south wind on the morning of the 7th, and almost the whole station was under water, and the water of all the tanks was more or less mixed up together. After this flood the water of some of the tanks, among them Scott's tank, seemed to me to have deteriorated, and to be not so clear as formerly, while some scum formed on the surface. Latterly, however, this scum seems to have cleared off again, and the water of Scott's tank has again become clear. The whole town is honeycombed by tanks, there being one or more to every house of any size, in most cases probably dug to supply earth for the foundations of the houses as well as to give water to their inhabitants. Most of these tanks are connected with the tidal khals. Some are flushed at high tide twice daily throughout the year. Most, however, are only flushed by the tide twice daily during the rains, or from May to November inclusive. During the rest of the year they are only flushed by the highest tides, twice monthly, at new and full moon. They thus perform a double duty, and fulfil the functions of a water-supply and a drainage system in one. A number of tanks, chiefly in the centre of the town, west of the Jail Road, are not connected with the khals at all, and are never flushed throughout the year.

Conservancy is carried out by the daily removal of nightsoil, by carts and hand buckets, to the trenching grounds, which are situated near the river, a mile north of the bazar. The municipality own three public latrines, and are putting up two more. The two daily markets have each a latrine for the use of their frequenters, and most private houses have latrines of their own. One jemadar and forty-six sweepers carry out conservancy. The system of trenching nightsoil works well in the hot and cold weather, but in the rains the soil is so waterlogged that it does not do well then. It would, however, be difficult to devise any other means for its disposal.

Cholera has occurred in the district in the form of a severe epidemic during the last two years. In 1886 this disease caused only 3,027 deaths. In 1887 it caused 8,885 deaths, or 4.60 per 1,000 of the population of the district. In 1888 it caused 7,835 deaths, a ratio of 4.11 per 1,000. The following table gives the number of deaths, month by month, due to cholera in the last two years, in the district, the town and the sadr dispensary, which is a separate registering

circle. There were no deaths from cholera in the jail in either 1887 or 1888 :—

MONTH.	CHOLERA DEATHS.					
	1887.			1888.		
	(a) town.	(b) dispensary.	(c) district (including a & b.)	(a) town.	(b) dispensary.	(c) district (including a & b.)
January...	...	...	1,084	...	...	136
February	...	...	589	6	...	613
March ...	27	1	2,197	6	2	2,950
April ...	33	...	3,444	9	2	1,770
May ...	6	...	1,135	4	2	937
June ...	...	...	251	...	...	61
July ...	...	...	66	...	...	28
August ...	...	...	20	...	...	4
September	...	...	12	2	...	13
October...	...	...	15	1	...	10
November	...	...	20	...	...	91
December	...	...	52	18	5	1,222
TOTAL ...	66	1	8,885	46	11	7,835

From the above table it will be seen that the cholera mortality was high in January 1887. After a slight fall in February, it ran up rapidly, reaching its maximum in April, falling steadily from May to September, when only twelve deaths occurred, the lowest number registered in one month during the year. From September again the number of deaths rose regularly month by month up till March 1888, being low, however, until February. After March the number of deaths sank again rapidly, the minimum number of deaths, four, being registered in August. In December 1888, however, the numbers went up again with a rush. January 1889, with 682 deaths, shows a considerable falling off again. In this month two deaths occurred in the town, none in the dispensary. The months of epidemic prevalence, both in 1887 and 1888, were February to May inclu-

sive; and, as usual in Eastern Bengal, when the rains began in earnest, cholera almost disappeared, and caused few deaths until after they had completely ceased. December 1888, however, was a month of severe epidemic prevalence of the disease, while December 1887 was not. Possibly the earlier cessation of the rains in 1888 than in 1887 had something to do with the earlier breaking out of cholera in the district in the winter of the later year. The rains in 1888 closed with the great storm, mentioned above, on the 6th and 7th October, there being only  $\frac{3}{4}$  inch of rainfall between that date and the end of January 1889. Whereas in 1887 there were over six inches of rainfall distributed through October, and over five inches in November.

The months of greatest prevalence of cholera in the Town of Barisal were March, April, and May 1887, February to May 1888, and December 1888; especially March and April 1887, and December 1888. Thus in 1887 the months of greatest prevalence of cholera in the town and district coincide, but not in 1888. Out of 216 deaths registered in Barisal Town during 1887, 66 were due to cholera, and 46 out of 172 in 1888.

