[Report 1913] / Medical Officer of Health, Newcastle-upon-Tyne City & County.

Contributors

Newcastle upon Tyne (England). City & County Council.

Publication/Creation

1913

Persistent URL

https://wellcomecollection.org/works/gq4snnw9

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution license.

This licence permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

441

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1913.

Printed by Easby & Best, 146, Pilgrim Street, Newcastle-upon-Tyne.

STORE
614.094282 - New

2998

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1913.

CONTENTS.

2998

SANITARY COMMITTEE.

Alderman Sir Henry W. Newton, J.P., L.F.P.S., Chairman.

Councillor C. T. Stableforth, J.P., Vice-Chairman.

The Lord Mayor (Councillor Johnstone Wallace, J.P.)

Alderman Sir Joseph Baxter Ellis, J.P.

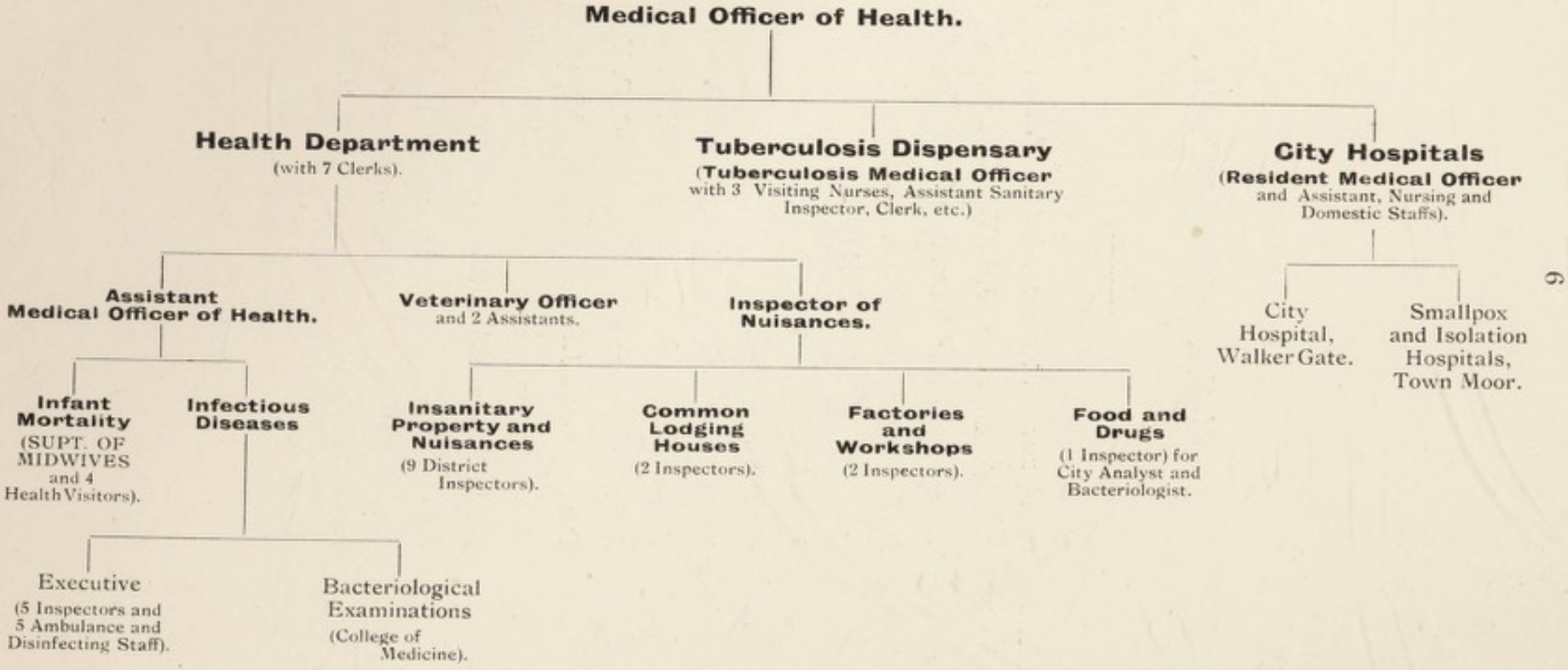
„ Adam Wilson, J.P., L.R.C.P.

„ Geo. Harkus, J.P.

„ Robert Flowers.

Councillor Walter Lee, J.P.	Councillor J. R. Mason, L.R.C.P.
„ Thos. Matthewson,	„ J. W. Telford.
„ A. M. Sutherland.	„ C. C. Elliott.
„ David Adams, J.P.	„ Edward Lonsdale.
„ Wm. Beckett.	„ Wm. Tiplady, L.R.C.P.
„ Alex. Wilkie, M.P., J.P.	„ W. O. Weddle.
„ Jos. Curry.	„ Thos. Cruddis.
„ Jas. Smith.	„ John Chapman.
„ John Grantham.	„ R. P. Dawson, J.P., M.B.

TABLE SHEWING THE VARIOUS SECTIONS OF THE SANITARY COMMITTEE'S WORK WHICH IS UNDER THE DIRECT CHARGE OF THE MEDICAL OFFICER OF HEALTH.



STAFF.

HAROLD KERR, M.D., D.P.H., Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases.

S. J. CLEGG, M.D., D.P.H., (Assistant Medical Officer of Health and Resident Medical Officer, City Hospitals for Infectious Diseases).

WM. HUDSPETH, Inspector of Nuisances, and Chief Sanitary Inspector.
CHRIS. RAIMES, Chief Assistant Inspector of Nuisances, and Assistant Workshops Inspector.
WM. CATTLIFF, Assistant Inspector under the Food and Drugs Acts.
ISAAC CLARK, Assistant Workshops Inspector.
E. W. SCOTT, JAS. MCNICHOLL, JAS. HUNTER, GEO. HARDIE, W. F. BACON, JAS. MCKENDRY, RICHARD REDPATH, BERTRAM MURRAY, ADAM FLOCKHART, District Inspectors.
W. E. PERKINS, THOS. HESLOP, Assistant Inspectors of Common Lodging Houses.
WM. BEAN, L. W. JOHNSON, WM. GRAY, C. R. CRAIG, Infectious Diseases Inspectors.
JAS. ROBSON, JAS. BRUCE, J. R. CRAGIE, J. W. ROBSON, T. W. WHELANS, Ambulance Drivers and Disinfectors.

WM. GILLENDER, WM. MILNE, GEO. CUTHBERTSON,* ALFD. HEDLEY,* ALEC. WALKER,* JOS. GILHESPY, WM. COCKBURN, Clerks in the Health Department.
(Those marked * hold the Sanitary Inspector's Certificate of the Royal Sanitary Institute).

THOS. PARKER, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.
THOS. DODDS, J. M. ANDERSON, Assistant Inspectors of Provisions.

ELIA RENAUD, Superintendent of Midwives.
DOROTHY STRONG, Health Visitor.

W. H. DICKINSON, M.B., CH.B., D.P.H., Tuberculosis Medical Officer.
MARGT. BROWN, M. L. HUTCHINSON, Tuberculosis Visiting Nurses.
R. T. MORRISON, Assistant Inspector for Tuberculosis.
GEO. MAGNAY, Clerk for Tuberculosis.

J. D. INGRAM, M.B., CH.B., D.P.H., Resident Medical Assistant, City Hospitals for Infectious Diseases.

H. E. COOK, Matron, City Hospitals for Infectious Diseases.
Sisters, Nurses, Servants.
JAS. COCKBURN, Engineer.
JOHN HARRINGTON, Lodge Keeper, City Hospital, Walker Gate.
Firemen; Window Cleaner.
JAS. W. and JANE STEPHENSON, JAS. and MARY GREGAN, Caretakers at Smallpox and Isolation Hospitals.

To Councillor CHARLES T. STABLEFORTH, J.P., Chairman of the Sanitary Committee of the Corporation of Newcastle-upon-Tyne.

SIR,

Herewith I beg to submit to you my Report upon the health of the City during the year 1913.

The unusual lateness of issue is due to unavoidable delay in obtaining from the Census Office certain figures necessary for the preparation of a comparison of conditions of life in the various municipal wards.

Although the wards were re-arranged as recently as November, 1913, it was felt to be desirable to base comparisons upon the new wards rather than upon parishes, registration sub-districts, or the old wards, and to advise other public bodies such as the Insurance Committee and the Board of Guardians to adopt the same standard, so that statistics and other data may be of greater mutual value in the future than in the past.

It is satisfactory to record that the mortality figures, while not quite so low as those in 1912—the lowest on record—were nevertheless lower than in any other year. A concise detailed description of the general sanitary progress of the City is set out in the large table on page 28A.

The estimated **Population** of the City at the middle of the year was 271,295.

The number of **Marriages** in the City during the year was 2,414.

The **Birth Rate,** while still unduly low, was slightly higher than in the previous year, being 27·5 per 1,000 population, as compared with 26·7 in 1912, and 26·5 in 1911.

The **Death Rate** from all causes was 15·5 per 1,000 population, as compared with 14·3 in 1912, and is the second lowest yet recorded.

The **Infantile Mortality Rate** was equivalent to 122 deaths of infants under one year of age per 1,000 births, also the second lowest on record. That for 1912, however, was only 101.

The summer and autumn of 1913 were among the finest and warmest experienced for many years, and in spite of the special efforts to prevent its spread, Zymotic Diarrhœa caused 140 deaths among children under two years of age. That these may not have been due altogether to improper feeding, but rather to other bad management in the homes, is suggested by the analysis on page 44, which shows that the total mortality among infants from *all* digestive diseases was below average, although double that of 1912, but was about the same as in 1911, which was also notable for its fine warm summer.

It is significant that there was only one Health Visitor on the staff of the Department throughout the year, a most grave defect which has been remedied since then.

Much excellent work has been done by the Mothers' and Babies' Welcome Society, with its four (now five) Schools for Mothers, the executive of which is to be congratulated upon the excellent services rendered to the City.

The Midwives continue to act as unofficial members of the Health Department staff in imparting instruction to the women they attend.

Again the influence of *Housing* upon infant life is well illustrated by the deaths among 697 investigated cases. Of those who lived in single-roomed dwellings the mortality rate was equivalent to 166 deaths per 1,000 births, in the two-roomed houses to 80 per 1,000, and in the three-roomed houses to 33 per 1,000. Taken over a period of six years, with 7,030 babies under observation, the mortality amongst babies in single-roomed houses is 30 per cent. higher than all others.

The question of *Abortion* by drugs has received attention, and an account of an investigation into the misuse of diachylon is given. The sooner this useless but dangerous preparation is added to the schedule of poisons the better, for its administration is becoming a very real menace to the public weal.

It is gratifying to be able to refer to the efforts now being made to extend measures for child welfare to include all *children under school age*, who at present receive little or no public attention, while education authorities, as in Newcastle, are already doing excellent work among the *school children* by means of their

school clinics. These are an essential adjunct to medical inspection, which of itself does little to remedy a multitude of defects of vital importance to the physique and mentality of the race.

Infectious Diseases were on the whole somewhat less prevalent than of recent years, the incidence of **Measles** being the lowest since 1908. The cases of this disease were practically confined to the early months of the year, being the wind-up of the severe epidemic of the latter part of 1912. **Typhus** and **Smallpox** made no appearance. The number of exemption certificates from *vaccination* steadily increases, these having been obtained in respect of 17 per cent. of the infants born during the year. **Scarlet Fever** continued somewhat prevalent throughout the City, especially in Benwell ward, and in the West End generally, although to a less extent than in 1912. The disease was of mild type, with a case mortality of 2·1 per cent. The **Diphtheria** incidence was the lowest since 1905, and the case mortality was also low—7·6 deaths per 100 cases. Here again Benwell produced a larger proportion of cases than any other part of the City. **Whooping Cough** caused 98 deaths, as compared with a total of 81 from all the notifiable diseases except tuberculosis, and 64 from measles. And yet the number from whooping cough was not unusually high. **Infantile Diarrhœa,** as mentioned above, reappeared with the fine summer and autumn, and caused 140 deaths in children under two years of

age. **Enteric Fever** occurred in the form of a small epidemic in Benwell, more or less about the same locality in which an outbreak was reported in the previous year. The circumstances were very fully investigated by Dr. Clegg, whose findings and conclusions are embodied in the Report. Dry closets again appeared to be mainly responsible for the spread of infection, though in all probability the outbreak originated from a "carrier"—some person or persons who had suffered previously from the disease, and were still harbouring and excreting the germ of the disease. There is now a wealth of statistical proof in favour of *anti-typhoid inoculation* as a preventive of the spread of the disease, and while it would perhaps be inexpedient to force the pace, there is no doubt that more good would be likely to result from the free vaccination of all contacts with cases of enteric fever than from a costly and extremely difficult search for possible "carriers," the success of which is so often prevented by insurmountable obstacles. **Acute Poliomyelitis** was reported in 12 cases, of whom one died, five were left with permanent paralyses, and six recovered completely. **Epidemic Cerebro-Spinal Meningitis** was reported in two cases, both of whom died.

A sudden and extensive localised outbreak of **Food Poisoning** from milk took place in October-November, affecting 523 persons altogether, of whom 511 lived in Newcastle. A detailed description of this is also included in the Report. Fortunately there were

no fatalities. This was the first epidemic of the sort to have been thoroughly investigated from start to finish, and its cause absolutely established.

Such outbreaks as the foregoing are always liable to occur so long as any person who likes is at liberty to deal in or handle milk, untaught and uncontrolled. Were the more terrible, but much less obvious, effects of tubercle-infected milk only capable of similar striking illustration, popular opinion would be so moved that the present conditions under which much of the milk trade is conducted would not be permitted to continue for a single day.

Hospitals for Infectious Diseases.—1,286 patients, representing 88·3 per cent. of the notified cases of the diseases admissible, were isolated at the *City Hospital, Walker Gate.* The general case mortality was 4·6 per cent. In addition to these, 38 cases of advanced phthisis were admitted to the Hospital during the year.

The accommodation for Scarlet Fever was again inadequate, and the *Smallpox* and *Isolation Hospitals* were in requisition for clean convalescent cases during all but the months of April, May, and June. Scarlet fever is no more prevalent now than when the City Hospital was built, 26 years ago, and the cases are less severe, and do not remain nearly so long in the wards. The addition of one pavilion of 30 beds (for scarlet fever) in 1908 has not, however, been sufficient to cope

with the requirements of a population increased by nearly 60 per cent. since 1888, and with the high proportion of cases that now receive institutional segregation. The provision of more pavilions for present needs is urgently necessary.

Difficulty in obtaining nursing staff was again experienced during the year, but salaries have undergone further revision since April, 1913, when they were raised, and are now in accordance with the standard prescribed by the Fever Nurses' Association. There is at present no lack of answers to advertisements.

The **Tuberculosis** problem was thoroughly tackled, and a comprehensive combined scheme formulated with the Insurance Committee for dealing with every case of the disease in the City. A whole-time Tuberculosis Medical Officer was added to the staff of the Health Department in February, and he immediately turned his attention to getting the Tuberculosis Dispensary into active operation. As clinical head of this, he classifies all notified cases not under private medical care, and arranges for appropriate treatment, home or institutional. Up to the present the Dispensary is housed in utterly inadequate and unsuitable temporary premises in the Town Hall, and for the sake of efficiency, and not less of the health of the staff, it is to be hoped that the permanent quarters will soon be ready for occupation.

30 beds for early cases in adults were obtained at

Barrasford Sanatorium, and 30 for children at Stannington Sanatorium. All these have been in full occupation since the commencement of the contracts in the latter part of the year.

Pending the erection of pavilions for 60 beds for advanced cases at the City Hospital, Walker Gate, an isolation block of 14 beds at that institution has been set apart for cases whose circumstances render segregation a matter of public urgency. These beds have been fully occupied since June, 1913.

The Tuberculosis Medical Officer has acted generally as a consultant in connection with consumptive patients, and it is extremely satisfactory to state that his relations with other practitioners in the City have been most pleasant. This is by no means the least important condition for the successful operation of such a scheme as that described.

Full particulars of this work are submitted by the Tuberculosis Medical Officer in the Report.

Bovine Tuberculosis.—191 samples of milk were examined for the presence of tubercle bacilli, and 16 (or 8 per cent.) were found to contain the germ.

At a meeting in December, the Sanitary Committee decided to request the Council to petition the Government, urging them to promote legislation towards enabling this grave source of infection to be eliminated. The following is the text of the report, which was confirmed by the Council on 7th January, 1914 :—

City and County of Newcastle-upon-Tyne.

REPORT OF THE SANITARY COMMITTEE RECOMMENDING THAT THE LOCAL GOVERNMENT BOARD BE URGED TO INTRODUCE LEGISLATION DEALING WITH TUBERCULOUS MILK.

The Sanitary Committee have on numerous recent occasions had under their consideration Reports presented to them by the Medical Officer of Health indicating the frequency of the distribution in the City of milk which is or may be reasonably suspected to be infected with tubercle bacilli, and the enormous administrative difficulties experienced by the Medical Officer and his department in ascertaining the source of contamination and preventing the circulation of infected supplies.

The menace to public health, particularly that of the infantile population, presented by a tubercle-infected milk supply is generally admitted; indeed, recent observations by a well-known investigator have shewn that out of 67 cases of bone and joint tuberculosis, no less than 41, or 61 per cent., were due to bovine bacilli, while of the same group of cases every case under one year of age, and 78 per cent. of those under three years of age, were proved to be due to bovine infection. The presumption that the infection in these cases was due to infected milk is irrefutable, and facts similar to these, pointing to the frequency of cases of tuberculosis in children due to contaminated milk, can be indefinitely extended.

The adverse effect of the present condition, not merely from the point of view of the sanitarian, but also from the financial aspect of the matter, cannot be exaggerated, as is evidenced by the demands which are being made upon the funds of local authorities in connection with the schemes for the institutional treatment of tuberculosis.

Moreover, local legislation, or legislation imposing upon the consuming community, to the exclusion of the producing community, the expense of dealing with the question, can in no circumstances be satisfactory, as being not merely ineffective, but also partial.

The Government have indicated their appreciation of the public menace from infection by bovine tubercle bacilli by their introduction in 1909 and in 1913 of general legislation to deal with the question, and also by the making of the Tuberculosis Order of 1909.

As regards the two Bills referred to, neither of them came to a third reading; while, with respect to the Tuberculosis Order of 1909, which enables local authorities to dispose of tubercle-infected cattle by payment of varying proportions of value according to the degree to which the animal sought to be disposed of is affected with tuberculosis, it is to be observed that in practice the Order is only effective in enabling

local authorities to deal with animals in an advanced state of tuberculosis which may for months previous to their detection and segregation have been disseminating disease by their milk, and the penal clauses of the Order do not seem to have proved an effective deterrent to the distribution of infected milk.

With their present powers the Sanitary Committee are placed in a position ef extreme difficulty, since before deciding that a milk supply is infected with tubercle a period of at least a month must elapse for investigation, prior to which it is impossible to assert with scientific accuracy the presence of tubercle bacilli in the milk, and during this time the milk supply, with its possible attendant dangers, is being continued.

Moreover, having ascertained the presence of tubercle in the milk, the Committee have next to ascertain the source of supply of the particular milk, which, in numerous cases, is from a country district remote from Newcastle.

Having ascertained the source of supply, a further difficulty presents itself, since in general, the milk is the mixed milk of a herd of cows, and in frequent instances it is found that the constitution of the herd has changed by the elimination, before the Sanitary Committee's officers are in a position to act, of any cows which the farmer or other milk dealer regards as suspicious. In this way it is frequently extremely difficult, if not impossible, for the source of the contamination to be precisely and satisfactorily ascertained, while, even though the same is ascertained, a considerable delay has previously taken place, and the powers of the Committee under the existing law, particularly as regards milk derived from a source of supply outside the City area, are extremely limited.

Appended to this Report are particulars of five illustrative cases reported by the Medical Officer of Health indicative of the difficulties experienced.

In view of the attitude of the Government towards the question of the treatment of tuberculosis when the disease has developed in children and adults, and the obligations imposed by the Tuberculosis Order of 1909, both of which involve substantial and increasing charges upon local rates for services which are inherently national in their character, the Committee are of opinion that the Government should be strongly urged to promote in the ensuing Session of Parliament and to carry into effect legislation of a preventative rather than of a palliative character as at present which will enable Urban Local Authorities effectively, and without an undue burden of expense, to secure a pure and uncontaminated milk supply within their areas, and they accordingly recommend the Council to confirm this Report, and that instructions be given for a copy thereof to be sent to the Prime Minister, the Presidents of the Local Government Board and of the Board of Agriculture and Fisheries, and to local Members of Parliament.

Dated this 5th day of January, 1914.

HENRY W. NEWTON, Chairman.

ILLUSTRATIVE CASES REPORTED BY THE MEDICAL OFFICER OF HEALTH.

Case 1.—DUMFRIESSHIRE.—This milk is supplied to two dealers in the City. Samples collected from both dealers were reported by the Bacteriologist to contain Tubercle Bacilli. The supply was stopped. The Medical Officer of Health for Dumfriesshire was communicated with, and took immediate steps to have the herd examined. One cow was found to have tuberculosis and was excluded from the herd. Permission was then given for the resumption of the supply from the farm, and a check sample of the milk was collected. This last sample has now been reported to contain Tubercle Bacilli. So far as is known the Tuberculin test has not been applied to the cows.

Case 2.—NORTHUMBERLAND.—On receipt of the Bacteriologist's report that the milk was tuberculous, the dairyman in the City was informed and asked to stop the supply. He replied that he had ceased to take the milk about three weeks previously. It is not known whether the milk is being sent to any other dairy in the City, but the County Medical Officer of Health was informed, and is making inquiries.

Case 3.—Co. DURHAM.—Sample collected 22nd October, and report of Bacteriologist received 3rd December. The County Veterinary Inspector, after clinical examination of the herd of eight cows, on 5th December, reported that none of the animals shewed any sign of tuberculosis. Between the date of the collection of the sample and the receipt of the Bacteriologist's report, four cows had been sold and three new ones bought. On 22nd October the farmer had nine cows, so that there were five of the original herd still on the premises. Separate samples from each of these, and a mixed sample from the remaining three were taken, but a bacteriological examination gave a negative result, which points to the diseased cows or cow being among those sold between 22nd October and 5th December. The Tuberculin test was not applied.

Case 4.—NORTH RIDING.—Milk supplied to two dairymen in the City. On the milk being stopped, the farmer came to Newcastle and interviewed the Medical Officer of Health. He stated that between the dates of the collection of the sample and the receipt of the Bacteriologist's report, there had been changes in the herd. Clinical examination by a Veterinary Surgeon did not shew any of the cows to be affected. The farmer objected to the routine application of the Tuberculin test.

Case 5.—CUMBERLAND.—The milk is supplied to one of the largest dairies in the City. The Chief Veterinary Inspector reports that on clinical examination five cows were found suffering from tuberculosis. In three of these cases Tubercle Bacilli were found in the milk, and the animals were slaughtered, all being found on post-mortem examination to have advanced generalised disease. The milk of the other two cows proved negative for Tubercle Bacilli, but though undoubtedly tuberculous, they had no tubercular mammitis, and were not emaciated, and could not, therefore, be dealt with under the Tuberculosis Order of 1913. The Tuberculin test has not been applied.

It is satisfactory to note that a step in the required direction is likely to be effected by the passing of the Milk and Dairies Bill in the present year.

105 carcasses of home-killed cattle were condemned on account of tuberculosis.

The Veterinary Officer reports that the Tuberculosis Order of 1913, and even the later Order of wider scope which has replaced it in the present year, have proved of little value so far, owing to the want of thoroughness which has characterised their administration by Local Authorities. There is no systematic veterinary search for tuberculous animals, and it is not likely that stock-owners will come forward and notify cases themselves—nor do they.

As regards Newcastle, both this particular duty, and that of food inspection generally, are not nearly as thoroughly performed as they should be. One veterinary surgeon and two meat inspectors for the administration of the work under the Public Health and Diseases of Animals Acts, including the voluminous clerical business, are an entirely insufficient staff, especially in a town with 111 scattered private slaughter houses, and no public abattoir. Further, the office accommodation—one small room—is not enough for the present officers, let alone for any additional men.

Food and Provisions.—Inspections under this head are carried out by the Veterinary Officer and his assistants, and by assistants of the Inspector of

Nuisances who are specially detailed for the purpose of taking samples for examination by the Public Analyst and the Bacteriologist.

As stated above, and in previous Reports, the Veterinary Officer's efficient performance of his duties is much hampered by the impossibility of making anything like a thorough inspection of carcases in the private slaughter houses. The absence of a public abattoir is perhaps the most serious blot upon the health administration of the town, and the present conditions of meat inspection involve a maximum of what should be unnecessary labour, for a minimum of effective work. It is only necessary to visit some of the revolting and disgusting places where slaughtering is carried on—by licence of the Corporation—in this City, and then to see the municipal abattoirs in such towns as Edinburgh or South Shields, to be convinced of the need for a good central killing and clearing house in our own town.

The number of food samples (1,045) taken by the Inspector of Nuisances for analysis shows an increase of 114 over the previous year, but only represents a proportion of 3·9 per 1,000 of population. Of the total number 7·7 per cent. proved not to be genuine, as compared with 7·4 per cent. in 1912, and 9·4 per cent. in 1911.

Of the total milk samples taken 9·3 per cent. were not genuine, as compared with 8·6 per cent. in the previous year, and 13·8 per cent. in 1911.

6·8 per cent. of the milk, cream, butter, and margarine samples contained boric acid preservatives. Under the Public Health (Milk and Cream) Regulations, 1912, 285 samples of milk, and cream not sold as "preserved," were taken; in none of the former were preservatives found; in two of the latter less quantities than 0·5 per cent. of boric acid were found, but though the jar in one case was unlabelled, a notice was displayed prominently in the shop, and in the other case the jar of the informal sample was unlabelled, but that of the formal sample conformed to regulations. No infringements of the regulations as to cream sold as "preserved" were observed.

198 samples of milk were submitted to the Bacteriologist for examination for evidence of excremental pollution; 35 were reported as unsatisfactory, and immediate steps were taken to have the causes remedied.

The **Water Supply** continues to be of good quality, the chemical analysis being very satisfactory. 193 samples, from sources in all parts of the City, were examined bacteriologically for evidence of the presence of *bacillus coli communis*, the original source of which is always animal or human. A high standard is adopted for this purpose, and is of great value on account of its delicacy in showing the need for special precaution not indicated by the chemical analysis. Seven samples were returned as bad, and 55 as unsatisfactory. The Water Company are informed of each result, and institute

immediate inquiries as to possible sources of contamination. It is of interest to note that these appear to lie most frequently in the fittings of the domestic taps, etc., especially in the leather washers and collars, samples from reservoirs, filters, and mains proving to be satisfactory in practically all cases.

Housing.—This subject is fully dealt with in a special section of the Report, which contains a general description of the Newcastle dwellings, their condition as to sanitation and inhabitants, and action taken by the Sanitary Committee in regard to inspection, remedy of defects, and closures.

The Quayside area, as being the oldest residential part, with the most defective houses structurally, was very thoroughly inspected, primarily for the information of the Housing Committee. The houses were occupied for the most part as tenements by people of the poorest class—Quayside labourers, hawkers, and others of casual employment, but comparatively little overcrowding was found in them, although overcrowding of houses on area was noted.

A report by the Clerk to the Guardians upon "The Housing Problem in its relation to Disease and the Poor Rate" demonstrated in a striking manner that the greatest poverty, ill-health, and overcrowding is to be found, not so much in the poor tenements and rookeries, which are well known to, and supervised by, the Sanitary Authority, as in the small self-contained flats of three or four rooms, such as the ordinary

mechanic lives in. Here, except on reasonable suspicion of nuisance, the Sanitary Inspector has no access, so that there is little chance of his discovering the overcrowding. Poor Law out-relief, and old age pensions, are insufficient of themselves to pay rent and keep, so recipients crowd into the houses of others just above the poverty line, to the detriment of the general health.

94 houses, containing 182 separate holdings, have been dealt with in 1913. Of these, 31 houses, containing 41 holdings were cellars, which left 97 cellar dwellings, containing 130 holdings, still to be considered by the Committee. It is to be hoped sincerely that very soon the City will be freed entirely from these troglodyte habitations, and it is certain that houses, at present self-contained, with basement kitchens, will have to be strictly watched against their being let off as tenements, with inhabited cellars. Unfortunately, the law gives no power to interdict their use at present, although servant girls may be compelled to pass the greater part of their daily lives below ground.

Disposal of Refuse.—708 more dry closets have been converted to the water carriage system, under Section 36 of the Public Health Act, 1875. This reduces the proportion of dry closets in the City from 19 per cent. in 1905 (immediately after the incorporation of Walker and Benwell) to 11 per cent.

District Inspection continues to be efficiently performed, and nuisances dealt with.

The duty of testing the drains of new buildings was handed over to the City Engineer, as it is his function to superintend every other part of buildings under construction. The sole purpose of the transference was avoidance of overlapping, and as a guarantee that the work will be as efficiently performed as in the past, the two inspectors of new house drains were taken over by the City Engineer, and are now doing the same work under his supervision as they did previously in the Health Department.

Health Week.—What bids fair to become an annual national institution is the Health Week, which was celebrated throughout the country in April, 1913.

Originating from the Agenda Club, London, who provided a proportion of the funds, it was organised in Newcastle by a committee representative of all the various bodies and societies interested in the social work of the City, the Lord Mayor, supported by the Chairman of the Sanitary Committee, the President of the College of Medicine, and other influential personages, being at the head.

A comprehensive Health Exhibition was arranged, and this was held in the Cambridge Hall, Northumberland Road. It included a large and valuable section dealing with every phase of infant welfare, under the charge of your Superintendent of Midwives; a tuberculosis section, under your Tuberculosis Medical Officer and members of the Barrasford Sanatorium executive; and a fine practical exhibit of home sanitary fittings for

the benefit of the novice, in charge of your Chief Assistant Inspector of Nuisances and other members of the staff. Other sections included school medical inspection, dental care, home nursing, and domestic cookery.

Popular lectures, special addresses, and discussions were held in clubs, societies, churches, and picture halls (which also showed special health films)—wherever, in fact, audiences were obtainable—the idea being to make health matters a subject of common talk everywhere during the week, with a view to practical results afterwards. Over 20,000 persons visited the exhibition, including 5,000 of the older school children, and the arrangements for demonstrating and explaining the exhibits to both adults and children were very complete.

Such efforts as this cannot fail to effect much good by educating people in the principles of wholesome living.

The late Alderman Sir Henry Wm. Newton, J.P.—It is with a deep sense of loss that reference must be made to the death, on 22nd June, 1914, of Sir Henry William Newton, Chairman of the Sanitary Committee since 1893, and a member of the Council for forty-eight years.

Under his strong and able guidance the health of the City has been magnificently safeguarded, and many sanitary measures now in general use throughout the country originated from his fertile resourcefulness.

As a sanitarian Sir Henry's reputation was national, and there was no better-known figure than his at great conferences and consultations upon matters hygienic.

His removal deprives the City of Newcastle of one of its strongest leaders and sagest counsellors.

Staff of the Health Department.—During the year under report, the staff has lost two of its oldest members, both Infectious Diseases Inspectors —John Gibson, who died on 2nd November, after twenty-three years' service; and James Flockhart, who retired in December, owing to ill-health, after thirty-one years' service.

Dr. W. H. Dickinson, M.B., D.P.H., was appointed Tuberculosis Medical Officer on 24th February, 1913.

I have to acknowledge the excellent and loyal service rendered to the City by the respective staffs of the various divisions of the Department and Hospitals under my charge. Special mention should be made of that of the Tuberculosis Dispensary, whose heavy duties have been performed cheerfully under difficult and unwholesome conditions.

In conclusion, Sir, I desire to express my pleasure at your election to the chairmanship of the Sanitary Committee, and the hope that your tenure of it may be long and prosperous.

I have the honour to be, Sir,

Your obedient servant,

HAROLD KERR, M.D., D.P.H.,

Medical Officer of Health.

Health Department,
Town Hall,
Newcastle-upon-Tyne,
24th August, 1914.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

Health Report, 1913.

I. GENERAL.

MORTALITY TABLES, SOCIAL CONDITIONS,
CLIMATOLOGY, WATER SUPPLY, DISPOSAL OF REFUSE,
ADOPTED AND LOCAL ACTS.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

POPULATION, BIRTH RATE, AND SPECIAL MORTALITY RATES DURING THE PERIOD OF THE NOTIFICATION OF INFECTIOUS DISEASES.

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1913—**271,295.**

RETURN SHEWING THE ESTIMATED POPULATION OF THE DIFFERENT WARDS IN THE CITY, ACREAGE, POPULATION PER ACRE, ETC.

Ward.	Population.	Gross Area in Acres.	Less for Open Spaces. in Acres.	Nett Area in Acres.	Population Per Acre, gross.
			*	*	
St. Nicholas' ...	3,566	127			28
St. Thomas' ...	14,095	1,636			8·6
St. John's ...	15,338	169			91
Stephenson ...	18,734	215			87
Armstrong ...	15,611	178			88
Elswick	12,638	253			50
Westgate	15,252	90			170
Arthur's Hill ...	11,417	142			80
Benwell	17,569	550			32
Fenham	11,024	1,189			9
All Saints' ...	17,686	176			100
St. Andrew's ...	12,472	173			72
Jesmond	11,040	441			25
Dene	12,173	818			15
Heaton	15,489	225			69
Byker	17,465	140			125
St. Lawrence ...	17,893	181			99
St. Anthony's ...	15,769	601			26
Walker	16,064	1,149			14
CITY ...	271,295	8,453	1,400	7,053	32·1

*The information for these columns is not yet available.

INHABITED HOUSES.—33,193, with 56,037 separate occupiers, and an average of 8·13 persons per house.

RATEABLE VALUE.—£1,690,918. A penny rate produced £6,383.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being general engineering and machine making; conveyance of men, goods, and messages; building and works of construction, *e.g.*, ship building; and connected with ships and boats, sea-faring and harbour work; food, tobacco, drink, and lodging; coal and shale mines; and commercial or business occupations.

The amount of **Poor Law Relief** granted was £22,613 for out-door relief, and £21,509 for indoor maintenance, making a total of **£44,122.**

The City contains many **Hospitals** and other medical charities, but as wide surrounding districts are also served by them, figures as to patients treated are not of local value.

MARRIAGES.—**2,414** Marriages took place during the year.

BIRTHS.—7,460, equivalent to a rate of **27·5** per 1,000 population.

DEATHS (all causes)—4,611, equivalent to an uncorrected rate of 17·0 per 1,000, and, after deduction of the deaths of 560 non-citizens, and addition of 141 Newcastle residents who died elsewhere, to a corrected rate of **15·5** per 1,000 population.

16 deaths were *uncertified*.

Twenty-one Orders for Burial (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were given, 4 being in respect of bodies lying in inhabited rooms, and 17 being cases from hospitals.

INFANTILE MORTALITY.—908 Infants died before completing the first year of life, representing a rate of **122** deaths per 1,000 births.

ZYMOTIC DEATH RATE.—There were 365 deaths from the "Chief Zymotic Diseases" [Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (Typhus, Simple Continued, and Enteric) and Diarrhœa] which is equivalent to **1·3** deaths per 1,000 population.

TUBERCULOSIS.—479 persons died from various forms of Tuberculosis, 326 being from Pulmonary, and 153 from Other Forms. The equivalent death rates are *All Forms* **1·8**, *Pulmonary* **1·2**, and *Other Forms than Pulmonary* **0·6**, per 1,000 population.

For comparison of death rates with previous years see table page 28A.

For particulars of deaths, as to causes, age, etc., see pages 35—39.

CLIMATOLOGY.—The Newcastle district is notable for its grey skies and comparative lack of sunshine. To some extent this is the result of obscuration by smoke and suspended matter, but not by any means entirely so. During the year 1913 there were 705·25 hours of sunshine.

The mean barometer reading was 29·67 in.

The mean maximum temperature was 56·4° F. and the mean minimum 41·1° F.

Measurable rain fell on 148 days, amounting in all to 26·82 inches. On September 16th 2·43 inches fell between 8-30 a.m. and 10-40 a.m.

The prevailing winds were westerly, frequency of direction being noted as follows:—

W., N.W., or S.W. on 208 days.
E., N.E., or S.E. on 99 days.
S. on 32 days.
N. on 26 days.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of upland surface water of great purity, collected from large catchment areas at Catcleugh, close to the Cheviots, and in lower Northumberland.

It is stored in large impounding reservoirs at Catcleugh, Hallington, and Whittle Dene, and passes through sand filters at Whittle Dene and Throckley.

In the vast majority of cases the household taps are served directly from the mains, without intervening cisterns.

A separate trade supply is piped to some of the great riverside works from a point above the filters.

The Bacteriological reports upon the water samples are given on page 141.

SEWERAGE.—There are 275 miles and 972 yards of sewers discharging at various points along the seven miles of river frontage directly into the Tyne, which is tidal.

CLEANSING AND SCAVENGING.—$14\frac{3}{4}$ miles of streets are cleansed continuously by men and boys during the day, $37\frac{3}{4}$ miles are cleansed once a day, $110\frac{3}{4}$ miles three times a week, and 89 miles twice a week.

There are 49,397 water closets and 6,332 conservancy system closets in the city. Conversion of the latter is proceeding steadily, at the rate of about 700 per annum. All the schools are served by the water-carriage system.

The scavenging, which includes the removal of dry house refuse, the contents of privy pans, privies, and ashpits is efficiently carried out.

There are 40,963 dry ashtubs and galvanised iron bins in the City.

ADOPTIVE AND LOCAL ACTS IN FORCE.

