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County Palatine of Chester.

REPORT

OF THE

Medical Officer of Health,
FOR THE YEAR 1919.

BY

MEREDITH YOUNG, M.D., D.P.H.,

Of Lincoln's Inn, Barrister-at-Law.

PRESENTED TO THE

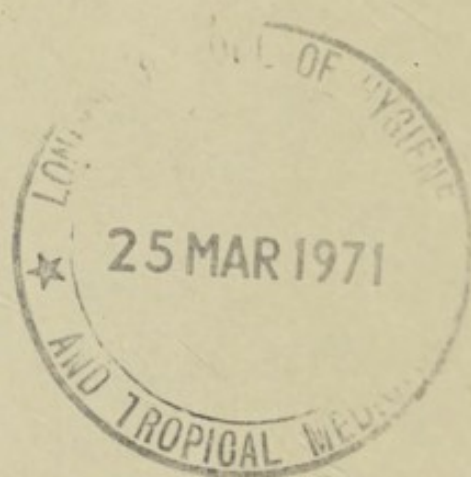
Public Health and Housing Committee

OF THE COUNTY COUNCIL,

October 22nd, 1920.

CHESTER:

PHILLIPSON & GOLDER, PRINTERS, EASTGATE ROW & FRODSHAM STREET.





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Medical Officer of Health

FOR THE YEAR 1918

MEREDITH YOUNG, M.D. D.P.H.

of Chester, Lancashire

Presented to the

Public Health and Housing Committee

of the County Council

October 28th 1920

Printed by

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County Palatine of Chester.

REPORT

OF THE

Medical Officer of Health.

FOR THE YEAR 1882.

MARSHALL YOUNG, M.D., D.P.H.

OF CHESTER, LANCASHIRE.

PRINTED BY THE

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OF THE COUNTY COUNCIL.

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REPORT
OF THE
Medical Officer of Health

For the Year ending December 31st, 1919.

*To the Public Health and Housing Committee of the
County Council of the County Palatine of Chester
and to the Members of the County Council.*



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INTRODUCTION.

*To the Chairman and Members of the
Public Health and Housing Committee,
of the Cheshire County Council.*

MR. CHAIRMAN AND GENTLEMEN,

I beg to submit my Annual Report for 1919 on the health of the County.

The Reports from all the District Medical Officers of Health have not been received, though I have postponed the preparation of my own Report to as late a date as can reasonably be done. At the time of going to press six district reports are still not to hand, though numerous requests have been made for them. Under such conditions it is not possible to give a complete digest of the sanitary circumstances of the whole County. The preparation of abstracts of the Reports of District Medical Officers of Health is in many instances exceedingly difficult owing to the fact that the matter is not presented in sequence and is frequently put under entirely wrong headings. Several Medical Officers of Health, too, repeat year after year the same remarks word for word—for what reason I cannot imagine. The Ministry of Health issue each year model headings for such reports and indicate what they desire to be stated under each heading, but in spite of this very material aid many officers adhere to their old-time practices with anything but satisfactory results.

The health record of the County for 1919 is distinctly satisfactory: there has been a slight decrease in the birth-rate and a decrease in the general death-rate and in the deaths from zymotic disease and amongst infants.

Deaths from cancerous disease continue to be recorded with increasing frequency and despite the vast amount of

research into the problems of the causation of this group of diseases we are still limited to the one line of prevention, viz., earlier diagnosis and earlier operation.

The Council's Maternity and Child Welfare Scheme has been extended in many directions and it would be impossible to exaggerate the benefits accruing from it. Its success is due in the first place to the keen attention to detail given by Dr. Jean R. Shaw and secondly to the splendid assistance rendered by the large band of voluntary lady workers.

The responsibilities of the Public Health Department of your Council have grown enormously during recent years and they will probably increase fairly rapidly in the future. The sympathetic consideration of the very numerous details which it has been my duty to place before your Committee from time to time have been greatly appreciated by my staff and myself and we desire to tender our joint thanks to you for the kindness with which you have always received our suggestions.

I am,

Mr. Chairman and Gentlemen,

Yours obediently,

MEREDITH YOUNG,

County Medical Officer of Health.

43, Foregate Street,

Chester,

September, 1920.

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REPORT OF THE Medical Officer of Health,

For the Year ended December 31st, 1919.

Section I.—Area and Population.

Area.

In the Census Report of 1911 this is given as 640,823 acres.

This area is distributed as follows:—

6 Municipal Boroughs	...	...	15,588 acres.
35 other Urban Districts	...	...	80,832 „
12 Rural Districts	...	...	544,503 „
Total	...	...	640,823 „

Population.

The population of the Administrative County, as enumerated at the Census of 1911, was 597,771.

This year the population is estimated as under:—

	For Death Rate.	For Birth Rate.
6 Municipal Boroughs	... 167,180	... 174,154
35 other Urban Districts	... 255,576	... 266,232
12 Rural Districts	... 178,162	... 185,592
Total	... 600,918	... 625,978

The Registrar-General supplies this Department and the District Medical Officers of Health with certain figures direct and the information given in this Report is based on such figures. His estimates of "present population" sometimes exceeds that of the Local Medical Officer of Health, with the result that the birth-rates in this return are in some cases lower than in the local Reports. Apparently some Medical Officers do not accept the figures supplied by the Registrar-General and their birth and death-rates do not coincide with the figures in my Reports, but I am, of course, bound to adopt the official figures.

In the Table accompanying this Report certain figures relating to population, area, births, deaths, &c., are given

for each District separately and for the County as a whole. A brief reference may be made to the more important of these figures.

Special attention is directed to the remarks of the Registrar-General, which have an important bearing on the figures shown herein:—

The “death-rate population” excludes all non-civilian males, whether serving at home or abroad. This is necessary for the purposes of local death-rates, because it has proved impossible to transfer the deaths of non-civilians to their areas of residence or to deal in any other satisfactory manner with the local mortality of this element in the population. These estimates are based mainly upon the rationing returns kindly placed at the Registrar-General’s disposal by the Ministry of Food.

The “birth-rate (and marriage-rate) population” on the other hand is intended to include all the elements of the population contributing to the birth and marriage-rates. It consists therefore of the death-rate or civilian population *plus* all non-civilians enlisted from this country, whether serving at home or abroad. This non-civilian element has been distributed over all the districts in the country in proportion to their estimated civilian population.

It will be seen from the above that the deaths of all men in the Army and Navy are not included in these Returns.

The figures for the various Districts are as under:—

Municipal Boroughs. (6)	Population.		Population for Birth-rate.	Population for Death-rate.
	1901.	1911.	1919.	1919.
Congleton	10707	11309	12300	11808
Crewe	42074	44960	47544	45640
Dukinfield	18929	19422	19467	18688
Hyde	32766	33437	33908	32550
Macclesfield	34624	34797	33785	32432
Stalybridge	27673	26513	27150	26062

Urban Districts. (35)	Population.		Population for Birth-rate.	Population for Death-rate.
	1901.	1911.	1919.	1919.
Alderley Edge ...	2891	3143	3579	3436
Alsager ...	2597	2743	2897	2781
Altrincham ...	16831	17813	19516	18735
Ashton-upon-Mersey ...	5563	7234	8226	7897
Higher Bebington ...	1540	1689	1851	1777
Lower Bebington ...	8398	11401	14791	14199
Bollington ...	5245	5224	5302	5090
Bowdon ...	2788	3044	3107	2983
Bredbury and Romiley	7185	8683	8542	8200
Bromborough ...	1891	1974	2523	2422
Buglawton ...	1452	1438	1701	1633
Cheadle and Gatley ...	7916	9913	10714	10285
Compstall ...	875	908	855	821
Ellesmere Port and Whitby ...	4275	10366	13932	13374
Hale ...	4562	8351	9983	9583
Handforth ...	911	934	961	923
Hazel Grove & Bramhall	7934	9631	10062	9659
Hollingworth ...	2447	2580	2299	2207
Hoole ...	5341	5929	6101	5857
Hoylake & West Kirby	10911	14029	15987	15347
Knutsford ...	5172	5760	5044	4842
Lymm ...	4707	4989	5025	4824
Marple ...	5595	6483	6647	6381
Middlewich ...	4669	4909	4788	4596
Mottram in Longdendale	3128	3049	2921	2804
Nantwich ...	7722	7815	7346	7052
Neston and Parkgate ...	4154	4596	4597	4413
Northwich ...	17611	18151	19892	19096
Runcorn ...	16491	17353	19315	18542
Sale ...	12088	15044	17009	16328
Sandbach ...	5558	5723	5837	5603
Tarporley ...	2644	2604	2690	2582
Wilmslow ...	7361	8153	8553	8211
Winsford ...	10382	10770	11935	11457
Yeardsley-cum-Whaley	1487	1659	1704	1636

Rural Districts. (12)	Population.		Population for Birth-rate.	Population for Death-rate.
	1901.	1911.	1919.	1919.
Bucklow	19890	22868	24751	23761
Chester	10908	12447	11267	10816
Congleton	12220	12821	12799	12287
Disley	2827	2958	3122	2997
Macclesfield	15740	16628	16003	15362
Malpas	4488	4643	4473	4294
Nantwich	23197	24995	23749	22798
Northwich	22073	23270	24373	23397
Runcorn	23244	28216	28291	27159
Tarvin	12614	13187	12757	12246
Tintwistle	2105	2193	1987	1907
Wirral	13905	19022	22020	21138

Section II.—Births and Deaths.

Births.

The total number of births registered in the Administrative County during 1919 was 9,999, equal to a birth-rate of 15.9 per 1,000 of the estimated population. Comparative statistics are:—

England and Wales	...	...	18.5
96 Great Towns ...	...	..	19.0
148 Smaller Towns	...	...	18.3
London	...	...	18.3

There were 161 more births in Cheshire in 1919 than during the previous years.

The highest birth-rates were:—

Neston and Parkgate U.D.	...	24.3
Ellesmere Port U.D.	...	22.6
Middlewich U.D.	...	21.5
Runcorn U.D.	...	20.6
Sandbach U.D.	...	20.5
Lower Bebington U.D.	...	20.2

The lowest rates were:—Bowdon U.D., 5.7; Higher Bebington U.D., 10.2; and Compstall U.D., 10.5.

The total number of illegitimate births in the Administrative County was 585, or 21 less than last year.

Deaths.

The total number of deaths occurring in the Administrative County during 1919 was 8,066, equal to a death-rate of 13.4 per 1,000 of the estimated population. In 1918 the death-rate was 16.2. Comparative statistics are:—

England and Wales	...	...	13.8
96 Great Towns	...	...	13.8
148 Smaller Towns	...	...	12.6
London	...	...	13.4

The rates vary very considerably. The highest rates are recorded in the following districts:—

Stalybridge Borough	...	...	17.9
Hollingworth U.D.	...	...	17.2
Dukinfield Borough	...	...	16.8
Hyde Borough	...	...	16.1
Mottram U.D.	...	...	16.4

The lowest rates are recorded in the following districts:—

Hoole U.D.	...	...	9.2
Bromborough U.D.	...	...	9.4
Alderley U.D.	...	...	9.8

The total deaths from *Influenza* in the County during the year was 884, compared with 1,681 in 1918.

Zymotic Diseases.

The total number of deaths from this special group of diseases in the Administrative County during 1919 was 222, equal to a zymotic death-rate of .36 per 1,000 of the estimated population. The rates were low except in the Ellesmere Port U.D., where it was 1.8 per 1,000.

Infantile Mortality.

Your Council commenced their scheme of Maternity and Child Welfare on the 1st April, 1916. The larger portion of the County comes within the scheme, but there are a number of districts which are responsible for their own schemes.

There have been 829 deaths of infants under one year in the Administrative County during 1919, a number equivalent to 83 per 1,000 of the recorded births. In 1918 there were 839 deaths, the rate being 85 per 1,000.

Comparative statistics are:—

England and Wales	...	...	89
96 Great Towns	...	...	93
148 Smaller Towns	...	...	90
London	...	...	85

The above rates have ruled highest in the following districts:—

Compstall U.D.	...	...	222
Tintwistle R.D.	...	...	160
Higher Bebington U.D.	...	...	157
Alsager U.D.	...	...	156
Malpas R.D.	...	...	139

In Handforth, Hollingworth and Lymm there were no deaths under one year. This is particularly creditable to Lymm with 78 births.

Low rates were recorded in the following districts:—

Knutsford U.D.	...	...	13
Alderley Edge U.D.	...	...	23
Hoole U.D.	...	...	30
Cheadle and Gatley	...	...	41

Further comments on this subject appear in the special section of this Report dealing with Maternity and Child Welfare.

Statistics for England and Wales.

The Registrar-General in a Preliminary Report just issued remarks:—

“According to the quarterly returns furnished by local registrars, 692,680 births and 504,254 deaths were registered in England and Wales in the year 1919. The natural increase of population, by excess of births over deaths, was, therefore, 188,426, the average annual increase in the preceding five years having been 222,445. This statement excludes all war deaths except those registered in this country. The number of persons married during the year was 738,014.