The following table gives the thanas chiefly affected by cholera in the two years 1887 and 1888, with the number and the ratio per 1000 of deaths in each. The same information is also given for the four municipal towns in the district, which are separate registering circles:—

THANAS.	1887.		1888.	
	Number of Deaths.	Ratio per 1000.	Number of Deaths.	Ratio per 1000.
Bhandaria ...	712	9.70	580	7.90
Patuakhali ...	1,367	7.86	1,135	6.53
Gulsakhali ...	750	7.59	552	5.59
Golachipa ...	446	7.55	354	5.92
Barisal ...	854	7.50	333	2.92
Matbaria ...	633	6.59	640	6.66
Backerganj ...	860	6.35	595	4.39
Nalchiti ...	444	5.62	212	2.17
Jhalokati ...	583	4.06	1,051	7.32

Towns.	1887.		1888.	
	Number of Deaths.	Ratio per 1000.	Number of Deaths.	Ratio per 1000.
Barisal ... ..	66	5.00	46	3.48
Piruzpur ... ..	50	3.30	44	3.95
Nalchiti ... ..	11	5.98	4	2.17
Jhalokati ... ..	8	5.47	9	6.15

The chief stress of the disease in both years, especially in 1888, fell on the south and south-centre of the district. Of the four thanas in Patuakhali sub-division, which includes the most southerly part of the district, three are heavily affected, only one, Baulal, getting off comparatively lightly. Of the western sub-division, Piruzpur, the two most southerly thanas, Bhandaria and Matbaria, both suffered much more from cholera in both years than the two northern ones, Piruzpur and Sarupkathi. Of the six thanas in the sadr sub-division, which includes the north, north-east, and centre of the district, the two most northerly thanas, Gaurnadi and Mendiganj, escaped comparatively lightly in both years, and Barisal and Nalchiti, though suffering severely in 1887, had far fewer deaths in 1888. The two most southerly thanas in this sub-division, Jhalakati and Backerganj, in the centre of the district, suffered severely in both years, and in 1888 the southern portions of these two thanas, comprised in the jurisdictions of Rajapur and Niamati outposts, respectively, suffered far more than the northern halves. The island sub-division of Bhola or Dakhin Shahbazzpur, including the two thanas of Bhola and Barhanudin, got off very lightly in both years, with 301 deaths in 1887, and 219 in 1888. Being separated from the mainland of Backerganj on the west by a river, the Ilsha, four miles broad, and from Noakhali on the east by a far broader river, the Megna, there is comparatively little communication between it and the other parts of the district.

The first case of cholera in the town in the winter of 1888 occurred in the person of a boatman, who was attacked while coming down the Lakhutia Khal from the north of the district on 27th November, reached Barisal on the morning of the 28th, was taken to the dispensary at once, and died there on 2nd December. On 1st December the second case occurred in a woman living on the north bank of this khal, a little west of the jail bridge, and using the water of the khal; she died on 3rd

December. The third case was her son, who was attacked on the day of his mother's death, removed to another house close by, and died there on the sixth. No cases occurred on the 4th December, but on the 5th there were two, both women; one (4), a Hindu female living in a house on the north bank of the same khal, the other a Musalmani (5), from a boat in the khal; the former died at her home on 8th December, the latter was removed to hospital and recovered there. On the 6th December three more cases occurred; first (6), another woman from the same boat as the preceding case, she also was removed to hospital, accompanied by the whole of the rest of her family, a man of about 40, an old woman about 70, and a child of three, the two last were subsequently attacked, and the old woman died; secondly (7), a boy aged 7; and thirdly (8), a clerk of 50 years old; these two, both lived on the north bank of the khal and both recovered. On 7th December there were two fresh cases (9 and 10), in quite a different part of the town, but still close to this khal, in Fariapati, on the south bank of the mouth of the khal, where it joins the Barisal river; one died next day and one recovered. On the 8th December three cases occurred (11, 12, 13), one on the north bank of the khal, the other two some distance south of it; these three all died. On the 9th December six cases were attacked; the first (14), a school-boy, who recovered, living near the two last cases; the next three a woman and two children (15, 16, 17), living in a house on the north bank of the khal, the same house in which the third case was treated, the woman died the same day, and the children recovered; a student (18), living a little south of the khal, and a school-boy (19), living on its north bank, these two recovered. Six more cases occurred on 10th December, two Hindu clerks (20 and 21), living on the north bank of the khal, in the same house as the seventh case, one recovered, the other was removed to his house in the mofussil, and I believe recovered there; an old woman (22), on the south bank of the khal, who died the same day; a student (23), near the south bank of the khal, who died next day; a shop-keeper (24), a little distance north of the khal, who died next day; and a Musalman girl (25), living in quite a different part of the town, on the south of the South Bogura Road; she died two days later, and no other cases were reported anywhere in this neighbourhood. Three more cases occurred on 11th December; a little girl (26), the child of the fifth case, who was attacked in hospital and recovered; a boatman (27), from a boat in the river, who was brought to hospital and died there three days later; and a man (28), who lived in the same house as the eighth case, he recovered. On the 12th December there were two cases,