Adopted Acts.—Infectious Disease (Prevention) Act, 1890. Section 4.

Public Health Acts Amendment Act, 1890.

Part III. ... ... whole of.

Part IV. ... ... whole of.

Notification of Births Act, 1907.

Public Health Acts Amendment Act, 1907.

Part II.—Sections 20, 22, 23, 26, 27, 28, 29, 30, 31, and 33.

Part III.—Sections 34, 35, 36, 37, 38, 43, 45, 48, 49, 50, and 51.

Part IV.—Sections 52, 53, 56, 58, 59, 61, 62, 63, 64, 65, and 68.

Part X.—Whole of.

Local Acts.—Newcastle-upon-Tyne Improvement Act, 1837.

Do. do. 1846.

Do. do. 1853.

Do. do. 1865.

Do. do. 1870.

Do. do. 1882.

Do. do. 1892.

Newcastle-upon-Tyne Tramways and Improvement Act ... ... 1899.

Newcastle-upon-Tyne Corporation Act ... 1911.

MORTALITY RATES.

COMPARISON WITH OTHER DISTRICTS.

DISTRICT.	Birth Rate.	General Death Rate.	Infantile Mortality Rate.	Death Rate per 1000 from Enteric Fever, Smallpox, Scarlet Fever, Measles, Whooping Cough and Diphtheria	Tuberculosis (all causes) Death Rate.
England and Wales	23·9	13·7	109	0·64	?
96 Towns	25·1	14·3	117	0·75	?
NEWCASTLE-UPON-TYNE	**27·5**	**15·5**	**122**	**0·83**	**1·76**
Hull	27·5	14·6	130	0·55	1·44
Leeds	23·6	15·7	136	0·69	1·74
Bradford	19·6	15·1	127	0·47	1·39
Sheffield	28·2	15·8	129	1·24	1·58
Manchester	25·6	15·7	128	0·87	1·93
Salford	26·2	16·3	143	1·06	2·0
Liverpool	29·8	18·0	132	0·95	2·0
Nottingham	22·6	14·3	131	0·47	1·42
Leicester	22·8	13·3	119	0·31	1·65
Stoke-on-Trent	31·3	18·7	169	1·95	1·7
Birmingham	27·3	14·9	129	1·06	1·53
Cardiff	26·2	13·7	115	0·48	1·54
Bristol	22·4	13·0	97·5	0·84	1·34
Portsmouth	24·4	12·2	90	0·70	1·40
London	24·5	14·2	105	0·66	?
Gateshead	29·2	14·7	123	0·48	1·56
South Shields	31·1	17·9	117	1·02	1·99
Tynemouth	28·8	15·6	123	0·51	1·46
Sunderland	31·4	18·1	135	0·93	1·66
Middlesbrough	23·9	13·4	109	1·09	1·64
County of Northumberland ...	26·4	13·6	111	0·77	1·39
County of Durham	30·6	15·2	137	1·00	1·42

TABLE I. OF LOCAL GOVERNMENT BOARD.

Vital Statistics of Whole District during 1913 and previous Years.

Year.	Population estimated to Middle of each Year.	Births.			Total Deaths Registered in the District.		Transferable Deaths.		Nett Deaths belonging to the District.			
			Nett.						Under 1 Year of Age.		At all Ages.	
		Uncorrected Number	Number	Rate.	Number	Rate.	of Non-residents registered in the District	of Residents not registered in the District	Number	Rate per 1,000 Nett Births.	Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1906	257,113	8,210			4,831	18·8						
1907	259,082	8,093			4,594	17·7						
1908	261,065	8,382			4,801	18·4						
1909	263,064	7,682			4,459	16·9						
1910	265,077	7,543			4,252	16·0						
1911	267,261	7,089	7,082	26·5	4,667	17·5	448	165	973	137	4,384	16·4
1912	269,193	7,219	7,194	26·7	4,221	15·7	529	146	727	101	3,838	14·5
1913	271,295	7,480	7,460	27·5	4,611	17·0	560	141	908	122	4,192	15·5

Area of District in acres (exclusive of area covered by water) 8,452. Total population at all ages at census 1911, 266,603.

Uncorrected Death Rates in different Wards.

St. Nicholas'.	St. Thomas'.	St. John's.	Stephenson.	Armstrong.	Elswick.	Westgate.	Arthur's Hill.	Benwell.	Fenham.	All Saints'.	St. Andrew's.	Jesmond.	Dene.	Heaton.	Byker.	St. Lawrence.	St. Anthony's.	Walker.	City.
10·4	63·4 *	13·0	12·7	15·6	13·8	11·8	41·5 †	11·6	10·3	15·2	18·3	8·8	8·2	11·0	13·2	13·0	13·2	19·8 ‡	17·0

* Includes the Royal Victoria Infirmary, Fleming Memorial Hospital, and other public institutions.

† Includes the Union Infirmary, St. Joseph's Home, etc.

‡ Includes the City Hospital, Walker Gate, etc.

TABLE II. OF LOCAL GOVERNMENT BOARD.

(See under **Infectious Diseases,** *page 73.)*

TABLE IV. OF LOCAL GOVERNMENT BOARD.

(See under **Infantile Mortality,** *pages 45 and 46.)*

TABLE III. OF THE LOCAL GOVERNMENT BOARD.

RETURN OF DEATHS FROM ALL CAUSES DURING THE 53 WEEKS ENDED JANUARY 3RD, 1914.

CAUSE OF DEATH.	DEATHS (ALL CAUSES) UNCORRECTED.									TRANSFERABLE DEATHS.		Nett Deaths.	Deaths in Institutions in the City of "Residents" or "Non-Residents"
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	TOTAL.	Inward.	Outward.		
—General Diseases.													
nteric Fever	...	...	1	6	4	4	2	...	17	...	2	15	14
leasles	17	23	22	2	...	...	...	...	64	...	...	64	3
carlet Fever	...	3	10	9	...	...	...	...	22	...	2	20	19
Whooping Cough	41	34	20	4	...	...	...	...	99	...	1	98	1
iphtheria	3	10	10	7	1	...	...	...	31	...	3	28	28
roup	...	1	...	...	...	...	...	...	1	...	...	1	...
nfluenza	2	...	...	...	1	7	4	5	19	...	...	19	2
rysipelas	2	...	...	...	...	2	4	...	8	...	...	8	5
yæmia, Septicæmia	...	...	1	1	1	3	7	...	13	...	5	8	10
etanus	...	...	...	...	1	...	...	...	1	...	...	1	1
ulmonary Tuberculosis (not acute)	1	4	10	26	43	143	64	8	299	22	6	315	86
cute Phthisis	...	...	1	1	1	5	4	...	12	...	1	11	2
cute Miliary Tuberculosis	...	1	...	4	1	...	2	...	8	1	2	7	6
uberculous Meningitis	15	14	17	22	4	6	...	...	78	...	11	67	25
uberculosis of Peritoneum and Intestines	14	8	8	4	4	5	1	3	47	1	5	43	12
uberculosis of Spinal Column	...	...	2	1	...	1	1	...	5	2	1	6	3
uberculosis of Joints	1	1	...	3	1	1	1	1	9	...	1	8	3
uberculosis of other Organs	...	...	1	1	2	3	1	1	9	1	2	8	7
isseminated tuberculosis	...	4	1	4	2	3	...	...	14	1	1	14	6
TOTAL TUBERCULOSIS	31	32	40	66	58	167	74	13	481	28	30	479	150
ickets, Softening of Bones	4	2	2	...	...	...	...	...	8	...	...	8	1
yphilis	12	...	1	2	...	1	1	1	18	...	2	16	11
ancer of the Buccal Cavity	...	...	1	2	1	4	18	6	32	1	9	24	15
ancer of the Stomach, Liver, &c.	...	...	...	...	...	14	55	32	101	2	26	77	40
ancer of the Peritoneum, Intestines, and Rectum	1	3	1	3	1	14	45	20	88	1	22	67	45
ancer of the Female Genital Organs	...	...	...	...	1	10	23	11	45	...	7	38	13
ancer of the Breast	...	...	...	...	...	6	18	4	28	1	1	28	1
ancer of the Skin	...	...	...	...	...	...	2	...	2	...	...	2	1
ancer of other or unspecified organs	...	...	1	1	1	11	29	12	55	...	15	40	22
ther Tumours (situation undefined	...	1	...	...	1	...	1	...	3	...	1	2	2
heumatic Fever	...	...	...	1	...	4	1	...	6	...	...	6	1
hronic Rheumatism, Osteo-Arthritis	...	...	...	2	1	4	9	9	25	...	1	24	4
curvy	...	1	...	...	...	...	...	...	1	...	1	...	1
iabetes	...	...	...	1	1	3	14	11	30	...	9	21	13
xophthalmic Goitre	...	...	...	...	...	2	1	...	3	...	1	2	2
ddison's Disease	...	...	...	...	...	1	...	...	1	...	1	...	1
eucocythæmia, Lymphadenoma	1	...	1	2	...	1	2	1	8	...	2	6	4
næmia, Chlorosis	...	...	...	1	3	5	15	3	27	...	4	23	7
ther general diseases	1	1	...	1	1	2	2	...	8	...	2	6	4
lcoholism (acute or chronic)	...	...	...	...	...	3	11	4	18	...	...	18	3

Table III. of the Local Government Board.—Continued.

Return of Deaths from all causes during the 53 Weeks Ended January 3rd, 1914.

Cause of Death.	Deaths (all causes) Uncorrected.									Transferable Deaths.		Nett Deaths.	Deaths in Institutions in the City of "Residents"
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total.	Inward.	Outward.		
II.—Diseases of Nervous System and Organs of Special Sense.													
Poliomyelitis	...	...	...	1	...	...	...	...	1	...	...	1	...
Encephalitis	...	...	1	...	1	4	...	...	6	...	4	2	5
Cerebro-Spinal Fever	...	...	1	1	...	...	...	...	2	...	...	2	...
Meningitis, other forms or undefined	20	11	8	7	2	4	...	...	52	...	6	46	14
Locomotor Ataxy	...	...	...	...	...	...	5	1	6	...	...	6	2
Other Diseases of the Spinal Cord	1	...	...	..	...	6	8	6	21	1	4	18	6
Cerebral Hæmorrhage, Apoplexy	...	...	...	...	1	12	85	115	213	6	4	215	40
Softening of the Brain	...	...	...	...	...	...	4	3	7	1	...	8	2
Paralysis, without specified cause	...	...	...	...	...	2	14	10	26	...	...	26	10
General Paralysis of the insane	...	...	...	...	...	1	2	...	3	18	...	21	...
Other forms of mental alienation	...	...	...	...	1	...	2	...	3	1	...	4	...
Epilepsy	...	...	...	3	...	3	1	1	8	2	...	10	2
Convulsions (non-puerperal; 5 years and over)	...	...	...	...	...	2	...	...	2	...	1	1	2
Infantile Convulsions (under 5 years)	56	2	3	1	...	...	...	...	62	...	2	60	3
Chorea	...	...	...	...	1	...	...	...	1	...	...	1	...
Hysteria, Neuralgia, Neuritis	...	...	...	...	...	2	3	1	6	...	...	6	1
Other diseases of the nervous system	...	...	...	...	2	7	4	1	14	6	2	18	3
Diseases of the eyes and annexa	1	...	...	...	...	...	...	...	1	...	1	...	1
Mastoid Disease	...	...	...	1	...	...	1	...	2	...	...	2	1
Other Diseases of the Ears	1	1	1	5	4	2	2	...	16	2	8	10	12
III.—Diseases of Circulatory System.													
Pericarditis	...	...	1	...	...	1	...	2	4	...	1	3	1
Acute Endocarditis	...	...	...	3	6	12	7	6	34	...	5	29	12
Valvular Disease, Fatty Degeneration of the Heart	...	...	...	2	10	52	84	63	211	12	17	206	50
Other Organic Disease of the Heart	...	...	...	...	3	7	27	29	66	6	2	70	9
Angina Pectoris	...	...	...	...	...	1	7	8	16	1	1	16	2
Aneurysm	...	...	...	...	...	5	7	2	14	...	4	10	6
Arterial Sclerosis	...	...	...	...	..	...	17	64	81	...	...	81	66
Other Diseases of Arteries	...	...	...	...	...	...	1	1	2	...	1	1	1
Cerebral Embolism and Thrombosis	...	...	...	..	...	2	8	14	24	...	1	23	1
Other Embolism and Thrombosis	...	...	...	...	1	2	1	1	5	...	...	5	...

Table III. of the Local Government Board.—Continued.

Return of Deaths from all causes during the 53 Weeks Ended January 3rd, 1914.

Cause of Death.	Deaths (all causes) Uncorrected.									Transferable Deaths.		Nett Deaths.	Deaths in Institutions in the City of "Residents" or "Non-Residents"
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total.	Inward.	Outward.		
I.—Diseases of Circulatory System.—(*Continued.*)													
Diseases of the Veins (Varices, Hæmorrhoids, Phlebitis, &c.)	...	...	...	...	...	...	1	2	3	...	...	3	1
Status Lymphaticus	...	...	1	...	...	...	...	...	1	...	1	...	...
Other Diseases of the Lymphatic System	1	...	...	1	...	...	...	...	2	...	...	2	...
Hæmorrhage; other Diseases of the Circulatory System	...	...	...	...	...	...	5	...	5	...	1	4	2
V.—Diseases of Respiratory System.													
Diseases of the Larynx	1	1	2	...	...	...	2	...	6	...	...	6	1
Diseases of the Thyroid Body	...	...	...	...	...	...	4	2	6	...	...	6	...
Bronchitis	64	22	11	2	4	12	60	124	299	2	3	298	52
Broncho-Pneumonia	75	46	23	7	5	5	13	11	185	...	10	175	25
Lobar Pneumonia	7	2	1	5	2	16	7	6	46	7	1	52	5
Pneumonia (type not stated)	25	14	5	4	7	11	26	16	108	2	4	106	18
Pleurisy	1	8	2	1	3	8	6	3	32	...	16	16	17
Pulmonary Congestion, Pulmonary Apoplexy	...	...	...	1	1	...	5	3	10	1	...	11	1
Gangrene of the Lung	...	...	...	...	...	...	1	...	1	...	1	...	1
Asthma	...	...	...	...	...	6	17	12	35	...	...	35	1
Pulmonary Emphysema	...	...	...	...	...	2	7	6	15	...	1	14	3
Fibroid Disease of Lung	...	...	...	...	...	...	...	1	1	...	...	1	...
Other Diseases of the Respiratory System	...	...	...	1	...	...	1	...	2	...	...	2	...
VI.—Diseases of Digestive System.													
Diseases of the Teeth and Gums	1	...	...	...	...	...	...	...	1	...	...	1	...
Diseases of the Pharynx, Tonsillitis	...	...	1	1	1	2	...	...	5	...	...	5	1
Perforating Ulcer of Stomach	...	...	...	...	3	8	13	2	26	...	9	17	16
Inflammation of Stomach	3	...	1	...	...	...	1	1	6	...	...	6	...
Other Diseases of the Stomach	8	...	2	...	2	4	7	4	27	...	1	26	3
Zymotic Diarrhœa (under 2 yrs.)	101	41	...	...	...	...	...	...	142	1	3	140	...
Enteritis (2 years and over)	...	...	16	7	2	12	11	8	56	1	11	46	21
Appendicitis	...	...	...	15	9	21	4	1	50	...	34	16	38
Hernia, Intestinal Obstruction	4	2	...	5	...	7	21	13	52	2	29	25	41
Other Diseases of the Intestines	1	...	...	...	...	1	1	1	4	...	2	2	2
Acute Yellow Atrophy of Liver	...	...	...	1	2	...	...	...	3	...	2	1	2
Hydatid of Liver	...	...	...	...	...	...	1	...	1	1	1	1	1
Cirrhosis of the Liver	...	...	...	1	...	5	24	4	34	2	5	31	13
Biliary Calculi	...	...	...	...	...	2	6	7	15	...	9	6	5
Other Diseases of the Liver	...	...	...	...	...	...	1	1	2	...	2	...	2
Peritonitis (cause unstated)	2	...	...	2	5	2	2	2	15	...	8	7	8
Other Diseases of the Digestive System	...	...	...	...	...	1	2	2	5	...	3	2	3

Table III. of the Local Government Board.—Continued.

Return of Deaths from all causes during the 53 Weeks Ended January 3rd, 1914.

CAUSE OF DEATH.	Deaths (all causes) Uncorrected.									Transferable Deaths.		Nett Deaths.	Deaths in Institutions in the
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total.	Inward.	Outward.		
VI.—Non-Venereal Diseases of Genito-Urinary System and Annexa.													
Acute Nephritis	...	2	2	4	8	36	45	24	121	...	26	95	36
Bright's Disease	...	...	1	...	1	19	29	22	72	1	5	68	19
Other Diseases of the Kidney and Annexa	...	...	...	...	1	9	1	1	12	1	5	8	8
Diseases of the Bladder	...	...	...	...	...	1	3	1	5	...	1	4	3
Diseases of the Urethra, Urinary Abscess, &c.	...	...	...	...	...	2	4	2	8	...	3	5	8
Diseases of the Prostate	...	...	...	...	...	...	2	8	10	...	2	8	8
Uterine Tumour (non-cancerous)	...	...	...	...	...	2	2	...	4	...	2	2	3
Other Diseases of the Uterus	...	...	...	...	...	1	1	...	2	...	...	2	3
Ovarian Cyst, Tumour (non-cancerous)	...	...	...	...	...	2	...	...	2	...	2	...	2
Other Diseases of the Female Genital Organs	...	1	...	...	...	2	...	...	3	...	2	1	1
VII.—The Puerperal State.													
Accidents of Pregnancy	...	...	...	...	...	5	...	...	5	...	1	4	3
Puerperal Hæmorrhage	...	...	...	...	...	6	...	...	6	...	...	6	1
Other Accidents of Childbirth	4	...	...	...	...	7	...	...	11	...	4	7	4
Puerperal Fever	...	...	...	...	2	5	...	...	7	...	6	1	3
Puerperal Albuminuria and Convulsions	...	...	...	...	2	4	...	...	6	...	2	4	4
Puerperal Phlegmasia, Alba Dolens, Embolism, and Sudden Death	...	...	...	...	2	...	...	...	2	...	1	1	1
VIII.—Diseases of Skin and Cellular Tissue.													
Senile Gangrene	...	...	...	...	...	...	1	8	9	...	1	8	4
Gangrene, other types	...	1	2	...	...	2	1	...	6	...	2	4	4
Carbuncle, Boil	...	...	...	...	...	...	...	2	2	...	...	2	2
Phlegmon, Acute Abscess	2	...	...	1	...	1	3	1	8	...	2	6	1
Diseases of the Integumentary System	3	...	...	...	...	...	1	...	4	...	...	4	2
IX.—Diseases of Bones, etc.													
Diseases of the Bones	1	1	2	3	2	...	1	1	11	...	4	7	3
Diseases of the Joints	...	...	...	...	...	...	1	...	1	...	1	...	
X.—Malformations.													
Congenital Malformations	39	5	2	1	1	...	1	...	49	...	11	38	1
XI.—Diseases of Early Infancy.													
Premature Birth	164	...	...	...	...	...	...	...	164	1	1	164	
Infantile Atrophy, Debility, and Marasmus	199	11	...	...	...	...	...	...	210	1	12	199	2

Table III. of the Local Government Board.—Continued.

Return of Deaths from all causes during the 53 Weeks Ended January 3rd, 1914.

CAUSE OF DEATH.	Deaths (all causes) Uncorrected.									Transferable Deaths.		Nett Deaths.	Deaths in Institutions in the City of "Residents" or "Non-Residents"
	Under 1 year.	1 year and under 2.	2 years and under 5.	5 years and under 15.	15 years and under 25.	25 years and under 45.	45 years and under 65.	65 years and above.	Total.	Inward.	Outward.		
I.—Diseases of Early Infancy.—(*Continued.*)													
Icterus Neonatorum, Sclerema and Œdema Neonatorum	6	...	...	...	...	...	...	...	6	...	1	5	1
Diseases of Umbilicus, &c.	2	...	...	...	...	...	...	...	2	...	...	2	...
Atelectasis	11	...	...	...	...	...	...	...	11	...	3	8	3
Injuries at Birth	10	...	...	...	...	...	...	...	10	...	...	10	...
Other Diseases peculiar to early infancy	1	...	...	...	...	...	...	...	1	...	...	1	...
II.—Old Age.	...	...	...	...	...	...	3	218	221	4	3	222	29
III.—Affections produced by External Causes.													
Suicide	...	...	...	2	1	7	10	4	24	2	4	22	3
Other Acute Poisonings	...	...	...	...	...	...	...	...	...	1	...	1	...
Burns (conflagration excepted)	1	1	5	9	1	8	...	2	27	...	18	9	25
Accidental Drowning	...	...	...	...	1	...	...	1	2	...	...	2	...
Injury by Firearms	...	...	...	...	1	1	...	...	2	...	..	2	2
Injury by Fall	...	...	1	2	1	11	10	3	28	4	10	22	15
Injury in Mines and Quarries	...	...	...	1	...	...	1	...	2	2	4	...	2
Injury by other Crushing (vehicles, railways, landslides, &c.)	...	1	1	2	2	4	4	7	21	5	10	16	11
Starvation	...	...	...	...	...	...	...	...	...	1	...	1	...
Homicide by other means	...	...	...	...	1	...	...	...	1	...	1	...	1
Other Violence	3	4	9	11	9	16	13	5	70	6	37	39	56
IV.—Ill-defined Causes.													
Atelectasis	...	1	...	...	...	...	1	2	4	...	1	3	1
Syncope (aged 1 year and under 70)	...	...	...	...	...	...	2	...	2	1	...	3	...
Sudden Death (not otherwise defined)	...	...	...	...	...	...	...	2	2	...	...	2	...
Heart Failure (aged 1 year and under 70)	...	...	...	..	...	7	10	3	20	1	3	18	3
Atrophy, Debility, Marasmus (aged 1 year and under 70)	...	7	5	...	...	2	5	...	19	...	...	19	2
Nothing	8	2	1	...	...	...	...	...	11	...	...	11	...
Other ill-defined deaths	1	...	1	...	...	1	1	...	4	...	...	4	...
Cause not specified	3	...	1	...	1	1	...	1	7	2	...	9	1
Execution	...	...	...	...	...	1	...	...	1	...	1	...	1
Total	946	298	226	223	192	683	1023	1,020	4,611	141	560	4,192	1,283
Transferable Deaths (Inward)	3	1	...	3	9	45	52	28	141				
Transferable Deaths (Outward)	41	32	27	67	50	143	162	38	560				
Nett	908	267	199	159	151	585	913	1,010	4,192				

Nett Rate 15·5.

TABLE SHOWING DISTRIBUTION OF BIRTHS AND DEATHS IN THE DIFFERENT QUARTERS OF THE YEAR.

Registration Sub-districts and City.		Births Registered in 53 Weeks ended 3rd January, 1914 (uncorrected). BIRTHS.				TOTAL	Deaths Registered in 53 Weeks 3rd January, 1914 (uncorrected). DEATHS.				TOTAL
		MALE.		FEMALE.			MALE.		FEMALE.		
		Legi-timate.	Illegi-timate.	Legi-timate.	Illegi timate.		Legi-timate.	Illegi-timate.	Legi-timate.	Illegi-timate.	
Benwell,	1st Qr.	116	4	91	13	224	52	4	43	...	99
	2nd Qr.	110	3	102	3	218	39	1	34	2	76
	3rd Qr.	105	4	117	3	229	34	...	35	...	69
	4th Qr.	97	3	108	5	213	44	...	30	...	74
Total...	...	428	14	418	24	884	169	5	142	2	318
Elswick,	1st Qr.	171	15	165	7	358	186	4	129	2	321
	2nd Qr.	159	18	175	17	369	140	4	136	2	282
	3rd Qr.	169	12	156	6	343	119	5	103	3	230
	4th Qr.	174	15	162	12	363	157	2	120	3	282
Total...	...	673	60	658	42	1,433	602	15	488	10	1,115
St. Nicholas,	1st Qr.	93	3	111	7	214	64	...	60	1	125
	2nd Qr.	124	3	108	4	239	41	1	44	...	86
	3rd Qr.	94	5	103	2	204	63	1	44	1	109
	4th Qr.	121	4	86	9	220	63	1	47	1	112
Total...	...	432	15	408	22	877	231	3	195	3	432
St. Andrew's,	1st Qr.	84	3	87	4	178	184	...	143	...	327
	2nd Qr.	85	5	97	3	190	152	1	110	...	263
	3rd Qr.	84	4	88	3	179	172	1	105	2	280
	4th Qr.	103	1	85	4	193	183	3	125	...	311
Total...	...	356	13	357	14	740	691	5	483	2	1,181
All Saints,	1st Qr.	111	5	120	9	245	57	2	56	3	118
	2nd Qr.	111	3	107	3	224	38	1	44	...	83
	3rd Qr.	103	4	111	5	223	34	3	38	2	77
	4th Qr.	104	4	104	8	220	34	3	42	2	81
Total...	...	429	16	442	25	912	163	9	180	7	359
Byker,	1st Qr.	250	6	247	8	511	136	2	139	4	281
	2nd Qr.	284	3	253	10	550	103	5	80	1	189
	3rd Qr.	268	10	261	8	547	84	2	88	1	175
	4th Qr.	236	11	245	11	503	117	1	122	2	242
Total...	...	1,038	30	1,006	37	2,111	440	10	429	8	887
Walker,	1st Qr.	60	1	62	2	125	54	1	56	...	111
	2nd Qr.	76	...	60	1	137	37	...	30	...	67
	3rd Qr.	68	2	63	4	137	33	...	28	...	61
	4th Qr.	61	1	60	2	124	40	...	40	...	80
Total...	...	265	4	245	9	523	164	1	154	...	319
City.	1st Qr.	885	37	883	50	1,855	733	13	626	10	1,382
	2nd Qr.	949	35	902	41	1,927	550	13	478	5	1,046
	3rd Qr.	891	41	899	31	1,862	539	12	441	9	1,001
	4th Qr.	896	39	850	51	1,836	638	10	526	8	1,182
Total...	...	3,621	152	3,534	173	7,480	2,460	48	2,071	32	4,611

The Births represent a rate of 27·6, and the Deaths a rate of 17·0 per 1,000 estimated population.
The increase of Births over Deaths is 2,869 this year, as compared with 2,998 in 1912.

II.—THE CHILD.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS, 1913.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year	3,621	3,534	7,155	152	173	325	7,480
Nett „ „	3,610	3,523	7,133	154	173	327	7,460

DISTRIBUTION OF DEATHS.

REGISTRATION SUB-DISTRICTS.	Deaths of Children under 1 year of age.		Rates per 1,000 of Deaths under 1 year to Births registered.	
	1912.	1913.	1912.	1913.
Benwell	71	93	88	105
Elswick	135	162	95	113
St. Nicholas'	106	119	123	136
St. Andrew's	84	114	124	154
All Saints'	90	120	102	132
Byker	182	239	91	113
Walker	59	61	107	117
City	727	908	101	122

WARDS.	Deaths (uncorrected) of Children under 1 year of age in 1913.					Children under 1 year of age— Death rate per 1,000 population.
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.	
St. Nicholas' ...	...	1	5	1	7	2·0
†St. Thomas	19	16	22	24	81	5·7
St. John's	16	5	19	22	62	4·0
Stephenson	11	13	15	12	51	2·7
Armstrong	8	12	18	14	52	3·3
Elswick	10	10	10	10	40	3·2
Westgate	22	14	16	6	58	3·8
*Arthur's Hill ...	11	8	2	3	24	2·1
Benwell	20	17	15	13	65	3·7
Fenham	10	10	5	4	29	2·6
All Saints'	30	16	21	20	87	4·9
St. Andrew's... ...	15	12	17	15	59	4·7
Jesmond	9	2	...	3	14	1·3
Dene	6	3	3	2	14	1·2
Heaton	3	6	7	5	21	1·4
Byker	27	22	10	16	75	4·3
St. Lawrence ...	25	16	16	29	86	4·8
St. Anthony's ...	21	15	9	21	66	4·2
‡Walker	23	15	8	9	55	3·4
City...	286	213	218	229	946	3·8

†Includes Royal Victoria Infirmary and Fleming Memorial Hospital.
* Includes Union Workhouse. ‡ Includes City Hospital for Infectious Diseases.

The ward distribution of Births being at present unobtainable, it has not been found possible to give the infantile mortality rates for the different wards in the present report.

SUMMARY OF MORTALITY, 1901-1913.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Death-rate of Infants *under 1 year* per 1,000 births ...	177	139	166	155	138	153	126	139	122	123	137	101	122
Death-rate of Infants *under 3 months* per 1,000 births ...	83·8	74·8	84·9	82·6	71·6	75·6	68·6	76·6	64·8	66·9	71·5	60·3	67·7
Death-rate of Infants from *Premature Birth*, per 1,000 births	20·1	20·7	25·1	20·9	19·7	22·0	21·2	24·8	19·8	18·8	21·7	19·3	22·0
Death-rate of Infants *under 1 year* per 1,000 births, from *Premature Birth* plus all *Congenital Causes** ...	40·8	51·7	62·1	60·6	52·1	61·5	43·0	44·6	42·3	42·6	43·9	48·0	57·4
Death-rate of Infants *under 1 year* per 1,000 births, from *Diarrhœa and all other Digestive Diseases*† ...	45·7	12·8	26·9	21·8	22·4	35·2	12·7	24·8	13·5	16·7	25·1	7·8	16·6

Prior to 1911, figures uncorrected for cases belonging to other districts.

* "*All Congenital Causes*" includes Syphilis, Debility at Birth, Injury at Birth, Atelectasis, Malformation of Heart, Spina Bifida, Hydrocephalus, Imperforate Anus, Cleft Palate, Hare-Lip, other Congenital Defects, and other and undefined Accidents of Childbirth.

† "*Diarrhœa and all other Digestive Diseases*" includes Diarrhœa, Dysentery, Epidemic or Zymotic Enteritis, Thrush, Starvation, Want of Breast Milk, Rickets, Sore Throat, Quinsy, Diseases of Stomach, Enteritis, Cirrhosis of Liver, Obstruction of Intestine, Peritonitis, and other Diseases of Digestive System.

For particulars of deaths, as to causes, etc., see pages 45 and 46.

DEATHS OF CHILDREN UNDER SCHOOL AGE.

The mortality rate among children aged 1 to 5 years in 1913 per 1,000 births in the years 1909 to 1912 (inclusive) was 15·9.

TABLE IV. OF THE LOCAL GOVERNMENT BOARD.

RETURN OF DEATHS UNDER ONE YEAR OF AGE
DURING THE 53 WEEKS ENDED 3RD JANUARY, 1914.

CAUSE OF DEATH.	Age Periods.										Transferable Deaths.			Deaths in Institutions in the City of "Residents" or "Non-Residents."
	Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—3 Months.	3—6 Months.	6—9 Months.	9—12 Months.	Total under 1 year of age.	Inward.	Outward.	Nett Deaths under 1 year of age.	
I.—General Diseases.														
Measles	...	...	...	...	...	...	2	5	10	17	...	...	17	2
Whooping Cough	...	...	...	3	3	6	8	10	14	41	...	...	41	...
Diphtheria	...	...	...	1	1	...	...	1	1	3	...	1	2	2
Influenza	...	...	1	...	1	...	...	1	...	2	...	...	2	1
Erysipelas	...	...	...	1	1	...	...	1	...	2	...	...	2	1
Pulmonary Tuberculosis (not acute)...	...	...	...	...	...	...	...	...	1	1	...	...	1	...
Tuberculous Meningitis	...	...	...	...	...	2	3	4	6	15	...	...	15	5
Tuberculosis of Peritoneum and Intestines	...	...	...	1	1	1	7	3	2	14	...	1	13	...
Tuberculosis of Joints	...	...	...	...	...	...	...	1	...	1	...	1	...	1
TOTAL TUBERCULOSIS ...	...	...	...	1	1	3	10	8	9	31	...	2	29	6
Rickets, Softening of Bones ...	...	...	...	...	...	1	1	2	...	4	...	..	4	1
Syphilis	1	...	..	...	1	2	4	3	2	12	...	...	12	6
Cancer of the Peritoneum, Intestines, and Rectum	...	...	...	...	...	...	...	...	1	1	...	...	1	1
Leucocythæmia, Lymphadenoma ...	...	...	...	...	...	...	...	1	...	1	...	...	1	...
Other general diseases	1	...	...	...	1	...	...	...	...	1	...	...	1	...
II.—Diseases of Nervous System and Organs of Special Sense.														
Meningitis, other forms or undefined	...	...	2	...	2	3	3	4	8	20	...	1	19	3
Other Diseases of the Spinal Cord ...	...	...	...	...	...	...	...	...	1	1	...	...	1	...
Infantile Convulsions	18	3	6	3	30	14	5	3	4	56	...	2	54	3
Diseases of the Eyes and Annexa ...	...	...	...	...	...	...	...	1	...	1	...	1	...	1
Other Diseases of the Ears... ...	...	...	...	...	...	...	1	...	...	1	...	...	1	...
III.—Diseases of Circulatory System.														
Other Diseases of the Lymphatic System	...	...	...	...	...	1	...	...	...	1	...	...	1	...
IV.—Disease of Respiratory System.														
Diseases of the Larynx	...	...	...	...	...	...	1	...	...	1	...	...	1	...
Bronchitis	2	2	3	4	11	16	14	13	10	64	...	...	64	3
Broncho-pneumonia	...	...	5	...	5	13	14	18	25	75	...	2	73	9
Lobar Pneumonia	...	...	...	...	...	2	...	1	4	7	...	1	6	...
Pneumonia (type not stated) ...	...	...	1	3	4	1	5	7	8	25	...	2	23	4
Pleurisy	...	...	...	...	...	1	...	...	...	1	...	1	...	...
V.—Diseases of Digestive System.														
Diseases of the Teeth and Gums ...	...	...	1	...	1	...	...	...	...	1	...	...	1	...
Inflammation of Stomach	...	...	...	...	...	...	1	2	...	3	...	...	3	...
Carried forward ...	22	5	19	16	62	63	69	81	97	372	...	13	359	43

TABLE IV. OF THE LOCAL GOVERNMENT BOARD—*Continued.*

RETURN OF DEATHS UNDER ONE YEAR OF AGE
DURING THE 53 WEEKS ENDED 3RD JANUARY, 1914.

CAUSE OF DEATH.	Age Periods.										Transferable Deaths.			Deaths in Institutions in the City "of Residents" or "Non-Residents."
	Under 1 Week.	1—2 Weeks.	2—3 Weeks.	3—4 Weeks.	Total under 1 Month.	1—3 Months.	3—6 Months.	6—9 Months.	9—12 Months.	Total under 1 year of age.	Inward.	Outward.	Nett Deaths under 1 year of age.	
Brought forward ...	22	5	19	16	62	63	69	81	97	372	...	13	359	43
V.—Diseases of Digestive System—*(Continued).*														
Other Diseases of the Stomach ...	2	...	...	...	2	...	3	2	1	8	...	...	8	...
Diarrhœa...	...	2	2	3	7	15	35	24	20	101	1	1	101	2
Hernia, Intestinal Obstruction ...	1	...	...	...	1	...	3	...	...	4	...	1	3	3
Other Diseases of the Intestines ...	...	1	...	...	1	...	...	...	...	1	...	...	1	...
Peritonitis (cause unstated) ...	...	...	...	...	...	1	...	1	...	2	...	1	1	1
VI.—The Puerperal State.														
Other Accidents of Childbirth ...	4	...	...	..	4	...	...	...	...	4	...	1	3	1
VII.—Diseases of Skin and Cellular Tissue.														
Phlegmon, Acute Abscess	...	...	...	1	1	...	...	1	...	2	...	1	1	1
Diseases of the Integumentary System	...	...	...	...	...	1	...	1	1	3	...	...	3	...
VIII.—Disease of Bones, etc.														
Diseases of the Bones	...	...	...	...	...	...	...	1	...	1	...	1	...	1
IX.—Malformations.														
Congenital Malformations	15	4	3	2	24	6	2	3	4	39	...	7	32	7
X.—Diseases of Early Infancy.														
Premature Birth	116	14	14	7	151	8	...	3	2	164	1	1	164	1
Infantile Atrophy, Debility, and Marasmus	44	12	20	9	85	41	30	25	18	199	1	9	191	14
Icterus Neonatorum, Sclerema and Œdema Neonatorum	3	1	...	1	5	...	1	...	...	6	...	1	5	1
Diseases of Umbilicus, etc. ...	1	...	1	..	2	...	...	...	...	2	...	...	2	1
Atelectasis	7	1	...	...	8	1	2	...	...	11	...	3	8	1
Injuries at Birth	8	...	...	...	8	...	...	1	1	10	...	...	10	...
Other Diseases peculiar to early infancy	1	...	...	...	1	...	...	...	...	1	...	...	1	...
XI.—Affections produced by External Causes.														
Burns (conflagration excepted) ...	...	...	...	...	...	...	...	1	...	1	...	1	...	1
Other Violence	1	...	...	1	2	1	...	...	...	3	...	...	3	...
XII.—Ill-Defined Causes.														
Teething	...	...	...	...	...	...	2	5	1	8	...	...	8	...
Other Ill-defined Deaths	1	...	...	...	1	...	...	...	...	1	...	...	1	...
Cause not Specified	...	...	1	...	1	2	...	...	...	3	...	...	3	...
TOTAL	226	40	60	40	366	139	147	149	145	946	3	41	908	78

The Report of the Superintendent of Midwives *is as follows:—*

To the Medical Officer of Health.

Sir,

Herewith I beg to submit my Report for the year 1913.