The marriage-rate in England and Wales during the year 1919 was 19.7 per 1,000 of the estimated population in the middle of the year, the birth-rate 18.5 per 1,000 and the civilian death-rate 13.8 per 1,000. Infant mortality was 89 per 1,000 registered births. The marriage-rate was higher and infant mortality lower than in any other year on record.”

Tuberculosis. (a) Pulmonary Forms.

These were responsible for 452 deaths, viz., 232 males and 220 females—a number considerably less than in the preceding year. The number of deaths in the urban areas

was 337 and in the rural areas 115. The highest number of deaths occurred in the following districts:—

Altrincham U.D.	...	...	27
Hyde M.B.	...	...	32
Macclesfield M.B.	...	...	36
Stalybridge M.B.	...	...	30
Hoylake and West Kirby U.D.	...	...	20
Crewe M.B.	...	...	26
Ellesmere Port and Whitby U.D.	...	...	13

(b) Non-Pulmonary Forms.

These caused 140 deaths, for which tuberculous meningitis was mainly responsible, 55 deaths being attributable to this condition.

For further details see Report by Dr. T. H. Peyton, County Tuberculosis Officer.

Cancer and Malignant Diseases.

The toll exacted by this group of diseases continues to grow heavier each year. During 1919 no fewer than 747 deaths were caused by malignant diseases as compared with 678 in 1918 and 711 in 1917. The cancer death-rate per 1,000 of the civilian population was thus 1.24 as compared with a rate of 1.23 for 1918 and 1.26 for 1917.

Districts which have suffered heavily from this class of disease are noted below:—

	Rate per 1,000. 1917.	Rate per 1,000. 1918.	Rate per 1,000. 1919.
Altrincham U.D. ...	1.60	1.60	0.6
Crewe M.B. ...	1.12	1.21	1.16
Hoylake and West Kirby U.D.	1.37	—	0.9
Hyde M.B. ...	1.23	1.4	1.35
Macclesfield M.B.	1.86	1.89	1.60
Northwich U.D. ...	1.07	2.18	1.26
Runcorn U.D. ...	1.06	—	1.44
Sale U.D. ...	1.32	—	1.1
Stalybridge M.B. ...	0.89	1.60	1.1
Winsford U.D. ...	1.59	—	1.1
Bucklow R.D. ...	0.99	—	1.12
Chester R.D. ...	1.57	—	1.3
Macclesfield R.D.	1.99	1.14	0.9
Nantwich R.D. ...	1.31	—	1.08
Northwich R.D. ...	1.19	1.38	0.66
Runcorn R.D. ...	1.45	—	1.6
Tarvin R.D. ...	1.47	1.43	1.1
Wirral R.D. ...	—	1.33	0.7

The deaths were divided as to 308 in males and 439 in females.

The recent increase in cancer mortality for the County as a whole is clearly shewn in the following statement:—

Year.	Death-rate per 1,000 of Population.	Year.	Death-rate per 1,000 of Population.
1900	0.70	1910	0.84
1901	0.90	1911	0.96
1902	0.74	1912	0.92
1903	0.79	1913	1.01
1904	0.79	1914	1.02
1905	0.77	1915	1.25
1906	0.85	1916	1.25
1907	0.83	1917	1.26
1908	0.84	1918	1.23
1909	0.86	1919	1.24

In the following paragraphs I have paraphrased or reproduced a section of a most valuable Report by the American Society for the Control of Cancer published for the information of the medical profession.

The early diagnosis of cancer is the factor of greatest importance in the control of the disease. But cancer manifests itself by a variety of symptoms. When there is a doubt as to its presence two courses are open; the first is to wait for the development of the symptoms and the second is to proceed at once to an "exploratory" operation. Waiting for further and more definite symptoms is a policy which results in enormous mortality. Completion of the diagnosis by exploratory operation is the method which "promises the greatest and most immediate reduction of the mortality of cancer."

"Most of the physicians of this country (America) have been taught the distinctive and typical symptoms of cancer and by the extent to which they are typical they are the symptoms of cancer which is no longer early but has already progressed to the inoperable stage. It is the early and uncertain cases that must be recognised if any material improvement in the mortality is to be brought about."

On the subject of "precancerous" conditions to which I have alluded for many years in my Annual Reports the monograph proceeds:—

One factor which during the last ten years has proved to be of great importance in the origin of cancer is the

element of chronic irritation. As the various theories of the parasitic origin of cancer have been disproved, the element of chronic irritation has been found to become an increasingly important factor in the incidence of cancer in one region after another. This fact has made it possible to give prophylactic treatment for the purpose of preventing the occurrence of cancer, a procedure which is exactly as rational as the prophylactic use of antitoxins in many of the infectious diseases and in fact is perhaps a more effective life-saving measure. This prophylactic treatment consists of the removal by a minor operation, often under local anesthesia, of lesions such as keratoses (more or less permanent thickening of the outer layer of the skin), moles, fissures, chronic ulcerations and indurations and the benign tumors, which so often precede the development of cancer itself. This prophylaxis further demands the avoidance of sources of chronic irritation, such as, for instance, the removal of an ill-fitting tooth-plate which causes irritation of the gum, or the repair, at as early a date as possible, of the deeper lacerations of the cervix (neck of womb) which occur at childbirth.

The more important lesions which may be regarded as of precancerous significance may be summarized as follows:

1. *Pigmented moles* have long been recognized to be the starting-point of that most fatal form of malignant disease, the so-called melanotic sarcoma. Not all moles, of course, undergo that transformation, but all must be held to contain that inherent possibility of development and on the slightest sign of increase in size, irritation or induration, they should be widely removed by radical operation. Pigmented moles on the hands and feet are especially liable to repeated trauma (injury) and thus to malignant change.

2. The *senile keratoses*, or scaling patches of heaped up squamous epithelium (outer layer of skin), so common on the face and exposed parts of the body of those of advancing years, are among the most common starting-points for cancer of the skin.

3. *Chronic ulcers and fissures of the skin* due to old burns and scars, the effects of roentgen rays and radium, tuberculosis of the skin and old syphilitic lesions often cause cancer. To this category belongs the "Kangri" cancer of Kashmir, occurring at the site of chronic ulceration due to burning from the Kangri basket, or hot stove carried against the abdominal skin within the clothing of the natives.

4. *Gallstones* are accompanied by chronic irritation of the gallbladder and in a certain percentage of cases carcinoma of the gallbladder occurs.

5. A certain proportion of *ulcers of the stomach* are known to become the site of cancer of that organ and a history which can be interpreted as evidence of previous ulcer is obtainable in certain cases of gastric cancer.

6. *Erosions and lacerations of the cervix* (neck) of the uterus, the almost inevitable result of childbirth, are the most common factors predisposing to cancer of the cervix. While it is customary for the physician to repair immediately the more serious lacerations of the cervix, less extensive lesions can be detected only at a later period. The routine examination of all women for cervical lesions three months after labour has been advocated, that these lesions may be immediately repaired and the predisposition to cancer avoided. It is advisable that all women who have borne children, as they approach the menopause (change of life) should have a vaginal examination and an inspection of the cervix at reasonable intervals until the menopause is well established and the normal atrophic changes have taken place. Deep lacerations should be repaired and superficial lesions, if resistant to local treatment, are sufficient indication for amputation of the cervix.

7. *Cystitis* (inflammation of the bladder) of one form or another often precedes cancer of the bladder and the irritation of *Bilharzia* parasites or of specific chemical irritants, such as anilin, are recognized as producing changes in the bladder lining which may go on to carcinoma.

8. Carcinoma of the buccal mucous membranes—the lip, tongue, cheek and jaw—have long been associated with one or another source of *chronic irritation*. In this country the most common source of chronic irritation of the buccal mucous membranes is the use of tobacco. It is significant, also, that in other countries, as the orient, cancer of the buccal mucous membranes appears to arise most directly as the consequence of the chewing of other irritants, such as the buyo leaf or the betel nut. Syphilis is also a recognized predisposing factor to cancer of the mouth and the chronic condition of the buccal mucous membrane—leukoplakia (white or blueish-white hard patches)—has repeatedly been observed to progress into carcinoma while under treatment. The irritation of ill-fitting tooth plates, or the chronic irritation of pyorrhea

alveolaris occasionally can be recognized as forerunners of cancer of the alveolar processes (jaw).

9. *Involution changes* (atrophy or wasting) of a physiologic nature appear to predispose to cancer in certain organs, notably the female breast and the male prostate. In the breast the involution phenomena which give rise to the condition commonly known as chronic cystic mastitis show an incidence of carcinoma estimated at from 10 to 25 per cent., while in the prostate chronic prostatitis and hypertrophy precede the symptoms of carcinoma in a notable proportion of all cases.

10. *Many tumors which are essentially benign* in character have been shown to be capable of malignant transformation, especially in the later years of life.

In all of the foregoing conditions the possibility, if not the probability, of cancerous transformation has been shown to be a serious element in prognosis. *There can be no question that the cure or the removal of all such lesions is a vital indication. Removal of the predisposing causes of cancer, and the early recognition of cancer, when it is present, are the two measures which give promise at the present time of yielding the greatest results in reducing the mortality of the disease.*

Dr. Herbert Snow, a well-known authority on this subject and the author of a number of papers on it, writes in much the same strain in the "Nineteenth Century" (Sept., 1920). Paraphrased, his observations are as under:—The existing causes of cancer are supposed to be a mystery; nothing is further from the truth. Cancer is not one malady—it is a host of maladies having ten primary and about 20 secondary modes of manifestation. In women worry, anxiety, trouble, work and general wear and tear largely help the development of cancer in those special organs which, so to speak, wither up when their special function has been completed. The increasing demands of civilisation for this reason are to be reckoned as assistant causes of cancer: *per contra* the cultivation of greater equanimity and cheerfulness, coupled with obedience to the maxim "keep fit" may go a long way towards the prevention of the development of cancer.

In men cancer is usually due in the first instance to some breach of Nature's laws, *e.g.*, chronic alcoholism and other unsavoury maladies.

On the question so often hopefully argued of the spontaneous disappearance of cancer, Dr. Snow says that this is a fallacy and that such a thing has "never occurred since the world began." The main reason for failure of operative interference in his opinion (and here he is amply supported by everyone in the surgical world) is extension of the growth by reason of its not having been removed in the early stage before auto-infection has set in. He is in agreement with most authorities when he states that a large number of doctors educated on existing lines cannot diagnose cancer in the early stages, *i.e.*, before the time-limit for operation has been passed and he goes on to say that if cancer be diagnosed in the first stage of its growth a permanent cure can be promised as safely as one can prophesy relief of toothache when the offending tusk has been removed.

"Once qualify your doctors to diagnose quickly and then properly treat these cancer cases and a considerable part of the battle would be won. At present the very opposite is the case not only here, but in Germany, America and everywhere else. . . . We want a race of doctors with full scientific equipment, competent to deal practically with a terrible disease scourge working havoc enough in the present generation, threatening much greater among those to come."

Influenza.

The deaths recorded as due to this disease during 1919 numbered 884, or approximately half the number which occurred during 1918.

In some areas it has been found practicable to enrol a number of women possessing a reasonable amount of skill in home-nursing whose services are available—under professional direction—for the nursing of patients during widespread outbreaks of influenza and certain other epidemic diseases. Provided the right kind of woman is employed, this system is to be commended, particularly now when the exigencies of war have produced a large body of educated people who have gained a fair amount of nursing experience. This kind of work is particularly suitable for those women who have assisted to nurse the sick and wounded under the schemes of the Order of St. John and the British Red Cross Society.

Diphtheria.

This disease has not been so prevalent during 1919 as it was in the few preceding years. There were 66 deaths due to diphtheria. No serious outbreaks occurred, though in the

Crewe following districts the number of cases was somewhat high:—
~~Congleton~~ M.B. (59), Dukinfield M.B. (37), Macclesfield M.B. (47), Nantwich U.D. (41), Winsford U.D. (24), Congleton R.D. (31) and Higher Bebington (8).

Enteric (Typhoid) Fever.

This disease appears to be a vanishing one. There are only five deaths recorded as due to it during 1919 out of a total of 39 cases notified. The greatest number of cases reported in any one district was in Crewe, where four were notified.

Measles.

There were 31 deaths ascribed to measles during the year. A few outbreaks occurred, but none of a serious character.

Whooping Cough.

The deaths from this disease numbered 28—less than one quarter of those occurring during the previous year.

Deaths from Violence.

There is again a slight increase in these deaths as compared with previous years, viz., 236, exclusive of suicide. There were in addition 43 deaths from suicide recorded.

Puerperal Fever.

