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CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

ANNUAL REPORT

OF THE

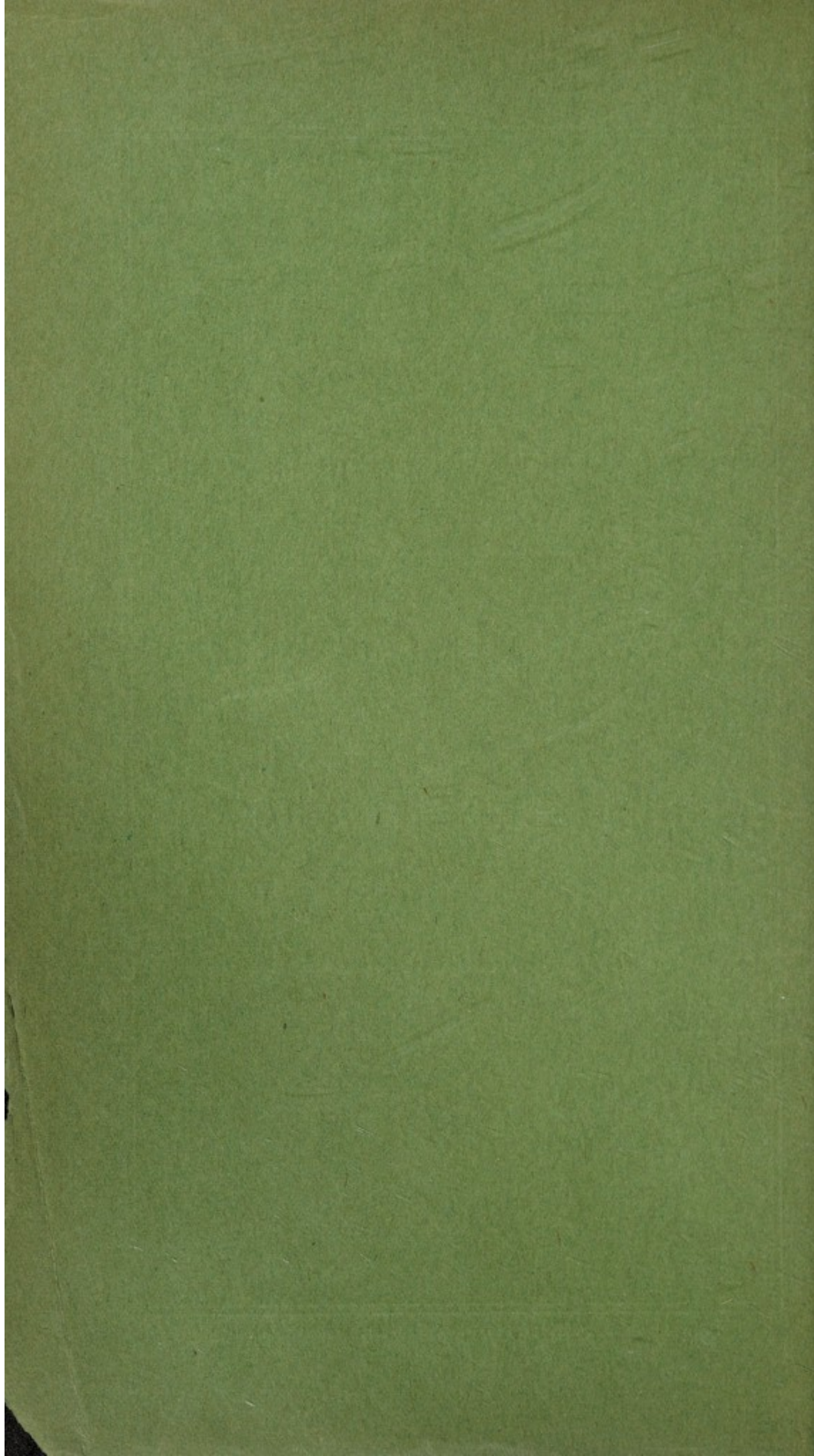
MEDICAL OFFICER OF HEALTH

ON THE

Sanitary Condition of the City

DURING THE YEAR

1919.





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ANNUAL REPORT

MEDICAL OFFICER OF HEALTH

Sanitary Condition of the City

1910

1910

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SANITARY COMMITTEE.

Alderman C. T. STABLEFORTH, J.P., Chairman.

Councillor DAVID ADAMS, J.P., Vice-Chairman.

The Lord Mayor (Councillor SIR A. M. SUTHERLAND, J.P.)

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„ G. D. NEWTON, L.R.C.P. „ J. C. DOYLE.

„ J. MOORE, J.P. „ E. CHARLTON.

STAFF.

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

S. J. Clegg, O.B.E., M.D., D.P.H. (Deputy 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. CATLIFF, 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, ADAM FLOCKHART, L. W. JOHNSON, District Inspectors.

ARTHUR ROWE, THOMAS HESLOP, Assistant Inspectors of Common Lodging Houses.

WM. BEAN, WM. GRAY, W. E. PERKINS, C. R. CRAIG, Infectious Disease Inspectors.

JAS. ROBSON, JAS. BRUCE, JNO. R. CRAGIE, J. W. ROBSON, T. W. WHELAN, THOS. MOORE, JOS. ROBSON, Ambulance Drivers and Disinfectors.

Wm. Gillender, WM. MILNE, *GEO. CUTHBERTSON, *ALFD. HEDLEY, *ALEC M. WALKER, JOS. GILHESPY, WM. COCKBURN, TAYLOR RICHARDSON, Clerks in the Health Department.

(Those marked * hold the Sanitary Inspectors Certificate of the Royal Sanitary Institute).

Thos. Parker, F.R.C.V.S., Veterinary Officer and Inspector of Provisions.

THOS. DODDS, JAS. M. ANDERSON, Assistant Inspectors of Provisions.

NORMAN DICKSON, Clerk.

a Georgina B. Cameron, Chief Health Visitor and Supt. of Midwives.

b DOROTHY STRONG, c CATHERINE M. THEXTON, d MARY LEVINE, e AGNES SPEAK, f MARIAN MOODY, e LIZZIE ISA. PRITCHARD, d LOUISE SHELL, g MAISIE L. HOPPER, g FLORENCE MARTHA HATFIELD, e JEANNIE GONZALEZ, f MATILDA WALLACE, c MATTIE D. HALLIDAY, g THOMASINA TYZACK, g ISABELLA MCKINLAY, g HILDA BLAIR, f HANNAH CHARLTON, c MARY WIGHAM, Health Visitors; **EDITH RODGERS, ANNIE McLEOD,** Clerks.

(Qualifications of those marked **a** C.M.B., General and Fever Nursing and R.S.I. Certificates.

f C.M.B., General Nursing and R.S.I. **c** C.M.B., General Nursing and Fever

d C.M.B., and R.S.I. **g** C.M.B., and General Nursing. **e** C.M.B. **b** R.S.I.)

Wm. H. Dickinson, O.B.E., M.B., CH.B., D.P.H., Tuberculosis Medical Officer.

C. J. HENDERSON, M.B., B.S., Assistant Medical Officer.

(a) MARGARET L. HUTCHINSON, (b) OLIVE SIMPSON, (c) CONSTANCE M. BAYNE, (d) ANNIE BOOTH, Tuberculosis Visiting Nurses.

(Qualifications of those marked **a** General Nursing. **b** General and Fever Nursing. **c** Health Visitors and School Nurses Certificates of R.S.I. **d** Fever Nursing).

RALPH T. MORRISON, Assistant Inspector for Tuberculosis.

GEORGE MAGNAY and WINIFRED MCGILLAN, Clerks for Tuberculosis.

Wm. Macewen, O.B.E., 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.

HELENA N. HARRINGTON, Dispenser.

JAS. COCKBURN, Engineer, **GEO. COCKBURN,** Assistant Engineer.

HERBERT BLACKTIN, FRANK HARRINGTON, Lodge Keepers, City Hospital, Walker Gate.

Firemen; Window Cleaner.

JOS. W. and JANE STEPHENSON, JAS. and MARY GREGAN, Caretakers at Smallpox and Isolation Hospitals.

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

SIR,

The Report upon the health of the City in 1919 is presented herewith. While it represents the results of happier conditions than in recent previous years, it can by no means be regarded as that for a normal peacetime year, demobilisation not being nearly complete until the later months.

In 1920, the world's shortage of food and many other necessities, together with the reaction from the tension of the previous four-and-a-half years, had their natural reflection in rising prices and general social unrest.

The vicious circle resulting from the attempt to meet the high and constantly increasing prices by repeatedly augmenting wages naturally resulted in still further inflation of prices. New problems had thus to be met, and many people formerly in comparatively comfortable circumstances were faced with a keen struggle for existence.

For organised employment the conditions of work are greatly improved on the whole, owing to shorter hours and greater opportunity for rest and relaxation. The home conditions, however, are even less satisfactory than previously, since there has been no building, and condemnation of unfit dwellings still remains impossible.

Generally speaking, health conditions have been good, though not as satisfactory as in the previous year, and the **General Death Rate** is somewhat above the average for the country and for the 96 great towns.

The first three months found the whole country over-run by the final wave of the fatal **Influenza Epidemic** which commenced during the summer of 1918. Newcastle suffered worse in the third wave than in either of the preceding ones, probably because of earlier immunity, and this disease, together with **Pneumonia**, accounted for 1,165 deaths as against 1,037 during the two earlier waves in 1918. This represents about a fifth of all the deaths during the year.

The incidence of the other **Infectious Diseases** was comparatively low, with the exception of **Measles**, an epidemic of which was due according to the normal cycle of prevalence. The number of deaths, however, was comparatively small, and the case mortality only one-and-a-third per cent. For this we have doubtless to thank the assiduity of the Health Visitors, in part at least.

All the diseases directly resulting from **Physical and Mental Overstrain** showed decrease in mortality from the previous year, diseases of the nervous system causing fewer deaths than since 1913. There was a substantial increase in the number of deaths from **Respiratory Diseases** (accountable for by the pneumonia during the influenza wave), and it was interesting to note that a term has occurred to the progressive diminution in the deaths from **Digestive Diseases**, the number in 1919 being greater than in any year since 1913, though not yet as high as in pre-war years.

Cancer caused a considerable number of deaths in 1919, 312, as compared with 225 in the previous year. This is the largest number of deaths recorded in any one year as yet, and ends the hope raised by the steady decline which occurred during the previous quinquennium.

Consumption was the cause of fewer deaths than in any year previously, both as regards pulmonary tuberculosis and the other forms, and this in spite of the continuance of the unsatisfactory housing conditions.

The Registrar General estimates the **Population** at the middle of the year as 275,099. Owing to demobilisation being incomplete, the population for calculation of the birth rate is estimated at 286,571.

The number of **Marriages** in the City during the year was 2,985, as compared with 2,544 in 1918, 2,389 in 1917, 2,620 in 1916, and 3,264 in 1915.

The **Birth Rate** was 23·3 per 1,000 population, the same as it was in 1918, the lowest yet recorded. Actually there were 206 more births in 1919 than in 1918, but the estimated population upon which the rate was calculated was higher in 1919.

The **Death Rate** (among civilians only) from all causes was 17·6 as compared with 17·3 per 1,000 population in 1918, and 15·0 in 1917. There were 22 fewer deaths in 1919 than in 1918, but the estimated population for calculation was less.

The *Natural Increase* (births minus deaths) only amounted therefore to 1,819.

The **Infantile Mortality Rate** was equivalent to 120 deaths under one year of age per 1,000 births, as compared with 107 in 1918, 113 in 1917, 123 in 1916, 133 in 1915, 137 in 1914, 122 in 1913, and 101 (the lowest recorded) in 1912. There were 114 more infantile deaths than in 1918.

Of the total number of these deaths nearly one-half were due to conditions operating before birth, influences which, so far, all our efforts have failed to modify. It is most encouraging, therefore, to note the keenness and enthusiasm of the Maternity and Child Welfare Committee, and the rapid progress which the Committee has already made during its first year of existence in organisation and provision of means to save the wastage of young lives.

The municipal scheme for Maternity and Child Welfare included during the year under report 20 Health Visitors; 10 beds in the Maternity Hospital; 10 beds in the Hostel for Unmarried Mothers; while subsidies were paid to the Mothers' and Babies' Welcome Society with its 9 Centres, and to the East End and West End Day Nurseries.

The milk distribution by the Department has developed considerably in response to the greater need amongst the population, and during 1919 about 37 tons of dried milk were distributed, of which $4\frac{1}{2}$ tons were given free, and the remainder at cost price.

The care and thoroughness with which the onerous task of ensuring the supply to the right homes, and to these only, has been carried out reflects much credit upon the organisation of MISS G. B. CAMERON, Chief Health Visitor and Superintendent of Midwives, and her section of the staff.

The community owes much to those public spirited individuals through whose wise foresight and able management the milk supply of the City was not merely maintained but actually increased during the period of general paralysis of railway communication and transport resulting from the great national strike in September—October. The cutting off of the milk, two-thirds of which comes from Cumberland, Scotland, and the Midlands, was the greatest danger to be apprehended. The members, both of the fresh milk and dried

milk trades are to be most heartily complimented upon the admirable way in which they met all the needs of the population.

Considerable progress has been made in obtaining facilities postulated in the special report issued at the end of 1918, and still further advancement has been made during the current year. Much remains to be done yet, however, and with the services of the competent and keen whole-time Medical Officer since appointed, much is likely to be accomplished.

The chief immediate needs of this branch of the service are considerable extensions of lying-in accommodation for the poorer classes and the provision of home helps for lying-in women without domestic assistance; and arrangements for treatment, both medical and dental, of ailing infants and their mothers.

The Maternity Hospital has been developing its resources to the utmost, and is co-operating with the Department intimately. The present institution, however, is far too small and cramped to meet adequately the rapidly growing demands upon it from Newcastle alone, and the sooner the scheme for building a large central institution, to incorporate and absorb the present charity, can be put into execution the better. The new self-supporting "Gables" maternity home, opened as a branch of the Maternity Hospital for lower-middle and working class patients, has more than justified itself from the very commencement.

Infectious Diseases.—Certain of the infectious diseases showed a relatively increased incidence. **Influenza and Pneumonia** were very prevalent in the third or final wave of the epidemic in 1918-19. This was described as a whole in the Report for 1918, and details of the 1919 cases will be found in the text. The highest number of deaths ever recorded in a single week in Newcastle occurred during the black seven days ending 27th February, 1919, when the general death rate was equivalent to an annual rate of 67·9 deaths per 1000 population.

Measles and Rubella were mildly epidemic, and notification as to 7,624 cases was received as compared with 1,660 in the previous year. There were 101 deaths, equivalent to a death rate of 0·63 per 1000 population, as compared with 33 deaths in 1918. Practically every case was visited as soon as notified by a Health Visitor to ensure that the patient was receiving proper care and attention, to see that the doctor's orders were being observed, and to seek out unattended cases.

As a result of the experience of thorough following up of measles cases by Health Visitors, the Sanitary Committee took the necessary steps to continue the compulsory notification of measles and rubella on the lapse of the national Order at the end of the year.

There were 716 cases of **Scarlet Fever** with 24 deaths, and **Diphtheria** remained relatively quiescent with 320 cases and 22 deaths. **Whooping Cough**

caused only 9 deaths, which is by far the lowest number on record, that for 1918 being 119. **Infantile Diarrhoea** caused 101 deaths in children under 2 years of age, an increase of 18 on last year's figures.

There were only 10 cases of **Enteric Fever**, with 2 deaths, which is another record and one that we may well be proud of. This disease, which used to be a scourge in the City, is now so rare that it is difficult for medical students and nurses to obtain any practical experience of it at all.

There were two outbreaks of suspected **Food-Poisoning**, the first, in May, involving a husband and wife, of whom the former died; and the second in July, affecting a number of persons taking part in the Northumberland County Lawn Tennis Tournament, but without fatal result. Pork sandwich was the suspected medium in the first instance, but no proof was obtainable. The second was complicated by a concurrent outbreak of scarlet fever among the tournament participators, who scattered quickly to all parts of the country. 9 cases were heard of. No proof was discovered of the source of the infection. In every person affected there was sudden onset of vomiting and diarrhoea, with more or less collapse.

Typhus made no appearance in the City in 1919.

Smallpox also remained absent. Attention, however, must be directed once again to the ever-growing neglect of infantile *Vaccination*. Since 1908, there

has been a steady diminution in the vaccination of babies. In Newcastle this is less noticeable than in most other places, but in 1919 only 74 per cent. obtained protection, and this is far in excess of the proportion in neighbouring areas. Sporadic cases of smallpox have been occurring all over the country during recent months so that the danger of an outbreak is unpleasantly real.

There were 5 cases of **Acute Poliomyelitis** notified of which none died, and there were 17 cases of **Cerebro-Spinal Fever**, with 6 deaths.

Hospitals for Infectious Diseases.—

1,370 fever patients, together with 185 cases of pulmonary consumption, were isolated at the *City Hospital, Walker Gate*. The former figure includes 128 cases of various diseases from naval vessels and from military camps and billets over the greater part of the two North-Eastern counties. The fever case mortality for the Hospital was 6·4 per cent.

The Smallpox and Isolation Hospitals were in use during the first 4 and last 3 months of the year, 359 patients being admitted, namely 308 scarlet fever convalescents, 46 influenza and pneumonia, and 5 others.

The *Disinfecting Stations* at Walker Gate and on the Moor dealt with 38,311 articles from the City, from military units within a wide radius of Newcastle, and from the Hospitals themselves.

The **Tuberculosis** scheme has been carried on under less arduous conditions than in the war years, since the appointment of an Assistant Tuberculosis Officer; the time of the latter is largely occupied with the care of the *Tuberculosis Pavilions* at *Walker Gate*, and still more skilled medical assistance is badly needed at the Dispensary in the City.

Although home-visiting of patients was almost entirely relegated to the Nurses, the TUBERCULOSIS MEDICAL OFFICER (Dr. W. H. Dickinson) reports maintenance of the high number of consultations with him at the Dispensary, namely, 10,332 as against 11,517 in 1918, and 9,286 in 1917. There were 724 new cases notified as compared with 819 in 1918, 909 in 1917, and 987 in 1916, and there were 455 deaths as compared with 531 and 571 in the two preceding years. This is the lowest mortality yet reached.

Twenty per cent. of the cases were first discovered by the Tuberculosis Officer among the home "contacts" of known patients.

There were 819 cases on the Dispensary register, and of these 383 were insured, 371 were dependents of insured persons, and 65 were uninsured.

The year has been the best yet in the annals of the Tuberculosis section, and has been full of encouragement to those engaged in fighting the disease. The death roll is the lowest so far, and shows a substantial decline in all forms and at all ages, a result

that is doubtless to some extent the direct consequence of the happier conditions of life since the close of the war, but is certainly also due partially at least to the really devoted efforts of Dr. Dickinson and his staff. As Dr. Dickinson points out, nothing like the full effect of the preventive work, both curative and educational, can be realised until the housing shortage is satisfactorily remedied, and an active after-care organisation is set up to help those who have benefited by treatment to continue to hold the ground they have gained. When Corporation houses become available for patients returning from Sanatorium, the benefits of the treatment are likely to be more permanent than at present, since they are largely lost on returning to the usual overcrowded and wholly unsuitable home that is the lot of the average consumptive to-day.

Among the new developments at the Dispensary are additional consultation sessions, including a special one in conjunction with the School Medical Officers, for scholars; certain improvements in the records of patients; and research into the inter-relationship between Influenza and Tuberculosis: arrangements have also been entered into for obtaining X-ray assistance in diagnosis. Closer relations and co-operation have been effected with private practitioners, who refer more cases every year for a special opinion.

It is to be regretted that very many cases still come for treatment too late for any hope of cure;

31·7 per cent. died within three months of the notification being received from the private doctor, while 14·0 per cent. had never been notified at all. It is much to be desired that with the return of all the doctors to civil employment this unfavourable feature will obtain the attention it requires.

The 45 beds at *Barrasford Sanatorium* for early cases of pulmonary tuberculosis in adults, and the 30 beds held by the Committee at *Stannington Sanatorium* for children were kept fully occupied. Of 853 patients treated in Corporation beds at Barrasford since the commencement of contract in 1908, at the end of 1919 there were 31 still in the institution, 233 well, working, or fit to work, 101 improved or moderately well, 38 relapsed, 329 dead, and 121 lost sight of. Of 43 Corporation patients who left Stannington in 1919, 36 were much improved, 2 improved, and 5 showed no improvement. 173 advanced cases were discharged from the *Sanatorium Pavilions, Walker Gate*, and 14 of these were fit for work, 67 were improved, 44 were without improvement, and 48 died in hospital. The great value of this institution lies in the prevention of the infection of other members of a household where the home conditions are not such as to permit of sufficient precautions being taken, and to some extent in the "patching up" of patients sufficiently to allow a proportion of them to return to work for a further period, and to the support of their families, until these are a stage nearer wage-earning age.

PROF. R. A. BOLAM, Chief Specialist Medical Officer at the Clinic, reports that the third year of work for diagnosis and treatment of **Venereal Disease** has been one of further development and progress. 1,239 persons from Newcastle attended 14,965 times at the out-patient Clinic, and occupied beds in the wards for 1,564 days, as compared with 8,364 attendances by 944 persons at the out-patient Clinic, and 1,045 in-patient days in 1918. It is a sign of great encouragement that the average out-patient attendances per individual have increased from 9 to 12, pointing to greater perseverance towards the completion of cure.

There is no doubt, however, that a much better attendance is necessary before the working of the Clinic can be considered as thoroughly satisfactory, and this will not be obtained until a system of modified notification becomes compulsory, *i.e.*, by the furnishing by the practitioner of personal particulars of his patient (name, address, etc.) to the Medical Officer of Health only when the patient has ceased attending for treatment before cure can be regarded as fairly certain. The Medical Officer of Health would then be in a position to order resumption of attendance by the patient, failing which there should be some means of compulsion or penalty.

Private practitioners continue to take advantage of the opportunities for study and practical experience afforded at the Clinic. It would be a great gain for the

Clinic itself, as permitting of greater opportunity for further necessary research into the nature and treatment of these diseases, if more of the treatment of cases could be devolved upon private practitioners in the City, an arrangement being made, for instance, for certain doctors to undertake treatment at so much per case or per session where the patient himself was unable to pay a fee. It would also be of considerable advantage to the City, in that facilities for obtaining treatment would be so much the more numerous and convenient of access.

Some arrangement for hostel accommodation for infected girls and unmarried mothers would also be a great boon, as enabling many of these to obtain and continue treatment who are at present quite unable to do this.

The irrigation station for each sex was in full and continuous use.

Public education and propaganda have continued quietly : six addresses were given to various women's organisations, and much instructive literature has been distributed. Some thousands of notices have been posted, and frequently renewed, in all the public lavatories and conveniences. Short articles have appeared from time to time in the local press. A further visit of Brioux's "Damaged Goods" was paid to the Theatre Royal.

Three successful prosecutions of unqualified persons undertaking treatment of venereal disease occurred during the year on the action of the police. Each case was proved, and fines of £200, £200, and £100 were imposed.

The four Police Women have done excellent work, and the Chief Constable reports there is room for two more. Their service lies mainly in patrol duty, and in detective work in connection with charges of abortion, and of treatment of disease by unqualified persons.

The voluntary Women Patrols of the National Council of Women have continued their evening work throughout the year, and rendered valuable social service, about ten ladies taking part.

Food and Provisions.—Bovine Tuberculosis.—169 samples of milk were examined for the presence of tubercle bacilli, which were found in six, or 3·6 per cent. of them. This proportion is slightly higher than in the previous year, when it was only 2·9 per cent. Owing to the lack of legal power, and of an equal desire for action among the various Local Authorities concerned, there is still considerable difficulty in dealing with tuberculous milks.

The VETERINARY OFFICER AND INSPECTOR OF PROVISIONS (Mr. Thomas Parker, F.R.C.V.S.) reports that the City now contains 27 cow-keepers, occupying 41 cow-sheds, on 29 premises, with 594 milch cows, a diminution of 28 cows since the previous year.

Control of the sales, movement, and slaughter of live stock has continued, and taken in conjunction with the small supply, has made possible more thorough supervision and inspection of meat than in pre-war days. A public abattoir becomes a more urgent necessity each successive year, and now that decontrol is approaching, many of the utterly unsuitable killing shops which have been temporarily shut up and disused are likely to be re-opened, adding to the difficulty of inspecting and safe-guarding the City's food.

274 carcasses were condemned on account of tuberculosis during the year.

Other Unsound Food.—1,875 $\frac{3}{4}$ carcasses, in addition to the above, were condemned as being unfit for human consumption. There were also condemned 3 tons, 17 cwts, 4 $\frac{3}{4}$ lbs. of other meat. This is a substantial increase over the quantities condemned in the previous year, and more than 10 times the amount condemned in 1914, the last normal year. This is 3 times as much for tuberculosis, and almost 17 times as much for other causes, the latter including great quantities of imported meat lost to the community through mishap, ignorance, or mismanagement.

The Veterinary Officer continued to render assistance to the Ministry of Food in the inspection of stock and supplies.

There were three successful prosecutions against persons selling or exposing for sale unsound food, and one unsuccessful. The fines amounted to £36.

There are numerous details in Mr. Parker's section of the Report dealing in a highly interesting and instructive manner with the protection of the City's food supply during a difficult year. Wherever possible material from condemned food was salvaged and put to other uses instead of merely being destroyed.

Food and Drugs Adulteration Acts.—THE INSPECTOR UNDER THE FOOD AND DRUGS ACTS (Mr. Wm. Hudspeth) reports the taking of 1,167 samples for analysis, including 870 of milk.

Of the latter 464 were rough-tested in the Health Department, and appeared to be genuine, and of the remaining 697 the Public Analyst found 100 to be below the minimal limits fixed by the Sale of Milk Regulations, 1901, while two contained annatto used as colouring matter, and boric acid as a preservative.

Of the 297 samples of food and drugs other than milk, 22 were found to be not genuine.

45 cases were taken to Court, and a conviction was obtained in 37 of them, with fines aggregating £65, cautions were issued in respect of 43, and no proceedings were taken, for various reasons, in 16.

There were 14 offences other than adulteration, eleven of the offenders being summoned and convicted. The penalties in these instances totalled £77 10s. 0d. The remaining three were cautioned.

The samples taken under the Food and Drugs Acts represented a proportion of 4·2 per 1,000 population in addition to 103 samples of milk for examination by the bacteriologist for presence of tubercle bacilli (previously mentioned), and 167 for evidence of excremental pollution, which was found to an undesirable degree in 87 (or 52·0 per cent.) In 182 samples of water examined for evidence of excremental pollution, 12 were classified by the Bacteriologist as satisfactory, 72 as doubtful, 53 as unsatisfactory, and 45 as bad.

In 1914 10·2 per cent. of the Milk samples were certified "not genuine," in 1915 9·3 per cent., in 1916 10·3 per cent., in 1917 11·0 per cent., in 1918 8·66 per cent., and in 1919 11·5 per cent. Tubercle bacilli were found in 6·7 per cent. in 1914, 5·8 per cent. in 1915, 8·7 per cent. in 1916, 3·1 per cent. in 1917, 2·9 per cent. in 1918, and 3·6 per cent. in 1919.

Evidence of excessive excremental pollution was found in 23·2 per cent. in 1914, 35·0 per cent. in 1915, 41·5 per cent. in 1916, 51·4 per cent. in 1917, 66·8 per cent. in 1918, and 52·0 per cent. in 1919, thus indicating an alarming deterioration in the precautions for safeguarding the cleanliness of the milk, by care and cooling at the farms and skilful handling in transit and delivery.

The number of small general shops selling milk has been further diminished. Before the war these amounted to 714, whereas there were at the end of 1919 only 275. The elimination of these from the milk trade is in itself no small gain.

The margarine warehouses, bakehouses, restaurant kitchens, fried fish shops, and ice-creameries were kept under supervision, and their cleanliness and cleansing insisted upon.

During the period covered by this report the Local Food Control Committee has continued to refer to the Medical Officer of Health all applicants for licence as manufacturers of or dealers in food for a certificate of suitability before granting the necessary permit. It is to be hoped that the powers of Local Authorities will be augmented in this direction before the complete repeal of the Defence of the Realm Act.

The House and the Workplace.—

Nuisance Abatement.—THE INSPECTOR OF NUISANCES (Mr. William Hudspeth) reports even greater difficulty during 1919 than in preceding years in getting improvements carried out and defects remedied, owing to the scarcity and excessive cost of labour and materials. Systematic house-to-house inspection under the Housing and Town Planning, etc., Act, has not yet been resumed, because of the impossibility of getting the vast number of minor defects so discovered attended

to. Nevertheless, 8,165 notices were served and magisterial proceedings had only to be resorted to in one instance (a case of bad overcrowding).

The Cleansing and Scavenging services (under the City Engineer) have been gradually returning to their pre-war efficiency, although the work is handicapped by its greatly increased cost. Under these circumstances, more than ever before, it is the duty of householders to burn all their combustible domestic refuse. If everyone would do this it would make an enormous difference to the amount to be removed and the cost in rates to the householders themselves each year.

An attempt has been made to resume the work of closet conversion from the dry closet to the water carriage system, but only two conversions have been effected.

The City still boasts (?) over 5,000 of these abominations, the steady and fairly rapid abolition of which came to an abrupt closure with the outbreak of war. St. Lawrence, Walker, Byker, St. Anthony's, All Saints', and Benwell Wards contain the largest numbers of dry closets, in their relative order. Those in Benwell and Walker are of the old cell-privy type; the remainder are for the most part pail-closets, a few, some 120 in all, being of the privy-ashpit denomination. Walker and Benwell, it will be remembered, were areas added to the City in 1904.