an old woman (29), living in hospital with her sick daughter, she died the same day; and a Hindu prostitute (30), living on the north bank of the khal near its mouth, she recovered. On the 13th and 15th December no cases occurred; but there was one on the 14th, a shop-keeper (31), living close to the last cases he died, two days later. On the 16th December four cases occurred, an old mukhtar (32), living a little north of the khal, who was taken away to his home in the mofussil, and I believe died there; a shop-keeper (33), living at the south end of Daghilpati, the main street of the town, he recovered, and no other cases occurred anywhere in this neighbourhood; a young man (34), in the same house as the eighth and twenty-eighth cases, who recovered; and a student (35), on the north bank of the khal near its mouth, he practically recovered from the attack of cholera, but was seized with pneumonia while still in bed, and died of that disease twelve days later. On the 17th December two cases were attacked, a wood-seller (36), living close to the last case and a coolie (37), on the south bank of the khal, both died next day. On the 18th December there was only one case, a child (38), living on the north bank of the khal, he recovered. On the 19th there was one case, a merchant living in a boat on the river (39), he was taken to hospital and died there on the 21st. No more cases were reported till the 23rd December, when a girl (40), living on the river bank near the steamer ghât was attacked, she recovered. No other cases took place in this neighbourhood either before or after. On the 29th December, a Hindu clerk (41), who had been attacked by cholera in the mofussil on the previous day, was brought into the town, and died there two days later. On the 30th December a shopkeeper (42), living on the north bank of the mouth of the khal, close to the house of the last case was attacked, and removed to his house outside the town, the result of the case I never heard. This was the end of the epidemic. No more deaths were reported in the town till 11th January, when two deaths occurred, and no more from that date up to the present (13th February).

On examining the municipal mortuary register for the month of December, however, I found that, while several of the fatal cases known to me had not been registered, six deaths from cholera had been registered, of which I had not heard. These all came from the suburban villages, *viz.*, two from Alekanda, two from Bogura, and one each from Shagardi and Kaunia. Allowing a mortality of fifty per cent. this would mean a dozen cases among these suburban villages, besides the forty-two cases enumerated above. Five more cases were reported to me as cholera, which, to the best of my belief, were not true cases of that

disease; four, all of which I saw, being simply cases of severe diarrhœa, all four making a rapid recovery; and the fifth, which I did not see, and which proved fatal, being a case of dysentery, as I was informed by the practitioner in attendance.

The Barisal municipality have two pakka dispensary buildings, one for out-patients and male in-patients, on the east of the Jail Road, the other for female in-patients opposite it, on the west of the road. In the compound of the latter stands a shed used for the treatment of cholera patients. On the outbreak of the cholera epidemic, the municipality appointed a special sweeper for the service of cholera patients, and two compounders to go round the town, enquire after and report cases of cholera, and administer remedies to such patients as were too poor to pay a native doctor to attend them, and too proud to come to hospital as in-patients. I visited a large number of cases myself (20 out of 42), and saw many of them daily till their death or recovery. Assistant-Surgeon K. H. Sanyal, of the Barisal Dispensary, and Babu T. K. Gupta, L.M.S., also worked with great zeal, attending cholera cases, some as private paying patients, but a number of the poorer ones gratuitously. On the first appearance of the disease among the boats in the khal, which is usually full of boats from its mouth into the river up to some distance beyond the jail bridge, I recommended that no boats should be allowed to lie in the khal, but only to pass through it. The Magistrate issued orders to this effect, which were carried out.