Under this heading we have a record of 15 deaths. The most careful enquiries are conducted into all these deaths and penal procedure is advocated where any evidence of negligence or malpraxis on the part of a midwife is obtained. The stern policy pursued by the Central Midwives Board in cases of proved neglect is having a highly beneficent effect and is undoubtedly raising the standard of cleanliness and asepsis amongst practising midwives.

Section III.—Infectious Diseases.

General.

The following statement gives a summary of the cases of infectious disease notified during the year:—

			Total.
Small-pox	...	...	10
Scarlet Fever	...	...	1383
Diphtheria	...	...	642
Enteric (Typhoid Fever)	...	...	39
Puerperal Fever	...	...	27
Erysipelas	...	...	191

The following Table taken from the Annual Return of the Local Government Board shews the incidence or attack rates of certain infectious diseases:—

Statistics of Incidence of Notifiable Infectious Diseases, 1919.

COUNTY OF CHESTER.	Estimated Civil Population in the middle of 1919.	Small-pox		Scarlet Fever.		Diphtheria.		Enteric Fever.		Puerperal Fever.		Erysipelas.	
		Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.
ADMINISTRATIVE COUNTY ...	600,918	10	0·02	1383	2·30	642	1·07	39	0·06	27	0·04	191	0·32
COUNTY BOROUGH—													
Birkenhead ...	148,052	2	0·01	623	4·21	188	1·27	16	0·11	19	0·13	65	0·44
Chester ...	40,764	—	—	97	2·38	43	1·05	7	0·17	2	0·05	4	0·10
Stockport ...	125,629	—	—	424	3·38	98	0·78	10	0·08	8	0·06	58	0·46
Wallasey ...	95,424	3	0·03	290	3·04	70	0·73	3	0·03	2	0·02	22	0·23
AGGREGATE OF BOROUGH AND URBAN DISTRICTS	422,756	10	0·02	1005	2·38	414	0·98	26	0·06	19	0·04	152	0·36
AGGREGATE OF RURAL DISTRICTS	178,162	—	—	378	2·12	228	1·28	13	0·07	8	0·04	39	0·22
BOROUGH & URBAN DISTRICTS—													
Alderley Edge ...	3,436	—	—	3	0·87	1	0·29	—	—	—	—	1	0·29
Alsager ...	2,781	—	—	—	—	—	—	—	—	—	—	—	—
Altrincham ...	18,735	—	—	21	1·12	2	0·11	2	0·11	2	0·11	5	0·27
Ashton-upon-Mersey ...	7,897	—	—	6	0·76	4	0·51	—	—	—	—	1	0·13
Bollington ...	5,090	—	—	1	0·20	10	1·96	1	0·20	—	—	1	0·20
Bowdon ...	2,983	—	—	4	1·34	2	0·67	—	—	—	—	—	—
Bredbury and Romiley ...	8,200	—	—	6	0·73	10	1·22	2	0·24	—	—	2	0·24
Bromborough ...	2,422	—	—	14	5·78	6	2·48	—	—	1	0·41	1	0·41
Buglawton ...	1,633	—	—	—	—	—	—	—	—	—	—	2	1·22
Cheadle and Gatley ...	10,285	—	—	50	4·86	11	1·07	—	—	—	—	7	0·68
Compstall ...	821	—	—	1	1·22	—	—	2	2·44	—	—	—	—
Congleton ...	11,808	—	—	6	0·51	13	1·10	—	—	3	0·25	6	0·51
Crewe ...	45,640	—	—	44	0·96	59	1·29	—	—	4	0·09	12	0·26
Dukinfield ...	18,688	—	—	119	6·37	7	0·37	4	0·21	1	0·05	8	0·43
Ellesmere Port and Whitby ...	13,374	—	—	221	16·52	37	2·77	—	—	—	—	11	0·82
Hale ...	9,583	—	—	14	1·46	3	0·31	—	—	1	0·10	3	0·31
Handforth ...	923	—	—	1	1·08	—	—	—	—	—	—	—	—
Hazel Grove and Bramhall ...	9,659	—	—	32	3·31	—	—	2	0·21	—	—	1	0·10
Higher Bebington ...	1,777	—	—	5	2·81	8	4·50	—	—	—	—	2	1·13
Hollingworth ...	2,207	—	—	—	—	3	1·36	—	—	—	—	—	—
Hoole ...	5,857	—	—	8	1·37	7	1·20	3	0·51	2	0·34	—	—
Hoylake and West Kirby ...	15,347	—	—	93	6·06	15	0·98	1	0·07	—	—	3	0·20
Hyde ...	32,550	—	—	43	1·32	22	0·68	3	0·03	—	—	31	0·95
Knutsford ...	4,842	—	—	9	1·86	3	0·62	1	0·09	1	0·21	2	0·41
Lower Bebington ...	14,199	10	0·70	128	9·02	9	0·63	—	—	—	—	8	0·56
Lymm ...	4,824	—	—	5	1·04	5	1·04	2	0·41	—	—	—	—
Macclesfield ...	32,432	—	—	21	0·65	47	1·45	—	—	—	—	7	0·22
Marple ...	6,381	—	—	2	0·31	4	0·63	1	0·16	—	—	2	0·31
Middlewich ...	4,596	—	—	1	0·22	7	1·52	—	—	—	—	3	0·65
Mottram-in-Longdendale ...	2,804	—	—	1	0·36	1	0·36	—	—	—	—	—	—
Nantwich ...	7,052	—	—	28	3·97	4	0·57	—	—	—	—	2	0·28
Neston and Parkgate ...	4,413	—	—	11	2·49	41	9·29	—	—	—	—	1	0·23
Northwich ...	19,096	—	—	6	0·31	20	1·05	—	—	1	0·05	2	0·10
Runcorn ...	18,542	—	—	34	1·83	13	0·70	1	0·05	—	—	8	0·43
Sale ...	16,328	—	—	13	0·80	7	0·43	—	—	—	—	6	0·37
Sandbach ...	5,603	—	—	7	1·25	1	0·18	—	—	1	0·18	—	—
Stalybridge ...	26,062	—	—	32	1·23	8	0·31	—	—	2	0·08	10	0·38
Tarporley ...	2,582	—	—	1	0·39	—	—	—	—	—	—	—	—
Wilmslow ...	8,211	—	—	2	0·24	—	—	—	—	—	—	—	—
Winsford ...	11,457	—	—	8	0·70	24	2·09	1	0·09	—	—	4	0·35
Yeardsley-cum-Whaley ...	1,636	—	—	4	2·44	—	—	—	—	—	—	—	—
RURAL DISTRICTS—													
Bucklow ...	23,761	—	—	37	1·56	16	0·67	2	0·08	—	—	8	0·34
Chester ...	10,816	—	—	30	2·77	10	0·92	5	0·46	2	0·18	2	0·18
Congleton ...	12,287	—	—	30	2·44	6	0·49	1	0·08	—	—	2	0·16
Disley ...	2,997	—	—	7	2·34	31	10·34	1	0·33	—	—	2	0·67
Macclesfield ...	15,362	—	—	17	1·11	12	0·78	—	—	—	—	7	0·46
Malpas ...	4,294	—	—	—	—	1	0·23	—	—	—	—	—	—
Nantwich ...	22,798	—	—	27	1·18	26	1·14	—	—	3	0·13	4	0·18
Northwich ...	23,397	—	—	19	0·81	46	1·97	1	0·04	—	—	1	0·04
Runcorn ...	27,159	—	—	83	3·06	41	1·51	2	0·07	2	0·07	8	0·29
Tarvin ...	12,246	—	—	3	0·24	16	1·31	1	0·08	—	—	1	0·08
Tintwistle ...	1,907	—	—	3	1·57	1	0·52	—	—	—	—	—	—
Wirral ...	21,138	—	—	122	5·77	22	1·04	—	—	1	0·05	4	0·19

Statement of Incidents of Nighttime

1. Name of Person: _____

2. Date of Incident: _____

3. Time of Incident: _____

4. Location of Incident: _____

5. Description of Incident: _____

6. Name of Person: _____

7. Date of Incident: _____

8. Time of Incident: _____

9. Location of Incident: _____

10. Description of Incident: _____

11. Name of Person: _____

12. Date of Incident: _____

13. Time of Incident: _____

14. Location of Incident: _____

15. Description of Incident: _____

16. Name of Person: _____

17. Date of Incident: _____

18. Time of Incident: _____

19. Location of Incident: _____

20. Description of Incident: _____

21. Name of Person: _____

22. Date of Incident: _____

23. Time of Incident: _____

24. Location of Incident: _____

25. Description of Incident: _____

26. Name of Person: _____

27. Date of Incident: _____

28. Time of Incident: _____

29. Location of Incident: _____

30. Description of Incident: _____

Small-pox.

The whole of the cases notified occurred in the Lower Bebington U.D. and in the opinion of the Medical Officer of Health for that District (Dr. J. B. Yeoman) were due to infection from the Liverpool Port Sanitary Hospital at New Ferry. I cannot say that I am a believer in the aerial transmission of small-pox, but there are numerous other ways in which this disease can be carried from a small-pox hospital to adjoining premises. The occasion referred to is by no means the only one on which small-pox has appeared in the vicinity of this Hospital under circumstances which appeared to point to the Hospital being the direct or indirect source of infection.

The spread of the disease was admirably controlled by the local Health Staff. I visited the district and saw certain of the cases in company with Dr. Yeoman.

Scarlet Fever.

The prevalence of this disease was most marked in Ellesmere Port and Whitby U.D., where 221 cases were notified during the year. Lower Bebington U.D. also suffered severely, having 128 cases; next in order came Dukinfield M.B. (119 cases), Bromborough U.D. (14 cases), Cheadle and Gatley U.D. (50 cases) and the Wirral R.D. (122 cases). With two exceptions, therefore, the Wirral Peninsula absorbed the larger number of cases of this disease, which was also prevalent to a marked extent in the County Boroughs of Birkenhead and Wallasey. Only 27 deaths occurred amongst the 1,383 cases reported.

Diphtheria.

Of the 642 cases notified in the County area the largest number occurred in the Borough of ~~Congleton~~—59 cases. The attack rate per 1,000 of the population, however, ruled highest in Disley R.D., where it was 10.34; the disease appeared to spread to this area from an adjoining district in Derbyshire. Neston and Parkgate also had a severe visitation, with 41 cases, giving an attack-rate per 1,000 of the population of 9.29. Other areas where the attack-rate ruled high were:—

		Attack Rate per 1000 of population.
Higher Bebington U.D.	...	4.50
Ellesmere Port U.D.	...	2.77
Bromborough U.D.	...	2.48
Winsford U.D. ...	...	2.09
Northwich R.D. ...	...	1.97
Bollington U.D. ...	...	1.96

Enteric (Typhoid) Fever.

The 39 cases of this disease notified during 1919 give an attack-rate per 1,000 of the population of only 0.06. In no part of the County were there more than isolated cases. The largest number of cases reported in any one area was five during the whole year in the Chester R.D. This has been the record of the County for many years and I think it can be fairly attributed to improvement of general sanitation.

Puerperal Fever.

Twenty-seven cases were reported, of which 19 were in urban and eight in rural areas. Fifteen deaths are recorded. Some further remarks on this disease will be found in the Section on Maternity and Child Welfare.

Malaria.

In view of the possible transmission of this disease from patients who have become infected during the war it is important to realise the fact that there are a good many localities in Cheshire where anopheline mosquitoes are to be found. They are known, for instance, to be abundant in Delamere Forest and in a number of places along the line of the River Gowy. The *anopheles maculipennis* has been found at Hatton Heath, Christleton, Rowton, Saughton, Stamford Bridge, Tarvin and Waverton; the *anopheles bifurcatus* has been found at Aldford, Holmes Chapel, Church Hulme and Mickle Trafford and the *anopheles plumbeus* at Poynton. The anopheline mosquito, if it bites a man who has been suffering for a few days from malaria and has sexual forms of the malaria parasites in his blood, takes these parasites into its stomach, where they develop in about 15 to 20 days into sporozoites (embryo parasites). When so developed these parasites travel to the salivary glands of the mosquito and when the mosquito next bites a man some of these embryo parasites are injected into his blood and produce a malarial infection in him similar to that of the patient from whom the blood has originally been sucked.

It would be of interest to know more fully the districts in Cheshire in which anopheline mosquitoes are to be found. The Keeper of Entomology, British Museum (Natural History), London, S.W.7, will at any time furnish a report on specimens submitted to him for examination. Such specimens should be carefully packed in tissue paper or cotton wool, preserved from crushing and accompanied by a note as to the prevalence of the particular species in the district concerned and the name and address of the sender.

Other Infectious Diseases.

Two deaths of males occurred from cerebro-spinal meningitis (spotted fever), four from poliomyelitis and one from septicæmia pestis (septicæmic plague).

Bacteriological Examinations.

