

under chloroform. All the opaque capsule removed with the hook from the left eye; capsule torn across but could not be brought away from the right eye. 30th September.—Vision very good with *left eye*, and will no doubt in time be good also in the right eye.

(To be continued.)

ON THE DETECTION OF MAGNESIC-CHLORIDE IN POTABLE-WATERS.

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One of the objects for incinerating the total solid residue in water analyses is to ascertain whether or not nitrous acid is present. Parkes, Wilson, and others recommend that a piece of ozone-paper should be held over the crucible during incineration to detect any nitrous acid which may be evolved, blueing of the paper being assumed due to that acid.

But magnesian-chloride—sometimes present in waters, especially well-waters—gives a similar reaction with paper containing starch and potassic iodide. When magnesian-chloride is heated, it is partially decomposed, and hydrochloric acid escapes; if the hydrochloric acid comes into contact with potassic iodide and starch, hydric iodide is formed which colours starch blue.

The behaviour of magnesian-chloride on the application of heat suggests a simple qualitative test for its detection. If a watch-glass—moistened with a few drops of a solution of argentic nitrate—be placed over a crucible containing a water residue, and heat be applied, chloride of silver—immediately recognized by its white colour—is formed if magnesian-chloride be present. It is possible to detect small quantities of magnesian-chloride by this reaction. The residue from 200 c. c. of water is sufficient for the application of the test. Ammonic chloride must be absent from the residue.

Bhagalpur, 3rd December 1878.

ACUTE DROPSY (BERIBERI?.)

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The following cases of a disease quite new in my experience have come under my notice within the past month.

Case 1.—A high caste Bengali girl, Babu's wife, age 16 years; healthy looking; slightly anæmic perhaps, but not more than might be accounted for by the state of confinement in which she lives; menstruates regularly; liver and spleen of normal size; no tenderness on pressure over either organ. The disease began about the middle of October, when she suffered from slight diarrhoea and profuse discharge of urine. I afterwards noticed that her feet and legs began to swell; the swelling came on gradually, and was hardly noticed at first: as it pro-

gressed she suffered from pain in the extremities and feverishness at irregular intervals. Now the cellular tissue of the lower extremities is highly œdematous, pitting deeply on pressure. She complains of irregular action of the bowels, *viz.* a necessity to go to stool 4 or 5 times a day; but only a small quantity is passed each time. The heart's action is normal, and no anæmic bruit discernible; in fact the œdema of the feet and consequent pain, heaviness and pyrexia, are the only disease of which she complains.

Urine.—There is a frequent desire to micturate, quantity said to be normal, light straw color, with noticeable mucus cloud; no trace of albumen; reaction faintly acid.

Case 2.—Servant of above, and resident in the same compound; æt. 32 A weakly built Bengali male from Calcutta, came to Shillong six months ago. States that he suffered a good deal from ague two years ago; spleen enlarged ever since. Suffered badly from ague for two months after arrival in Shillong, *viz.*, in June and July 1878. From this he recovered, and was stronger than usual until about the 15th of November, when he noticed that his feet began to swell. As the œdema increased he suffered from pyrexia at night, *viz.*, heat of skin followed by perspiration. The pyrexia came on irregularly at intervals of one, two or three days. Present state:—general appearance indicative of malarial cachexia; thoracic viscera apparently normal; suffers from dyspnoea after slight exertion; pulse in erect posture 84, respirations 28; spleen enlarged to size of about 2 lbs., liver also slightly enlarged; complains of constipation; lower extremities œdematous almost to bursting as far as the knees; the dropsy extends upwards as far as the waistbands; forearms and face also slightly swollen; complains of pains all over body,—the pain is felt chiefly in the skin, not deep-seated; skin tender on being pinched.

Urine sp. gr. 1020, of clear straw color, and perfectly free from any trace of albumen.

Case 3.—A *mussalchi* in the same house,—a servant of No. 1; a native of Gowhatty; came to Shillong four months ago

A stout, fairly healthy looking man; thoracic viscera quite normal; spleen very slightly enlarged, just perceptible beneath the ribs; slight tenderness on pressure in hepatic region; liver of normal size; has not suffered from ague lately, and is not at all anæmic.

