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Pamphlet

City and County of Newcastle-upon-Tyne.

R E P O R T

ON AN

OUTBREAK OF SCARLET FEVER

IN

JESMOND, NEWCASTLE-UPON-TYNE.



NEWCASTLE-UPON-TYNE :

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1888.



CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

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ON AN

OUTBREAK OF SCARLET FEVER

IN

JESMOND, NEWCASTLE-UPON-TYNE.

ON the afternoon of the 31st January last attention was drawn to the occurrence of Scarlet Fever in Jesmond, from the fact that after the disease had been almost entirely absent for some time, in five days it had been notified in three different houses, having nothing in common except that all derived their milk from the same dairy. This fact soon became accentuated by the occurrence of fresh cases in other households under precisely similar circumstances.

Extent of Outbreak.—The first case in the outbreak was notified on January 27th and the last on February 6th. In this period of eleven days 19 cases of Scarlet Fever in 16 different households were reported in the part of the City to the north of the Leazes and Sandyford Road, and including one case in a house abutting on the south side of this road. Two only of these occurred to the west of the Moor Road. Of these 19 cases, 17 were supplied with milk from the dairy of Mr. Stephen Fairbairn, South Gosforth Farm.

From the 1st of January to the date of this report (28th February) three other households only in the area have been invaded with Scarlet Fever. Some particulars of the cases in the dairy custom are given below :—

HOUSEHOLDS IN WHICH SCARLET FEVER WAS NOTIFIED AND WHICH DERIVED
THEIR MILK SUPPLY FROM SOUTH GOSFORTH FARM.

Number of Cases.	Date of Notification.	Initial of Person Infected.	Locality.
1	January 27, 1888 ...	P.	Windsor Terracc.
2	" 30, " ...	T.	Jesmond Road.
1	" 31, " ...	S.	Haldane Terracc.
2	February 1, " ...	McI.	Jesmond Villas.
1	" " " ...	C.	M— Jesmond.
1	" " " ...	M.	Elgon Street.
1	" " " ...	McI.	Abbotsford Terracc.
1	" " " ...	R.	Lily Avenue.
1	" 2, " ...	N.	E— Clayton Park Road.
1	" " " ...	D.	Victoria Square.
1*	January 31, " ...	T.	Jesmond Road.
1	February 3, " ...	D.	Eskdale Terracc.
1	" " " ...	C.	M— House, Jesmond.
1	" 4, " ...	L. with R.	Victoria Square.
1	" 6, " ...	S.	Claremont Place.

* Before taking ill this child had been removed from an infected house in Jesmond Road.
See above (T).

Hitherto no death has been reported among these cases.

As already stated suspicion of the milk supply was roused at an early stage of the outbreak. In each case, as it came under notice, every other known channel or medium for the transmission of infection was inquired carefully into. In none of the cases was there any ground to suspect that the infection came from any other common source, or indeed, with the possible exception, presently to be mentioned, from any source whatever, except that already indicated. The possible exception is this:— Two boys (McI. and C.) from different houses, who caught the disease, were pupils at a private school at which a boy from a third infected house (P.) attended. But it was ascertained from the principal of the school that one of the first two mentioned boys was absent from school ten days before the appearance of Scarlet Fever in the house of the third boy P. (who himself remained healthy). The date at which the boy C. sickened was three days after the first feeling of illness of the case P., hence rendering it probable that he had not contracted infection from that case.

The cases were scattered over an area measuring about a mile across. They all occurred in well-to-do families, and in houses the sanitary arrangements of which were generally satisfactory.

A plan showing the cases in connection with the milk supply in question and others notified this year was submitted.

INQUIRY.

On my attention being directed to the milk supplied to the infected households I communicated without delay with the Medical Officer of Health for Gosforth, Dr. Galbraith, who replied under date February 1st, that after inquiry he had failed to find any trace or history of Scarlet Fever in any of the families on the farm; and that among upwards of 50 families in Gosforth supplied with milk from that dairy there was not, so far as he knew, a case of Scarlet Fever in the place. Other cases of Scarlet Fever among the Newcastle customers of the dairy coming to my knowledge, I visited the farm on February 5th with Dr. Galbraith and our Inspector under the Dairies Order (Mr. Hedley), who had previously seen Dr. Galbraith on my instruction.