I am indebted to Professor Delépine, Director of the Public Health Laboratory, University of Manchester, for the following statement shewing the number of examinations made on behalf of the Council during the year:—

Diphtheria	Typhoid Fever.	Fixation of Complement	Bovine Tuberculosis Milk.	Bacteriological
Total +	Total +	Total +	Total +	Total
18 1	1 ...	1 1	1 ..	1

VARIOUS INVESTIGATIONS.

B. Date	Nature	No. of Samples.
28/1/19 ...	Throat swab encephalitis ... lethargica	1
28/6/19 ...	Nasal " " ...	1
28/6/19 ...	Tonsils of Child ...	1
15/12/19 ...	Milk for diphtheria ...	2

The number of samples of water taken for bacteriological examination is not so large as it should be. In an increasing number of cases the County Analyst reports as the result of a chemical analysis that a water supply is suspicious and asks for his opinion to be confirmed or otherwise by the more searching test of a bacteriological examination. Although the County Council pays the cost of this examination, the required sample is not always collected locally, the reason presumably being the time, care and trouble involved. This is one of the minor matters which a County Sanitary Inspector could well take in hand.

I should also like to see the Manchester Public Health Laboratory utilised much more by medical practitioners who desired to have pathological or serological examinations made of morbid products. Such aids to diagnosis are invaluable.

Section IV.—Venereal Diseases.

No change worthy of mention has been made during the year in the scheme for the diagnosis and treatment of this group of diseases. The number of persons applying for Institutional treatment has grown considerably (as was to be expected) owing to the spread of information regarding the scheme. The number of applications for salvarsan substitutes received from private practitioners remains a small one and that in spite of the increasing convenience of the forms in which these preparations are now available for domiciliary use. The number of persons abandoning treatment before it is completed still remains disappointingly high and, conversely, the number of persons discharged after completion of treatment and observation remains a low one.

The return made annually by the Medical Officers of Treatment Centres, on which one relies almost entirely for information as to the progress of this scheme (Form V.R. 6), is defective in certain respects, so far at all events as concerns counties which have to rely on Institutions outside their own borders for the treatment of venereal cases. For example, information is not available in this return as to:—

- (a) The number of persons who ceased to attend the out-patient clinic before completion of treatment or before final tests for cure had been applied;
- (b) The number of persons transferred to other Centres for treatment;
- (c) The number of persons discharged after completion of treatment and observation;
- (d) Examinations of pathological material.

All this information is given *for the Institution* which may be drawing patients from a number of different counties or county boroughs, but it is not given separately for the individual counties and boroughs.

The number of persons ceasing attendance before completion of treatment differs somewhat widely in the various Institutions used by Cheshire patients. Thus in the case of the Chester Royal Infirmary it is only little over 0.1 per cent. of the patients dealt with for the first time during the year 1919; in the case of the David Lewis Northern Hospital,

Liverpool, it is over 4.0 per cent. of the same number; in the case of the Warrington Infirmary it is 24 per cent.; in the case of the District Infirmary, Ashton-under-Lyne, it is 21 per cent.

Again the number of Wassermann tests applied, whether it be compared with the number of new attendances for syphilis or with the total attendances at the out-patient clinic, shews a difference at the several Treatment Centres which one is rather at a loss to explain. Compare for example the following figures:—

	No. of Wasserman Tests.		No. of New Cases of Syphilis.		Total attendances at Out-Patient Clinic.		Wasser- mann tests per cent. of new cases of Syphilis.
Chester Royal Infirmary	322	...	34	...	422	...	947
Ashton-under-Lyne Dis- trict Infirmary	364	...	67	...	772	...	543
6 Manchester & Salford Institutions	12	...	129	...	2579	...	93

One can understand that many cases of syphilis do not require the aid of a Wassermann test for purposes of diagnosis, but this can hardly be the whole of the explanation. Though practice varies somewhat as to the pronouncement of a cure in the case of gonorrhœa, it is almost invariably the custom to rely on a negative Wassermann test repeated at intervals for an opinion as to the cure of syphilis. The variations shewn in the figures just quoted must be susceptible of some explanation, but I am unable at present to give it.

The following statement compiled from the returns received from the various Treatment Centres shews the number and nature of the Cheshire cases dealt with during 1919:—

Institution.	Persons attending for first time at Out-Patient Clinic suffering from :			Total attendances at Out-Patient Clinic.	Aggregate No. of In-Patient Days.	Doses of Salvarsan substitutes given.
	Syphilis.	Soft Chancre	Gonorrhœa.			
Chester Royal Infirmary	34	1	26	422	124	189
Warrington Infirmary ..	8	—	5	104	14	33
Ancoats Hospital ...	9	8	3	174	—	43
Manchester Hospital for Skin Diseases ...	50	1	3	1019	1	245
Manchester & Salford Lock Hospital ...	18	4	36	394	691	121
Manchester Royal Infirmary ...	52	4	34	982	7	251
St. Mary's Hospital, Manchester ...	—	—	1	10	—	2
David Lewis Northern Hospital, Liverpool ...	3	—	1	25	—	22
District Infirmary, Ashton-under-Lyne ...	67	—	7	772	24	452
Royal Infirmary, Liverpool ...	36	—	32	654	28	125
Cancer and Skin Hospital, Liverpool ...	17	—	1	103	8	31
Royal Southern Hospital, Liverpool ...	1	—	—	5	—	3
Stanley Hospital Liverpool ...	1	—	1	7	...	6

Examination of Venereal Products.

The following statement shews the number of specimens examined in the Department of Pathology, University of Manchester, during the year:—

Syphilis.			Gonorrhœa.		Total Examinations.
Wassermann.		Spirochetes.			
Total.	Positive.			Total.	Positive.
102	54	None	6	2	164

Of this number only 52 specimens were submitted by general practitioners; of the remainder one was sent from the Macclesfield Infirmary and all the rest from Winsford Albert Infirmary. The Infirmaries at Chester, Warrington and Liverpool send all specimens for examination to the Liverpool University and at Ashton-under-Lyne many examinations are conducted in the Laboratory attached to the District Infirmary.

The number of specimens submitted for pathological examination and sent to an approved Laboratory by the several Treatment Centres was as under:—

Institution.	For detection of :			For Wassermann Reaction.
	Spirochetes.	Gonococci.	Other Organisms.	
Manchester Institutions...	—	—	—	12
David Lewis Northern Hospital, Liverpool ...	1	2	—	80
Warrington Infirmary ...	6	29	—	155
Chester Royal Infirmary ...	—	—	3	322
Ashton-under-Lyne District Infirmary ...	16	18	—	364

So far the campaign against venereal diseases in this County has been confined to the provision of free diagnosis and free treatment. In my opinion this is not sufficient. One of the most potent weapons in the prevention of communicable diseases is education and so far only isolated attempts have been made to teach certain limited sections of the public how they may safeguard themselves against the danger of contracting venereal disease. Such teaching can be given in a manner which would not offend any of the canons of decency or modesty and at the present time it is being given in very many centres throughout the country, both to the general public and to selected audiences in large works and elsewhere. The statement that such education excites prurience or blunts modesty is one which I do not believe. Men and women of the world know that even boys and girls, however sheltered and cloistered their lives may be, are continually coming into bare and blatant contact with phases of sex-knowledge which stimulate their curiosity and end in inquiries which often result in the acquisition of perverted, false and dangerous information. The question resolves itself into this—is it better for the individual and the race that information as to these loathsome diseases should be disseminated in a secret and perverted or in a moral and physiological manner?

Section V.—Maternity and Child Welfare.

NOTE.—This Section has been written (with the exception of the introductory paragraph) by Dr. Jean Reid Shaw.

Introductory.

This great and important work continues to advance. It is now five years since the scheme was commenced and as it deals with the health of children up to the age of five years it is practically at its zenith so far as numbers are concerned. But in so far as it is ameliorative and educative work, there is still abundant room for expansion. The number of Centres is increasing and will increase a great deal still until I hope there will be a Centre available for every mother and infant in the County.

As the work of the Health Visitors increases their districts will have to be made smaller and their numbers increased. This is necessary because the home visitation is the really essential part of their work: advice can be driven home to mothers better and can be better illustrated by object lessons in their own houses: moreover advice and correction can be more privately and effectively administered at home than in a Centre.

The system of employing part-time general practitioners as Medical Officers for the Centres has been continued. I trust that I shall not be deemed ungenerous when I say that the interest displayed by these Medical Officers varies a good deal. And everyone must realise that the benefits of a Centre depend most largely on the interest and special qualification of the physician in charge. He has unique opportunities not merely of detecting the "beginnings of disease," but of *preserving the infant in health*. The latter should be his prime object all the time and if he cannot achieve it, in any case that case should be regarded as a serious failure and should cause him a great deal of mental searching.

The Voluntary Committees have by their earnest and continued hard work established their position as a necessary and vital part of this scheme and our very cordial thanks are due to one and all of them for the great assistance they have rendered.

The ante-natal branch of this work is progressing and if it has not yet attained a high degree of perfection it must be remembered that, in a county area particularly, it is the most difficult section of our work. No effort will be spared to make it a success, for no one has any doubt of its great importance.

The maintenance of an adequate midwifery service proves a continuous problem and this will be the case until both the status and the remuneration of the midwife are greatly improved. Many people are apt to forget that the midwife carries in her hand the life and health of mother and child and for this reason, if for no other, she should be accorded a higher place on the professional ladder. One can only hope for the day to come when women of a higher educational standard than generally obtains at present will enter upon this branch of work.

Midwives.

Number in Practice.

There were 324 Midwives who notified their intention to practise in the County area during the year 1919.

Actually (119 Trained Midwives.

Practised (94 Untrained Midwives.

27 Monthly Nurses.

18 Midwives living outside County Area.

1 Midwife struck off the Roll.

6 Midwives died.

59 „ have not had any cases.

The percentage of trained midwives practising is now 56 per cent., which shows a considerable falling-off of the bona-fide midwife. There is still a great difficulty in getting midwives to fill the places of those who retire. Of course, the advent of an entirely trained midwifery service will help greatly to improve conditions for the mother and baby. Still it ought to be remembered to the credit of the bona-fide midwives of past times that they worked with devotion and self-sacrifice, with little or no reward for their services, when there was no one else to help the mothers in their time of need.

The County has now eight County midwives—at Nantwich, Lymm, Hazel Grove, Tarvin, Timperley, Scholar Green, Upton and Hollingworth. The midwives receive a salary of £100 and all midwifery fees received by them are paid to the County. Provided the midwife attends to all midwifery in

her area, she is allowed to do any nursing of non-infectious cases and retain any fee received.

In a number of other districts where there has been a shortage of midwives and no district nurse, through the kindly services of the County Nursing Association, the Council has been enabled to secure the appointment of a District Nurse Midwife and have given a grant towards the cost of maintenance. The amount of the grant varies according to the proved needs of each case. This plan has been found to work most satisfactorily.

The following is the list of County Midwives at present engaged:—

District.	Salary.
Hazel Grove—	
Nurse R. Rowles ...	£100 per annum.
Scholar Green—	
Nurse E. Wood ...	„ „
Tarvin—	
Nurse Janet Wright ...	„ „
Lymm—	
Nurse E. Holt ...	„ „
Timperley—	
Nurse M. Bullock ...	, ,
Nantwich—	
Nurse M. Tetlow ...	„ „
Greasby—	
Nurse J. Holmes ...	„ „
Hollingworth—	
Nurse M. Ellis ...	„ „

The following are the districts in which the District Nurse Midwives are subsidised by the Council:—Audlem, Halton, Holmes Chapel, Higher Sutton, Church Minshull, Northenden, Moulton, Rainow, Stretton, Weaverham and Wildboarclough.

Inspections.

The Lady Assistant Medical Officer of Health inspects all the trained Midwives and the Health Visitors assist with the inspection of the untrained ones. There have been 983 visits paid to midwives: 710 were formal inspections and the other 273 were paid to make enquiries *re* still-births, puerperal fever cases, infant deaths, etc. On 115 occasions midwives were found away from home when the inspecting officer called.

Facts ascertained on Inspection.

	Bag.		Register.		Charts.		Person.		Home.	
	Trained.	Un-trained.	Trained.	Un-trained.	Trained.	Un-trained.	Trained.	Un-trained.	Trained.	Un-trained.
Satisfactory ...	110	62	107	64	110	36	113	65	112	69
Fair ...	9	29	12	26	9	10	5	23	7	24
Unsatisfactory	—	3	—	4	—	—	1	1	—	1

Thirty-eight untrained midwives cannot take the temperature nor pulse of their patients. With the exception of nine trained midwives, their bags were well kept and on the whole the untrained midwives show a marked improvement. Owing to so many of the untrained midwives being unable to write there is always a difficulty in getting them to keep their registers up-to-date.

A similarity of temperature and pulse reading, *e.g.*, 98.4 degrees F. and 72 pulse every day has often been noticed; every case has been noted and attention called to it as a doubtful finding both on the charts of trained as well as untrained midwives.

