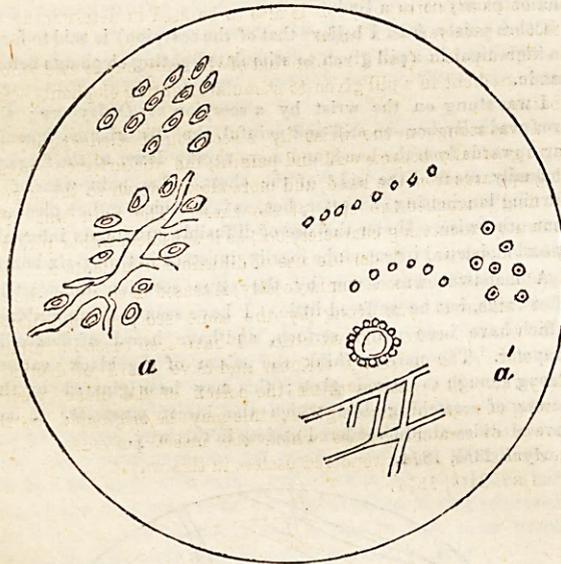


a.—Tubulation.
b.—Stauroid bodies.

a'.—Oil globules.
b.—Central nuclei and tubes.



Scorpion poison.
a.—Mixing with the blood cells in a frog's foot.

a'.—Poison of red ants.

REPORT ON CHOLERA IN THE SHAHABAD DISTRICT.*

By J. H. THORNTON, *Civil Surgeon of Shahabad.*
No. 46.

From the Civil Surgeon of Shahabad, to the Dy. Surgeon-General, Dinapore Circle, dated Arrah, 28th July 1873.

SIR,—I HAVE the honor to submit the following report regarding the progress of cholera in this district from its first appearance up to the present time. The disease first showed itself in the beginning of April among the coolies employed on the irrigation works at Dehree, and soon after it appeared, in the town of Buxar, where it lasted for about a month attacking 136 persons and causing 65 deaths. I do not allude further to these two outbreaks, as they have doubtless been already reported upon by the Civil Surgeons of Dehree and Buxar. A few cases were reported at Chowsah (near Buxar), and at Bindowlia (near Beheea) about the end of the month,

* This and the succeeding report have been placed at our disposal by the Surgeon-General, Indian Medical Department.

and supplies of cholera pills were sent to those places. During the month of May cholera showed itself in many parts of the district. It appeared in the town of Arrah on the 7th, from which date to the end of the month 15 cases were reported with seven deaths. On the 9th it was reported to have broken out at Peeroo, and I sent a medical subordinate to the place with medicines. A few days afterwards I visited Peeroo myself and found that the village was healthy, but that there had been 34 cases of cholera and 19 deaths at Kuttereea, a village about five miles distant. I advised that this village (which was very dirty) should be cleaned, and that sulphur fires should be burned in it. About the same time cholera was reported to be very prevalent at Bindowlia and other villages, a few miles north of Beheea Railway Station, and I accordingly despatched the jail native doctor to the spot with medicines. He reported that there had been an outbreak of cholera in these villages attended with many deaths, but that the disease had ceased for nine days. He also stated that Bindowlia was in a very dirty state, containing very offensive drains and cess-pools. I therefore recommended that measures should be taken to improve the sanitary condition of this village. Cases of cholera also occurred at Chowsah, Doomraon, Sinha, and Rajpooor, to which places supplies of medicines were forwarded through the police. On the 22nd the disease appeared in the town of Sasseram. The sub-assistant surgeon reported this, and recommended that a native doctor should be sent to Sasseram to assist in giving medical aid to the people during the prevalence of cholera. I forwarded a copy of this letter to your office and supported the recommendation. A passed medical pupil was accordingly sent to Sasseram, and is still doing duty there. Towards the middle of June there was a considerable increase of cholera in many parts of the district, particularly in the vicinity of Arrah. The disease became very prevalent in the villages of Kullianpooor and Gujrajgunge near Beheea, and a hospital assistant was sent there with medicines. He reported that there had been 30 deaths from cholera in Kullianpooor, and 12 in Gujrajgunge. He left supplies of medicines with the headmen of the villages, with suitable instructions for use. Twenty-five cases of cholera, with nine deaths, occurred about this time in the village of Ulekhi Tolah near Arrah, and ten cases, with seven deaths, in the village of Ekhowna. A medical subordinate was despatched to these villages with medicines to render aid to the sick. The Bhubooah sub-division had hitherto been free from cholera, but now a serious outbreak occurred in some villages near Doorgowtee, where 67 persons were attacked, and 30 died. Some cases also occurred in the town of Bhubooah itself; they were attended by the hospital assistant attached to the lock-up and dispensary at Bhubooah, while the compounder of the dispensary was sent to Doorgowtee to render aid to the sick in that neighbourhood. A considerable number of cases also occurred in the town of Doomraon and in other parts of the Buxar sub-division, as well as in Sasseram and some of the neighbouring villages. After the 20th of June cholera increased rapidly in the town of Arrah and the outlying villages. I recommended the employment of sulphur fires, and they were used extensively, but did not stop the progress of the disease. It would appear that, however useful sulphur fires may be in a slight localised outbreak of cholera, they are quite ineffectual in such a case as this, when cholera was prevalent nearly all over the district. I ordered supplies of cholera pills to be distributed to the different police stations with instructions for use, and I told off the police native doctor and three vaccinators to visit the sick people in the town and outlying villages, and afford medical aid to as many as possible. Every morning I went into different parts of the town, and visited as many cholera patients as I could find time to see. On the 25th of June cholera broke out in the jail; this need not be dwelt upon here as a special