Since 1896 the erection of a dry closet in the City has been forbidden by bylaw. The cost of carrying out work of this sort is now almost prohibitive, and while one has not much sympathy with the owner who has prevaricated and procrastinated in the matter for years, there are others such as poor widows for whom the carrying out of the work may mean almost a total loss of income for years to come. Hitherto conversions have been effected under sections 36 and 91 of the Public Health Act, 1875, each being taken on its individual merits. No attempt has been made as yet to convert *en masse*, nor has the Local Authority adopted section 39 of the 1907 Act, under which the Corporation would have to defray the entire cost of conversion of pail-closets and half the cost of the conversion of the others. Each of these was doubtless the best arrangement that could be obtained in its time, but even the pail-closet is now long out of date, and under the best of circumstances a social danger. How to get rid of it, however, without a heavy increase of the ratepayer's burden, or the complete annihilation of many of the smaller owners, is the problem.

Atmospheric Pollution, as measured at the observation station near the Sallyport Tower in City Road, amounted to a deposit, in that part of the town, at the rate of 18·2 cwt. of solid impurities per acre per annum, or 581 tons per square mile.

327 observations were made of 65 chimneys, and 17 of them showed excessive output of black smoke on

56 occasions. There were no prosecutions undertaken, but a steady improvement occurred as the result of the strongly expressed warnings of the Committee.

Housing has made practically no progress during the year. Housing schemes in plenty are in the air, but a sufficiency of houses seems as far off as ever, none having been built during 1919. Indeed the extension of business premises led to the demolition of two tenemented houses containing six holdings.

In November 1919, the City Engineer's census shewed only 44 empty houses in the City as against 244 in August 1914 and 1305 at the end of 1912. Overcrowding is the rule, and sub-letting is on the increase everywhere.

As usual, the most severely congested wards showed the highest morbidity. In 1919 the general death rate was 23·8 per 1,000 population in All Saints Ward, while in Dene and Jesmond Wards respectively it was 11·7 and 11·9. In St. Nicholas and in Armstrong Wards the death rates from tuberculosis were 3·59 and 2·14, while in Jesmond it was only 0·62 per 1,000 population.

In St. Lawrence Ward 172 babies under 1 year of age died to every 1,000 born, and 145 in Byker, whereas in Dene and Jesmond the rates were only 59 and 60. Over a period of 12 years the deaths of infants per 1,000 births in 1-room, 2-room, and 3-room houses have been respectively 150, 128, and 114.

Accommodation in the common lodging houses was ample. These dwellings are as well kept as their structural condition will permit, under the watchful eyes of the Health Department inspectors. Many are quite good, but those in the oldest part of the town—about lower Pilgrim Street and Quayside chiefly—are situated in ruinous old rookeries; the chance visitor finds even these astonishingly clean, as was the recent experience of His Royal Highness, Prince Albert, in Silver Street, where he made a totally unexpected excursion into one of the “toughest” establishments in that squalid district.

Factories and Workshops, Offices, and Schools.—5,538 inspections of factories and workshops have been made, and 589 notices to remedy defects were served. The homes of outworkers were also kept under observation.

11 samples of rag flock were purchased and submitted to the Public Analyst, 6 being found not to conform to the legal standard of cleanliness.

128 inspections were made at Council and other Schools. In 16 instances certain minor defects and other insanitary conditions in connection with the conveniences, etc., were noted and reported to the School Authorities, who had them remedied.

Staff.—All the members of the staff who had been on active service returned to duty before the end of the year. One only had been wounded, and all but one

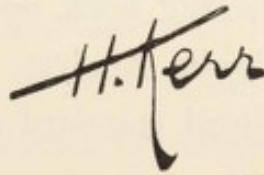
(R.S.M. Adam Flockart, R.E.) were in good health. The last-named brought back with him a heritage of malaria and dysentery from his long and arduous experience in Mesopotamia. By the end of the year the Department had settled down again into its old routine, though many duties have been added since 1914.

To one and all of my colleagues and staff I desire to record my warm appreciation of steady endeavour, mutual confidence, and general goodwill, of a certainty the best assurances of sound team work.

To the Members of the Sanitary Committee, and especially to yourself, Sir, I beg to acknowledge gratefully your constant support and valuable advice at all times, and your ready help in every difficulty.

I have the honour to be, Sir,

Your obedient servant,

A handwritten signature in dark ink, appearing to read 'H. Kerr'. The signature is fluid and cursive, with a long horizontal stroke extending to the left and a vertical stroke extending downwards.

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

*Health Department,
Town Hall,
Newcastle-upon-Tyne,
14th July, 1920.*

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

Health Report, 1919.

I. GENERAL.

MORTALITY TABLES, SOCIAL CONDITIONS,
CLIMATOLOGY, WATER SUPPLY, DISPOSAL OF REFUSE.

Health Report, 1919.

The following table shows the number of cases of the principal diseases reported during the year 1919, compared with the number reported during the corresponding years 1918 and 1917.

Disease	1919	1918	1917
Smallpox	1	0	0
Diphtheria	12	15	10
Scarlet fever	8	10	12
Erysipelas	5	7	9
Measles	150	180	200
Whooping cough	20	25	30
Polio	3	4	5
Typhoid	10	12	15
Paratyphoid	5	6	8
Enteric fever	2	3	4
Cholera	0	0	0
Shigellosis	1	2	3
Amoebic dysentery	1	1	2
Trachoma	5	6	7
Conjunctivitis	10	12	15
Ophthalmia	5	6	7
Ear disease	10	12	15
Nasal disease	5	6	7
Throat disease	10	12	15
Laryngeal disease	5	6	7
Tracheitis	5	6	7
Bronchitis	10	12	15
Pneumonia	10	12	15
Emphysema	5	6	7
Asthma	10	12	15
Heart disease	10	12	15
Stroke	10	12	15
Paralysis	5	6	7
Epilepsy	5	6	7
Insanity	10	12	15
Alcoholism	10	12	15
Drug addiction	5	6	7
Self-harm	5	6	7
Murder	5	6	7
Assault	10	12	15
Robbery	5	6	7
Theft	10	12	15
Fire	5	6	7
Accidents	10	12	15
Deaths	10	12	15

I. GENERAL

GENERAL STATISTICS.

POPULATION.—As estimated by the Registrar General at the middle of the year 1919—**275,099.**

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.	Nett.
St. Nicholas' ...	3,616	127	1	126	29	29
St. Thomas' ...	14,293	1,636	1,130	506	9	29
St. John's ...	15,554	169	1	168	93	94
Stephenson ...	18,997	215	...	215	89	89
Armstrong ...	15,829	178	31	147	90	109
Elswick ...	12,815	253	17	236	51	55
Westgate ...	15,467	90	1	89	174	176
Arthur's Hill ...	11,578	142	6	136	82	86
Benwell ...	17,814	550	20	530	33	34
Fenham ...	11,179	1,189	...	1,189	10	10
All Saints' ...	17,934	176	2	174	103	104
St. Andrew's ...	12,645	173	3	170	74	75
Jesmond ...	11,195	441	35	406	26	28
Dene ...	12,343	818	37	781	15	16
Heaton ...	15,706	225	76	149	70	106
Byker ...	17,711	140	...	140	128	128
St. Lawrence ...	18,144	181	3	178	101	103
St. Anthony's ...	15,990	601	...	601	27	27
Walker ...	16,289	1,149	37	1,112	14	15
CITY ...	275,099	8,453	1,400	7,053	33	39

INHABITED HOUSES.—**51,754**, shewing (each flat and each tenement holding being counted as one house) an average of 5·32 persons per dwelling.

RATEABLE VALUE.—**£1,774,017.** A penny rate produced £6,743.

SOCIAL CONDITIONS.—The principal **Trades and Occupations** are of a healthy nature, being generally 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 during the year ended 30th September, 1919, was £44,583 for outdoor relief, and £38,449 for indoor maintenance, making a total of **£83,032**, as compared with **£65,179** in the previous year.

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.—2,985 Marriages took place during the year, as compared with 2,544 in 1918, and 2,389 in 1917.

BIRTHS.—6,674, equivalent to a rate of **23·3** per 1,000 population, the same as last year, (the lowest yet recorded).

DEATHS.—(All causes)—5,358, equivalent to an uncorrected rate of 19·5 per 1,000, and, after deduction of the deaths of 737 non-citizens, and addition of 234 Newcastle residents who died elsewhere, to a corrected rate of **17·6** per 1,000 population. In 1918 the death rate was 17·3.

12 deaths were *uncertified*.

Seventeen **Orders for Burial** (Newcastle-upon-Tyne Improvement Act, 1882, Sec. 47) were given, 1 being in respect of a body lying in an inhabited room, and 16 being cases from hospital.

**TOTAL DEATHS DURING RECENT YEARS FROM CERTAIN CLASSES OF
DISEASE.**

Classification in Table III. of Ministry of Health.

	II. Nervous System.	III. Circu- latory.	IV. Respira- tory.	V. Digestive.	XIII. External Causes.
1912	410	435	603	204	152
1913	457	453	722	332	114
1914	448	505	863	465	142
1915	470	635	873	361	163
1916	477	448	856	281	117
1917	497	478	864	268	135
1918	498	503	957	252	135
1919	439	497	1,040	272	133

INFANTILE MORTALITY.—806 Infants died before completing the first year of life, representing a rate of **120** deaths per 1,000 births.

ZYMOTIC DEATH RATE.—There were 258 deaths from the “Chief Zymotic Diseases” (Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever (Typhus, Simple Continued, and Enteric) and Diarrhœa), equivalent to 0·9 deaths per 1,000 population, which is the lowest on record.

TUBERCULOSIS.—455 persons died from various forms of Tuberculosis, 339 being from Pulmonary, and 116 from Other Forms. The equivalent death rates are *All Forms* **1·65**, *Pulmonary* **1·23**, and *Other Forms than Pulmonary* **0·42** per 1,000 population.

For comparison of death rates with previous years see table, page 34A.

For particulars of deaths, as to causes, age, etc., see table, page 40A.

GEOLOGY.—The geological formation of the area consists of heavy clay on the top of hard sandstone, which overlies coal seams.

CLIMATOLOGY.—The mean barometer reading was 30·25 in.

The mean maximum temperature was 55·1° F., and the mean minimum 42·0° F.

Measureable rain fell on 180 days, amounting in all to 25·92 inches.

For 7 months (March to Sept.) there was practically a drought, but Oct. and Nov. were very wet months, 5·36 and 3·94 inches of rain being recorded respectively.

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

W., N.W., or S.W. on 193 days.

E., N.E., or S.E. on 121 days.

S. on 13 days.

N. on 27 days.

This information is supplied through the courtesy of the proprietors of the *Newcastle Chronicle*.

WATER SUPPLY.—The City is served by the Newcastle and Gateshead Water Company with a plentiful supply of pure upland surface water, 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 123.

The consumption of water in the City has increased since the beginning of the war, chiefly on account of the greater requirements of industry. Coincidentally there has been no increase in the area of the filter beds, nor in the storage capacity of the reservoirs, and it is not surprising that the results of the bacteriological examinations should show a considerable higher organismal contamination.

SEWERAGE.—There are 277 miles and 760 yards of sewers discharging at various points along the seven miles of river frontage directly into the Tyne, which is tidal.

CLEANSING AND SCAVENGING.—The removal of house refuse has almost reached the conditions prevailing prior to the War, with the exception that excluding certain areas, the ashbins are now only emptied once per week instead of twice. With the high costs of labour and haulage, it is improbable that the frequency of removal can be increased.

With an ample supply of labour now available, the cleansing of the roads and streets is stated to be satisfactory.

There are 52,241 dry ashtubs and galvanised iron bins, and 51,661 water closets and 5,335 conservancy system closets in the City. Conversion of the latter was proceeding steadily up to the outbreak of War, at the rate of 600 to 700 per annum. All the schools are served by the water-carriage system.

MORTALITY RATES, YEAR 1919.

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	18·5	13·8	89	0·34	?
96 Great Towns (includ. London)	19·0	13·8	93	0·39	?
NEWCASTLE-UPON-TYNE	23·3	17·6	120	0·57	1·65
Hull	19·4	15·1	111	0·75	1·46
Leeds	17·6	16·2	119	0·43	1·67
Bradford	13·40	16·27	113	0·18	1·34
Sheffield	19·9	14·1	96	0·47	1·28
Manchester	17·62	13·73	97·76	0·29	1·50
Salford	18·8	15·8	113	0·47	1·6
Liverpool	23·9	17·0	110	1·18	1·7
Nottingham	18·34	14·56	106	0·43	1·60
Leicester	15·34	13·06	98	0·20	1·38
Stoke-on-Trent	22·5	16·2	111	0·76	1·50
Birmingham	20·9	13·0	84	0·46	1·28
Cardiff	18·1	12·1	94	0·45	1·58
Bristol	18·44	13·94	83·5	0·271	1·309
Portsmouth	22·3	12·6	71	0·34	1·15
London (County)	18·2	13·6	85	0·35	1·45
Gateshead	26·4	16·7	115	0·887	2·0
South Shields	26·9	17·0	118	0·52	1·93
Tynemouth	26·6	18·3	123	0·77	1·8
Sunderland	27·7	17·9	119	0·67	1·61
Middlesborough	26·64	19·16	139	2·03	1·43
*County of Northumberland	22·14	14·11	102	0·62	1·33
*County of Durham	23·35	13·17	113	0·55	1·18

* Administrative County.

TABLE I. OF MINISTRY OF HEALTH.

Vital Statistics of Whole District during 1919 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.			
		Uncorrected Number	Nett.		Number	Rate.	of Non-residents registered in the District	of Residents not registered in the District	Under 1 Year of Age.		At all Ages.	
			Number	Rate.					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
1914	271,523	7,564	7,538	27·8	5,069	18·7	546	138	1,029	137	4,660	17·2
1915	278,107	7,575	7,545	27·8†	5,257	18·9	693	207	1,007	133	4,771*	17·2*
1916	278,107	7,332	7,284	26·2	4,875	17·5	680	232	899	123	4,427*	15·9*
1917	278,107	6,548	6,495	23·4	4,646	16·7	718	246	732	113	4,174*	15·0*
1918	278,107	6,555	6,468	23·3	5,380	19·3	872	308	692	107	4,816*	17·3*
1919	275,099	6,793	6,674	23·3§	5,358	19·5	737	234	806	120	4,855*	17·6*

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

† In accordance with the instructions of the Supt. of Statistics, General Register Office, Somerset House, this rate is calculated on the population for 1914.

* Civilians only.

§ Calculated on a population of 286,871.

Corrected Death Rates in different Wards, 1919.

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.
20·5	14·0	18·6	21·0	19·0	18·9	15·1	14·3	16·0	13·0	23·8	18·7	11·9	11·7	16·3	21·8	19·7	18·7	17·1	17·6

* All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE II. OF MINISTRY OF HEALTH.

(See under **Infectious Diseases**, page 61).

TABLE IV. OF MINISTRY OF HEALTH.

(See under **Infantile Mortality**, page 46A).

TABLE 1. - *Estimated Deaths in Selected States, 1910*

State	Estimated Deaths
Alabama	1,234
Arizona	567
Arkansas	890
California	2,345
Colorado	456
Connecticut	1,567
Delaware	234
District of Columbia	123
Florida	789
Georgia	1,012
Idaho	345
Illinois	3,456
Indiana	1,789
Iowa	1,234
Kansas	678
Kentucky	901
Louisiana	1,345
Maine	456
Maryland	567
Massachusetts	1,678
Michigan	2,123
Minnesota	1,456
Mississippi	890
Missouri	1,567
Montana	234
Nebraska	567
Nevada	123
New Hampshire	345
New Jersey	1,789
New Mexico	456
New York	4,567
North Carolina	1,234
North Dakota	234
Ohio	2,345
Oklahoma	345
Oregon	456
Pennsylvania	2,567
Rhode Island	123
South Carolina	567
South Dakota	234
Tennessee	901
Texas	1,567
Vermont	123
Virginia	678
Washington	345
West Virginia	234
Wisconsin	1,234
Wyoming	123

Source: U. S. Bureau of Census, *Estimated Deaths in Selected States, 1910*.

NOTE: The above table is based on the best available data for the year 1910. It is not intended to be a complete statement of the mortality in the United States for that year.

U. S. BUREAU OF CENSUS, WASHINGTON, D. C., 1911.

TABLE 2. - *Estimated Deaths in Selected States, 1910*

[illegible]

REPORT OF THE
CHIEF HEALTH VISITOR AND
SUPERINTENDENT OF MIDWIVES.

II.—THE CHILD.

INFANTILE MORTALITY, MATERNITY, AND
CHILD WELFARE.

REPORT OF THE
JOINT HEALTH VISITOR AND
SUPERINTENDENT OF MIDWIVES

II. THE CHILD.

INFANTILE MORTALITY, MATERNITY AND
CHILD WELFARE.

INFANTILE MORTALITY.

SUMMARY OF BIRTHS AND DEATHS, 1919.

	LEGITIMATE.			ILLEGITIMATE.			Grand Total.
	M.	F.	Total.	M.	F.	Total.	
Total Births in the Year	3,255	3,176	6,431	175	187	362	6,793
Nett ,, ,,	3,207	3,108	6,315	178	181	359	6,674
Nett Deaths ,,	440	313	753	31	22	53	806

BIRTHS (UNCORRECTED) IN WARDS IN THE DIFFERENT QUARTERS OF THE YEAR 1919.

WARD.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	TOTALS.
St. Nicholas'	15	13	19	32	79
St. Thomas'	58	47	62	86	253
St. John's	103	60	109	144	416
Stephenson	116	107	137	138	498
Armstrong	97	97	101	147	442
Elswick	76	48	68	75	267
Westgate	71	75	101	120	367
Arthur's Hill	27	29	37	45	138
Benwell	107	142	152	187	588
Fenham	59	49	56	93	257
All Saints'	111	94	146	172	523
St. Andrew's	74	53	75	91	293
Jesmond	29	39	31	49	148
Dene	40	42	50	56	188
Heaton	69	65	83	83	300
Byker	120	89	122	165	496
St. Lawrence	114	110	130	162	516
St. Anthony's	111	99	151	182	543
Walker	90	122	129	140	481
City	1,487	1,380	1,759	2,167	6,793

DISTRIBUTION OF DEATHS.

WARDS.	Nett Deaths of Children under 1 year of age in 1919.					Children under 1 year of age— Death rate per 1,000 Births.	Birth Rate per 1,000 Popula- tion (Uncor- rected).
	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.		
St. Nicholas' ...	2	2	2	...	6	76	21·8
St. Thomas' ...	10	5	5	9	29	115	17·7
St. John's ...	14	5	17	12	48	115	26·7
Stephenson ...	20	9	17	25	71	143	26·2
Armstrong ...	24	11	14	11	60	136	27·9
Elswick ...	11	6	2	3	22	82	20·8
Westgate ...	8	6	6	12	32	87	23·7
Arthur's Hill ...	4	3	3	4	14	101	11·9
Benwell... ...	16	15	18	12	61	104	33·0
Fenham	19	...	10	6	29	113	23·0
All Saints' ...	27	11	16	19	73	140	29·2
St. Andrew's ...	10	5	10	6	31	106	23·2
Jesmond	2	4	...	3	9	60	13·2
Dene	5	1	2	3	11	59	15·2
Heaton	10	9	4	6	29	97	19·1
Byker	26	13	16	17	72	145	28·0
St. Lawrence ...	38	14	20	17	89	172	28·4
St. Anthony's ...	24	11	16	18	69	127	34·0
Walker	20	11	10	10	51	106	29·5
City	284	147	182	193	806	120	24·7

All deaths occurring in Public Institutions have been allotted to the Wards to which they properly belong.

TABLE IV. OF MINISTRY OF HEALTH.

46A

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1920.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	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.	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.	
I.—General Diseases.																					
Measles	1	...	8	17	26	...	...	...	...	...	1	...	8	17	26	12
Scarlet Fever	1	3	4	...	...	...	...	...	...	1	3	4	4	4
Whooping Cough	1	...	2	1	4	...	...	...	...	...	1	...	2	1	4	...
Diphtheria	1	1	2	...	...	...	...	...	...	1	1	2	...	...
Influenza	5	12	5	15	37	...	...	...	...	...	5	12	5	15	37	...
Erysipelas	1	...	1	...	...	...	...	...	...	...	...	...	1	...
Pyæmia, Septicæmia	1	...	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	...
Pulmonary Tuberculosis (not acute)...	1	1	...	...	...	...	...	...	...	...	1	1	1
Acute Miliary Tuberculosis...	1	1	...	...	...	...	...	...	...	...	1	1	1
Tuberculous Meningitis	3	3	...	...	...	...	...	...	...	...	3	3	...
Tuberculosis of Peritoneum and Intestines	1	...	3	2	6	...	...	...	...	...	1	...	3	2	6	...
Disseminated Tuberculosis...	1	1	...	...	...	...	...	...	...	...	1	1	1
TOTAL TUBERCULOSIS	1	...	3	8	12	...	...	...	...	...	1	...	3	8	12	3
Rickets, Softening of Bones	1	1	1	3	...	...	...	...	...	...	1	1	1	3	1
Syphilis	1	2	4	6	1	...	...	11	...	1	2	1	4	6	1	...	...	11	3
Other Venereal Diseases	1	...	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	1	1
Other General Diseases	1	...	2	3	...	...	...	...	...	1	...	2	3	1	...
II.—Diseases of Nervous System and Organs of Special Sense.																					
Meningitis, other forms or undefined	5	2	2	9	...	...	...	...	...	...	5	2	1	8	3
Cerebral Hæmorrhage, Apoplexy	1	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
Epilepsy	2	...	...	2	...	...	...	...	2	2	...	...	...	2	...	...	...	...	2	...
Infantile Convulsions ...	15	5	4	2	26	12	15	10	5	68	15	5	4	2	26	12	15	11	5	69	...
Diseases of the Ears	1	1	...	...	...	...	...	...	...	...	...	...	1
III.—Diseases of Respiratory System.																					
Diseases of the Larynx	1	1	...	...	...	...	...	...	...	...	1	1	...
Bronchitis	2	2	4	18	27	16	10	75	...	...	2	2	4	18	27	16	10	75	4
Broncho-pneumonia	1	...	2	4	11	23	33	23	94	1	...	2	1	4	11	22	33	23	93	16
Lobar Pneumonia
Pneumonia (type not stated)	2	3	3	6	14	...	...	...	...	...	2	3	3	6	14	2
Other Diseases of the Respiratory System ...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
IV.—Diseases of Digestive System.																					
Diseases of the Teeth and Gums	1	...	1	...	...	...	...	1	1	...	1	...	1	...	...	...	...	1	...
Diseases of œsophagus	1	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	1
Inflammation of Stomach	1	...	1	6	3	2	1	13	...	1	...	...	1	6	3	2	1	13	...
Other Diseases of the Stomach	2	...	...	2	...	1	...	...	3	1	...	...	...	1	...	...	...	...	1	2
Diarrhœa and Enteritis including Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh	1	...	4	7	8	31	18	17	81	1	...	3	2	6	6	29	18	17	76	18
Hernia, Intestinal Obstruction	2	4	1	7	...	...	...	...	...	...	1	1	1	3	4
Carried forward ...	24	8	16	8	56	71	125	110	115	477	23	8	15	8	53	69	120	108	113	463	67

TABLE IV. OF MINISTRY OF HEALTH.—Continued.

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1920.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	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.	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.	
<i>Brought forward</i> ...	24	8	16	8	56	71	125	110	115	477	22	8	15	8	53	69	120	108	113	463	67
V.—Diseases of Skin and Cellular Tissue.																					
Carbuncle, Boil ...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...
Phlegmon, Acute Abscess ...	...	...	...	1	1	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	3
Diseases of the Integumentary System ...	...	...	2	1	3	1	...	1	...	5	...	2	1	...	3	1	...	1	...	5	...
VI.—Diseases of Bones, &c.																					
Diseases of the Bones ...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
VII.—Malformations.																					
Congenital Malformations ...	13	7	3	...	23	8	3	...	2	36	12	7	3	...	22	8	1	...	1	32	7
VIII.—Diseases of Early Infancy.																					
Premature Birth ...	122	21	15	10	168	5	1	...	...	174	114	21	15	9	159	5	...	...	...	164	17
Infantile Atrophy, Debility, and Marasmus ...	39	10	8	9	66	28	21	4	6	125	38	9	8	9	64	28	20	2	6	120	14
Icterus Neonatorum, Sclerema and Oedema Neonatorum ...	1	3	...	1	5	...	1	...	...	6	1	3	...	1	5	...	1	...	...	6	...
Atelectasis ...	2	...	1	...	3	...	...	...	...	3	...	...	1	...	1	...	...	...	...	1	1
Injuries at Birth ...	1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
Other Diseases peculiar to early infancy ...	3	1	1	...	5	...	...	...	...	5	3	1	1	...	5	...	...	...	...	5	...
Lack of care ...	2	...	...	...	2	...	...	...	...	2	2	...	...	...	2	...	...	...	...	2	...
IX.—Affections produced by External Causes.																					
Burns (conflagration excepted) ...	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	1	1	2	3
Homicide by other means ...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...
Other Violence ...	1	...	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
X.—Ill-defined Causes.																					
Teething ...	...	...	...	...	...	...	...	1	1	2	...	...	...	...	...	...	...	1	1	2	...
TOTAL ...	208	52	46	28	334	116	153	117	125	845	194	51	44	27	316	112	143	113	122	806	113

TABLE IV. OF MINISTRY OF HEALTH.

46A

RETURN OF DEATHS UNDER ONE YEAR OF AGE DURING THE 53 WEEKS ENDED 3RD JANUARY, 1920.

CAUSE OF DEATH.	AGE PERIODS.																				Deaths in Institutions in the City of "Residents" or "Non-Residents."
	GROSS.										NETT (after allowing for transfers).										
	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.	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.	
I.—General Diseases.																					
Measles	1	...	8	17	26	...	...	...	...	...	1	...	8	17	26	12
Scarlet Fever	1	3	4	...	...	...	...	...	...	...	1	3	4	4
Whooping Cough	1	...	2	1	4	...	...	...	...	...	1	...	2	1	4	...
Diphtheria	1	1	2	...	...	...	...	...	...	...	1	1	2	...
Influenza	5	12	5	15	37	...	...	...	...	...	5	12	5	15	37	...
Erysipelas	1	...	1	...	...	...	...	...	...	...	...	...	...	1
Pyæmia, Septicæmia	1	...	1	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	...
Pulmonary Tuberculosis (not acute)...	1	1	...	...	...	...	...	...	...	...	1	1	1
Acute Miliary Tuberculosis...	1	1	...	...	...	...	...	...	...	...	1	1	1
Tuberculous Meningitis	3	3	...	...	...	...	...	...	...	...	3	3	...
Tuberculosis of Peritoneum and Intestines	1	...	3	2	6	...	...	...	...	...	1	...	3	2	6	...
Disseminated Tuberculosis...	1	1	...	...	...	...	...	...	...	...	1	1	1
TOTAL TUBERCULOSIS	1	...	3	8	12	...	...	...	...	...	1	...	3	8	12	3
Rickets, Softening of Bones	1	1	1	3	...	...	...	...	...	...	1	1	1	3	1
Syphilis	1	2	1	4	6	1	...	11	...	1	2	1	4	6	1	...	...	11	3
Other Venereal Diseases	1	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	1	1
Other General Diseases	1	...	2	3	...	...	...	...	...	...	1	...	2	3	1
II.—Diseases of Nervous System and Organs of Special Sense.																					
Meningitis, other forms or undefined	5	2	2	9	...	...	...	...	...	...	5	2	1	8	3
Cerebral Hæmorrhage, Apoplexy	1	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	...
Epilepsy	2	...	...	2	...	...	...	...	2	2	...	...	...	2	...	...	...	...	2	...
Infantile Convulsions ...	15	5	4	2	26	12	15	10	5	68	15	5	4	2	26	12	15	11	5	69	...
Diseases of the Ears	1	1	...	...	...	...	...	...	...	...	...	...	1
III.—Diseases of Respiratory System.																					
Diseases of the Larynx	1	1	...	...	...	...	...	...	...	...	1	1	...
Bronchitis	2	2	4	18	27	16	10	75	...	...	2	2	4	18	27	16	10	75	4
Broncho-pneumonia ...	1	...	2	1	4	11	23	33	23	94	1	...	2	1	4	11	22	33	23	93	16
Lobar Pneumonia	1	...	1	...
Pneumonia (type not stated)	2	3	3	6	14	...	...	...	...	...	2	3	3	6	14	2
Other Diseases of the Respiratory System ...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
IV.—Diseases of Digestive System.																					
Diseases of the Teeth and Gums	1	...	1	...	...	...	...	1	1	...	1	...	1	...	...	...	...	1	...
Diseases of œsophagus	1	...	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	1	1
Inflammation of Stomach	1	...	...	1	6	3	2	1	13	...	1	...	...	1	6	3	2	1	13	...
Other Diseases of the Stomach ...	2	...	...	...	2	...	1	...	...	3	1	...	...	...	1	...	...	...	...	1	2
Diarrhœa and Enteritis including Dysentery, Epidemic or Zymotic Enteritis, and Intestinal Catarrh ...	1	...	4	2	7	8	31	18	17	81	1	...	3	2	6	6	29	18	17	76	18
Hernia, Intestinal Obstruction	2	4	1	7	...	...	...	...	...	...	1	1	1	3	4
Carried forward ...	24	8	16	8	56	71	125	110	115	477	23	8	15	8	53	69	120	108	113	463	67

*The Report of the Chief Health Visitor and
Superintendent of Midwives is as follows:—*

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

Herewith I beg to submit my report of work done in the year 1919.

MIDWIVES ACT, 1902.

During the year 1919, 32 midwives notified the Local Supervising Authority of their intention to practise; of these, 20 hold the Certificate of the Central Midwives Board, or of a recognised hospital, the remainder being on the register before the passing of the Midwives Act. During the year one bona-fide midwife gave up practising on account of ill-health and two midwives holding the C.M.B. Certificate removed to other towns. In order to replace these midwives two trained women holding the Central Midwives Board Certificate were appointed by the Sanitary Committee of the Corporation. They are subsidised to the extent of £100 for the first year, £80 for the 2nd year and £50 for the 3rd year in addition to retaining all fees. It was found necessary to increase the subsidy from the original £50 yearly for three years, as the midwives appointed, finding it impossible to live while working up a practice, resigned to take up more remunerative work. During the year a grant was made by the Sanitary Committee whereby midwives who were unable, owing to poverty or illness, to secure their fees from their patients, were paid by the Local Supervising Authority for such cases.