On no occasion during 1919 has a midwife had to be censured for wearing an unwashable skirt, &c., at her cases.

Cases Reported to the Midwives Committee.

During the year six cases were reported to the Committee. Four midwives were severely censured and two cases were reported to the C.M.B., both midwives being subsequently struck off the roll.

Notifications.

Table showing number and nature of notifications received during 1919:—

	Medical Help.	Still-births.	Death of Child.	Death of Mother.	Laying out of Dead.	Ophthalmia Neonatorum	Source of Infection.	Artificial Feeding.
Trained ...	542	67	10	3	30	35	9	58
Untrained...	187	15	2	—	—	5	1	14

Births, &c., Visitations.

With regard to the Visiting of Births under the Notification of Births Act, the arrangements have been similar to those of previous years. All cases notified to the Chester Office have been written out on special forms and sent on daily to the Health Visitors of the district to which they belong. Cases attended by untrained midwives are visited as soon as possible after the birth and those attended by a doctor or a trained midwife are visited after the tenth day.

The Health Visitors send every week to the County Medical Officer a report of the work done during the preceding week and a report (on special forms) of every baby visited and re-visited. These reports are carefully gone into by the Lady Assistant Medical Officer and a duplicate of each form is kept and filed.

During the first year the babies are usually visited once a month, but it is found necessary in many cases to visit more frequently. During 1918, with one exception, the number of visits to notified babies under one year worked out at an average of ten visits per child, which was very satisfactory. During 1919 the average has fallen to about six visits per child. This is due to the increased amount of tuberculosis and school inspection visiting that the Health Visitors have had to do. Every branch of the Health Visitor's work is important and to enable her to do it all satisfactorily she requires to have a much smaller area than is at present allotted to her. This means that if home visiting is to be kept up to its previous standard the staff of Health Visitors will have to be further increased. It would be a thousand pities if the home visiting should have to be curtailed, as the Health Visitor in the home gets more in touch with the mother than at the Centre; moreover, she gets at the mother who won't take the trouble to bring her children to a Centre.

By the appointment of an additional Health Visitor at Stalybridge practically every baby on the visiting list is now being visited every month.

In the second year, according to the County Scheme, the children should be visited at least quarterly and in subsequent years, until admitted to school, half-yearly visits should be paid to these older children. Children that are ill or neglected are of course visited more frequently.

Some 49 per cent. of the children attending the Child Welfare Centres are over one year old, so that we are gradually getting more of the older children under medical supervision. As in the previous years the Health Visitors have

been well received and made to feel that their visits are welcome.

A conference of the Health Visitors is held in Chester at six weekly intervals. At these meetings points which have arisen in the work since the previous meetings are considered and some subject relating to the work is reviewed. Each one is expected to take part in these discussions.

The following is a summary of visits paid by the Lady Assistant Medical Officer and Health Visitors during 1919:—

First Visits to Infants under 1 year	...	5535
Revisits to Children under 1 year (Ophthalmia, etc.)	...	30377
Revisits to Children over 1 year	...	24492
Still-births and Death Enquiries	...	610
Visits to Midwives	...	983
Visits to Expectant Mothers	...	1851

The staff at present consists of a Lady Assistant Medical Officer and 26 whole-time Health Visitors and one part-time Visitor (Stalybridge). With three exceptions, each Health Visitor is responsible for the visiting of all children under five years of age, the schools and school children, tuberculosis cases and attendance at the Tuberculosis Dispensaries and Maternity and Child Welfare Centre in her particular area.

The Feeding of Infants.

The following table shows the method of feeding of children over six months old and under one year old. There were 986 rural cases and 873 urban cases:—

	Breast.				Mixed.				Artificial.			
	1916. %	1917. %	1918. %	1919. %	1916. %	1917. %	1918. %	1919. %	1916. %	1917. %	1918. %	1919. %
1st Month—												
Rural ...	85	78	81	84	1	4	3	3	14	18	16	13
Urban ...	77	80	82	83	2	4	3	2	21	16	15	15
2nd Month—												
Rural ...	79	76	80	80	2	5	3	3	19	20	17	17
Urban ...	73	76	80	76	5	5	4	4	22	19	16	20
3rd Month—												
Rural ...	75	73	79	74	3	5	4	6	22	22	17	20
Urban ...	70	72	73	70	6	6	5	6	24	22	19	24
4th Month—												
Rural ...	72	70	75	70	3	6	5	7	25	24	20	23
Urban ...	68	69	72	65	7	6	6	6	25	25	22	29
5th Month—												
Rural ...	70	69	74	66	3	6	5	8	27	25	21	26
Urban ...	65	66	68	62	7	7	7	6	28	27	25	32
6th Month—												
Rural ...	69	68	73	63	3	6	5	9	28	26	22	31
Urban ...	64	63	67	60	6	7	7	7	30	30	26	33

It is very disappointing to find that the percentage of breast-feeding has fallen this year after steadily rising during the three preceding years. No definite reason can be assigned for this. During the war there was no doubt that among women the wave of patriotism was equally strong with the husbands who went to fight and they felt to "do their bit" they must feed their babies naturally. Now they share in the spirit of unrest and possibly this may to some extent account for the lower percentage of breast-feeding.

The method of feeding till six months old and health of child at 12 months is shown below, the figures being percentages:—

FEEDING.				HEALTH.			
				Good.		Fair.	Poor.
				%		%	%
Breast	{	Rural	...	84	...	14	2
	{	Urban	...	83	...	13	4
Mixed	{	Rural	...	75	...	21	4
	{	Urban	...	66	...	30	4
Artificial	{	Rural	...	77	...	20	3
	{	Urban	...	73	...	21	6

Early Illnesses (Birth to 2 years).

The illness from which children 1—2 years of age have suffered during their first year of life are shewn in the following table and age at which they suffered from these illnesses:—

		Birth to 3 months.		3 months to 6 months.		6 months to 9 months.		9 months to 12 months.	
		%		%		%		%	
Bronchitis 10%	..	1	...	3	...	4	...	2	
Pneumonia 2%	...	.2	...	.8	...	.7	...	.3	
Influenza 7%	...	.5	...	3	...	1.5	...	2	
Convulsions 6%	...	2	...	1	...	2	...	1	
Diarrhoea 3%	...	.5	...	1	...	.7	...	.8	
Measles 2%	...	.05	...	.2	...	.1	...	1.7	
Whooping Cough 6%	...	.5	...	.5	...	3	...	2	
Marasmus 1%	...	.4	...	.4	...	.2	...	—	

This table is interesting as showing how many children come successfully through those illnesses compared to the number who succumb to them.

Health of Children aged 2, 3 and 4 years.

In the following table the health of the children at two years, at three years and those at four years who have been

visited in 1919 is shown (method of feeding during first six months of life):—

Feeding.	Health. 2 years. 2715 children.			Health. 3 years. 2370 children.			Health. 4 years. 973 children.		
	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.
	%	%	%	%	%	%	%	%	%
Breast—									
Rural ...	85	13	2	85	13	2	86	13	1
Urban ...	77	21	2	80	17	3	85	14	1
Mixed—									
Rural ...	80	15	5	80	14	6	88	12	—
Urban ...	70	27	3	74	23	3	80	19	1
Artificial—									
Rural ...	80	17	3	75	21	4	80	16	4
Urban ...	71	24	5	79	18	3	75	20	5

It is interesting to be able to show by the above table that at two years, three years and four years those children who have been fed naturally during their first six months show a higher percentage of good health than those that have been artificially fed.

The illnesses from which these children aged two years, three years and four years have suffered between 1—2 years of age, 2—3 years of age and 3—4 years of age respectively are as follows:—

	2 years.	3 years.	4 years.
	%	%	%
Bronchitis ...	7	3	3
Pneumonia ...	2	1	0.05
Influenza ...	8	6	7
Measles ...	3	3	4
Convulsions ...	0.3	0.4	0.04
Diarrhœa ...	2	0.5	1
Whooping Cough ..	3	1	4
Chicken Pox ...	1	—	—
Diphtheria ...	0.1	0.2	—
Scarlet Fever ...	—	0.2	0.7

Of the children between one and four years of age who suffered from bronchitis eleven per cent. of them had repeated attacks. Very often the mother states that her child cuts each tooth with bronchitis or another mother will say her child has diarrhœa whenever he cuts a tooth. It is difficult to convince mothers that teething is a normal process and to get them, when their babies are not well, to seek the real cause and not to be content with their own or neighbour's diagnosis

of "teething" when there is no evidence in the child's mouth of irritation.

There has been no large epidemic of measles or whooping-cough. The Council is willing to pay for a trained nurse to look after a case of measles or whooping-cough requiring special nursing, but the great difficulty is to get the nurses at the present time. In four districts nurses who reside in these districts have promised to give their services in the event of an epidemic.

Signs of rickets were noted in six per cent. of the children between one and four years of age (four per cent. slight and two per cent. marked).

Deaths of Infants under 1 year.

Table giving particulars of deaths of 235 children under one year but over ten days old (138 males and 97 females):—

	Method of Feeding.	Ten days to 3 months	3 months to 6 months	6 months to 9 months	9 months to 12 months
Respiratory Diseases ... (3 Inquests)	Breast ...	13	6	4	7
	Artificial .	5	10	6	11
Convulsions ... (1 Inquests)	Breast ...	12	1	1	4
	Artificial .	19	5	3	3
Measles	Breast ...	—	—	—	2
	Artificial .	—	—	1	1
Marasmus	Breast ...	1	—	—	—
	Artificial .	15	1	—	—
Influenza	Breast ...	1	2	7	4
	Artificial .	7	—	1	1
Whooping Cough	Breast ...	4	1	—	2
	Artificial .	—	1	—	—
Gastro-Enteritis	Breast ...	2	—	—	—
	Artificial .	10	3	2	4
Tabes Mesenterica	Artificial .	3	—	2	2
Syphilis	Artificial .	1	—	—	1
Pemphigus	Artificial .	1	—	—	—
Debility	Artificial .	3	—	—	—
General Tuberculosis	Breast ...	1	—	—	—
Prematurity	Breast ...	5	—	—	—
	Artificial .	7	—	—	—
Membranous Croup	Breast ...	—	—	—	1
Malformatious	Breast ...	7	1	1	2
	Artificial .	—	—	—	2
Meningitis	Breast ...	1	1	1	—
Internal Hæmorrhage	Artificial .	—	2	1	1
	Artificial .	2	—	—	—
Diphtheria	Breast ...	—	—	1	1
Injury at Birth	...	1	—	—	—
Total	...	121	34	31	49

Practically fifty per cent. of these deaths occurred before the child was three months old. Out of the 235 deaths 20 were of babies of illegitimate birth.

Table giving some particulars of deaths of 110 children between one year and four years of age (occurring during 1919):—

	Total.	1 year to 2 years.	2 years to 3 years.	3 years to 4 years.
Respiratory Diseases ...	35	24	10	1
Convulsions ...	11	6	4	1
Measles ...	6	4	2	—
Whooping Cough ...	4	3	1	—
Gastro-Enteritis ...	2	—	2	—
Marasmus ...	1	—	1	—
Diphtheria ...	1	—	1	—
Meningitis ...	12	5	6	1
Tubercular Meningitis ...	4	2	2	—
Tabes Mesenterica... ..	3	2	1	—
Tuberculosis (lungs) ..	1	1	—	—
General Tuberculosis ...	1	—	—	1
Influenza ...	22	13	7	2
Congenital Heart Disease ...	1	1	—	—
Membranous Croup ...	3	1	1	1
Accidental Death (Inquest)... ..	1	1	—	—
Peritonitis (Inquest) ...	1	—	—	1
Scalded (Inquest) ...	1	1	—	—
	<hr/> 110 <hr/>	<hr/> 64 <hr/>	<hr/> 38 <hr/>	<hr/> 8 <hr/>

Table giving some particulars of deaths of 121 children aged ten days or less:—

Premature Birth ...	53—26	Births attended by Doctor.
	27	„ „ Midwife.
Difficult Labour ...	9—	Doctors' Cases.
Atelectasis ...	4—	2 Doctors' Cases.
		2 Midwives' Cases.
Feebleness ...	25—12	Doctors' Cases.
		13 Midwives' „ (2 Inquests).
Bronchitis ..	1—	Doctor's Case.
Convulsions ...	12—	4 Doctors' Cases.
		8 Midwives „ (2 Inquests).
Suffocation ...	1—	1 Midwife's Case (Inquest).
Pemphigus ...	1—	1 Midwife's Case.
Malformations ...	9—	5 Doctors' Cases.
		4 Midwives' Cases.
Want of Attention at Birth ...	3—	Born before Midwives' arrival (Inquests).
Cause of Death unknown	1—	Midwife's Case (Inquest).
Internal Hæmorrhage ...	2—	1 Doctor's Case.
		1 Midwife's Case.