report on the subject has already been forwarded to your office. The epidemic increased greatly in the town of Arrah and the neighbouring villages during the first-half of the present month, and it is only within the last few days that it has commenced to abate. From the time the disease first showed itself on the 7th of May there have been in Arrah and the outlying villages a population of about 40,000 people, 736 cases of cholera, and 372 deaths, of which 69 cases and 351 deaths occurred since the 20th of June.

The following table shows the number of cases of cholera and of deaths from the disease which occurred daily from the 28th of June to the 19th of July, the period when the epidemic was at its greatest height:—

	JUNE.				JULY.														Total.				
	28th.	29th.	30th.	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	13th.	14th.	15th.		16th.	17th.	18th.	19th.
Cases of cholera.	15	19	20	32	28	27	32	27	36	26	38	38	31	34	28	34	13	20	15	33	10	16	572
Deaths.	6	11	11	8	13	13	21	22	12	11	17	23	15	16	17	18	15	16	9	13	11	6	304

Cholera has also been very prevalent in the Buxar sub-division, 179 cases and 121 deaths having been reported in Berhampoor and other villages since the 22nd of June, as well as a considerable number in Doomraon, Chowsah, and other places. In the Bhubooah sub-division many cases have occurred at Ramgurh, Chand, Doorgowtee, Chlynepoor, and the town of Bhubooah; while in the Sasseram sub-division the disease has been prevalent at Dhungain, Nokha, Rajpoor, and the town of Sasseram.

It has also shown itself lately in Jugdispoor and the neighbouring villages. In fact nearly every part of the district has been visited by cholera during the current month. As regards the origin of the epidemic, little can be said, for it is uncertain in what part of the district the disease first appeared. The first outbreak of any magnitude was that which occurred among the coolies at Dehree in the beginning of April; this may have been imported from some district where cholera previously existed, but I am not aware whether there is any evidence of such importation. Once introduced into the district the disease spread in all directions. Its progress at first was slow, but latterly it has extended and multiplied rapidly, favored by the extreme heat of the weather and the absence of rain. Now that the rains have fairly set in the epidemic is abating, and we may hope that it will soon entirely cease. I may observe in conclusion that no local sanitary measures could be expected to arrest the progress of a wide-spread epidemic such as this; but these measures, if carried out extensively throughout the district, would be of great service in preventing the occurrence of future epidemics.

I have the honor to be,

Sir,
Your most obedient servant,
J. H. THORNTON, M.B., B.A.,
Civil Surgeon of Shahabad.