Inspections.—133 visits were paid to certified midwives at their homes in order to inspect their bags of appliances, and to see that they keep satisfactorily the necessary records of their work; also to investigate cases of ophthalmia neonatorum, of septicæmia, or of any other abnormality occurring in their practices. The results of these visits were generally satisfactory; the midwives comply with all require-

ments to the best of their ability. Four midwives underwent disinfection, having been in contact with patients suffering from puerperal septicaemia. In addition 248 visits were paid to midwives' cases usually at the request of the midwives on account of some abnormal condition. Handy women are still active if the slightest opportunity arises, but on investigations, cases where they had called in proved to be emergency ones.

Births attended by Midwives.—2,592 live births and 77 still-births have been attended by midwives during the year, these figures being a decrease of 6 in the former but an increase of 16 in the latter number. Midwives attended 39% of the total births in the city. This is a remarkably low figure as compared with the rate in other towns.

Lectures to Midwives.—34 weekly meetings were held in the Health Department. At these meetings, subjects of interest to the midwives are discussed and the midwives are encouraged to discuss any difficulties that arise in the course of their duties. In addition the Northumberland and Durham Midwives' Association meetings have been revived and local doctors have lectured monthly on interesting and instructive subjects. These were well attended. The same close co-operation and harmony exists between the practising midwives and the Health Department, and the midwives and health visitors are ever willing to assist the mothers in their difficulties.

There is also close co-operation between the Health Department and the Maternity Hospital; between the Health Department and the Mothers' Hostel in Osborne Road; and between the Health Department and the Day Nurseries. A grant is now paid to the Maternity Hospital by the Corporation, and women who are unable to pay for the services of a nurse are received into the Maternity Hospital or attended in the district by nurses from the Maternity Hospital free of all cost. This benefit applies to both married and

unmarried mothers. A grant is also paid to the Mothers' Hostel Committee which permits of unmarried mothers and their babies being received at the Hostel, the object of the Hostel being to keep mother and child together, and the mothers to maintain their independence by working during the day while their children are looked after, the mothers having the care of them at night and paying a fair proportion of their wages for their maintenance.

Notices to the Local Supervisory Authority from Midwives who have sent for medical help. The following are the details:—

FOR MOTHER				<i>During Puerperium—</i>			
<i>During Pregnancy—</i>				Rise of Temperature	...	3	
Varicose Veins	...	...	8	Eclampsia	...	2	
Ante partum Hæmorrhage			2	Mastitis	...	2	
Abortions	...	...	6	Chest Affections	...	5	
Kidney Trouble	...	...	1				12
			17	Total calls for Mother	...	112	
<i>During Labour—</i>				FOR CHILD			
Uterine Inertia	...	...	29	Immaturity	...	14	
Malpresentations	...	...	11	Prematurity	...	46	
Contracted Pelvis	...	...	6	Cyanosis	...	1	
Retained Placenta	...	...	2	Congenital Defects	...	9	
Placenta Prævia	...	...	1	Convulsions	...	6	
Post Partum Hæmorrhage			8	Ophthalmia Neonatorum	...	38	
Ruptured Perineum...	...	...	18	Icterus Neonatorum...	...	2	
Syncope	...	...	8	Illness of Infant	...	11	
			83				127
				GRAND TOTAL	...	239	

An increase of 57 instances on the number for 1918. The percentage of midwives' cases where a doctor is called in is 8·9%.

According to the grant for payment of the doctors' fees when called in by a midwife to cases where the patient is unable to pay, the following claims were made.

			£	s.	d.	£	s.	d.	
For forceps delivery ...	9 cases	@	2	2	0				
„ post partum hæmorrhage	2 „	@	1	1	0				
„ other illnesses of mother	6 „	@	0	3	6	to	0	10	0
„ „ „ child	4 „	@	0	3	6	to	0	7	0
Total cases 21.	Total payments		£24	1	0.				

Ophthalmia Neonatorum.—Total number of cases notified 100, of these 91 were visited, the remainder being cases admitted into Hospital from other districts and notified. This figure shows a marked increase on last year's number, there being only 19 notified in 1918.

Doctors attended at birth in	43	of the cases.
Midwives " "	42	" "
Union Hospital "	2	" "
Maternity Hospital "	4	" "
	<hr/> 91	

A total number of 387 visits were paid to these cases, and the ultimate results were—complete recovery in 84 cases, 4 of the children died, and 3 left the district.

Puerperal Septicæmia.—6 cases of puerperal septicæmia have been notified, doctors attended two of the cases, and midwives the remaining 4. Four of the patients recovered and two died.

Maternity and Child Welfare Centres.—During the year 1919, the number of centres has been increased by 2, one in Mill Lane district and the other in St. Peters, this makes a total of 9 centres situated in different parts of the town. The attendance of children at the "Welcomes" has increased very considerably, in fact difficulty is experienced in arranging that all the babies be seen by the doctors, nominally the sessions are from 2—4 p.m., but at several of the centres the mothers have often to wait till 6 p.m. before they can see the doctor, a doctor attends each of the 9 centres fortnightly to see the babies, and at 5 of the centres, a lady doctor has a clinic for pre-maternity cases fortnightly; at present the total number of medical sessions per fortnight is 14. Two health visitors attend each of the centres on the weekly weighing day, and a health talk is given weekly on simple subjects relating to the care and feeding of young children and the hygiene of the home.

The total attendances of expectant mothers at the centres were 538 as compared with 148 in 1918; of children under one year 5,783 as compared with 3,396 in 1918; of children over one year 2,600 as compared with 1,417 in 1918; in all a total number of 8,383 attendances were made by children under five years as compared with 4,803 in the previous year.

The total number of individual pre-maternity cases that attended was 65; of children under one year 1,018 as compared with 470 in 1918; of children over one year 566.

307 health talks were given at the centres.

Sewing and knitting classes conducted by members of the voluntary society assisted by competent paid workers are held at all the centres at least once weekly.

Notification of Births.—4,562 births were notified in 1919 as against 6,783 registered births, or 68%.

The following table shows from whom they were received :—

Notified by	Living Births.	Still-Births.
Medical Practitioners	967	42
Certificated Midwives	2,592	77
Maternity Hospital	956	39
Union Hospital	43	1
Parents	4	...
	4,562	159

Still-Births.—Of the total notifications of births received under the Act, still-births have been in the following proportion.—1909, 4·1%; 1910, 3·9%; 1911, 4·1%; 1912, 3·2%; 1913, 3·4%; 1914, 3·6%; 1915, 3·4%; 1916, 3·6%; 1917, 3·1%; 1918, 3·3%; and 1919, 3·5%.

The following are the details of the 118 still-births visited, being attended by midwives and Maternity Hospital:—

Duration of Pregnancy.—Under 7 months, 13 or 11%; at 7 months, 20 or 18%; at 8 months, 13 or 11%; and at full time, 72 or 60%.

Presentation.—Vertex, 86 or 72%; breech, 10 or 8%; footling, 17 or 15%; unknown, 5 or 5%.

Supposed Cause of Still-Births.—Mothers health in 57 cases, or 50%; accident previous to birth in 18 cases, or 15%; malpresentations, etc., in 31 cases, or 26%; and other causes in 12 cases, or 9%.

In 35 instances it was the 1st child; in four instances the 2nd; in 16 the 3rd; in 18 the 4th; in 13 the 5th; and in 32 the 5th or more.

This was the first still-born child in 85 cases; the 2nd in 18; the 3rd in 9; the 4th in 5; and the 5th in 1.

Health Visitors.—At the beginning of 1919, there were 11 Health Visitors working in the different parts of the City. But in April 8 additional women were appointed, all general trained nurses, and holding the C.M.B. certificate, this making a total of 18 Health Visitors, 1 Assistant Chief Health Visitor and the Chief Health Visitor. This increase of staff has enabled the work of health visiting to be carried out very thoroughly—the babies are visited frequently and regularly up to their first birthday, and then at less frequent intervals up to 5 years, expectant mothers are visited and advised; and cases reported for the Royal Victoria Infirmary are followed up in their homes, measles, pneumonia, influenza and diarrhoea cases are also visited and revisited, and where necessary in these cases the Health Visitors help the mothers by giving practical demonstrations of how the doctor's instructions should be carried out. The visits of the Health Visitors are always appreciated and welcomed by the mothers, and they endeavour to win their confidence, by tactful and friendly advice and help.

During the year 1919, 5,923 births were visited, and a total number of 25,698 re-visits were paid to these births; 14,232 visits were paid to children over one year and under 5 years; 692 visits were paid to expectant mothers; 418 visits

to cases notified by the Royal Victoria Infirmary; and 1,843 special visits; in all a total of 48,846 visits to infants were paid. In addition 7,252 primary and 7,702 subsequent visits to measles; 491 primary and 515 subsequent visits to pneumonia; 1,171 primary and 206 subsequent visits to influenza; 84 primary and 44 subsequent visits to diarrhoea; and making a total of 17,465 visits to notified infectious cases, and a grand total of 66,311 visits.

Milk.—Free dried milk. **Glaxo and Cow and Gate.**

The results obtained from the extensive use of Glaxo and Cow and Gate still continues to be good and this is particularly obvious when given free to the poor necessitous cases. Each case where free milk is given is carefully investigated by the Health Visitor for that District before it is granted and it is only given free until the parents are in a position to buy it at the reduced price. Many of the recipients of free milk are fatherless, others, the children of disabled and delicate men who are unable to work to support their family. 315 children were supplied free during the year, a certain number were supplied for the entire period, others for two or three months or longer as circumstances demanded. A total number of 10,050 lbs were given away free.

In addition, dried milk continues to be sold at the reduced rate. In order that only needful cases be supplied, cards are supplied to each applicant where they are asked to state their expenses and income. An average number of 1,560 children are supplied monthly with glaxo, etc., at cost price and a total number of 82,994 lbs were sold, 100% increase on the amount sold in 1918.

5,533 infants born in 1918 and on the visiting list of the department were due to attain the age of 12 months in 1919. Of these 553 left the City and 57 removed and could not be traced; in addition 35 were only visited once and 707 died which gives a mortality rate of 128 per 1000 births visited as compared with 107 for the whole city.

Housing Conditions.—664 births occurred in one-roomed dwellings and of these 111 died, a mortality rate of 167·1 per 1000; 2,056 births occurred in two-roomed dwellings and of these 306 died, a mortality rate of 148·4 per 1000; 1,358 births occurred in three-roomed dwellings and of these 188 died, a mortality rate of 138·4 per 1000; and 810 births occurred in houses of more than three rooms and of these 102 died; a mortality rate of 125·9 per 1000.

During the 12 years 1908-1919, 32,546 births were under the observation of the Health Visitors and of these 4,130 died, a death rate of 126·8 per 1000.

The following is the analysis :—

YEAR.	LIVING IN							
	1 Room.		2 Rooms.		3 Rooms.		4 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
1914	245	36	375	31	90	11	25	3
1915	631	104	2,140	306	1,416	144	692	74
1916	611	121	2,333	343	1,584	180	756	85
1917	730	104	2,199	284	1,349	150	776	84
1918	607	90	2,018	270	1,285	144	766	83
1919	664	111	2,056	306	1,358	188	810	102
	5,778	869	14,941	1,918	7,891	900	3,936	443
Death rate per 1,000 births.	150·3		128·3		114·0		112·5	

* The Notification of Births Act came into force April 1st.

Cleanliness.—The cleanliness of the 4,888 homes visited was as follows :—

Good ... 3,769, or 77·1 %.
 Fair ... 953, or 19·4 %.
 Dirty ... 166, or 3·3 %.

Employment of Mothers.—

Before confinement 419, or 8·5% of the mothers worked.

After confinement 325, or 6·6% of the mothers worked.

The remainder were at home before and after confinement. Of the total of 419 mothers who worked before confinement, 88 or 21% lost their babies during the first year of life, and of these deaths 40% were due to prematurity.

Deaths.—707 children died during the first year and of these 271 or 38% died during the first month and the cause of death in 254 or 95% of these, 271 cases was “prematurity,” and 88 or 34% of these 254 deaths were twin children. 194 children or 27% of the total deaths died from bronchitis or pneumonia; the greater number of these during the February-March Influenza epidemic. The following figures show how great was the loss of infant life during that period. The infantile death rate for the year 1919, for the whole city was 120 per 1000.

Previous Deaths in families whose baby died during 1919. In 61% of the cases, this was the first death; in 15% it was the second; in 11% it was the third; in 4% it was the fourth; in 3% it was the fifth; and in 4%, more than the fifth.

Health of Mothers.—At the time of confinement it was:

Good in 79·5% of the cases.

Fair in 14% of the cases.

Poor in 5·6% of the cases.

The Feeding of the 4,888 children under observation was as follows:—

	Breast.	Mixed.	Artificial
Children who survived 1st year feeding during first month	92%	3·6%	4·3%
Children who died in first year feeding during first month	79·5%	7·4%	12·8%
Children who survived first year feeding at nine months	3·6%	47·9%	48·4%
The feeding of 73 children who died from gastro enteritis feeding at time of death	23·2%	19·1%	57·5%

These figures show an increase in the number of breast-fed infants during the first month of life, the percentage for 1918 being 89·4%, but more children have been wholly artificially fed at 9 months.

Deaths among Notified and Unnotified Births.—69% of the infant deaths were notified births; the remainder were unnotified.

Illegitimacy.—There were 175 male and 187 female illegitimate children born, total 362.

Of these 53 died; a rate of 147 per 1,000 as compared with 120 for all births.

Sex.—There were 3,430 male children born and of these 471 died, a death rate of 137 per 1,000, and 3,363 female children born and of these 335 died, a death rate of 100 per 1,000.

I am, Sir,

Your obedient servant,

GEORGINA B. CAMERON,
*Chief Health Visitor and
Superintendent of Midwives.*

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

REPORTS OF THE
RESIDENT MEDICAL OFFICER OF THE
INFECTIOUS DISEASES HOSPITAL
AND THE TUBERCULOSIS OFFICER.

III. INFECTIOUS DISEASE.

FEVERS, FOOD POISONING.
CITY HOSPITAL FOR INFECTIOUS DISEASES.
TUBERCULOSIS, DISINFECTION, BACTERIOLOGY.

REPORTS OF THE
RECENT MEDICAL OFFICERS
INFECTIOUS DISEASES HOSPITAL
AND THE TUBERCULOUS OFFICERS
INFECTIOUS DISEASES HOSPITAL
AND THE TUBERCULOUS OFFICERS

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INFECTIOUS DISEASES.

NUMBER OF CASES PER 1,000 POPULATION IN 1919.

DISTRICT.	ATTACK-RATE PER 1,000 POPULATION.						
	Small-pox.	Typhus.	Scarlet Fever.	Diphtheria.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.
England and Wales ...	0·01	0·00	2·29	1·50	0·10	0·06	0·44
82 County Boroughs ...	0·01	...	2·57	1·48	0·08	0·07	0·48
NEWCASTLE-UPON-TYNE ...	...	...	2·60	1·16	0·04	0·02	0·63
Hull	0·00	0·00	0·03	0·12	0·02	0·02	0·02
Leeds ... ..	...	...	3·11	1·88	0·08	0·06	0·46
Bradford ... ..	...	...	0·86	1·25	0·11	0·06	0·38
Sheffield ... ..	...	...	2·6	1·06	0·03	0·1	0·6
Manchester	0·02	...	2·22	0·62	0·12	0·20	0·50
Salford	0·02	...	2·9	0·9	0·1	0·1	0·6
Liverpool	0·016	0·00	3·5	2·5	0·5	0·064	0·68
Nottingham ... ..	...	...	1·8	1·9	0·04	0·05	0·54
Leicester ... ..	...	...	2·45	1·15	0·13	0·05	0·55
Stoke-on-Trent ... ..	...	...	3·70	1·94	0·04	0·06	0·53
Birmingham ... ..	...	...	3·05	1·05	0·04	0·11	0·38
Cardiff	00·9	0·00	10·59	1·25	0·04	0·07	0·38
Bristol ... ..	...	...	1·004	1·240	0·91	0·66	0·512
Portsmouth ... ..	...	...	1·21	2·38	0·09	0·05	0·30
London County	0·01	...	2·92	2·14	0·08	3·7*	0·64
Gateshead	0·01	...	3·7	0·59	0·04	0·01	0·40
South Shields	0·01	...	1·31	0·36	0·06	0·02	0·37
Tynemouth ... ..	...	...	1·25	0·51	0·13	0·06	0·72
Sunderland ... ..	...	...	3·1	0·58	0·10	0·03	0·45
Middlesborough ... ..	...	...	3·10	1·58	0·08	0·06	0·46
†County of Northumberland	...	...	2·16	1·52	0·29	0·03	0·55
†County of Durham ...	0·01	...	3·9	1·2	0·11	0·02	0·37

† Administrative County. * Per 1000 births.

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

WARD.	Diph- theria.	Ery- sipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cere- bro- spinal Fever.	Polio- myelitis.	Measles	Puer- peral Fever.	Small- pox.	Whoop- ing Cough.	Zymotic Diarrhoea (under 2 years of age).
St. Nicholas'	...	...	1	...	...	...	...	...	...	...	...	1
*St. Thomas'	...	2	...	...	...	...	...	...	...	...	...	3
St. John's	2	1	4	...	1	...	...	4	...	...	...	8
Stephenson	2	...	1	...	...	1	...	10	...	...	...	8
Armstrong	2	...	1	...	...	1	...	15	...	...	1	13
Elswick ...	1	...	1	...	...	...	...	1	...	...	...	3
Westgate	1	...	1	...	...	...	...	5	...	...	...	4
†Arthur's Hill	...	...	...	...	...	...	...	...	...	...	...	2
Benwell ...	1	...	...	...	1	...	...	7	...	...	3	11
Fenham ...	...	...	1	...	...	...	...	1	...	...	1	1
All Saints'	2	...	1	...	...	...	...	7	...	...	...	4
St. Andrew's	2	...	...	...	...	...	...	4	...	...	...	3
Jesmond...	...	1	1	...	...	...	...	...	...	...	...	2
Dene ...	...	...	2	...	...	...	...	...	...	...	...	...
Heaton ...	3	...	...	...	...	1	...	1	...	...	...	3
Byker ...	3	...	4	...	...	2	...	7	...	...	3	5
St. Lawrence	2	...	4	...	...	...	...	11	...	...	...	14
St. Anthony's	...	...	...	...	...	...	...	19	...	...	...	6
†Walker ...	...	...	2	...	...	...	...	8	...	...	1	10
City ...	22	4	24	...	2	6	...	101	...	...	9	101

* 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 pages 95 to 105.

NOTIFIED CASES OF INFECTIOUS DISEASE.

EXCLUSIVE OF TUBERCULOSIS.

AGES OF CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1919.

(TABLE II. OF MINISTRY OF HEALTH 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 up-wards.	Ages not known.	1919.	1918.
Diphtheria (including Membranous Croup)...	4	83	150	52	23	3	...	5	320	250
Erysipelas ...	4	5	9	23	61	54	12	5	173	102
Scarlet Fever ...	7	156	471	62	15	3	...	2	716	426
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	1	1	6	1	1	...	...	10	29
Epidemic Cerebro-Spinal Meningitis ...	3	3	3	5	3	...	...	...	17	16
Acute Poliomyelitis ...	1	1	3	...	...	...	...	...	5	...
Acute Polio-Encephalitis ...	...	...	1	...	...	...	...	...	1	...
Encephalitis Lethargica ...	...	...	1	...	...	...	...	...	1	...
Measles and Rubella ...	467	3373	3689	18	24	...	...	53	7624	1660
Puerperal Septicæmia ...	...	...	...	1	4	...	...	1	6	10
Ophthalmia Neonatorum ...	100	...	...	...	...	...	...	...	100	19
Pneumonia ...	29	122	113	97	125	77	31	24	618	...
Malaria ...	...	...	...	19	69	5	...	5	98	...
Dysentery ...	...	...	...	4	4	...	...	2	10	...
TOTALS ...	615	3744	4440	287	329	143	43	97	9,699	2,512

WARD DISTRIBUTION OF INFECTIOUS DISEASES.

(TABLE II. OF MINISTRY OF HEALTH RETURNS.)

WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Poliomyelitis.	Acute Polio-Encephalitis.	Encephalitis Lethargica.	Measles.	Rubella.	Puerperal Fever.	Ophthalmia Neonatorum.	Acute Primary Pneumonia.	Malaria.	Dysentery.	Acute Influenzal Pneumonia.	TOTAL.
St. Nicholas'...	...	1	7	...	...	...	...	...	65	...	...	...	3	2	...	3	81
St. Thomas'...	44	13	37	2	5	1	...	...	281	12	...	9	18	13	1	5	441
St. John's ...	18	6	38	1	1	...	...	...	365	1	...	3	32	9	1	6	481
Stephenson ...	11	12	19	2	1	...	...	...	480	5	1	1	24	9	...	8	573
Armstrong ...	19	15	38	...	2	1	...	...	444	7	...	8	23	5	1	3	566
Elswick ...	12	5	52	2	...	1	1	...	213	10	1	7	5	1	1	9	320
Westgate ...	26	2	44	...	...	...	...	...	538	2	...	8	17	6	...	5	648
Arthur's Hill..	9	12	22	...	...	...	...	...	121	4	...	2	11	7	...	11	199
Benwell ...	16	13	56	1	1	1	...	...	673	2	2	8	63	7	2	14	859
Fenham ...	7	5	53	...	...	...	...	...	262	6	1	2	7	3	...	7	353
All Saints' ...	17	9	37	...	...	...	...	1	670	4	...	6	24	2	...	2	772
St. Andrew's...	8	13	30	...	1	...	...	...	311	...	...	8	24	2	1	7	405
Jesmond ...	10	3	19	...	...	1	...	...	110	2	...	1	3	1	...	10	160
Dene ...	8	6	28	...	2	...	...	...	119	1	...	...	9	1	1	11	186
Heaton ...	21	10	25	...	2	...	...	...	330	1	...	5	12	11	...	14	431
Byker ...	23	17	51	...	1	...	...	...	519	2	1	7	27	6	...	26	680
St. Lawrence	25	11	79	1	1	...	...	...	640	3	...	10	26	5	1	16	818
St. Anthony's	30	13	40	...	...	...	...	...	745	2	...	8	32	...	1	12	883
Walker ...	16	7	41	1	...	...	...	...	668	6	...	7	65	8	...	24	843
City ...	320	173	716	10	17	5	1	1	7554	70	6	100	425	98	10	193	9,699

For particulars of cases of **Tuberculosis**, see special section, pages 93, 94 & 105.

WARD INCIDENCE OF INFECTIOUS DISEASES.
EXCLUSIVE OF TUBERCULOSIS.

NOTIFIABLE DISEASES—Cases per 1,000 Population.																		DEATHS per 1,000 Pop.		
WARD.	Diphtheria.	Erysipelas.	Scarlet Fever.	Typhus Fever.	Enteric Fever.	Cerebro-Spinal Fever.	Polio-myelitis.	Acute Polio- encephalitis.	Encephalitis. Lethargica.	Measles (including Rubella).	Puerperal Fever.	Smallpox.	Ophthalmia Neonatorum.	Pneumonia.	Malaria.	Dysentery.	Measles (including Rubella).	Whooping Cough.	Zymotic Diarrhoea (under 2 years of age).	
St. Nicholas'	...	0.28	1.94	...	...	...	...	...	...	18.0	...	...	...	1.66	0.55	...	...	...	0.28
*St. Thomas' ...	3.08	0.90	2.59	...	0.40	0.35	0.07	...	...	2.06	...	...	2.49	1.60	0.90	...	0.07	...	0.21
St. John's ...	1.16	0.39	2.44	...	0.06	0.06	...	...	...	23.5	...	...	0.19	2.44	0.58	...	0.26	...	0.51
Stephenson ...	0.58	0.63	1.00	...	0.10	0.05	...	...	...	25.5	0.05	...	0.05	1.70	0.47	...	0.53	...	0.42
Armstrong ...	1.20	0.95	2.40	...	...	0.12	0.06	...	...	28.5	...	...	0.50	1.64	0.32	0.06	0.95	0.06	0.82
Elswick ...	0.94	0.39	4.06	...	0.16	...	0.08	0.08	...	17.4	0.08	...	0.55	1.09	0.08	0.08	0.08	...	0.23	
Westgate ...	1.68	0.29	2.84	...	...	...	...	...	...	34.9	...	...	0.52	1.42	0.39	...	0.32	...	0.26
†Arthur's Hill ...	0.78	1.04	1.90	...	...	...	...	...	...	10.8	...	...	0.17	1.90	0.60	...	...	...	0.17
Benwell ...	0.90	0.73	3.14	...	0.06	0.06	0.06	...	...	38.0	0.12	...	0.45	4.32	0.39	0.12	0.40	0.17	0.62
Fenham ...	0.63	0.45	4.74	...	...	...	...	...	...	24.0	0.09	...	0.18	1.25	0.27	...	0.09	0.09	0.09
All Saints' ...	0.95	0.50	2.06	...	...	...	...	...	0.06	37.6	...	...	0.33	1.45	0.11	...	0.39	...	0.22
St. Andrew's ...	0.63	1.03	2.37	...	...	0.08	...	...	...	24.6	...	...	0.63	2.37	0.16	0.08	0.32	...	0.24
Jesmond ...	0.89	0.27	1.70	...	...	...	0.09	...	...	10.0	...	...	0.09	1.16	0.09	...	...	...	0.18
Dene ...	0.65	0.49	2.27	...	...	0.16	...	...	...	9.7	...	...	...	1.62	0.08	0.08	...	...	...
Heaton ...	1.34	0.64	1.59	...	...	0.13	...	...	...	21.0	...	...	0.32	1.66	0.70	...	0.06	...	0.19
Byker ...	1.30	0.96	2.88	...	...	0.06	...	...	...	29.4	0.06	...	0.40	2.94	0.34	...	0.40	0.17	0.28
St. Lawrence ...	1.38	0.60	4.35	...	0.06	0.06	...	...	...	35.4	...	...	0.55	2.31	0.28	0.06	0.60	...	0.77
St. Anthony's ...	1.88	0.81	2.50	...	...	...	...	...	...	46.7	...	...	0.50	2.75	...	0.06	1.19	...	0.37
†Walker ...	0.98	0.43	2.52	...	0.06	...	...	...	...	41.4	...	...	0.43	5.46	0.49	...	0.49	0.06	0.61
City ...	1.16	0.63	2.60	...	0.04	0.06	0.02	0.004	0.004	27.7	0.02	...	0.36	2.25	0.36	0.04	0.37	0.03	0.37	

*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 105.

HOUSEHOLDS AFFECTED WITH INFECTIOUS DISEASES, EXCLUSIVE OF TUBERCULOSIS.

DISEASES.	HOUSEHOLDS WITH						Mili- tary or Naval Cases	Public Insti- tutions *	TOTAL CASES †
	Single Cases	2 Cases each	3 Cases each	4 Cases each	5 Cases each	6 Cases each			
Diphtheria (including Membranous Croup)	192	25	6	2	2	1	16	20	320
Erysipelas ...	153	2	...	...	...	...	3	13	173
Scarlet Fever ...	464	75	16	3	...	2	4	26	716
Enteric (or Typhoid) Fever ...	9	...	...	...	...	...	...	1	10
Epidemic Cerebro- Spinal Meningitis...	12	...	...	...	...	...	2	3	17
Poliomyelitis ...	4	...	...	...	...	...	...	1	5
Acute Polio-Enceph- alitis ...	1	...	...	...	...	...	...	...	1
Encephalitis Lethar- gica ...	1	...	...	...	...	...	...	...	1
Puerperal Fever ...	6	...	...	...	...	...	...	...	6
Ophthalmia Neona- torum ...	100	...	...	...	...	...	...	...	100
Pneumonia ...	561	11	3	...	...	...	...	26	618
Malaria ...	92	...	...	...	...	...	...	5	98
Dysentery ...	10	...	...	...	...	...	...	...	10
TOTAL ...	1606	113	25	5	2	3	25	95	2075

* See Page 65.

† Exclusive of Measles and Rubella.

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.
Atkinson Road	1.4
Bath Lane	1.2
Bentinck	2.1
Benwell St. Joseph's	1.2
Blenheim Street	1.7
Bolam Street	2.2
Byker Church of England, Headlam Street	...	0.4
Byker St. Anthony's, Walker Road	1.8
Canning Street	2.5
Chillingham Road	1.5
Clarence Street	1.3
Cruddas Park	0.4

SCARLET FEVER AND DIPHTHERIA IN SCHOOLS—(continued).

School.	Per cent. of Households infected with	
	Scarlet Fever	Diphtheria.
Delaval	0.3	...
Denton Road	1.4	0.2
Diana Street	1.4	...
Elswick Road	1.3	0.6
Elswick St. Paul's	0.2	...
Fenham R.C.	1.7	0.9
Heaton Park Road	0.9	0.7
Mitford Street	0.4	0.4
North Heaton	0.4	0.2
North View	2.3	0.8
Ouseburn	1.4	0.8
Raby Street	1.5	0.6
Royal Jubilee	0.3	0.1
Saint Peter's	0.2	0.1
Sandyford Road	1.0	0.6
Shieldfield	0.7	0.1
Shieldfield Christ Church, Henry Street	0.5	0.5
Snow Street	1.5	0.1
South Benwell	2.0	0.4
Spital Tongues	0.8	0.4
St. Andrew's R.C., Manors	1.4	0.2
St. Dominic's R.C., Red Barns	0.8	0.1
St. John's	1.6	0.6
St. Lawrence R.C., Allendale Road	1.7	0.3
St. Mary's, Cross Villa Place	1.3	0.3
St. Mary's R.C., Bath Lane Terrace	0.6	0.4
St. Michaels' R.C., Clumber Street	1.2	0.5
St. Nicholas'	1.4	0.3
St. Thomas'	1.0	0.7
Todd's Nook	1.0	1.2
Victoria Jubilee	1.1	0.2
Walker East	1.0	0.2
Walker Gate	1.1	0.3
Walker R.C., Welbeck Road	0.6	0.1
Walker West	0.1	—
Welbeck Road	1.5	1.0
Westgate Hill	2.2	0.4
West Jesmond	0.4	0.5
Westmorland Road	0.6	0.2
Wingrove	1.1	0.5

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, 534 contained scholars of one or other of 76 different schools in the City. 19 of the largest elementary schools had scholars from upwards of 10 households each attacked during the year, the largest number of such households connected with any one school being 30.