Five of the above infants were of illegitimate birth. In two of the cases the mother had been working in a factory and eight other mothers had followed other occupations during pregnancy.

Still-births.

The following table gives some particulars of 144 still-births that have been enquired into:—

History of shock, fright or accident	...	18
Born before arrival	.. 11—Premature	9
	Full-time...	2
Malformation of child	...	3
Placenta Prævia	...	4
Antepartum Hæmorrhage	...	1
History of ill-health	... 19—Premature Birth	14
(Mother)	Full-time	5
Malpresentation or Difficult Labour	...	59
No known cause	... 29—Premature Birth	14
	Full-time	15

In eight cases the still-births were illegitimate births. Thirty-two cases occurred in primiparæ. In nine cases there was a previous history of more than one miscarriage or still-birth and in ten cases a history of one miscarriage or still-birth. In three cases out of the ten the still-birth occurred also in the second pregnancy, so that the mother had not given birth to a live child. In 31 cases the child was said to be decomposed.

Expectant Mothers.

During 1919, 1,851 visits and re-visits have been paid to expectant mothers. Of this number a small proportion has been paid by the County Midwives, but the majority have been paid by the Health Visitors.

Of the 615 cases that were visited during 1919 (the baby being born within that year) the following are some interesting points that have been noted:—

	Good.	Fair.	Poor.
Health of Mother	... 67%	... 24%	... 9%

Ten per cent. of the mothers were advised to seek medical aid; 2.5 per cent. of whom were so advised on account of passing a scanty amount of urine; 30 per cent. suffered more or less from constipation; 68 per cent. had carious teeth and in 32 per cent. of the cases the teeth were noted to be in a very bad condition. Fifty-three women had a set or sets of artificial teeth.

Five mothers out of these 615 cases of pregnancy died, one from Bright's disease, one from puerperal fever, two from influenza and pneumonia and one natural causes (inquest).

Of the babies born of these mothers the following may be noted:—

90.5% Normal	{ 80% Breast fed.
	{ 20% Artificially fed.
2% Not strong.	
4% Weekly and died during first fortnight.	
.5% Miscarriages.	

Stalybridge Ante-natal Clinic.

In November, 1919, the above Clinic was opened by the Council as a six months' experiment. A specialist in obstetrics and gynæcology was appointed and attended at its fortnightly sessions. During the six months the Clinic has been open 48 patients have attended on one or more occasions, being sent by their own doctor or brought by the midwives engaged to attend. A complete history was taken in each case, the patient's condition was carefully investigated, the urine of all cases was examined and pelvic measurements were taken as circumstances demanded. The patient was advised as to diet, exercise and the general hygiene of pregnancy. In the event of any special medical or surgical treatment being required, a letter was sent to the patient's own doctor. The conditions in connection with which special advice was given are summarised below:—

Albuminuria—4 cases.

Acute vomiting—2 cases.

Œdema, with visual disturbances, headaches, etc.—4 cases.

Anæmia—2 cases.

Dyspepsia, etc.—2 cases.

Dysuria, incontinence, etc.—2 cases.

Hernia, cystocele, prolapse—3 cases.

Fainting fits, tachycardia—2 cases.

Melancholia, headaches, insomnia—3 cases.

Varicose veins, hæmorrhoids—3 cases.

Wassermann test—1 case.

Rickets, Cæsarean Section, child saved—1 case.

Other cases (normal or otherwise)—19 cases.

From the above it will be seen that excellent work has been done at this Clinic in the short time it has been running. The larger proportion of the cases dealt with have been pathological pregnancies, but it is hoped that as the Clinic becomes better known, the pregnant women will be persuaded to come to the Clinic and being advised how to keep healthy, will prevent so many pathological conditions arising.

Two-thirds of the women who attended were primiparæ, which is hopeful, as it is easier to educate the younger women. The midwives in Stalybridge have been most enthusiastic and it is mainly due to their efforts that the patients have come so well as they have done. It is hoped that the Council will continue this Clinic and establish others at other Centres.

Maternity and Child Welfare Centres.

During 1919 three new Centres have been opened. These were at Lymm, Neston and Bollington respectively. At all Centres, with the exception of Nantwich (where there are only two rooms which can be used), there are three or four rooms used for the Centre—a large room where the mothers assemble, have tea, talks, etc., a smaller room where from three to six babies are undressed at a time and weighed, and a doctor's room. Where there is a fourth room available the older children are taken there during the afternoon and amused with toys and games.

With the exception of the Whaley Bridge and Utkinton Centres, a local doctor attends on the weighing days for consultations. A County Health Visitor attends the meetings. It would be impossible to carry on with such a small staff without the services of the Voluntary Committees. The members of these Committees have worked splendidly and have been untiring in their efforts to help the mothers in every way. The Council owes a great debt of gratitude to these Voluntary Committees. One of the great difficulties at the Centres is in getting the mothers to undress their infants each weighing day. The holding of a Centre is of little value unless the babies are under thorough supervision and this is only possible where the doctor and nurse see the baby undressed and its accurate weight obtained. As the Centres are arranged never more than six babies should be in the weighing room at one time, so that the ladies and nurse have ample opportunity of seeing each baby, its clothing and a much better chance of talking to the mothers individually and getting to know them. The nurse is careful to see that the room is kept at a suitable temperature.

One important lesson learned in starting a Centre is that one should hesitate to begin one unless the rooms are suitable for the mothers to undress the babies from the commencement. If they do this on their first day, they do it as a matter of routine each day.

The Mothers' Welcome at Utkinton, maintained by one lady, continues to do excellent work among the mothers and

babies of that village. Its popularity with the mothers is shown by the fact that only one baby's name is not on the register.

Successful Baby Week Celebrations were held at Hoylake, Runcorn, Sale, Stalybridge, Nantwich, Utkinton, Marple, Whaley Bridge, Heswall, Dukinfield, Congleton and Lymm. At most of these celebrations a baby-judging has taken place. Many people nowadays object to "Baby Shows." If properly judged and certificates and not prizes be awarded, they are excellent. There must be plenty of time allowed so that the judge (who should be a doctor) can point out to the mother the points on which her baby loses points. It really comes to be an annual thorough inspection of the babies and if time would only allow it would be much better if it could be a quarterly inspection.

In 1919 a society of all the voluntary workers at the County Centres was formed. Its object is to bring the voluntary workers together to discuss difficulties arising in the working of the Centres and exchange ideas. The work of this society is to save the babies or wealth of the nation, so it has called itself the "Cheshire Gold Cross Society." Its Executive Committee is composed of a representative from each Centre and the Lady Assistant Medical Officer of Health. This Committee meets quarterly at Chester or at one of the Centres on the Centre day.

An annual meeting is held in May, to which all voluntary workers and all interested in Child Welfare are invited to attend. In May, 1919, the annual meeting was addressed by Dr. Buchan (Bradford) and Dr. Meredith Young (Cheshire). During 1919 and 1920 a series of competitions were arranged for—Sewing, Knitting, Cookery, Laundry, Handicraft (fathers' competition), Essays on Housing and Housekeeping, Best Attendance at Centre, Mothercraft and Number of New Members on Register, the Centre getting the highest marks in all competitions to gain the Gold Cross Shield. This shield was presented by the President (1919 to 1920), Mrs. Rankine (Hoylake) and is of oak, with a large Maltese Gold Cross, in the centre of which there is a painting of a child's head. Seven Centres entered for these competitions and Marple Centre was successful in winning the shield for 1919—1920.

Stalybridge and Dukinfield Centres have both had to start a second doctors' day at their Centres during 1919 and Sale, Runcorn and Hoylake Centres hope soon to have another day arranged for, as at present they are overcrowded.

At Sale and Marple Centres a sewing meeting is held, weekly at the former and fortnightly at the latter; these meetings are well attended and very popular with the mothers.

At Hoylake and District Centre a shield is competed for annually by the school girls under 14 years of age attending the various schools in that district. In 1919 this shield was won by the girls attending West Kirby Church of England School for the best set of long clothes for a baby.

Attendances at Centres.

	Hoylake.	Runcorn.	Sale.	(2 days) Stalybridge.	Nantwich.	Utkinton.	Marple.	Whaley Bridge.
Consultations held ...	929	333	1469	2399	275	—	417	—
Total Attendances made ...	2254	3186	2656	3572	1398	113	774	589
Average Attendance per Meeting ...	48	77	60	40	24	6	31	24
Attendances made by Ante-natal Mothers	28	20	—	104	3	—	48	1

	Heswall.	Congleton.	(2 days) Dukinfield.	Higher Bebington.	Lymm.	Neston.	Bollington.
Consultations held ...	85	641	1355	363	458	544	177
Total Attendances made ...	103	796	2882	775	1387	1712	403
Average Attendance per Meeting ...	14	16	48	34	31	51	36
Attendances made by Ante-natal Mothers	—	23	27	40	62	94	1

Ophthalmia Neonatorum.

There have been 91 cases of inflammation of or discharge from the eyes in new-born babies notified. Forty-nine of these cases were only slight.

The ages of the infants on the day when the disease started ranged from two days to ten days, most of the cases occurring between the second and fifth days.

In 28 of the cases the birth was attended by doctors and 63 were attended by midwives. Twenty of the cases attended by midwives were reported by Health Visitors, who also visited the midwife and warned her of her neglect to notify. In some of these cases a doctor had been called in to see the patient. There is still difficulty in getting midwives to realise that they must notify a case no matter how slight.

Description of cases:—

Slight cases—one eye affected	...	...	19
„ both eyes affected	...	...	30
Severe cases—one eye affected	...	...	4
„ both eyes affected	...	...	38

All the slight cases recovered. Of the 42 severe cases 40 recovered and the following are particulars of the other two cases:—

One case—scar left eye, right eye clear.
 „ weakly child—died.

Illegitimate Children.

Special enquiries have been made into the circumstances of 135 illegitimate children born in 1919 and living in Cheshire.

In 44 of the cases the mothers were unemployed and in 91 instances they were employed.

One hundred and five of the homes were found to be satisfactory.

The father was known to be contributing (from 3/6 to 10/-) in 56 cases and in nine cases it was impossible to find out. One father had died and 66 made no contribution to the upkeep of their child. Three of the fathers had married the mothers.

Forty-five of the children were being cared for by the mother herself, 55 by the grandmother, 19 by other relatives, three were in Institutions, 11 were looked after by neighbours and two had been adopted.

Section VI.—Miscellaneous.

Housing.

Through the activities of the Ministry of Health we have now obtained a fairly accurate census of housing needs throughout the County. The following tabular statement shews the outstanding features and requirements of each district in this respect.

(a) UNHEALTHY AREAS.

The only districts in which the existence of unhealthy areas is admitted are as under:—

Buglawton U.D.—44 houses in Havannah, 8 houses in Dane Row, 4 houses in Mill Street, 5 houses in Havannah Street, 4 houses each in Spring Bank and Cloud Site and 1 house each in Dane-in-Shaw and Bank House. 71 houses in all.

Congleton M.B.—96 houses occupied by 241 persons and situate in Canal Street, Silver Street, Brook Street, Dane Street, High Street, Barlow Street, Lawton Street, &c.

Dukinfield M.B.—75 houses occupied by 398 persons and situate in Pitt Street, Waterloo Street, Water Street, Wharf Street, Ogden Square, Nelson Street, etc.

Ellesmere Port U.D.—Three houses in Back Dock Street.

Knutsford U.D.—35 houses in Princess Street and Market Place occupied by 150 persons.

Neston and Parkgate U.D.—14 houses occupied by 63 persons and situate in Swift's Weint, Lion Yard and Jackson's Row.

(b) HOUSES UNFIT FOR HABITATION OR SERIOUSLY DEFECTIVE.