The first sign of disease that he noticed was the swelling of the legs. The œdema began in the early part of November, and as it increased he experienced considerable pain in thighs and pyrexia at night. He complains, like No. 1, of unsatisfactory action of the bowels, *viz.* desire to go to stool two or three times a day, but never has a full motion

At present there is very great œdema of the cellular tissue of the lower extremities, extending upwards to the waist. The feet are not much swollen, probably owing to the fact that he wears shoes and stockings; but the skin of the buttocks and back of thighs is hard and brawny from the amount of the infiltration.

The œdema and consequent feeling of heaviness and pain, probably from distension, are the only disease com-

plained of in this case. The man works as usual and eats tolerably—not as well as before, and sleeps fairly at night.

Urine.—frequent desire to micturate,—passes water eight or ten times by day and two or three times at night; reaction strongly acid, healthy in color; no trace of albumen.

Case 4.—Baboo in Forest Office; husband of No. 1, and resident in the same compound.

A healthy-looking, well-built young man, *æt.* 28; enjoyed excellent health until a few months ago, when he went to Calcutta to bring up his wife (*Case No. 1*); had fever for a few days in Calcutta. On his return to Shillong in July he was ill for about a week with ague and dysenteric diarrhoea. Lately he has been enjoying his usual health, and walks to his office every day,—a distance of about 2 miles over a hilly road—without noticing any increase of dyspnoea. On examination I find the thoracic viscera, the liver, and the spleen apparently healthy.

This morning (1st December), when I was explaining to him that the sickness in his family was, in my opinion, due to local insanitary conditions, *viz.* (1) dampness of the surface and subsoil near the houses caused by the passage of a small stream of water in an open drain through the compound, at the very foundation of the houses, and to the existence of a few small *cutcha* tanks within it; (2) to defective surface ventilation owing to numerous enclosure walls and *tatties*, and the growth of rank vegetation and creepers; when I explained this and said "You owe your exemption from the malady to the fact that you are out of the place all day at office." To this he replied, "but, Sir, I have got the disease myself, and was just about consulting you. Last evening I discovered by accident that my legs are swelling." To the accidental circumstance of sitting at table with his leg pressed against the rail beneath, and noticing the 'pit' which resulted from the pressure, he owed his knowledge of the existence of the oedema. When I examined him I found well-marked oedema of the legs—pitting deeply on pressure. The only other symptoms that he complains of are—(1) unsatisfactory action of the bowels, *viz.*, desire to go to stool often, but cannot get a full motion; (2) flatulence; (3) frequent desire to pass water.

In this case the oedema came on without pain, fever, or any other remarkable symptom. Both legs from the knees downwards are now distinctly oedematous, yet up to yesterday he thought he was in good health.

Urine, strong acid reaction, clear, deep straw color; not a trace of albumen.

The peculiar part of these four cases is that they all occurred in one compound, and, as far as I know, the only respect in which they differ from their neighbours is, that they have all come lately from the plains. The house stands in the midst of the Babu's quarter of the station. The premises of the other Babus are in an equally insanitary state, yet I have not heard of any other cases of the disease in the immediate neighbourhood.

The three next cases occurred in a house in a different part of the station, *viz.*, near the jail.

Case 5.—Babu's wife: a high caste Assamese girl

resident in Shillong for 15 months; age 16; very fair complexion; very anæmic, and distinctly scorbutic. Lungs and heart are healthy; no enlargement of either liver or spleen discernible; she is in the fifth month of pregnancy.

States that early in November she suffered from "fever" one night for a few hours; next morning noticed that the feet began to swell.

At present the lower extremities and trunk as far as the waist, are highly oedematous; legs brawny and hard, pitting deeply on pressure; face and eyelids pale and puffy; the gums are spongy and ulcerating from scurvy. Very violent and continued hæmorrhage took place for some days from the gums of the upper jaw; she lost about three pints of blood. The appetite is bad; tongue slightly coated; bowels irregular—sometimes constipated, sometimes prone to diarrhoea. She complains of occasional pyrexia, *viz.*, heat of body without rigor. I have not been able to make accurate thermometric observations, but the skin has usually felt dry and rough and hot; temperature between 99 and 100° F.