In two schools there was infection in the households of the scholars during nine months of the year, in six schools during eight months, and in six schools during seven months of the year.

School Closure.—Owing to the Influenza epidemic all the Elementary Schools were closed on February 8th and re-opened on March 10th.

Notices appeared in the local papers urging the closure of Sunday Schools, the request being generally complied with.

Children were also excluded from cinemas and theatres.

PUBLIC INSTITUTIONS AND INFECTIOUS DISEASE.

The following notifications were received during the year:—

INSTITUTIONS, &c.	Diphtheria.	Erysipelas.	Scarlet Fever.	Enteric Fever.	Cerebro-Spinal Meningitis.	Polionyelitis.	Measles and Rubella.	Puerperal Fever.	Pneumonia.	Malaria.	Influenza.	* TOTAL.
Royal Victoria Infirmary ...	11	3	7	1	3	...	...	...	16	4	...	45
Fleming Memorial Hospital, North Road ...	1	...	9	...	...	1	12	...	...	...	...	23
Workhouse ...	...	9	...	...	...	...	...	...	9	1	...	19
City Hospital for Infectious Diseases—(Staff) ...	7	...	9	...	...	...	2	...	1	...	9	28
Isolation Hospital ...	...	...	1	...	...	...	...	...	...	...	...	1
St. Ann's Convent ...	...	1	...	...	...	...	...	...	...	...	...	1
Convent of the Sacred Heart	1	...	...	...	...	...	...	...	...	...	...	1
TOTAL ...	20	13	26	1	3	1	14	...	26	5	9	118

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

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.

There were in the City before the War 714 small general shops retailing milk, few of them being fit places for the purpose. This number has been diminished to 275 by the action of the Food Control Committee in referring all applicants for licence to the Health Department, which was thus enabled to weed out the great majority of the undesirables.

Eighteen cases of Scarlet Fever occurred at public places of various kinds, including one commercial hotel, one full licensed house, one off beer house, one chemist, three boarding houses, one boarding school, two dressmakers, one tailor, two fried fish shops, two general dealers and two boot repairing shops. Thirteen cases of diphtheria occurred—one at a public house, seven at a general dealer's, one at a dairy farm, two at milk sellers, one at a medical practitioner's and one at a boarding house.

SCARLET FEVER.

Notifications of 716 cases were received during the year, being little more than half the previous year's incidence, and there were 24 deaths, which is equivalent to a mortality of 3·3 per cent. The type of disease was mild on the whole.

DIPHTHERIA.

320 cases were notified during the year, and 22 died, a case mortality of 6·9 per cent.

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

Number of medical practitioners who made application for Antitoxin...	55
Number of phials of Antitoxin supplied	170
Number of cases of Diphtheria notified	320
Number of cases of Diphtheria removed to Hospital	253
Number of Hospital cases in which Antitoxin was injected prior to admission	49

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

Year.	DIPHTHERIA CASES. (All Forms.)	
	Number.	Case Mortality.
1909	546	12·7%
*1910	443	9·0%
1911	507	7·5%
1912	501	6·6%
1913	368	7·6%
1914	362	7·7%
1915	275	9·5%
1916	272	10·3%
1917	226	14·6%
1918	250	9·2%
1919	320	6·9%

* 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 AND RUBELLA.

7,624 cases (including 70 of Rubella) were notified, and there were 101 deaths (corrected) in 1919, representing a death rate of 0·37 per 1,000 population, as compared with 0·12 in 1918.

DEATHS, 1919.

MONTH.	YEARS OF AGE.							TOTAL.
	0-1.	1-2.	2-3.	3-4.	4-5.	5-10.	Over 10.	
January ...	...	2	...	...	...	...	...	2
February ...	...	...	...	...	...	...	...	...
March ...	...	...	...	...	...	...	...	...
April ...	...	...	...	...	...	...	...	...
May ...	2	3	...	1	...	...	...	6
June ...	6	5	5	2	1	1	...	20
July ...	9	8	4	1	1	1	...	24
August ...	4	9	4	2	1	...	...	20
September ...	1	6	5	...	1	...	...	13
October ...	1	3	...	...	...	1	...	5
November ...	3	1	2	...	...	1	...	7
December ...	...	3	...	1	...	...	...	4
Total ...	26	40	20	7	4	4	...	101

The following table shews the deaths in the various wards, and at different age periods:—

	Under 3 months.	3 and under 6 months.	6 and under 9 months.	9 and under 12 months.	1 and under 2 years.	2 and under 3 years.	3 and under 4 years.	4 and under 5 years.	5 and under 10 years.	Over 10 years.	TOTALS.
St. Nicholas'
St. Thomas'	1	...	...	...	...	...	...	1
St. John's	2	1	1	...	...	...	4
Stephenson	1	1	3	3	1	1	...	...	10
Armstrong	2	...	10	1	...	2	...	...	15
Elswick	1	...	...	...	...	1
Westgate	1	...	1	1	...	1	1	...	5
Arthur's Hill
Benwell	2	3	1	...	...	1	...	7
Fenham	1	...	...	...	...	...	1
All Saints'	...	1	...	1	3	1	1	...	...	...	7
St. Andrew's	3	...	1	...	...	...	4
Jesmond
Dene
Heaton	1	...	...	...	...	...	...	...	1
Byker	2	3	1	1	...	...	...	...	7
St. Lawrence	3	5	1	1	...	1	...	11
St Anthony's	5	8	4	1	...	1	...	19
Walker	2	...	5	1	...	...	...	8
Total	...	1	7	18	40	20	7	4	4	...	101

Each Health Visitor visited and revisited the cases occurring in her district. By this arrangement the cases are visited immediately on receipt of the notification, and advice is given regarding the nursing and isolation of the patient, special care being taken to impress on the mothers the importance of good ventilation and warmth, and the necessity for the great cleanliness of the mouth and eyes of the patient. The cases are kept under supervision until they recover, and should subsequent cases occur in the family they are recorded.

Measles Cases including Rubella notified during 1919—

	Civil.	Military.
Cases notified by Medical practitioners ...	5,453	...
„ found „ Health Visitors ...	2,013	...
„ notified „ Parents ...	148	...
	7,614	10
		7,624

The total cases, including military, occurred in the following wards:—

	Measles.	Rubella.
St. Nicholas' ...	65	—
St. Thomas' ...	281	12
St. John's ...	365	1
Stephenson ...	480	5
Armstrong ...	444	7
Elswick ...	213	10
Westgate ...	538	2
Arthur's Hill ...	121	4
Benwell ...	673	2
Fenham ...	262	6
All Saints ...	670	4
St. Andrew's ...	311	—
Jesmond ...	110	2
Dene ...	119	1
Heaton ...	330	1
Byker ...	519	2
St. Lawrence ...	640	3
St. Anthony's ...	745	2
Walker ...	668	6
	7,554	70

The following were the ages of the civilian cases:—

Under 1 year ...	467
From 1—5 years ...	3,373
„ 5—15 years ...	3,689
„ 15—25 years ...	10
„ 25—45 years ...	22
„ 45—65 years ...	—
Over 65 years ...	—
Unknown ...	53
	7,614

Of the total number of measles cases notified, 7,252 (or 95%) were visited by the Health Visitors, and 7,702 revisits were paid.

It was found that there were 5,343 households affected, and these households lived in the following dwellings:—

Number occurring in 1 roomed dwellings ...	607
„ „ 2 „ ...	1,979
„ „ 3 „ ...	1,678
„ „ 4 „ ...	1,079
	5,343

Isolation.—The isolation of the 7,252 visited cases was found to be good in 34% of the cases; fair in 42%; bad in 24%.

Medical Attendance.—In 95% of the cases a doctor was found to be in attendance.

Condition of Patient.—In 87% of the cases the disease ran a normal course, bronchitis or pneumonia developed in the remainder, and 1·3% of the total cases died.

Attendance at Schools.—25% of the children affected had previously attended school, and in 30% of the cases no one from the affected households had been attending any school.

The following were the ages of the children (visited) suffering from measles :—

Under 1 year	...	...	463
„ 2 years	...	...	971
„ 3 years	...	...	1,081
„ 4 years	...	...	1,216
„ 5 years	...	...	1,180
„ 6 years	...	...	1,057
Over 6 years	...	...	1,284
			<hr/>
			7,252

WHOOPIING COUGH.

9 deaths occurred from Whooping Cough. The particulars are as follows :—

MONTH.	YEARS OF AGE.				TOTAL.
	0—1	1—2	2—3	3—4	
January ...	...	...	...	...	...
February ...	2	...	1	...	3
March ...	...	...	1	...	1
April ...	...	...	...	...	...
May ...	...	...	...	...	...
June ...	...	...	...	...	...
July ...	...	...	...	...	...
August ...	...	1	...	...	1
September ...	...	...	...	...	...
October ...	...	...	...	1	1
November ...	1	1	...	...	2
December ...	1	...	...	...	1
Whole Year ...	4	2	2	1	9

The death rate in 1919 was equivalent to 0·03 per 1,000 population, as compared with 0·43 in 1918.

ENTERIC FEVER.

10 cases were notified during the year, and there were 2 deaths, giving a death rate of 0·007 per 1,000 population, and a case mortality of 20·0 per cent.

The 10 notified cases occurred as follows:—

1 in a public institution, and 9 in private households, all of which had water closets, the attack rate being 0·19 cases per 1,000 water closet houses.

One of the cases had shellfish, bought in the Bigg Market, but infection was not suspected. One case was imported from America; and one came from abroad by vessel, and afterwards left for his home in London.

DIARRHŒA.

There were in all 132 deaths from the disease, equal to a death rate of 0·48 per 1,000 population, and this number included 101 deaths of children under two years of age.

FOOD POISONING.

Two occurrences.—(1) Man and wife, of whom the former died; pork sandwiches bought in pork shop in Shields Road were suspected as the cause. (2) In connection with the Northumberland County Lawn Tennis Tournament, nine cases in all were heard of, but the diagnosis was rendered difficult by the coincident occurrence of cases of scarlet fever, and the scattering of the tournament participators to all parts of the country. There were no deaths, and no cause could be traced.

TYPHUS.

No case of this disease occurred during the year.

SMALLPOX.

There were no cases of smallpox in Newcastle or district, but a number of suspicious cases were visited in consultation with private medical practitioners at different times.

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
1914	7,023	4,230	11	1,499	21·2
1915	7,116	4,487	1	1,485	20·9
1916	7,117	4,405	9	1,509	21·2
1917	6,166	3,688	5	1,478	24·0
1918	6,092	3,488	15	1,362	22·4
1919	6,131	3,405	8	1,582	25·8

* Vaccination Act, 1907, came into force.

The *Public Vaccinators* and *Vaccination Officers* for the various districts of the City are :—

Dene, Heaton and Byker Municipal Wards :—

DR. F. R. H. LAVERICK, Woodbine Villa, Heaton Road.

Deputy—Dr. T. BOWER, 35, Heaton Road.

St. Anthony's and St. Lawrence Municipal Wards :—

Dr. RICHARD DAGGER, 1, Rothbury Terrace.

Deputy—Dr. L. S. DAVISON, 19, Heaton Road.

Walker District :—

Dr. T. J. RYAN, Welbeck Road.

Deputy—Dr. WM. HUTCHINSON, Welbeck Road.

East Central :—

Dr. FRANK HAWTHORN, 10, Ellison Place.

Deputy—Dr. O. W. OGDEN, 4, St. Mary's Terrace.

West Central :—

Dr. JAMES DON, 1, Grove Street.

Deputy—Dr. JAS. HUDSON, 42, Crossley Terrace.

Western district :—

Dr. G. D. NEWTON, 8, Regent Terrace.

Deputy—Dr. J. A. BRAND, 186, Westmorland Road.

Poor Law Infirmary :—

Dr. G. P. HARLAN.

Vaccination Officers :—

Western—W. J. WHITE, 119, Dilston Road.

Eastern—WM. GARRETT, 34, Harbottle Street.

ERYSIPELAS.

173 cases of this disease were notified and there were 4 deaths.

PUERPERAL SEPTICÆMIA.

Inquiries were made concerning 6 cases. Two of the cases were attended by doctors.

INFLUENZA AND PNEUMONIA.

These diseases accounted for 1,165 deaths as against 1,037 last year. The epidemic commenced in the early stages of the year and during the months of February and March was at its height, when no less than 568 and 290 deaths occurred respectively. After that the numbers gradually went down.

The following returns show the wards in which these deaths occurred and the age periods of the total deaths.

	Influenza.			Pneumonia.		
St. Nicholas'	6	...	...	...	...
St. Thomas'	31	...	...	...	13
St. John's	20	...	...	...	11
Stephenson	50	...	...	...	18
Armstrong	43	...	...	...	27
Elswick	18	...	...	...	8
Westgate	13	...	...	...	8
Arthur's Hill	19	...	...	...	3
Benwell	28	...	...	...	22
Fenham	30	...	...	...	6
All Saints'	28	...	...	...	34
St. Andrew's	16	...	...	...	12
Jesmond	20	...	...	...	3
Dene	20	...	...	...	8
Heaton	33	...	...	...	19
Byker	62	...	...	...	28
St. Lawrence	38	...	...	...	32
St. Anthony's	39	...	...	...	24
Walker	54	...	...	...	14
City	568	...	...	...	290

Total deaths at age periods.

Under 5 years.	5-15	15-25	25-45	45-65	65 and over.	TOTAL.
421	94	55	260	232	103	1165

As will be seen from the above figures, 260 or 22·3 per cent. occurred between the years of 25 and 45, and 421 or 36·1 per cent. below the age of 5 years.

PNEUMONIA.

A total number of 618 cases of Pneumonia including Influenzal-Pneumonia have been notified for the following wards :—

St. Nicholas' 6	Brought Forward 274
St. Thomas' 23	All Saints' 26
St. John's 38	St. Andrew's 31
Stephenson 32	Jesmond 13
Armstrong 26	Dene 20
Elswick 14	Heaton 26
Westgate 22	Byker 53
Arthur's Hill 22	St. Lawrence 42
Benwell 77	St. Anthony's 44
Fenham 14	Walker 89
Carried Forward 274	618

Of that number 491 or 79 per cent. of the cases were visited by the department.

It was found that of these 491 visited cases, 273 or 55 per cent. were cases of Primary Pneumonia, 177 or 36 per cent. were cases of Influenzal-Pneumonia, and 41 or 9 per cent. were cases of Pneumonia following other diseases.

Sex—60 per cent. of the cases were males.

Ages— of 491 cases visited :—

Under 1 year... ..	26
1-5 years	118
5-15 years	98
15-25 years	75
25-45 years	91
45-65 years	59
and over 65 years	24
	491

Of these, 101 were school children.

Housing—44 cases occurred in 1 roomed dwellings, 174 cases occurred in 2 roomed dwellings, 141 cases occurred in 3 roomed dwellings, and 132 cases occurred in more than 3 roomed dwellings.

Type of House—276 cases in flats, 149 cases in tenements and 66 in self-contained houses.

Isolation—The isolation was good in 65 per cent. of the cases, fair in 7 per cent. of the cases, and bad in 28 per cent. of the cases.

Ventilation was considered good in 81 per cent. of the cases.

Previous History—

There was a previous history of Measles	in 53 cases.
" " " Whooping Cough	in 15 cases.
" " " Influenza	in 59 cases.
Previous attacks of Pneumonia	in 32 cases.
" " Bronchitis	in 27 cases.
" " Tuberculosis	in 10 cases.
There was a previous history of Frequent Winter Coughs and Colds	in 100 cases.

Deaths—103 or 21 per cent. of the visited cases of Pneumonia died.

VENEREAL DISEASES.

Syphilis was certified as the cause of death in 13 cases, and 1 death was assigned to "other venereal diseases."

The work of the treatment clinic has been continued successfully. 1,239 new cases attended 14,965 times as out-patients, and accounted for 1,564 in-patient days. Of the new cases 743 were syphilis, 443 gonorrhœa, 35 soft chancre, and 18 conditions, other than venereal, approximately two-thirds were males and one-third females.

3,336 doses of salvarsan substitutes were administered.

2,214 Wasserman reactions were carried out at the College of Medicine, and 109 microscopical examinations of pathological material were made at the College and 254 at the treatment clinic. The irrigation stations for males and for females in connection with the clinic, were completed at the end of 1918, and have been in full use during the year under report.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

Accommodation.

NAMES AND SITUATION OF HOSPITALS.	TOTAL AVAILABLE BEDS.
City Hospital for Infectious Diseases, Walker Gate (including Phthisis Pavilions, 62 Beds) ...	294
Smallpox and Isolation Hospitals, Town Moor ...	172

YEAR.	Population of the City.	Number of Beds at City Hospital for Fever Cases.	Total Admissions (exclusive of Phthisis).	Percentage of Notified Cases Admitted.
1890	182,866	104	219	21·3
1900	213,039	104	290	38·6
1909	263,064	172	1,090	78·0
1910	265,077	172	912	83·0
1911	267,261	172	1,110	83·1
1912	269,193	172	1,542	86·4
1913	271,295	172	1,286	88·3
1914	271,523	172	1,835	78·9
1915	278,107	232	1,886	90·5
1916	278,107	232	1,380	87·0
1917	278,107	232	1,303	87·5
1918	278,107	232	1,245	87·5
1919	275,099	232	1,370	84·3

CITY HOSPITAL, WALKER GATE.
(Fever Pavilions).

Admissions during the year—1,370.

The *average daily number* of patients in the hospitals was 127, exclusive of 45 cases of phthisis.

RATE PER CENT. OF CASES REMOVED TO HOSPITAL TO CASES NOTIFIED.

	1890	1895	1900	1905	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
Scarlet Fever	18·4	33·0	35·0	50·1	84·5	83·8	88·0	90·6	81·4	91·3	94·5	91·9	99·3	88·0
Diphtheria	8·3	28·7	40·0	36·8	80·1	80·5	81·8	81·5	84·8	89·1	84·6	82·0	91·6	74·4
Enteric Fever	38·9	48·0	54·5	52·0	90·5	92·0	91·2	91·1	94·1	87·0	96·6	96·0	93·1	80·0
All cases of the above together with Continued and Typhus Fever, and Cerebro-Spinal Fever, &c.)	21·3	34·6	38·6	47·8	83·0	83·1	86·4	88·3	82·6	90·5	87·0	87·5	87·5	84·3

Diseases and Mortality Rates.

MORTALITY OF CASES TREATED IN HOSPITAL AS COMPARED WITH CASES NOT REMOVED DURING 1919.

DISEASE.	HOSPITAL.			NOT REMOVED.		
	Total Cases (Verified).	Deaths.	Case Mortality per cent.	Total Cases as (Notified).	Deaths.	Case Mortality per cent.
Scarlet Fever	630	21	3·3	86	3	3·5
Diphtheria	196	13	6·6	82	9	11·0
Enteric Fever	11	0	0·00	2	1	50·0

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

	Cases.
To the Newcastle Sanitary Authority	1,205
To private guarantors	14
To the War Office and Admiralty	130
Tyne Port Sanitary Authority	21
TOTAL	1,370

CITY HOSPITAL FOR INFECTIOUS DISEASES.

78A

Diseases Admitted—1919.

		CASES ADMITTED PROVED AFTER OBSERVATION TO BE :																												
CASES SENT IN AS :—	Number.	Scarlet Fever.	Diphtheria.	Diphtheria Carriers.	Enteric Fever.	Measles.	Rubella.	Epidemic Cerebro-Spinal Meningitis.	Epidemic Cerebro-Spinal Meningitis Carriers.	Other Forms of Meningitis.	Varicella.	Mumps.	Influenza.	Renal Colic.	Pneumonia.	Other Respiratory Diseases.	Poliomyelitis.	Encephalitis Lethargica.	Valvular Disease of Heart.	Erythema.	Tonsilitis.	Malaria.	Ophthalmia Neonatorum.	Skin Infections.	Septic Infections.	Affections of Gastro-Intestinal Tract.	Affections of Nervous System.	Contacts of Infectious Disease.	Indefinite.	Infecting Sc. F.
Scarlet Fever	655	612	1	...	...	9	10	...	...	...	...	...	2	...	...	...	...	...	...	7	4	...	...	...	1	1	...	...	8	...
Diphtheria	253	11	194	...	...	1	...	2	...	...	...	...	...	...	1	6	...	...	...	...	29	...	...	...	4	...	...	...	5	...
Diphtheria Carriers ...	42	...	...	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	17	...	...	...	9	1	...	1	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	2	...	...	1	...	
Measles	89	4	...	...	...	74	10	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rubella	41	3	...	...	...	...	35	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Epidemic Cerebro-Spinal Meningitis ...	20	...	...	...	1	...	...	13	...	2	...	...	...	...	...	1	1	1	...	...	...	...	...	...	1	...	...	...	...	...
Epidemic Cerebro-Spinal Meningitis Carriers ...	20	...	...	...	...	...	...	...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other forms of Meningitis	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Varicella	6	...	...	...	...	...	1	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Mumps	8	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Influenza	110	...	...	...	...	...	...	...	...	...	...	...	109	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	36	...	...	...	1	1	...	...	...	...	...	...	...	...	28	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Poliomyelitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Malaria	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	1	...	...	...	...	...
Dysentery	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Erysipelas	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	...	...	...	...	...	...
Scabies	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Affections of the Gastro-Intestinal Tract ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
Valvular Disease of Heart	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Puerperal Septicæmia ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
Pertussis	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tonsilitis	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...
Contacts of Infectious Diseases	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	...	...
Infecting Scarlet Fever	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Hysteria	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Septic Infections	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...
Other Respiratory Diseases	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...
TOTALS	1370	630	196	42	11	86	56	16	20	3	4	7	113	1	31	15	2	2	1	9	39	8	3	19	14	6	1	19	15	1

ADMISSIONS AND DEATHS, 1919.

DISEASES.	ADMISSIONS.												DEATHS.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Scarlet Fever	32	16	19	27	27	21	30	56	57	118	121	106	630	1	2	2	1	1	3	1	...	1	4	2	3	21
Diphtheria	14	16	19	10	10	12	22	13	21	21	25	13	196	1	1	2	...	1	1	1	...	2	2	1	1	13
Diphtheria, Carriers,	5	2	9	2	3	1	3	2	1	7	5	2	42	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	...	...	...	...	...	1	1	1	1	2	2*	3	11	...	...	...	...	...	2	...	1	...	...	...	...	5
Measles	1	...	...	1	5	10	12	17	6	10	14	10	86	...	...	...	...	...	...	...	...	...	...	...	...	...
Rubella	5	11	4	1	19	6	1	2	...	4	...	3	56	...	...	1	2	1	...	1	2	...	1	...	3	11
E.C.S.M.	...	1	1	3	2	...	2	...	...	1	...	4	16	...	...	...	2	1	...	...	...	...	...	...	...	...
E.C.S.M. Carriers	1	2	4	13	...	...	...	...	...	...	...	...	20	...	...	...	1	...	...	...	...	...	...	...	...	3
Other forms of Meningitis	1	...	...	1	...	...	...	...	...	...	...	1	3	1	...	...	1	...	...	...	...	...	...	...	...	...
Varicella	...	...	...	1	1	...	...	1	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...
Mumps	2	...	3	...	...	1	1	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	1	57	39	3	8	2	2	3	2	1	9	9	113	...	9	12	2	1	...	...	...	...	...	...	...	24
Pneumonia (Influenzal & Primary)	...	...	3	...	...	2	2	...	2	1	3	1	31	...	...	2	...	...	...	...	...	1	...	...	...	4
Other Respiratory Diseases	1	2	1	...	...	3	1	...	2	...	...	...	15	...	...	...	...	...	...	...	...	...	...	...	...	1
Erythema	1	2	...	1	2	1	...	...	2	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...
Tonsilitis (including Erysipelas)	2	...	2	4	6	4	1	...	...	5	9	6	39	...	...	...	1	...	1	...	1	1	...	...	...	4
Skin Infections	1	1	...	4	2	3	...	2	1	1	...	4	19	...	...	...	...	...	1	...	...	...	...	...	...	...
Poliomyelitis	...	...	...	1	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica	...	1	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaria	...	...	...	2	2	1	2	...	...	...	1	...	8	...	...	...	...	...	...	...	...	...	1	...	...	1
Indefinite	...	...	...	1	...	...	...	...	6	7	1	...	15	...	...	...	...	...	...	...	...	...	...	...	...	...
Gastro-Intestinal Affections	...	...	1	...	2	...	...	1	1	...	4	4	6	...	...	...	...	...	...	...	...	...	...	1	...	...
Septic Infections	1	...	...	1	2	2	...	...	...	...	6	...	14	...	...	...	...	...	...	...	...	...	...	...	...	1
Contacts of Infectious Diseases	1	1	9	...	...	...	3	...	...	...	...	...	19	...	...	...	...	...	...	...	...	...	...	...	...	...
Affections of Nervous System	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Infecting Scarlet Fever	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Renal Colic	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Valvular disease of Heart	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia Neonatorum	...	...	...	...	...	...	1	1	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	71	111	114	76	91	71	83	101	100	179	204	169	1,370	3	12	19	7	4	7	3	4	5	7	5	12	88

Includes 6 cases of Scarlet Fever, 5 of Diphtheria, 6 of Influenza (of whom 1 died), 5 of Tonsilitis and 7 of other diseases amongst the Nursing Staff; 1 case of Scarlet Fever, 1 of Diphtheria 5 of Influenza, 2 of Tonsilitis and 2 of other diseases amongst the Maids. * Includes 1 Para "B."

Length of stay in Hospital of fatal cases.—Of the foregoing, the following *died within 24 hours of admission*—Scarlet Fever 1, Diphtheria 4, Influenza 1.—Total 6.

The average time in hospital of the fatal cases of certain diseases was—Scarlet Fever 11·2 days, Diphtheria 4·6 days, Influenza 6·5 days and Epidemic Cerebro-Spinal Meningitis 12 days.

Naval and Military Cases Admitted.—The following are the particulars of the *Naval and Military Cases* admitted (included in the foregoing large tables):—

Disease for which admitted.	Cases.	Deaths.
Scarlet Fever	9	...
Diphtheria	15	...
Diphtheria Carriers	4	...
Epidemic Cerebro-Spinal Meningitis	2	2
Carriers of Cerebro-Spinal Meningitis	20	...
Measles	1	...
Rubella... ..	41	...
Mumps	7	...
Varicella	2	...
Erysipelas	6	1
Erythema	2	...
Diseases of Respiratory System	3	1
Influenza	4	...
Contact Small-pox	4	...
Other Diseases	8	...
TOTAL	128	4

The above deaths refer to the actual cases admitted during the year, whether the deaths occurred within the same period or not.

**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	2·9	28·3	17·9
1912-1919.									
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
1914	1,404	251	86	43	21	13	3·1	8·4	15·1
1915	1,305	223	88	37	18	10	2·8	8·0	11·4
1916	677	210	57	19	23	8	2·8	10·9	14·0
1917	409	164	12	13	22	1	3·1	13·5	8·3
1918	381	205	26	9	13	2	2·6	6·3	7·8
1919	630	196	11	21	13	0	3·3	6·6	0·00
	6,677	1,586	471	197	159	59	2·9	10·0	12·3

CEREBRO-SPINAL FEVER.

16 cases of Cerebro-Spinal Fever were admitted during the year of whom 11 died, a case mortality per cent. of 68·7.

Diphtheria.—Of the 196 patients in Hospital 140 were faucial or pharyngeal cases, of whom 4 died, a case mortality per cent. of 2·85; 46 were laryngeal or tracheal cases, of whom 8 or 17·4 per cent. died, and 10 had involvement of the nasal passages of whom 1 or 10 per cent. died. Tracheotomy was performed in 16 cases of Diphtheria, and in 1 case of Measles complicated with laryngeal Diphtheria; of the 17 cases, 6 or 35·3 per cent., died. Of the 13 deaths from Diphtheria, 4 were moribund on admission, and died within 24 hours.

The diagnosis of all cases were confirmed bacteriologically, either before or after admission to hospital.

The type of the disease was, on the whole, mild, the case mortality per cent. over the year being 6.6.

Antitoxin is administered to all cases of Diphtheria admitted to Hospital which have not received the remedy at home.

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

Influenza.—Of the 113 cases of Influenza admitted to hospital, 58, or 51.3 per cent., had coincident Pneumonia, and 24, or 21.2 per cent., died. The great majority of the cases admitted were severely ill, and were sent to Hospital chiefly for this reason.

Mixed Infection.—Excluding cases of Influenza with coincident Pneumonia, 74 patients sent into Hospital, or 5.4 per cent., were found on admission to be suffering from two or more distinct infectious diseases, as follows:—

Scarlet Fever and Diphtheria (bacteriological)	...	8
Scarlet Fever and Diphtheria (clinical)	...	7
Scarlet Fever and Scabies	...	9
Scarlet Fever and Measles	...	8
Scarlet Fever and Varicella	...	6
Scarlet Fever and Pertussis	...	1
Scarlet Fever and Vincents Angina	...	1
Scarlet Fever and Impetigo	...	1
Scarlet Fever and Diphtheria, Measles and Scabies	...	2
Scarlet Fever and Diphtheria, Measles and Pneumonia	...	1
Scarlet Fever, Pertussis and Measles	...	1
Scarlet Fever and Tuberculosis	...	2
Scarlet Fever and Ringworm	...	1
Diphtheria and Scarlet Fever	...	3
Diphtheria and Measles	...	3
Diphtheria and Broncho Pneumonia	...	3
Diphtheria and Scabies	...	1
Diphtheria and Vincents Angina	...	2
Diphtheria, Measles and Scarlet Fever	...	1
Measles and Pertussis	...	2
Measles and Diphtheria	...	3
Pneumonia and Pertussis	...	1
Pneumonia and Varicella	...	1
Influenza and Diphtheria (bacteriological)	...	3
Influenza and Diphtheria (clinical)	...	1
Influenza and Tuberculosis	...	2

74

Thus, 7.6 per cent. of the cases of scarlet fever were suffering from or incubating one or more additional infectious diseases on admission, and 6.6 per cent. of the cases of Diphtheria.