The table indicates that in the whole of the County area there are 626 houses unfit for human habitation and about 3,982 "seriously defective" but capable of being made fit for habitation. These figures are taken from returns supplied to the Housing Commissioner for this area. The term "seriously defective" has apparently been very differently interpreted in different districts. For example, it is stated that there are no "seriously defective" houses in Hyde M.B., very few in Macclesfield M.B. and none in Middlewich U.D., Sandbach U.D., Congleton R.D. or Northwich R.D., whilst there are 1,046 in Winsford U.D. (chiefly houses provided with cesspool-

Urban Districts.	No. of houses which are not and cannot be made fit for habitation.	No. of houses already subject to—		No. of houses seriously defective but can be made habitable.	Action proposed by Local Authority with reference to	
		Closing Orders.	Demolition Orders.		Houses which are not and cannot be made fit for habitation.	Houses which are seriously defective but which can be made habitable.
Alderley Edge ...	none	none	none	none	...	Work in course of execution'
Alsager ...	none	none	none	none	...	...
Altrincham ...	20	none	1	36	Action retarded by acute shortage of houses	Action taken by Council where necessary
Ashton-on-Mersey ...	none	none	none	none	...	...
Bebington (Higher) ...	none	none	none	none	...	...
" (Lower) ...	30	none	none	134	None until new houses are built	None till new houses are built
Bollington ...	4	none	none	3 (uninhabited)	Do. do.	...
Bowdon ...	none	none	none	none	Immediately new houses are available	Notices will be served under the Act
Bredbury and Romiley ...	100	none	none	100	None ...	None
Bromborough ...	1 & 2 in lock-up shops (not occupied)	none	none	no statement	...	...
Buglawton ...	none	none	none	no statement	...	...
Cheadle and Gatley ...	none	none	none	none	...	...
Compstall ...	none	none	none	none	...	...
Congleton Mun. Boro' ...	none	none	none	considerable number	To close as soon as new houses are erected	To issue orders to reconstruct, &c.
Crewe Mun. Boro' ...	none	none	none	not stated	...	Periodical examinations being made; 1350 houses due for inspection
Dukinfield Mun. Boro' ...	none	none	none	37	...	Action will be taken under H. & T.P. Act, 1909. Most of these houses are back-to-back and will be made through
Ellesmere Port & Whitby ...	none	2	none	30	None ...	Being dealt with in the ordinary course
Hale ...	none	none	none	none	...	...
Handforth ...	4	1	1	very few	Will be demolished and 2 others built in place thereof	All nuisances are served with notice and abated
Hazel Grove & Bramhall ...	none	none	none	49	...	Will be dealt with as early as practicable
Hollingworth ...	none	none	none	24 (back-to-back)	...	Not stated
Hoole ...	none	none	none	none	...	Can be dealt with under ordinary powers of Council
Hoylake & West Kirby ...	none	none	none	none	...	No action is necessary
Hyde Mun. Boro' ...	none	none	5	none	Awaiting housing scheme	Awaiting housing scheme
Knutsford ...	10	none	none	4	...	Thorough re-inspection to be made and action taken thereon
Lymm ...	none	none	none	250	...	Inspection of district being completed as rapidly as possible and notices served and enforced
Macclesfield Mun. Boro' ...	112	55	none	very few	The Health Committee have always recommended demolition orders in such cases	Work will be executed as soon as possible
Marple ...	7	none	none	73 (some back to back)	Will be demolished when occupiers can be re-housed	...
Middlewich ...	14	none	none	none	To be condemned and demolished as circumstances permit	Private owners to make these habitable as soon as conditions permit
Mottram-in-Longdendale ...	4	none	none	41	Awaiting building of new houses	Action will be taken under Housing Acts
Nantwich ...	none	none	2	90	...	See reply under previous column
Neston and Parkgate ...	15	none	none	137	No action can be taken till alternative accommodation available	...
Northwich ...	120	2	none	130	Pushing on with 2 new housing schemes	Owners required to carry out alterations. Dependent on water scheme which is in hand
Runcorn ...	none	none	none	100 (back-to-back)	All pulled down	By making back-to-back houses into through
Sale ...	none	none	none	20	...	Conversion to w.c.s and general overhauling under consideration
Sandbach ...	3	none	none	none	Referred to Sanitary Committee	No action necessary
Stalybridge Mun. Boro' ...	100	none	none	100	Nothing till new houses provided	Steps being taken for necessary repairs
Tarporley ...	3	none	none	20	Demolition when new houses available	Notices served for improvement
Wilmslow ...	10	4	none	25	Closing orders will be made	Notices will be served
Winsford ...	3	2	none	1046	One is disused; others will be dealt with when new houses available	This is contingent on conversion of cesspool privies to w.c.s and is before the Council
Yeardsley-cum-Whaley ...	none	none	none	none	...	...
Rural Districts.						
Bucklow ...	50	1	none	550	Demolition as new houses available	Serve notices for improvements
Chester ...	none	none	none	about 200	Not stated	Not stated
Congleton ...	none	none	none	none	Nil	Nil
Disley ...	10	5	none	6	Necessary repairs only till new houses available	Notices to repair being served
Macclesfield ...	1	13	none	9	Council do not contemplate any action	Do. do.
Malpas ...	3	none	none	40	Closure where re-housing practicable	Do. do.
Nantwich ...	20	none	none	150	Do. do.	Closure unless defects remedied
Northwich ...	95	14	2	none	Temporary dwellings being provided till housing scheme completed	Action taken as necessary under Housing Acts
Runcorn ...	169	16	1	341	Closing orders served but eviction cannot be adopted till new houses available	Do. do.
Tarvin ...	none	none	none	about 200	Not any ...	Notices being served
Tintwistle ...	5	none	none	10	Not decided yet	Do. do.
Wirral ...	1	1	1	30	All these houses except one can be made fit	Will be done when housing scheme completed

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privies), 550 in Bucklow R.D., 250 in Lymm U.D., 150 in Nantwich R.D. and about 200 each in Chester and Tarvin R.D.'s.

As regards the houses which are not and cannot be made fit for habitation, the almost universal statement made is that action must be suspended until new houses are available for the people who would be dispossessed by closure. There is one striking exception to this in the case of the Northwich Rural District, where the Council are purchasing munition hutments for the temporary housing of dispossessed tenants until new houses are ready.

In the case of houses seriously defective but capable of being made habitable, the statement is made by certain Councils that no action can be taken until new houses are available. There is some misconception here, for it is clearly the duty of the Councils concerned to serve and enforce notices for necessary alterations and repairs where insanitary conditions exist which are capable of remedy without the tenants being turned out. In the case of back-to-back houses one can understand that a suitable remedy cannot be applied until alternative accommodation is available, but the remedy of defective ventilation, dampness, defective drainage, insufficient or defective closet accommodation, etc., can be carried out whilst the house is occupied.

Rivers Pollution.

There is not much to be added to what has been said in previous Reports under this heading. The river about which I am most concerned is the Dane and its condition is a continual anxiety, for new industries are springing up along its banks and unless most carefully watched they may do very serious damage. Already it is polluted by the discharge of imperfectly treated dye-waste and this pollution, unless dealt with in a very drastic manner, will greatly injure the natural beauties of a very charming river. Steps are being taken by the principal offender to prevent pollution, but first one difficulty and then another crops up rendering the complete remedy of the condition a very tedious process.

The River Dee continues to be the recipient of sewage matter at numerous points, the grossest and most flagrant being that from Llangollen, where the Council are apparently indifferent either to the disgusting appearance of the river-bank in their own midst or to the potential danger they are creating for those further down the stream. It is really high time that the Ministry of Health intervened in this matter;

records which one would have thought warranted action have been in their pigeon-holes for many years.

The River Weaver is generally looked upon as an industrial waterway and so the main stream is from its entrance into the Mersey at Frodsham Marsh down as far as Winsford. Few people dilate on the natural beauties of this part of the river, though it is by no means devoid of them. But south of this part right away to Adderley and Shavington Park there are many charming stretches and windings in spite of the crude sewage poured into it at Nantwich and elsewhere and every care should be taken to preserve its amenities. Its many tributaries, too, provide pleasure for those fond of nature's beauty and delight for the angler.

There are those who say that industrial interests must be the paramount consideration and that rivers are meant to provide water for power and trade processes and to act as a convenient outlet for trade waste. They would argue that by compelling manufacturers to purify sewage we are handicapping industrial development. The answer, I think, is that we are only applying an old and well-known principle in equity—*Sic utere tuo ut alienum non leadas*—a principle which has always been recognised as socially fair and just. We do not permit manufacturers to discharge black smoke or noxious fumes into the atmosphere nor to pollute the air by the storage or manipulation of offensive trade material; neither should they be permitted to soil our streams and kill fish and cattle and healthful vegetation by the discharge of polluting material into rivers and streams.

It is still a matter of very great difficulty, if not an impossibility, for me to give the necessary amount of supervision to the numerous disposal works on these three great rivers and their tributaries and I am of opinion that an inspector possessing sufficient engineering and technical knowledge is urgently required if this branch of work is to receive the attention it deserves. In the neighbouring counties of Lancashire and Yorkshire there is a whole-time Chief Rivers Inspector with a number of assistants and in Staffordshire the County Medical Officer of Health is provided with an assistant devoting his whole time to river inspection. The Mersey and Irwell Joint Committee supervise the rivers of approximately half of this County, but the remainder is a large area and in many places is thickly dotted over with possible sources of pollution; an inspection of these about half-a-dozen times a year is by no means sufficient. I commend this suggestion to the earnest attention of your Committee.

Water Supply.

The investigations necessitated by the Manchester Corporation Water Bill of 1919 and the Liverpool Corporation Water Bill of 1920, though they occupied a great deal of time, have proved most useful in demonstrating where a number of weak spots existed in the water supply of the County. The matter is too lengthy for more than general reference in this Report, but the information which has been collected by me is carefully filed and when time permits I hope to present a complete survey of the County's water supplies.

The position under the Manchester Corporation Act, 1919, Section 118, is that the Corporation are to give a "construction notice" not more than three years before commencing the construction of any instalment of their main reservoir at Haweswater and of certain subsidiary reservoirs and aqueducts, such notice to specify the work contemplated and the amount of water estimated to be yielded daily. Thereupon any district, any part of which is within five miles of the Thirlmere or Haweswater aqueducts, may within two years of the giving of this "construction notice" serve on the Corporation a "reservation notice" requiring them to reserve for them a specified daily quantity of water. Within a year of the giving of such "reservation notice" the local authority must obtain the assent of the Minister of Health, who is to be the final judge as to the amount of water requisitioned and as to the necessity of the supply. Districts complying with these requirements will be entitled on payment to a certain share in one quarter of the estimated average daily yield of the Haweswater undertaking. Provision is made for a reference to arbitration in the event of the estimate of the average daily yield being disputed.

By the same Act the water supply of Altrincham, Ashton-on-Mersey, Bowdon, Hale and Sale and the parishes of Ashley, Baguley, Dunham Massey, Northenden, Northen Etchells (part of), Ringway and Timperley in the Bucklow Rural District is handed over to the Manchester Corporation by the North Cheshire Water Company—the project of forming a Joint Water Board for that and certain adjoining areas having been abandoned.

The water supply is not entirely satisfactory in the urban districts of Bellington, Compstall, Nantwich, Northwich, Winsford, Yeardsley-cum-Whaley and parts of the rural districts of Bucklow, Chester, Congleton, Disley, Malpas, Nantwich, Northwich, Runcorn and Tarvin.

Milk Supply.

There have not recently been so many complaints from Manchester, Liverpool, Warrington or Stockport as to cattle suffering from tuberculosis of the udder. The cowsheds which I have inspected were all the subject of some defect and in many instances the defects were serious.

In a good many instances the County Analyst has found samples of milk to contain dirt largely of manurial origin. In my experience most milk does contain dirt. There is no excuse for this, as it does not require expenditure of much if any capital to keep dirt out of milk; care, common-sense and cleanliness are the principal factors concerned. There is a good deal to be said for the grading of milk, the price to be regulated by its purity. The only difficulty I see is that it will necessitate the appointment of a large number of inspectors—veterinary and otherwise—if the grading is to be of any value to the general public. A farmer or milk-dealer may deliver milk free from the taint of tubercle and in all other respects pure and clean one day and a few days later the same supply may contain tubercle bacilli or be dirty owing to a change in his staff or an addition to his herd. The farmer, too, is sometimes at the mercy of a Railway Company and milk delivery vans are not always cleansed as they should be. I have greater hopes of a system which would license milk-sellers and empower Sanitary Authorities to revoke these licences in cases where the provisions of the Dairies, Cowsheds and Milkshops Orders or of the Sale of Foods and Drugs Acts and the various Regulations made under these enactments were infringed.

The National Clean Milk Society has issued a very practical leaflet on the production of clean milk which I think is well worth reproduction:—

The whole secret of the production of clean milk is to make sure that the milk comes into contact as little as possible with dust or dirt from the moment it is drawn from the cow until it leaves the farm. Bacteria, which are little, living vegetable organisms, so small that they can only be seen with a microscope (being only about one twenty-five thousandth of an inch long), are on the particles of dust in the air and exist in very large numbers in any form of dirt or manure. Unfortunately they thrive particularly well and increase with great rapidity in milk. All troubles with the wholesome or keeping qualities of milk are caused by bacteria, of which there are many kinds. Some cause souring by acting on the sugar that is in milk and producing acid (these are called lactic acid bacteria). Others

cause such diseases as tuberculosis, typhoid fever, scarlet fever, septic sore throat, etc. The bacteria in dirty milk very often cause diarrhoea in babies and young children, which in many cases results in death. Few people realize how much illness and death are caused by dirty milk. Milk as it is drawn from a healthy cow contains no bacteria or a very small number; if none are allowed to get in afterwards it will stay sweet and wholesome for a long while. If milk is kept cool the bacteria that do get into it will not increase rapidly in numbers because bacteria need to be warm in order to multiply. Milk that is produced and handled under the most cleanly conditions, bottled immediately in a sealed bottle so that no more bacteria can get into it and kept cool will keep sweet and wholesome for many days or even for weeks. The cleaner and cooler any milk is kept the longer it will remain sweet.