In the course of treatment a small quantity of quinine with ferri sulph. and lime-juice was given to this girl. An abortion ensued, probably due to the ecboic influence of the quinine.

Urine said to be normal in quantity, pale straw color; reaction acid, sp. gr. 1007. No trace of albumen.

Case 6.—Bokoolee, Assamese girl, age 20; servant of No. 5, and resident in the same compound. Has been in Shillong for over a year.

A very stout but muddy complexioned, cachectic (malarial) looking girl; suffered from what the Babu informed me was "menorrhagia" in July and August; also had diarrhoea for a short time in September. Towards the end of October suffered from slight feverishness one night and pains in the legs. Next morning she noticed that the legs were oedematous and pitted on pressure. As the swelling progressed she suffered from pains in her legs and thighs, caused no doubt by the simple distension of the tissues from infiltration of fluid.

At present (December 2nd) the legs from the knees downwards are oedematous almost to bursting; the dropsy extends upwards to the waist. The face is slightly puffy, and probably the girl's cachectic appearance is due in some measure to this circumstance.

Notwithstanding the oedema the girl works every day, and sleeps and eats fairly. The lungs and heart are healthy; liver apparently of normal size; spleen slightly enlarged,—weighs probably about 12 oz.

Urine of pale straw color, strong acid reaction; no trace of albumen. Sp. gr. not ascertained owing to the small quantity sent for examination.

Case 7.—Ratibar, a stout Assamese boy, age 16; came to Shillong three months ago. His appearance is slightly, very slightly, indicative of malarial cachexia. With the exception of slight enlargement of the spleen, the other organs of the body appear to be healthy.

He states that he had ague a few times in October and November. Towards the end of October he noticed that his legs began to swell. At first there was no pain: but as the swelling progressed he suffered from severe pains in his legs and thighs.

At present the lower extremities, as far as the middle of the thighs, are highly œdematous, and pit deeply on pressure. Pyrexia is complained of at night. The bowels are said to be relaxed, 3 or 4 stools daily, the matter passed is of a light drab color, deficient in bile.

Notwithstanding the dropsy the boy attends to his work and eats as usual, and sleeps well.

Urine is healthy in color, said to be normal in quantity, sp. gr. 1015; no trace of albumen.

The sanitary state of the compound in which these three cases occurred is similar to that described under the heading of case 4, *viz.* damp surface and subsoil from the passage of a small stream through it, and defective surface ventilation from numerous enclosure walls, crowding of buildings and rank vegetation, creepers, &c.

The three next cases occurred amongst the sepoy's of the 42nd Regiment N. L. I. The lines of this regiment are situated quite at the opposite end of the station, fully half a mile from the jail, and from the Babu's quarter. The sanitary condition of the lines is good. The huts stand on two well drained hills, free from jungle and undergrowth, and well open to the prevailing winds. The water supply is also totally different, and the circumstances of a sepoy's daily existence necessarily have little in common with that of babus and their servants. Thus, in these cases, the insanitary state of the men's dwellings can hardly be charged with the causation of the disease.

Case 8.—Mowlah Buksh, sepoy, 42nd N. L. I., age 32; has been in Shillong for the past year; began to suffer about a week ago from burning sensation in feet and hands, and slight feverish feel at night. The pyrexia only lasted for a couple of hours each night. After a few days began to suffer from pains in his thighs, forearms, and loins; the pain was not felt in the bones or joints but superficially, and was probably due to the effusion into the tissues.

Present state.—A sallow complexioned, anæmic, cachectic looking man; face slightly puffy; suffers from dyspnoea after slight exertion. No sign of scurvy.

Lungs and heart healthy; pulse 84 in erect posture; liver somewhat enlarged but free from tenderness or pain; spleen normal. Has not suffered from ague lately, only from the pyrexia which began with the dropsy.

Both legs are œdematous from the knees downwards, pitting deeply on pressure; face also slightly œdematous. Urine passed in usual quantity, clear light straw color. Sp. gr. 1.10; no trace of albumen.

Case 9.—Garubjeet Ram, sepoy; 42nd N. L. I., age 16; a stout healthy looking Goorkha boy, came to hospital this morning, 11th November, complaining of swelling of the feet and legs.