Cross Infection.—During the year 15 patients developed a second infection in the wards, or 1·1 per cent. of the total admissions to hospital.

CROSS INFECTIONS.

Admitted as				Developed.				Number of Cases.
Scarlet Fever ...	...	...	...	Diphtheria ...	...	...	...	2
Do. ...	...	...	...	Scabies ...	...	...	...	1
Do. ...	...	...	...	Varicella ...	...	...	...	5
Do. ...	...	...	...	Measles ...	...	...	...	1
Diphtheria ...	...	...	...	Scarlet Fever ...	...	...	...	2
Erythema ...	...	...	...	Scarlet Fever ...	...	...	...	1
Rubella ...	...	...	...	Scarlet Fever ...	...	...	...	1
Measles ...	...	...	...	Scarlet Fever ...	...	...	...	1
Do. ...	...	...	...	Scabies ...	...	...	...	1
TOTAL ...								15

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

"RETURN" CASES OF SCARLET FEVER, 1919.

SCARLET FEVER.	"Infecting" Cases.		"Return" Cases.		Average Day of Disease when Discharged.
	No.	Percentage.	No.	Percentage.	
Total Admissions.					
630	23	3·6	22	3·5	47·3

SEASONAL OCCURRENCE.

Quarter.	Total Scarlet Fever Admissions.	"Infecting" Cases.		"Return" Cases.	
		No.	Percentage.	No.	Percentage.
January to March ...	67	3	4·5	3	4·5
April to June ...	75	1	1·3	1	1·3
July to September ...	143	3	2·1	3	2·1
October to December ...	345	16	4·6	15	4·3

Of the 23 "infecting" cases: (a) ten had no complications or discharges whilst in hospital and remained "clean" after reaching home; (b) six had no complications whilst in hospital but developed discharges after reaching home; and (c) seven were "dirty" cases whilst in hospital but were "clean" on

discharge. In three of this last class, discharges recommenced after reaching home.

Of the above classes, the average day of disease on discharge from hospital of the supposed infecting cases, and the period elapsing after that discharge and the onset of illness in the "return" case, were as follows:—

Class (a)—36·4 and 8·7 days.

„ (b)—38·4 „ 18·0 „

„ (c)—67·1 „ 8·1 „

In two instances "return" cases occurred although the supposed "infecting" cases had been detained in hospital for 115 and 116 days respectively.

"RETURN" CASES FOR YEARS 1906-1919.

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
1914	1,404	78	5·6	96	6·8
1915	1,305	43	3·3	49	3·7
1916	677	22	3·3	24	3·5
1917	409	9	2·2	13	3·2
1918	381	13	3·4	14	3·6
1919	630	23	3·6	22	3·5

Hospital and Home "Isolation" Compared.

In order to determine the relative liability to further infection subsequent to the first, in hospital and home-isolating households respectively, a careful record has been kept for seven years of the number of presumably susceptible persons in each invalided house, all, other than the original patient, below 12 years of age being so classed, and the proportionate incidence of secondary cases calculated.

Cases occurring within seven days of the "isolation" of the original case were not counted, as these probably acquired their infection before the influence of the "isolation" could be felt.

Cases occurring subsequently to the seventh day of "isolation" of the original case, and prior to the release of the latter, were classed as "incidental" infections.

Cases occurring within 28 days after the release of the original case from "isolation" were classed as "return" infections.

The following table shows the results obtained:—

YEAR	...	...	1913.	1914.	1915.	1916.	1917.	1918.	1919.	7 Years.
Patient "isolated" at			Hospital	Hospital	Hospital	Hospital	Hospital	Hospital	Hospital	Hospital
			Home	Home	Home	Home	Home	Home	Home	Home
"Susceptibles" in the homes of each class of patient			1131	1708	1462	800	509	450	726	6786
"Incidental" infections			69	78	85	33	25	18	59	367
Percentage of "incidentals" to "susceptibles"			6.1	4.6	5.8	4.1	5.0	4.0	8.1	5.4
"Return" Infections			29	84	55	21	20	14	22	245
Percentage of "returns" to "susceptibles"			2.6	4.9	3.8	2.6	3.9	3.1	3.0	3.6
Total of "incidentals" and "return" infections			98	162	140	54	45	32	81	612
Percentage of this total to "susceptibles"			8.7	9.5	9.6	6.7	8.8	7.1	11.2	9.0
			5.7	11.5	10.5	37.5	8.8	...	2.1	9.5

Thus it is seen, on seven years working, that there are fewer secondary cases in the households which sent their first case to hospital. This difference is the more marked when one analyses the relative housing accommodation of the two classes. Thus for every "susceptible" remaining at home among the hospital-isolating class, there were on an average at least 2.52 rooms, whereas in the home-isolating class there was an average of at least 4.85 rooms for each "susceptible," the home class having therefore about twice the accommodation of the others, and being in fact selected on that account. If, therefore, home isolation were as efficient, case for case, as hospital, one would have expected to find a great preponderance in favour of the home class in the above evidence, instead of which the result is entirely the other way.

Average stay in Hospital during the last Twelve 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.
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
1914	1,835	41.6	1,404	44.4	251	34.4	86	41.2	94	20.2
1915	1,886	41.3	1,305	47.1	223	35.6	88	44.0	271	17.2
1916	1,380	35.7	677	42.5	210	38.2	57	48.8	436	22.3
1917	1,303	33.9	409	46.5	164	43.5	12	59.8	718	24.0
1918	1,245	32.1	381	45.2	205	46.6	27	52.3	632	18.7
1919	1,370	33.8	630	41.5	196	54.8	11	39.2	533	16.9

Bacteriological Laboratory, City Hospital.

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

Swabs for Diphtheria Bacilli	...	...	1,415
Cerebro-Spinal Fluid	...	...	10
Sputum, for the germs of Influenza and			
Pneumonia	...	...	11
Blood for Malaria parasite	...	...	3
Enteric	...	...	4
Pus	...	...	4
TOTAL	...	...	1,447

Smallpox and Isolation Hospitals, Town Moor.

These Hospitals were in use during the first four and the last three months of the year, 359 patients being admitted.

Scarlet Fever cases from the City Hospital,

Walker Gate	...	...	...	...	308
Influenza and Pneumonia	...	...	...	...	46
Smallpox Contacts	...	...	...	...	5

TUBERCULOSIS.

Report of the Tuberculosis Medical Officer.

TO THE MEDICAL OFFICER OF HEALTH.

SIR,

Herewith I beg to submit my Report on the work of the Tuberculosis Section during the year 1919.

As anticipated in my last report, there is a marked decrease in the number of deaths reported as resulting from Tuberculosis. This is most noticeable in respect of the "other forms" of the disease but it is extremely satisfactory that the 1919 death roll from tuberculosis is smaller than any previously recorded, notwithstanding the great increase in the population since 1883. This happy result is due more to the fact that fewer cases have originated (note the decrease in the number of notifications) in consequence of improved standards of living and preventive measures, than to the effects of treatment for it is a regrettable fact that cures of "open" cases of phthisis are still painfully few and far between.

It is not suggested that sanatorium treatment has failed—the immediate results are good—but sanatorium treatment, so far as the working classes are concerned, is "ahead of the times" and future efforts must be directed to the improvement of "domiciliary" and "post-sanatorium" conditions.

Therefore, I have no hesitation in expressing the opinion that the most profitable form of expansion in the future will

consist of an enlargement of the functions of the Tuberculosis Dispensary and the establishment of a Care Committee.

During the year great improvements were effected in the methods of keeping the dispensary records, but I am sorry to say that owing to pressure of routine work and personal indisposition, latterly, it has been impossible to incorporate all the new matter in the present report.

Special attention has been paid to the fact that pulmonary tuberculosis shows marked differences in its manifestations in the two sexes (e.g., the duration of the disease in the fatal cases, was found to be 37.6 months in males against only 27.3 months in females) and at the different age periods.

All cases attending the dispensary are now classified into "males," "females," and "children" (both sexes.)

The sixteenth birthday is, for the purpose of these statistics, taken as the beginning of adult life, as it is the date on which workers become eligible to enter upon "insurance."

It was found that roughly one half of the attendances were made by children, one third by males, and one sixth by females.

Further it was elicited that the adult males and females had, on the average, a complete physical examination once in every three visits as compared with once in every seven visits in the case of the children. A new card index of ex-service men was prepared and has been found of great value owing to the large number of reports, etc., required in respect of these cases.

In addition to the routine work an attempt was made during the great epidemic, to ascertain the effects of influenza upon tuberculous patients; also what part the disease played in kindling latent tuberculous disease into activity.

Particulars were taken in respect of 651 consecutive patients attending the dispensary between February 10th and March 8th, 1919, but, unfortunately the investigation had to be suspended owing to members of the staff taking the disease (influenza).

The 651 patients consisted of definite cases of tuberculosis (108 verified bacteriologically), suspects and contacts, and 239, or 37 per cent., of them stated that they had suffered from influenza, whereas, of the 2,791 other members of their households 805, or 29 per cent., had contracted the disease, 58 had developed pneumonia and 29 had died, giving a pneumonia incidence of 7.2 per cent., of cases, and a death rate of 3.6 per cent.

Second attacks during the epidemic were reported in 8 per cent. of all cases.

So far the enquiry indicates that nearly one-third of the population suffered from influenza, and that tuberculous individuals showed no evidence of any immunity towards the disease. The sputum-positive cases were remarkably free from complications when affected, but on the other hand a considerable number of patients developed acute tuberculosis of the lungs after an attack of influenzal broncho-pneumonia.

All known cases are being followed up, but it is still too early to make any definite pronouncement on the subject.

The later results of the investigation will be communicated to you in due course.

When an Assistant Tuberculosis Officer was appointed in May, 1919, it was decided to reorganise the medical work. Thus the forenoon clinics on Mondays, Wednesdays, and Fridays were restricted to male patients, those on Tuesdays and Thursdays were reserved for females, and new cases of less than 16 years of age, and the Saturday morning session was arranged to deal exclusively with children of school age attending school. The Wednesday night clinic is still open to those working, or, for some other reason, unable to attend in the forenoon.

Two new clinics were started, one on Tuesday afternoons for women, attended by the Assistant Tuberculosis Officer, and the other for children excluded from school on Friday afternoons. The latter, through the courtesy of Dr. Geo. Foggin, Principal School Medical Officer, was presided over by one of the Assistant School Medical Officers.

It was, I think a beneficial innovation, and proved of value to the patients, their parents, the school medical department, and the dispensary, at the same time avoiding a considerable amount of overlapping.

The new facilities for securing X-ray photos of, and reports on cases are a great advantage, but pressure of other work precludes extensive use of them.

The relations between the general practitioners of the City and the Dispensary Staff were harmonious throughout the year, and it is pleasing to be able to state that an ever increasing proportion of the new cases entered on the dispensary register comes direct from the medical men in charge of the patients.

Before concluding I would like to express my appreciation of the invaluable and loyal assistance of the nursing and clerical staffs.

Their indefatigable interest in the great cause in which they are working is worthy of the highest praise, and now that some measure of success appears to be attending our efforts, that interest will be more than sustained.

Of Dr. Henderson's work, while with us, I cannot speak too highly. Popular with, and greatly respected by, all classes of patients, he brought the Tuberculosis Pavilions at the City Hospital to a high pitch of efficiency while in charge of them.

His departure in March of the present year to take up another post was a great loss to the tuberculosis organisation of the City.

Finally, Sir, I beg to thank you, personally, for the lively interest you have always taken in the work of this section, and on behalf of all the members of the staff for your unremitting efforts to improve their status and conditions of work.

Yours faithfully,

W. H. DICKINSON,

Tuberculosis Medical Officer.

REPORT.

Notifications.—824 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 724, of whom 519 were certified to be suffering from pulmonary and 205 from other forms of tuberculosis.

The details are set forth in the accompanying tables, together with some comparative figures for previous years :—

NOTIFICATIONS—ORIGINAL AND REPEATED.

Year.	TOTAL.	Nett New Notifications.	Notified twice.	Notified three times.	Notified four times.	Notified five times.	Notified six times.	Notified seven times.
1912	1,249	972	192	59	18	6	1	1
*1913	1,441	1,246	158	26	9	2	...	...
1914	1,060	958	88	13	...	1	...	...
1915	1,108	964	131	9	4	...	...	...
1916	1,125	987	128	9	1	...	...	...
1917	1,007	909	91	6	1	...	...	...
1918	896	819	70	5	2	...	...	...
1919	824	724	92	7	1	...	...	...

*On February 1st, 1913, all forms of Tuberculosis became notifiable.

SOURCE OF NOTIFICATIONS.

Year.	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.)
1912	972	893	Nil.	79
1913	1,246	957	140	149
1914	958	624	180	154
1915	964	694	146	124
1916	987	757	162	68
1917	909	555	244	110
1918	819	456	221	142
1919	724	489	145	90

SUMMARY OF NOTIFICATIONS DURING THE PERIOD, 1ST JANUARY TO 31ST DECEMBER, 1919.

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.												Primary Notifications.		Total Notifications (including Cases previously notified by other doctors).		Poor Law Institutions.	Sanatoria.	Poor Law Institutions.	Sanatoria.
	Total Notifications (including Cases previously notified by other doctors).												Under 5	5 to 10.	10 to 15.	TOTAL.				
	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.								
Pulmonary—	2	5	9	12	31	27	77	68	43	15	10	299	361	During the year, the School Medical Officer referred all suspicious cases to the Tuberculosis Medical Officer.	21	100	15	105		
Males ...	...	...	...	...	...	...	...	...	...	...	...	...	...		20	32	13	35
Females	...	6	12	20	35	25	56	34	25	3	4	220	247		3	10	...	10		
Non-Pulmonary—	7	31	21	13	10	4	8	2	6	3	...	105	111		1	6	1	5		
Males ...	...	...	...	...	...	...	...	...	...	...	...	...	...	During the year, the School Medical Officer referred all suspicious cases to the Tuberculosis Medical Officer.	...	...	...	...
Females	7	22	24	7	16	9	7	...	2	6	...	100	105		45	148	29	155		
TOTAL ...	16	64	66	52	92	65	148	104	76	27	14	724	824	...	...	...	...	...

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

Deaths.—496 deaths were registered as due to some form of tuberculosis, and of these 346 were certified as due to pulmonary tuberculosis (including 10 cases of acute phthisis) and 150 to other forms of the disease.

On these figures the death rates per 1,000 population were :—

				Number of Deaths.	Death Rate per 1,000 Population.
Pulmonary Tuberculosis	...	...	...	346	1·26
Other Forms of Tuberculosis	...	...	...	150	0·54
Total Tuberculosis Death Rate (uncorrected)				<u>496</u>	<u>1·80</u>

It must be noted, however, that 39 residents of Newcastle died in other parts of the United Kingdom from tuberculosis (35 pulmonary ; 4 other forms), while 80 of the deaths (42 pulmonary ; 38 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	...	...	...	...	339	1·23
Other Forms	...	...	...	...	116	0·42
All forms of Tuberculosis (corrected)					<u>455</u>	<u>1·65</u>

195 of the persons who died during the year had attended the Tuberculosis Dispensary, while a further 54 had been visited by the nurses, making a total of 249 known to the Dispensary staff.

The figures for previous years are appended.

TABLE SHOWING NUMBER OF DEATHS FROM TUBERCULOSIS AND
NUMBER WHO WERE ATTENDED FROM THE DISPENSARY.

Year.	Deaths.			Attended Dispensary.		Visited by Nurses.		Total known to Dispensary.		Percentage of cases known to Dispensary to the number of Deaths.	
	Lungs.	Other Forms.	Total.	Lungs.	Other Forms.	Lungs.	Other Forms.	Lungs.	Other Forms.	Lung.	Other Forms.
1913	297	152	449	63	...	188	...	251	...	84.5	...
1914	351	156	507	158	...	66	...	224	...	63.8	...
1915	367	162	529	206	10	64	6	270	16	73.6	9.8
1916	388	135	523	193	6	89	7	282	13	72.7	9.6
1917	383	147	530	222	27	70	6	292	33	76.2	22.4
1918	364	127	491	198	15	59	4	257	19	70.6	14.9
1919	302	109	411	190	5	49	5	239	10	79.1	9.2

The deaths are of those persons who were residents of, and died in,
Newcastle-upon-Tyne.

In 190 cases, *i.e.*, 63 per cent. of the 302 deaths from tuberculosis of the lung the diagnosis had been verified bacteriologically.

168 "insured persons" are included amongst the total deaths.

Sex and Age Distribution.—There was a substantial decrease in the number of deaths from pulmonary tuberculosis below the age of 25 years, as is seen in the subjoined table:—

DEATHS FROM TUBERCULOSIS.
SEX AND AGE PERIODS.

Lungs.

Year.	Sex.	Under 1 year.	1 and 2	3 and 4	5 to 10	10 to 15	15	16 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 70	70 and over	Total.
1913	Male ...	1	3	6	5	5	1	5	14	43	37	35	10	3	3	171
	Female...	...	3	1	5	8	4	13	11	35	26	13	6	1	...	126
1914	Male ...	...	1	2	4	3	2	12	14	47	59	47	15	3	1	210
	Female...	1	5	1	7	13	4	11	17	32	25	19	6	...	...	141
1915	Male ...	3	1	2	7	5	1	14	22	53	59	39	23	10	...	239
	Female...	1	3	1	4	12	2	10	9	25	31	22	7	...	1	128
1916	Male ...	...	5	4	2	5	...	18	20	38	56	54	22	6	3	233
	Female...	...	2	4	7	7	2	17	15	42	35	17	5	1	1	155
1917	Male ...	1	3	...	4	7	2	12	24	31	46	55	15	2	1	203
	Female...	2	3	...	7	13	3	25	22	41	38	19	3	4	...	180
1918	Male ...	1	3	3	8	10	1	15	25	33	53	36	16	4	3	211
	Female...	2	5	...	4	5	4	18	24	36	39	14	2	...	...	153
1919	Male ...	1	2	1	3	4	2	13	10	39	41	34	17	6	1	174
	Female...	...	2	...	5	7	2	24	13	33	24	16	1	1	...	128

Other Forms.

1913	Male ...	15	26	3	12	6	1	3	1	6	4	2	1	2	2	84
	Female...	14	19	5	8	8	...	2	2	5	4	1	...	...	...	68
1914	Male ...	13	17	8	14	7	...	5	7	4	3	2	2	...	...	82
	Female...	17	11	11	13	9	...	2	3	3	...	3	2	...	...	74
1915	Male ...	12	23	7	16	7	...	4	2	3	1	2	1	1	2	81
	Female...	17	20	8	10	7	...	8	2	4	3	2	...	...	...	81
1916	Male ...	12	24	10	9	8	2	7	1	5	3	2	...	...	...	83
	Female...	7	18	6	6	8	...	...	2	2	3	...	...	...	...	52
1917	Male ...	2	19	8	13	7	...	8	3	4	3	2	1	...	...	70
	Female...	3	15	12	13	11	...	12	3	4	3	1	...	...	...	77
1918	Male ...	7	18	6	12	8	...	1	2	5	5	4	2	...	1	71
	Female...	7	8	7	9	10	...	4	1	5	2	2	1	...	...	56
1919	Male ...	5	16	3	12	3	...	1	2	3	2	2	4	...	...	53
	Female...	5	10	6	12	4	...	6	2	2	3	1	5	...	...	56

N.B.—The above only includes those persons who were residents of, and died in, Newcastle-upon-Tyne.

The figures are further analysed in the large table on the following page. From this it is clearly evident that while pulmonary tuberculosis claims most of its victims after the age of 16 years (the age at which a person is eligible to enter into National Health Insurance) an overwhelming majority of the deaths from tuberculous meningitis and abdominal tuberculosis occurs in the first fifteen years of life.

DEATHS FROM TUBERCULOSIS.—Sex and Age Distribution.

	Under 1 year.		1 and 2		3 and 4		5 to 10		10 to 15		15		16 to 20		20 to 25		25 to 35		35 to 45		45 to 55		55 to 65		65 to 70		70 and upwards		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pulmonary Tuberculosis ...	1	...	2	2	1	...	3	5	4	7	2	2	13	24	9	12	39	32	40	24	34	15	17	1	6	1	1	...	172	125
Acute Phthisis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	...	...	1	...	...	...	...	...	...	2	3
Acute Miliary Tuberculosis	1	...	...	...	...	1	1	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	5	2
Tuberculous Meningitis ...	1	3	7	6	2	3	6	6	2	1	...	...	1	5	...	...	...	...	1	...	1	...	...	...	...	...	...	...	21	24
Abdominal Tuberculosis ...	3	2	7	4	1	2	3	3	...	...	...	...	...	...	1	1	1	...	...	1	...	...	...	2	...	...	...	...	16	16
Spinal Column ...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	2	1	...	...	...	...	3	4
Tuberculosis of Joints	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	3
Tuberculosis of Genito-Urinary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Tuberculosis of Larynx	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Disseminated Tuberculosis	...	...	2	...	...	...	1	...	1	2	...	...	...	1	...	1	1	...	...	1	1	1	1	...	...	...	...	...	7	6
Tuberculosis of other Organs ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL ...	6	5	18	12	4	6	15	17	7	11	2	2	14	30	12	15	42	35	43	27	36	17	21	6	6	1	1	...	227	184

N.B.—The above only includes those persons who were residents of, and died in, Newcastle-upon-Tyne.

Duration of Illness.—After every death from pulmonary tuberculosis enquiry was directed, where possible, to the length of time the deceased had been ill. The average duration of illness in such cases was found to be, in males, 37·6 months, and in females, 27·3 months, all cases 33 months, as against 29 months in 1918, 28 months in 1917, 27 months in 1916, 26 months in 1915, 26 months in 1914, 23 months in 1913, and 28 months in 1912.

Notification.—Death Interval.—On the average the period between the date of notification and the date of death was 14·3 months. This is greater than in previous years, as is shown in the attached table.

CASES OF TUBERCULOSIS OF THE LUNGS. GIVING THE PERIOD BETWEEN THE DATE OF NOTIFICATION AND THE DATE OF DEATH.

Year.	No. of Deaths	Average period from the date of notification to the date of death. MONTHS.	Average period from the date of notification to the date of death; deducting cases not notified before death. MONTHS.	Number of deaths which occurred, that had not been notified before death.
1913	297	5·2	6·0	39
1914	351	6·5	7·7	57
1915	367	8·3	9·2	38
1916	388	9·5	10·3	27
1917	383	10·0	11·7	55
1918	364	13·6	16·7	67
1919	M. 174	16·7	19·2	23
	F. 128	11·2	13·2	20
	TOTAL 302	14·3	16·7	43

As the average duration of illness was found to be 33 months, the figure 14·3 is far from satisfactory, because on the average each patient who died during the year must have been ill 18·7 months before notification.

As a result the majority of the cases are advanced when notified, and during the year 1919 no fewer than 45·7% of the persons dying from pulmonary tuberculosis had either not been notified prior to death (14·0%) or died within 3 months of notification (31·7%).

Comparative figures for previous years are submitted below :—

COMPARATIVE RETURN OF DEATHS FROM TUBERCULOSIS OF THE LUNGS OCCURRING IN:—

	Deaths which occurred in these years.								TOTAL.
	1913	1914	1915	1916	1917	1918	1919		
							M.	F.	
Persons not notified	39	57	38	27	55	67	23	20	326
„ notified under 1 month	36	28	46	42	26	42	33	29	282
„ between 1 and 3 months	71	92	98	113	97	73	20	13	577
„ „ 3 „ 6 „	49	54	47	61	56	27	13	16	323
Total under 6 months ...	195	231	229	243	234	209	89	78	1,508
Persons notified between									
6 and 12 months...	57	49	37	43	47	50	18	20	321
„ 12 „ 18 „ ...	29	25	32	25	30	19	11	8	179
„ 18 „ 24 „ ...	14	12	21	14	17	20	10	2	110
„ 2 „ 3 years ...	2	32	24	24	17	15	14	5	133
„ over 3 years ...	...	2	24	39	38	51	32	15	201
TOTAL	297	351	367	388	383	364	174	128	2,452

N.B.—The above deaths are those persons who were residents of, and died in, Newcastle-upon-Tyne.

Occupations.—The nature of the work done and the conditions under which it is carried on have an important bearing on the incidence of tuberculosis, especially the pulmonary forms. The occupations of 281 persons who died during 1919 from phthisis were ascertained to be as under :—

Occupation.	M.	F.	Occupation.	M.	F.	Occupation.	M.	F.
			Brought forward..	103	114	Brought forward	135	120
Housewives ...	...	44	Bakers ...	1	1	Farmer ...	1	...
Labourers ...	21	1	Compositors ...	2	...	Furnaceman ...	1	...
Scholars...	8	10	Drillers ...	2	...	Gasworker ...	1	...
No Occupation ...	1	13	Electricians ...	2	...	Grinder ...	1	...
Clerks ...	10	4	Motormen ...	2	...	Hairdresser ...	1	...
Fitters & Turners	10	...	Moulders ...	2	...	Laundress ...	...	1
MunitionWorkers	2	6	Oilers ...	2	...	Lead Worker ...	1	...
Housekeepers ...	...	7	Painters...	2	...	Manager...	1	...
Cartmen...	6	...	Platelayers ...	2	...	Millwright ...	1	...
Machine Men ...	6	...	Porters ...	2	...	Musician ...	1	...
Machinists ...	...	6	School Teachers	1	1	Naval Artificer ...	1	...
Tailoresses ...	...	6	Stonemasons ...	2	...	Nun ...	...	1
Joiners ...	5	...	Beltman ...	1	...	Photo. Printer ...	...	1
Miners ...	5	...	Blacksmith's			Patternmaker ...	1	...
Packers ...	2	3	Striker ...	1	...	Plater ...	1	...
Shop Assistants..	1	4	Boilermaker ...	1	...	Pottery Worker	1	...
Under 5 years ...	3	2	Boxmaker ...	...	1	Rivetter ...	1	...
Hawkers ...	3	1	Bottler ...	...	1	Scalemaker ...	1	...
Barmen ...	3	...	Bricklayer ...	1	...	Slinger ...	1	...
Blacksmiths ...	3	...	Butcher ...	1	...	Sugar Boiler ...	...	1
Charwomen ...	...	3	Builder ...	1	...	Shoemaker ...	1	...
Domestic Serv'ts	...	3	Caretaker ...	...	1	Soldier ...	1	...
Gaugers...	2	1	Craneman ...	1	...	Scavenger ...	1	...
Holders Up ...	3	...	Cattledrover ...	1	...	Tailor ...	1	...
Rivet Catchers...	3	...	Commercial			Upholsterer ...	1	...
Storekeepers ...	3	...	Traveller ...	1	...	Upholstress ...	...	1
Sheet Iron W'k'rs	3	...	Dressmaker ...	...	1			
			Dentist ...	1	...			
Carried forward	103	114	Carried forward	135	120	Total ...	156	125

25 Of the above are also ex-service men.

Family History.—It is well-known that phthisis is very apt to re-appear in families which have already suffered from its in-roads. In 94 instances amongst the 281 cases investigated after death, *i.e.*, in 33·45%, there was a history that some near relation was suffering from, or had died of, pulmonary tuberculosis.

DEATHS FROM TUBERCULOSIS: GIVING THE NUMBER OF CASES WHO HAD RELATIONS WHO DIED, OR WHO ARE ILL WITH TUBERCULOSIS.

Year.	No. of enquiries. Tuberculosis of Lungs.	No. of cases who had relations with Tuberculosis of the Lungs.	Percentage to No. of enquiries.
1913	251	82	32·66
1914	313	132	42·17
1915	353	158	44·75
1916	339	148	43·0
1917	355	144	40·56
1918	320	132	41·25
1919	M. 158	45	28·48
	F. 123	49	39·83
	TOTAL 281	94	33·45

It is interesting to note that of those who die of pulmonary tuberculosis, the individuals who give a history of phthisical parentage die at a considerably earlier age than those of none phthisical parentage.

AVERAGE PERIOD OF LIFE OF PERSONS ONE OR BOTH OF WHOSE PARENTS DIED OF PULMONARY TUBERCULOSIS AS COMPARED WITH THOSE WHO HAD NO SUCH HISTORY.

Year.	No. of cases where enquiries were made of Tuberculosis of the Lungs.	No. of cases where parent had died of Tuberculosis of the Lungs.	Average period of life of same in years.	No. of cases where parent had not died of Tuberculosis of the Lungs.	Average period of life of same in years.
1913	251	26	24	225	34
1914	313	48	25·5	265	32
1915	353	56	26	297	33
1916	339	51	24·5	288	32·79
1917	355	48	27	307	33
1918	320	44	29	276	32·5
1919	M. 155	16	28·2	139	37·3
	F. 126	19	24·3	107	28·7
	TOTAL 281	35	26·2	246	33·6

House Accommodation.—The home conditions of the working classes are intimately associated with occupation and family history as predisposing to tuberculosis.

The numbers of rooms in the dwellings occupied by 281 persons who died of tuberculosis of the lungs were as follows:—

Rooms in Dwelling.	1	2	3	4	More than 4	Common Lodging Houses.	Total.
Deaths ...	19	83	67	66	36	10	281

As regards the type of house occupied, 180 were flats, 54 tenements, 37 self-contained, and 10 common lodging houses.