MIDWIVES ACT, 1902.

Midwives Roll.—41 Midwives notified the Local Supervising Authority of their intention to practise. Of these, 15 work entirely as monthly nurses, and 19 act as midwives and also as monthly nurses. One has died during the year, four do not practise on account of old age, and two have left the city to take up district work in the country.

A large proportion of the midwifery work in the city is performed by the Maternity Hospital.

The number of midwives actually practising shows a decrease of four on 1912, and is inadequate to meet the increased work consequent upon the operation of the National Insurance Act. This shortage of midwives is to be regretted, as in addition to the value of their special services, the training they receive and their influence in the homes of the people enables them to render great assistance to the Health Department staff in their efforts towards the improvement of the general health of the city, and especially in the reduction of infantile mortality.

Inspection.—108 visits were paid to the midwives at their homes, to inspect the hygienic condition of their dwellings, to see that their bags of appliances were complete and in compliance with the rules of the Central Midwives Board, that their chart books were filled in daily, recording the temperature and pulse of each patient, and that their registers were filled up correctly.

The number of visits paid varies from two or three to the more competent women, to seven or eight to those who require more supervision. It is satisfactory to record that the necessity for these visits becomes less and less each year, the midwives being anxious to improve themselves and attending lectures regularly, and it is found that those who do not attend the weekly meetings are the ones who need most supervision as regards their equipment and home conditions.

The midwives are encouraged to regard their work as a valuable corollary to that of the Health Department, and to extend their interest in their cases as much as possible. They receive systematic instruction in home hygiene and in the modern methods for the prevention of infantile mortality, and their influence is seen in the improved habits of their patients.

Many mothers engage the midwife some time before the confinement, thus giving an opportunity for the investigation of prenatal conditions, and for instruction in the care of the patient herself and in the welfare of the infant, special stress being laid upon the importance of breast feeding. Efficient preparations can thus be made, with the greatest advantage to both mother and child.

Births attended by Midwives.—2,120 live births and 30 still births were attended during the year, being an increase in the former of 337 over last year, and of 6 in the latter.

Puerperal Septicæmia.—2 cases occurred during the year in the practice of two midwives.

Lectures to Midwives.—32 lectures were delivered by the Superintendent of Midwives, and were well attended. In addition to these, there were 6 addresses by medical men and others in connection with the Northumberland and Durham Midwives' Association, of which the Superintendent is honorary secretary, and these also were well attended by the Newcastle midwives.

Notices to Local Supervisory Authority from Midwives who had sent for medical help, 197. Details are as follows :—

Prematurity (3 cases of twins)	44	Contracted Pelvis	4
Immaturity (1 case of twins)	18	Abnormal Presentations	18
Infantile Convulsions	4	Icterus Neonatorum	3
Ophthalmia Neonatorum	7	Mothers' illness	3
Secondary Post-partum Hæmorrhage	1	Septicæmia	2
Ante-partum Hæmorrage	4	Uterine Inertia	33
Adherent Placenta	7	Ruptured perinæum	5
Placenta Prævia	3	Congenital Deformity	10
Rise of temperature	16	Blue Baby	4
Abortion	1	Skin Eruption	5
Tenderness of Breast	2	Offensive Lochia	3
Eclampsia	2		197

Expectant Mothers.—131 were visited, and 18 attended the classes held every week at the Byker and Scotswood Schools for Mothers, and received instruction and advice.

There are now five of these schools in the city, situated in populous districts, and every effort is made to induce mothers, especially expectant mothers, to attend. It is found that once the mothers realise the objects of the schools they take a keen and intelligent interest in the work, and thereby benefit not only themselves, but also their neighbours and friends, to whom they are in fact health missionaries.

At the Health Week Exhibition in April, the Schools for Mothers, in co-operation with the Health Department, organised a most successful Baby-land exhibit which included exerything necessary for the well-being of the child, and in which great interest was taken by the numerous women visiting the exhibition.

In November a Mothercraft Competition was held by the Schools for Mothers. In this over 60 mothers from various parts of the city competed. The examinations to which they were subjected were very thorough, and the excellent results indicated the benefit the mothers obtain from the instructions

at the schools. Uniformity of teaching is the first essential to the success of such schools, and the organisation of classes and syllabuses being largely superintended by members of the Health Department staff goes far to insure this in Newcastle.

During the year under report there was only one Health Visitor on duty in the Health Department, and it was only possible to carry out the necessary teaching and home visiting through the splendid and valuable assistance rendered by the nurses and voluntary workers of the Mothers' and Babies' Welcome Society.

Leaflets ("Advice to Mothers.")—10,000 of these, together with large numbers on "Diarrhœa" and "Measles," were distributed during the year by the Health Department officers, voluntary workers, midwives, and in the schools for mothers, mothers' meetings, and the maternity wards of the Union Infirmary.

Interviews.—350 interviews have been held with Midwives and mothers in the office of the Superintendent of Midwives.

Baby Weighing.—1,389 babies have been weighed in the office, at the various Mothers' Meetings, and at the Mothers' Welcomes. Full advantage has been taken of the opportunities these weighings afford for the giving of practical advice to the mothers and nurses in attendance.

Health Talks to Mothers.—160 addresses have been given by the Superintendent of Midwives to Mothers' Meetings, Girls' Clubs, etc., and every effort is made to extend these as far as possible, both in number and scope.

NOTIFICATION OF BIRTHS ACT, 1907.

Notifications Received.—4,410 notifications of births have been received, out of a total of 7,191 registered. Particulars of those not notified were obtained from the registrars of the sub-districts at a later date, and consisted almost entirely of better-class cases under the care of private medical practitioners.

The following table shows from whom the notifications have been received :—

Notified by	Living Births.	Still Births.
Medical Practitioners...	1,538	75
Maternity Hospital	677	46
Union Infirmary	62	2
Midwives	2,120	30
Parents	13	—
Totals	4,410	153

Of the total notifications received under the Act, **still births** have been in the following proportions :—1909, 4·1 per cent. ; 1910, 3·9 per cent. ; 1911, 4·1 per cent. ; 1912, 3·2 per cent. ; and 1913, 3·4 per cent.

Work of Health Visitor—Births Visited.—Of the births notified, 2,182 cases in the poorer parts of the City were visited as soon after birth as possible, and 750 were assigned to the Health Visitor for regular visitation until the infants attain the age of 12 months. During the shortage of staff great assistance was rendered by the workers of the Schools for Mothers, the total number of visits paid by the Superintendent of Midwives, the Health Visitor, and the voluntary workers being 6,713. All cases of neglect, cruelty, privation or sickness were referred to the appropriate organisation, and insanitary conditions in the homes, and cases of non-notifiable infectious disease, brought to the notice of the Medical Officer of Health.

Of the 750 births assigned to the Health Visitor for regular visitation, 53 were lost sight of through change of address and could not be traced. Of the remaining 697, 74 died, equivalent to a rate of *106* deaths per 1,000 births, as compared with an infantile mortality rate for the City as a whole of *122* deaths per 1,000 births.

The influence of even such partial supervision as can be attained with only one visit each three months, is well brought out by the above figures, especially when it is remembered that the cases are drawn from the poorest and

most ignorant class, and from houses, the surroundings and general circumstances of which render the chances of survival extremely precarious.

Influence of Housing Accommodation.—Of 697 births under observation by the Health Department, 241 occurred in single-room holdings, and of these 40 died, a mortality rate of 166 per 1,000 births; of 348 births in two-room holdings 28 died, a mortality rate of 80; of 91 births in three-room holdings 3 died, a mortality rate of 33; and of 17 births in holdings of more than three rooms, 3 died. The last-quoted numbers refer only, however, to a small proportion of exceptionally insanitary or unhealthy households, and are not at all typical of such cases in general.

These figures are in general accord with previous experience, and indicate in striking fashion how great a factor in the production of a high infant death rate is the single-room tenement, with its devitalising conditions, and this in spite of the fact that the only houses of three or more rooms included in the visiting lists are those whose domestic and sanitary circumstances are known to be specially unfavourable to the infants.

159 infants were found to be living under conditions of overcrowding, and of these 20 died, equivalent to a mortality rate of 125 deaths per 1,000 births, which is considerably higher than the average for the whole of the cases visited.

Parental Employment.—Only a small proportion of mothers are at work; the figures available do not point to the maternal employment exercising any particular influence upon the health of the infant.

Feeding.—87 per cent. of the babies under observation were entirely breast fed (as compared with 78 per cent. in 1912), while 4 per cent. received artificial (in addition to breast) feeding before the age of 9 months, and 9 per cent. were entirely artificially fed. The death rate among those entirely breast fed reached the low figure of 84 per 1,000 births.

Illegitimacy.—The infantile mortality rate for legitimate children was 98 per 1,000, whereas that of the illegitimate babies was 391 per 1,000 births.

Sex.—The mortality rate among male infants was 124, and that among females 86, per 1,000 births.

It is to be noted that all the particulars given above are only in respect of infants visited by the officers of the Health Department, and do not refer to any others than those entered in their books for supervision.

I am, Sir,

Your obedient Servant,

ELIA RENAUD,
Superintendent of Midwives.

Health Department,
Town Hall,
June, 1914.

HOUSING AND THE INFANT DEATH RATE.

During the six years 1908-1913 there have been 45,375 births, and 5,645 deaths of infants under one year, giving an average annual infantile mortality rate of 124 deaths per 1,000 births. Of these, 7,030 infants were under the observation of the Health Visitors throughout their first year of life. Although these included the very poorest and most unfavourably circumstanced of all, only 776 died, which is equivalent to a rate of 110 deaths per 1,000 births.

Of the births notified, only a relatively small proportion of those lodged in more than two rooms were included in the visiting lists, and as these were the worst circumstanced of their class, the figures in the subjoined table cannot be regarded as representative, in so far as they refer to houses of three or more than three rooms.

The following is an analysis of the housing of the above 7,030 children, with the death rate for each class :—

Year.	Living in							
	1 Room.		2 Rooms.		3 Rooms.		More than 3 Rooms.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1908	247	32	515	57	312	32	13	2
1909	339	53	694	86	168	32	29	3
1910	536	62	723	68	51	4	7	2
1911	462	68	794	79	77	6	20	1
1912	465	48	746	60	110	6	25	1
1913	241	40	348	28	91	3	17	3
6 Years ...	2,290	303	3,820	378	809	83	111	12
Death rate per 1,000 births visited. (6 Years).	132		99		103		108	

USE OF ABORTIFACIENTS.

An inquest upon a case of death from **Diachylon,** in a neighbouring town, suggested the advisability of inquiring into the use of that preparation in this City for abortifacient purposes. Accordingly a circular letter, containing the following questions, was first addressed to the medical men practising in the City :—

1.—Have any instances come to your notice where there was reason to suspect that Diachylon had been taken for the purpose of bringing on abortion, and if so, how many ?

2.—Amongst what class of women does the practice exist ?

3.—Is the use of Diachylon as above on the increase ?

4.—Do you find that abortions occur more frequently now than formerly ?

5.—Is it your experience that illegitimate babies, and first children born less than nine months after marriage of the parents, are frequently weakly or have a higher mortality than other infants, suggesting the use of harmful drugs by the mothers during pregnancy ?

6.—In your opinion, would the scheduling of Diachylon as a poison interfere in any way with its legitimate use for medicinal purposes ?

Of the general practitioners 76 replied. 46 stated that they had no knowledge of the practice, while 30 were well aware of it. Of these latter—

2 stated that they had had over 30 cases each,
6 had had "many" cases,
6 had had "several" cases,
2, "half-a-dozen" cases each,
1, "a few cases,"
3, "two or three cases per annum,"
1, four cases,
1, three cases,
4, two cases each, and
4 had had one case each.

The replies to question 2 varied somewhat. The majority of those who had had cases alleged prevalence among working class and artisan class, married women, unmarried women, and even among middle class married women, and, generally, married women with large families and small incomes, but not among the poorest or most ignorant.

To the third question the answer was for the most part in the affirmative. To the fourth and fifth it was doubtful. One or two replies to number 5 were strongly in the affirmative.

Every reply, of the entire 76, was emphatically to the effect that diachylon should be scheduled as a poison, and that if this were done it would in no way interfere with its legitimate use for medicinal purposes. A considerable proportion of the replies questioned whether its sale might not be forbidden altogether, without any loss to medicine.

One practitioner had to cope with half-a-dozen cases of diachylon poisoning happening almost coincidently in one street, and within a stone's throw of each other. This led to the interesting statement by two other practitioners (since borne out by a neighbouring Medical Officer of Health, and doctors in his district) that there are certain streets the women in which habitually dose themselves with diachylon pills immediately prior to the expected onset of each menstruation, as a "corrective" of possible irregularities.

At a meeting of the local Midwives' Association, each individual present was questioned, and all were well aware of the prevalence of the practice, nearly every one having had personal experience of cases. To report instances, however, would create such difficulties for them that it was only on the

assurance that no steps would be taken in regard to the women concerned that the midwives would give any particulars.

The druggists were then approached and much more precise information was forthcoming from them. All were well aware of the use to which diachylon was put. They were unanimous that it is practically never used or ordered by medical men in the city. The members of the local Panel Chemists' Association, which included all but three of the druggists in the city, after discussion of the subject in a full meeting, voluntarily undertook not to stock the stick diachylon, although this does not apply to the spread plasters. Various members admitted quite frankly that their weekly sale of the stuff amounted to pounds weight, and while quite cognisant of the purpose to which it was put, they had believed themselves to be under a legal obligation to supply whatever pharmaceutical commodity was demanded.

In this district the usual practice is to purchase a half-ounce stick of diachylon (price 1d.) and ½-ounce of cape aloes (price 1d.). These are melted down, mixed together, and made into pills. The knowledge of the drug is widespread, and not by any means confined to occasional old women, as formerly, even although it is not at all a successful or reliable abortifacient, and is very liable to cause serious and lasting injury to its consumer.

By certain devious methods a small supply of the pills was obtained, and submitted to the public analyst, who reported that they consisted of diachylon to a proportion of 50 per cent.; in other words the pills contained 14·5 per cent. of lead oxide, equivalent to slightly over a third of a grain in each pill, which, owing to the cumulative action of lead, may easily amount to a considerable dose if many pills are taken.

This particular sample was part of a stock supplied by a

"skilly" woman to the wife of a mechanic. There were originally 96 pills (containing a gross amount of 33·52 grains of lead oxide) in the consignment, *all* of which were to be (and commonly are) consumed within a few days, and if nothing happened, another eight dozen was to be taken in the same way.

It is to be hoped sincerely that the Home Office will see their way shortly to add to the poison schedule not only diachylon, but all the pharmaceutical preparations of lead.

LEAFLET DISTRIBUTED BY HEALTH VISITORS.

The "Advice to Mothers and Women about to become Mothers" is in three parts, I.—The Mother, II.—The Child, III.—Weaning, as follows:

PART I.—THE MOTHER.

The health of the woman during the time of child-bearing and nursing is of very great importance to the nation. A woman who is to become a mother should look well after her own health and do all in her power to give health and strength to her child.

Birth is not the beginning of life.

Every child born living has been alive for some months before birth, therefore it is necessary to consider the well-being of a child before it is actually born. It is the *beginning* of life that is most important. The period of nine months before birth and the first year after it are most important for the health and strength of the human being during the whole of its life.

The first thing to be considered is

Occupation during the time of pregnancy.

A woman should then work with moderation, avoiding over-work and such hard work as paperhanging, whitewashing, lifting and carrying heavy weights, and climbing stairs. She should avoid the poss-tub and laundry, factory, and brickyard work, and keep away from crowds, theatres, and funeral gatherings. She must not stand for longer at a time than she can help, and should always sit down and rest whenever she has the opportunity.

Great attention must be paid to *cleanliness* as regards the food, habits, person, and clothing; and to the purity and freshness of the air breathed.

In improving the woman's own health she improves the conditions for her unborn baby. Wholesome, plain, nourishing food must be eaten. A vegetable and fruit diet is more beneficial during pregnancy than a meat diet, and some variety is necessary. All stimulants and spices should be avoided, and very little tea drunk. Powerful opening medicines are harmful; costiveness can be prevented by a suitable diet such as brown bread, porridge and new milk, stewed vegetables and fruit,—prunes, figs, &c.—and fat food, together with sufficient exercise. Above all a regular habit should be cultivated. She should go early to bed; and keep the windows open day and

night, for she has to supply *a double amount of fresh air* to her lungs.

A short walk in the open air should be taken every day. Comfortable shoes with low heels should be worn. Tight garments must be avoided; neither stays nor garters should be worn. A shaped abdominal belt made of flannel or drill, according to the season, is a great comfort; it acts as a support to the abdomen and keeps the back warm. The stays cause harmful pressure on the heart, on the stomach, and on the breast and nipples; they are often the cause of flat nipples, fainting fits after meals, shortness of breath when walking and going upstairs, varicose veins and constipation. The skirt and petticoats should be made to button on to a bodice so as to hang from the shoulders; this arrangement is very comfortable, for with it there is no weight or pressure round the waist.

An expectant mother requires more rest during the last two months of pregnancy than before. This is a most important time in the development of the infant, for during that period it should increase in weight from $3\frac{1}{2}$ to $7\frac{1}{2}$ lbs.

During the whole time of pregnancy, at the ordinary monthly period the woman should rest, and be careful not to take any strong opening medicine. By so doing she will often prevent a miscarriage or a premature birth.

From the seventh month to the end of pregnancy, the nipples should be hardened, in preparation for suckling, by washing them daily with spirit and water, or with strong warm tea, which has been well stewed. If the nipples are short, some olive oil should be applied as well, and they should be gently drawn with the fingers every day.

A woman who has taken care of her health ought to be able to feed the baby entirely on the breast for the period of 9 months.

The child should be put to the breast as soon as possible after birth. Regular suckling of the baby causes the flow of milk to increase more and more. No woman can say that she has no milk unless she has persevered with this for three months.

If the breast is not regularly emptied, the flow of milk decreases; the child should be put to both breasts for equal periods at each meal. Care of the breasts must not be neglected throughout the period of suckling.

After confinement, rest is an important consideration. During the first three months after confinement, the woman should never over-work nor tire herself, as this lowers her health and has an injurious effect on her milk, and then the baby suffers. Stays must not be worn, as they press on the breasts, and also cause indigestion and shortness of breath. The mother must take her food regularly; drink as much milk as possible, and use chiefly such plain and easily digested articles as oatmeal and barley water, porridge, soup, stewed vegetables, and fruit. Moderate exercise and fresh air are very necessary.

EXCESSIVE TEA DRINKING.

Nursing-mothers and women who are expecting to be confined should drink tea in as small a quantity and as seldom as possible.

Not more than two cups should be taken in any one day, and even then as weak as possible, and freshly infused. Tea, when taken strong, or in any considerable amount, has a specially harmful effect upon women with babies at the breast. It upsets the digestion, causes costiveness, poorness of the blood and nervous weakness, and lessens and weakens the mother's milk. Tea drinking is a frequent cause of mothers being unable to nurse their babies through "failure of their milk." Its effects are as harmful as those of alcohol, which should not be taken at all during the pregnant and nursing periods, even in the form of beer, stout, or wine.

ASSISTANCE IN THE CONFINEMENT.

Expectant mothers are warned against calling in any but medical assistance or that of a registered midwife in their confinements, as a very grave risk is incurred if dependence be placed upon the unskilled services of a neighbour or untrained and ignorant handywoman. The doctor or midwife should be engaged three months before the confinement is expected to take place.

NOTIFICATION OF BIRTHS.

Parents are reminded that notice of every birth, whether of a living or of a dead child, must be sent to the Medical Officer of Health, at the Town Hall, within thirty-six hours of its occurrence. This is in addition to the usual registration with the Registrar of Births and Deaths.

PART II.—THE CHILD.

Clothing.—The baby should be kept warm, but not overloaded with clothes. The garments must be of flannel, preferably white, warm and light, and loose-fitting. The sleeves must be long. The binder should be of flannel, ¾-yard long and 5 to 6 inches wide, and neither hemmed nor bound. In putting it on, it should be firm below, and loose in its upper part, so that it does not press on the chest and interfere with the child's breathing, or with its digestion. If drawn tightly over the breasts it is liable to cause abscess. The binder should be fastened by stitches. A binder should be worn throughout the winter. A knitted belt will do instead of a binder, and is exceedingly comfortable. Stays are unnecessary for an infant; a woollen vest, with sleeves, is all that is required.

Rest.—The baby must never be put to sleep in its mother's bed, but be laid in a separate little cot or cradle of its own. During the lying-in period a basket can be used, placed on the bed. This is both more comfortable for mother and child, and very much safer for the baby on account of the very serious risk it runs in the mother's bed of being suffocated by overlying, or by the weight of the heavier bedclothes. In the separate cot the baby has more room to itself, more air, and lighter bedclothes. The bedclothes being small are easily washed and changed. Heavy coverings weaken the child. The cot can be easily warmed by means of a bottle of hot water placed in it, but so that it will not touch the child. With this, a small square of blanket or a baby's shawl is sufficient covering. The baby's head and face should never be covered indoors. The cot should not be made to rock, as rocking is injurious.

Bathing.—The baby's bath should be given every day at a regular hour. The baby ought not to be fed for at least an hour before the bath, or its digestion will be interfered with, but should be put to the breast immediately after. The baby should

be washed quickly in warm—not hot—water, and in front of the fire in winter time. The mother should have a square of flannel or blanket on her knee, for the baby's comfort while being dried. The baby's mouth and nose should be cleaned every morning with clean water and a piece of clean soft linen. Borax and honey is unnecessary. Strict attention must be paid to baby's eyes, and if any gummy-looking material appears on the lids, the doctor should be got to see them. Neglect of the eyes very frequently results in blindness. The baby should be dressed as soon as dry, and not left when partly clothed. When dressed it should be put to the breast, and then laid to sleep.

Feeding.—It is of the very greatest importance that the baby should receive the best possible food, that which will nourish it most, which will suit its digestion, and which runs least risk of contamination and adulteration. There is no food for a young infant to compare with that specially prepared by nature, the mother's milk. Provided the mother is reasonably healthy, looks after herself properly, and feeds the child *at regular intervals*, there is no reason why, in most cases, the mother's milk should not amply suffice for the nourishment of her baby. It is wrong to feed a child whenever it cries, as overfeeding and indigestion often result. Never under any circumstances whatever should a baby be given a dummy teat to suck. This is most harmful, and one of the commonest causes of indigestion, wind, and diarrhœa. The baby should be put to the breast as soon as possible after it is born. It should be fed every two hours during the day, and twice in the night, during its first month; once every 2½ hours during the day, and once in the night, during the second month; once every three hours during the day, and once during the night, till three months old. After that the feeds during the day need not be quite so frequent, and the baby should not be fed at all between 10 p.m. and 4 or 5 a.m. The baby should be made to feed slowly, taking 15 to 20 minutes for each meal. The stomach requires rest at night. The weight of the child and the appearance of its motions are an indication of its progress.

The baby should be weaned when it is about nine months old but not in July, August, or September, on account of the great risk of diarrhœa during this period. *(See* Weaning *page 67.)* *Weaning* means the change from mother's milk to cow's milk entirely, and this change should be effected gradually. If the child for some reason does not thrive, or loses weight when fed entirely on the breast,

mixed feeding should be tried, *i.e.*, alternately on the breast and on cow's milk. The cow's milk must be good and fresh, and none should be used that has been kept overnight. If the child is weakly during its first month, equal parts of boiled milk and boiled water should be given; in the third month three parts of milk to one of water, and after that the pure boiled milk alone. The milk is only to be watered during the first three months if the child is weak. A baby's stomach is very small, and it must not be overloaded with food. A child born before its full time requires its food in smaller quantities at a time, but more frequently than a healthy child; and the same applies to a weak child. A baby not fed on the breast should have at each feed not more than

2 to 4	tablespoonfuls	during the	first month
5 „ 7	„	„	second „
7 „ 9	„	„	third „
9 „ 12	„	up to six	months
12 „ 18	„	„	twelve „

at four hours' interval. With artificial feeding there should be a larger interval between the feeds. A small child has a smaller capacity than a well-grown one. A small amount of food of good quality is preferable to a larger quantity of poor nourishing value. But no artificial food is nearly so good as the mother's milk.

Bottle.—The kind of bottle which has a long tube should never be used. It is impossible to keep it clean, as, like the dummy-teat, it collects dirt and germs, and is the cause of the death of hundreds of babies every year.

Much better is the ordinary boat-shaped bottle, or even an ordinary medicine bottle with a wide teat slipped over its mouth. These can be kept clean, and should only be used until the baby can drink out of a cup or tumbler.

If possible two bottles should be kept to be used alternately. After each time of use the bottle should be well cleaned with soda and water, and rinsed out frequently with cold water. The teat should be turned inside out and thoroughly cleaned also. In warm weather it is necessary to boil both bottle and teat after each time they are used. The bottle should be stood in a cool place, protected from dust, to drain, till next required.

Milk.—Only the best cow's milk should be obtained, and used fresh; in summer it should be immediately heated till just

on the point of boiling, then placed in a covered jug, which has been well scalded out before use. The milk vessel should be stood in a dish of cold water, to keep it cool; and well away from the sink, or closet, or any drain.

When required for the baby, the milk should be warmed by standing the jug for a few minutes in a dish of hot water. Any milk left over after a feed should be thrown away, and not kept for the next. An occasional taste of orange juice is an excellent thing to give a baby which is being artificially fed, but milk should be the staple food of children until they are two years old.

On no account should tea be given to any young child, much less to a baby, because the stomach of a young child is too delicate to digest it, and may be permanently injured by it; nor should an infant be given any kind of solid food until it has teeth to eat with. Babies and young children are not able to digest the same food as grown-up people, and to feed them on "the same as we get ourselves" is extremely bad for them. Especially to be avoided are tea, coffee, all intoxicants, meat, tinned foods, dried fish, shellfish, pickles, raw vegetables (such as radish and celery), new bread, pastry, doughy puddings, dried fruit, or nuts. Until it is almost a year old a baby should not even have egg, or gravy, or potato; and it should not have any meat at all until it is at least two years old.

Fresh Air.—This is very necessary for the health of infants as well as for older folk. It is important that the room the baby lives in should be well ventilated, and never stuffy. After the child is a fortnight old it should be taken out every day, except in bad weather.

Cleanliness.—The baby must be kept constantly clean and dry, and changed as often as necessary. The dusting powder should be used frequently when required.

Growth of baby.—This can be judged best by weighing the child. The average weight of a healthy baby at different ages during its first year is as follows:—

At birth	7 to 8 lbs.
At 3 months	12 to 13 lbs.
At 6 months	15 to 16 lbs.
At 9 months	17 to 18 lbs.
At 12 months	about 20 lbs.

Low weight in a child usually indicates that its health is unsatisfactory. Regular weighing is both interesting and useful. The baby can be weighed, without charge, at the following addresses:—

Office of the Superintendent of Midwives, Health Department, Town Hall, every Friday between 3.30 and 5 p.m.

School for Mothers, 20, Wharncliffe Street, every Wednesday, at 2 p.m.

School for Mothers, Dalton Street and Shipley Street, every Monday, at 2 p.m.

The School for Mothers, Dunn's Terrace, Spital Tongues, every Tuesday, at 2 p.m.

School of Mothers' Craft, Buddle Road, Benwell, every Tuesday, at 2 p.m.

School for Mothers at 47, City Road (Girls' Club premises), every Wednesday, at 2 p m.

PART III.—WEANING.

WEANING means the change from mother's milk to cow's milk entirely; therefore, the word "weaning" only refers to breast-fed infants.

The change should be effected gradually.

Weaning generally takes place between the ninth and twelfth month. On no account should it be done during the hot summer months of July, August, and September, as during those months milk, which should be baby's chief food, quickly turns bad, and also runs more risk of being infected by flies, either of which condition may cause severe diarrhœa.

A baby nine months old should be given pure boiled milk to which a little sugar has been added. The milk should be given in small quantity to begin with, one table-spoonful (no bottle need be used at that age) every three or four hours after each breast feed, this quantity being increased gradually until rather less than a gill of cow's milk can be given morning and evening without any breast feed. The breast feeds are gradually replaced by feeds of cow's milk until baby is taking a quart of milk daily from the age of twelve months till two years.

Add to this diet fine oatmeal, sago, hard crusts of bread with butter, dripping, marrow, or fried bacon fat, gravy, and bread crumbs; soft boiled egg (fresh), if stale, boil hard and give the yolk alone with a little salt; fresh fish, beef tea, mutton broth (not bovril, because it is spicy and preserved), minced mutton or chicken.

Boiled mashed carrots with milk and a little fat or butter.

Seedless raisins, dried figs and prunes.

Teach baby to chew well.

Oranges and grapes are the only fruit which should be given uncooked. All other fruit should be stewed.

Give a large quantity of water to drink, but no tea or coffee.

Cocoa should be given boiled with milk.

Rice and potatoes are not advisable before the child is 18 months old, because of the quantity of starch they contain.

The condition of the child's stools shows whether the food is properly digested or not.

The health of the child largely depends upon the way you feed it.

Give no medicine except by doctor's orders.

Do not use any Patent Foods.

H. KERR, M.D., D.P.H.,
Medical Officer of Health.

Health Department,
Town Hall.

III. INFECTIOUS DISEASE.

FEVERS, FOOD-POISONING EPIDEMICS,
CITY HOSPITALS FOR INFECTIOUS DISEASES,
TUBERCULOSIS, DISINFECTION, BACTERIOLOGY.

INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1913.

DISTRICT.	Attack-Rate per 1,000 Population.						
	Small-pox.	Typhus.	Scarlet Fever.	Diph-theria.	Enteric Fever and Con-tinued Fever.	Puer-peral Fever.	Ery-sipelas.
England and Wales ...	0·00	0·00	3·57	1·39	0·22	0·05	0·63
78 County Boroughs ...	0·00	0·00	4·29	1·49	0·25	0·07	0·73
NEWCASTLE-UPON-TYNE ...	...	...	**3·61**	**1·41**	**0·49**	**0·04**	**0·67**
Hull	0·02	...	1·36	1·53	0·54	0·07	0·60
Leeds	...	...	2·89	1·94	0·19	0·10	0·85
Bradford	...	...	1·82	1·54	0·25	0·05	0·78
Sheffield	...	...	7·68	1·80	0·16	0·12	1·04
Manchester	0·00	...	5·39	1·01	0·45	0·19	0·60
Salford	0·02	...	5·31	1·44	0·48	0·07	0·87
Liverpool	0·00	0·01	2·96	1·37	0·16	0·07	1·02
Nottingham	...	...	3·82	1·66	0·15	0·05	0·73
Leicester	0·00	...	2·39	0·79	0·10	0·07	0·83
Stoke-on-Trent	...	0·00	1·13	2·68	0·43	0·08	0·75
Birmingham	...	...	10·19	1·42	0·13	0·11	0·95
Cardiff	0·02	...	4·89	3·02	0·15	0·04	0·79
Bristol	...	...	4·80	2·09	0·17	0·06	0·63
Portsmouth	...	0·00	4·89	4·00	0·53	0·09	0·58
London	0·00	0·00	3·89	1·70	0·17	0·08	0·92
Gateshead	...	...	2·61	0·79	0·42	0·03	0·70
South Shields	0·01	...	10·16	0·57	0·20	0·05	0·76
Tynemouth	...	...	4·78	1·19	0·42	0·05	0·59
Sunderland	...	...	5·14	1·20	0·27	0·01	0·64
Middlesbrough	...	...	7·86	1·41	0·10	0·06	0·65
County of Northumberland	0·00	...	6·23	1·73	0·48	0·01	0·67
County of Durham ...	...	...	5·93	1·53	0·39	0·03	0·77

DEATHS (UNCORRECTED) FROM NOTIFIABLE INFECTIOUS DISEASES AND NON-NOTIFIABLE ZYMOTIC DISEASES, EXCLUSIVE OF TUBERCULOSIS.

WARD.	Small-pox.	Typhus Fever.	Enteric Fever.	Polio-myelitis	Cerebro-Spinal Fever.	Puerperal Fever.	Scarlet Fever.	Diphtheria.	Erysipelas.	Measles	Whooping Cough.	Zymotic Diarrhœa (under 2 years of age).
St. Nicholas'	...	...	...	...	...	...	...	...	...	...	1	1
*St. Thomas'	...	...	2	...	...	6	...	3	1	...	2	7
St. John's	...	...	...	...	...	...	...	...	...	1	1	12
Stephenson	...	...	2	...	...	...	...	1	...	4	3	13
Armstrong	...	...	...	...	...	...	...	1	...	5	12	14
Elswick	...	...	...	...	...	...	...	1	1	2	4	4
Westgate	...	...	...	...	...	...	1	...	...	3	4	8
†Arthur's Hill	...	...	...	...	...	...	...	...	2	3	3	2
Benwell	...	...	..	...	...	...	...	...	...	6	7	10
Fenham	...	...	...	...	...	...	...	...	...	6	3	3
All Saints'	...	...	...	...	...	...	...	...	2	10	7	9
St. Andrew's	...	...	...	...	1	1	...	...	...	4	7	6
Jesmond...	...	...	...	1	...	...	...	...	...	...	...	1
Dene	...	...	...	...	...	...	...	...	...	...	2	3
Heaton	...	...	...	...	1	...	...	...	1	...	3	5
Byker	...	...	...	...	...	...	...	...	...	...	5	14
St. Lawrence	...	...	...	...	...	...	...	...	1	2	10	17
St. Anthony's	...	...	...	...	...	...	1	...	...	4	9	5
‡Walker	...	...	13	...	...	...	20	25	...	14	16	8
City	...	...	17	1	2	7	22	31	8	64	99	142

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Union Workhouse.

‡ Includes City Hospital for Infectious Diseases.

For particulars of deaths from **Tuberculosis** see Table on page 122.

NOTIFIED CASES OF INFECTIOUS DISEASE,

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1913.
(TABLE II. OF LOCAL GOVERNMENT BOARD RETURNS).

NOTIFIABLE DISEASE.	AT AGES—YEARS.							TOTAL (ALL AGES).	
	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards	1913.	1912.
Diphtheria (including Membranous Croup).	7	115	186	38	17	5	...	368	501
Erysipelas	6	7	13	22	48	67	12	175	161
Scarlet Fever	8	201	671	58	17	...	...	955	1184
Typhus Fever	...	...	...	...	...	...	...	...	...
Enteric Fever	...	11	38	28	42	5	...	124	91
Puerperal Septicæmia	...	...	...	2	9	...	...	11	7
Epidemic Cerebro-Spinal Meningitis ...	...	...	2	...	...	...	...	2	3
Acute Poliomyelitis ...	...	9	3	...	...	...	...	12	30
TOTALS	21	343	913	148	133	77	12	1,647	1,977

WARD DISTRIBUTION OF INFECTIOUS DISEASES.

(TABLE II. OF LOCAL GOVERNMENT BOARD RETURNS).

WARD.	Small-pox.	Typhus Fever.	Enteric Fever.	Polio-myelitis	Cerebro-Spinal Fever.	Puer-peral Fever.	Scarlet Fever.	Diph-theria.	Ery-sipelas.	TOTAL.
St. Nicholas'...	...	...	...	1	...	...	4	2	2	9
St. Thomas' ...	...	...	15	...	...	5	51	28	14	113
St. John's ...	...	...	6	1	...	...	36	12	6	61
Stephenson ...	...	...	8	1	...	...	66	18	13	106
Armstrong ...	...	...	7	2	...	...	89	20	10	128
Elswick ...	...	...	1	...	...	...	52	20	7	80
Westgate ...	...	...	...	...	...	1	60	11	6	78
Arthur's Hill...	...	...	3	...	...	...	40	9	20	72
Benwell ...	...	...	55	...	...	1	125	37	14	232
Fenham ...	...	...	3	...	...	...	55	21	1	80
All Saints' ...	...	...	2	2	...	1	20	13	7	45
St. Andrew's...	...	...	2	...	1	...	15	9	1	28
Jesmond ...	...	...	1	1	...	...	40	12	3	57
Dene	...	...	...	..	...	...	36	25	5	66
Heaton ..	...	...	...	2	1	...	37	15	12	67
Byker	...	...	3	1	...	...	34	33	19	90
St. Lawrence	...	...	1	1	...	1	60	23	7	93
St. Anthony's	...	...	4	...	...	2	34	16	14	70
Walker ...	...	...	13	...	...	...	101	44	14	172
City	...	...	124	12	2	11	955	368	175	1,647

For particulars of cases of **Tuberculosis,** see special section, pages 117 and 122.

WARD INCIDENCE OF INFECTIOUS DISEASES,

EXCLUSIVE OF TUBERCULOSIS.