History.—States that he suffered from slight feverishness at night for two days; had no rigor, merely heat of body; at the end of two days noticed that his legs began to swell; as the dropsy progressed suffered from pain in the legs and thighs.

Present state.—The boy looks bright and well: tongue clean; pulse and respiration normal; appetite fair; bowels regular, no enlargement of either liver or spleen, no

trace of scurvy. Legs highly œdematous as far as knees. Average temperature 99.6 at night.

Urine—light straw color; sp. gr. 1015; quantity said to be normal; no increased desire to micturate; no trace of albumen.

This boy has been under treatment now for nearly a month. Though much diminished the œdema still persists to some extent. He eats well, sleeps soundly, and has no uneasiness or pain save that caused by the presence of fluid in the cellular tissue of the legs; in fact the dropsy of the legs would appear to be his only disease. As his case progresses there is an appearance of anæmia which was not noticeable at first.

Case 10.—Sepoy Jaykurn, 42nd N. L. I., age 28; a healthy looking sepoy, employed in the Adjutant's Office; has been stationed in Shillong for one year; has had no fever or other sickness for the past year.

States that about a week ago (25th November) he felt an unusual burning sensation in his fingers and toes; four days later noticed that his legs began to swell. Has not felt feverish at night: says that his appetite is as good as usual; sleeps fairly at night, and has no illness that he knows of beyond the swelling of the legs. Since the swelling began has suffered from pains in the lower extremities. He refers the pain to the cellular tissue, says that it is not deep-seated but felt beneath the skin.

Present state.—There is nothing peculiar in this man's appearance. After a close scrutiny he might, perhaps, be termed slightly anæmic; the gums are slightly scorbutic. When I saw him in the line of "hazir wallas" at the hospital this morning (2nd December) so little ill did he look that I noted him as a possible malingerer.

On examination I find thoracic viscera healthy, liver and spleen apparently of normal size. Both legs are highly œdematous from knees to ankles, pitting deeply on pressure. No œdema of any other part of body noticeable at present.

Urine, sp. gr. 1015; reaction strongly acid; color deep straw; heavy mucous cloud on standing; no trace of albumen; no increased desire to micturate. Temp. at night 99.8°.

December 5th.—Anæmia, at first hardly noticeable, is now very plainly expressed in this case.

The two next cases were officers' servants in the cantonment. Both proved fatal.

Case 11.—A splendidly built, tall, stout Punjabi Muslim man; a cook by profession; age 32; consulted me on the 10th November. He stated that on 1st and 2nd November he suffered from fever at night. There was no rigor, merely heat of body; dry skin, no perspiration. On the third day noticed that his legs began to swell; had slight feverish feel every night for the ensuing days, but went on with his work as usual.

When I saw him on the 10th November his condition was:—general appearance slightly cachectic; face somewhat anæmic and tired looking; tongue creamy; pulse small, rapid, 120° in erect posture; liver and spleen appeared to be of normal size; bowels regularly moved every morning; appetite bad; great thirst at night.

Both legs highly œdematous; feet puffy almost to bursting. The dropsy extends upwards to the waist.

Urine light in color, shows a heavy mucous cloud; perfectly free from albumen.

27th November.—Dropsy much increased; suffers from intense dyspnoea after slight exertion; cellular tissue of penis, scrotum and abdomen very much swollen from œdema. He looks much weaker and more anæmic; complains of severe pains in thighs and of difficulty of breathing in recumbent position. The dyspnoea he refers to his throat, and is probably due to sub-mucous œdema of larynx.

Urine again examined:—copious deposit of lithates on standing; turns of a mahogany color on boiling with nitric acid, contains about $\frac{1}{3}$ th to $\frac{1}{5}$ th albumen. He died on 3rd December of œdema of the lungs and consequent apnoea. Unfortunately no *post mortem* was allowed.

This man had been a mess cook in the 44th N. I. up to the 15th October. I knew him to be a perfectly strong, healthy, active man, and, no doubt, he was well fed. He had lived in Shillong for six years, and said that he never suffered from ague; never was ill in fact until he got the present attack.