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The number of individuals resident in the houses occupied by the above-mentioned 281 deceased persons is shown in the following table:—

Size of Holding (Rooms).	Number of Houses.	Number of Occupants.	Average No. of Occupants per Room.
1	29	73	2.51
2	83	419	2.52
3	67	383	1.90
4	66	381	1.44
5	10	61	1.22
6	11	75	1.13
7	6	47	1.11
8	3	14	0.58
9	3	24	0.89
10	3	22	0.73
Total ...	281	1499	1.66

Deaths in Institutions.—46 (32 males, 14 females), Newcastle residents died of phthisis, in the Union Infirmary, and 39 (26 males and 13 females) in the Sanatorium Pavilions, 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 mortality from tuberculosis, especially amongst children, for while the sufferer is well cared for the dependants are freed from further risk of massive 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. Further, it has been thought convenient to incorporate in this return the number of insured persons who have applied for "Sanatorium Benefit," the number enrolled on the Dispensary Register, and the number of persons whose sputum has been examined during the year and found to contain tubercle bacilli, that is to say, the number of new definite sources of infection discovered.

It is apparent at once from the table 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 congested wards than in those enjoying more favourable conditions, and also that the largest number of infective foci are found in those quarters in which it is most difficult to prevent the spread of infection.

WARD DISTRIBUTION OF TUBERCULOSIS, 1919.

WARD.	Population estimated on Registrar General's figures for 1919.	NOTIFICATIONS.						DEATHS.						Persons on Dispersary Register.	Application for Sanatorium Benefit.	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'	3,616	17	4.70	3	0.83	20	5.53	10	2.76	3	0.83	13	3.59	15	4	8
St. Thomas'	14,293	17	1.19	1	0.07	18	1.26	7	0.48	1	0.07	8	0.55	15	8	14
St. John's ...	15,554	26	1.67	9	0.58	35	2.25	17	1.09	6	0.39	23	1.48	49	14	25
Stephenson	18,997	44	2.32	16	0.84	60	3.16	24	1.26	6	0.32	30	1.58	62	19	28
Armstrong	15,829	30	1.90	20	1.26	50	3.16	23	1.45	11	0.69	34	2.14	55	15	20
Elswick	12,815	22	1.72	10	0.78	32	2.50	10	0.78	6	0.46	16	1.24	20	6	21
Westgate	15,467	30	1.94	11	0.71	41	2.65	15	0.97	9	0.58	24	1.55	41	16	27
Arthur's Hill	11,578	13	1.12	7	0.60	20	1.72	6	0.51	3	0.26	9	0.77	11	5	14
Benwell	17,814	35	1.97	17	0.95	52	2.92	20	1.12	4	0.22	24	1.34	38	18	31
Fenham	11,179	19	1.70	10	0.89	29	2.59	11	0.98	4	0.36	15	1.34	7	7	18
All Saints	17,934	51	2.85	13	0.72	64	3.57	30	1.67	7	0.39	37	2.06	70	26	35
St. Andrew's	12,645	28	2.21	14	1.11	42	3.32	17	1.34	6	0.48	23	1.82	50	19	31
Jesmond	11,195	7	0.62	5	0.45	12	1.07	3	0.26	4	0.36	7	0.62	6	...	6
Dene	12,343	13	1.05	3	0.24	16	1.29	9	0.73	3	0.24	12	0.97	13	6	16
Heaton	15,706	19	1.21	9	0.57	28	1.78	13	0.83	4	0.25	17	1.08	35	9	22
Byker	17,711	45	2.54	12	0.68	57	3.22	19	1.07	5	0.28	24	1.35	101	22	36
St. Lawrence	18,144	40	2.20	15	0.83	55	3.03	30	1.65	8	0.44	38	2.09	108	24	34
St. Anthony's	15,990	36	2.25	12	0.75	48	3.00	25	1.56	6	0.37	31	1.93	60	14	27
Walker	16,289	27	1.66	18	1.10	45	2.76	13	0.80	13	0.80	26	1.60	52	15	27
City	275,099	519	1.88	205	0.74	724	2.62	302	1.10	109	0.39	411	1.49	819	247	440

NOTE.—Deaths occurring in Public Institutions, have been allocated in every case to the Wards in which they resided.
The figures relating to deaths only include those persons who were residents of, and died in, Newcastle-upon-Tyne.

THE TUBERCULOSIS DISPENSARY.

819 new patients were entered on the Dispensary Register during the year, comprising 383 "insured persons," 371 dependents of "insured persons," and 65 who were "uninsured."

Many of these were contacts, and of the total 145 (equal to 18 per cent.) were first discovered to be suffering from tuberculosis by the Tuberculosis Medical Officer, a considerable proportion being fairly advanced cases and active sources of infection, expectorating tubercle bacilli in their sputum.

In the following return the new entrants are classified under various headings, the figures for previous years being given for comparison :—

PERSONS ON DISPENSARY REGISTER UNDER THE FOLLOWING HEADINGS.

Year.	Number on Dispensary Register.	Insured.	Dependents.	Uninsured.	Notified by Medical Practitioners.	Notified by T.M.O.	Contacts and Suspects.
*1913	729	299	318	112	457	140	132
1914	1046	388	499	159	396	180	470
1915	899	297	484	118	286	146	467
1916	850	306	438	106	288	162	400
1917	969	361	504	104	243	244	482
1918	904	377	423	104	193	221	490
1919	819	383	371	65	211	145	463
TOTAL	6216	2411	3037	768	2064	1238	2914

* From March 17th.

These cases were derived from various sources, but it is noteworthy that practically 50 per cent. were referred to the Dispensary by the general practitioners of the city or the school medical officers, as is seen in the subjoined table:—

RECOMMENDED BY				1914	1915	1916	1917	1918	1919
Medical Practitioners	...	...	...	227	200	230	301	299	313
Dispensary Nurses	...	...	...	438	397	270	162	103	157
School Medical Officers	...	...	...	101	57	88	145	144	100
Came of own accord	...	...	...	211	131	102	80	98	43
Lady Almoner, Royal Victoria Infirmary	...	...	...	24	31	75	107	70	56
Insurance Committee	...	...	...	15	4	15	13	57	38
Friends of Patients	...	...	...	11	21	24	35	37	16
Tuberculosis Medical Officer	...	...	...	10	16	11	14	20	25
Charity Organisation Society	...	...	...	5	6	1	1	4	2
Poor Children's Holiday Association	...	...	...	2	2	3	4	5	1
Superintendent of Midwives and Health Visitors	...	...	...	2	14	6	7	7	3
Military Authorities	...	...	...	...	...	19	68	22	...
War Pensions Committee	...	...	...	...	...	...	17	34	61
War Relief Fund	...	...	...	...	...	...	11	2	1
Other Sources	...	...	...	...	20	6	4	2	3
TOTAL				1046	899	850	969	904	819

The number of attendances at the Dispensary for consultation with the Tuberculosis Medical Officer was 10,332, as compared with 11,517 in 1918, 9,286 in 1917, 7,758 in 1916, 6,473 in 1915, 6,712 in 1914.

2,055 patients were seen, so that each one visited the Dispensary on the average 5 times during the year; 24 per cent. of the total had been verified bacteriologically—43 per

cent. of the males, 33 per cent. of the females, and only 2 per cent. of those below 16 years of age. The details are tabulated below :—

Sputum Examination.	Number of Patients who attended the Dispensary during the Year 1919.				Ex-Service Men (included in the Total).
	Total.	Males.	Females.	Under 16 years of age	
Bacilli found	492	342	133	17	126
Bacilli <i>not</i> found	1,563	457	262	844	210
Total	2,055	799	395	861	336

The Work of the Nurses.—With few exceptions every individual notified as suffering from tuberculosis of the lungs is visited by one of the Dispensary nurses.

In all 393 new patients were seen and 10,976 subsequent visits were made, giving a grand total of 11,369 visits for the year.

Special attention is paid to those persons who are known to have tubercle bacilli in their sputum. They are visited at least once monthly, and the number of those under supervision on various dates is shown in the following return :—

Dec. 31, 1915	...	...	400	Dec. 31, 1917	...	...	486
June 30, 1916	...	...	423	June 30, 1918	...	...	515
Dec. 31, 1916	...	...	455	Dec. 31, 1918	...	...	529
June 30, 1917	...	...	468	June 30, 1919	...	...	542
			Dec. 31, 1919	...	...	506	

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 separate bed for the sufferer, the preparation of simple and inexpensive articles of diet, and kindred subjects.

At the same time encouragement is given to those who have been treated in Sanatoria and Hospitals to continue to observe the rules for the preservation of their health and prevention of infection of others which they learned whilst receiving institutional treatment.

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 to 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.

The Work of the Sanitary 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	...	...	...	...	...	476
Houses disinfected (total)	...	...	...	...	...	461
For patients going to Sanatoria	...	...	...	...	...	100
„ „ changing their address	...	...	...	...	...	16
„ „ changing their rooms	...	...	...	...	...	—
„ „ going to Hospital	...	...	...	...	...	125
After death	...	...	...	...	...	220
Rooms disinfected in above houses	...	...	...	...	...	526
Total number of visits	...	...	...	...	...	962
Houses found to have sanitary defects (including overcrowding) and referred to the Inspector of Nuisances	...	...	...	...	...	29

Bacteriological Examination of Sputum.—Every effort is made to verify each notified case by bacteriological means, and during the year 1,266 specimens of sputum were examined at the Dispensary.

Of this number 306 were found to contain tubercle bacilli while 960 gave negative results.

In addition 642 samples of sputum were sent for examination to the College of Medicine by the medical practitioners of the city.

Of these 134 proved positive, and 508 negative.

The following table shows the division into age periods of the persons in whose sputa the specific germs were demonstrated :—

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

	Under 5 years.	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.
College of Medicine—Males	6	5	23	20	15	2	2	73
College of Medicine—Females	1	7	12	17	11	12	...	1	61
Tuberculosis Dispensary—Males	1	3	22	23	67	60	35	3	2	216
Tuberculosis Dispensary—Females	11	15	16	30	12	5	1	...	90
Total...	1	15	50	56	137	103	67	6	5	440

INSTITUTIONAL TREATMENT.

Under the Combined Scheme 30 beds (of which 20 are reserved for "insured" persons) were provided at Barrasford Sanatorium for early or moderately advanced adult cases of pulmonary tuberculosis, 62 beds were available for more advanced cases in the Sanatorium Pavilions at the City Hospital, Walker Gate, while at Stannington Sanatorium 30 beds were maintained for the treatment of tuberculous children.

Owing to the increase in the number of patients requiring Sanatorium Treatment 10 additional beds were acquired at Barrasford Sanatorium on December 9th, 1918, and an arrangement was made whereby a further 5 beds would be at the disposal of the Newcastle-upon-Tyne Corporation if and when required.

Barrasford Sanatorium.—The beds were continuously occupied and 107 persons completed treatment during the year.

The details as to “insured” and “uninsured” persons, males and females, together with the average length of stay in the institution, are submitted herewith:—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM
DURING YEAR 1919.

	In Barrasford Sanatorium on 1st January, 1919.	Admitted during year.	Persons who completed treatment during year.			In Barrasford on 31st Dec., 1919.
			Number.	Total Number of days.	Average Length of Stay in days.	
Uninsured Males ...	1	6	4	539	135	3
Uninsured Females...	1	12	6	703	117	7
Insured Males ...	26	84	81	10,010	123	29
Insured Females ...	8	12	16	2,955	185	4
Total ...	36	114	107	14,207	133	43

The results of treatment were satisfactory, and the condition of the patients on discharge is as follows:—

RESULTS.					Males.	Females.	Total.
(a) Fit to work ...	...	...	...	...	51	8	59
(b) Improved ...	...	...	...	...	25	6	31
(c) Without improvement ...	...	...	...	...	7	8	15
(d) Worse ...	...	...	...	...	2	...	2
Total ...	...	...	...	...	85	22	107

As beds have been maintained at this institution by the Corporation since the end of 1908 the comparable figures for each year are given:—

PATIENTS WHO RECEIVED TREATMENT AT BARRASFORD SANATORIUM
AND THEIR CONDITION ON DISCHARGE.

Year Discharged.	Number of Patients Discharged.	MALES.	FEMALES.	Condition on Discharge.			
				Fit to Work.	Improved.	Without Improvement.	Worse.
*1909	55	34	21	32	18	4	1
1910	64	41	23	35	22	6	1
1911	71	45	26	40	21	9	1
1912	67	47	20	39	19	8	1
1913	85	58	27	41	38	5	1
1914	78	59	19	71	3	4	...
1915	74	54	20	56	13	5	...
1916	64	45	19	38	23	3	...
1917	68	45	23	43	18	5	2
1918	89	81	8	67	17	5	...
1919	107	85	22	59	31	15	2
TOTAL....	822	594	228	521	223	69	9

* NOTE.—No patient completed treatment during 1908.

Each discharged patient is visited at frequent intervals by one of the Dispensary staff and is encouraged to report periodically so that he can be examined and records kept of his condition.

In the next table a summary is given of the condition on December 31st, 1919, of all the patients treated at the Corporation expense since 1908. It will be noticed that most of the earlier cases are returned as dead or untraceable:—

PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM,
AND THE RESULTS.

YEAR.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at end of Year 1919.					Total Number of days in the Sanatorium.	Average number of days in the Sanatorium.
				Well, working or fit to work.	Improved or moderately well	Relapsed.	Dead.	Lost sight of, or left the district		
1909	55	34	21	4	6	...	34	11	6,260	114
1910	64	41	23	8	2	2	37	15	6,471	101
1911	71	45	26	6	9	1	46	9	6,868	97
1912	67	47	20	10	5	...	37	15	5,396	81
1913	85	58	27	19	5	2	41	18	9,567	112
1914	78	59	19	26	4	4	33	11	9,723	124
1915	74	54	20	25	6	1	29	13	10,803	146
1916	64	45	19	16	5	6	26	11	10,005	156
1917	68	45	23	23	9	5	21	10	10,603	156
1918	89	81	8	42	18	7	15	7	11,926	134
1919	107	85	22	54	32	10	10	1	14,207	133
TOTAL...	822	594	228	233	101	38	329	121	101,829	124
Received treatment in previous years ...	34	22	12	7	8	1	15	3	...	...
Nett Cases	788	572	216	226	93	37	314	118	101,829	124

34 patients received a second spell of treatment, the details of which are shown on the following page.

The results are not satisfactory and go to show that if a patient has a second breakdown the outlook is very serious.

RECEIVED TREATMENT IN PREVIOUS YEARS.

Year of Discharge.	Number of Patients discharged from Barrasford Sanatorium.	MALES.	FEMALES.	Condition at the end of Year, 1919.				
				Well, working or fit to work.	Improved or moderately well.	Relapsed.	Dead.	Lost sight of, or left the district.
1911	5	2	3	...	1	...	4	...
1912	4	3	1	...	...	...	3	1
1913	4	1	3	...	2	...	1	1
1914	4	3	1	1	...	...	2	1
1915	1	1	...	...	...	...	1	...
1916	1	...	1	...	1	...	...	...
1917	4	3	1	1	...	1	2	...
1918	6	5	1	3	1	...	2	...
1919	5	4	1	2	3	...	...	...
TOTAL ...	34	22	12	7	8	1	15	3

While the appearance of tubercle bacilli in the sputum indicates that there is active destruction of lung tissue still it must be recognised that there is always a doubt about any case in which the diagnosis has not been verified bacteriologically.

Accordingly the bacterial history of each patient admitted to Barrasford Sanatorium has been investigated as thoroughly as possible, and the results are tabulated below :—

BACTERIAL HISTORY OF
PATIENTS WHO RECEIVED TREATMENT IN BARRASFORD SANATORIUM.

YEAR.	Persons discharged from Barrasford Sanatorium.			Number who had Tubercle Bacilli found in the Sputum after discharge.	Persons deceased at the end of the year.				Cases who had Tubercle Bacilli in the Sputum and could not be traced at end of Year.
	TOTAL Nett Cases.	Number who had Tubercle Bacilli found in the Sputum.	Number who had not Tubercle Bacilli found in the Sputum.		TOTAL.	Tubercle Bacilli found in the Sputum before or during treatment.	Tubercle Bacilli not found in the Sputum before or during treatment.	Tubercle Bacilli found in the Sputum after discharge.	
1909	55	35	20	2	34	29	4	1	2
1910	64	46	18	3	37	31	4	2	9
1911	66	44	22	6	42	34	4	4	5
1912	63	36	27	9	34	26	4	4	7
1913	81	54	27	3	40	32	5	3	11
1914	74	52	22	1	31	30	1	...	3
1915	73	51	22	3	28	25	1	2	7
1916	63	49	14	3	26	23	1	2	9
1917	64	41	23	4	19	15	2	2	6
1918	83	54	29	2	13	13	...	...	5
1919	102	82	20	3	10	10	...	...	...
TOTAL.	788	544	244	39	314	268	26	20	64

It is at once obvious from the above that the prognosis is very much more grave in the "bacillary" cases than in those who had a "negative" sputum throughout.

STANNINGTON SANATORIUM.

The 30 beds were kept fully occupied throughout the year and 43 patients completed treatment.

The details appear below :—

**CHILDREN WHO RECEIVED TREATMENT IN STANNINGTON SANATORIUM
DURING YEAR 1919.**

	In Sana- torium on 1st Jan., 1919.	Admitted during the year.	Persons who completed treatment during the year.			In Sana- torium on 31st Dec., 1919.
			Number.	Total number of days.	Average length of stay in days.	
Males	16	24	27	6,734	249	13
Females	13	21	16	3,106	194	18
Total	29	45	43	9,840	229	31

In nearly every case great benefit accrued to the patient as is shown in the following return:—

	Males.	Females.	Total.
(a) Much Improved	22	14	36
(b) Improved	2	...	2
(c) Without Improvement	3	1	4
(d) Worse ... ..	...	1	1
Total	27	16	43

SANATORIUM PAVILIONS, WALKER GATE.

There has been great demand for the beds provided here and of the 185 patients admitted 94 were men discharged from the services suffering from tuberculosis.

Of the above number 59 were pensioners residing in other districts, and the expenses of their maintenance were defrayed

by the authorities responsible for their admission. Further details regarding the patients treated during the year are given in the accompanying table :—

PATIENTS WHO RECEIVED TREATMENT IN SANATORIUM PAVILIONS
AT THE CITY HOSPITAL, WALKER GATE, DURING YEAR 1919.

	Patients in Hos- pital on 1st Jan., 1919.	Patients admitted.	Patients who have completed treatment.			In Hospital 31st Dec., 1919.
			Number.	Total number of days.	Average length of stay in days.	
Uninsured, Male ...	9	9	10	1600	160	8
„ Female ...	8	29	22	2616	119	15
Insured, Male ...	33	129	126	9822	78	36
„ Female ...	4	18	15	1581	105	7
Total ...	54	185	173	15,619	90	66

N.B.—4 patients were re-admitted and are counted as 8 admissions.

The results of treatment where completed are as follows :—

	Males.	Females.	Total.
(a) Fit to Work ...	14	...	14
(b) Improved ...	53	14	67
(c) Without Improvement ...	34	10	44
(d) Died in Hospital ...	35	13	48
Total ...	136	37	173

4 patients were transferred to Barrasford Sanatorium.

Of the 48 patients who died in the institution, 39 were Newcastle residents; and 9 were pensioners from other districts.

The various activities of the Tuberculosis Section have been summarised, and are set out on the following page together with the corresponding figures for previous years.

It will be noted that there is an increase in nearly every item except under the headings of Notifications and Deaths.

TUBERCULOSIS SECTION.
ANNUAL SUMMARY OF WORK DONE.

	1919	1918	1917	1916	1915	1914	1913
<i>Notifications</i> ... Total	724	819	909	987	964	958	1246
Lungs	519	552	590	642	612	665	796
Other Forms	205	267	319	345	352	293	450
Notified by T. M. O. ...	145	221	244	162	146	180	140
<i>Deaths (Corrected)</i> Total	455	531	571	557	542	529	479
Lungs	339	393	411	417	380	375	326
Other Forms	116	138	160	140	162	154	153
<i>Attendances at Dispensary</i>	10332	11517	9286	7758	6473	6712	3656
New Patients	819	904	969	850	899	1046	729
†Military Cases ... ..	...	10	35	10	...	...	...
<i>Barrasford Sanatorium.</i>							
Admitted	114	95	69	67	70	78	86
Discharged	107	89	68	64	74	78	86
<i>Stannington Sanatorium.</i>							
Admitted	45	48	55	74	65	78	17
Discharged	43	49	55	73	65	55	11
<i>Sanatorium Pavilions, Walker Gate.</i>							
Admitted	185	207	181	146	54	40	38
Discharged	125	151	138	89	38	27	16
Died	48	30	48	26	17	14	8
<i>Bacteriological Exams.</i>							
College of Medicine—Total	642	529	604	624	600	714	910
Sputum—Positive ...	134	129	159	172	147	202	207
Negative	508	400	445	452	453	512	703
<i>Dispensary</i> ... Total	1266	1080	957	708	608	764	354
Sputum—Positive ...	306	233	204	146	140	182	85
Negative	960	847	753	562	468	582	269
Urine	832	812	806	681	272	...	...
<i>Evening Consultations.</i>							
Attendances	1499	1455	1264	1180	1124	1000	546
New Patients	53	57	84	96	128	130	59
<i>Work of Nurses.</i>							
New Patients	393	463	336	505	1055	1306	799
Subsequent Visits ...	10976	9668	6188	7515	5429	6444	1235
Total	11369	10131	6524	8020	6484	7750	2014
East District	4360	2993	2530	4050	3323	3729	...
West District	3244	4499	3777	3970	3161	3921	...
Central District	3765	2639	217	...	...	...	...
<i>Special Inspector's Visits</i>	962	933	1110	1070	1400	2385	1835
Houses Disinfected ...	461	504	554	537	512	549	514
Rooms Disinfected ...	526	557	701	619	779	1077	1089
Sanitary Defects—Houses	29	22	34	17	23	48	71

†Residing outside of Newcastle, referred to T.M.O. by Ministry of National Service.

WILLIAM H. DICKINSON., M.B., D.P.H.,
Tuberculosis Dispensary, Tuberculosis Medical Officer.
June, 1920.

DISINFECTION.

9,699 cases of notifiable infectious disease have been inquired into by the Infectious Disease Inspectors and Health Visitors, and, with the exception of measles, the houses or rooms connected therewith disinfected by spraying with formalin. The Lord Mayor's Information Bureau (Saville Row) was disinfected 20 times. In connection with cases of tuberculosis, 461 houses, including 526 rooms, were similarly disinfected.

In all cases amongst civilians, except measles, 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.

Inquiries were also made in connection with 44 smallpox and 21 cerebro-spinal fever contacts. These persons were kept under observation until the possible incubation period was over.

522 extra visits of supervision to the cases left at home were made by the Infectious Diseases Inspectors.

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

ARTICLES FROM CITY.		ARTICLES—HOSPITAL PROPERTY.	
1919.	1918.	1919.	1918.
20,196	17,332	10,014.	7,392.

1,232 articles of clothing, etc., were also disinfected at the Smallpox Hospital.

The foregoing list includes only civilian work. In addition, the following articles from military billets and camps were disinfected :—

ARTICLES DISINFECTED FOR MILITARY AUTHORITIES.

DESCRIPTION.	TREATED AT.		
	City Hospital.	Moor Hospital.	TOTAL.
Kits and Bags	83	...	83
Blankets	3,425	932	4,357
Other Articles of Bedding and Wear- ing Apparel, etc.	541	1,513	2,054
Horse Rugs and Saddle Blankets ...	...	375	375
TOTAL	4,049	2,820	6,869

The staff have thus dealt with 38,311 articles at the two disinfectors during the year.

INFECTED ARTICLES DESTROYED AND REPLACED BY THE HEALTH DEPARTMENT.

	1919.	1918.
Half Straw Mattresses	12	18

The sum of £20 6s. 2d. was paid for loss of work and business, and goods destroyed on account of exposure to infection.

Fluid disinfectant, in half-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—1919.

FROM	FOR INFECTIOUS DISEASES.		FOR PHTHISIS
	FLUID ($\frac{1}{2}$ pint tins.)	SOAP (1 lb. bars.)	FLUID ($\frac{1}{2}$ pint tins.)
Health Department	288	111	...
Tuberculosis Dispensary ... ..	...	...	120
Corporation Yard, Benwell	39	30	...
TOTAL	327	141	120

BACTERIOLOGICAL INVESTIGATIONS, 1919.

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.

4,556 specimens were submitted for examination. The nature of the investigations, and the results obtained were as follows :—

	DIPHTHERIA.			PHTHISIS.			ENTERIC FEVER.			PARA TYPHOID.
	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Total.	Posi- tive.	Nega- tive.	Nega- tive.
No. of Ex- aminations	938	146	792	642	134	508	39	9	30	5

Milk Examinations :—

	Total	Found	Not Found
1. For the tubercle bacilli	169	6	163
2. Bacterial contents of organisms other than tubercle bacillus (the colon bacillus being taken as the indicator.)			
Colon bacilli not found in 1 cc. or less	...		0
Colon bacilli found in 1 cc. but not in less			6
Colon bacilli found in 0.1 cc. but not in less			24
Colon bacilli found in 0.01 cc. but not in less			50
Colon bacilli found in 0.001 cc. but not in less			87
			<u>167</u>

Water Examinations :—

Class I. (Colon bacilli not found in 100 cc. or less)	12
Class II. (Colon bacilli found in 100 cc. but not in less)	72
Class III. (Colon bacilli found in 10 cc. but not in less)	53
Class IV. (Colon bacilli found in 1 cc. but not in less)	45
	<u>182</u>

Venereal Diseases :—

	WASSERMANN REACTIONS.	MICROSCOPICAL EXAMINATIONS.		OTHER EX- AMINATIONS.
		Gonococci	Spirochætes.	
No. of Examina- tions ...	2,214	81	1	27

Other Examinations :—

a Cerebro-spinal fever.

3 suspected cases were examined, all of which were negative.

36 contacts were examined, no meningococci were found in any.

b Examination of blood for malarial parasites.

30 cases were examined, 7 were found to be infected, and in 23 no parasites were found.

c Dysentery carriers.

3 cases were examined, but no dysentery bacilli were found.

d Typhoid carriers.

16 suspected cases were examined, but in no case was the typhoid bacillus recovered.

e A sample of dried milk.

This was found to have quite a low bacterial content.

f Suspected food poisoning.

A bacillus of the food poisoning group (Aertrycke type) was isolated.

g Examination of shaving brush for anthrax.

No anthrax bacilli were found.

H. J. HUTCHENS,
Bacteriologist.

*University of Durham College of Medicine,
28th January, 1920.*

REPORTS OF THE
VETERINARY OFFICER AND INSPECTOR
OF PROVISIONS, AND OF THE
INSPECTOR UNDER THE FOOD AND DRUGS
ACTS (INSPECTOR OF NUISANCES).

IV.—FOOD.

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

REPORT OF THE
VETERINARY OFFICER AND INSPECTOR
OF PROVISIONS AND OF THE
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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—1919.

Six samples of milk were reported by the Bacteriologist during the year to be tuberculous. Two of the samples were from herds in the City, while the other four were from farms situated respectively in Westmorland, Cumberland, Northumberland, and Kirkcudbrightshire.

In one of the Newcastle cases, examination of the cows revealed no clinical symptoms whatever. Two cows had been sold shortly after the sample was taken, and the assumption is that one or other of these was responsible, for two further samples from the remaining stock were both reported negative. In the other Newcastle case, one cow was found suspicious and removed, and a check sample from the others was reported as not showing tubercle bacilli.

In the Kirkcudbrightshire case, the City dairy had ceased to take the milk soon after the sample was obtained and before the report was received. The circumstances were, therefore, reported to the County Medical Officer of Health, but it is not known what action was taken.

In each of the three remaining herds, clinical examination led to cows in a suspicious condition being found and isolated. At one farm, two of the suspected animals subsequently reacted to the Tuberculin test. In all these cases, check samples were taken from the herds after the exclusion of the suspected cows and were reported negative.

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 Thirteenth Annual Report, viz: that for the year ended 31st December, 1919.

THE DAIRIES, COWSHEDS, AND MILK SHOPS ORDERS, 1885-1899.

Within the City, there are 27 cowkeepers who occupy 41 cowsheds on 29 premises, and possess a total of 594 milch-cows. During the year 102 visits have been made to the cowsheds and dairies for the purpose of inspecting the buildings, etc., as to defects, sanitation and general cleanliness. As in previous years, it has been necessary from time to time, to warn various occupiers as to the necessity for the exercise of more stringent precautions against the pollution of the milk with excremental matter.

TABLE NO. 1.

Year.	DISEASED COWS FOUND IN REGISTERED PREMISES WITHIN THE CITY.								
	No. of Cowkeepers.	No. of Registered Cowsheds.	No. of Dairy Premises.	No. of Milch Cows in City.	Number of Diseased Cows.				
					Tuberculosis.		Other Diseases.		Destroyed
					Of Udder.	Other than Udder.	Udder.	Other than Udder.	
1909	41	...	...	527	5	2	4	1	5
1910	38	41	...	503	1	1	8	...	1
1911	37	44	38	497	1	...	4	...	1
1912	37	44	37	465	2	...	1	...	...
1913	31	43	33	489	2	2	...	...	...
1914	31	43	33	510	1	1	1	...	...
1915	31	43	33	554	3	...	6	...	...
1916	30	44	32	536	2	2	12	...	1
1917	30	44	32	512	1	...	...	...	...
1918	29	43	31	622	...	...	...	...	...
1919	27	41	29	594	...	...	...	...	...

ANIMALS SLAUGHTERED FOR FOOD.

During the year 1919, 119,464 animals were slaughtered within the City, as compared with 131,728 slaughtered the year previous. The following table illustrates the number of animals slaughtered within the city during the past four years:—

NUMBER OF ANIMALS SLAUGHTERED ON LICENSED PREMISES
WITHIN THE CITY.

TABLE No. 2.