WARD.	NOTIFIABLE DISEASES. Cases per 1,000 Population.								Non-notifiable Diseases. Deaths per 1,000 Population.		
	Small-pox.	Typhus Fever.	Enteric Fever.	Polio-myelitis.	Cerebro-Spinal Fever.	Puerperal Fever.	Scarlet Fever.	Diph-theria.	Ery-sipelas.	Measles.	Wooping Cough.	Zymotic Diarrhœa (under 2 years of age).
St. Nicholas'	...	...	...	0·28	...	...	1·12	0·56	0·56	...	0·28	0·28
*St. Thomas	...	...	1·06	...	...	0·35	3·62	1·93	0·99	...	0·14	0·49
St. John's	...	...	0·39	0·07	...	...	2·35	0·78	0·39	0·07	0·07	0·78
Stephenson	...	...	0·43	0·05	...	...	3·52	0·96	0·69	0·21	0·16	0·69
Armstrong	...	..	0·45	0·13	...	...	5·70	1·28	0·64	0·32	0·77	0·90
Elswick	...	...	0·08	...	...	...	4·11	1·58	0·55	0·16	0·32	0·32
Westgate	...	...	...	...	...	0·07	3·93	0·72	0·39	0·20	0·26	0·52
†Arthur's Hill	...	...	0·26	...	...	...	3·50	0·79	1·75	0·26	0·26	0·17
Benwell	...	...	3·13	...	...	0·06	7·11	2·10	1·80	0·30	0·36	0·57
Fenham	...	...	0·27	...	...	...	4·99	1·90	0·09	0·54	0·27	0·27
All Saints'	...	...	0·11	0·11	...	0·06	1·13	0·73	0·40	0·57	0·40	0·50
St. Andrew's	...	...	0·16	...	0·07	...	1·20	0·72	0·07	0·32	0·56	0·48
Jesmond	...	...	0·09	0·09	...	...	3·62	1·09	0·27	...	...	0·09
Dene	...	...	...	...	...	...	2·96	2·05	0·41	...	0·16	0·25
Heaton	...	...	...	0·13	0·06	..	2·39	0·97	0·77	...	0·19	0·32
Byker	...	...	0·17	0·06	...	...	1·95	1·89	1·09	...	0·29	0·80
St. Lawrence	...	...	0·06	0·06	...	0·06	3·35	1·29	0·39	0·11	0·56	0·95
St. Anthony's	...	...	0·25	...	...	0·13	2·16	1·00	0·89	0·25	0·57	0·32
‡Walker	...	...	0·80	...	...	...	6·29	2·74	0·87	0·87	1·00	0·50
City	...	...	0·46	0·04	0·007	0·04	3·52	1·36	0·65	0·24	0·36	0·52

* Includes Royal Victoria Infirmary and Fleming Memorial Hospital for Sick Children. † Includes Union Workhouse.

‡ Includes City Hospital for Infectious Diseases, Walker Gate.

For particulars of **Tuberculosis** see table on page 122.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES,

EXCLUSIVE OF TUBERCULOSIS.

DISEASES.	Households with							Public Institutions. *	Total Cases.
	Single Cases.	2 Cases each.	3 Cases each.	4 Cases each.	5 Cases each.	6 Cases each.	7 Cases each.		
Smallpox	...	...	...	...	...	...	...	...	...
Scarlet Fever ...	628	88	26	8	...	2	...	8	955
Diphtheria (including Membranous Croup	279	25	5	...	1	...	...	6	368
Enteric (or Typhoid) Fever	71	10	1	1	1	...	1	5	124
Puerperal Fever ...	4	...	...	...	...	...	...	2	11
Erysipelas	139	4	...	...	...	...	...	4	175
Epidemic Cerebro-Spinal Meningitis...	2	...	...	...	...	...	...	...	2
Poliomyelitis... ...	11	...	...	...	...	...	...	1	12
Total	1,134	127	32	9	2	2	1	26	1,647

* See page 77.

SCHOOLS AND INFECTIOUS DISEASES.—Through the courtesy of the Director of Education and of the Principal Medical Officer to the Education Committee, it has been possible to prepare the following statement, shewing the number of households affected with Scarlet Fever and Diphtheria per hundred scholars (calculated upon the average attendances).

Scarlet Fever and Diphtheria in Schools.

School.	Per cent. of Households infected with Scarlet Fever.	Diphtheria.
Arthur's Hill	1·0	0·3
Atkinson Road...	3·8	0·7
Bath Lane	1·0	0·1
Bentinck	1·6	0·3
Blenheim Street	2·3	0·8
Bolam Street	0·9	0·2
Chillingham Road	1·5	0·7
Canning Street	3·0	0·9
Clarence Street	0·2	0·2
Diana Street	3·8	0·8
Denton Road	1·1	0·6
Delaval	0·7	0·9
Elswick Road	2·4	0·4
Elswick Works	1·3	0·8
Heaton Park Road	1·5	0·4
Mitford Street	1·8	0·7
North Heaton	0·9	1·4
North View	0·9	1·2

SCARLET FEVER AND DIPHTHERIA IN SCHOOLS—*(continued)*.

School.	Per cent. of Households infected with Scarlet Fever.	Diphtheria.
Ouseburn	0·5	0·3
Raby Street	0·8	0·5
Royal Jubilee	0·5	0·3
Shieldfield	—	0·4
Snow Street	1·0	0·3
South Benwell	4·8	0·8
Spital Tongues	1·0	0·3
Saint Peter's	0·8	0·5
Sandyford Road	0·9	0·3
Todd's Nook	2·7	0·7
Victoria Jubilee	0·7	0·6
Walker East	2·3	1·7
Walker West	3·8	0·4
Walker Gate	1·0	0·4
Welbeck Road	1·9	0·5
Westmorland Road	1·2	0·2
Westgate Hill	3·3	0·5
West Jesmond	3·0	0·3
Wingrove	1·4	0·6

The Medical Officer of Health continues to inform principals of schools of the presence of infectious diseases in the homes of their pupils, as also of the cessation of infection. A daily return of cases in the homes of scholars is also forwarded to the Principal Medical Officer of the Education Committee.

Of the households infected with Scarlet Fever, 686 contained scholars of one or other of 71 different schools in the City. Scholars of 24 of the largest elementary schools resided in upwards of 10 of such households during the year, the largest number of such households from which children attended any one school being 56.

In three schools there was infection in the households of the scholars throughout the year, in two schools during eleven months, in three schools during ten months, and in one school during nine months of the year.

School Closure.—No school nor department has been closed during the year on account of infectious disease. Mild scarlet fever has been somewhat prevalent in the City, but no one school has suffered to any marked extent.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year:—

INSTITUTIONS, &c.	Scarlet Fever.	Enteric Fever.	Diphtheria.	Erysipelas.	Acute Poliomyelitis	Puerperal Fever.	TOTAL.
Royal Victoria Infirmary ...	4	8	6	9	1	6	34
Fleming Memorial Hospital, North Road...	15	2	6	3	...	...	26
Maternity Hospital	...	...	...	...	...	1	1
Children's Hospital, City Road	1	...	1	...	...	...	2
Girls' Orphanage ... —	2	...	...	...	...	..	2
Workhouse	...	2	...	15	...	...	17
City Hospital for Infectious Diseases..(Staff)	3	...	3	...	...	...	6
Throat and Ear Hospital ...	1	...	...	...	...	...	1
Military Barracks	2	1	2	...	..	...	5
Deaf and Dumb Institution ...	...	1	...	...	...	...	1
Soldiers' Home, Spital Tongues	...	...	1	...	...	...	1
Tuberculosis Dispensary ...	1	...	...	...	...	..	1
H.M. Prison	...	...	...	1	...	...	1
Total	29	14	19	28	1	7	98*

* Does not include any cases belonging to the City which could properly be assigned to their homes

MILK SUPPLY IN RELATION TO INFECTIOUS DISEASES.

The source of the milk supply was ascertained in every case of fever and diphtheria. In no case was there reason to suspect that the milk was responsible for the conveyance of infection.

Two cases of scarlet fever occurred at milk shops, the stock of milk in each case being seized, and the owner compensated.

Eleven cases of scarlet fever occurred at other shops of various kinds, including one public-house.

There are in the City 703 small general shops in which milk is retailed, none of them being a fit place for the purpose, but there is no means of interfering with them at present.

SCARLET FEVER.

Notifications of 955 cases were received during the year, and there were 20 deaths, which is equivalent to a mortality of 2·1 per cent. The type of disease was mild on the whole.

DIPHTHERIA.

368 cases were notified during the year, and 28 died, a case mortality of 7·6 per cent.

Antitoxin was distributed free to medical practitioners in the City as follows:—

Number of medical practitioners who made application for Antitoxin	50
Number of phials of Antitoxin supplied	225
Number of cases of Diphtheria notified	368
Number of cases of Diphtheria removed to Hospital ...	300
Number of Hospital cases in which Antitoxin was injected prior to admission	99

The fatality of the disease in recent years is shown in the subjoined table.

Year.	Diphtheria Cases. (All Forms.)	
	Number.	Case Mortality.
1909	456	12·7%
*1910	443	9·0%
1911	507	7·5%
1912	501	6·6%
1913	368	7·6%

* Antitoxin first distributed gratis April, 1910.

Particulars of the type of the disease as noted in cases sent to hospital will be found later in the section dealing with the City Hospitals.

MEASLES.

There were 64 deaths from measles in 1913; of these 34 occurred in January, and 56 during the first six months of the year, in continuance of the epidemic of the last quarter of 1912, which was fully reported upon in the Annual Health Report for 1912.

The death rate in 1913 was 0·24 per 1,000 population, as compared with 0·61 in 1912.

DEATHS FROM MEASLES, 1913.

MONTH.	YEARS OF AGE.							TOTAL.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January ...	10	10	7	3	3	1	—	34
February ...	1	3	3	1	—	—	—	8
March ...	4	3	—	—	—	—	—	7
April	1	—	1	—	—	—	—	2
May	1	1	1	—	—	—	—	3
June	—	2	—	—	—	—	—	2
July... ...	—	2	—	—	1	1	—	4
August ...	—	1	—	—	—	—	—	1
September ...	—	1	1	—	—	—	—	2
October ...	—	—	—	—	1	—	—	1
November ...	—	—	—	—	—	—	—	—
December ...	—	—	—	—	—	—	—	—
Total ...	17	23	13	4	5	2	—	64

WHOOPING COUGH.

98 deaths occurred from whooping cough. The particulars are as follows:—

MONTH.	YEARS OF AGE.						TOTAL.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	
January	2	—	2	—	—	1	5
February	2	3	—	—	—	1	6
March	4	2	1	—	—	—	7
April	3	3	1	—	—	1	8
May	5	7	3	—	2	—	17
June	8	6	1	2	3	—	20
July	2	4	2	—	—	—	8
August	3	2	1	—	—	—	6
September	6	3	—	—	—	—	9
October	—	3	1	1	—	—	5
November	4	1	—	—	—	—	5
December	2	—	—	—	—	—	2
Whole Year	41	34	12	3	5	3	98

The death rate in 1913 was equivalent to 0·36 per 1,000 population.

ENTERIC FEVER.

124 cases were notified during the year, and there were 15 deaths, giving a death rate of 0·06 per 1,000 population, and a case mortality of 12·1 per cent.

The 124 cases occurred as follows :—14 were in institutions, and 110 occurred in 85 households, of which 69 (86 cases) had water closets, and 16 (24 cases) had dry closets. The attack rate was 1·74 cases per 1,000 water-closet houses, and 3·8 cases per 1,000 dry-closet houses—much the same proportion as in 1912. That is to say, the risk of acquiring enteric fever is roughly three times as great for people living in dry-closet houses as for those with water-closets.

In no instances did infection appear to have been conveyed by water, milk, shell fish, or watercress.

Outbreak in South Benwell.—A somewhat serious outbreak of enteric fever occurred during August, September, and October in the South Benwell district of the City.

The circumstances were inquired into by Dr. Clegg, who had also the immediate charge of the preventive measures, and the following particulars are obtained from his report, which deals with all cases between the commencement of the outbreak about the beginning of September and its virtual close in mid-October.

During this period there were 31 cases, with no deaths, the type of disease having been mild on the whole. Thirteen households were affected, with a varying incidence of one to seven cases per household, in one instance the whole of one family, seven in number, having been removed to hospital.

Dates of Cases.—The following table and diagram on page 85 shows the distribution and dates of the cases. The houses are of the flat type, of two stories, with two rooms and scullery downstairs, and three rooms and scullery upstairs, having a common yard and water closet or privy, but separate water supply. They were found to be fairly clean, though some left much to be desired in that respect, and the number of cases per household bore a distinct inverse ratio to their cleanliness, the dirtier houses suffering more severely.

DISTRIBUTION AND DATES OF CASES.

House.	Convenience.	Total Cases.	Probable commencement of illness.
25, Violet Street	W.C.	2	(1) 11th Aug. (2) 14th Aug.
22, Aline Street	Privy	7	(1) 9th Aug. (2) 23rd Aug. (3) Nil. (4) (5) (6) Nil. (7) 9th Sept.
24, Aline Street	Privy	2	(1) 22nd Aug. (2) 3rd Sept.
7, Violet Street	W.C.	2	(1) 27th Aug. (2) 7th Oct.
10, Aline Street	Privy	3	(1) 6th Aug. (2) 13th Sept. (notified). (3) 2nd Sept. (notified).
62a, Scotswood Road	W.C.	1	(1) 16th August.
28, Aline Street	Privy	1	(1) 29th August.
12, Aline Street	Privy	5	(1) 12th Sept. (2) 8th Sept. (3) (4) (5) Nil (notified 15th Sept.)
60a, Scotswood Road	W.C.	1	(1) 16th August.
16, Aline Street	Privy	1	(1) 6th September.
9, Violet Street	W.C.	1	(1) 8th September.
108, Violet Street	W.C.	1	(1) 10th September.
8, Aline Street	Privy	3	(1) 6th Sept. (2) (3) 24th Sept.
64, Scotswood Road	W.C.	1	(1) 23rd July (Scarlet fever?).
Total		31	

Water.—Each household has its own supply from the town water, direct from the mains.

Sanitary Conveniences.—Of the 13 households, 6 were on the privy, and 7 on the water closet system, 22 cases occurring in the former, and 9 in the latter, an average of 3·7 and 1·2 cases per household respectively. It is seen, therefore, that the cases were almost exactly three times more numerous in the privy households than in those on the water closet system. The privies examined were very foul, in some cases being in such a condition as to render their use almost impossible, and were a source of much complaint, the inhabitants frequently making use of adjacent water closets in preference. The water closets are of the short hopper type, and were also found to be on the whole in an unsatisfactory state.

Flies.—Flies were very numerous in all the houses, and particularly in those having privies.

Coincident Diarrhœa.—The inspection revealed many cases of simple diarrhœa, which in some cases had preceded an attack of enteric fever.

Food and Milk.—There was no evidence that either food or milk was directly responsible for the outbreak.

Age Incidence.—42 per cent. of the cases were under 10 years of age, and 61 per cent. under 15 years. The actual numbers were as follows:—

Under 5 years	8
5 to 10 years	5
10 to 15 years	6
15 to 25 years	5
25 to 35 years	4
Over 35 years	3

Action taken.—The four notifications from two households, received between the 19th and 26th August, made the existence of a common focus of infection probable, which was confirmed by the two subsequent ones on 30th August, and by those following. A house to house inquiry, therefore, was made by the Assistant Medical Officer of Health and Special Inspector, during which every house on the affected sides of the two streets was visited, all contacts seen, and cases of illness of any kind investigated, and blood tests made where necessary, this resulting in the detection of several further cases. It is of interest to note that in six instances, all in children under ten years of age, there was not only no sign of illness at the time the examination was made, but no history of any illness in previous years which might have been Enteric Fever, yet they all showed a positive Widal reaction in their blood, indicating that though they might not have suffered from an actual attack, they had become affected at some time with the specific organism, and under the circumstances, had still to be regarded as possible sources of infection.

All cases were removed to the City Hospital for Infectious Diseases, Walker Gate.

The medical men practising in the neighbourhood were informed of the existence of the outbreak, and were able to render the Department valuable aid in checking its spread.

By arrangement with the City Engineer, the privies, which were previously cleared out once a week, were now cleared twice weekly, and disinfectant powder used. The cells were also hot limewashed, and the seats and floors thoroughly and frequently scrubbed out with disinfectant solution prepared under the supervision of the Inspector.

The Health Department "Diarrhœa" leaflets were freely distributed, special emphasis being laid on the necessity for the boiling of milk, and of protecting food from flies.

The possibility of the outbreak having originated from an infected water or food supply was eliminated by bacteriological examination of various samples taken.

In view of the excessive incidence on children, special note was taken of ice cream, ginger beer, and herb beer known to be freely consumed in the neighbourhood, the premises where these were made being inspected, and the persons employed in their manufacture examined. Bacteriological and blood examinations made proved to be negative.

Acting in conjunction with the Principal School Medical Officer, all children from houses in the infected area were excluded from school for a period of three weeks, and the school chiefly affected was inspected, and recommendations made for certain sanitary improvements (see report of the Medical Officer of Health, 6th October, 1913).

General Observations.—The origin of the outbreak has not yet been traced.

The probable first case occurred on 23rd July, and presented very atypical symptoms, so much so that it was first considered to be Scarlet Fever. It is possible that other similar cases had occurred and been entirely overlooked owing to the mild nature of the attack. Some of the boys were in the habit of bathing in the river Tyne, about 100 yards below a sewer outfall, the bank at this point being said to be very

foul at low tide, but direct connection with any case could not be traced. From the character of the outbreak, and from the results of the bacteriological examinations, it is considered unlikely that either infected food or water was the cause.

The spread of the disease was undoubtedly largely the result of contact with infected cases, intercommunication between the different households being extremely free and frequent in this district, the conditions in this respect being practically those of one large family; in the only case occurring outside of the sharply circumscribed area described above, contact with a previous case over a prolonged period was definitely ascertained.

Fully half the cases discovered had never been confined to bed, and were following their usual occupations.

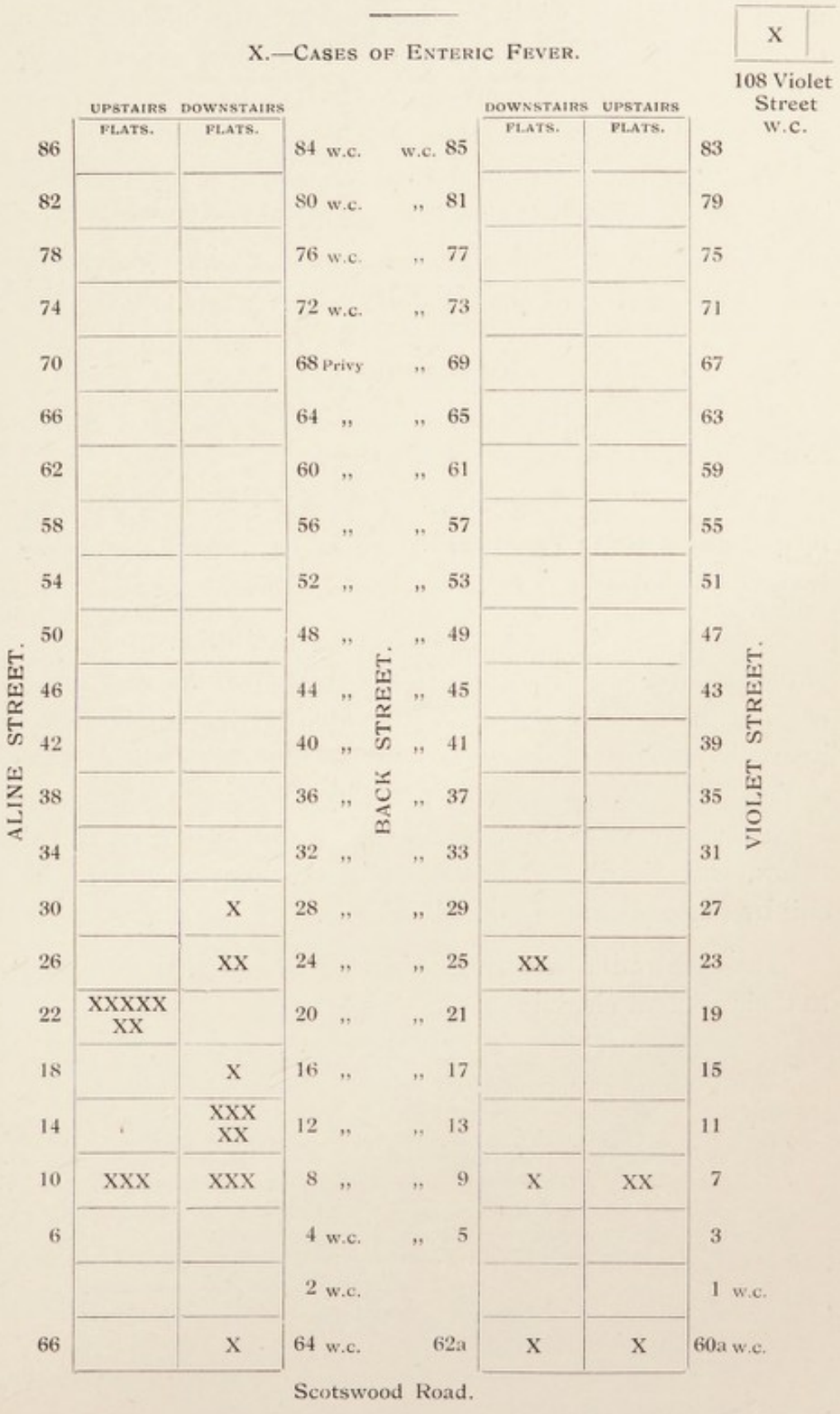
That the privies played an important part is indicated by the large number of cases occurring in houses on this system, their foul and generally insanitary condition affording every facility for the dissemination of infection. It is considered also that they were in great measure responsible for the prevalence of flies in the neighbourhood, and for the unusual incidence of the disease on the children, the latter often being found playing in the yard in close proximity to the privy, and also on the pavement outside, both situations probably being frequently contaminated.

It is probable that the large number of flies was also instrumental in some degree in spreading the disease, as in no case was any precaution taken to prevent their access to food.

Although the actual origin of the outbreak has not been discovered, the chief factors influencing its spread are undoubtedly the free intercommunication between the inhabitants of the affected houses, and the existence of privies. The type of house and the character of tenant make the former almost inevitable, but the latter is remediable, and their removal and conversion into water closets would constitute an important advance in the sanitary condition of the district.

Block Plan of Adjacent Sides of Aline and Violet Streets.

X.—Cases of Enteric Fever.



From the foregoing, it appears that the dry closets are again mainly responsible for the spread of the infection of a disease which, once extremely prevalent, has become rarer with the progressive conversion of dry to water-carriage systems.

The area dealt with in the present report is one in which many outbreaks of infectious disease originate, and the chief consideration now should be to press on as rapidly as possible the work of converting the filthy dry closets which still remain.

DIARRHŒA.

The fine summer and autumn of 1913 brought with it the usual increased prevalence of diarrhœa.

There were in all 186 deaths from the disease, equal to a death rate of 0·69 per 1,000 population, and this number included 140 deaths of children under two years of age.

Special attention was given to the sanitation of closets, yards, and streets, and to places where manure and other organic matter was deposited, the district inspectors being instructed to give this work precedence over all routine duties. The co-operation of the City Engineer's Cleansing Department staff was also obtained, and the leaflet, reprinted below, was distributed broadcast in the houses, and to the children attending the Council schools.

The retail milk shops were visited frequently, with regard to their general cleanliness.

City and County of Newcastle-upon-Tyne.

DIARRHŒA.

Every warm summer hundreds of infants die from Diarrhœa.

It is **caused** by a disease germ which lives and thrives in dust, dirt, decaying vegetables and household refuse generally, from which it gets into the food.

It can be prevented by attention to the following precautions:—

Do not allow dust and dirt to accumulate. Scrub the floors frequently. Use a damp cloth for dusting, so that the dust may not fly about. For the same reason never sweep up dry dust on floors, yards or pavements, but sprinkle first with water or damp tea leaves. Swill down back yards and scrub out closets twice a week. Closets should be lime-washed twice a year.

Burn all vegetable and animal refuse, such as potato peelings, cabbage leaves, scraps of fish and meat. **Do not throw them into the ash pit or on the street,** and do not leave them lying about the kitchen, as they immediately attract germs and flies. Avoid throwing waste liquid or slops into the ash pit or on the street. Put them down the yard gully and flush well with water afterwards.

Keep your children healthy by giving them **plain simple food at regular hours.** Do not allow them to eat between meals nor to eat any food which has begun to go bad. As they may have picked up disease germs on their hands when playing, see that they wash before taking a meal.

Flies are known to carry thousands of disease germs about with them on their bodies and legs. The fly you see feeding on a scrap of decayed vegetable or bad meat may alight on your food and leave there germs and particles of filth; therefore **protect your food,** and especially **milk,** from flies and dust, and destroy all dirt and refuse where the flies and germs may breed.

Milk is the babies' food. If possible, every infant should be **breast fed.** If that is not possible, **use fresh cow's milk,** but see that it is **clean** when you get it, and **keep it clean** by storing in a clean vessel and by **protecting it from flies and dust.** Milk is supplied in **bottles** by various dairies, and this is more economical, cleaner and much more easily preserved than that bought in the ordinary way. **Boiling destroys germs,** therefore **boil the milk** before using it.

If a feeding bottle is necessary, use the kind that can be kept clean easily, such as the **boat shaped** one Those with long rubber tubes cannot be cleaned properly, and the inside of the tube becomes **foul** with decomposing milk. Rinse out the bottle in cold water **immediately after use,** and keep in dish of clean cold water until again required. **Feed the child at regular intervals** of 2½ to 4 hours, according to age, and do not give it too much at a time.

Do not give the child a "comforter." It makes the mouth dirty, prevents the teeth from coming through properly and spoils them when they are through. The constant sucking by the child gives the digestion no rest and leads to wind, indigestion and diarrhœa.

As the germs of diarrhœa are contained in the motions of the child, do not allow soiled napkins to lie about, but wash them immediately, but **not** at the kitchen sink, which should be kept as clean as possible.

Teach your children cleanly habits.

Mothers, give your children a chance!

H. KERR,
Medical Officer of Health.

Health Department,
Town Hall,
Newcastle-upon-Tyne.

FOOD POISONING.

Suspected "Ptomaine" Poisoning.—On July 21st the Coroner's officer called attention to the case of a young girl of 10 years, living at 4, Temple Street, who had died suddenly of what was believed to be food poisoning. On July 19th the child had eaten, very greedily, some potted chicken, ham, and tongue, purchased at a shop in Churchill Street. Her mother and sister also partook of this meat, and though the mother was slightly affected, the sister suffered no harm. The deceased girl took ill within half-an-hour and died. An inquest was held, and a verdict of death from "gastro-enteritis probably due to eating some tinned meat," was returned.

The shop at which the meat was bought was examined and found very clean. The meat was supplied to the shopkeeper on July 18th, and was put up in an enamelled pie-dish and covered with parchment paper, which was removed, and the meat turned out on a plate. The meat was consumed immediately after being purchased. The wholesale dealers who supplied the meat were communicated with, and a sample of the meat submitted to the Bacteriologist, who reported that he was unable to detect any organisms of the *Gaertner* group, but that bacteria of the *colon* and *proteus* type were readily isolated. He expressed the opinion that whatever may have been the cause of death, it was not due to infection with any member of the *enteritidis* group.

Food Poisoning caused by Milk.—A sudden outbreak, affecting no less than 511 persons within the City, occurred about the week end at the beginning of November. Fortunately no deaths resulted, although many of those affected were seriously ill.

Prompt information of the first cases was sent to the Medical Officer of Health, and a thorough investigation set on foot without a moment's delay. All the cases proved to be consumers of milk from one particular farm in the Longbenton Urban District, near to Gosforth.

Full particulars of this important outbreak are included in the following special report.

REPORT

UPON AN OUTBREAK OF

FOOD-POISONING CAUSED BY MILK IN THE HEATON DISTRICT.

31st October to 3rd November, 1913.

Part I.—EPIDEMIOLOGY.

On Saturday morning, 1st November, 1913, information was received from the Chief Constable that about a dozen of the constables and other residents at the East End Police Station (Headlam Street) had been suddenly affected with severe vomiting, diarrhœa, and prostration, accompanied by abdominal pain and high temperature; the first cases occurring late on Friday night, and others following during the early hours of Saturday morning; the Police Surgeon was in attendance.

First Inquiry.

Immediate inquiries were instituted, and from the circumstances it was at once suspected that the condition originated from food, the symptoms being analogous to those usually met with in cases of poisoning from bacterially-infected material and, commonly, contaminated tinned or prepared meats. Accordingly the dietary of the sufferers during the preceding 48 hours was carefully investigated, when it was found that the only articles common to all were water, bread, potatoes, and tapioca pudding, which last formed part of Friday's dinners, at 1 and 2 p.m. All the patients had eaten

this, with the addition of a little fresh milk obtained from a local dairy. As only four similar outbreaks, originating from milk, were known to the investigators, and as that article is not generally supposed to bulk very largely in the dietary of a policeman, there seemed at first no special reason to suspect it in the present instance, more especially as it was at first stated that two of the sufferers had used milk from another source only. It was afterwards found, however, that they had also taken some of the common milk. Samples of tapioca, water and bread were taken for examination, together with specimens of the vomit, stools, and blood of the sufferers. There was none of the milk available.

Subsequent Cases.

Late the same evening (Saturday) a private practitioner notified by telephone a number of cases of "ptomaine poisoning" in his practice. Accordingly, early next morning (Sunday) all the medical men practising in the Heaton district were visited or communicated with directly, and from them was obtained a long list of similar cases, in some 30 houses. A number of the severer ones were visited, and inquiry as to diet made. By midday it became evident that apart from the water, which in all cases came from the general town's supply, milk was the only article of food of which all had partaken.

The Milk Supply.

A number of the affected persons volunteered the information that the Friday afternoon's milk had had a peculiar taste. The source of the milk was elicited in each affected household, and it was speedily found that it all originated from a single farm at Low Gosforth, either directly, or through one of several dairies and shops in Heaton.

The Farm.

The farm was then visited (Sunday midday), and it was found that the farmer himself and two farm hands who were engaged in the milk business were ill, together with two

other farm hands living out, but taking meals at the farm. All had drunk some of Friday afternoon's milk, their illness commencing some twelve hours afterwards. The farmer's wife, who had had none of the milk, was unaffected, as also her infant, who, however, was said to have had the raw milk all along.

The Cows.

It was also discovered that a batch of five cows, calved about 18th October, had been purchased at Gateshead Mart on Friday, 24th October; their milk had been used with that of the other 26 cows in the herd, all being mixed together. On the Thursday (30th October), the man who had special charge of the cows noticed that one of the new ones, a dark roan, was not very well. Next morning, Friday, she was rather worse, and her milk diminished to about one-third of its usual quantity, which was given as "a bucket and a half." At the afternoon milking, this cow seemed really ill, and thinking a "cold" was the trouble, since he could perceive no special symptoms, the milkman administered a dose of a patent medicine, the analysis of which is given below. Her milk yield amounted to about a pint only, and was described as being "rather thick, like strippings," and this was just mixed as usual with that of the rest of the herd. Next morning, early, the cow was found dead in her stall.

Method of Milking.

Several persons usually took part in the milking, and no special precautions as to cleanliness were adopted. Each milker took so many cows, using one bucket all the time; as each cow was milked, the bucket was emptied into a large vessel before the milker proceeded to the next animal. The mixed milk was then placed in "churns" and sent off direct by cart to the various customers in Newcastle and district, the total daily yield being about 80 gallons. The cow-byres and dairy are built round a "fold yard," full of manure and liquid filth. There was no evidence of any cooling apparatus.

For much of the above information, and for the courtesy of being permitted to visit the farm, the Medical Officer of Health is indebted to Dr. Hembrough, Medical Officer of Health of the County of Northumberland.

Carcase of Cow.

The carcase of the cow was removed on Saturday, the day of the animal's death, to a knacker's yard in Newcastle. Here it was found, already in a state of partial decomposition, on Sunday afternoon, and the spleen, portions of the udder, uterus, intestine, and mesenteric glands were taken for submission to the bacteriologist, whose report is appended.

History of Affected Cow.

An endeavour was made to trace the origin and recent history of the cow which appeared to be the source of trouble, but unsuccessfully. The animal, as stated above, was purchased on Friday, 24th October, at Gateshead Auction Mart from a Ponteland farmer, who in turn had bought her at Darlington Market on the Monday previous (20th October). The latter is a big market, aud no record is kept of the origin of cows brought for sale, and consequently nothing further could be ascertained about the animal. It was not known either whether she had aborted, or calved in the usual way.

A couple of years ago two cows in the herd at Low Gosforth aborted and were promptly sent for slaughter, and about two months ago one cow went slightly off her food and her milk yield diminished, but she was quite well again in a day or two. No other cases of illness were known to have occurred recently amongst the cows and other animals on the farm, or among the human inhabitants.

No **Rat Virus** of any description has ever been used on the farm, and in fact rats are almost unknown there.

Precautions at Farm.

During the progress of the investigation the farmer was made to carry out thorough cleansing and disinfection of the cow-shed where the affected animal had been housed. For this the County and District Medical Officers of Health were responsible, and they supervised the proceedings. The

bedding and litter were removed from the byre and burnt just outside it; the byre was then thoroughly cleansed, disinfected, and hot lime-washed. All dairy utensils were well scalded, and the dairy cleansed. All the persons who had worked among the cows or milk, and all who had suffered in any way from the epidemic symptoms, were forbidden to have anything whatever to do with the cows or the milk for a full week, when they were again permitted to resume their usual employment.

Except that on one day during the week the farmer himself delivered milk, owing to misunderstanding, all instructions appear to have been executed.

Persons Supplied with the Milk.

A complete list was then obtained from the farmer of all his milk customers. These included two dairies in Heaton, part only of whose supply came from this farm, and one or two small general shops, and the two dairies also supplied one or two small shops, all of these in Heaton. Lists of the customers of the dairies and small shops were also obtained. The following is a summary:—

Houses supplied direct from the farm	185
Houses supplied with the farm's milk through the two dairies	172
Houses supplied with the farm's milk through smaller shops	15
Houses supplied with the farm's milk indirectly from the dairies through smaller shops ...	40
Total	412

In addition to these was an unknown number of persons who purchased small quantities of milk in the various shops. These must have included one or two unknown hawkers, who peddled the milk in the back lanes, as a number of affected persons stated that their milk was so obtained.

In addition, the farmer's list included one house in the Gosforth and six in the Longbenton areas, notice of which was telephoned to the respective Council offices.

Census of Customers.

(*a*) In Newcastle.

Five members of the Inspectorial staff of the Health Department were detailed off on the Monday morning (3rd November) to visit every known customer of the farm, direct or indirect, together with such other households as had been reported by medical practitioners to be affected, and any others of whom they might hear casually. Inquiries were made in each case as to the number of persons in the house, the number affected, and the persons who had consumed milk, and any other food-stuff upon which suspicion might rest. It was not found possible to obtain reliable information as to the exact persons who had used the milk, beyond that the source of the domestic supply was verified, and in practically every instance the sufferers remembered that they at least had had some of the milk. The result of this special inquiry among the Newcastle customers was as follows:—

Total number of houses visited	429
Number of houses in which affected persons were found	232
Total occupants of affected houses	996
Total persons found to be affected	511
Houses supplied with farm's milk, but found to be unaffected...	78
Affected houses found to have obtained their milk from unknown hawkers	4

In two instances a dog, and in another a cat, were given some of the farm's milk, and in all three instances the animal was stated to have suffered subsequently from severe diarrhœa and vomiting.

The private dining rooms for the employés of a local engineering works were supplied by one of the dairies which sells milk from the farm in question, amongst that from other sources, but it is doubtful whether this contained any of that from the special farm. Forty persons dine here daily, and none complained of any ill effects.

All the cases of illness occurred, so far as could be ascertained, on the Friday night, Saturday, or Sunday morning

(October 31st, and November 1st and 2nd). One case was reported on the Wednesday (November 5th) as having occurred the previous day, the history being that Yorkshire pudding had been made on the Saturday with some of the Friday's milk. This was not eaten till Monday evening or Tuesday, some hours after which the illness commenced.

To some extent the severity of the attacks seems to have been in proportion to the quantity of milk consumed.

(*b*) Outside Newcastle.

In addition to the Newcastle users of the farm's milk, a number of others, resident in outside areas, was obtained. The inquiry among these was made at the instance of the County Medical Officer of Health, and he has been good enough to supply the following particulars:—

Houses visited (including the farm)	10
Number in which affected persons were found ...	5
Total occupants of affected houses	19
Total persons found to be affected	12
Houses supplied with the farm's milk, but found to be unaffected	5

In one house in which three out of four people were taken ill, only morning milk was said to have been obtained.

Total Affected.

The total households and persons, in and around the city, involved in the epidemic were therefore:—

Total houses known to have been supplied with milk from the farm	320
Number of houses in which affected persons were found	237
Total occupants of affected houses	1,015
Total persons found to be affected	523
Houses supplied with farm's milk but found to be unaffected	83
Affected houses found to have obtained their milk from unknown hawkers	4

Add to these two dogs and one cat in separate houses.

This completes the list so far as it has been possible to ascertain.

Unaffected Households.

Of the houses supplied with the farm's milk in which nobody was affected, in most instances the milk was only used in cooking food (*e.g.*, puddings) or was boiled before consumption.

In no instance was a person who had used only boiled milk known to have been affected. Thus, in one family consisting of husband, wife, and wife's mother, the two women drank a small quantity of raw milk from the farm, at the most a tumblerful, and both were taken ill about twelve hours later. The husband, on the other hand, habitually drank a pint a day, but always boiled. He followed his usual custom on this occasion, and was unaffected.

In a few houses (exact number unknown) the milk was stated to have been used in the ordinary way, part of it presumably raw, without ill effect. It is not quite certain whether the milk in these cases was always from the special farm, or from some of the others supplying the local dairies.

Of the five households, outside Newcastle, which obtained the farm's milk but were unaffected, the County Medical Officer of Health states that three obtained only a small quantity of morning milk daily, one obtained one pint morning and evening, and the remaining one got "two pennyworth" per day, presumably from morning and evening supply. In one household, where a boy of twelve years was taken ill, his mother, a consumptive, drinks a quart of raw milk (from the farm) each day, but was unaffected.

Mortality.

Most fortunately there were no deaths among the persons thus affected, although many were seriously ill.

Analysis of Medicine.

