

WATER ANALYSIS—REPORT.

	Local Standard for Ragstone Water, Conduit Supply.	Adams, 17th Sept., 1897.	Gregory, 2nd Dec., 1897.	Somerset House, 16th Feb., 1898.
Total Solids ...	32.89	53.6	52.0	54.1
Loss on Ignition ...	2.51	2.0	?	?
Chlorine ...	2.30	3.4	3.01	2.7
Nitrogen as Nitrates ...	.466	1.14	1.840	1.81
Free Ammonia ...	.005	.00	.02	.10
Albuminoid Ammonia ...	.015	.05	.03	.064
Oxygen absorbed in 1 hour ...	.008	.013		
Oxygen absorbed in 4 hours ...	.018	.018	.0096	.0063
Hardness, Total ...	17.4	23.1	33.6	34.0
„ Perm. ...	6.5	15.6		20.0
Appearance in 2-ft. Tube ...	cl. p. blue	gr. bl. rather dty		cl. colour- less
Smell ...	none	none		none
Phosphoric Acid ...	trace	sl. trace		?
Nitrites ...				trace

All results given in grains per gallon, except free and albuminoid ammonia, which are in parts per million.

ENTERIC FEVER AND SHELL-FISH.

By

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Of the 88 cases originating in Brighton during 1897, it was stated in 47 cases that no shell-fish had been eaten during the three weeks preceding the onset of the disease; in 11 other cases this point was doubtful, the patients' own statements on the question not being obtainable; in 11 cases oysters, and in 16 cases mussels, from a source grossly contaminated by sewage, had been eaten within three weeks of the date of onset of the disease; while in three other cases the infection appeared to have been acquired in connection with the storing and selling of oysters, derived from a sewage-contaminated source. These three cases are of interest, as they support a similar case narrated in my last Annual Report. In the first of these a child aged four years, whose father keeps an oyster shop and lives on the same premises, began with enteric fever on June 6th. The mother of this child had enteric fever in the same house in 1892. The sanitary arrangements of the house are good. The mother frequently had oysters, the child is stated to have had none. The oysters are stored close to where the child played, they frequently are not free from mud when received; and this mud is derived from an estuary, within a few hundred feet below where

the sewage of a considerable population is discharged.

The second case is somewhat similar. A boy aged six years began with enteric fever on September 2nd. The drain of the house was found to be leaky. There were nine other persons living in the same house, who have remained well. During the summer the mother sells oysters on the beach, and the above patient during the school holidays (in August) was daily playing about on the beach. He is stated not to have eaten any oysters.

The following are given as illustrative of the cases of enteric fever, traceable to the consumption of specifically contaminated shell-fish:—

MUSSEL CASES.

1.—On January 17th, Mr. W. brought home a quantity of mussels which he had gathered in — Harbour. Mrs. C. ate a quantity of these mussels raw, Mr. C. ate one raw, Mr. and Mrs. W. and Mrs. C.'s children ate the remainder after they were cooked. All remained well except Mrs. C., who began with enteric fever on January 27th. The sanitary arrangements of this house were perfect.

2.—A boy aged 11 and his father bought a quantity of mussels in — Lane, on July 14th. Each of them ate four of the mussels raw while they were cleaning them at the sink. The father has remained well, the boy started with enteric fever on July 22nd. Seven other children and two adults live in this house, the sanitary arrangements of which are excellent, and they have remained well. The mussels were derived from — Harbour.

3.—A man aged 53 years, sent his daughter on September 15th, to — Lane, for a quart of mussels. These he ate raw. No one else partook of them. There were living in this house seven adults and eight children (three families). The sanitary arrangements are good. All have remained in good health except the above man, who started with enteric fever on September 28th. The mussels were derived from — Harbour.

4.—On September 25th, Mrs. W. and her married daughter (Mrs. H.) bought two quarts of mussels in — Street. These mussels came from — Harbour. After well washing them, Mrs. H. ate two or three raw. Mr. H. ate a large number raw. Mr. W. also ate some raw. Mrs. W. ate none raw. The mussels were then placed on the fire for a quarter of an hour in a saucepan containing a small quantity of water, and then they were eaten by the above four, with the following sequence of events:—Mrs. H. began with enteric fever on October 11th. She was six months pregnant at the time and miscarried as the result of the fever, dying suddenly a few days later

from pulmonary embolism. Mr. H. has remained well. Mrs. W. had diarrhoea and very bad headache for several days, starting about fourteen days after eating the mussels. Mr. W. had diarrhoea at the same time lasting several days, but did not keep away from work. The drain of this house does not pass under the house. It was leaky.