Case 12.—Was the son of preceding, a lad aged 17, a khidmutgar. I saw him the day before his death. The history of the case was much the same as that described in most of the preceding cases, *viz.*, sudden appearance of dropsy during a condition of apparent health. When I saw him he had been ill for a month; his body was then œdematous all over, and he was suffering from intense dyspnoea, and from pneumonia, which was rendered plain by profuse expectoration of rusty sputa.

Remarks.—I have seen several other cases of this disease, but the 12 mentioned above afford a sufficient description of the disorder. At first it appeared to me that the disease was confined to people who had recently visited the plains, and whose spleens and livers were more or less affected by their journey through the unhealthy terai. Next I thought it due to defective local sanitation. Again, as I met with no cases among the Khasias for some time, I concluded that the hardy hill people were exempt from the disease. But within the past few days I have seen one Khasia, an exceedingly strong man, affected with the disorder, and I have heard of others. A case has also occurred amongst the Goorkha sepoy of the 44th Regiment. As the lines of this regiment are about $1\frac{1}{2}$ miles outside the station, in a most healthy situation, supplied with good water, and as the men themselves are well nourished, hardy, active Goorkhas, and used to a hill climate, I had hoped that they would escape: but yesterday I saw one case amongst them, *viz.*, a Goorkha sepoy, who supposed himself to be in good health: but a few days ago he got a slight fever, and then noticed that his legs began to swell. This man, though he has not been in hospital for a couple of years, now looks distinctly anæmic and cachectic, and suffers from the same symptoms as the other cases.

With regard to the causation of the disease, when we consider that so many persons, living under different conditions and in places so widely apart, have been affected, we must, I think, come to the conclusion that it is due to some climatic influence. This influence is, in my opinion, to be found in the lateness of the rains in the

present year. As a rule the rains are over in these hills by the 15th October. This year we had heavy rain almost to the end of October and for some days in November. In fact dampness combined with cold would appear to me to be the prime cause of the malady.

I have heard that the disease is also prevalent in the plains at the foot of the hills. A native doctor, stationed at the outpost of Allynuggur in the Sylhet district with a detachment of the 42nd Regiment, remarks in his weekly return—"dropsy is very prevalent here."

With regard to treatment, as I have found the disease in almost every case, sooner or later, associated with a certain amount of anæmia very well expressed in some cases, I have regarded it as a blood disorder and treated it accordingly, *viz.*, with iron, acids, and quinine or cinchona febrifuge, combined with an occasional aperient of compound jalap in the morning. In the cases in which there was a scorbutic taint, lime juice and oranges, which are very plentiful and cheap at this season, have been prescribed. Meat and vegetable diet has also been enjoined. The legs have been bandaged with flannel.

The enlargement of the spleen, which was found in so many of the cases, would appear to have been an accidental complication, for it did not occur in all the cases; and in this part of the world enlarged spleen may be found as an accompaniment of almost every disease.

In each case I have carefully tested the urine several times for albumen, but in only one instance did I find any, *viz.* in Case No. 11, when the disease was far advanced. Thus the kidneys may be said to be unaffected, at least in the early stage of the disease.

Up to the present time I have not had an opportunity of carefully studying the clinical history of the disease from beginning to end, but now I have four cases in hospital, and several in their own houses, which I am carefully observing.

In the few cases in which I have been able to make thermometric observations, there has been a distinct rise of temperature at night, *viz.*, to 99.5 or 99.6°. In one case only did it rise to 100° F.

Shillong, 5th December 1878.

A MIRROR OF HOSPITAL PRACTICE.

A CASE OF TYPHOID LESION CONFINED TO THE LARGE INTESTINE, AND SOME REMARKS ON THE CAUSATION OF THE DISEASE.

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In reading through the *Indian Medical Gazette* of 1st November, received by me in Shillong on 6th November, I was much interested by the *P.M.* notes of 11 out of 18 fatal cases of enteric fever, which occurred in the 2/2nd Regiment at Bareilly, reported with much clearness and accuracy by Passed Hospital Apprentice J.R. Massey. Ten of the cases might be said to be typical examples of the true typhoid lesion. The last case was abnormal, and