A bottle of medicine, similar to that administered to the cow on the last day upon which it was milked, was obtained and submitted to the City Analyst, Dr. J. T. Dunn. His Report is as follows :—

"The sample contains cloves, possibly also ginger, alcohol and potassium nitrate. It has a faint smell of ethyl nitrite, but the quantity contained is so small as not to be measurable. The potassium nitrate amounts to about 1·5% of the whole, and the solid residue of the cloves and ginger, after evaporating the water and alcohol, is approximately 0·75%.

I can detect no harmful ingredients in the sample."

Part II.—BACTERIOLOGY.

The Bacteriologist, Professor H. J. Hutchens, reports as follows upon the material submitted to him :—

THE BACTERIOLOGICAL LABORATORY,
COLLEGE OF MEDICINE,
NEWCASTLE-ON-TYNE,
24th November, 1913.

On the 3rd November, 1913, the following materials were received for bacteriological examination :—

A.—From a cow :—

1. A loop of the intestine.
2. The spleen.
3. The uterus.
4. The mesentery and mesenteric glands.
5. A few cubic centimetres of a blood-stained milky fluid collected from the udder with a sterile pipette after the udder had been cut across. (None of the milk which had been sold could be obtained, and the only means of examining the milk was to cut into the udder and collect a few drops as above).

B.—Stools of seven of the patients affected.

Seeing that the illness was probably due to one or other of the members of the Salmonella (Gaertner) group of micro-organisms the investigations were mainly directed to the detection of organisms of that group.

An emulsion in sterile water was prepared with each of the different materials, and the twelve emulsions were used as follows:

(*a*) Plates were prepared on MacConkey's lactose agar with the emulsions from the cow.

(*b*) Brilliant green peptone water (Browning's method) was sown with all the emulsions and, after incubating for 24 hours, lactose agar plates were prepared.

(*c*) Dulcite peptone water was similarly sown with all the emulsions and, after incubation, plated as in the preceding case.

On these various plates non-lactose fermenting organisms were readily recognized, and a number were sub-cultivated in litmus milk. Of the milk tubes which became alkaline, one from each source (twelve in all) was selected for further examination.

All the organisms thus isolated possessed the same characteristics and gave the same reactions:—

On agar the growth was rapid and luxuriant and bluish in colour, and on microscopical examination was found to consist of gram-negative, highly motile, cocco-bacilli.

On gelatine the organisms grew rapidly and luxuriantly without liquefying the medium (10 days).

In litmus milk some degree of acidity was developed in the first 24-48 hours at 37° C., but the medium subsequently became distinctly alkaline.

In peptone water no indol was present after ten days incubation at 37° C. when tested with paradimethyl-amidobenzaldehyde.

Both acid and gas were produced from glucose, dulcite, and mannite, but neither acid nor gas was formed out of either lactose or saccharose.

The organisms isolated had, therefore, all the characteristics of the Salmonella group, and it remained to be determined by serological methods with which member of the group [*B. Gaertner*, *B. aertryke (suipestifer)*, and *B. paratyphoid B.*] they were identical.

TABLE:- AGGLUTINATION REACTIONS OF THE ORGANISM ISOLATED WITH KNOWN SPECIFIC SERUMS.

	Dilutions of Serum.										Saline.
	20	100	200	400	800	1,600	3,200	6,400	12,800	25,600	
1. *Using a Gaertner Serum.*											
Organism from the milk	++++	++++	++++	++++	+++	+++	...	...	...	...	...
Organism from stool No. 5	++++	++++	++++	++++	++++	++++	...	...	...	...	...
Gaertner (Newcastle No. 1)	+++	+++	+++	+++	+++	+++	++	++	...	...	...
Liverpool rat virus	++++	++++	++++	++++	+++	++	+	...	...	...	...
2. *Using an Aertrycke Serum.*											
Organism from the milk	...	...	...	...	...	...	...	...	...	...	...
Organism from stool No. 5	...	...	...	...	...	...	...	...	...	...	...
Aertrycke (Král)	+++	+++	+++	+++	+++	++	++	...	...	...	...
Aertrycke (Newcastle)	+++	+++	+++	+++	+++	++	...	...	...	...	...
Paratyphoid P. (McWeeney) ...	+++	+++	+++	++	++	++	+	+	+	+	...
3. *Using a Paratyphoid B. Serum.*											
Organism from the milk	...	...	...	...	...	...	...	...	...	...	...
Organism from stool No. 5	...	...	...	...	...	...	...	...	...	...	...
Paratyphoid B. (McWeeney) ...	++++	++++	++++	+++	+++	+++	+++	++	++	...	...

NOTE.—The degree of agglutination is indicated by the number of + signs.

These experiments show that the organisms examined are identical with Gaertner's bacillus.

Hence it appears that an organism identical morphologically, bio-chemically, and serologically with Gaertner's bacillus has been isolated from the spleen, mesenteric glands, uterus, intestine, and milk of a cow, as well as from the stools of seven of the persons who became ill after drinking milk with which the milk of this particular cow had been mixed.

It is clear from this that the illness must be attributed to an infection with Gaertner's bacillus derived from the milk of a cow which was suffering from and died of a Gaertner septicæmia following parturition. Unfortunately this epidemic has shed no light upon the source whence the cow became infected—a subject upon which information is much needed.

H. J. Hutchens.

Part III.—SUMMARY AND CONCLUSIONS.

Summary.

From the foregoing, therefore, it is seen that an outbreak of illness, characterised by severe gastro-intestinal disturbance and collapse, and affecting approximately 523 persons, occurred suddenly on the night of 31st October-1st November, a few cases being reported within the subsequent 36 hours.

That all the cases were in households supplied directly or indirectly with milk from one particular farm.

That at this farm, where five cases of the illness had occurred, one cow, recently calved and added to the herd, had taken ill a day or two before, and died almost coincidently

with the occurrence of the first cases of the outbreak, and that her milk was mixed with the general yield of the herd right up to the last.

That from the carcase of the cow, from milk obtained from the udder after death, and from the excreta of a number of the persons affected, an organism was obtained identical with that obtained from various epidemics of food-poisoning. and originally isolated by Gaertner from an outbreak of food-poisoning at Frankenhausen in 1888, and commonly known as the Bacillus Enteritidis of Gaertner.

That no other article than the milk was common to the dietaries of all the sufferers, with the exception of the water from the town's supply, which, obviously for many and apparent reasons,took no part in the causation of the epidemic.

Conclusions.

It may be concluded, therefore, from the above that the outbreak was due to infection of the milk supply by the yield of a single cow, of the antecedents of which it is unfortunate that little is ascertainable.

Like other outbreaks of food-poisoning, the one under report was of exceedingly sudden, almost fulminating, onset, and on cessation of use of the causative material as suddenly stopped.

While the farmer was certainly to blame for permitting the sale of milk from an animal noticed to be ailing, his explanation that her condition was believed to be due to an ordinary "cold" accounts for the light view he took of it.

Although no lives were lost, the serious results that may follow a contamination of so important an article of food as milk are well illustrated in this instance, and the obvious conclusion is that too great emphasis cannot be laid upon the necessity for the strictest care in the production, handling, and sale of milk, and for the more stringent supervision of the entire trade. Until legislation makes this more feasible,

and compulsory, Local Authorities cannot exert the control that is so essential for the public safety. It is one of the outstanding absurdities of the present conditions under which the people's food is produced that it should be possible for milk, probably the most widely used article, and by far the most readily contaminated, to be handled by any person, however ignorant, dirty, or otherwise unsuitable, who likes to enter the trade as an independent dealer, and so become a constant menace to the community. It is only among those farmers who supply milk to the big high-class dairy companies that there is any really effective supervision, whereas among the small retailers the conditions under which the milk is produced and sold are, speaking generally, anything but satisfactory.

In conclusion, I desire to acknowledge my indebtedness to the Staff of the Health Department, and chiefly to Dr. S. J. Clegg, Assistant Medical Officer of Health, also to Dr. Hembrough, Dr. Burn, and the Inspectors for the Northumberland County Council, for the indefatigable way in which they have assisted in collecting the necessary information for this Report. I desire also to state that without the very generous co-operation of the medical practitioners in the affected district it would have been impossible to have obtained the necessary data till too late to be of any use for the investigation.

HAROLD KERR,
Medical Officer of Health.

Health Department,
Town Hall,
Newcastle-upon-Tyne,
25th November, 1913.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX

was also entirely absent. The following are the particulars, courteously furnished by the Clerk to the Guardians, of infant **Vaccination** in Newcastle during recent years. (Walker, which belongs to the Tynemouth Rural area for registration purposes, is not included).

Year.	Births Registered.	Successful Vaccinations.	Unsuccessful Vaccinations.	Exemption Certificates	
				Number.	Percentage to Total Births.
1905	7,958	7,264	27	65	0·8
1906	7,721	6,733	28	92	1·2
1907	7,610	6,702	16	94	1·2
*1908	7,747	6,414	20	449	5·8
1909	7,180	5,667	30	517	7·2
1910	7,023	5,532	22	683	9·7
1911	6,604	5,002	24	767	11·6
1912	6,715	4,625	18	982	14·6
1913	6,874	4,441	7	1,173	17·0

* Vaccination Act, 1907, came into force.

ERYSIPELAS.

175 cases of this disease were notified, and there were 8 deaths.

PUERPERAL SEPTICÆMIA.

Inquiries were made concerning 11 cases, 2 of which occurred in the practice of midwives.

ACUTE POLIOMYELITIS AND EPIDEMIC CEREBRO-SPINAL MENINGITIS.

(Copy of Return made to Local Government Board, 6th May, 1914.)

Total No. of Cases.	NUMBER OF CASES.																			
	1-5 Years.						5-10 Years.						10-15 Years.							
	Male.			Female.			Male.			Female.			Male.			Female.				
	Cases.	Deaths.	*Permanent Paralysis.	Cases.	Deaths.	*Permanent Paralysis.	Cases.	Deaths.	*Permanent Paralysis.	Cases.	Deaths.	*Permanent Paralysis.	Cases.	Deaths.	*Permanent Paralysis.	Cases.	Deaths.	*Permanent Paralysis.		
12	5	...	3	4	...	2	2	1	...	...	...	...	1	...	...	...	...	...	Acute Poliomyelitis.	
†3	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	Cerebro-Spinal Fever.	
Cases Removed to Isolation Hospital.	2	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Acute Poliomyelitis	
	...	...	...	..	...	...	†1	†1	...	...	...	...	...	...	...	...	...	...	Cerebro-Spinal Fever	

* *i.e.*, Recovered with Permanent Paralysis of one or more groups of muscles.

† One case notified as E.C.S.M. proved to be Apical Croupous Pneumonia. Confirmed by post-mortem examination.

VENEREAL DISEASES.

Syphilis was stated as the cause of death in 16 cases, equivalent to a death rate of 0·06 per 1,000 population. No deaths were assigned to "other venereal diseases."

Statistics as to this group of diseases are most difficult to obtain, and only the Newcastle Dispensary and the Union Infirmary have been able to give any information at all. At the Dispensary, of 8,872 letters issued, 96 were in respect of cases of syphilis, and 9 of gonorrhœa, or a total percentage of 1·2.

At the Union Infirmary, of a total of 1,428 in-patients, 111 suffered from various venereal diseases, equivalent to 7·8 per cent. of all cases. Included in this total are later manifestations due to syphilis, such as general paralysis, locomotor ataxy, arterio-sclerosis, aneurism, and eye, ear, and skin affections.

It has not been possible to obtain the number of cases at the Royal Victoria Infirmary. At this institution there is no "lock" ward or other special department for diseases of this nature, although many cases are undertaken incidentally to their treatment for other conditions.

The municipality has made no arrangement for diagnosis or treatment of venereal disease. Wasserman tests are made, and salvarsan treatment administered, at the Royal Victoria Infirmary.

CITY HOSPITALS FOR INFECTIOUS DISEASES.

Accommodation.

Name and Situation of Hospital.	Total Available Beds.
City Hospital for Infectious Diseases, Walker Gate ...	172
Smallpox and Isolation Hospitals, Town Moor ...	172

CITY HOSPITAL, WALKER GATE.

Admissions during the year—1,286.

The *average daily number* of patients in the hospitals was 160.

Rate per cent. of cases removed to Hospital to cases notified in 1890, and during each of the years 1895, 1900, 1905, 1910 to 1913.

	1890	1895	1900	1905	1910	1911	1912	1913
Scarlet Fever	18·4	33·0	35·0	50·1	84·5	83·8	88·0	90·6
Diphtheria	8·3	28·7	40·0	36·8	80·1	80·5	81·8	81·5
Enteric Fever	38·9	48·0	54·5	52·0	90·5	92·0	91·2	91·1
All cases of the above together with Continued and Typhus Fever	21·3	34·6	38·6	47·8	83·0	83·1	86·4	88·3

Owing to the great pressure upon the accommodation during a large part of the year, an endeavour was made to encourage the friends in a number of instances to contrive to isolate their patients at home; in few cases was the attempt successful, hospital treatment being nearly always demanded. The cases whose removal to hospital is most usually resisted are those whose home conditions absolutely preclude any possibility of efficient isolation.

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT REMOVED DURING 1913.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases (Verified).	Deaths.	Case Mortality per cent.	Total Cases (Notified).	Deaths.	Case Mortality per cent.
Scarlet Fever ...	853	21	2·5	90	1	1·1
Diphtheria	254	22	8·7	68	9	13·2
Enteric Fever ...	109	12	11·0	11	5	40·0

Expenses of Maintenance.—Of the patients admitted, the expense of maintenance is charged as under:—

	Cases.
To the Newcastle Sanitary Authority	1,285
To private guarantors	1
Total	1,286

1913.

Diseases Admitted.

Sent in as:—		After observation proved to be:—																				
	No. of Cases.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Influenza.	Tonsillitis.	Erythema.	Laryngitis.	Croupous Pneumonia.	Broncho-Pneumonia.	Measles.	Aphthous Stomatitis.	Varicose Ulcer.	Psoriasis.	Vincent's Angina.	Oral Sepsis.	Ichthyosis.	Anterior Poliomyelitis.	Gastro-Enteritis.	Febricula.	Hepatic Cirrhosis.	Rötheln.
Scarlet Fever ...	865	841	...	1	1	11	6	...	1	...	...	...	...	...	...	1	1	...	...	1	...	1
Diphtheria ...	300	12	254	...	...	24	...	6	...	1	...	1	...	...	2	...	...	...	...	...	...	...
Enteric Fever ...	113	...	...	108	...	...	...	...	2	...	...	...	1	...	..	...	...	...	1	...	1	...
Epidemic Cerebro-Spinal Meningitis	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
Measles	2	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Tonsillitis ...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals ...	1,286	853	254	109	1	37	6	6	4	1	1	1	1	1	2	1	1	3	1	1	1	1

Monthly Admissions and Deaths.

DISEASES.	Admissions.													Deaths.											
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Scarlet Fever	42	45	38	41	56	55	85	91	105	97	107	91	853 *	...	1	...	1	2	1	1	3	1	3	4	4	21
Diphtheria	13	37	27	13	16	16	12	16	13	30	30	31	254 †	2	2	3	1	1	1	...	2	2	1	3	4	22
Enteric Fever	4	3	4	3	5	6	4	9	25	13	21	12	109	...	2	2	...	...	1	...	...	...	2	4	1	12
Tonsillitis	1	...	3	5	3	2	1	5	2	6	4	4	36	...	...	...	...	...	...	...	...	...	...	...	...	...
Laryngitis	...	...	1	1	1	...	1	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...
Croupous Pneumonia	...	...	...	...	1	...	1	...	1	...	1	...	4	...	...	...	...	...	...	...	...	1	...	...	...	1
Laryngitis and Meningitis	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1
Erythema	...	...	...	...	...	2	3	...	1	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Apthous Stomatitis	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Broncho-Pneumonia	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Septic Tonsillitis	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1
Varicose Ulcer	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1
Influenza	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Psoriasis	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	..
Vincent's Angina	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Oral Sepsis	...	...	...	...	..	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Icthyosis	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis	...	...	...	...	...	...	...	2	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Gastro-Enteritis	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Septic Laryngitis, and Bronchitis	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Febricula	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Hepatic Cirrhosis	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Rotheln	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	..	...	...	...	...	...	...
Totals	64	86	73	63	83	81	108	124	153	147	165	139	1,286	3	5	5	2	4	3	1	5	4	6	12	9	59

* Includes 1 Nurse. † Includes 2 Ward Maids.

NOTE.—The deaths given above for each month refer to patients admitted during that month only, and have no reference to the actual number of deaths in that month.

Of the foregoing, the following **died within 24 hours of admission**—Scarlet Fever 4, Diphtheria 9, and Croupous Pneumonia 1, Total 14.

Present Death Rates compared with those of previous years—

RETURN SHEWING THE NUMBER OF CASES OF SCARLET FEVER, DIPHTHERIA, AND ENTERIC FEVER ADMITTED TO HOSPITAL, AND MORTALITY RATES PER CENT.

1890-1895.

YEAR.	NUMBER OF CASES ADMITTED TO HOSPITAL.			NUMBER OF DEATHS.			CASE MORTALITY, PER CENT.		
	Scarlet Fever.	Diph-theria.	Enteric Fever.	Scarlet Fever.	Diph-theria.	Enteric Fever.	Scarlet Fever.	Diph-theria.	Enteric Fever.
1890	114	15	80	2	1	14	1·8	6·7	17·5
1891	110	10	67	5	6	6	4·5	60·0	8·9
1892	244	18	26	8	5	5	3·3	27·8	19·2
1893	202	15	49	5	2	6	2·5	13·3	12·2
1894	230	8	60	6	3	13	2·6	37·5	21·7
1895	319	41	75	10	10	21	3·1	24·4	28·0
	1,219	107	357	36	27	65	3·0	25·2	18·2

1908-1913.

1908	283	220	88	7	21	5	2·5	9·5	5·7
1909	623	334	56	26	31	12	4·2	9·3	21·4
1910	465	317	47	11	29	5	2·4	9·1	10·6
1911	605	375	68	14	33	11	2·3	8·8	16·2
1912	1,018	383	82	34	27	13	3·3	7·0	15·8
1913	853	254	109	21	22	12	2·5	8·7	11·0
	3,847	1,883	450	113	163	58	2·9	8·7	12·9

Diphtheria.—*Cases in Hospital.*—Of the 254 patients in Hospital, 209 were faucial, pharyngeal, or nasal cases, and of these 12, or 5·7 per cent., died. 45 were also laryngeal or

tracheal, and of these 10, or 22·2 per cent., died. Tracheotomy was performed on 12 patients, of whom 3, or 25 per cent., died. It is of interest to note that of 71 cases in which the nasal passages were involved 19 died, a case mortality of 26·8 per cent.

Of the 22 deaths, 9 were of patients practically moribund on admission, who died within 24 hours.

As hitherto, the patients sent to Hospital, generally speaking, came from much less favourable surroundings than those treated at home, and suffered from a severer type of the disease.

Antitoxin is administered to all cases of Diphtheria admitted to Hospital which have not received the remedy at home. Owing to the free supply of Antitoxin to private medical practitioners, patients receive the treatment earlier than previously.

Bacteriological diagnosis is made in the great majority of cases before admission.

Mixed Infection.—95 patients sent into Hospital, or 7·4 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows:—

Scarlet Fever and Diphtheria	12
Scarlet Fever and Varicella	13
Scarlet Fever and Pertussis	6
Scarlet Fever and Phthisis	1
Scarlet Fever, Diphtheria, and Vaginitis	1
Scarlet Fever and Ringworm	15
Scarlet Fever and Impetigo	3
Scarlet Fever and Scabies	2
Scarlet Fever and Conjunctivitis	8
Scarlet Fever and Endometritis	1
Scarlet Fever and Vincent's Angina	1
Diphtheria and Scarlet Fever	15
Diphtheria and Measles	4
Diphtheria and Varicella	4
Diphtheria and Pertussis	2
Diphtheria and Conjunctivitis	1
Diphtheria and Impetigo	1
Diphtheria and Scabies	1
Diphtheria and Vincent's Angina	1
Diphtheria, Scarlet Fever, and Varicella	1
Enteric Fever with Phthisis	1
Enteric Fever with Scarlet Fever	1

Thus, 7·4 per cent. of the cases of scarlet fever, on admission, suffered from another infectious condition as well, 11·8 per cent. of the cases of diphtheria, and 1·8 per cent. of the enterics.

Deaths from Concurrent Affections.—Out of the total number of deaths from all causes in hospital (59), 14, or 23·7 per cent., were of patients suffering from a concurrent affection directly or partially causative of the fatal termination. These were as follows:

DEATHS WITH CONCURRENT AFFECTIONS.

Scarlet Fever with Diphtheria...	2
Scarlet Fever with Abdominal Tuberculosis...	1
Scarlet Fever with Pulmonary Tuberculosis and Spinal Caries ...	1
Scarlet Fever with extensive burns	1
Diphtheria with Scarlet Fever	3
Diphtheria with Splenic Anæmia	1
Diphtheria with Measles	3
Enteric Fever with Tuberculous Meningitis...	1
Enteric Fever with Carcinoma of Stomach	1

Cross Infection.—It is always noted that when the wards are kept uniformly full, as in years of high admissions, the proportion of cross infections is also higher than ordinary. This has happened during the year under report, when 53 patients developed a second infection in the wards; of these 11 were incubating the second disease on admission, the remaining 42, or 3·26 per cent. of all cases admitted, acquiring the second infection in hospital, many of them from the incubating cases admitted.

Strong efforts were made to deal with all such cases by means of the "barrier" system of "bed isolation," a method, however, which depends for success entirely upon the personal element, and requires the most rigorous and laborious observances of minutiæ of regime.

Particulars of cases are shown in the following table.

CROSS INFECTIONS.

Sent in as	Developed	Number of Cases.	Number Infected in Hospital.
Scarlet Fever	Scarlet Fever	10	10
Scarlet Fever and Ringworm	Scarlet Fever and Varicella...	1	1
Scarlet Fever	Varicella	16	10
Scarlet Fever and Diphtheria	Varicella	1	1
Scarlet Fever	Ringworm	1	1
Scarlet Fever	Measles...	3	3
Diphtheria	Scarlet Fever	9	7
Diphtheria	Varicella	3	1
Diphtheria and Scarlet Fever	Varicella	2	2
Diphtheria	Pertussis	4	4
Diphtheria	Scabies	1	1
Diphtheria	Measles...	1	0
Diphtheria	Scarlet Fever and Varicella...	1	1
		53	42

Of 853 cases of scarlet fever admitted 6, or 0·7 per cent., were incubating a second disease, and 26, or 3·04 per cent., were infected in hospital. Of these 26, no less than 10 (or 1·2 per cent. of all scarlet fever admissions) were cases sent in as mild scarlet fever, the diagnosis of which by the private practitioner rested upon symptoms stated to have disappeared before removal of the patient. When so large a proportion of notified cases exhibit only slight and transitory symptoms, it is extremely difficult to avoid error in a certain number.

Of 254 cases of diphtheria admitted 5, or 1·9 per cent., were incubating a second disease, and 16, or 6·3 per cent., were infected in hospital.

"Return" Cases.—The following are details of the "return" cases during the year :—

"RETURN" CASES OF SCARLET FEVER, 1913.

SCARLET FEVER.	"Infecting" Cases.		"Return" Cases.		"Infecting" Cases.
Total Admissions.	No.	Per-centage.	No.	Per-centage.	Average Day of Disease when Discharged.
853	23	2·7	24	2·8	47·8

THE SEASONAL OCCURRENCE WAS AS FOLLOWS:—

Quarter.	Total Scarlet Fever Admissions.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
January to March ...	125	3	2·4	4	3·2
April to June	152	5	3·3	7	4·6
July to September ...	281	2	0·7	2	0·7
October to December ...	295	13	4·4	11	3·7

Of the 23 "infecting" cases 14 remained "clean," *i.e.* free from any apparent infective condition such as sores or discharges. 9 developed nasal discharge after reaching home. In the 14 "clean" cases, the period before onset of illness of the second or "return" case after discharge from hospital of the supposed "infecting" case was 8·7 days, and in the "dirty" cases, 9 days.

The "clean" cases had been discharged from hospital on the (average) 48th day of disease, and the "dirty" cases on the (average) 49th day.

"RETURN" CASES FOR YEARS, 1906-1913.

Year.	Total Scarlet Fever Admitted.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
1906	442	7	1·6	10	2·3
1907	390	11	2·8	17	4·4
1908	283	4	1·4	5	1·8
1909	623	23	3·7	30	4·8
1910	465	18	3·9	20	4·3
1911	605	26	4·3	30	4·9
1912	1,018	47	4·6	52	5·1
1913	853	23	2·7	24	2·8

AVERAGE STAY IN HOSPITAL DURING LAST SEVEN YEARS.

Year.	All Cases.		Scarlet Fever.		Diphtheria.		Enteric Fever.		Other Diseases.	
	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.	No.	Average Stay in Days.
1907	647	52·4	390	59·7	177	42·4	35	39·9	46	39·2
1908	614	48·4	283	56·3	220	40·0	88	48·5	25	31·8
1909	1,090	49·2	623	54·3	334	41·6	56	45·9	78	42·8
1910	912	44·4	465	51·3	317	37·2	47	46·4	83	32·5
1911	1,110	45·6	605	50·5	375	41·9	68	44·4	62	20·2
1912	1,542	45·8	1,018	46·1	383	45·7	82	46·2	59	20·9
1913	1,286	45·5	853	47·6	254	47·9	109	43·4	70	19·6

BACTERIOLOGICAL LABORATORY, CITY HOSPITAL.

The following examinations were made in connection with the patients in the wards :—

Swabs for Diphtheria germs	1,228
Blood for Widal reaction (Enteric Fever) ...	23
Urine for Pathological Organisms	3
Cerebro-Spinal Fluid, for Meningococcus and Cells	2
Pus (various sources), for organisms	6
Hair for Ringworm Favus, etc.	5
Sputum, for Tubercle Bacilli	3
TOTAL	1,270

SMALLPOX AND ISOLATION HOSPITALS.

Owing to the insufficiency of the accommodation for scarlet fever at Walker Gate, recourse was had, as usual, to the hospitals on the Town Moor.

The total number of beds in the scarlet fever pavilions at the City Hospital is 73, including an observation block, and the average daily number of scarlet fever patients in hospital during 1913 was 111, and in 1912, 128. Accordingly, "clean" convalescent cases were sent to the Moor during the greater part of the year, from January 1st to March 26th, and from July 15th to the end of the year, since when, up to date, the wards there have been in continuous use. 416 cases in all were so sent, as compared with 528 in 1912.

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

To the Medical Officer of Health.

Sir,

Herewith I beg to submit my Report for the year 1913.

As the special section of the Health Department which deals with Tuberculosis is a newly-established one, the Report includes a brief review of the initial steps in its development, and in the formation of the comprehensive combined scheme for dealing with all cases of tuberculosis in the City.

I would desire to thank the staff for their loyal support in carrying through the organisation and work of the Dispensary in the face of great difficulties, and yourself, Sir, for the valuable advice, continuously and willingly given, and your untiring efforts in originating and eventually carrying through the combined scheme.

Your obedient servant,

William H. Dickinson, M.B., D.P.H.,
Tuberculosis Medical Officer.

REPORT.

Notifications.—1,441 notifications of tuberculosis were received by the Medical Officer of Health, but some of the patients had already been notified, so that the total number of new cases was 1,246, of whom 796 were certified to be suffering from pulmonary, and 450 from other forms of tuberculosis.

The details are set forth in the accompanying tables:—

Summary of Notifications during the Period, 1st January to 31st December, 1913.

Age Periods.	Number of Notifications on Form "A."													Number of Notifications on Form "B."					Number of Notifications on Form "C."		Number of Notifications on Form "D."	
	Primary Notifications.												Total Notifications (including Cases previously notified by other doctors).	Primary Notifications.				Total Notifications (including Cases previously notified by other doctors).	Poor Law Institutions.	Sanatoria.	Poor Law Institutions.	Sanatoria.
	0 to 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 and upwards.	Total.		Under 5	5 to 10	10 to 15.	Total.					
Pulmonary—Males	2	10	34	26	40	40	100	82	77	25	9	445	530	—	2	6	8	14	67	56	56	57
Pulmonary—Females	—	12	40	49	29	34	74	56	27	12	3	336	404	—	1	6	7	14	48	25	33	42
Non-Pulmonary—Males ...	19	47	55	40	31	15	13	12	6	2	3	243	253	—	3	8	11	14	11	—	4	—
Non-Pulmonary—Females ...	15	41	44	32	19	11	22	5	1	—	—	190	205	—	3	3	6	7	5	—	5	—
Total	36	110	173	147	119	100	209	155	111	39	15	1,214	1,392	—	9	23	32	49	131	81	98	99

N.B.—The notification of "All Forms" of Tuberculosis came into force on 1st February, 1913. The notifications of Pulmonary Tuberculosis are from 1st January, 1913. and notifications of "Other Forms" from 1st February, 1913.

Form "A."—Notification by any Medical Practitioner of a case of Tuberculosis (whether at an Institution or otherwise).

Form "B."—Notification by School Medical Officers of cases of Tuberculosis in children attending Public Elementary Schools of which he has become aware in the course of inspection.

Form "C"—Notification by the Medical Officers of Poor Law Institutions and Sanatoria of persons admitted who are suffering from Tuberculosis.

Form "D."—Notifications by the Medical Officers of Poor Law Institutions and Sanatoria of persons discharged who are suffering from Tuberculosis.

NOTIFICATIONS—ORIGINAL AND REPEATED.

TOTAL.	Nett New Notifications.	Notified twice or more times.	Notified three or more times.	Notified four or more times.	Notified five times.
1,441	1,246	158	26	9	2

SOURCE OF NOTIFICATIONS OF NETT CASES.

Total Number of Nett Cases Notified.	Notified by Medical Practitioners.	Notified by the Tuberculosis Medical Officer.	From Other Sources than Medical Practitioners, Death Returns, etc.
1,246	957	140	149

Deaths.—During the year 481 deaths (uncorrected) were registered as due to some form of tuberculosis. Of this number, 59 were insured persons.

Of these 311 were certified as due to pulmonary tuberculosis (including 12 cases of acute phthisis) and 170 to other forms of the disease.

The death rates per 1,000 population were as under:—

Pulmonary Tuberculosis	1·15
Other Forms of Tuberculosis	0·62
Total Tuberculosis Death Rate (uncorrected) ...	1·77

The details as to the parts affected and the age periods are given on the following page.

DEATHS (UNCORRECTED)—CLASSIFICATION ACCORDING TO AGE AND TYPE.

	Under 1 year.	1 to 2 years.	2 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 45 years.	45 to 65 years.	65 years and upwards.	TOTAL.
Pulmonary Tuberculosis (not acute)	1	4	10	26	43	143	64	8	299
Acute Phthisis	...	...	1	1	1	5	4	...	12
Acute Miliary Tuberculosis	...	1	...	4	1	...	2	...	8
Tuberculous Meningitis	15	14	17	22	4	6	...	...	78
Tuberculosis of Peritoneum and Intestines ...	14	8	8	4	4	5	1	3	47
Tuberculosis of Spinal Column	...	...	2	1	...	1	1	...	5
Tuberculosis of Joints	1	1	...	3	1	1	1	1	9
Tuberculosis of other Organs	...	...	1	1	2	3	1	1	9
Disseminated Tuberculosis	...	4	1	4	2	3	...	...	14
									481
SUMMARY.									
Pulmonary	1	4	11	27	44	148	68	8	311
Non-Pulmonary	30	28	29	39	14	19	6	5	170
									481

It must be noted, however, that 28 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (22 pulmonary; 6 other forms), while 30 of the deaths (7 pulmonary; 23 other forms) registered in Newcastle were those of temporary residents.

The corrected deaths and death rates per 1,000 of the population were:—

	Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	326	1·20
Other Forms	153	0·56
Death Rate from all forms of Tuberculosis (corrected)	479	1·76

It will be noticed that the uncorrected and corrected totals are practically identical.

The reason for the differences between the uncorrected and corrected figures for the two sub-divisions is that patients with pulmonary tuberculosis leave the city for the fresh air of the country, while persons from the surrounding districts, suffering from surgical tuberculosis, flock to the Royal Victoria Infirmary and other hospitals for active treatment.

Occupations.—The occupations of 239 persons who died during the year were ascertained to be as follows:—

Occupations of Persons who Died from Pulmonary Tuberculosis during the year, 1913.

Trade or Occupation.	No.	Trade or Occupation.	No.	Trade or Occupation.	No.
Housewives	35	Brought forward...	170	Brought forward ...	196
Labourers	29	Commercial Trav's.	2	Messenger	1
Scholars	19	Organ Builders ...	2	Moulder	1
Children (under 5 yrs)	13	Platers	2	Mattress Maker ...	1
Domestic Servants ...	9	Watermen	2	Nurse	1
Clerks...	6	Bottlewasher ...	1	White Lead Worker ...	1
Miners	6	Bookfinisher	1	Porter	1
Shop Assistants ...	6	Butcher	1	Patternmaker	1
Engineers	5	Clogmaker	1	Photographer	1
Joiners	5	Cattle Drover ...	1	Plumber	1
Machinists	5	Cooper	1	Policeman	1
Housekeepers ...	4	Dressmaker	1	Steel Smelter	1
Packers	4	Driller	1	Slater	1
Pottery Workers ...	4	Draper	1	Stonemason	1
Motormen	3	Electrician	1	Shoemaker	1
Platers' Helpers ...	3	Engine Driver ...	1	Soldier	1
Charwomen	3	Fireman	1	Telegraphist	1
Barmen	2	Grinder	1	Tripe Preparer ...	1
Boot Repairers ...	2	Gardener	1	Tinsmith	1
Brassfinishers ...	2	Grocer	1	Typist	1
Blacksmiths	2	Hawker	1	Turner (Steel)... ...	1
Bricklayers	2	Hairdresser	1	Warehouseman ...	1
Caretakers	2	Holder Up.	1	No Occupation ...	21
Carried forward ...	170	Carried forward...	196	Total cases visited ...	239

Duration of Illness.—After every death from pulmonary tuberculosis, enquiry was directed when possible, to the length of time the deceased had been ill. The average duration of illness in such cases, during 1913, was roughly two years and two months (25·88 months), while in 1912 it was roughly two years and four months (28·24 months).

As the average duration of phthisis is generally estimated at from 5 to 7 years, it is obvious that these patients must

have been suffering from the disease, and were probably active sources of infection for many months, and possibly years, before they realised the true nature of their complaint.

It is hoped that earlier recognition of active phthisis will enable the patients to take proper precautions, and thus reduce the risk to the general public.

Notification-Death Ratio.—As there were 796 (nett) notifications of pulmonary tuberculosis, and 311 deaths, the ratio of notifications to deaths was as 2·56 to 1.

During the eleven months, February 1st to December 31st, there were 450 (nett) notifications of other forms of tuberculosis, and 170 deaths, the notification-death ratio was as 2·56 to 1.

Deaths in Institutions.—62 patients died of phthisis, in the Union Infirmary, and 7 in the phthisis pavilions at Walker Gate.

There can be no doubt that the increased use of such hospitals, by patients in the later stages of consumption, is likely to have a good effect upon the phthisis death rate, for while the sufferer is well looked after, the dependants are freed from further risk of infection and are better able to earn sufficient money to provide the necessaries of life.

Ward Distribution of Tuberculosis.—Considerable interest attaches to the prevalence of tuberculosis in the various wards of the city, and a table has been prepared showing, for each ward, the estimated populations, the number of notifications and deaths, together with the rates per thousand, and also the number of insured persons who have applied for sanatorium benefit, the number on the Dispensary register, and the number of persons whose sputum has been examined and found to contain tubercle bacilli.

WARD DISTRIBUTION OF TUBERCULOSIS.

WARD.	Population estimated on Registrar General's figures for 1913.	NOTIFICATIONS.						DEATHS (Uncorrected).						Application for Sanatorium Benefit.	Persons on Dispensary Register.	Sputa examined with positive result.
		Pulmonary.	Attack rate per 1,000 of population.	Non-Pulmonary.	Attack rate per 1,000 of population.	Total.	Attack rate per 1,000 of population.	Pulmonary.	Death rate per 1,000 of population.	Non-Pulmonary.	Death rate per 1,000 of population.	Total.	Death rate per 1,000 of population.			
St. Nicholas	3,566	27	7·57	4	1·12	31	8·69	4	1·13	2	0·55	6	1·68	6	13	7
St. Thomas	14,095	33	2·34	14	0·99	47	3·33	*26	1·84	*41	2·91	67	4·75	6	28	7
St. John's	15,338	58	3·78	25	1·63	83	5·41	12	0·8	4	0·26	16	1·06	16	37	13
Stephenson	18,734	63	3·36	30	1·60	93	4·96	14	0·75	6	0·33	20	1·07	24	81	30
Armstrong...	15,611	78	4·99	34	2·18	112	7·17	15	0·96	8	0·52	23	1·48	21	65	30
Elswick	12,638	35	2·77	11	0·87	46	3·64	7	0·56	4	0·31	11	0·87	10	19	20
Westgate	15,252	42	2·75	23	1·51	65	4·26	15	0·99	9	0·59	24	1·58	19	45	26
Arthur's Hill	11,417	34	2·98	31	2·71	65	5·69	†73	6·4	†21	1·84	94	8·24	12	21	11
Benwell	17,569	69	3·92	59	3·35	128	7·27	12	0·68	14	0·8	26	1·48	29	79	17
Fenham	11,024	17	1·54	11	1·00	28	2·54	11	1·0	1	0·09	12	1·09	3	32	8
All Saints	17,686	69	3·90	29	1·64	98	5·54	18	1·02	6	0·34	24	1·36	15	57	16
St. Andrew's	12,472	50	4·00	14	1·12	64	5·12	8	0·64	5	0·36	13	1·0	18	31	17
Jesmond	11,040	12	1·09	7	0·63	19	1·72	3	0·27	1	0·09	4	0·36	5	8	6
Dene	12,173	9	0·74	10	0·82	19	1·56	4	0·33	5	0·42	9	0·75	6	11	4
Heaton	15,489	29	1·87	21	1·35	50	3·22	11	0·73	9	0·58	20	1·31	12	29	14
Byker	17,465	47	2·68	26	1·49	73	4·17	18	1·03	6	0·34	24	1·37	13	42	15
St. Lawrence	17,893	49	2·74	34	1·90	83	4·64	24	1·35	9	0·51	33	1·86	20	52	22
St. Anthonys	15,769	41	2·60	23	1·46	64	4·06	14	0·89	9	0·57	23	1·46	15	45	17
Walker	16,064	34	2·12	44	2·74	78	4·86	‡22	1·37	‡10	0·62	32	1·99	14	34	12
City	271,295	796	2·93	450	1·65	1246	4·58	311	1·15	170	0·62	481	1·77	264	729	292

N.B.—Notification of non-pulmonary tuberculosis only came into force on February 1st, 1913.