The Dairy.—We found a herd of 35 cows at the farm all in milk. Cattle not in milk are kept at another farm some distance away. We were informed that no cow had been brought to, or sent away from, the South Gosforth farm lately. I noticed that the hind quarters of one or two of the cows were slightly denuded of hair, and on inquiry was told that this was due to the casting of their coat, usual at this season, which leads the animals to rub and scratch themselves, often severely. One cow had a chapped teat. There was no sign or trace of a vesiclé or an ulcer on the teats of any cow. At my request Mr. Clement Stephenson afterwards examined the herd, as will be stated later in this report. The farm buildings are substantial and well built, and no special defect was noted in connection with them. The water is supplied by the Newcastle and Gateshead water Company. There is an old pump in the garden, but there is no likelihood of its having been used for a considerable time.

The yield of milk at the farm is about 100 gallons per day (60 gallons in the morning and 40 in the afternoon). Almost the whole of each “meal” of milk is emptied into a large tin vessel and mixed. It is then put into four tin “churns” for delivery. A small quantity is sent out in small private tins (baby’s milk, etc).

Dairy Business.—The dairy business is managed by five persons, three men and two women, all of whom live in cottages on the farm. They all milk the cows. One of the women (Johnson) washes the milk vessels. Two of the men (Spoor and Rowlinson) distribute the milk to the customers.

Occasional Supply from other Sources.—With certain exceptions, all the milk supplied to Mr. Fairbairn’s customers is produced on the farm as above indicated. The exceptions are—when the amount for a delivery accidentally runs short and additional milk has to be bought on the road

from other retailers. Thus Spoor has often had to buy milk lately from Hall, of Three Mile Bridge, and Redhead, of Spital Tongues, milk dealers. Hall's milk so bought has generally been about $1\frac{1}{2}$ gallons in quantity, and was put into the general stock at the beginning of the delivery. Redhead's supply, on the contrary, has been got when the stock was low, and has been delivered unmixed. The milkman Spoor has also occasionally bought milk from the carts of the Haltwhistle Dairy.

The milkman Rowlinson has occasionally got extra supply from the milkmen of Dodds, of Fenham, Gibson, of Kenton, Urwin, Back Hill Street, Newcastle, and perhaps others. He says he has bought very little milk lately.

These adventitious supplies were inquired into, and will be presently referred to.

Health of the Dairy-workers and their families.—I visited the cottages of the persons engaged in the dairy business, and inquired closely into the health of the families. There was no evidence whatever of the presence of infectious disease at the time of my visit. In the family of the milkman Rowlinson, consisting of two parents and six children, one boy was convalescent after chest ailment. In September last three of the children are reported to have had Mumps. On being questioned, the mother stated that one of these (Ellen) had also Rheumatic Fever (swelled joints, etc.), but she had no rash. The mother says that at the time the girl was ill a boy (Harry) had Measles. *None of the children peeled.* The households of the other dairy-workers were free from suspicion as to infectious disease.

Dr. Horace Paige, Gosforth, states that he attended Rowlinson's children about the end of September last for an anomalous feverish ailment. The girl was affected as described by her mother, and the boy was feverish and had a mottled eruption on the lower limbs, with very slight sore throat, but no vomiting or subsequent desquamation. The case, in Dr. Paige's opinion, resembled one of ill-developed German Measles. A third child had Mumps, without rash. (Dr. Galbraith states that Mumps was epidemic in Gosforth at the time in question.) I was informed that the house was disinfected and cleansed after the cases recovered.

On my third visit to South Gosforth Farm, made for the special purpose of further inquiring as to whether it were possible that any infected article of clothing, etc., might have been put away last autumn and brought out again lately and so have led to the infection of the milk, I

failed to find anything to justify suspicion of such a thing. The milkman's work-clothes (two suits) had not been specially disinfected, but they are stated to have been washed more than once since the sickness. The sick-room had been fumigated with sulphur and thoroughly cleansed.

Household at Gosforth South Farm.—Mr. Fairbairn's household consists of six persons, viz. :—The two parents, two children, and two female servants. He states that they have all been free from sickness. One of the servants, however, had at the date of my first visit traces of Follicular Tonsillitis, from which, on inquiry, it appeared she had been ailing for a week or more though not off her work.* None of the household are engaged in the dairy business.