YEAR 1919.				1918.	1917.	1916.
Horses	674	714	487	500
Cows	...	2,395	25,151	18,379	26,333	25,365
Heifers	...	9,341				
Bulls	...	649				
Bullocks	...	12,766				
Calves	3,561	2,412	1,989	...
Tups	...	1,400	75,483	100,488	112,417	113,087
Ewes	...	14,204				
Other Sheep	...	33,991				
Lambs	...	25,888				
Boars	...	209	14,595	9,735	15,669	21,500
Sows	...	913				
Other Pigs	...	13,473				
Total Animals	...	119,464		131,728	156,895	160,452

**THE INSPECTION OF MEAT, PROVISIONS, FISH,
FRUIT, ETC.**

During the year 1919, a total of $2,149\frac{3}{4}$ animal carcasses, together with 3 tons, 17 cwts, $4\frac{3}{4}$ lbs. of meat were condemned within the city and destroyed as being unfit for human consumption, as compared with $411\frac{3}{4}$ animal carcasses and 8 tons, 3 qrs. 21 lbs. of meat condemned and destroyed the previous year.

Of the $2,149\frac{3}{4}$ carcasses, 274 (264 carcasses and 40 quarters) were condemned on account of tuberculosis, as compared with $187\frac{1}{4}$ (176 carcasses and 45 quarters) the year previous.

Again, excluding mutton, of the total number of carcasses, parts of carcasses, and organs condemned as unfit during the year, tuberculosis was found to be the cause in 363, or 69·27 per cent. of the cases.

Of the animals other than sheep slaughtered 838 per cent. were found tuberculous. Of the bovine animals slaughtered, as indicated in Table 3, it will be observed that the cow class exhibits by far the highest percentage of cases of tuberculosis, 8·6 per cent. of those slaughtered being wholly or partly condemned on account of that disease. The higher percentage of tuberculous animals in the cow class is just what one naturally expects, owing to the fact that these animals, being older than bullocks and heifers as a rule, and having been housed within dairy cow-sheds under indifferent hygienic conditions for considerable periods, have been exposed to greater risks of infection.

When one takes into account the fact that of the cattle slaughtered during the year within the City 9·5 per cent. were cows, and that the entire carcass of no fewer than 6·6 per cent. of these latter were condemned and destroyed on account of tuberculosis, it will be clearly seen that the risk, when obtaining live cattle of the cow class in an open market or auction sale, of purchasing meat liable to seizure and condemnation is one that no tradesman can afford to consider carelessly or dismiss lightly. During Government control practically all the cattle slaughtered at the Government controlled slaughter houses were graded cattle sold by the Ministry of Food after slaughter. The carcasses of such animals, if condemned, were paid for by the Ministry of Food, thus preventing loss to the owner. Knowing that out

of every 14 or 15 cows of a particular class in a market there may be at least one which on slaughter will be found in a condition necessitating entire condemnation on account of disease if subjected to official inspection, and also knowing that such animals are not, as a rule, insured against the risk of being diseased, the reason why cows (before Government control and insurance) were invariably sent to districts where inspection scarcely existed will be obvious. Assuming cows to average £30 each, the cost to insure them against the risk of total condemnation on account of tuberculosis would amount to about £1. 9. 7. per head. With the coming of de-control it may be anticipated that unless some system of insurance—in the case of cows—comes into operation it is certain that the majority of butchers trafficking in these animals will be those who slaughter in out-of-the-way places, with the result that fewer cows will be slaughtered within the City, fewer will be condemned, and more people in certain districts will be fed on faked diseased meat.

TABLE NO. 3.

CATTLE, CALVES, AND PIGS SLAUGHTERED WITHIN THE CITY (See also Table No. 2).			Number of Animals found diseased, unsound, or otherwise unfit for human consumption.		Number of Animals found Tuberculous.		Animal Carcasses (including organs) wholly or partly condemned for any cause.	Animals Slaughtered.
Year 1919.	1918	1917	Whole Carcasses Condemned.	Parts or Organs Condemned.	Whole Carcasses Condemned.	Parts or Organs Condemned.	Per Cent. Tuberculous.	* Per Cent. Tuberculous.
							Year 1919.	
Cows ...	2,395	617	171	55	160	48	92.3	8.6
Heifers ...	9,341	14,301	64	41	60	30	85.7	.963
Bulls ...	649	876	2	2	2	2	100.0	.616
Bullocks ...	12,766	10,539	41	30	39	17	78.8	.438
Totals ...	25,151	26,333	278	128	261	97	88.17	1.42
Calves ...	3,561	1,989	108	...	1	...	.925	...
Pigs ...	14,595	15,669	10	...	4	...	40.0	...
Total ...	43,307	...	...	...	...	...	...	.838

*NOTE.—The figures representing the number of animals found tuberculous on slaughter do not necessarily indicate the total number of animals afflicted with the disease, for all those slaughtered are not subjected to inspection.

**CARCASSES OF BEEF CONDEMNED WITHIN THE CITY DURING THE
PAST TEN YEARS.**

TABLE NO. 4.

Total Condemned.		Number Condemned on account of Tuberculosis.	Percentage, Tuberculous.
Year.	Carcasses.	Carcasses.	Per Cent.
1910	116	110	94·82
1911	88	79	89·77
1912	79	73	92·40
1913	92	89	96·73
1914	83	70	84·33
1915	96	88	91·66
1916	109	103	94·49
1917	98	92	93·87
1918	230	182	79·13
1919	306	267	73·0

NOTE.—The above refers to whole carcasses and quarters, but does not indicate the total animals found tuberculous, and therefore does not include those carcasses in which only the organs or parts were found diseased and condemned. See Table 3.

UN SOUND HAMS FROM LIVERPOOL.

Included in the total amount of ham recorded in Table 6 is a consignment which was sent in a putrid condition from Liverpool to the City for the purpose of sale, and subsequently gave rise to proceedings, once at Newcastle Police Court, and twice before a Court of Arbitration at Liverpool.

On Friday, June 20th, 1919, a warehouse within the City, occupied by a wholesale provision merchant, was visited, and the contents of three boxes, namely, 47, 51, and 41 hams respectively, weighing a total of 1,650 lbs., were inspected. They were borax-preserved hams, originally packed in New York, America, and had been sent from Liverpool on the 10th June, arriving within the City on or about 18th June, 1919. On examination the hams were found thickly coated

with a greyish-green slime, which emitted a strong odour of putrefaction. Those near the bottom of each box were found to be in the worst condition. Those forming the upper layers were then examined for the purpose of considering the question of salvage regarding the whole consignment. It was found that putrefaction had extended some distance from the bones into the fleshy parts of each, and from the external surface of each the process of putrefaction had already extended some distance internally.

The cut surface of the hams—fleshy parts—rapidly changed on exposure from a brightish red to a greenish dirty grey colour. They were condemned and seized, and then shown to a Justice of the Peace, by whose order they were subsequently destroyed.

Proceedings were taken against the Liverpool firm for sending the unsound hams into the City, and at the same time the Liverpool firm not only threatened the Corporation with damages for seizure, but actually proceeded against the Newcastle wholesale firm who received the hams, the case being heard before a Court of Arbitration.

On Friday, July 18th, at Liverpool, the case was heard against the Newcastle firm. The Court decided on hearing the evidence, that the 3 boxes of hams tendered were not a good tender on the contract, the Newcastle firm being allowed expenses and arbitration fees. On Tuesday, July 22nd, the case against the Liverpool firm was heard at the Newcastle Police Court. The bench, after hearing the evidence, being satisfied that the defendants did not know and did not have reason to believe that the hams were unfit at the time they were despatched from Liverpool, dismissed the case.

Subsequently the Liverpool firm appealed against the decision of the Liverpool Court of Arbitration, and on Tuesday, July 29th, the whole of the case was reheard in Liverpool before a full board of Directors, who, on hearing the evidence and being satisfied that the hams were absolutely unfit not only when seized within the City but at the time they were sent from Liverpool, upheld the previous decision of that Court. The Newcastle wholesale firm were, as a result, awarded full costs.

Enumerated in Table 6 are several items that may be briefly referred to, namely :—

1. A total of 11,032 lbs. of dates were inspected on various premises. In some cases the boxes containing the dates were not only dirty and wet but badly damaged, and had apparently been stored under adverse conditions for considerable periods. Of the whole examined 5,397 lbs. were condemned, the remaining 5,635 lbs. being passed and disposed of.
2. 2 tons of gooseberries, 2 cwts. raspberries, 1 ton of strawberries and 1,598 lbs. of sausage became unsound and unfit through delay in transit occasioned by the railway strike.
3. 4 tons of fresh peas, 58 cwts. pickled herring, 1,680 lbs. findon haddocks, 1 ton 17 cwts. mussels, and 5 tons of plums became unfit through delay on rail.

Foodstuffs condemned as unfit for human consumption, but permitted to be used for animal feeding, and foodstuffs unmarketable but allowed to be used for manufacturing purposes :—

Animal feeding.— $\frac{1}{4}$ waggon load of cauliflowers; 3 tons, 17 cwts. 2 stones currants; 4,469 tins condensed milk.

Manufacturing purposes.—4,279 tins condensed milk; 5 cwts. 15 lbs. sugar.

The following foodstuffs, after condemnation, were destroyed by orders of Magistrates:—

15 quarters of beef, 60 lbs. chocolates, $4\frac{1}{2}$ lbs. boiled ham, 1 rabbit and 90 bags currants.

The Damaged Foodstuffs Order of 1918.

The above Order has for its object the recovery from condemned foodstuffs of everything that is likely to be of value as animal food, fertilisers or for the manufacture of same, or other articles.

At the present time, the Sanitary Committee have under consideration the desirability or otherwise of erecting and working a plant for the destruction of:—

- (a) Animal carcasses dealt with under the Contagious Diseases of Animals Acts; and
- (b) Carcasses and other foodstuffs condemned under the Public Health, &c., Acts.

In connection with the above subject, attention is being given to the possibility of utilising certain of the residuals in the manufacture of

- 1. Poultry, pig and dog meals; and
- 2. Bone meal and other fertilisers.

SLAUGHTER HOUSES.

During the year under report there were 102 separate premises licensed for slaughtering purposes within the City, there being four separate premises fewer licensed as compared with the previous year. They consist of five separate groups situate, two in the East end, one in the West end, and two in the centre of the City. The remaining slaughter houses—thirteen in number—including one knackers yard, are situate in different parts of the City, some being behind and in close proximity to private dwellings. One of the groups (eighteen separate slaughter houses) in the centre of the City has been sold, and in the near future will be demolished, the land being required as a site for business premises.

MARKETS AND ABATTOIRS SCHEME.

Four years ago, on the instructions of the Sanitary Committee, a Report on the subject of the provision of public abattoirs for the City was presented by the Veterinary Inspector. In that Report was suggested an "Abattoirs and Markets Scheme," designed so as to provide cattle, sheep, and pig abattoirs; lairages; cooling spaces for carcasses; triperies; gut and blood houses; diseased meat chamber and destructor; administrative offices and provision for the removal of refuse, &c. (without traffic over the highways) leaving space for future extension to the extent of one third, all upon the present beast market site. New cattle and sheep markets and pig lairages and weigh bridge were provided for upon the present sheep market site, south of Scotswood Road and part of the "Old Infirmary" site; the Marlboro' Crescent (sheep market) site, north of Scotswood Road, to be disposed of as the Corporation considered desirable. There were to be no

entrances or exits in connection with the abattoirs and markets abutting Scotswood Road so that the present nuisances to general traffic were to be excluded. Soon after the Report had been circulated and approved by the Committee, the North Eastern Railway Company commenced negotiations with the Corporation for the purchase of the whole of the sheep market site, south of Scotswood Road, together with the "Old Infirmary" site. A special Committee, consisting of 15 members of the Council, with the Lord Mayor as Chairman, was formed to deal with the matter, with the result that an agreement was entered into, as between the Corporation and the North Eastern Railway Company for the sale and purchase of the sites referred to. The possibility of providing abattoirs and markets, such as those outlined, in that part of the City therefore ended, and in the near future the sheep market, at present in use, will, it is presumed, cease to exist as such.

Ideal though the site was believed to be for the purposes outlined in the scheme, one is compelled to recognise that whilst the provision of Abattoirs and Markets or Auction Marts are an urgent necessity within the City, it is of vital importance to the City that adequate provision be made for the future extension of the Central Railway Station premises. Again, whilst it is not possible to extend the Central Railway Station accommodation, to provide for future requirements, except by including more or less of the sheep market and "Old Infirmary" sites, it is, on the other hand, a comparatively simple matter, after having disposed of the present market sites, for the Corporation to obtain the necessary "Abattoir and Market Scheme" accommodation elsewhere.

POULTRY, GAME, FISH, FRUIT AND PROVISIONS, Etc., DESTROYED AS BEING UNFIT FOR HUMAN CONSUMPTION
DURING THE YEAR 1919.

TABLE No. 6.

Cause of Unfitness.	Poultry and Game.	Fish.	Fruit and Vegetables.	Provisions.
Unsound or Unwholesome.	130 Chickens 160 Ducks 1 Turkey 4,704 Rabbits 25 Grouse 30 Hares 500 Ptarmigan 52 Pigeons 142 Fowls	2 Codlings 2 Whittings 133 lbs. Herrings 1 " Ling 742 " Cod 80 " (Mixed) Fish 1680 " Findon Haddocks 203 " Haddocks 9 " Halibut 626 " Plaice... 160 " Anchovy 8 Salmon 1 Hake 58 Cwts. Pickled Herring SHELL. 1 ton 17 cwt. 6 stones Mussels 3½ cwts. Peri- winkles	15 cwts. & 9000 Bananas 5 tons 5 cwts. 6 stones Plums 5,397 lbs. Dates 4 tons 7 cwts. 2 stones Pears 2 tons 17 cwts. Goose- berries 2 cwts. Raspberries 1 ton 2 cwts. Straw- berries 23 lbs. Damsons 2 cases Oranges 4 tons Potatoes 56½ tons Swede Turnips 6 cwts. Leeks 80 crates and 1 Hamper Cabbages 1 cwt. Cress 320 lbs. Tomatoes	1,445 lbs. Cheese 1,280 " Bacon 2,741½ " Ham 29 " Margarine 250 " Rasins 3 tons 17 cwts. 2 stones Currants 356 Fish Cakes 36 Mince Pies 5,633 Eggs 56 lbs. Meal 1,062 " Biscuits 7 " Bl'k Puddings 7 " Polonies 1,598 " Sausages 6 " Mince 6 " Cow Heel 60 " Chocolates TINNED. Corned Beef ... lbs. Rabbit ... 3,068 Ox Tongue ... 4 Tomato ... 399½ Apples ... 588 Pine Apple ... 7½ Condensed Milk ... 1½ 8,748 tins. BOTTLED. Soup ... Btls. Pickles ... 3 Fruit ... 15 ... 1

PROSECUTIONS.

1. *Contractor*.—Fined £1 for permitting the movement of 10 swine without being marked and licensed in accordance with the Newcastle-upon-Tyne (Byker and Walker Piggeries) Swine Fever Order of 1907 ; fined £1 for selling swine to a person who did not hold the necessary buying permit as required by the Meat (Dealers' Restriction) Order of 1918. Person in charge of swine at the time of moving fined £1. Butcher fined £1 for accepting swine which had been moved in contravention of the Swine Fever Order ; and fined £1 for buying swine, not being a holder of the necessary buying permit.

2. *Pork Butcher*.—Fined £5 for failing to take reasonable precautions to prevent waste, namely, allowing 4 carcasses of veal to undergo putrefaction in contravention of The Waste of Foodstuffs Order of 1918.

3. *Farmer*.—Fined £30 10s. for sending diseased meat into the City for the purpose of sale.

4. *Milk Vendor*.—For having in his possession a horse affected with parasitic mange, failed to give notice of suspected disease, fined £15.

5. *Coal Merchant*.—For having in his possession a horse affected with parasitic mange, failed to give notice of suspected disease, fined £2.

6. *Shopkeeper*.—Fined 10/- for having deposited on premises for the purpose of sale, unsound chocolates.

7. *Wholesale Provision Merchants.* — Summoned for sending into the City for the purpose of sale unsound hams. Case dismissed.

8. *Ministry of Food*—Live Stock Commissioner, Area Meat Agent, and Members of the Meat Distribution Committee, six persons in all, were charged with having unlawfully wasted 1,325 carcasses of frozen mutton within the City. Case dismissed.

I have the honour to be, Sir,

Your obedient Servant,

THOMAS PARKER, F.R.C.V.S.,

Veterinary Officer,

Inspector of Meat, Provisions, &c.

Town Hall,

Newcastle-on-Tyne.

FOOD AND DRUGS ADULTERATION, Etc.

Total Samples.—The number of **samples** (of all kinds) obtained by the *Inspector of Nuisances* for analysis during the year was 1,167, against 1,161 in 1918. For details see table on page 144A.

Of this total, only 697 were submitted for analysis to the Public Analyst, the remainder being milk samples which, on being tested in the offices of the Health Department, appeared to be genuine.

Informal Samples.—281 samples (included in the foregoing total) were collected “informally,” chiefly through the agency of hired persons.

Milk Samples.—The number of milk samples taken was 870; 98 of these were certified to be below the minimal limits fixed by the “Sale of Milk Regulations, 1901,” whilst one of these, and one sample otherwise genuine, contained annatto used as a colouring matter, and one boric acid as a preservative.

Samples Not Genuine, etc.—The percentage of samples not genuine to the total number taken is 10·45 (compared with 7·84 for the previous year), and the percentage of non-genuine milk samples to the total number of milk samples obtained is 11·5 (as against 8·66 in 1918).

The total number of samples taken is at the rate of 4·2 per 1,000 of the population (estimated) of the City for the year 1919.

Milk Adulteration.—Of the 100 milk samples not genuine, 32 were deficient in non-fatty solids, 41 in milk-fat, and 25 in both (the remaining samples containing annatto and boric acid, as above).

The percentage of deficiency in fat varied from 1·6 to 38·3 (the average being 11·19), and in solids not fat from 1·5 to 26·7 (average 9·07).

Margarine Act, 1887.—57 samples of margarine (included in the foregoing total of 1,167) have been purchased and

analysed. These were found to be genuine, except that all but one contained boric acid (as below).

Margarine Warehouses.—96 visits have been made to the margarine warehouses. No contravention of the law as to the marking of packages was found.

Preservatives in Food.—Of the total number of samples taken for analysis (1,167), 57 (or 4·9 per cent.) were certified to contain preservative. 56 of these were samples of margarine, the preservative present being boric acid, in quantity below the maximal limit of 0·5 per cent. The remaining sample was one of milk, which also contained boric acid equivalent to 21 grains per gallon.

Action taken with respect to Offences other than Adulteration.

Offence.	No. of Cases.	Proceedings taken, etc.
<i>Sale of Food and Drugs Act, 1899, Sec. 9:—</i> Selling milk from cans upon which the name and address of the vendor were not inscribed.	3	In 2 instances offenders summoned, and fined £1, and 10/- respectively. The remaining case was met by a caution.
<i>Sale of Food and Drugs Act, 1875, Sec. 17:—</i> Refusing to sell a sample of milk to the Inspector.	2	Fined £10 in each case. (Charged in respect of 2 separate vessels.—This person was also defendant in the case next following).
<i>Waste of Foodstuffs Order, 1918:—</i> Destroying about 4 gallons of milk to prevent its being sampled by the Inspector.	1	Fined £50.
<i>Margarine Act, 1887, Sec. 6.</i> Margarine delivered to purchaser in paper not properly marked "Margarine," and bulk exposed for sale not labelled.	1	Offender cautioned.
Margarine delivered to purchaser in paper not properly marked "Margarine."	7	In 6 cases the vendors were fined £1 each, and in the remaining instance cautioned.
Total ...	14	Amount of Penalties, £77 10s.

Samples taken for Analysis during the Year 1919.

ARTICLE.	No. of Samples obtained.			Result of Analysis.		Action Taken.				REMARKS.
	Formal.	Informal.	Total.	Genuine.	Not Genuine.	Provisional.	Convicted.	Dismissed.	Withdrawn.	
New Milk ...	880	10	870	770	100	41	34	7	...	In 43 cases the vendors were cautioned (by order of the Sanitary Committee), and in the remaining 16 (of the 100 not genuine) no further action was taken, some of these being informal samples, in others deficiency slight, "appeal to Cow" samples, etc., etc.
Condensed Milk ...	...	1	1	1	...	...	...	...	...	All but one of the margarine samples contained boric acid (within the limit allowed).
Dried Milk ...	...	1	1	1	...	...	...	...	...
Margarine ...	8	49	57	57	...	...	...	...	...
Coffee ...	...	1	1	1	...	...	...	...	...
Cocoa (and Cocoa preparations) ...	...	3	3	3	...	...	...	...	...
Tea ...	...	1	1	1	...	...	...	...	...
Sugar ...	...	1	1	1	...	...	...	...	...
Flour ...	...	2	2	2	...	...	...	...	...
Self-raising Flour ...	...	1	1	1	...	...	...	...	...
Bun Flour, Bun Powder, Cake Flour, etc. ...	...	11	11	11	...	...	...	...	...
Egg Powder, Egg Substitutes, etc. ...	...	8	8	8	...	...	...	...	...
Baking Powder ...	...	21	21	20	1	...	...	...	...	The sample "not genuine" (informal) contained 42% of calcium sulphate. No further action taken.
Ground Ginger ...	...	5	5	5	...	...	...	...	...
Pepper ...	1	17	18	17	1	...	...	...	...	The sample "not genuine" (taken informally) contained 82% of common salt. A subsequent formal sample proved to be genuine, and no further action was taken.
Mustard ...	...	15	15	15	...	...	...	...	...
Vinegar ...	5	9	14	4	10	3	3	...	...	The samples "not genuine" (5 of which were taken informally and 5 formally, from the same vendors) were deficient in acetic acid, in amounts ranging from 2.5% to 19%. In 3 instances the vendors were summoned and fined 10/- each, and in the remaining 2 cases the deficiency was slight, and the vendors were cautioned.
Golden Syrup ...	...	1	1	1	...	...	...	...	...
Mustard Powder ...	...	4	4	4	...	...	...	...	...
Corn Flour ...	...	10	10	10	...	...	...	...	...	The sample, "not genuine" (informal) consisted entirely of maize. Efforts made to obtain a formal sample unsuccessful, article being "out of stock" on each occasion.
Semolina ...	...	3	3	2	1	...	...	...	...
Rice ...	...	1	1	1	...	...	...	...	...
Ground Rice ...	...	23	23	23	...	...	...	...	...
Jams ...	...	2	2	2	...	...	...	...	...
Yorkshire Pudding Powder ...	...	2	2	2	...	...	...	...	...
Arrowroot ...	...	1	1	1	...	...	...	...	...
Sponge Mixture ...	...	2	2	2	...	...	...	...	...
Arrowroot ...	...	2	2	2	...	...	...	...	...
Sago ...	...	1	1	1	...	...	...	...	...
Cream of Tartar ...	...	10	10	10	...	...	...	...	...
Tartaric Acid ...	...	10	10	10	...	...	...	...	...
Gregory's Powder ...	1	7	8	6	2	...	...	...	...	The samples "not genuine" (one informal and the other formal—from the same vendor) contained carbonate instead of calcined magnesina. Having regard to labelling and explanation tendered by vendors, no further action was taken.
Sweet Spirits of Nitre ...	1	8	9	8	1	...	...	...	...	The sample "not genuine" (taken informally) was deficient in ethyl nitrite 30.3%. A subsequent formal sample proved to be genuine, and no further action was taken.
Tincture of Rhubarb ...	1	7	8	6	2	1	...	...	1	The 2 samples "not genuine" (one informal and the other formal—from the same vendor) contained no glycerine. A summons was issued and afterwards withdrawn (the manufacture of tincture of rhubarb without glycerine having been allowed as a war measure).
Syrup of Rhubarb ...	...	6	6	6	...	...	...	...	...
Camphorated Oil ...	1	4	5	4	1	...	...	...	...	The sample "not genuine" (taken informally) contained sesame oil instead of olive oil. A subsequent formal sample being genuine, no further action was taken.
Olive Oil ...	...	4	4	4	...	...	...	...	...
Paregoric ...	...	7	7	6	1	...	...	...	...	The sample "not genuine" (taken informally) was deficient in alcohol and in tincture of opium. Efforts to obtain a formal sample have been unsuccessful (shopkeeper stating he only had a "substitute").
White Precipitate Ointment ...	...	6	6	6	...	...	...	...	...
Liquorice Powder ...	6	6	6	6	...	...	...	...	...	The samples "not genuine" (informal) contained respectively 12% and 8% of water. Subsequent formal samples proving genuine, no further action was taken.
Glycerine ...	2	5	7	5	2	...	...	...	...
TOTALS ...	886	281	1,167	1,045	122	45	37	7	1	Total amount of penalties obtained—£175 10s. 0d.*

*Including those in respect of " offences other than adulteration " etc. See separate table.
Included in the above are—
22 " Appeal to Cow " samples (taken at farm or byre, after seeing the cows milked; 15 of these proved to be genuine and 7 deficient).
64 samples taken " in course of delivery " (mostly at railway stations).
4 samples submitted by private persons.

**The Public Health (Milk and Cream) Regulations,
1912 and 1917.**

MINISTRY OF HEALTH 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 ...	401	1 (This sample contained boric acid equivalent to 21 grains per gallon). A subsequent (or "check") sample proved to be free from preservative, but was deficient in fat. Vendor cautioned by order of Sanitary Committee.
Cream ...	—	—

2.—Cream sold as Preserved Cream. No samples taken owing to restrictions on supply.

BACTERIAL IMPURITY OF MILK AND WATER.

Milk.—169 samples were obtained and examined by the Bacteriologist for presence of tubercle bacilli, which were found in 6, or 3·6 per cent.

Action taken is described on pages 143-145.

167 samples were obtained and submitted for examination for presence of evidence of excremental pollution, which was found to an undesirable degree in 87, or 52·0 per cent. The vendors and producers were communicated with and warned, further samples being taken in each case.

Water.—182 samples were collected from all parts of the City, and examined for the presence of *bacillus coli*.

The results are described on page 123.

**CONDITION OF PREMISES ON WHICH FOOD IS
PREPARED.**

Bakehouses.—The number of bakehouses in the City is 242, comprising 20 factories, 113 workshops, and 109 domestic bakehouses.

Factory bakehouses are under the jurisdiction of H.M. Inspector of Factories.

The systematic inspection of workshop bakehouses by the officers of the Health Department has been continued, attention being given to matters of cleanliness (including the periodical limewashing required by law) and general sanitary condition.

In the "domestic" bakehouse, the baking is frequently done by the wife or other member of the family in the kitchen or living room of a tenemented holding or small self-contained house, for sale in most cases either from the same apartment or some other part of the premises, and the Inspector considers that baking under such undesirable conditions is to be discouraged as far as possible.

In the inspection of bakehouses of this class, regard is had to the special provision in a local Act that no Article or food is to be stored or prepared for sale in any room which is used as a sleeping apartment.

Restaurant Kitchens.—The number of kitchens of restaurants, cafés, and dining rooms in the City is 86. These are inspected with a view to their maintenance in good sanitary order and condition.

Fried Fish Shops.—The number of these shops on the register at the end of 1919 was 116, as compared with 113 in the previous year. As previously reported, there has been a marked improvement in the general sanitary conditions under which this business is carried on as compared with what formerly obtained. This is largely due to the facilities for closer supervision afforded by its inclusion in the list of "offensive trades," the establishment of such a business on any premises being now subject to the sanction of the Local Authority. The improvement referred to has been maintained throughout the year under report, and the shops as a rule found to be conducted satisfactorily and free from nuisance.

Ice Creameries (including Retail Shops).—The number of these places shews an increase of 11 during the year, viz: from 95 to 106. Although the conditions under which ice cream is now prepared and sold shew a distinct advance also, the process is still carried on in many cases in the poorest localities in connection with dwellings which are crowded and congested and the general environment unsuitable. It is the practice of the Inspector in such cases to endeavour to have the business restricted to some premises (or portion of premises) to be set apart exclusively for the purpose.

General Shops from which Milk is sold.—The number of such shops on the register at the end of the year was 275 (a decrease of 205 on the previous year). The gradual reduction of this number from the pre-war figure of 714 has resulted chiefly from action taken, through the Local Food Control Committee, for the revocation of the licences of

retailers whose premises were considered to be unfit, on sanitary grounds, for the sale of milk, in exercise of special powers conferred by the Milk (Registration of Dealers) Amendment Order, 1918.

This has proved of decided advantage in eliminating a large number of the small "general" shops referred to in previous reports, from which milk was sold under conditions, which were anything but hygienic, and which precluded the adoption of even the most rudimentary precautions against the pollution or contamination of the milk. In dealing with this question, regard was had to the requirements of particular districts, and no undue hardship appears to have resulted. In a number of other cases, shopkeepers have voluntarily discontinued the sale of milk owing to restrictions on supply and other difficulties, the small quantity usually dealt in not making it worth their while to continue.

DEFENCE OF THE REALM.

FOOD CONTROL ORDERS.

Attention has again been given to the enforcement of these Orders, and the following table summarises the work done under this heading during the year:—

Number of			Action Taken.		Result.		
Visits Made.	Samples Taken.	Offences Disclosed.	Cautions.	Prosecution.	Convictions.	Cases Dismissed.	Total Amount of Penalties.
1,892	2	3	—	3	1	2	£50

(Signed) W. M. HUDSPETH,
Inspector under the Food and Drugs Act.

REPORT OF THE
INSPECTOR OF NUISANCES.

NUISANCES, HOUSING,
FACTORIES AND WORKSHOPS,
&c.

The following is the
Report of the Inspector of Nuisances.

V. THE HOME AND THE
WORKSHOP.

NUISANCES, HOUSING, FACTORIES AND
WORKSHOPS, &c.

REPORT OF THE
INSPECTOR OF NUISANCES

V. THE HOME AND THE
WORKSHOP.

CHAPTER I. THE HOME.

THE HOME is the place where the family live, and it is the duty of the State to see that it is a place of health and comfort. The law requires that the home should be kept clean and free from any source of infection or nuisance.

CHAPTER II. THE WORKSHOP.

THE WORKSHOP is the place where the goods of the country are made, and it is the duty of the State to see that it is a place of health and comfort. The law requires that the workshop should be kept clean and free from any source of infection or nuisance.