* Include deaths in Royal Victoria Infirmary and Fleming Memorial Hospital.
† Include deaths in Union Hospital.
‡ Include deaths in City Hospital, Walker Gate.

It must be borne in mind that the Union Hospital is situated in Arthur's Hill Ward, the Royal Victoria Infirmary and Fleming Memorial Hospital in St. Thomas' Ward, while the Phthisis Pavilions at the City Hospital, Walker Gate, are in the Walker Ward.

Overlooking these wards with their abnormal conditions it is at once apparent that the death-rate per thousand population (which in the case of tuberculosis is of far more practical value than the notified incidence per thousand), is much higher in the poorer and more congested wards than in those enjoying more favourable conditions.

Thus to take but one example, the death rate from phthisis in the St. Lawrence Ward is five times that of Jesmond and nearly four times that of the Dene Ward.

These figures all go to prove the importance of poverty, congestion and indifferent housing as factors in aiding the ravages of tuberculosis.

Another point that arrests the attention is the abnormally high notified incidence of tuberculosis in St. Nicholas Ward (8·69) compared with the death rate (1·68), which is below the average for the city (1·77). The explanation is that this ward contains an exceptionally large number of Common Lodging Houses, which are frequently the resort of individuals impoverished by tuberculosis, who eventually end their days in the Union Hospital.

Housing Accommodation.—The numbers of rooms in the dwellings occupied by 239 persons who died from pulmonary tuberculosis were as follows :—

Rooms in dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Military Barracks.	Total.
Deaths.	23	65	58	42	43	7	1	239

Housing has a very important bearing on the death rate as well as the spread of phthisis.

Thus, while according to the 1911 census, only 5 per cent. of the population of Newcastle were living in one-roomed houses, practically 10 per cent. of the deaths from phthisis occurred amongst people occupying holdings of one room only.

Many of the patients who died in institutions, *e.g.* the Union Infirmary, belonged to the very poorest sections of the community.

In connection with the housing question it should be stated that wooden shelters are at the disposal of the Tuberculosis Medical Officer. These are of considerable value as they enable the patient to carry out open-air treatment at home, reducing the congestion in the house and at the same time eliminating the great source of danger, *i.e.*, the patient with "open" phthisis expectorating tubercle bacilli.

It is unfortunate, however, that but few individuals are able to take advantage of these valuable adjuncts to treatment and prevention owing to the small size of their yards or gardens (if they possess any at all).

DEVELOPMENT OF ARRANGEMENTS FOR DEALING WITH TUBERCULOSIS.

At the beginning of the year pulmonary tuberculosis was a compulsorily notifiable disease in this city, and the nucleus of the future Tuberculosis Dispensary was already in existence. This consisted of a clerk, who kept all the records relating to notifications, changes of address, and deaths of consumptives, and a special inspector whose duties were to disinfect and report on any sanitary defects in the houses occupied, or previously occupied, by sufferers from phthisis.

In addition, the Council was under contract with the authorities of Barrasford Sanatorium for the maintenance of twenty patients in that institution.

On February 1st the Public Health (Tuberculosis) Regulations, 1912, came into force, and all forms of tuberculosis became notifiable throughout the country.

The establishment of a Tuberculosis Dispensary had long been decided upon, and on February 24th the Tuberculosis Medical Officer was appointed and straightway took up his duties, visiting notified cases, examining contacts, and acting as Medical Adviser to the Insurance Committee with regard to the administration of Sanatorium Benefit.

Temporary premises, consisting of two rooms, were secured in the Town Hall, and these were occupied on March 17th. The hours of attendance here were from 9 a.m. to 1 p.m., and 2.30 p.m. to 5 p.m. daily during the week, but ceasing at 1 p.m. on Saturdays.

By the end of March 69 patients were enrolled on the Dispensary Register, and it was found necessary to engage a nurse to assist in the work at the Dispensary and visit the patients in their homes.

During Health Week (April 8th to 14th) the staff of the Dispensary took an active part in the Tuberculosis Section, and sixty-four addresses were delivered to 5,000 children, while many thousands of leaflets relating to the work of the Dispensary, the precautions to be taken to prevent the spread of consumption, etc., were distributed to the school children and others who visited the Exhibition in the Cambridge Hall.

Owing to the very limited accommodation, it was found impracticable to store and dispense medicines at the Dispensary, so, on April 9th, arrangements were made with a local firm of druggists to make up prescriptions for Dispensary patients at the same tariff rates as charged to the Insurance Committee.

Tuberculin treatment of selected cases was commenced on April 16th, and three days later arrangements were completed for the bacteriological examination of sputum and other discharges of persons attending the Dispensary.

Owing to the fact that many notified patients and contacts of phthisical individuals were working, it was found expedient

to open the Dispensary on Wednesday evenings for the benefit of such persons as were unable to come during the forenoon except at considerable expense and inconvenience.

The necessity of segregating some of the more advanced cases was soon found to be urgent, and the Sanitary Committee decided to utilise temporarily an isolation block, consisting of two pavilions with 14 beds, for the accommodation of phthisical patients, at the City Hospital, Walker Gate. These beds were occupied from June 6th onwards.

The number of patients on the Dispensary Register continued to increase rapidly, and a second nurse was engaged on October 14th.

THE "COMBINED SCHEME."

Before the National Insurance Act, 1911, came into operation on July 15th, 1912, the facilities for sanatorium treatment were very limited, except for persons with considerable financial resources. The majority of the sufferers from phthisis were treated at home under bad conditions as regards nourishment and housing, while a few were received as in-patients, for a limited time, by voluntary hospitals.

Among the poorer classes large numbers drifted under the care of the Poor Law Authority and ended their days in the Union Hospital.

The Departmental Committee, appointed by H.M. Treasury in 1912, recommended that Local Authorities should co-operate with the Insurance Committees of their areas in the treatment of persons suffering from tuberculosis, and a report was prepared conjointly by the Medical Officer of Health and the Clerk to the Insurance Committee outlining a combined scheme for the detection, classification, and treatment of tuberculosis in Newcastle-upon-Tyne.

This suggested scheme received the approval of the City Council and the Newcastle Insurance Committee in June, and under it the Corporation agreed :—

(*a*) To establish, equip, staff, and maintain a Tuberculosis Dispensary.

(*b*) To provide Sanatorium and Hospital accommodation for not less than 120 persons suffering from tuberculosis.

Under the National Insurance Act, 1911, 1s. 3d. per annum per insured person was allotted to the Sanatorium Benefit Fund, and of this sum 6d. per head is paid to the doctors on the local panel for the domiciliary treatment of insured persons suffering from tuberculosis. After certain deductions for drugs and administration expenses, the balance, which must be not less than 7½d. per insured person, is to be handed over yearly to the Corporation, who guarantee to carry out the combined scheme, the annual cost of which, over and above the Insurance Committee's contribution, is to be borne equally by the city rates and H.M. Treasury.

Although the scheme was only finally sealed by the two contracting bodies on March 17th, 1914, its provisions as regards sanatorium treatment came into force on November 12th, 1913, when the City Council became responsible for 30 beds for adults at Barrasford Sanatorium and 6 beds for children at Stannington Sanatorium.

Further, it was agreed that the Corporation should provide immediately 24 additional beds for children at Stannington Sanatorium and build a hospital to accommodate not less than 60 persons on a site adjacent to the City Hospital for Infectious Diseases at Walker Gate.

The Work of the Tuberculosis Dispensary.—Between February 25th and December 31st the number of new patients entered on the Dispensary register was 739, and of these 299 were 'insured' persons, 318 dependants of 'insured' persons, while 112 were 'uninsured.'

Many of these cases were 'contacts,' and of them no fewer than 140 (or nearly 20 per cent.) were first discovered to be

suffering from consumption by the Tuberculosis Medical Officer, and many of them were fairly advanced cases and active sources of infection, expectorating tubercle-bacilli in their sputum.

The number of attendances at the Dispensary was 3,483, and 173 patients were visited in their homes, making a total of 3,656 consultations by the Tuberculosis Medical Officer.

When a patient first attends the Dispensary his name and address are entered on the register, then these and other particulars relating to his personal and family history, the nature and duration of his present illness, etc., are noted on the "Medical Report" form which is completed by the Medical Officer after the examination.

A pocket spitting flask is provided free of charge to all cases with tubercle-bacilli in the sputum, advice is given as to precautionary measures and a special pamphlet entitled, "Rules for Consumptives and Those Looking after Them," is handed to each definite case.

If it is thought desirable that the patient should keep a record of his temperatures a thermometer is supplied free of charge, the nurse instructing him in its use.

The cases on the Dispensary Register were derived from many sources, the majority being notified cases and their contacts reported by the Dispensary Nurses, who visit practically every person notified as suffering from tuberculosis of the lungs.

Many, however, were referred to the Tuberculosis Medical Officer, with a view to Sanatorium or other treatment, by the Insurance Committee, the School Medical Officers, private practitioners, out-patient departments of the Royal Infirmary and Sick Children's Hospital, etc., while a considerable number were secured through the agency of the Charity Organisation Society, and the Guild of Help.

Comparatively few patients received medicinal treatment at the Dispensary, but in special cases prescriptions for medicine

were given or cod liver oil (either pure or in some more palatable form) and tonics were supplied.

Tuberculin injections were administered to 76 patients.

The results were not very encouraging, but it is only fair to state that the majority of the patients had commenced treatment at Barrasford Sanatorium, under excellent conditions which were not maintained after their return to Newcastle.

The opinion formed by the Tuberculosis Medical Officer is that treatment by inoculation on the intensive method is not free from grave risk to patients who are not residing in a Sanatorium or Hospital.

The Work of the Nurses.—The first nurse was appointed on April 9th, and she assisted in the Dispensary every forenoon and on Wednesday evenings, visiting patients in their homes in the afternoons. This arrangement continued till October 14th, when a second nurse was appointed to assist in the outside work.

In all 799 new patients were visited and 1,235 subsequent visits were made making a total of 2,034 visits paid between April 9th and December 31st.

The main object of these visits is to see that the patient is carrying out, in every detail, the instructions of the doctor in attendance more especially with regard to the prevention of the spread of infection to other members of the household.

The nurse can often give good advice on home nursing, the improvisation of a bed for the sufferer, the preparation of simple and inexpensive articles of diet and kindred subjects.

Enquiry is also directed to the health of contacts and any who are ailing are urged to see their own doctor if they have one or come to the Dispensary for examination.

In this way a large number of unrecognised cases of tuberculosis has been discovered, especially amongst children.

The nurses report to the Tuberculosis Medical Officer every morning upon the previous day's work, special mention being

made, in the case of new patients, of the number and relation of the inmates of the house occupied, the number of rooms in the house, the sleeping arrangements of the patient and any obvious sanitary defects, *e.g.*, improper ventilation or bad drainage.

This information is set out on a special form and filed with the medical report and other papers relating to the case.

The Work of the Special Inspector.—This officer disinfects houses after deaths or changes of address of consumptives, arranges for the removal and disinfection of phthisical patients' clothing and bedding and reports on any insanitary conditions existing in the homes of dispensary patients, such as overcrowding, insufficient ventilation, or defective sanitary arrangements.

The details of his work were as follows:—

Houses visited	1,251
Houses disinfected	514
Rooms disinfected in above houses	1,089
Disinfection for patients going to Sanatoria ...	77
,, ,, ,, changing their address	108
,, ,, ,, changing their rooms	7
,, ,, ,, going to Hospital ...	80
Houses disinfected after death (included in above)	242
Disinfection of Dispensary	80
Total number of visits	1,835
Houses found to have Sanitary defects (including overcrowding)	71

These defects were referred to the Inspector of Nuisances.

PAMPHLETS DISTRIBUTED FROM THE TUBERCULOSIS DISPENSARY.

(1) HANDBILL:—

City and County of Newcastle-upon-Tyne.

What a Tuberculosis Dispensary is.

A Tuberculosis Dispensary is that branch of the Health Department of a local authority which deals exclusively with **CONSUMPTION.**

All forms of the disease, whether affecting the lungs, glands, joints, bones or other parts, are included, and **the main objects of the Dispensary are to control the disease, where it is already established, and to prevent the infection of healthy persons.**

The Dispensary is under the supervision of the Medical Officer of Heath, and is staffed by doctors, nurses, inspectors, etc.

The doctors examine patients at the Dispensary, or at their homes, if they are confined to the house.

In consultation with the patient's own private medical attendant, if he has one, the line of treatment suitable for each case is decided on, some of the patients being drafted to Sanatoria or Hospitals, while others are treated at home by their own family doctor.

A very important feature is the examination of relatives and contacts of known consumptives. In this way many cases are caught in the earliest stages, when they are most amenable to treatment.

The nurses assist at the Dispensary and visit bedridden patients in their own homes to see that the doctor's instructions are being carried out.

The inspectors also visit the houses of consumptives and report on any insanitary conditions about the premises, *e.g.*, dampness, overcrowding, defective drains and so forth.

As **TUBERCULOSIS IS AN INFECTIOUS DISEASE** the inspectors disinfect the rooms, clothing and bedding of consumptives.

All information relating to patients is strictly confidential as between patient and doctor, and nothing will be done or divulged which would have the effect of interfering in any way with the patient's means of making a livelihood.

HEALTH DEPARTMENT,
TOWN HALL,
April, 1913.

(2) SMALL FOUR-PAGE CARD :—

City and County
of Newcastle-upon-Tyne.

HEALTH DEPT.

RULES

FOR CONSUMPTIVE PATIENTS AND THOSE LOOKING AFTER THEM.

(Adapted from the Rules of the Royal Victoria Hospital for Consumption, Edinburgh).

Town Hall,
April, 1913.

"If preventable, why not prevented?"
KING EDWARD VII.

Rules for Consumptive Patients and those looking after them.

Consumption is a communicable disease. It may pass from person to person. It may pass from one lung to the other or from one organ to another.

The chief source of infection is the expectoration of the consumptive. The great danger lies in the drying of the expectoration and the blowing about of the dried infectious material.

The spread of consumption can be largely prevented.

If the following directions be observed there is no need for fear in ordinary intercourse with patients.

The breath of the consumptive is not directly infectious.

When at home the patient should expectorate into a jar or cup containing a tablespoonful of carbolic acid (1 in 20) or other disinfectant. The vessel should be changed once in twelve hours, or oftener. It should be cleansed by being

3

filled up with *boiling* water. The combined contents should be poured down the W.C. The vessel should then be washed with *boiling* water.

When the patient is out of doors he should carry a pocket spitting flask. The flask should be used and cleansed like the jar. The patient should never spit on the streets.

The patient should not use handkerchiefs for expectoration. If this ever has to be done the handkerchief should be of an inexpensive material, *which should be burned after use*. Squares of rag or paper which may be used for convenience should be similarly treated.

The expectoration should on no account be swallowed, for thereby the disease may pass to other organs (bowels).

Consumptive patients should avoid kissing.

Consumptive mothers should not suckle.

Patients with pronounced disease should have separate table utensils.

If expectoration has been accidently deposited on the floor or elsewhere it

4

should be wiped up and burned and the contaminated surface cleansed with strong disinfectant.

Rooms which have been long occupied by a consumptive patient should, before occupation by someone else, be carefully disinfected as after other infectious disease. This will be done free of charge on application to the Health Department.

The furnishings of the bedroom should be as simple as possible, all unnecessary hangings, furniture and mats being avoided.

Fresh Air is the food of the lungs. Therefore see that the lungs are not starved.

A.—*By Day.*—The patient should occupy as airy and as dry a room as possible. *The windows should be kept freely open.* When able, the patient should be out of doors once or several times during the day, but should *avoid over-exertion* and chill.

B.—*By Night.*—He should sleep alone. The bedroom should be large and airy. *The window should be kept freely open* in all weathers.

(3) ILLUSTRATED HANDBILL, published by "The Medical Officer." A copy of this on cardboard, for hanging up, is given to every known case of consumption.

Bacteriological Examination of Sputum.—910 specimens of sputum were examined for presence of tubercle bacilli at the College of Medicine, 207 being positive, and 703 negative.

354 specimens were examined at the Dispensary, and of these 85 were positive, and 269 negative.

The following table shows the division into age periods of the persons whose sputa were found to contain tubercle bacilli :—

AGE PERIODS OF PERSONS WHOSE SPUTA, ON EXAMINATION, PROVED TO CONTAIN TUBERCLE BACILLI.

	5 years to 10 years.	10 to 15.	15 to 20.	20 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65	65 and upwards.	TOTAL.
College of Medicine—Males ...	...	2	10	14	39	33	25	3	2	128
College of Medicine—Females ...	1	3	14	11	23	16	5	4	2	79
Tuberculosis Dispensary—Males ...	1	...	6	11	19	19	6	...	...	62
Tuberculosis Dispensary—Females	...	6	4	3	4	5	1	...	...	23
Total...	2	11	34	39	85	73	37	7	4	292

Institutional Treatment.—The following tables show the number of patients admitted to *Barrasford Sanatorium* and the *City Hospital*, Walker Gate, under the auspices of the City Council or the Insurance Committee, together with the results of treatment where it had been completed :—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM DURING YEAR 1913.

	In Barrasford Sanatorium on 1st January, 1913.	Admitted during year.	Persons who completed treatment during year.			In Barrasford on 31st Dec., 1913.
			Number.	Total Number of days.	Average Length of Stay in days.	
Uninsured Males ...	8	4	9	1,357	151	3
Uninsured Females...	3	12	12	1,177	98	3
Insured Males ...	15	57	50	4,819	96	22
Insured Females ...	4	13	15	1,761	117	2
Total	30	86	86	9,114	106	30

RESULTS OF TREATMENT OF PATIENTS DISCHARGED FROM BARRASFORD SANATORIUM DURING YEAR 1913.

RESULTS.	Men.	Women.	Total.
(*a*) Fit to work	34	7	41
(*b*) Improved	23	15	38
(*c*) Without improvement	1	4	5
(*d*) Worse	0	1	1
Treatment discontinued for other medical reasons	1	0	1
Total	59	27	86

PATIENTS WHO RECEIVED TREATMENT IN PHTHISIS PAVILION, AT THE CITY HOSPITAL, WALKER GATE.

The first patient was admitted 5th June, 1913.

	Patients admitted.	Patients who have completed treatment.			In Hospital 31st Dec., 1913.
		Number.	Total number of days.	Average length of stay in days.	
Uninsured, Male... ...	4	1	2	2	3
,, Female ...	6	3	101	33	3
Insured, Male	24	17	765	45	7
,, Female	4	3	81	27	1
Total	38	*24	949	39	14

* One Patient re-admitted.

Of those who completed treatment, 11 died, 3 were able to resume work, 2 left the district, 4 were improved, and 3 remained *in statu quo*.

Stannington Sanatorium. — The Newcastle-upon-Tyne Insurance Committee entered into an agreement with the Poor Children's Holiday Association to take 6 beds at Stannington Sanatorium. From March 11th to December 31st, 17 children, comprising 7 males and 10 females, under 16 years of age, had been admitted for treatment.

Of the 11 who completed treatment, 2 were discharged greatly improved, 3 improved, while 6 left without much benefit except in their general condition.

After Care.—Every effort is made to keep in touch with patients after they leave the Sanatoria and Hospitals, in order to encourage them in their battle against the disease, and to see that they continue to observe the rules for the preservation of health and prevention of infection of others which they learned whilst undergoing institutional treatment.

A list was compiled of all the persons who had made application for treatment in the 20 beds at Barrasford Sanatorium maintained by the Corporation from October 29th, 1908, until their recent co-operation with the local Insurance Committee.

The Dispensary Nurses visited all those persons who were still alive and could be traced, and a large number have reported themselves at the Dispensary and continue to do so at intervals of from 3 to 6 months.

In all there were 475 applications for treatment, 276 being accepted and 199 rejected.

On October 31st, 1913, of those who were accepted 165 were still alive, 98 were dead, and 13 could not be traced, while of those rejected 36 were alive, 128 were dead, and 35 could not be traced.

A special report is being prepared which will give the results in detail and the number of persons living 1, 2, 3, 4, 5, and 6 years after the original application, together with their condition, capacity for work, etc.

Further, thanks to the courtesy of the Stannington Sanatorium authorities, a list has been procured of all the children residing in Newcastle who have been treated at the institution. Wherever possible these cases have been followed up and are regularly visited by the Dispensary Nurses if thought desirable.

A very pressing need is some means of providing suitable employment for phthisical patients, and probably an "After Care Committee" could best deal with this matter.

It is far too common to see cases return from Sanatorium or Hospital much improved in health and able to undertake a certain amount of work, and then relapse, owing to insufficient nourishment whilst looking for an "open-air" job.

Doubtless the establishment of farm colonies would overcome this difficulty to some extent, but the average town dweller is unable to keep a wife and family on the wages paid to a farm servant.

If the schemes conceived by the present Government for the improvement of the conditions of the agricultural labourer and the return of the people to the land come to fruition, there is undoubtedly a great future for farm colonies.

THE FUTURE.

Although "The Combined Scheme" marks a tremendous advance in the methods adopted for the treatment and prevention of tuberculosis, a very great deal still remains to be done. The principal items calling for attention are :—

1. The Prevention of Surgical Tuberculosis. The trend of modern opinion is that surgical tuberculosis is very largely due to a milk supply tainted with bovine tuberculosis, and that the provision of pure milk is urgently needed.
2. The Treatment of Surgical Tuberculosis. Tuberculous disease of the bones, joints and spinal column is more amenable to treatment than phthisis, but treatment must be prolonged and hence is costly.

   It is very desirable that a special hospital, or a special wing of an existing hospital, should be established, where patients suffering from tuberculosis of the spine, joints, etc., can be attended to by a surgeon and at the same time enjoy the advantages of open-air treatment.

   The number of cripples in our streets is a blot upon our civilisation.

3. Improved Housing Accommodation for the Working Classes. Overcrowding is everywhere acknowledged to be prejudicial to the health and morals of those exposed to it.

4. The formation of an influential "After Care" Committee, representative of the voluntary charitable agencies, employers of labour (including the works foremen), the local hospitals and sanatoria, the churches, the Insurance Committee, and the City Council.

   Such a Committee might assist necessitous cases in various ways, *e.g.*, with clothing or food. They could then insist upon the patients taking proper precautionary measures to prevent the spread of infection.

   Again, an "After Care" Committee might help the phthisical patient to obtain more suitable work than he has had in the past, and, finally, they might raise funds for the foundation of a "Farm Colony" that would be partially self-supporting.

5. The Provision of Open-Air Schools. Large numbers of children who are delicate and unable to withstand the routine of ordinary school-life, and thus lose much of their education, would benefit enormously, both physically and mentally, if they could obtain some instruction in open-air schools where the hours would be shorter and the hygienic advantages greater than in the orthodox type of school.

   Such children if excused school in the ordinary way are often allowed to "run wild" about the streets, greatly to the detriment of their health and morals.

> The Boy Scouts' organisation is the nearest approach to open-air schools that we possess, and there is no doubt that the love of the open air which is inspired, and the discipline which is enforced, can only be beneficial to the rising generation.

Before concluding it might not be inappropriate to remark upon the urgent necessity of securing better premises for the Dispensary. At present only two rooms, located in a noisy thoroughfare, are available, and the accommodation is quite inadequate. Apart from the facts that the ventilation and heating arrangements are bad and that there are no dressing rooms, all of which cause considerable inconvenience and delay to the patients, the health of the Dispensary staff has only been indifferent.

It is also to be hoped that the new Pavilions to be erected at Walker Gate will be completed without delay, as the segregation of advanced bed-ridden cases promises to be one of the most important factors in the prevention of the spread of phthisis, which has, very aptly, been called a bedroom disease.

The relations between the Dispensary staff and the local members of the medical profession, the Sanatorium and Hospital authorities, the School Medical Officers, the voluntary charitable agencies, and the Insurance Committee, have been most cordial and the Tuberculosis Medical Officer would like to acknowledge, in this report, his appreciation of the assistance accorded him by one and all.

WILLIAM H. DICKINSON, M.B., D.P.H.,
Tuberculosis Medical Officer.

Tuberculosis Dispensary,
July, 1914.

DISINFECTION.

1,649 cases of notifiable and 86 of non-notifiable, infectious disease have been inquired into by the infectious disease inspectors, and the houses or rooms connected therewith disinfected by spraying with formalin. In connection with cases of tuberculosis, 514 houses, including 1,089 rooms, were similarly disinfected.

In every instance the bedding and other infected articles were removed to the Disinfecting Station at the City Hospital, Walker Gate, and after sterilisation by steam, returned to the owners.

INFECTED ARTICLES PURIFIED IN THE DISINFECTING APPARATUS AT THE CITY HOSPITAL FOR INFECTIOUS DISEASES, WALKER GATE, AND THE ISOLATION HOSPITAL, TOWN MOOR.

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1913.	1912.	1913.	1912.
23,756	28,440	4,234	4,187

INFECTED ARTICLES DESTROYED AND REPLACED BY THE HEALTH DEPARTMENT.

	1913.	1912.
Half Straw Mattresses	40	66
Flock Bed	...	1

Orders for goods to the value of £9 2s. 8d. were also given in replacement of similar articles destroyed by order of the Medical Officer of Health.

Fluid disinfectant, in pint tins, and disinfectant soap, in

pound bars, were given out free on the order of the special inspectors, for home use in connection with infectious disease. Every precaution was taken to ensure that the material so dispensed was properly and economically used.

DISINFECTANTS DISTRIBUTED.

FROM	FOR INFECTIOUS DISEASES.		FOR PHTHISIS	
	FLUID. (1 pint tins.)	SOAP. (1 lb. bars.)	FLUID. (1 pint tins.)	SOAP. (1 lb. bars.)
Health Department	500	382	124	31
Tuberculosis Dispensary ...	...	...	145	8
Corporation Yard, Benwell ...	301	301	37	37
Corporation Yard, Walker ...	148	189	42	73
TOTAL, 1913	949	872	348	149
The Total in 1912 was	1,677	1,486	726	466

BACTERIOLOGICAL INVESTIGATIONS, 1913.

The following is a summary of the bacteriological investigations carried out on behalf of the Health Department of the Newcastle Corporation by Professor H. J. Hutchens, at the University of Durham College of Medicine, Newcastle.

REPORT.

2,451 specimens were submitted for examination. The nature of the investigations, and the results obtained, were as follows :—

	Diphtheria.			Tuberculous Phthisis.			Enteric Fever.		
	Total.	Positive.	Negative.	Total.	Positive.	Negative.	Total.	Positive.	Negative.
No. of Examinations ...	795	217	578	909	203	706	179	82	97

Milk Examinations :—

	Total	Found	Not Found.
1. For tubercle bacilli	191	16	175

2. Bacterial content of organisms other than tubercle bacilli (the colon bacillus being taken as the indicator.)

Colon bacilli not found in 1 cc. or less ...	8
Colon bacilli found in 1 cc. but not in less	45
Colon bacilli found in 0·1 cc. but not in less	71
Colon bacilli found in 0·01 cc. but not in less	39
Colon bacilli found in 0·001 cc. or less ...	35
	198

Water Examinations :—

Class I. (Colon bacilli not found in 100 cc. or less)	32
Class II. (Colon bacilli found in 100 cc. but not in less)	99
Class III. (Colon bacilli found in 10 cc. but not in less)	55
Class IV. (Colon bacilli found in 1 cc. but not in less)	7
	193

Other Examinations :—

1. An investigation of a localized epidemic of enteric fever	1
2. An investigation of an epidemic of food poisoning	1
	2

In the former investigation a number of persons were examined with the object of detecting a "carrier" of the bacillus, as well as a number of samples of water, ginger beer, etc., but with the material available the investigation failed to throw any light on the source of the epidemic.

In the food poisoning epidemic Gaertner's bacillus was recovered both from the cow upon which suspicion had fallen and also from a number of persons who had suffered from the infection. A detailed account of these experiments has already been submitted and appears elsewhere in this volume.

H. J. HUTCHENS,
Bacteriologist.

University of Durham College of Medicine,
Newcastle-upon-Tyne,
27th March, 1913.

IV. FOOD.

BOVINE TUBERCULOSIS,
INSPECTION OF MEAT AND PROVISIONS,
INSPECTION OF FOOD AND DRUGS.

BOVINE TUBERCULOSIS, AND THE INSPECTION OF MEAT AND PROVISIONS, AND FOOD AND DRUGS.

TUBERCULOUS MILK.

191 samples of milk, collected by the *Assistant Inspectors of Nuisances* were examined by the Bacteriologist for the presence of tubercle bacilli, and in 16 instances the milk was found to be infected, as shown in the report of the latter, (see page 141).

The details of the action taken in each case are as follows:—

Identification No.

78. *Corbridge.*—Sample collected January 8th.
108. *Carlisle.*— ,, February 26th.
109. *Carlisle.*— ,, ,,
58. *Carlisle.*— ,, November 5th.

All the above samples were collected from one Dairy in the City. In each case the supply was stopped immediately. The herds were examined and each was found to contain animals in a suspicious condition, which were isolated from the remainder. Permission was then given for the resumption of the supplies, the milk being sterilised before sale as a precaution. A check sample from each supply after the removal of the suspected cows was found to be free from tubercle bacilli.

Identification No.

88. *Burgh-by-Sands.*—Sample collected January 22nd. The Dairy Company ceased taking the milk until the herd had been examined. Suspicious animals were excluded from the herd, and the supply was allowed to be resumed, the Company in the meantime sterilising the milk as a precaution. A check sample taken after the exclusion of the suspected animals shewed that the milk still contained tubercle bacilli, and the supply was therefore again stopped. A further examination of the herd led to other cows being excluded, and the supply again being resumed, subject to its being sterilised before sale. A second check sample was free from bacilli.

151. *Wetheral.*—Sample collected May 7th. The supply was stopped until the herd had been examined. It was ascertained through the dairyman in the City that a cow or cows had been removed from the herd, although there was no official information to this effect, and the supply resumed. A check sample was then taken and was reported to be free from tubercle bacilli.

171. *Carlisle.*—Sample collected July 2nd.

178. *Longtown.*—Sample collected July 16th.

These samples were obtained at the same dairy. The supplies were stopped immediately pending veterinary examination of the herd. This resulted in several cows at each farm being found in a suspicious condition. These animals were isolated from the others, and on the understanding that their milk was not mixed with that of the remainder, permission was given for the resumption of the supply. Check samples were taken and were reported by the Bacteriologist to be free from tubercle bacilli.

175. *Lockerbie.*—Sample collected July 9th. The supply was stopped immediately. The herd was tested with tuberculin and one cow found suspicious and excluded from the herd. A check sample from the milk of the remainder was reported not to contain tubercle bacilli.

Identification No.

44. *Newcastle.*—Sample collected October 8th. The dairy premises are in the City, but at the time of examination the cows were kept on premises in the County area, and were therefore inspected by the County Veterinary Inspector. Three were found suspicious and excluded from the herd. Samples from the mixed milk of the remainder were found not to contain tubercle bacilli.

49. 54. *Dumfriesshire.*—These samples were from the same farm, but were collected from two different dairymen in the City, 49 on October 22nd and 54 on October 29th. The supply was stopped pending the result of action by the County Authorities at Dumfries. This resulted in one cow being found tuberculous and removed from the herd, upon which the supply was allowed to be resumed. Check samples taken on November 26th, however, were also found to be tuberculous, and the supply was again stopped. Inoculation tests of the milk of two further cows found suspicious were carried out by the Dumfriesshire authorities and revealed the presence of tubercle bacilli, and these cows were therefore removed from the herd. Permission was then given for the resumption of the supply. Further check samples from the mixed milk were reported free from bacilli. The farmer refused to have the tuberculin test applied to his cattle.

50. *County Durham.*—Sample collected October 22nd. The supply was stopped at once. The herd was inspected by the Veterinary Inspector for County Durham, who reported that he could find no trace of tuberculosis in any of the animals. Subsequent to the collection of the tuberculous sample, however, several cows in the herd had been sold and others bought to replace them, and it appeared probable that some of the former were the source of the mischief. Under

Identification No.

the circumstances, therefore, the embargo on the milk was removed, and check samples were collected from two different dairies in the City receiving the milk. Both of these were reported free from tubercle bacilli.

53. *North Riding, Yorkshire.*—Sample collected October 29th. The circumstances in this case were similar to those in No. 50. On the supply being stopped the farmer interviewed the Medical Officer of Health for Newcastle, and stated that he had had the herd examined but no trace of disease could be discovered. Changes had taken place in the herd since the sample was collected. It is evident that the discarded cows were responsible for the bacilli in the milk, as a check sample examined by the inoculation test gave a negative result.

67. *Morpeth.*—Sample collected November 19th. On communication with the City dairyman from whom the sample was obtained, it was found that he had ceased to take the milk. The County Medical Officer of Health, who was informed, subsequently reported that one cow at the farm had been found with tuberculosis. He had not been able to ascertain whether the milk was being sent to Newcastle again.

INSPECTION OF MEAT AND PROVISIONS.

Report of the

Veterinary Officer, Inspector of Meat, etc.

To the Medical Officer of Health.

Sir,

I have the honour to present this my seventh annual Report to the Sanitary Authority for the City and County of Newcastle-upon-Tyne concerning the duties performed in my section of the Health Department during the year ending 31st December, 1913.

THE DAIRIES, COWSHEDS, AND MILKSHOPS ORDERS, 1885-1899.

There are 31 dairymen registered within the city, who occupy 43 cowsheds on 33 premises, and possess a total of 489 milch cows.

During the year 353 visits have been made to the cowsheds and dairies for the purpose of inspecting the buildings, utensils, etc., as to structural repair, sanitation, general cleanliness, etc.

During the year under report four persons gave up the business of cow-keeping, whilst two commenced. Of the four persons giving up, one was on account of the premises being closed—as unfit for the purpose of housing milch cows—by order of the Sanitary Authority. The premises in question were not only bad from the point of view of light, ventilation, cubic space, and drainage, but, besides having been frequently occupied by tuberculous cattle, were so constructed as to render proper cleansing and disinfection an impossibility.

Structural alterations are being carried out in regard to several premises, in order to bring them up to the requirements of the Sanitary Committee.

During the year ten milch cows were found diseased, three of them being affected with tuberculosis. All the tuberculous cows were destroyed. Of the remaining seven diseased cows, all were affected with disease of the udder, necessitating the milk from these animals being eliminated from the public supply.

THE TUBERCULOSIS ORDER OF 1913.

According to the Tuberculosis Order, issued by the Board of Agriculture at the beginning of May, 1913, every person having in his possession or under his charge,

(1) Any cow which is, or appears to be, suffering from tuberculosis of the udder, indurated udder, or other chronic disease of the udder; or

(2) Any bovine animal which is, or appears to be, suffering from tuberculosis with emaciation, shall, without avoidable delay, give information of the fact to a constable of the police force for the area wherein the animal is; or to an Inspector of the Local Authority, etc. From May to 31st December, 1913, only one case of tuberculosis has been notified within the city. On visiting the premises, the animal, an aged cow, was found to be suffering from an advanced stage of tuberculosis with emaciation and the udder extensively affected. The animal was valued and slaughtered, and the carcass, etc., was destroyed.

As the result of tubercle bacilli being found in a sample of milk from a herd in the City, another animal was suspected. Meanwhile, however, she had been sent into the county of Northumberland, the officer for which authority was notified, and dealt with the case.

Three other cases of tuberculosis were dealt with, one in the Cattle Market and the remainder within the dairy

cowsheds. Only one of these was of that form which comes within the scope of the Tuberculosis Order.

EMERGENCY LABORATORY.

At the close of the year arrangements were being made by the Veterinary Officer for the microscopic examination for tubercle bacilli of samples of milk obtained from suspected cows within the city cowsheds.

Although the Tuberculosis Order of 1913 has been withdrawn and replaced by another, having wider scope regarding the various forms of the disease, there can be no grea improvement—regarding freedom from contamination by the germs of a dangerous disease—in the public milk supply unless steps are taken by Local Authorities to carry out regular and systematic Veterinary Inspection of all the dairy herds within their districts.

Owing to the continued increase of work, not only under the Public Health Acts, but also under the Diseases of Animals Acts, great difficulty is experienced in finding time to go out to the various farms for the purpose of examining the cows. The subject of searching the herds for cows giving tuberculous milk or spreading the disease is of the greatest importance from the public health point of view, and ought not to be neglected. In order that the work be continued satisfactorily within the city it will be absolutely necessary for the Veterinary Officer, having regard to his many other duties, to be provided with (1) clerical, and (2) veterinary, assistance, and (3) increased office accommodation, as the present single small room is altogether inadequate.