Extent of the Dairy custom and its relation to the Outbreak of Scarlet Fever.—Mr. Fairbairn on being asked at once furnished a list of his dairy customers. 185 households in Newcastle are supplied with milk by him. The milkman Spoor has, in his "walk" in Newcastle, 88 customers, of whom the families of 5 (or about $5\frac{1}{2}$ per cent.) have recently been infected with Scarlet Fever. The milkman Rowlinson has 97 customers in the City, of whom 9 families (or above 9 per cent.) have recently had Scarlet Fever.

The lists of customers in each "walk" shows the names of the families in the order in which they were supplied. Scrutiny of these yields no special information as to the incidence of the disease on any particular section of the "walks."

It appears that at four houses only were private tin milk bottles left, viz., one in the "walk" of Rowlinson (this house was infected); and three, all of which remained free from infection, in the "walk" of the milkman Spoor.

One of the infected families had, for about three weeks before the disease appeared in the house, been supplied with milk from two dairies (Mr. Fairbairn's and another) at the same time †

In addition to the Newcastle custom, the list supplied contains the names and addresses of 31 customers in Gosforth. As previously stated Dr. Galbraith was not aware of any case of Scarlet Fever among the Gosforth customers, or indeed at Gosforth at all. Very soon after my

* I examined this servant very carefully on two separate occasions and found no peeling of the skin or sign of other ailment than that of the tonsil, which was to my mind unmistakable.

† It is possible that this patient may have been infected from a totally different source as, some days before taking ill, he was in the company of a child who two days afterwards developed Scarlet Fever.

inquiry began I was informed by a medical practitioner in Newcastle of a case of the disease in Rectory Terrace, Gosforth, under his care in a family supplied with this particular milk. It was also reported to me that there was a case of Scarlet Fever some six weeks before the inquiry in Gosforth Terrace, and another more recently in Row's Terrace, Gosforth, the former taking the milk in question, the latter not. The notification of infectious disease in Gosforth not being obligatory the existence of these cases, unknown to the Medical Officer of Health, is not surprising.

As already mentioned, the two milkmen from Mr. Fairbairn's farm have occasionally bought milk from other dairymen to eke out their own supplies. The Disease Inquiry Forms, filled in by the Special Inspectors of the Health Department at the house of every case of notified disease in the City, show that no Scarlet Fever has recently been reported in the custom of any of these dairymen. Such of the dairies as are in Newcastle have been visited by us and found free from suspicion. Those in the country are similarly reported on by the respective Medical Officers of Health. There is therefore no ground to suppose that infection was introduced among the customers of the Gosforth South Farm Dairy by milk from an occasional source.

Health of the Cows at the Farm.—At my request Mr. Clement Stephenson, F.R.C.V.S., Chief Veterinary Inspector for the County, met me at the farm on the 6th February and carefully examined each cow there. After doing so he gave the following certificate to Mr. Fairbairn :—

(COPY.)

6th February, 1888.

I certify that I have this day, at the request of Dr. H. E. Armstrong, Medical Officer of Health of Newcastle-on-Tyne, examined the whole of the cows (35) at Mr. Fairbairn's, Gosforth, and find them all in good health.

(Signed) CLEMENT STEPHENSON, F.R.C.V.S.,
Chief Vet. Inspector for County of Northumberland.

On the same day I gave the following certificate to Mr. Fairbairn :—

(COPY.)

Newcastle-upon-Tyne,

6th February, 1888.

Owing to an outbreak of Scarlet Fever in Newcastle, in connexion with the milk supplied by Mr. Fairbairn, South Gosforth Farm, I have, accompanied by Dr. Galbraith, Medical Officer of Health, Gosforth, visited the Farm on two occasions and examined the different persons engaged in the Dairy Business. The Dairy Farm appeared to me to be in good order. I have found no cases of Scarlet Fever on the Farm, or hitherto have received confirmation of the suspicion which led to the investigation.

(Signed) HENRY E. ARMSTRONG,
Medical Officer of Health.

Observations.—Although the most important link in the chain of evidence is wanting, the facts connecting the recent appearance of Scarlet Fever in the northern part of the City with the milk supply from Gosforth South Farm, are too pronounced to be merely coincidental. In a large open, well maintained, and previously healthy district, like that in question, the sudden invasion, and as sudden disappearance of a short and incisive outbreak of infectious disease can only be due to some cause affecting in common the victims to it. The most careful inquiry has failed to show any condition to which the sufferers from the outbreak under report were in common subjected, except that 17 out of 19 of these took milk from the same supply.