No. 49.

From the Civil Surgeon of Shahabad, to the Dy. Surgeon-General, Dinapore Circle, dated Arrah, 9th August 1873.

SIR,—I beg to inform you that a few days ago, in accordance with the Magistrate's orders, I despatched Hospital Assistant Mahomed Feroze to Sahar to enquire into the circumstances of an outbreak of cholera reported to have occurred in that part of the district and to give medical aid to the sick. He has since returned and reports that the outbreak commenced about the 5th of July in the village of Magurya, from which it spread to others. No evidence of importation of the disease by human agency could be found; it was said to have broken out suddenly

without any apparent cause. It was ascertained that in rather less than a month from the above date 369 cases of cholera had occurred in 22 villages* with 201 deaths. At the time of the hospital assistant's visit the disease was abating in all the villages except three, viz., Ugeown, Burgove, and Khooree. It had been most prevalent and also most fatal in a village called Birten which was reported to be in a very dirty state. Several other villages were also very dirty, viz., Sahar, Lasandy, Gulzarpoor, Nonore, Magurya, Kurbasin, Burgove, Khooree, Dheeree, and Sunderpoor. In most of these places the inhabitants are reported to use the lane and open spaces close to their houses, as privies, not taking the trouble to go into the fields. I have recommended that attempts should be made with the assistance of the headmen of the villages to induce the people to use the trenches for this purpose, having the contents covered every day with fresh earth. If this could be arranged the sanitary condition of these villages would no doubt be much improved. The disease has now abated in all parts of the district except Doomraon and Jugdispoor, where fresh cases still occur. There are only a few cases remaining within the limits of the Arrah municipality.

I have the honor to be,

Sir,
Your most obedient servant,
J. H. THORNTON, M.B., B.A.,
Civil Surgeon of Shahabad.

	*Cases.		Cases.
Sahar	... 25	Bara	... 15
Ugeown	... 10	Kooree	... 38
Lasandy	... 12	Khandole	... 13
Gulzarpoor	... 16	Sundais	... 14
Puri	... 3	Tekoli	... 8
Purhabi	... 7	Jukta	... 10
Nonore	... 6	Sukichuck	... 10
Tarachak	... 7	Sunderpoor	... 3
Magurya	... 30	Masooree	... 4
Kurbasin	... 20	Dheeree	... 5
Burgove	... 28		
Birten	... 80		369

REPORT ON CHOLERA IN THE ARRAH JAIL.

By J. H. THORNTON, Civil Surgeon of Shahabad.

No. 45.

From the Civil Surgeon of Shahabad, to the Deputy Surgeon-General, Dinapore Circle, dated Arrah, 21st of July 1873.

SIR,—I have the honor to submit the following account of the outbreak of cholera which has occurred among the prisoners of this jail, and has necessitated their removal into camp for a time. During the month of May there were a few cases of cholera in the town of Arrah, and the disease showed itself in many other parts of the district. By the 20th of June there was an increase in the number of cholera cases in the town, but the disease had not shown itself in the jail at that time, and it was hoped that the isolation of the prisoners, and the good food and hygienic advantages enjoyed by them, would secure immunity. In the meantime I took such precautions as were possible under the circumstances, by enforcing strict attention to cleanliness, making careful examinations of the prisoners' food and water, giving them an extra allowance of salt, and ordering the jail officials to watch the prisoners and to send at once to hospital any man who seemed unwell. On the morning of the 25th the disease appeared in the jail and five cases were admitted. One of the patients was in a bad state, as he had been taken ill the day before, and had concealed it as long as possible. He died the same day at 2 p. m. I placed the cholera patients in the smaller ward of the jail hospital and kept the doors closed, so as to isolate them as much as possible from the other patients. Most of the latter I discharged, but there were a few who could not be thus disposed of; they had to remain and subsequently two of them were attacked and one died. Arrangements were made for the careful removal of the choleraic excreta to a distance from the jail; sulphur fires were burned in the different wards and in the jail hospital; and strict orders were given that as soon as a prisoner felt unwell he should at once be