MEAT, PROVISIONS, FISH, FRUIT, Etc.

During the year 1913, besides foreign meat and other foodstuffs, some $202\frac{3}{4}$ carcasses of home-killed animals have been condemned and destroyed within the city, as being unfit for human consumption, as compared with 168 carcasses in

the previous year. Of the 202¾ carcasses, 105 were condemned on account of tuberculosis.

During the year 1913, the number of cattle insured by the Newcastle, Gateshead, and District Butchers' Association was 15,712, being an increase of 740 over the year 1912, and 81 fewer than in the year 1911.

The Association has paid to its members the sum of £1,196 2s. 10d. as compensation in respect of carcasses, etc., condemned and destroyed on account of disease, etc., during the year 1913, which is £191 4s. 6d. more than was paid in the previous year for the same purpose.

NUMBER OF VISITS AND INSPECTIONS OF PREMISES DURING THE YEAR 1913.

Slaughter Houses, Knackers' Yards.	Meat, &c., Market.	Fruit, &c., Market.	Fish Market.	Meat, Provision, Fruit, Fish, Wholesale and Retail Shops.	Cold Stores.	Sausage, &c., Factories.	Goods Stations.
10,582	556	540	783	2,053	35	35	6

FOREIGN MEAT.

During the year 1913 some 408 vessels carrying meat and other foodstuffs from South America, Denmark, Holland, Norway, Sweden, France and other countries, arrived at the Quayside.

Of these, 17 were large South American vessels specially fitted for carrying huge cargoes of frozen meat.

During the year 49 vessels were boarded and 483 visits to the wharves were made, and of the 2,582 casks and other packages containing meat, etc., opened, minute examinations were made in each case. In regard to the visits made, 26 were by reason of detention notices having been served by the Customs officials detaining meat at the Quayside for the purpose of inspection.

Twenty samples—particularly brine—were taken during the year and submitted to the Public Analyst for chemical analysis, and all have been found free from any harmful preservative.

Foreign Meat arriving by Vessels.—During the year 1913 no carcasses of fresh beef have arrived, as compared with 196 the year before. With regard to pork, the imports show a large increase, there being 1,050 fresh carcasses landed, as compared with 115 the year previous. The consignments of frozen beef totalled some 3,000 quarters fewer than the previous year, whilst the number of carcasses of mutton are increased by about 30,000, the total number of carcasses of lamb, on the other hand, being reduced by some 3,900, or 50 per cent. fewer than in the previous year.

The following table states the quantities of fresh, frozen, and chilled meat, etc., landed at the Quayside during the year 1913:—

FOREIGN MEAT ARRIVING BY VESSEL AND LANDED AT THE NEWCASTLE-UPON-TYNE QUAYSIDE.

FRESH.

BEEF.		PORK.		MUTTON.	
	Casks.	Carcasses	1,050		Casks.
Maws ...	2	Sides (green bacon)	368,930	Mutton ...	5
Tripe ...	9		Casks.	Plucks ...	11
Udders ...	1	Feet	4,776	Feet ...	38
Meat	12	Maws	3,461	Livers ...	5
Livers ...	14	Tongues	226	Heads ...	28
Hearts ...	1	Pork	25		
		Tails	1		
		Heads	5,775		
		Plucks	2		

CHILLED.

BEEF.	
Fore-quarters	325
Hind-quarters	50

FROZEN.								
BEEF.			MUTTON.			LAMB.		
Hind-quarters	25,824		Carcasses	81,086		Carcasses	3,997	
Fore-quarters	60,526			Packages.				
	Packages.		Legs ...	5				
Hearts	1,997		Loins ...	5				
Tails	627		Shoulders ...	10				
Skirts	768		Hearts ...	799				
Tongues	535		Kidneys ...	326				
Livers	997			Casks.				
Kidneys	236		Suet ...	185				
Tripe	1,007							
Cheeks	224							
Flitches	62							
Crops	2,770							
Shin	3							
Spinal Cord	2							

OTHER GOODS.	
	Cases.
Tinned Beef	1,916
Sausages	17
Hams	17
Venison	1

The following *packages of foreign meat and other foodstuffs were seized and destroyed* in accordance with the Foreign Meat and Unsound Food Regulations :—

Tuberculosis.		Putrefactive Decomposition.	
Ox Tongues ...	15	Sheep Heads	140

CARCASSES, ETC., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION DURING THE YEAR 1913.

	Carcasses.				Plucks.		Ox Lungs.	Ox Hearts.	Ox Livers.	Ox Kidneys.	Ox Heads.	Ox Cheeks.	Ox Tripe.	Sheep Feet.
	Beef.	Veal.	Mutton.	Pork.	Sheep.	Pigs.								
Tuberculosis	81+32qrs.	1	...	15	...	...	sets 16	6	8	2	5	...	...	...
Swine Erysipelas ...	...	...	...	3	...	...	...	...	...	...	...	...	...	...
Pyæmia	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Abscesses	...	...	8 lbs.	...	...	...	sets 3	...	13	...	...	...	...	...
Congestion	...	...	1	1	1	8	...	...	...	...	...	...	...	...
Pleurisy	...	...	...	...	1	...	sets 2	...	...	...	...	...	...	...
Pneumonia (including Septic) ...	...	...	1	...	...	...	set 1	...	...	...	...	...	...	...
Traumatic Pericarditis .	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Fatty Degeneration ...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Cirrhosis	...	...	...	...	1	...	...	...	4	...	...	...	...	...
Emaciation (including Dropsy) ...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Uræmic poisoning ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Imperfectly bled ...	1	2	8	1	...	...	...	...	...	...	...	...	...	...
Asphyxia	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Immature	...	2	...	...	...	...	...	...	...	...	...	...	...	...
Traumatism	72 lb.	2 qrs.	...	...	...	...	...	...	...	...	...	...	...	...
Unmarketable	...	...	...	...	4	...	...	...	...	...	...	..	...	...
Died in Transit... ...	...	11	16	12	...	...	...	...	...	...	...	...	...	...
Decomposition	...	21	9+36 lbs	2	55	8	...	...	...	...	17	90 lbs.	636 lbs.	448 lbs.
TOTAL	92⅛	37½	39	34	62	16	22	7	26	2	22	90 lbs.	636 lbs.	448 lbs.

POULTRY, GAME, FISH, ETC., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION DURING THE YEAR 1913.

	Poultry and Game.	FISH.		Fruit.	Vegetables.	Provisions.
Tuberculosis	Chicken - - 1					
Putrefactive Decomposition	No. Rabbits - - 38 Grouse - - 20 Ptarmigan - 118 Ducks - - 19	Shell Fish. Prawns 339 lbs.	Other than Shell Fish. Cod - - - 26 lbs. Haddock - 208 ,, Halibut - - 133 ,, Kippers - - 77 ,, Trout - - 85 ,, Skate - - 112 ,, Witch - - 91 ,, Plaice - - 840 ,, Mackerel - 20 ,,			No. Eggs - - - 748 Meat Pies 8 stones Bacon - 116 lbs. Spare Rib 6 ,, Sausage - 252 ,,
Unsound				Bilberries - 6 lbs. Black Currants 80 ,, Plums - - - 384 ,, Pears - - - 112 ,, Pomegranates 103 cases	Onions 37 cwts. Cucumber 784 lbs. Potatoes 4½ tons	
Traumatism	Pheasants - 7					
Unseasonable (unclean)			Trout - - 532 lbs. Salmon - - 25½ ,,			

SLAUGHTER HOUSES.

During the year 1913, there were one hundred and eleven slaughter houses licensed within the City, including premises used for horse-slaughtering only, besides one knacker's yard proper.

The whole are made up of 6 groups, situate Dispensary Lane, Cattle Market, Benwell, Stepney, Byker Hill and Oaks Place, together with fifteen separate private premises in various parts of the City.

The Dispensary Lane Group have for some time been under 6 months licences, which have been renewed from time to time.

The Oaks Place Group of 5, and 1 slaughter house behind Heaton Park Road, were reported to the Sanitary Committee in regard to their unfit condition, when it was decided to grant a temporary licence of three months from November term in respect of the Oaks Place Group to enable the occupiers reasonable time to make other arrangements. Concerning the Back Heaton Road premises, the Committee decided not to license the premises and to survey them before deciding to issue a closing order.

On several occasions slaughter houses were found, particularly at the week ends, not properly cleansed. The occupiers were cautioned in each instance either verbally or by letter, but no occasion has occurred for further proceedings.

SHOPS AND CELLARS.

Premises wherein meat, etc. (including sausages) is prepared for food have been regularly visited, and on several occasions it has been necessary to direct the occupier's attention to the requirements of cleansing and limewashing, which have invariably been carried out by verbal request of the Inspector. Not only the buildings, but also the machinery or plant utilised for the preparation of food stuffs, are inspected as to general cleanliness from time to time.

PROSECUTIONS DURING YEAR 1913.

For slaughtering upon unlicensed premises one person was fined 20/- and costs.

For exposing unsound carcasses of mutton for sale one person was fined 40/- and costs in each of two cases; for depositing the same the cases were dismissed on payment of costs in each case; the case against the same person for depositing a diseased carcass at the same time was dismissed.

I have the honour to be, Sir,
Your obedient Servant,
THOMAS PARKER, F.R.C.V.S.,
Veterinary Officer,
Inspector of Meat, &c.

Health Department,
Town Hall,
Newcastle-on-Tyne,
June 10th, 1914.

FOOD AND DRUGS ADULTERATION.

The total number of **samples** (of all kinds) obtained by the ***Inspector of Nuisances*** for analysis during the year was 1,045, against 931 in the previous year. For details see pages 161-70. Of this total, only 607 were submitted for analysis to the Public Analyst, the remainder being milk samples, which, on being tested in the offices of the Health Department, were found to be genuine. The number of *milk samples* taken was 708. 66 of these were certified to be below the standard fixed by the "Sale of Milk Regulations, 1901."

Of the total number of samples taken (1,045), 279 were collected "informally," chiefly through the agency of hired persons, viz. :—

Butter	57	Flour	2
Margarine	28	Tapioco	1
Lard	27	Corn Flour	3
Vinegar	13	Sugar	2
Ground Rice	11	Tea	1
Baking Powder	8	Golden Syrup	1
Mustard	7	Arrowroot	2
Ground Ginger	7	Cream	5
Rice	2	Ground Almonds	2
Sago	5	Chewing Gum	4
Black Pepper	5	Lager Beer	8
White Pepper	9	Tartaric Acid	7
Semolina	9	Gregory's Powder	2
Condensed Milk	7	Swt. Spirits of Nitre	7
New Milk	1	Olive Oil	3
Cocoa	2	Camphorated Oil	3
Strawberry Jam	1	Cream of Tartar	7
Blackcurrant Jam	2	Tinct. of Rhubarb	6
Raspberry Jam	1	Syrup of Rhubarb	3
Marmalade	1	Paregoric	4
Coffee	1	Glycerine	1
Farola	1		

The percentage of *samples not genuine* to the total number taken is 7·66 (compared with 7·4 for the previous year), and the percentage of milk samples below standard to the total number of milk samples obtained is 9·3 (as against 8·6 in

1912). The total number of samples taken is at the rate of 3·9 per 1,000 of the population (estimated) of the City for the year 1913.

Preservatives in Food.—Of the total number of samples taken for analysis (1,045), only 57 (or 5·4 per cent.) were certified to contain preservative. The articles in question being—Margarine (31), Butter (17), and Cream (7), and British Wines (2). The latter contained undeclared salicylic acid to the extent of 2·6 grains and 4·8 grains per pint, in respect of which the vendors were cautioned. All the samples of Cream contained boric acid, in amounts varying from 0·19 per cent. to 0·47 per cent. In three instances, the samples were not labelled in accordance with the Public Health (Milk and Cream) Regulations, 1912, and the consequent action taken is shewn on pages 168 and 173.

In the case of the Margarine and Butter, the preservative in each case consisted of boric acid within the limit allowed.

Margarine Act, 1887.—31 samples of Margarine (included in the foregoing total) have been purchased and analysed. All were found to be genuine, except that they contained small quantities of boric acid (as above). In four instances, samples were delivered to the purchaser in a paper not marked "Margarine" as required by the Act. See page 171.

Margarine Warehouses.—106 visits have been made to the margarine warehouses, no contravention of the law as to the marking of margarine packages being found.

FOOD AND DRUGS ADULTERATION ACTS.

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
New Milk ...	708	642 genuine.		
		1 deficient in milk-fat 20·0%	4	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 4·2%	27	Subsequent samples genuine. No further action taken.
		1 deficient in milk-fat 21·6%	73	From one vendor, who was summoned. Cases dismissed on the ground that the milk had not been tampered with.
		1 deficient in milk-fat 16·6%	83	
		1 deficient in milk-fat 13·3%, and in non-fatty solids 1·9%	145	From one vendor, who was cautioned.
		1 deficient in milk-fat 6·6%	164	
		1 deficient in non-fatty solids 5·6%	153	From one vendor, who was cautioned.
		1 deficient in non-fatty solids 3·6%	209	
		1 deficient in non-fatty solids 2·2%	225	Subsequent sample genuine. Vendor cautioned.
		1 deficient in milk-fat 1·6%, and in non-fatty solids 8·6%	229	Vendor summoned. Fined 10/- and costs.
		1 deficient in milk-fat 6·6%	304	Vendor summoned. Fined 10/- and costs.
		1 deficient in milk-fat 3·3%	316	Subsequent sample genuine. Vendor cautioned.
Carried forward ...	708	Amount of penalties carried forward ...	...	£1 0 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	708	Amount of penalties brought forward ...	...	£1 0 0
New Milk ... (*contd.*)		1 deficient in milk-fat 10·0%	334	From one vendor, who was summoned. Cases dismissed on the ground that the milk had not been tampered with.
		1 deficient in milk-fat 3·3%	344	
		1 deficient in milk-fat 11·6%	350	Vendor summoned. Case dismissed on payment of costs.
		1 deficient in milk-fat 1·6%	414	From one vendor, who was cautioned.
		1 deficient in milk-fat 3·3%	425	
		1 deficient in milk-fat 3·3%	415	Subsequent sample genuine, vendor cautioned.
		1 deficient in non-fatty solids 3·0%	457	From one vendor, who was summoned. Cases dismissed, the former on payment of costs, and the latter on proof of warranty. No further action taken with regard to the latter.
		1 deficient in milk-fat 16·6%	487	
		1 deficient in milk-fat 6·6%	461	Subsequent sample genuine, vendor cautioned.
		1 deficient in milk-fat 6·6%	490	Subsequent sample genuine, vendor cautioned.
		1 deficient in milk-fat 10·0%	491	Vendor summoned. Case dismissed on the ground that the milk had not been tampered with.
		1 deficient in milk-fat 10·0%	500	Vendor summoned. Case dismissed on the ground that the milk had not been tampered with.
		1 deficient in milk-fat 6·6%	503	Subsequent sample genuine, vendor cautioned.
		1 deficient in milk-fat 6·6%	514	Vendor cautioned.
Carried forward ...	708	Amount of penalties carried forward ..	...	£1 0 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	708	Amount of penalties brought forward ...	...	£1 0 0
New Milk ... (*contd.*)				
		1 deficient in milk-fat 35·0%	519	From one vendor, who was summoned. Cases dismissed on proof of warranty.*
		1 deficient in milk-fat 40·0%	528	
		1 deficient in milk-fat 40·0%	527	No proceedings taken, owing to some irregularity in the taking of the sample.
		1 deficient in milk-fat 16·6%	536	From one vendor, who was summoned in respect of the first mentioned sample (No. 536); case dismissed on proof of warranty. (See Nos. 545 and 546).
		1 deficient in milk-fat 5·0%	541	
		1 deficient in milk-fat 3·3%	542	
		1 deficient in milk-fat 8·3%	545	From one vendor, who was summoned. Cases dismissed on the ground that the milk had not been tampered with. (These samples were taken in course of delivery from the farmer supplying—through a second dealer—the vendor of Nos. 536, 541, and 542). On the advice of the Town Clerk, no proceedings taken with regard to the warranty proved in case immediately preceding.
		1 deficient in milk-fat 8·3%	546	
Carried forward ..	708	Amount of penalties carried forward ...	...	£1 0 0

* Upon this, proceedings were instituted against the warrantors, who in turn proved a warranty from the farmer supplying them. This case was therefore dismissed on the same grounds. The farmer was then summoned, and this case dismissed on the ground that the milk had not been tampered with.

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	708	Amount of penalties brought forward ...	...	£1 0 0
New Milk ... (*contd.*)		1 deficient in non-fatty solids 2·6%	631	Subsequent sample genuine. No further action taken.
		1 deficient in milk-fat 3·3%	634	Subsequent sample genuine. No further action taken.
		1 deficient in milk-fat 10·0%	635	From one vendor, who was summoned. Cases dismissed on payment of costs.
		1 deficient in milk-fat 3·3%	643	
		1 deficient in milk-fat 11·6%	651	Vendor summoned. Case dismissed on payment of costs.
		1 deficient in milk-fat 6·6%	655	From one vendor, who was cautioned.
		1 deficient in milk-fat 6·6%	668	
		1 deficient in non-fatty solids 7·3%	694	Vendor summoned. Fined 20/- and costs.
		1 deficient in non-fatty solids 3·0%	706	From one vendor, who was cautioned.
		1 deficient in milk-fat 5·0% and in non-fatty solids 3·6%	731	
		1 deficient in non-fatty solids 4·4%	708	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 3·7%	716	These samples were taken in course of delivery from a Dairy Company supplying the vendor of No. 694. On the advice of the Town Clerk, no proceedings taken, having regard to the small deficiencies.
		1 deficient in non-fatty solids 1·4%	717	
		1 deficient in non-fatty solids 3·5%	726	Vendor cautioned.
Carried forward ...	708	Amount of penalties carried forward ...	...	£2 0 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	708	Amount of penalties brought forward ...	...	£2 0 0
New Milk ... (*contd.*)		1 deficient in non-fatty solids 2·3%	783	Subsequent sample genuine. Vendor cautioned.
		1 deficient in milk-fat 6·6%	824	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 1·8%	850	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 1·4%	852	Subsequent sample genuine. Vendor cautioned.
		1 deficient in milk-fat 18·3% and in non-fatty solids 1·2%	926	From one vendor, who keeps one cow. The sample No. 964 was therefore taken at the byre, after seeing the cow milked. Vendor cautioned.
		1 deficient in milk-fat 10·0%	945	
		1 deficient in milk-fat 6·6%	964	
		1 deficient in non-fatty solids 7·5%	969	From one vendor, who was summoned. Cases dismissed on proof of warranty.†
		1 deficient in non-fatty solids 7·5%	986	
		1 deficient in non-fatty solids 9·0%	987	
		1 deficient in milk-fat 3·3%	974	Subsequent sample genuine. Vendor cautioned.
		1 deficient in milk-fat 3·3%	977	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 1·4%	988	Subsequent sample genuine. No further action taken.
		1 deficient in non-fatty solids 1·6%	990	Subsequent sample genuine. No further action taken.
Carried forward ...	708	Amount of penalties carried forward ...	...	£4 0 0

† The warrantor was then summoned, and he in turn proved a warranty from the farmer supplying him, and the cases were therefore dismissed. The farmer was also summoned, and fined 40/- and costs in respect of the first-mentioned sample (No. 969), the other two cases being dismissed on payment of costs. (See also Nos. 994 and 995, following).

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	708	Amount of penalties brought forward ...	...	£4 0 0
New Milk ... (*contd.*)				These samples were taken in course of delivery from the Farmer who was stated to be supplying (through a second dealer), the vendor of deficient samples Nos. 969, 986 and 987, above referred to. Vendor summoned. Fined 20/- and costs in respect of sample No. 994, the other case being dismissed on payment of costs.
		1 deficient in non-fatty solids 10·1%	994	
		1 deficient in non-fatty solids 3·5%	995	
		1 deficient in milk-fat 1·6%	1007	Subsequent sample genuine. Vendor cautioned.
		1 deficient in non-fatty solids 7·0%	1028	Vendor summoned. Fined 10/- and costs.
British Wine ... (Port)	1	Contained 2·6 grains of Salicylic acid per pint.	37	Vendor cautioned.
British Wine ... (Raspberry)	1	Contained 4·8 grains of Salicylic acid per pint.	40	Vendor cautioned.
British Wine ... (Raisin)	1	Genuine.		
British Wine ... (Cowslip)	1	Genuine.		
Carried forward ...	712	Amount of penalties carried forward ...	...	£5 10 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	712	Amount of penalties brought forward ...	...	£5 10 0
Blackcurrant Jam ... (*continued on next page*)*	9	6 genuine.		
		1 contained apple pulp. Not "declared."	548	Informal sample. No further action taken.
Vinegar ...	13	12 genuine.		
		1 continued only 1·6% of acetic acid.	565	Informal sample. This was a bad sample (having been supplied from a barrel which was nearly empty). No further action taken.
Cider	3	1 genuine.		
		1 contained no alcohol or other products of the fermentation of apple-must, but consisted of a saccharine solution artificially flavoured with an ester (probably amyl acetate).	593	Vendor cautioned.
		1 contained no alcohol or other products of the fermentation of apple-must, but consisted of a saccharine solution artificially flavoured with an ester, (probably amyl acetate).	594	Vendor cautioned.
Cream.‡ ...	7	4 genuine (but contained boric acid—"declared.")		
		1 contained 0·40% of boric acid.—(Not labelled in accordance with the Regulations).	619	Informal sample. Formal sample taken (see No. 672).
Carried forward ...	744	Amount of penalties carried forward ...	...	£5 10 0

‡ See also Special Table on page 173.

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	744	Amount of penalties brought forward ...	...	£5 10 0
Cream* ... (*contd.*)				
		1 contained 0·47% of boric acid.—(Not labelled in accordance with the Regulations).	620	Informal sample. Formal sample taken. (The latter contained 0·19% of boric acid, but was labelled to that effect).
		1 contained 0·22% of boric acid.—(Not labelled in accordance with the Regulations).	672	Vendor cautioned.
Ground Ginger	8	7 genuine.		
		1 consisted entirely of Cassia.	683	Informal sample. Formal sample taken, which was genuine.
Sago	6	4 genuine.		
		1 consisted entirely of Tapioca.	691	Informal sample. Formal sample taken. (See No. 790).
		1 consisted entirely of Tapioca.	790	Vendor cautioned.
*Blackcurrant Jam ...		1 contained at least 10% of apple pulp.	952	Vendor summoned. Fined 20/- and costs. (Notice of appeal given by defendant, but not proceeded with).
*Blackcurrant Jam ...		1 contained at least 10% of apple pulp.	1018	Sample labelled accordingly. No action taken.
Total ...	758	Total amount of penalties ...	...	£6 10 0

* See also Special Table on page 173.

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and taken.
Brought forward ...	758	Amount of penalties brought forward ...		£6 10 0
Raspberry Jam	6	All genuine.		
Strawberry Jam ...	1			
Marmalade ...	1			
Butter ...	67	Genuine (except that 17 contained small quantities of boric acid—below 0.5%).		
Margarine ...	31	Genuine (except that all contained small quantities of boric acid—below 0·5%.)		
Lard	27			
Condensed Milk	7	All genuine.		
Skimmed Milk	7			
Coffee	1			
Flour	2			
Ground Rice ...	11			
Semolina ...	9			
Corn Flour ...	3			
Baking Flour...	8			
Ground Almonds ...	2			
White Pepper	9			
Black Pepper	5			
Tapioca ...	1			
Farola ...	1			
Rice	2			
Tea	1			
Sugar	2			
Cocoa	2			
Mustard ..	7			
Carried forward ...	971	Total amount of penalties ...	...	£6 10 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Samples taken for Analysis during the Year 1913.

Articles taken for Analysis.	Total No. of samples taken.	Result of Analysis.	Rotationary No. of sample.	Proceedings taken and result.
Brought forward ...	971	Amount of penalties brought forward ...	...	£6 10 0
Arrowroot ...	2	All genuine.		
Golden Syrup	1			
Chewing Gum	4			
Gregory's Powder ...	2			
Sweet Spirits of Nitre ...	7			
Tincture of Rhubarb ...	6			
Syrup of Rhubarb ...	3			
Tartaric Acid	7			
Camphorated Oil ...	3			
Olive Oil ...	3			
Glycerine ...	1			
Cream of Tartar ...	7			
Paregoric ...	4			
"Mixtures" (according to medical prescription).	2			
Pills (according to medical prescription).	2			
Lager Beer ...	8			
Rum	3			
Whisky ...	3			
Bitter Beer ...	3			
Burton Beer ...	3			
Total ...	1,045	Total amount of penalties ...	...	£6 10 0

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Action taken with respect to Offences other than Adulteration,

Offence.	No. of Cases.	Proceedings taken, etc.
Margarine Act, 1887, Sec. 6.		
Margarine delivered to purchaser in paper not marked "Margarine."	4	In one instance, an informal sample (No. 894), was purchased, a subsequent sample (No. 897), being taken formally. In both cases, the word "Margarine" was merely written upon the wrapper in pencil. Vendor cautioned. In two cases, the vendors were summoned, and fined 10/- and costs and 5/- and costs, respectively.
Sale of Food and Drugs Act, 1899, Sec. 9.		
Names and addresses of vendors not inscribed upon their milk-cans, etc.	11	In four cases, the vendors were summoned, in three fined 5/- and costs each (in one instance in which defendant was charged in respect of two separate dates, one of the summonses was dismissed), and the other dismissed on payment of costs. In the remaining 7 instances, the vendors were cautioned.
Total ...	15	Amount of penalties, £1 10 0.

FOOD AND DRUGS ADULTERATION ACTS.—*Continued.*

Summary of Legal Proceedings taken during the Year 1913.

Total samples reported as not genuine ... 80.

	No. of Non-genuine samples represented.	No. of Persons summoned.
Convictions and penalties obtained.	6	7 *
Cases dismissed.	21	18 *

No. of samples respecting which the vendors were cautioned (by order of Sanitary Committee) 36

No. of deficient samples in respect of which the vendors were neither summoned nor cautioned (some of these being informal samples, in others deficiency slight, subsequent samples being genuine, etc., etc., (See Tables) 17

Total amount of penalties ... ... £6 10s. 0d.

Offences other than Adulteration.

No. of prosecutions 6
No. of convictions and penalties obtained 5
No. of cases dismissed 2
No. of offenders cautioned 8
Others (informal sample) 1

Total amount of penalties ... ... £1 10s. 0d.

* This includes the persons summoned in respect of false warranties (viz.: 1 in the former number and 5 in the latter).

The Public Health (Milk and Cream) Regulations, 1912.

LOCAL GOVERNMENT BOARD TABLE.

1.—Milk and Cream not sold as Preserved Cream.

	(*a*) Number of samples examined for the presence of a preservative.	(*b*) Number in which a preservative was reported to be present.
Milk	282	Nil.
Cream ...	3	3. (*a*) Sample No. 619 (informal), contained boric acid 0·40%. A formal sample was therefore obtained (No. 672), and this was certified to contain 0·22% of boric acid. No label was attached to the parcel of cream sold, but a notice posted in the shop declared that "Cream sold at this establishment is preserved cream." The vendor was cautioned by order of Sanitary Committee. (*b*) Sample No. 620 (informal), contained boric acid to the extent of 0·47%. A formal sample was therefore taken (No. 673), and this contained 0·19% of boric acid, but was labelled to that effect (and is therefore included below, under "Cream sold as Preserved Cream.")

2.—Cream sold as Preserved Cream.

(*a*) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct.

(i.) Correct statement made 4

(ii.) Statement incorrect ... ... —

(*b*) Determinations of milk-fat in cream sold as preserved cream.

(i.) Above 35 per cent. 4

(ii.) Below 35 per cent. ... ... —

(*c*) Instances where (apart from analysis) the requirements as to labelling or declaration of preserved cream in Article V. (1) and the provision in Article V. (2) of the Regulations have not been observed ... ... Nil.

(*d*) Particulars of each case in which the Regulations have not been complied with, and action taken ... ... Nil.

3.—Thickening substances.—Any evidence of their addition to cream or to preserved cream. Action taken where found ... Nil.

4.—Other observations, if any.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—191 samples were obtained and examined by the Bacteriologist for presence of tubercle bacilli, which were found in 16.

Action taken is described on pages 145-48.

198 samples were obtained and submitted for examination for presence of evidence of excremental pollution, which was found in 35. The vendors and producers were communicated with and warned, further samples being taken in each case.

Water.—193 samples were collected from all parts of the City, and examined for the presence of *bacillus coli.*

The results are described fully on pages 21 and 141.

CONDITION OF PREMISES ON WHICH FOOD IS PREPARED.

Bakehouses.—There are 299 bakehouses in the City, made up of 16 factory bakehouses, 69 workshop bakehouses, and 214 domestic bakehouses. There is no access to the factory bakehouses for the officers of the Local Authority, but they are inspected by H.M. Inspector of Factories. No record as to their sanitary condition is therefore available. Generally speaking, the sanitary condition of the workshop bakehouses, which are under the supervision of the Health Department, is maintained in a fairly satisfactory state. Many of them are, however, small, and not well adapted for the purpose. The limewashing of walls and ceilings is regularly carried out twice a year, and special attention is given to the general sanitary condition, for which purpose they are regularly visited. The domestic bakehouses, which are generally small shops in dwelling houses, where home-made bread is baked by the occupiers, are kept in as clean a condition as circumstances will permit. No room in which baking is done is allowed to be used for sleeping purposes.

Restaurant Kitchens.—There are 88 kitchens of restaurant, cocoa, and dining rooms in the City, and these are regularly visited, as to the limewashing of walls and ceilings, and the

cleansing of floors, tables, etc. In a few cases the attention of the proprietors has been called to dirty premises, but in no case was it necessary to resort to legal proceedings.

General Shops from which Milk is Sold —There were 703 of the above shops on the register at the end of 1913. These are regularly visited by the District Inspectors. In a great many cases the milk is not kept under the most ideal conditions. For instance, the vessel may be standing on the counter of a dark, ill-ventilated shop, paraffin oil, fish, and sometimes coals being stored in close proximity. The vessels are kept covered and in a fairly clean state, but with the greatest care it is impossible to prevent a certain amount of contamination to this most important article of food, when stored under these conditions. In one case the conditions were so bad that the Medical Officer of Health deemed it necessary, in the interests of the consumers, to stop the sale of milk.

(Signed) Wm. Hudspeth,
Inspector under the
Food and Drugs Acts.

V. THE HOME AND THE WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND WORKSHOPS, &c.

NUISANCES, HOUSING, FACTORIES, AND WORKSHOPS, ETC.

The following is the

Report of the Inspector of Nuisances.

To the Medical Officer of Health.

Sir,

I beg to submit to you my sixth report of the work done in my section of the Health Department, viz., that for the year ended 31st December, 1913, which, together with the section on Food and Drugs Adulteration, is as follows:—

NUISANCE ABATEMENT.

The total number of notices served during the year was 7,803, of which 7,450 were informal and 353 statutory. In addition, 2,792 written letters and 1,538 circular letters were sent out.

Magisterial Proceedings.—It is again satisfactory to be able to state that only in thirteen instances has it been necessary to resort to legal proceedings in order to obtain the abatement of nuisances, etc. In the remaining cases where official notices were not at once complied with, letters of reminder were sent or the persons responsible interviewed, etc., and this resulted in the requirements of the notices being carried out.

CONVERSIONS OF DRY CLOSETS.

708 privies have been removed and replaced by water closets, against 611 in the previous year. Of this total (708), 486 were pail-closets, 43 midden-privies (chiefly in Benwell and Walker), and 179 "cell" privies (all in the two districts mentioned). It is satisfactory to have to state that this work was accomplished in all but six instances without having to resort to legal proceedings. In addition to the numbers previously mentioned, 95 dry ashpits have been removed, and replaced by portable galvanized-iron dustbins.

There still remains a considerable number of "dry" ashpits, so called (as distinct from ashpits in combination with privies, but the number is gradually lessening each year. The practice of supplying the first dustbins free of charge as an inducement towards the abolition of ashpits and privies has been continued, 873 such dustbins having been given during the year.

The following table, prepared by the Medical Officer of Health, shows the incidence of Enteric Fever in relation to the proportion of dry and water closets in the City, over a number of years:—

Enteric Fever in relation to the Elimination of the Conservancy System of Disposal of Excreta during the last 23 Years

Year.	City Engineer's Census of		Enteric Fever.	
	Number of Dry Closets in the City.	Number of Water Closets in the City.	No. of Cases.	Attack Rate per 1000 population.
1891	8,244	21,966	134	0·71
1892	8,640	24,749	97	0·50
1893	8,566	25,822	141	0·73
1894	8,515	26,997	164	0·81
1895	8,661	27,848	213	1·03
1896	8,867	28,977	176	0·83
1897	8,982	29,931	138	0·63
1898	9,317	31,158	307	1·38
1899	7,689	33,030	133	0·58
1900	7,966	33,708	79	0·34
1901	7,956	34,408	76	0·35
1902	7,863	35,323	57	0·26
1903	7,613	36,661	75	0·34
1904	7,313	37,985	30	0·13
1905	9,741*	42,175	50	0·19
1906	9,501	43,348	70	0·26
1907	9,237	43,460	66	0·24
1908	9,109	44,803	111	0·40
1909	8,781	45,468	74	0·26
1910	8,428	46,458	63	0·22
1911	7,959	47,681	87	0·33
1912	7,166	48,788	91	0·34
1913	6,332	49,397	124	0·46

* The large increase in the number of dry closets in 1905 is due to the incorporation of Walker and Benwell in November, 1904, these districts having a privy-box system.

The proportion of Dry Closets to Water Closets has thus fallen from 1 to 2·66 in 1891 to 1 to 7·8 in 1913.

SMOKE NUISANCE.

Smoke Inspections.—The following are particulars as to smoke observations made :—

No. of chimneys watched.	No. of observations made.	No. of chimneys from which black smoke issued in such quantity as to be a nuisance for periods of over 5 minutes in the aggregate during one hour.	No. of times when smoke issued so as to be a nuisance.	No. of notices served for the abatement of smoke nuisances.		No. of Prosecutions.
				Informal.	Statutory	
136	231	42	48	27	3	1

OFFENSIVE TRADES.

The following are the numbers and classes of offensive trades carried on within the City :—

Specified in Section 112, Public Health Act, 1875. Blood Boiler (0), Bone Boilers (4), Fellmonger (0), Soap Boilers (2), Tallow Melter (0), Tripe Boilers (8).

Declared by Local Authority, confirmed by Local Government Board (in accordance with Section 51, Public Health Acts Amendment Act, 1907). Rag and Bone Dealers (25), Dealers in Hides and Skins (4), Dealer in blood or other putrescible animal products (1), Blood Dryer (0), Fat Melter or Fat Extractor (2), Glue and Size Makers (2), Gut Scrapers (3). Fish Friers (126).

The premises in question are systematically inspected, and any nuisance found immediately dealt with.

Although the following have not yet been declared to be "offensive trades," having regard to the nature of the businesses, the premises receive the same amount of inspection and sanitary supervision as the foregoing, viz. :—Tanners (2), Fish Curers (4), Manure Manufacturers (3), Bone Store (1).

SUMMARY OF NUISANCES, &c., FOR THE ABATEMENT OF WHICH NOTICES WERE SERVED DURING 1913.

Foul privies and ashpits (to replace with water-closets)...	Privies	70
	Ashpits	39
Defective "cell" privies in Benwell and Walker (to replace with water-closets)		287
Foul or defective ashpits not connected with privies (to remove and provide dust bins, or to provide doors and coverings)		91
Insufficient water-closet or privy accommodation (additional water-closets ordered)		13
Defective or insufficient ashtubs or dust bins (to provide new or additional)		922
Defective water-closets (to repair)		584
Water-closets without water supply (to provide water)		79
Choked water-closets (to cleanse—mostly served on tenants) ...		329
Dirty water-closets (to cleanse—all served on tenants)		380
Defective pail-closets (to repair, provide new pails, &c.)		238
Foul pail-closets (to replace with water-closets)		718
Dirty privies (to cleanse—all served on tenants)		44
Defective drains (to repair, or construct new drains)		369
Choked drains, etc. (to cleanse)		1,101
Defective or choked sinks, waste pipes, etc. (to repair or cleanse) ...		261
Defective or chocked soilpipes, vent shafts, etc. (to repair or cleanse)		30
Sink wastepipes not trapped, &c...		74
Want of or defective pavement in yards and passages (to provide or repair)		187
Dirty rooms (to be cleansed)		150
Damp rooms		74
Overcrowding (to abate)		73
Dirty yards and passages (to cleanse)		579
Animals, pigeons, and fowls improperly kept (to remove)		78
Offensive accumulations (to remove)		157
Accumulations of manure (to periodically remove)...		83
Want of or defective manure pits (to provide or repair)		9
Broken roofs and want of or defective or choked spouting (to repair, provide, or cleanse)		311
Want of water (to provide supply)		166
Smoke nuisances (to abate)		30
Want of proper ventilation to rooms (including broken window cords in tenements)		32
Defective "waste" waterclosets (to remove, and provide w.c's with flushing cisterns, &c.)		9
Defects in Council Schools	Conveniences dirty	3
	Choked w.c's	5
	Choked drains	2
	Defective pavement of yard	1
	Defective w.c.	1
	Urinals defective, without water supply, &c.... ...	2
	Room and passage walls very rough (colouring blistered and peeling off)	1
Structural defects in houses (broken plaster, floors, stairs, &c.) ...		172
Water supply to sinks, &c., derived from feed cisterns		18
Food manufactured or stored for sale under improper conditions ...		10
Bedding in dirty condition (to cleanse)		4
Slop water or excreta thrown into privy pails or ashtubs		14
Filth thrown on yards, streets, &c.		12
Want of or defective sanitary conveniences in public-houses (to provide or repair)		3
Sale of Ice Cream—Premises in dirty condition		3
Want of drainage		4
Unsuitable premises used as stable		4
Want of (or defective) under floor ventilation		20
Milk Shops	Cellar dwellings illegally occupied	1
	Premises in dirty condition	3
	Milk vessels uncovered	1
Offensive trade established without consent		1
Unclassified minor nuisances (to abate)		36
Bakehouses in dirty condition		70
Rain spouts connected to drains		2
Total		7,960

Details Relating to certain works carried out in the Abatement of Nuisances and to Inspections made during 1913.