Failure to find evidence of recent infection at the farm raises various questions for consideration, viz. :—

- 1.—Was the disease of the Rowlinson children in September last Scarlet Fever, and if so, was infection in any way transmitted from those children to the milk customers nearly five months afterwards?
- 2.—Has there been any concealed or undetected Scarlet Fever or other human infectious disease on the farm?
- 3.—Was the outbreak in Newcastle genuine Scarlet Fever or some other febrile eruptive disease resembling it?
- 4.—Is there any ailment or condition of cattle that could so affect the milk as to give rise to an outbreak of Scarlet Fever or disease resembling Scarlet Fever among the consumers?

I am strongly of opinion that the ailment of Rowlinson's girl, at least was Scarlet Fever. Her mother's account of her having Mumps followed by Rheumatic Fever, at the time another member of the family had Measles is a history that no medical man could but regard as strongly suspicious that all three ailments were Scarlatinal and nothing else.

Whether infection could under existing circumstances be retained from these cases, and communicated to the milk after the lapse of time which occurred, cannot be proved. I think it scarcely probable.

If there have been any concealment it has been very dexterously managed. From first to last I believe Mr. Fairbairn to have been straightforward and open. The ailment of his domestic servant was, I consider, undoubtedly what I have described it to be, and not to be regarded as a possible case of unrecognised Scarlet Fever.

As to the real *nature of the outbreak* in Newcastle:—the 17 cases were notified by eight different medical men distinctly as Scarlet Fever (or Scarlatina), a diagnosis I have no right to question. One of the cases so reported came under my own observation in the person of a domestic servant who was removed to the Fever Hospital. This case certainly presented the ordinary signs of a mild attack of Scarlet Fever (vomiting, followed by Fever, sore throat, red eruption, and desquamation of skin).

We cannot, however, positively affirm that the many and various symptoms now classed under the term Scarlet Fever are not indeed those of different diseases, which we have not yet learnt to distinguish from each other.

At present, whilst we are completely in ignorance as to the origin of Scarlet Fever, it is not surprising that the cause of such outbreaks as that just reported is sought in the animals yielding the milk, distribution of which coincides with the distribution of the disease. It was with the view of clearing up all question as to the presence of scabbed teats in the South Gosforth herd, and of satisfying myself as to the loss of hair in some of the cattle, that the opinion of Mr. Clement Stephenson was asked.

In connection with this part of the subject, the milk of recently calved cows may be, and sometimes is, mixed with other milk and sold at too early a stage. Complaints are occasionally made to us as to the smell and taste of such milk. Again, the effect produced on the milk by the slight and periodical ailments of cows, even when accompanied by increased temperature of the body, is but lightly regarded by dairymen, and such milk is not always withdrawn from distribution. There is probably room for investigation here.

A Former Experience.—The outbreak here described recalls, in certain particulars, a similar occurrence in the northern half of the Westgate Registration Sub-district of Newcastle in 1879. On that occasion the outburst was short, clearly defined, and similar in extent, but much more virulent than the recent one.* Then, also, the only common feature was the milk supply, and no Scarlet Fever in connection with the dairies supplying the milk was detected. With one exception, all of the households then invaded in a large area derived their milk directly or indirectly from one or other of two dairies, who interchanged milk for the mutual convenience of trade. In the investigation at that time several complaints

* 10 deaths in a total of 23 cases (see Annual Report of the Medical Officer of Health for 1879). Several of the fatal cases ran a remarkably rapid course.

were made that the milk smelled and tasted badly and did not keep well. Some of the milk complained of was found to be laden with Cholesterine corpuscles, thus proving it to be the yield of recently calved cows.

In 1879 the inquiry was tedious and difficult, owing to the want of notification of the cases of sickness and the fact that one large milk retailer declined to furnish a list of her customers, which at that time we had no power to compel. On the present occasion there have been no difficulties of this kind.

A Suggestion.—The only precaution I considered it necessary to suggest to the proprietor of the dairy at Gosforth South Farm was that he should provide the dairy-workers with blouses or overcoats to wear whilst milking or handling the milk at the farm. This was at once attended to.

HENRY E. ARMSTRONG,

MEDICAL OFFICER OF HEALTH.

Health Department,

Town Hall, Newcastle-upon-Tyne.

28th February, 1888.