5.—A boy, aged 12 years, was sent on December 11th, by Mrs. S., a lodger in the same house, for half a gallon of mussels from — Lane. These were all eaten raw by Mrs. S., the boy, his brother, aged 15 years, his married sister (Mrs. H.), and by a Mr. M., with the following sequence of events. Mrs. S. has left Brighton, and nothing can be ascertained about her. Mr. M. and the boy's mother have remained well. On or about December 18th the boy began with enteric fever. On December 25th Mrs. H. had a violent attack of diarrhoea, lasting four days. She had only mutton for dinner on that day, and no Christmas pudding. The brother (aged 15 years) had diarrhoea on December 29th, which lasted two days. He felt so ill that he asked to be allowed not to go to work. On January 8th I examined Mrs. H.'s blood and found that it gave a typical Widal's reaction, indicating that the patient had suffered from an attack of enteric fever. She had not had this disease previously, and there appears to be little doubt that the illness above mentioned was an abortive attack of enteric fever.

OYSTER CASES.

1.—A man, aged 21, a labourer, on May 29th, went to an oyster bar in — Street and bought a dozen oysters. He ate the oysters at the bar. One of them being "bad," the proprietress gave him another in its place. He had, however, eaten a portion of the "bad" oyster. The oysters came from — Harbour. The man lives with his father and mother, and a brother and sister, aged 10 and 15 respectively, who have remained well. The sanitary arrangements of the house are good.

2.—Mrs. W. came to Brighton from London on October 29th. About November 16th she and her husband ordered half a lobster and six oysters at —. The lobster was eaten by Mr. W., the oysters by Mrs. W. Mrs. W. noticed that the oysters were "not nice," and Mr. W. made the shopman change two of them. Mrs. W. had oysters on several previous occasions at this shop. The oysters in this shop are stated to come from Billingsgate. Mrs. W. began with enteric fever about eight or nine days after eating the above oysters. The exact date cannot be ascertained, the attack (and the patient's memory as to dates) being complicated by a relapse.

3.—Mr. X. began to be ill about October 22nd, with symptoms resembling influenza, which

eventually proved to be enteric fever. Just before this time he was in poor health, and was in the habit of frequently calling at — oyster shop, at least once a week, and eating oysters, which came from — Harbour. A cesspool was found in the back yard of this house. The wife, two boys, two assistants, and a servant living in the same house have remained well.

The 47 cases of local origin, in which it was stated that no shell-fish had been eaten, remained to be accounted for. Of these, nine occurred in one family, in a deplorable state of poverty and dirt. The first case in this family was a boy, who was stated to be in "the habit of bringing stinking fish home," and no doctor being called in, the others rapidly failed. Five other cases were derived by infection from previous cases in the same house. Of the remaining 33 cases, in 18 no history of infection could be ascertained, while in 15 others the only fact ascertainable was that the house-drains were defective. In the shell-fish cases, 10 were associated with defective house-drains, and in 16 these were perfect.—*A.R.*, 1897.

LAMP EXPLOSIONS.

THE following report, presented at the end of June last to the Manchester and Salford Sanitary Association, on dangerous lamps and lamp oils, will be of interest to our readers. It will be remembered that the Parliamentary Committee have reported by a narrow majority in favour of raising the flash point to 100° :—

"In accordance with your request, I beg to give you as follows my abridged report upon the investigation of explosions in paraffin oil lamps during the last two-and-a-half years, which have taken place in Manchester and Salford, and which has been entrusted to me by the Association. During that time I have investigated 29 cases which show on an average about one lamp explosion per month. I summarise as follows the kind of lamps which have exploded :

Queen Anne ...	21	Eureka ...	4	Duplex ...	2
Same type, but		Same type,			
no name ...	1	but no			
		name ...	1		
	22		5		

"About the beginning of this year you requested the police of Manchester and Salford to be good enough to obtain for me if possible samples of the oil which had been used in the lamps which had exploded, and since these instructions were issued by the heads of the police departments we have obtained four samples of oil. The flash point of one was 75° F., which is one of the ordinary low-flash-point American oils, and the other three had the flash points respectively of 85°, 86° and 89°