**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 present to you my twelfth report upon the work done in my Section of the Health Department, viz., that for the year ended 31st December, 1919, which, together with the section on Food and Drugs Adulteration, etc., is as follows:—

NUISANCE ABATEMENT.

The aftermath of the War is still retarding sanitary progress, and considerable difficulty continues to be experienced in securing the carrying out of necessary works owing to the increasing cost of labour and materials, etc.

It is hoped that matters will soon become more stable in this respect and that it will be possible to proceed with the sanitary alterations and improvements which were interrupted on the outbreak of the late War.

A larger number of visits than is ordinarily necessary has had to be made to premises in respect of which notices had been served, entailing no little amount of additional labour on the part of the Staff.

The housing problem is still with us, and is becoming more and more acute and pressing for remedy, and under existing conditions it is exceedingly difficult to deal either with the general question of overcrowding or with the individual cases of actual contravention of the law which come under notice from time to time. The subject is one of serious importance, and it is hoped that the steps now being taken to meet the shortage of housing accommodation will in due time effect a satisfactory solution.

With regard to the members of the Inspecting Staff previously reported as serving with H.M. Forces, it is pleasing to be able to state that all have now returned to their duties at the Health Department. All appear to be in good health, with the exception of one inspector who served in Mesopotamia and is still suffering from the effects of malaria contracted there.

The following are the numbers of notices and letters issued during the year :—

Total number of notices served—Informal				7,975
Statutory				190—8,165
Number of letters sent out	...	...	...	2,122
Number of circular letters sent	...	...	...	749
Total	...	...	...	<u>11,036</u>

Magisterial Proceedings.—Except in one instance (of overcrowding) no cases were taken before the Magistrates to enforce the abatement of nuisances, etc., requirements being carried out without having to resort to actual proceedings.

Military.—Co-operation with the military authorities has continued, but the necessity for the close attention previously accorded has diminished as the number of billeting stations, etc., in the city, has gradually decreased. 615 inspections of such places were made during the year, of which the following is a summary :—

Special Inspector's Visits	...	...	...	...	...	525
District Inspectors' "	...	...	...	...	...	90
						— 615
DEFECTS, ETC., FOUND AND DEALT WITH.						
Store Rooms and Kitchen used for sleeping purposes	...	...	...	...	...	5
Neglect of Ventilation and Cleanliness	...	...	...	...	...	8
Insufficient and Defective W.Cs.	...	...	...	...	...	10
Accumulation of Refuse	...	...	...	...	...	82
						<hr/> 720

THE PUBLIC HEALTH (INFLUENZA) REGULATIONS, 1918.

In connection with the epidemic of influenza, and in pursuance of the above order, the places of entertainment were inspected, special attention being given to the matters of cleanliness, ventilation, sanitary accommodation, and general sanitary condition. The proprietors were communicated with where necessary, considerable improvement being effected, and the premises brought into conformity with the requirements of the Order.

REMOVAL OF PRIVIES, &c.

Two privies with ashpits combined, 1 pail-closet, and 22 "dry" ashpits have been removed, and, in this connection, 27 free dustbins have been supplied during the year.

USE OF PUBLIC SANITARY CONVENIENCES BY SOLDIERS.

The arrangements made in January, 1915, for troops who were fed in the various restaurants round the centre of the City to have free use of the public sanitary conveniences, still continues.

The following table, prepared by the *Medical Officer of Health*, shows the incidence of Enteric Fever to 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 29 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	0·72
1892	8,640	24,749	97	0·51
1893	8,566	25,822	141	0·73
1894	8,515	26,997	164	0·84
1895	8,661	27,848	213	1·07
1896	8,867	28,977	176	0·87
1897	8,982	29,931	138	0·68
1898	9,317	31,158	307	1·48
1899	7,689	33,030	133	0·63
1900	7,966	33,708	79	0·37
1901	7,956	34,408	76	0·35
1902	7,863	35,323	57	0·26
1903	7,613	36,661	75	0·35
1904	7,313	37,985	30	0·14
1905	9,741*	42,175	50	0·20
1906	9,501	43,348	70	0·27
1907	9,237	43,460	66	0·25
1908	9,109	44,803	111	0·42
1909	8,781	45,468	74	0·28
1910	8,428	46,458	63	0·24
1911	7,959	47,681	87	0·33
1912	7,166	48,788	91	0·34
1913	6,332	49,397	124	0·46
1914	5,999	49,957	102	0·38
1915	5,528	51,466	100	0·36
1916	5,343	51,651	76	0·27
1917	5,337	51,657	25	0·09
1918	5,337	51,659	29	0·10
1919	5,335	51,661	10	0·04

* 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 10·3 in 1919.

RETURN OF "DRY" CLOSETS IN THE VARIOUS WARDS IN THE CITY.

WARDS.	Total No. Privies.	Pail Closets.	Cell Privies.	Privies and Ashpits.	
				Privies.	Ashpits.
Fenham Ward ...	69	12	24	33	24
Benwell Ward ...	150	...	147	3	2
Arthur's Hill Ward...	...	...	...	...	...
Elswick Ward ...	66	66	...	...	...
Westgate Ward ...	11	11	...	...	...
Armstrong Ward ...	7	7	...	...	...
Stephenson Ward ...	17	17	...	...	...
St. John's Ward ...	61	61	...	...	...
St. Thomas' Ward ...	24	24	...	...	...
St. Andrew's Ward...	55	55	...	...	...
St. Nicholas' Ward...	7	7	...	...	...
Jesmond Ward ...	5	...	...	5	5
All Saints' Ward ...	178	176	...	2	1
Heaton Ward ...	40	33	...	7	7
Dene Ward ...	1	...	...	1	1
Byker Ward ...	927	926	...	1	1
St. Lawrence Ward	1,622	1,619	...	3	3
St. Anthony's Ward	608	590	...	18	17
Walker Ward ...	1,039	...	990	49	33
Total in City ...	4,887	3,604	1,161	122	94

ATMOSPHERIC POLLUTION.

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 Prosecu- tions.
				Informal.	Statutory	
65	327	17	56	25	...	...

Atmospheric Pollution Records.—An observation station, under the immediate control of the City Analyst, is placed on an open site between City Road and Wall Knoll, in connection with similar stations in other towns, the monthly results from all of which are compared and published by the (National) Committee for the Investigation of Atmospheric Pollution.

The observation station was removed to the Cattle Market in February, and then to Davison's Yard, Manors, in August.

The monthly readings from the Newcastle station are appended:—

ATMOSPHERIC POLLUTION.—NEWCASTLE RECORDS, 1919.

MONTH.	RAINFALL. (Millimeters.)	METRIC TONS OF DEPOSIT PER SQUARE KILOMETER PER MONTH.								
		Insoluble Matter.			Soluble Matter.		TOTAL SOLIDS.	Included in Soluble Matter.		
		Tar.	Other Carbonaceous.	Ash.	Loss on Ignition.	Ash.		Sulphate as SO ₃	Chlorine Cl.	Ammonia NH ₃
January ...	60	0·24	5·87	8·84	2·03	6·33	23·31	2·15	0·76	0·13
February ...	28	0·06	2·79	4·35	2·46	2·91	12·57	1·38	0·43	0·12
March ...	54	0·17	7·15	12·94	2·40	4·58	27·24	1·93	0·77	0·12
April ...	}	Out of Order.								
May ...										
June ...										
July ...										
August ...										
September ...	130	Out of Order.								
October ...										
November ...										
December ...	28	0·15	2·16	3·66	1·02	4·65	11·64	1·67	0·64	0·13
TOTAL, 5 months	298	0·82	21·71	35·84	12·06	24·18	94·61	9·80	4·44	0·69
Average per month	60	0·16	4·34	7·16	2·41	4·83	18·92	1·96	0·88	0·13

An average of 18·92 metric tons of total solids per square kilometer per month is equivalent to 18·2 cwt. per acre per annum, or 581 tons per square mile.

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 (26), Dealers in Hides and Skins (4), Dealer in blood or other putrescible animal products (1), Blood Dryer (0), Fat Melter or Fat Extractor (3), Glue and Size Makers (3), Gut Scrapers (2), Fish Friers (116).

As compared with the previous year, this is a decrease of 1 gut scraper and an increase of 3 fish friers.

The trades in question have been kept under close sanitary supervision, and usually found to be conducted satisfactorily and with a minimum of nuisance.

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES WERE SERVED DURING 1919.

Defective "cell" privies in Walker and Benwell (to replace with water-closets or to temporarily repair)	20
Foul or defective ashpits not connected with privies (to remove and provide dust bins)	36
Insufficient water-closet or privy accommodation (additional water-closets ordered)	18
Defective or insufficient dust bins (to provide new or additional) ..	1,093
Defective water-closets (to repair)	1,168
Water-closets without water supply (to provide water)	324
Choked water-closets (to cleanse—mostly served on tenants) ...	202
Dirty water-closets (to cleanse—all served on tenants)	181
Defective pail-closets (to repair, provide new pails, etc.)	552
Foul pail-closets (to replace with water-closets)	71
Carried forward	3,665

SUMMARY OF NUISANCES, ETC., FOR THE ABATEMENT OF WHICH NOTICES
WERE SERVED DURING 1919.—*Continued.*

Brought forward	...	...	...	...	3,665
Dirty privies (to cleanse—all served on tenants)	...	...	...	...	13
Defective drains (to repair, or construct new drains)	...	...	...	...	181
Choked drains, etc. (to cleanse)	...	...	...	...	1,162
Defective or choked sinks, waste pipes, etc. (to repair or cleanse)	...	...	...	...	317
Defective or choked soil-pipes, vent shafts, etc. (to repair or cleanse)	...	...	...	...	20
Sink waste-pipes not trapped,	...	...	...	...	25
Want of or defective pavement in yards and passages (to provide or repair)	...	...	...	...	113
Dirty rooms (to be cleansed)	...	...	...	...	57
Damp rooms	...	...	...	...	46
Overcrowding (to abate)	...	...	...	...	44
Dirty yards, passages, stairs, etc. (to cleanse)	...	...	...	...	342
Animals, pigeons, and fowls improperly kept	...	...	...	...	41
Offensive accumulations (to remove)	...	...	...	...	154
Accumulations of manure (to periodically remove)...	...	...	...	...	43
Want of or defective manure pits (to provide or repair)	...	...	...	...	10
Broken roofs and want of or defective or choked spouting (to repair, provide, or cleanse)...	...	...	...	...	940
Want of water (to provide supply)	...	...	...	...	597
Smoke nuisances (to abate)	...	...	...	...	25
Want of proper ventilation to rooms (including broken window cords in tenements)	...	...	...	...	177
Insufficient means of light to rooms, staircases, etc.	...	...	...	...	5
Defects in Council Schools { Defective w.c's	...	...	...	...	2
Defects in Council Schools { Defective drain	...	...	...	...	1
Defects in Council Schools { Rain spouting	...	...	...	...	1
Defects in Council Schools { Additional dust bins required	...	...	...	...	12
Structural defects in houses (broken plaster, floors, stairs, etc.)	...	...	...	...	395
Dirty cisterns supplying water to sinks, etc.	...	...	...	...	3
Slop water or excreta thrown into privy pails, ash-tubs or dustbins...	...	...	...	...	6
Filth thrown on yards, streets, etc.	...	...	...	...	5
Stables (defective, dirty, etc.)	...	...	...	...	3
Food manufactured or stored for sale under improper conditions	...	...	...	...	6
Bakehouses—Dirty, &c.	...	...	...	...	40
Bedding in dirty condition (to cleanse)	...	...	...	...	8
Unsuitable premises occupied as dwellings	...	...	...	...	9
Public-house urinals (foul, without water, etc.)	...	...	...	...	3
Ice-Creameries (unsuitable, dirty, etc.)	...	...	...	...	3
Fried fish shops (premises dirty, etc.)	...	...	...	...	1
Offensive trade (rag store) established without consent	...	...	...	...	1
Unclassified minor nuisances (to abate)	...	...	...	...	84
Total	...	...	...	...	8,560

DETAILS RELATING TO CERTAIN WORKS CARRIED OUT IN THE ABATEMENT OF
NUISANCES AND TO INSPECTIONS MADE DURING 1919.

Length (in yards) of old drains removed	1,216
" " new drains constructed	1,479
New trapped gullies provided to drains	158
Combined privies and ashpits removed { privies	2
ashpits	2
Pail-closet removed	1
Defective water-closets removed	52
Water-closets provided (in place of the foregoing privies and defective water-closets removed, also in 6 cases where the accom- modation was previously insufficient)	61
Dry ashpits removed and replaced by galvanized iron dustbins ...	22
Dustbins substituted for dry ash-pits where water-closets existed, and provided in cases where privies have been replaced by water-closets	‡27
No. of drains tested	450
No. of tests of above drains made by smoke and water	650
No. of inspections from complaints made at office (verbally or by letter)	2,232
No. of tenement inspections made	17,469
No. of contraventions of Tenement Bye-laws for which notices have been served to obtain remedy	§1,828
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	6,146
Inspections to learn if works ordered were in progress	14,222
Supervisions of work in progress	1,378
Common yards and courts in the worst localities specially visited on Friday afternoons and Saturday mornings to obtain weekly cleansing of same	31,545
Inspections after infectious disease	906
Inspections of milk shops and ice creameries (including retail shops)	1,382
" bakehouses	†805
" offensive trades	931
" wholesale margarine warehouses	96
" as to limewashing of tenements	4,665
" of schools	128
" military billeting stations	615
Miscellaneous Visits	3,168

‡ 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.

† Including 271 inspections made under the Factory and Workshop Acts by the Assistant Inspectors of Workshops.

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1919.

Nature of Complaint.	No. of Cases.	How disposed of.
<i>Public Health Acts :—</i>		
Choked drain	1	Drain cleared without the summons being applied for.
Defective drain	1	Drain reconstructed without the summons being applied for.
Defective W.C. soil pipe	1	Soil pipe repaired without the summons being applied for.
Defective sink waste pipes	2	Wastepipes repaired without the summonses being applied for.
Defective or choked spouting	2	Spouting cleared and repaired without the summonses being applied for.
Yard, passage, staircase, etc., in dirty condition (limewashing required).	1	Limewashing carried out without the summons being applied for.
<i>Public Health Act, 1875, Sec. 36, and Newcastle-upon-Tyne Improvement Act, 1892, Sec. 53 :—</i>		
Houses without sufficient water closets. (Defective W.Cs. to be repaired, furnished with adequate water supply, etc).	7	Conveniences put in order without the summonses being applied for.
Defective pail closets (to be repaired, pails to be renewed, etc).	4	Conveniences put in order without the summonses being applied for.
<i>Newcastle-upon-Tyne Corporation Act, 1911, Sec. 55 :—</i>		
Want of proper dustbins for storage of house refuse	7	Dustbins provided without the summonses being applied for.
<i>Carried forward ...</i>	26	

SUMMARY OF LEGAL PROCEEDINGS ORDERED TO BE TAKEN BEFORE THE
MAGISTRATES FOR THE ABATEMENT OF NUISANCES, ETC.,
DURING THE YEAR 1919.—(Continued).

Nature of Complaint.	No. of Cases.	How disposed of.
<i>Brought forward</i>	26	
<i>Tenement Bye-laws :—</i>		
Contravention of Bye-law No. 6. (Overcrowding).	1	Occupier summoned. Magistrate's order obtained for abatement of overcrowding within 21 days. Subsequently summoned for non-compliance with order, and penalty imposed of 1/- for each day in default. Premises eventually vacated.
Contravention of Bye-law No. 16. (W.C. structure, apparatus, drainage, etc.)	4	W.Cs. repaired without the summonses being applied for.
Contravention of Bye-law No. 27. (Stairs and landings in dirty condition).	1	Necessary cleansing carried out without the summons being applied for.
Contravention of Bye-law No. 34. (Want of water supply for domestic use).	2	Water supplied without the summonses being applied for.
TOTAL	34	

HOUSING.

That the problem of finding houses is by no means less acute than in previous years is shown by the following return :—

CITY ENGINEER'S CENSUS OF UNOCCUPIED HOUSES.

Class of House.	Nov. 1912.	Aug. 1914.	Nov. 1917.	Nov. 1918.	Nov. 1919.
Self-contained	306	137	40	29	43
Flats (each Flat counted as a separate dwelling).	903	75	None.	None.	1
House and Shop combined	68	29	1	2	None.
Tenemented Houses ...	28	3	None.	None.	None.
Total	1,305	244	41	31	44

Bonuses for possession are offered in every evening's paper, as much as £25 for a four-roomed flat, while £10 is nowadays a quite common inducement.

Effect of Bad Housing.—Reference has already been made to the effect of bad housing and overcrowding upon the public health. It is of interest to summarise some of the points. Speaking generally, the wards with the highest populations per acre have also the highest death rates. The converse does not always hold, as some wards, such as Walker, may have small densely packed areas scattered about among wide stretches of open space or farm land. The rates in these will be relatively high. But where the dwellings are evenly distributed and in good sanitary condition, and the population on area is low, the death rate is also low.

Thus the highest death rate from all causes is in All Saints' Ward (23·8), and the lowest in Dene and Jesmond Wards, (11·7) and (11·9) respectively, which occupy respectively also the opposite ends of the scale in regard to quality of housing, and density of population (See Table on page 41).

Similarly infantile mortality generally follows the same rule, and the wards with the highest wastage of child life are again the most crowded ones, thus Armstrong Ward had an infantile mortality rate of 136 deaths per 1,000 births, All Saints' 140, Stephenson 143, Byker 145 and St. Lawrence 172, as compared with rates of 59 and 60 in Dene and Jesmond Wards respectively.

Over a period of twelve years, the deaths per 1,000 births in one room, two room, and three room houses have been respectively 150, 128 and 114, and last year were 148, 125 and 109.

In the case of tuberculosis one sees again the influence of congestion and bad houses in the fact that the highest mortality for the year was in St. Nicholas' Ward, (3.59), Armstrong (2.14), St. Lawrence (2.09), and All Saints' (2.06), while the lowest incidence occurred in Jesmond (0.62).

Again, 28 per cent. of the population live in one and two room houses, yet over 39 per cent. of the deaths from consumption were among these.

As will be noticed previously (page 153), closet conversion has fallen off almost entirely, as has also, since war broke out, the number of nuisances dealt with by notice and otherwise, due, not to any lessening of the need for this work, but chiefly to lack of labour, and to the high price of building materials.

The Housing, Town Planning, etc., Act, 1909.

The house to house inspection which was being carried out under this Act has had to be discontinued entirely owing to the war.

Houses dealt with under the Newcastle-upon-Tyne Improvement Act, 1882, Section 32.

None.

Houses Demolished.—2 tenemented houses (comprising 6 holdings), have ceased to be used as dwellings, having been

demolished during the year in connection with the extension of adjoining business premises.

Houses built during the Year 1919.—The City Engineer reports that there were no houses built during the year under report.

Tenement Bye-laws.—The number of tenemented houses in the City is 3,502, containing 9,932 holdings, as follows:—

1 Room.	2 Rooms.	3 Rooms.	4 Rooms.	5 Rooms.	Total
3,322	5,426	1,068	113	3	9,932

Customs and Inland Revenue Act, 1890, Sec. 26 (2).—

91 applications under this Act were received and 9 certificates granted.

New Buildings and Sanitary Alterations.—230 plans were examined by the Medical Officer of Health before their submission to the Town Improvement and Streets Committee and approved or otherwise by the Medical Officer of Health, and forwarded to the City Engineer for his consideration, as compared with 103 during the previous year.

COMMON LODGING HOUSES.

The number of registered common lodging houses in the City at the end of the year was 55, as in 1918.

In accordance with the requirements of the Newcastle-upon-Tyne Corporation Act, 1911, applications were received at the beginning of 1919, for the re-registration of these houses, all of which were registered as desired, up to the end of the year.

The satisfactory control of these houses by the keepers has been maintained, but the remarks made in the previous Report still apply as to the general unsuitability of many of these houses, particularly in the Quayside area.

Taking the City as a whole, the accommodation afforded by this class of dwelling continues well in excess of the demand.

The following summary shows the accommodation afforded by the common lodging houses in the City :—

Description of Lodgers.	No. of		Accommodation.			
	Houses	Beds.	Married Couples	Single Women	Single Men.	Total.
Married couples and single women ...	3	52	20	42	...	62
Single women and single men ...	2	92	...	47	45	92
Single men, single women and married couples..	3	145	46	50	72	168
Single women only ...	1	18	...	18	...	18
Single men only ...	46	1,595	...	...	1,595	1,595
Totals ...	55	1,902	66	157	1,712	1,935

The total number of lodgers for which the houses were registered was thus 1,935, as against 1,959 at the close of 1918 (a decrease of 24 in the total accommodation). The average number of lodgers per night was 1,534, the highest and lowest numbers on any one night being 1,710 and 1,410 respectively.

REGISTERED COMMON LODGING HOUSES.

SUMMARY OF WORK DONE AND VISITS MADE DURING THE YEAR 1919.

Number of Houses on the register at the end of the year ...	55
Applications for re-registration (Newcastle Corporation Act, 1911, Sec. 63) ; all granted ...	55
Inspections made in the day-time ...	9,492
" " night-time ...	506
Notices served { re washing of bed clothes 220 " limewashing of houses 110 }	330
Contravention of Bye-laws, &c. :—	
Cleaning and ventilation of houses ...	26
Bed-clothes not properly "aired" during prescribed hours ...	11
Cleansing of yards, conveniences, etc. ...	4
Beds and bedding dirty or defective, etc. ...	29
Beds not properly screened ...	1
Structural defects in houses ...	14
Defective water-closets and drains ...	35
Choked drains, water-closets, &c. ...	16
W.Cs. without water ...	6
Defective roofs and choked or defective spouting ...	30
Want of or defective dustbins ...	13
Accumulation of refuse ...	2
Insufficient ventilation to rooms (broken window cords, &c.) ...	4
Statutory limewashing not carried out ...	2
Insufficient bedroom utensils ...	1
Unclassified minor nuisances or defects ...	7
Number of Prosecutions ...	None
Deaths reported (non-infectious disease) ...	9
Cases of infectious disease reported (all tuberculosis) ...	20

FACTORIES AND WORKSHOPS.

FACTORY AND WORKSHOP ACTS.—There are on the Register 1,201 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 following Tables.

During the year, 64 lists of outworkers have been received, 23 employers having sent in lists twice, and 18 employers once.

Included in the lists so received, were 54 names and addresses of out-workers employed outside the City, (which were duly forwarded to the respective districts, as required by law), while three of the lists were received from firms in other districts employing as out-workers persons resident in Newcastle.

Seventy-nine notices as to insanitary conditions in factories and workshops have been received from His Majesty's Inspectors of Factories. 28 of these related to factories, and 51 to workshops. The matters referred to were duly 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 1919.

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.)	182	589	—
Workshops (Including Workshop Laundries.)	4,903		
Workplaces (Other than Outworkers' premises included in Part 3 of this Report.)	453		
Total	5,538	589	—

2.—DEFECTS FOUND.

PARTICULARS.	NUMBER OF DEFECTS.			Number of Prosecu- tions.
	Found.	Remedied.	Referred to H.M. Inspector.	
(1)	(2)	(3)	(4)	(5)
<i>*Nuisances under the Public Health Acts:—</i>				
Want of cleanliness	282	282	—	—
Want of ventilation	22	22	—	—
Overcrowding	5	5	—	—
Want of drainage of floors	—	—	—	—
Other nuisances	88	88	1	—
†Sanitary (insufficient	39	38	—	—
accommodation (unsuitable or defective	87	88	1	—
(not separate for sexes	19	14	—	—
<i>Offences under the Factory and Work- shop Act:—</i>				
Illegal occupation of underground bakehouse (s. 101)	—	—	—	—
Breach of special sanitary require- ments for bakehouses (ss. 97 to 100)	51	51	—	—
Other offences (Excluding offences relating to out- work which are included in Part 3 of this Report.)	—	—	1	—
Total	593	588	3	—

* 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.

FACTORY AND WORKSHOP ACTS.—Continued.

3.—HOME WORK.

NATURE OF WORK.	OUTWORKERS' LISTS, SECTION 107.										OUTWORK IN UNWHOLESALE 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.		Instances.	Prosecutions.	Orders made (Section 110.)	Prosecutions (Sections 109, 110.)		
	Twice in the Year.		Once in the Year.													
	Outworkers.†		Lists.		Outworkers.											
	Lists.†	Con-tractors (3)	Work-men. (4)	Con-tractors (5)	Work-men. (6)	Work-men. (7)										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
Wearing Apparel, Making, &c.	...	44	12	105	18	2	122	34	Nil.	Nil.	15	15	Nil.	Nil.	Nil.	
Upholstering	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Total	...	46	12	107	18	2	122	34	...	...	15	15	...	...	...

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 32 of these cases the lists of outworkers were not received in the month of February or August as required by the Act, but in every case they were subsequently received on the employers being reminded of their default. In the remaining 2 cases (of failing to keep or permit inspections of lists of outworkers) notice was also given and complied with.

* In each case the Notice was served upon the *Outworker*, and was duly complied with.

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Workshops	1,201
Domestic Workshops	232
Workplaces	245
Laundries	37
Bakehouses	222
Total ...	1,937

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)	47
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 ...	79
Reports (of action taken) sent to H.M. Inspectors ...	79
Other:—	
Underground Bakehouses (s. 101):—	
Certificates granted during the year	—
In use at the end of the year	12

6.—TRADES.

Particulars as to the number and nature of the various trades carried on in the workshops of the City.

TRADES.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places
Ærated Water Manufacturers, Beer bottling, etc.	7	...	9
Artificial Stone, Asphalt, Bitumen Solution, Enamel and Cement making	4	...	...
Athletic Outfitters... ..	3	...	...
Bacon Washing	10	...	4
Bags, Baskets, Trunks, Brushes (making and repairing)	14	3	...
Bakehouses	113	109	...
Bouquets and Wreath making	15	...	...
Bedsteads, Bedding and Mattress making	1	1	6
Boat and Bicycle making and repairing	29	7	...
Blacksmiths and Locksmiths	44	...	...
Carried forward ...	240	120	19

6.—TRADES.—*continued.*

TRADES.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places.
<i>Brought forward</i> ...	240	120	19
Boots, Shoes, Slippers (making and repairing)	146	26	—
Carts, Carriages, Coaches, Barrows (making and repairing)... ..	12	—	6
Carpets, Canvas, Water Proof Cover making...	6	—	—
Chemical Works	2	—	—
Confectionery making	9	1	—
Coopers	6	—	—
Cork Cutters	2	—	—
Currants and other Fruit packing and cleaning	4	—	—
Cigarette making and Pipe making and repairing	3	—	—
Dressmaking, Milliners, and Mantle Makers ...	196	104	—
Drysalts	4	—	—
Engravers	5	—	—
Engineers, Electric Heating and Cooking, etc.	24	—	—
Firewood Cutting and Firelighter Makers ...	4	—	1
Fish Curers	3	—	—
Furniture, Automatic Seats, French Polishing and Upholstery	47	6	—
Grain, Ice, Meat, Onions, Oil, packing and storage	24	—	26
Harness making and repairing	12	—	—
Hide and Skin Dealers	—	—	4
Instruments—Mathematical, Musical, etc. (making and repairing)... ..	6	—	—
Jewellery, Watches, Clocks, (making and repairing)	49	6	—
Joiners, Handrailleurs, Ladder Makers, and Wood Carvers and Turners	65	6	—
Lamp Making and repairing	1	—	—
Laundries	33	4	—
Marble Masons and Monumental Sculptors ...	9	—	—
Marine Stores	15	—	29
Miscellaneous Warehouses and Workshops, (which include repairing umbrellas and guns, preparing cattle food and medicine, dressing leather, packing eggs, lard rendering and gut scraping)	22	3	29
Painters' Workshops, and making and bottling Paint and Varnish	19	—	—
Photographers	23	3	—
Pickle and Sauce making	6	—	—
Picture Framers and Gilders	11	—	—
Plasterers, Lath rendering	3	—	—
Plumbers, Gas Fitters and making and repairing Sanitary Pipes and Fittings... ..	61	3	1
Restaurant kitchens	—	—	86
Rubber Stamps and Tyres (making and repairing)	2	—	—
<i>Carried forward</i> ...	1,074	282	201

6.—TRADES—Continued.

TRADES.	Work-shops.	Domestic workshops (including domestic bake-houses and laundries).	Work-places.
<i>Brought forward</i> ...	1,074	282	201
Scales, Weighing Machines and Sewing Machines (making and repairing) ...	8	...	...
Sign Boards, Sun and Venetian Blind (making and repairing) ...	4	...	...
Stained Glass making ...	5	...	...
Stables (Livery, etc.) ...	...	...	33
Tailors ...	188	43	...
Taxidermists, Fur pulling and cleaning ...	6	...	...
Tea Blending and Packing ...	5	...	...
Ticket Writers ...	7	1	...
Timber Yards ...	...	...	11
Tin, Iron Plate and Wire Workers ...	14	1	...
Tripe Dressers ...	6	...	...
Typewriting Machines (repairing) ...	4	...	...
Underclothing (making) ...	26	20	...
Totals ...	1,347	347	245

COUNCIL AND OTHER SCHOOLS.

Sanitary Inspection.—128 inspections of these schools have been made during the year. At 5, certain insanitary conditions were found. (For particulars see page 158.) The matters in question were duly reported to the school authorities, and, except in one instance, have since been remedied.

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. Six of these did not conform to the standard of cleanliness laid down by the Local Government Board in their Regulations under the Act, (containing 32-40 parts of chlorine per 100,000 of flock). In each instance the vendor was cautioned by order of the Sanitary Committee.

For particulars of work done under the *Food and Drugs Acts*, see pages 143-145.

I desire to record my appreciation of the services rendered by the members of the Staff throughout the year, and of the loyal manner in which they have discharged the various duties entrusted to them.

I am, Sir,

Your obedient Servant,

W. HUDSPETH,

*Inspector of Nuisances,
Common Lodging Houses, &c.*

Health Department,

Town Hall.

July, 1920.