Length in yards of old drains removed	3,754
,, ,, new ,, constructed	5,584
New trapped gullies provided to drains	730
Combined privies and ashpits removed { privies	*43
{ ashpits	*25
Cell-privies removed (in Benwell and Walker Districts)	179
Pail-closets removed	486
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 13 cases where the accommodation was previously insufficient)	825
Defective water-closets removed (including waste water-closets, etc.)	106
Dry ashpits removed and replaced by galvanized iron dustbins ...	95
Dustbins substituted for dry ash-pits where water-closets existed, and provided in cases where pail-closets, &c., have been replaced by water-closets	‡873
No. of drains tested	1,255
No. of tests of above drains made by smoke and water	1,748
No. of inspections from complaints made at office (verbally or by letter)	915
No. of tenement inspections made	25,657
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	§2,175
Inspections of houses made from complaints received outdoors or nuisances discovered in the districts, including a large number of minor nuisances, such as choked drains and dirty yards, the abatement of which was accomplished at the time of visit, and without legal notice	9,373
Inspections to learn if works ordered were in progress	10,776
Supervisions of work in progress	5,314
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing of same	33,013
Inspections after infectious disease	1,256
Inspections of milk shops and ice creameries	1,553
,, bakehouses	†1,133
,, offensive trades	765
,, wholesale margarine warehouses	106
,, as to limewashing of tenements	7,353
,, of schools	143
Houses inspected in connection with a special inquiry into housing conditions in the Quayside area	1,631
Houses visited in connection with inquiry into an outbreak of food poisoning caused by milk in the Heaton district	429

* Some ashpits have more than one privy attached.

† Including 496 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

‡ Free dust bins given by Corporation in each case.

§ In addition to this number, the District Inspectors have daily had premises cleansed on verbal order.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC., DURING THE YEAR 1913.

Nature of Complaint.	No. of Cases.	How disposed of.
Public Health Acts:—		
Defective Drains	1	Work done without the summons being applied for.
Choked Drains	2	Work done without the summonses being applied for.
Choked Waste Water Closet	1	Work done without the summons being applied for.
Defective Roofs or Spouting, causing dampness	2	Work done without the summonses being applied for.
Furnace Chimney sending forth black smoke in such quantity as to be nuisance	1	Summons issued, resulting in a Magistrate's Order being obtained for the abatement of the nuisance forthwith. This was duly complied with.
Manure not regularly removed	1	Manure removed without the summons being applied for.
Dirty yards and conveniences	1	Premises cleansed without the summons being applied for.
Public Health Act, 1875, Sec. 36, and Newcastle-upon-Tyne Improvement Act, 1892, Sec. 53:—		
Houses without sufficient water closets, etc. (foul privies to replace by water closets)	48	In 6 cases, summonses were issued and afterwards withdrawn on the work being done and costs paid by defendants. In the remaining 42 instances, the work was done without the summonses being applied for.
		NOTE.—In last Report, it was stated that in one case an owner had been fined 5/- and costs, a subsequent extension of time (not then expired) being granted by the Sanitary Committee. On the expiry of this period, the work was duly carried out.
Public Health Acts Amendment Act, 1890, Sec. 22:		
Factories or workshops without sufficient and suitable sanitary accommodation	3	In 1 instance a summons was issued, the case being dismissed on the work required being carried out and special costs paid by defendants. In the remaining 2 instances, the work required was done without the summonses being applied for.
Carried forward ...	60	

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC., DURING THE YEAR 1913.

Nature of Complaint.	No. of Cases.	How disposed of.
Brought forward ...	60	
Newcastle-upon-Tyne Improvement Act, 1892, Sec. 63 :—		
Horses kept in place not fit for the purpose	1	Summons issued, and Magistrates' Order obtained to discontinue the keeping of horses on the premises forthwith. The said Order was duly complied with.
Newcastle-upon-Tyne Improvement Act, 1899, Section 46 :—		
Want of water supply	2	Water supplied without the summonses being applied for.
Newcastle-upon-Tyne Corporation Act, 1911, Sec. 55 :—		
Want of proper dustbins for house refuse	6	Dustbins provided without the summonses being applied for.
Tenement Bye-laws :—		
Contravention of Bye-law 12 (insufficient w.c. accommodation)	1	Additional w.c. provided without the summons being applied for.
Contravention of Bye-law 16 (w.c. structure and apparatus)	5	Work done without the summonses being applied for.
Contravention of Bye-law 31 (limewashing of yards, passages, staircases, etc.)	4	Summonses issued, and afterwards withdrawn on the work being done and costs paid by defendants.
Contravention of Bye-law 33 (yard pavement defective)	1	Work done without the summons being applied for.
Contravention of Bye-law 34 (want of water supply for domestic purposes)	11	Water supplied without the summonses being applied for.
Total ...	91	

HOUSING.

According to the census returns of 1911, there were in Newcastle, 32,920 houses inhabited by 55,570 separate occupiers, with the high average of 8·13 persons per house.

Newcastle dwellings consist largely of "flats," an upstairs and a downstairs, with three to five rooms in each. The flats generally have separate entrances from the front street, and may either have separate yards, or one yard common to two flats, each having a distinct entrance to the yard.

In the more ancient parts of the town, notably along the riverside, there is still a considerable amount of old property, mostly let in tenements. There are few "houses let in lodgings," dealings being practically always between landlord and occupier, without the intervention of any "tenant" as defined in the model bye-laws. The tenements in these houses are relatively low rented, single rooms being let at an average of 2/- per week, two rooms at about 3/6, and three rooms at 4/3. Consequently they meet a real want of the poorest classes.

32 per cent. of the housing accommodation in the City consists of one and two room holdings, in which live 28 per cent. of the population.

During the latter part of the year a special inquiry as to housing conditions in the Quayside area was carried out, the report upon which is set out below.

It showed that, generally speaking, this, probably the oldest part of the City, was not by any means overcrowded as regards persons per house, although certain sections showed overcrowding on area.

Housing in the Quayside Area.

SPECIAL INQUIRY AND REPORT.

Area.—For the purpose of determining the housing conditions in the above district of the City, the Medical Officer of Health has had carried out a survey of the streets within the area bounded as follows:—

On the South by the River Tyne;
On the West by Forth Banks;
On the North by the Central Station, Collingwood Street, Mosley Street, Pilgrim Street, New Bridge Street, and Stepney Bank; and
On the East by Byker Buildings, Dunn Terrace, the Riverside Branch of the North Eastern Railway, and the St. Lawrence Cattle Sanatorium.

Houses Inspected.—A careful house-to-house inquiry has been made in all but such streets and groups of houses as were known to be comparatively new, in good sanitary condition, and occupied by better-class tenants. Altogether 1,631 houses were visited and inspected, of which 873 were self-contained, and 758 (containing 2,334 holdings) were tenements. The results were as detailed below.

Self-contained.—The 873 houses inspected contained 1,909 rooms, and of these houses 75 are in such a state as to be, in the opinion of the inspectors, unfit for human habitation and not capable of remedy, besides others which are in need of repair or alteration. On the average of 3·5 persons to each house of (average) 2·2 rooms, such closures would involve the displacement of 260 persons. The worst area for this class of house is between Crawhall Road and the Ouseburn.

Tenements.—758 houses, containing 2,334 holdings, were inspected. There was an average of 2·86 persons to each holding of (average) 1·56 rooms, or an average of 1·83 persons per room.

Of these holdings 273 were found to be in such a state as, in the opinion of the inspectors, to render closure highly desirable, apart from many others in which alterations or repairs are necessary and possible. Such closures would involve the displacement of about 900 persons. One of the worst districts as regards the state of the tenements is that extending from Forth Banks, along the Quayside, to the Keelmen's Hospital, where, out of 568 holdings examined, 73 were considered by the inspectors not to be fit for human habitation, and unable to be rendered so. Another bad area is, as in the case of the self-contained houses therein, that between Crawhall Road and the Ouseburn, 120 out of 729 holdings being described as unfit for human habitation.

Occupants.—These houses are occupied almost entirely by the casual labourer class, chiefly Quayside workers, together with hawkers, etc., the average wage being 18/- per week.

Rents.—Considerable variation in the rentals was found among the houses inspected. In the tenements, single rooms were let at from about 1/6 to 2/6 per week, the average being about 2/-. Two-room holdings cost 2/6 to 4/-, with an average of about 3/6 per week; and three-room tenements were let at 3/6 to 5/-, or an average of 4/3. For the very bad so-called "furnished" rooms, 4/- and 5/- is frequently charged, the occupants in many instances being single women, whereas for the excellent furnished single-room holdings in St. Lawrence Dwellings, the rent is only 3/6.

The rentals in the self-contained houses work out at rather less per room than in the tenements.

Empty Houses.—In the whole area under consideration, there were vacant, at time of inspection, 23 self-contained

houses, with approximately accommodation for 80 persons, and 105 tenement holdings, with approximate accommodation for 298 persons.

Accommodation Required.—In the event of the necessary closures being effected, of the present population in the area about 600, of whom about 500 are tenement dwellers, would be unable to obtain houses.

Overcrowding.—From the above figures, it is seen that, speaking generally, there is no overcrowding in the houses, there being an average of 3·5 persons per self-contained house of 2·2 rooms, and in the tenements an average of 1·83 persons per room, this figure being exceeded in some limited localities however.

It is not possible to make a definite statement as to overcrowding on area, but there is no question that there is an undesirable density of population in the rectangle bounded by Stepney Lane on the North, City Road on the South, Manors Power Station on the West, and Gibson Street on the East, and also about Byker Bank. In the neighbourhood of the lower part of Pilgrim Street there is considerable congestion in the older tenement property.

Health of Area.—Owing to the fact that the Quayside Area includes only portions of various wards—All Saints' East, All Saints' West, St. John's, St. Nicholas', and Byker—it is not possible, without very great labour, to obtain definite statistics as to the health of the inhabitants.

On reference to the Annual Report of the Medical Officer of Health for 1912, the statement appears that *Consumption* is most prevalent in All Saints' West, Westgate South, Elswick South, Westgate North, Arthur's Hill, All Saints' East, Byker, and All Saints' North, in that order of demerit, which list includes the greater part of the area in question. Of all diseases, this is the one upon which housing conditions exert most influence.

Conclusions.—From the foregoing it will be seen that unless more houses are provided shortly by private enterprise or by the municipality, the Sanitary Committee will be in the unfortunate position of either condoning the present highly unsatisfactory condition of many of the dwellings in the area under consideration, or of creating an even worse state of affairs by the closure of some, which would lead, inevitably, to the overcrowding of the remainder.

In considering any scheme for rehousing displaced tenants in the Quayside area, two important points must be borne in mind, viz.:—that the great majority of the local population consist of casual labourers earning only about 18/- per week, and that the nature of their employment compels them to live close to the wharves.

The above report was presented to the Housing and Sanitary Committees in October, and carefully considered by the former, which has since obtained the sanction of the Council to a rehousing scheme, providing 92 two-roomed and 36 three-roomed dwellings contiguous to the Quayside area.

It is also understood that two areas have been defined under Part II. of the Housing and Town Planning Act, one of 26 acres, and the other of 1,272 acres, primarily for the purposes of working-class housing.

In November a remarkable report was made to the Board of Guardians by their Clerk, Mr. Gladstone Walker, upon "The Housing Problem in its Relation to Disease and the Poor Rate." This provided information unobtainable by the Health Department, as it dealt largely with "self-contained" houses, to which there is only power of entry upon complaint or suspicion of actual nuisance.

The report deals with the distribution of out-relief, and demonstrates very clearly that the streets drawing the largest

sums annually do not comprise the worst structurally, but rather those made up of small self-contained flats, the reason being that the relief dole is insufficient for rent and keep, and recipients therefore herd in with other families, the result being very serious overcrowding. This is quite in accordance with the limited experience of the Health Department, and applies not only to the recipients of Poor Law relief, both financial and medical, but also to the Old Age Pensioners.

Add to this the fact that new houses are not being built, although there is a steadily increasing demand, and, as noted in the Quayside report above, that the Sanitary Committee is compelled to close a considerable number of insanitary dwellings every year, from which it is obvious that the housing problem is an acute one at the present moment.

During and previous to the year under report, 1913, there had been no action taken for at least a dozen years under Part I. of the Housing of the Working Classes Act, nor had the provisions of the Housing and Town Planning Act yet been made use of.

The reason for this was that under the Newcastle-upon-Tyne Improvement Act, 1882, Section 32, this City had powers similar to those more recently conferred by the Housing and Town Planning Act, in addition to which there are, under Sections 115 and 120 of the local Act, powers to impose penalties; there is no power, however, under the local Act to enforce demolition, and it is recognized that it is an advantage to issue closing orders under both Acts.

With regard to systematic inspections as required by Section 17 (1) of the Act of 1909, this work up to the end of 1913, has always been performed by the District Inspectors of the City in conjunction with their other duties, and in accordance with Sections 91 (1) and (5) and 92 of the Public Health Act, 1875, and with the local Bye-laws as to tenemented houses, which last are at the present time under revision.

This duty has recently been rearranged, and systematic house-to-house inspections, with card-indexed records of each, are now being made regularly, as from the commencement of the current year.

STATEMENT, REQUIRED BY ARTICLE V. OF THE HOUSING (INSPECTION OF DISTRICT) REGULATIONS, 1910, IN REGARD TO THE INSPECTION OF DWELLING-HOUSES.

Number of primary inspections of dwelling-houses (self-contained and tenemented) made under the Newcastle-upon-Tyne Improvement Act, 1882, etc.	36,661
Number of such dwelling-houses which were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation	94 houses
Containing	182 holdings
Number of dwelling-houses in respect of which representations were made to the Local Authority with a view to the making of closing orders	94 houses
Containing	182 holdings
Number of dwelling-houses in respect of which closing orders were made by the Local Authority	50 houses
Containing	93 holdings
Number of dwelling-houses, the defects in which were remedied without the making of closing orders	35 houses
Containing	80 holdings
Number of dwelling-houses under consideration by the Local Authority in 1912, finally dealt with in 1913—	
Closed	8 houses
Containing	19 holdings
Alterations approved and carried out	13 houses
Containing	19 holdings
Number of dwelling-houses in regard to which remedies were proposed to and approved by the Sanitary Authority, but the work not completed by the end of 1913	9 houses
Containing	9 holdings
Number of dwelling-houses which, after the making of closing orders, were made fit for human habitation	0 houses
Containing	0 holdings
Number of dwelling-houses still under consideration at the end of 1913	0 houses
Containing	0 holdings

General character of defects found to exist in the dwelling-houses inspected:—Dampness, insufficient light or ventilation, dilapidation, cellar dwellings.

Insanitary Dwellings dealt with under the Newcastle-upon-Tyne Improvement Act, 1882.

The following dwellings, reported to Committee by the Medical Officer of Health, were dealt with as shown :—

	No. of Houses.	No. of Holdings.	Tenants Displaced.
Closed— TENEMENTS.			
21 Dog Bank	1	8	8
31 and 35, Pandon and Tinner's Entry ...	6	13	13
1 and 9, Sandgate	2	2	2
5, 7, 14, 15, 19, Johnson's Entry	5	10	10
18, Cut Bank (bedroom only)	1	1	—
4, 5, Forster's Yard and Forster's Cottage, Tyneside Road	2	2	2
14, Wall Knoll	1	4	4
Lime Street Stairs	1	1	1
5, 7, 41, Lime Street, 7, 8, 21, 39, Back Lime Street, house behind 25, Back Lime Street	5	18	16
4, Carliol Place (1st floor room)	1	1	1
27, Carliol Square (ground floor rooms) ...	1	3	3
18, Croft Street „ „ ...	1	1	1
2, 3, 6, and 13, Back Picton Terrace (ground floor rooms)...	4	4	4
43, 45, 47, 49, Ropery Walk	4	4	4
894, Scotswood Road (bedroom)	1	1	—
	36	73	69
Alterations or repairs carried out—			
6, Pandon	1	7	1
10, Wall Knoll	1	4	—
2, 3, 4, 5, Cox Chare (9 holdings closed) ...	4	25	9
17, Forster's Yard, Tyneside Road ...	1	1	—
8, 9, 19, 25, 27, 27½, 29, 31, 33, 35, Lime Street, 9, 19, 25, 29, 31, Back Lime Street	9	19	4
2, 9, 11, Back Picton Terrace	2	3	—
	18	59	14
Work in progress—			
31, 33, 35, 37, 39, 41, Ropery Walk, 35, 37, Back Ropery Walk	8	8	—
Improvements agreed to, but not yet entirely carried out—			
15, Erick Street	1	1	—
CELLAR DWELLINGS.			
Closed—			
323, 886, Scotswood Road	2	3	3
14, Lime Street	1	1	1
3, 3a, Lord Street	2	2	2
83, 99, Pine Street	2	2	2
31, 33, Carliol Street	2	2	2
57, 61, 63, 65, Westmorland Road ...	4	8	8
3, Sycamore Street	1	2	2
	14	20	20
Alterations carried out—			
327, 331, 335, 339, 898, 902, 906, 910, 914, 918, 922, Scotswood Road	11	15	8
85, 87, 95, Pine Street	3	3	2
9, 11, Carliol Street	2	2	—
6, Picton Terrace (let with rooms above) ...	1	1	1
	17	21	11
Total Cellar Dwellings	31	41	31
Grand Total ...	94	182	114

The following houses, in connection with which proceedings were commenced in 1912, were finally dealt with as under :—

Closed— TENEMENTS,

110, 114, Percy Street.

Closed— CELLAR DWELLINGS.

187, Scotswood Road.
20, John Street.
7, 17, Worley Street.

Alterations made—

251, 255, 287, 291, 299, 601, 605, 607, 611, 619, 623, Scotswood Road.
3, 10, Worley Street.

Houses Demolished or otherwise Converted.—8 tenemented houses (24 holdings), 11 flats, and 6 self-contained houses have been converted into business premises, demolished for Ouseburn Valley improvements, Walker Shipyard extension, or otherwise ceased to be used as dwellings. These are in addition to the number closed as unfit for habitation.

Houses Built during the Year 1913.—The following return of houses built during the year under report is supplied through the courtesy of the City Engineer :—

Newcastle-upon-Tyne.	Houses Self-contained.	Houses of Two Flats each.
Benwell	6 ...	—
Fenham	16 ...	—
Elswick Township	7 ...	—
Westgate Township	— ...	—
Byker Township	— ...	1
Jesmond Township	12 ...	—
Heaton Township	16 ...	7
St. Andrew's Parish	— ...	—
St. John's Parish	— ...	—
St. Nicholas' Parish	— ...	—
All Saints' Parish	— ...	—
Walker	36 ...	1
	—	—
	93	9
		(for 18 families.)

New accommodation has thus been provided for 111 families, or at the rate of 5 persons to a family, 555 persons, as compared with accommodation estimated for 725 persons provided during 1912.

Tenement Bye-laws.—The number of tenemented houses in the City is 3,535, containing 10,024 holdings, as follows:—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total.
3,433	5,416	1,059	113	3	10,024

The systematic inspection of tenement dwellings continues; generally speaking, the Bye-laws with respect to these houses have been fairly well complied with, and the improvement referred to in last Report has been maintained. The houses under consideration have been fully occupied during the year, consequent, no doubt, on the continued improvement in trade. This naturally tends to overcrowding, to which special attention is given, and which is dealt with as far as it is possible to do so under existing legal powers.

The Bye-law as to the limewashing of tenement yards, passages, etc., twice a year continues to involve a great amount of labour on the part of the Health Department officers. During the year under report, 7,353 visits were made in connection with the enforcement of this Bye-law alone. As previously, circular letters of reminder have been issued to all landlords of tenemented property, and this, together with personal interviews, &c., has resulted, in most cases, in the work required being ultimately carried out without recourse to legal proceedings, which were only rendered necessary in four instances.

Customs and Inland Revenue Act, 1890, Sec. 26 (2.)—Applications, respecting 5 houses, for certificates entitling the owners to exemption from inhabited house duty were made to the Medical Officer of Health during the year. The certificate was granted in each case.

Sanitary Alterations.—13 plans for minor sanitary works have been examined and approved or otherwise by the Medical Officer of Health, and forwarded to the City Engineer for his consideration, as compared with 12 during the previous year.

NEW HOUSE DRAINS.

Drains of New Buildings.—Details of this work are shewn in the following table :—

No. of Premises at which Drains have been laid.	No of Main Drains Tested.		No. of Branch Drains Tested.		Supplementary Tests.	Supervisions of Work in Progress.	Visits to learn if Work in Progress.
	With Water.	With Smoke.	With Water	With Smoke			
170	148	29	575	222	688	2,650	1,474

The figures given, however, are only up to July 26th, at which time the duty of inspecting the drains of new buildings was transferred to the City Engineer's Department, together with two of the three officers who were employed in this work ; the remaining officer, who previously combined this duty with the collection of samples under the Food and Drugs Acts, etc., is now engaged solely in the latter work.

COMMON LODGING HOUSES.

These houses have been well conducted during the year. The number of common lodging houses on the Register at the end of the year was 62, as against 61 for 1912. In accordance with the requirements of the Newcastle-upon-Tyne Corporation Act, 1911, applications were received at the beginning of 1913 for the re-registration of 59 of these houses (the remaining 2 having been discontinued as common lodging houses and removed from the Register), and 4 applications were received in respect of houses not previously registered, all of these being granted, whilst 1 of the older houses was closed as unfit. The total number of lodgers for which the houses were registered was, at the close of the year, 2,189, as against 2,006 at the end of 1912. The average number of lodgers per night was 1,636, the highest and lowest numbers on any one night being 1,735 and 1,506 respectively.

For further particulars see Tables on pages 198-9.

The Assistant Inspectors of Common Lodging Houses also obtain samples of water and milk for bacteriological examination, and collected 193 of the former and 389 of the latter

during the year. These officers also take smoke observations, and assist the Food and Drugs and District Inspectors when required.

REGISTERED COMMON LODGING HOUSES.

Summary of Work Done and Visits Made during the Year 1913.

Number of Houses on the register at the end of the year	62
Applications for registration (all granted)	63
Existing houses re-registered (Newcastle Corporation Act, 1911, Sec. 63)	59
New houses registered	4
Houses removed from register (1 closed as unfit, and 2 discontinued as common lodging houses. The latter occurred during 1912, but the houses were not actually removed from the register until the beginning of 1913)	3
Inspections made in the day-time	8,695
,, ,, night-time	690
Notices served { *re* washing of bed clothes 233 ; ,, limewashing of houses 119 } ...	352
Contraventions of Bye-laws, &c.:—	
Cleaning and ventilation of houses	38
Bedclothes not properly "aired" during prescribed hours	33
Beds and bedding dirty or defective	39
Cleansing of yards, passages, &c.	17
Dirty water-closets	20
Beds re-occupied within period of 8 hours ...	1
Slop-pails, defective	2
Structural defects in houses	9
Defective water-closets and drains	14
Choked drains, water-closets, &c.	29
Defective roofs and choked or defective spouting ...	10
Defective or choked sinks, waste pipes, &c. ...	5
Want of or defective dustbins	7
Accumulations of refuse	7
Lavatories dirty	3
Defective yard pavement	1
Insufficient ventilation to rooms (broken window cords, &c.)	7
Death reported (non-infectious disease)	1
*Cases of infectious disease reported (all tuberculosis) ...	24

* Not previously included as an infectious disease.

LODGERS OCCUPYING COMMON LODGING HOUSES IN THE CITY DURING THE YEAR 1913.

	Year 1913.	Corresponding Nos. for Year 1912.
Average number of Lodgers per night	1,636	1,524
Highest number on any one night	1,735	1,739
Lowest ,, ,, ,, ...	1,506	1,437
Number of Lodgers for whom accommodation was provided in the Common Lodging Houses of the City at the end of the year	2,189	2,006

FACTORIES AND WORKSHOPS.

Factory and Workshop Acts.—There are on the Register 1,258 workshops, besides a large number of domestic workshops, workplaces, laundries, and bakehouses.

Particulars as to the number and nature of the various trades carried on, the number of inspections made, defects found, out-workers, &c., are given in the Tables below.

During the year, 74 lists of outworkers have been received, 23 employers having sent in lists twice, and 28 employers once.

Included in the lists so received, were 19 names and addresses of out-workers employed in districts outside the City. These were duly forwarded to the respective districts, as required by law. In one case an outworker, working in Newcastle, but employed by a firm outside the City, was notified by the Sanitary Authority of that district.

94 notices as to insanitary conditions in factories and workshops have been received from H.M. Inspectors of Factories. 41 of these related to factories, and 53 to workshops. The matters referred to were investigated and dealt with by service of notice, &c., the results being reported to the Inspectors of Factories as required by the Act.

ADMINISTRATION OF THE FACTORY AND WORKSHOP ACT, 1901, IN CONNECTION WITH FACTORIES, WORKSHOPS, WORKPLACES AND HOMEWORK, DURING THE YEAR 1913.

HOME OFFICE TABLES.

1.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES.

PREMISES. (1)	NUMBER OF		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories ... ... (Including Factory Laundries.)	244	581	1
Workshops ... ... (Including Workshop Laundries.)	6,669		
Workplaces ... ... (Other than Outworkers' premises included in Part 3 of this Report.)	643		
Total	7,556	581	1

2.—DEFECTS FOUND.

PARTICULARS. (1)	NUMBER OF DEFECTS.			Number of Prosecutions. (5)
	Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	
*Nuisances under the Public Health Acts:—**				
Want of cleanliness	240	241	1	—
Want of ventilation	12	13	—	—
Overcrowding	10	10	—	—
Want of drainage of floors	1	1	—	—
Other nuisances	174	172	—	—
†Sanitary accommodation (insufficient	20	23	2	—
†Sanitary accommodation (unsuitable or defective	81	79	—	1
†Sanitary accommodation (not separate for sexes	14	14	1	—
Offences under the Factory and Workshop Act:—				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	132	126	—	—
Other offences ... ... (Excluding offences relating to outwork which are included in Part 3 of this Report.)	—	—	—	—
Total	684	679	4‡	1

* Including those specified in sections 2, 3, 7 and 8, of the Factory and Workshop Act as remediable under the Public Health Acts.

† Sec. 22 of the Public Health Acts Amendment Act, 1890, is in force. The standard fixed by the Sanitary Accommodation Order (No. 89) of 4th February, 1903, is followed as a model.

‡ All relating to Factories.

NOTE.—When the number of "Defects Remedied," Column (3), exceeds the number of Defects "Found," Column (2), this is accounted for by certain defects included in the previous report having since been remedied.

FACTORY AND WORKSHOP ACTS.—*Continued.*

3.—HOME WORK.

Nature of Work.	Outworkers' Lists, Section 107.									Outwork in Unwholesome Premises, Section 108.			Outwork in Infected Premises, Sections 109, 110.		
	Lists received from Employers.						Notices served on Occupiers as to keeping or sending Lists.	Prosecutions.							
	Twice in the Year.			Once in the Year.											
	Lists.†	Outworkers.†		Lists.	Outworkers.			Failing to keep, or permit inspection of Lists.	Failing to send Lists.	Instances.	Notices served.	Prosecutions.	Instances.	Orders made (Section 110.)	Prosecutions (Sections 109, 110.)
		Contractors	Workmen.		Contractors	Workmen.									
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Wearing Apparel (1) Making, &c.	46	8	185	26	15	61	35§	Nil.§	Nil.§	22	22*	Nil.	2‖	Nil.	Nil.
Wearing Apparel (2) Cleaning and Washing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furniture and Upholstery	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...
Paper Bags and Boxes...	...	...	...	1	...	4	...	...	...	...	...	...	...	...	...
Total	46	8	185	28	16	65	35	...	...	22	22	...	2	...	...

Notes.—† The figures in columns (2), (3), and (4) are the *total* number of lists (received from employers who sent them both in February and August as required by the Act) and of the entries of names of outworkers in those lists. They are, therefore, double of the number of such employers and (approximately) double of the number of individual outworkers whose names are given, since in the February and August lists of the same employer the same outworker's name is often repeated.

Columns (3), (4), (6), and (7)—Employers seldom state whether their Outworkers are "Contractors" or "Workmen," hence the numbers given above may not be properly divided.

§ In 16 cases the lists of outworkers were not received in the month of February or August as required by the Act, but in every such case they were subsequently received on the employers being reminded of their default. 19 instances of failing to keep or permit inspection of lists of outworkers also occurred, the employers likewise complying after reminder.

* In each case the Notice was served upon the *Outworker*, and was duly complied with.

‖ One of these was Scarlet Fever, the patient being removed to Hospital and the premises thoroughly disinfected. The other was a case of Phthisis, which was under the observation of the Medical Officer of Health.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Workshops	1,258
Domestic Workshops	177
Workplaces	261
Laundries	43
Bakehouses	283
Total ...	2,022

5.—OTHER MATTERS.

Class. (1)		Number. (2)
Matters notified to H.M. Inspector of Factories:—		
Failure to affix Abstract of the Factory and Workshop Act (sec. 133)		33
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5).	Notified by H.M. Inspectors ...	94
	Reports (of action taken) sent to H.M. Inspectors	94
Other:—		
Underground Bakehouses (s. 101):—		
Certificates granted during the year		—
In use at the end of the year		13

6.—TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City.

Trades.	Workshops.	Domestic workshops (including domestic bakehouses and laundries).	Workplaces.
Ærated Water Manufacturers, Beer bottling, etc.	7	...	23
Artificial Stone, Asphalte, Bitumen Solution, Enamel and Cement making	8	...	4
Athletic Outfitters...	4	...	...
Bacon washing	6	...	...
Bags, Baskets, Trunks, Brushes (making and repairing)	16	1	...
Bakehouses	69	214	...
Bouquets and Wreath making	13	...	...
Bedsteads, Bedding and Mattress making ...	4	1	2
Bicycle making and repairing	24	1	...
Blacksmiths and Locksmiths	50	...	...
Boat building	3	...	...
Carried forward ...	204	217	29

6.—TRADES.—*continued.*

Trades.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places.
Brought forward ...	204	217	29
Boots, Shoes, Slippers (making and repairing)	126	22	...
Carts, Carriages, Coaches, Barrows (making and repairing)...	19	...	2
Carpets, Canvas, Water Proof Cover making...	6	...	...
Chemical Works	3	...	...
Confectionery making	8	...	...
Coopers	7	...	...
Cork Cutters	3	...	...
Currants and other Fruit packing and cleaning	4	...	...
Cigarette making and Pipe making and repairing	3	...	...
Dressmaking, Milliners, and Mantle Makers ...	210	69	...
Drysalters	4	...	2
Engravers	6	1	2
Engineers, Electric Heating and Cooking, etc.	36	1	1
Firewood Cutting and Firelighter Makers ...	5	...	...
Fish Curers	4	...	...
Furniture, Automatic Seats, French Polishing and Upholstery	57	9	17
Grain, Ice, Meat, Onions, Oil, packing and storage	20	4	23
Harness making and repairing	12	...	...
Hide and Skin Dealers	...	...	4
Instruments—Mathematical, Musical, etc. (making and repairing)	5	...	...
Jewellery, Watches, Clocks (making and repairing)	48	6	...
Joiners, Handrailers, Ladder Makers, and Wood Carvers and Turners	74	...	...
Lamp Making and repairing	3	...	...
Laundries	29	14	...
Marble Masons and Monumental Sculptors ...	9	...	...
Marine Stores	...	...	22
Miscellaneous Warehouses and Workshops, (which include repairing umbrellas and guns, preparing cattle food and medicine, dressing leather, packing eggs, lard rendering and gut scraping)	8	1	27
Painters' Workshops and making and bottling, Paint and Varnish	35	...	...
Photographers	25	1	...
Pickle and Sauce making	8	...	...
Picture Framers and Gilders	12	...	...
Plasterers, Lath rendering	3	...	5
Plumbers, Gas Fitters and making and repairing Sanitary Pipes and Fittings... ...	29	...	...
Restaurant kitchens	...	...	88
Rubber Stamps and Tyres (making and repairing)	3	...	...
Carried forward ...	1,028	345	222

6.—TRADES.—*continued.*

TRADES.	Workshops.	Domestic workshops (including domestic bakehouses and laundries.	Workplaces.
Brought forward ...	1,028	345	222
Scales, Weighing Machines and Sewing Machines (making and repairing) ...	7	...	...
Sign Boards, Sun and Venetian Blind (making and repairing)...	8	...	...
Stained Glass making	4	...	...
Stables (Livery, etc.)	3	...	34
Tailors	200	37	...
Taxidermists, Fur pulling and cleaning ...	7	...	...
Tea Blending and Packing	4	...	...
Ticket Writers	9	1	...
Timber Yards	...	...	5
Tin, Iron Plate and Wire Workers	15	1	...
Tripe Dressers	6	...	...
Typewriting Machines (repairing)	4	...	...
Underclothing (making)	61	21	...
Totals	1,356	405	261

COUNCIL SCHOOLS.

Sanitary Inspection of Council Schools.—143 inspections of these schools have been made during the year. At 9 schools, insanitary conditions were found. (For particulars see page 183.) The matters in question were reported to the School Authorities, or in some instances. when of a minor character, were attended to by the caretakers on their attention being called to them.

The testing of drains and the examination of sanitary fittings of Council and non-provided schools in the City involved a great deal of the Inspectors' time, especially at the South Benwell schools, where the drains were tested and found to be very defective, and the sanitary arrangements generally unsatisfactory, A report thereon was submitted by the Inspector of Nuisances to the Secretary of the Education Authority. The work of re-draining has since been carried out, and this necessitated one of our officers being on the job during the whole progress of the work. To give some idea of the amount of work done, there were—

552 yards of old drain removed.

552 yards of new drain provided.

49 old gullies were removed and substituted by gullies of a more modern and self-cleansing type.

27 defective water-closets were removed and the same number of an improved type provided. There have also been 12 additional water-closets fixed.

In 23 branch drains there were 58 tests made.

THE RAG FLOCK ACT, 1911.

In pursuance of this Act, 11 samples of rag flock have been purchased and submitted for analysis to the Public Analyst. Five of these did not conform to the standard of cleanliness laid down by the Local Government Board in their Regulations under the Act, and the consequent action taken is shown in the following table.

Total number of samples taken.	Result of Analysis.	Rotationary number of sample.	Action taken.
11	6 conformed to the standard of cleanliness prescribed by the Regulations (containing only from 8 to 27 parts of chlorine per 100,000 of flock).		
	1 contained soluble chlorine, as chlorides, to the extent of 49 parts per 100,000.	2	Vendor cautioned.
	1 do. 447 „ „	4	The vendor in this instance was a picture framer, only occasionally doing a little upholstering, and having a very trifling quantity of flock on the premises. Under these circumstances the Sanitary Committee decided to taken no action in the matter.
	1 do. 34 „ „	6	Vendor cautioned.
	1 do. 34 „ „	8	Vendor cautioned.
	1 do. 231 „ „	10	Summons issued, and afterwards withdrawn by order of Sanitary Committee, on payment of costs by defendants (the principal having attended a meet- of the Committee and explained the circumstances under which the old flock had been found upon the premises, etc.)

For particulars of work done under the *Food and Drugs Acts*, see pages 159-73.

I am, Sir,

Your obedient Servant,

W. HUDSPETH,

Inspector of Nuisances,
Common Lodging Houses, &c.

Health Department,
Town Hall.

SUMMARY OF SPECIAL REPORTS MADE BY THE MEDICAL OFFICER OF HEALTH DURING 1913.

The following, in addition to routine matters, have been brought before the Sanitary Committee by the Medical Officer of Health during the year:—

(The figures denote the folio numbers in the Fortnightly Report Book.)

Epidemic and Infectious Disease.

Enteric Fever—Outbreak in South Benwell ... ... Aug., 268-70, Sept., 272, 275, Oct., 280

Gastro-enteritis in Heaton and District (milk) ... Nov., 288-9, and 292.

Localities.

Rye Hill and Fish Quay—Bad smells ... ... July, 254

Ouseburn Refuse Tip ... ... Sept., Oct. and Nov., 277, 280, 284, 291

Houses unfit for human habitation ... April, July, Oct., Nov., Dec., 235, 238, 255, 281, 287, 298, 303

St. Anthony's Well ... ... Oct., 284-6

General.

National Association for the Prevention of Infant Mortality... Jan., 209

Investigation of Atmospheric Pollution ... ... Jan. and Oct., 213 and 286

National Health Week ... ... Jan., 214

Compensation for articles destroyed on account of infection... Mar. and Sept., 231, 277

Epidemic Diarrhœa ... ... July, 250

Bacteriological Examinations ... ... Monthly

Tuberculous Milk—Jan, Feb., March, April, June, Aug., Sept., Nov. Dec., 211, 217, 220, 223, 227, 230, 234, 244, 247, 258, 265, 273, 297, 301 303, 306-7

SUMMARY OF SPECIAL REPORTS—*continued.*

MINISTRY OF HEALTH
LIBRARY