Of the total 42 cases, 28 lived on the banks of or near the khal, 8 elsewhere in the town, 3 in boats on the khal, 2 in boats on the river, and one was brought in sick from the mofussil. Of the 28 living near the khal, all but one or perhaps two, who used river water, used the khal water for drinking and cooking purposes, and this water was, of course, used also by the three cases living in boats on the khal. Of the eight who lived in the town, not particularly near the khal, one lived on the river bank and used river water; two were attacked in the dispensary, where they were using water from Scott's tank, filtered; and five used the water of other tanks—in all five cases from tanks connected with the khal system, and flushed twice monthly. It is possible, moreover, that the two cases attacked in the dispensary may have used water from a tank close by, flushed from the khal twice daily, as well as the filtered water with which they were supplied from the dispensary. This would give us 29 cases using khal water, five using the water of tanks connected with the khal, two using water from Scott's tank, and five using river water, these accounting for all the 42 cases, with the exception of the one

attacked in the mofussil. It is difficult to resist the idea that the water of the Lakhutia Khal was in some way connected with the spread of the disease, the first case taking place in a boat on the khal, and nearly three-fourths of the whole using khal water. But the khal has free communication with the river, even at the lowest tide, and its water is simply river water with its impurities perhaps a little less diluted; and it is the river water again which passing up the Bhata Khal, supplies water to part of the southern half of the town. But comparatively few users of river water were attacked, and only one of those living near and using the water of the Bhata Khal. With the exception of the two attacked in hospital, none of those who used the water of Scott's tank were attacked; and none of those using the water of other tanks not connected with the khals, although the water of such tanks is probably in many cases the worst used in the town. So it is on the whole impossible to say that any particular water-supply spread the disease.

## A Mirror of Hospital Practice.

### CASE OF TETANUS FOLLOWING DOG-BITE.

#### TREATMENT—RECOVERY.

BY SURGEON G. H. FINK, I.M.S.

PAUMESWARI, a Hindoo female child, *æt.* 9, was admitted into the Mozuffanaggur Hospital on the 15th August 1888, for traumatic tetanus following dog-bite after the 7th day of bite.

The following were the symptoms present: Fever, quick, and hard pulse, cold sweating especially about head and neck, inability to respire freely, tonic rigidity of the whole body, jaws fixed, spasms at intervals, of the opisthotonos type, risus sardonicus, painful expression of countenance when spasms appeared, bowels confined, phonation present, mind intact, all the senses intact, hyperaesthesia present. No fear of water.

Three deep wounds about an inch apart from one another were present, in the upper third of outer surface of the right thigh, sloughing and very dirty in appearance.

*Treatment.*—Patient was placed under chloroform and the area of the three wounds in the thigh were freely excised until healthy tissue was reached. Solid caustic (Ag. No<sub>3</sub>) was applied freely, and the wound dressed with carbolic oil and lint.

An hour after the operation a quarter of a grain of morphia was administered. Diet, milk and eggs *ad libitum* at frequent intervals—poured through a small chink between the teeth on left side.

The following day, 16th August 1888, an enema of castor-oil was administered, and gr. v of chloral hydrate ordered to be given every fourth hour in a little water.

From day to day this treatment was carried out, the bowels regulated and the wound dressed with carbolic oil. The temperature which was high gradually reduced, and the pulse became better. The spasms also gradually reduced until the 26th August 1888, the child began to open her mouth a little, and could move her head a very little from side to side. Every day an improvement now set in, and the spasms entirely disappeared, although rigidity of muscles was present. Her nourishment was improved to strong soup, eggs and milk, and the following pill was administered thrice a day:—

Iodoform gr. ii.

Ext. gentian q. s.

*t. d. s.*

The pill was swallowed with a little difficulty, and in about a week longer, the little patient was able to rise from bed, looked more cheerful, and talked a little. Chloral Hydrate gr. v was only restricted to the morning and evening, the child was wonderfully tolerant of the iodoform and seemed to improve most rapidly under its influence, being discharged from Hospital six weeks after date of admission, quite well able to move about freely, talk and laugh, and she put on flesh to a great degree. The three wounds rapidly healed and filled in with the help of zinc ointment, leaving three circular scars about  $\frac{3}{4}$  inch in diameter each.

MOZUFFANAGGUR,

1889.

### CASE OF LARYNGISMUS STRIDULUS.

REPORTED BY R. NUGENT, L.R.C.P. & S., EDIN. & GLASGOW,

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LARYNGISMUS STRIDULUS being rather an uncommon affection in the adult, the following case, treated in Dr. J. Ffrench Mullen's ward, at the Presidency General Hospital, may prove interesting:—

Harry Westerman, seaman, was admitted into the General Hospital on the 15th November 1888. His condition, on admission, was as follows:—Both tonsils are large and inflamed: cannot swallow solid food; temperature 98°F.; says that he suffered from inflammation of the larynx six years ago, for which the operation of tracheotomy was performed. Ordered to have tonsils touched with nitrate of silver solution, also steam inhalation (with Tinct. Benzoin Co. ʒi to o.i added), and internally, Acid Hydroch. dil. m.x, Tinct. Ferri Perchd. m.x, Aqua ʒi *t. d.*