(1) *The Cows should be Healthy.*

Each animal should be tested by the tuberculin test annually and if any animal in the herd reacts to the test, showing that she is affected with tuberculosis, she should be disposed of and the entire herd should be re-tested in six months.

Anyone wishing to maintain a healthy herd will reject any animal that reacts to the tuberculin test, for a cow that reacts, even if she is not giving tubercular milk at the moment, may do so at any time and at all times she may be the means of infecting with tuberculosis other animals in the herd.

A cow that has a tubercular udder, or that gives tubercular milk, is not the only tubercular cow that is a source of danger. Other cows suffering from this disease may cough the bacteria causing tuberculosis into the air, or pass the bacteria with their manure. In both cases this may affect the milk after it has been drawn from any cow in the milking shed, or may give the disease to other cows. In order to maintain a herd free from tuberculosis, it will probably be found necessary for some time to come for the owner to breed his own stock unless he can rely upon buying cattle subject to the tuberculin test. It is also of great importance that the bull should not be tubercular.

(2) *The Buildings in which the Cows are Housed or Milked should be Light, Clean and Well-ventilated.*

Natural light should reach all parts of the cowshed. Sunlight is the best and least expensive disinfectant.

Sufficient artificial light is necessary, so that when the cows are milked during hours of darkness the milkers can see that the cows are clean.

The shed in which cattle are milked should be kept as clean as possible. The ceiling or rafters should be kept free from dust and cobwebs, for a dusty atmosphere must result in dust falling into the milk. The floors, walls and stalls should be kept clean, otherwise the atmosphere becomes contaminated.

The building should be well ventilated so that the animals may breathe air that is as fresh as possible and because milk is very easily contaminated by bad air.

(3) *Before Milking the Cows should be Cleaned.*

Before milking the cows should be groomed with a curry-comb and brush. Manure or dirt should be washed at least from the flanks, tail and udder. The udder and teats, after being washed, should be wiped with a cloth which should be clean, so as not to dirty the udder again and damp so that dust or loose hairs that remain on the udder may not fall into the pail when the cow is being milked. It is important to keep the cow's tail clean, for if it is dirty and she swishes it about when being milked dirt may be thrown into the pail.

The hair on the udder should be clipped regularly (with a horse clipper), for a close-clipped udder can be kept clean much more easily than one covered with long hairs. The hair on the end of the cow's tail should be kept short so that it may not brush the ground or the animal's hocks and thus become too dirty.

(4) *Milkers*

The milkers should be healthy and should not come into contact with any person suffering from a contagious disease. They should put on clean overalls and caps after washing the cows so that dust from their clothes or persons will not fall into the milk pail. Immediately before milking and as often as may be needed, they should wash their hands. Their finger nails should be kept short so that they can be easily cleaned. Care should be taken not to press the head against the cow's side while milking for by this means dirt or hair may be loosened and fall into the milk.

The milking-stool should be kept very clean for the milker always handles it just as he sits down to milk and

if it is dirty the dirt gets on to his hands and thence into the milk.

The milking should be done with clean, dry hands, for wet milking results in milk that has run over the milker's hands falling into the pail; such milk has become contaminated by germs from the hands. The first squirt from each teat should not be allowed to go into the milk pail because this milk (called the fore-milk) contains a large number of bacteria which have found their way into the teat, not from the udder but from the outside. The first stream cleans out the teat. As soon as one cow is milked the milk should be removed immediately so that it may not be contaminated by the impure air in the cowshed.

(5) *Utensils.*

All utensils should be so constructed that they can be easily cleaned. They should have no crevices and the seams should be well soldered.

It is very important that the type of pail used should be a covered one having a small opening, for the smaller the opening the less dirt or dust can fall into the milk. It is necessary that it should be of such a pattern that it can be washed easily and that every part of the interior can be seen.

All utensils with which milk comes into contact should be kept scrupulously clean. After being used, they should first be rinsed in cold water, for if hot water is used the albumen in the milk becomes coagulated (just as the white of egg becomes thick when put in hot water) and sticks to the utensil. They should then be well scoured with soap in hot water to which some washing soda has been added. The water should be hot so as to dissolve the fat in the milk and the washing soda added to help this process. The utensils should then be rinsed again. To make a thorough job they should then be sterilized by steam for at least 20 minutes or immersed in boiling water.

Those having a boiler in the dairy will not find it difficult to fit up a tank in which all utensils, such as the cooler, can be sterilized. The buckets may be washed last so that they may be left in the sterilizing tank until they are next wanted so that a really clean bucket can be assured. In the production of clean milk no factor is more important than having really clean milk vessels, for if any

milk is left in crevices, etc., it makes a breeding ground for bacteria which will contaminate the milk when the vessel is next used.

(6) *Handling the Milk.*

As soon as the milk is taken from the milking shed it should be strained and then cooled to as low a temperature as possible, for bacteria increase very rapidly in milk which is warm. At a temperature of 50 degrees Fahrenheit or lower, bacteria increase comparatively slowly. Milk should be strained, because even with great care some loose hair from the cows or small particles of dirt may find their way into it, but it should always be remembered that straining never makes dirty milk clean, it only removes obvious filth and it does not remove the bacteria which have got into it with the dirt. The bacteria cannot be removed because they are so very small. It is calculated that about 160,000 could pass together, side by side, through a single mesh of the finest butter muslin. If manure falls into the milk only about one-tenth of it can be removed by straining; the other nine-tenths are liquid or have been dissolved in the milk.

If the straining is done through a cloth, the cloth should be very clean—it should be boiled every time after it is used. The best type of strainer is one which is fitted with cotton wool discs and wire meshes. The cotton wool should never be used more than once and should be changed during milking if necessary.

Milk should be put at once into clean cans (or into sterilized bottles) which should be covered immediately. In warm weather, when the milk is carted from the farm to the railway station or to its destination, the cans should be kept covered with a light coloured cloth, so that they may be shaded from the direct heat of the sun and the milk kept as cool as possible.

Meat Supply.

There are many references in the Reports of the District Medical Officers of Health to the condition of the slaughter-houses in their areas and to the foodstuffs which it has been their duty to condemn as unfit for human consumption. There is no doubt but that Public Abattoirs would solve most of the difficulties connected with the supply of wholesome meat and the Medical Officer of Health for Crewe (Dr. A. B.

McMaster) makes out an excellent case for the provision of one for his district. The model Bye-laws of the Ministry of Health could be improved by the insertion of some such clauses as those contained in the Danish Regulations of August 19th, 1911, some of which I reproduce:—

Public Abattoirs and Slaughter-houses authorized for export.

Section 2.

If gas-engines or other power-engines which pollute the air are being used, they shall be in special, ventilated rooms.

Section 3.

Persons employed at the slaughter of animals or at the dressing or preparing of meat shall not change their clothes on the same premises where the slaughter, dressing or preparing is carried on and their clothes shall not be kept on the same premises except it be in a separate closet with sufficient ventilation to the open air or to a chimney. When at work the employees shall wear special, suitable clothes which can be washed and which shall be kept clean.

A place where the workmen can wash shall be supplied outside the premises used for working and storing.

It shall be prohibited to spit on the floors of the premises and on the premises, except where the slaughter is carried on, spittoons with water shall be placed which shall be emptied and cleaned after each working day.

Section 4.

On the premises used for working or storing there shall be kept no tainted meat, offensive matter, nor any material in the shape of a dry powder, which might pollute the air or spoil the meat or meat products kept on the premises, nor any goods or any matter whatsoever which directly or indirectly might make the meat products unsuitable or less acceptable as human food.

Section 5.

Dogs and poultry shall not be allowed on the premises.

Section 6.

All implements and machines used on the premises shall be kept scrupulously clean. Meat-hooks—which are

to be nickel-plated or galvanized—shall be frequently cleansed in hot soda solution.

The butchers shall not take knives and stretchers in their mouth; dirty knives shall not be used for meat, and meat and offal of diseased animals shall not be made to touch the meat of healthy animals.

Arrangements shall be made that all implements and machines used shall be carefully cleaned after working; axes, knives, steels, saws, stretchers and cloths shall be put in boiling water; mackintosh aprons and overalls shall be carefully washed and the butcher shall carefully wash his arms and hands with warm water, soap and nail-brush. The preceding regulations about cleaning shall invariably be put into practice each time an animal, which is diseased or which after slaughter shows evident signs of disease, has been slaughtered and before the next animal is slaughtered.

Before cutting up carcasses, removing the shoulder-blades from carcasses of pigs or undertaking similar work, the butcher shall carefully wash his arms and hands as well as his mackintosh apron and overall.

Nothing but clean cloths and clean water shall be used for washing meat.

Transport.

Section 11.

Vans used for the conveyance of meat and meat products shall be clean, closed or covered with a tarpaulin or in a similar way. No meat shall during transport hang out of the van nor shall any person sit on the meat.

Meat carried on a tray or in an open receptacle shall be covered with a clean cloth and persons carrying large pieces of meat shall wear hoods or similar protection for the head and neck.

Health of Employees.

Section 12.

No person shall be employed at the slaughter of animals, at the preparing, sale or transport of meat or meat products nor have anything whatever to do on premises where such work is carried on, if he suffers from any contagious disease

of the skin of arms. hands. head or neck, or in the nose, mouth, throat, larynx or lungs (such as a peeling or secreting eruption, sore or inflammation, offensive catarrh in the nose, sores or papulæ in the mouth, throat or larynx, cough with excessive or offensive expectoration) or from any disease whatever which directly or indirectly can infect or contaminate the goods.

Section 13.

When a person employed at the slaughter of animals, at the preparing, sale or transport of meat or meat products or having anything whatever to do on premises where such work is carried on, shall be taken ill with a contagious acute disease (such as typhoid fever, gastric fever, scarlatina, diphtheria, inflammation of the throat, erysipelas, cholera or meningitis cerebro-spinalis) or be suffering from a serious contagious chronic disease (including tuberculosis of the larynx or lungs) he (or she) shall at once cease to be so employed.

If the person so suffering lives in the immediate neighbourhood of premises where meat or meat products are stored, prepared or sold, the case must be at once reported to the sanitary authority of the district, who shall have power to require the patient to be removed and to order that the use of the premises in the said way shall cease until further notice.

Before resuming work the person shall produce a medical certificate that the period of infection is past, which certificate shall be forwarded as soon as possible to the medical officer of health for the district.

Refuse Removal and Disposal.

The number of privy-middens and similar conservancy types of closet still remains deplorably high in many districts. A few of the worst have been displaced by water-closets or pail-closets, but much more wholesale action is needed. There is no doubt that these abominable structures play a sensible part in the dissemination of diphtheritic diseases and epidemic diarrhoea.

In several districts it is time that the system of disposing of refuse by depositing it on tips were discontinued and destruction by fire or pulverisation adopted. This is particularly the case in urban areas which are becoming densely

populated. But in any event refuse tips ought to be much more carefully supervised than is the case at present. The face of the tip (where tipping is taking place) should be kept as small as possible and should be covered with a good layer of earth or lime or both at the end of each day's tipping. Waste paper should be collected and burned. Tins should be separated out, desoldered and rolled out flat for disposal as old iron, &c. Offensive refuse should be most carefully covered with earth or lime. Rats and mice should be exterminated by poison, gassing, ferretting, &c., and fly-breeding places should be well sprayed with liquid disinfectant. Few if any of these measures are at all generally employed, the refuse being merely tipped and left to nature.

Rats Destruction.

Towards the end of the year a scheme was initiated for the destruction of rats and an Executive Officer and eight assistants were appointed. The scheme was generally approved by the Ministries of Health and of Agriculture and was based at its initiation on the Food Controller's Order. The assistants called at farms, slaughter-houses, tips and other infested premises and offered their services in the destruction of rats at a fixed payment of 2/6 per hour, plus 2/- per lb. for any poison laid. However, when the accounts came to be rendered for work done it is no exaggeration to say that the Department was inundated with complaints all on pretty much the same lines, *e.g.*, that the officer had only been on the premises a few minutes, that the rats were more numerous than ever since his visit, that no dead rats had been seen, that poultry and other animals had been poisoned and so on. These complaints became so numerous that when the Rats and Mice (Destruction) Act, 1919, came into force it was decided to carry out the scheme on the lines laid down in that Act, *i.e.*, inspect premises and serve notices where rat infestation was present and only do actual destruction in default of compliance with notices served.

Squills and barium carbonate are the two poisons usually laid. Both vary in toxicity, squills much more so than barium carbonate. Inquiries have been made as to the standardisation of the squills preparation sold as rat poison, but only unsatisfactory replies were received. It is obvious that as some squills preparations are poisonous to rats, whilst others can be used for the fattening of caged rats, we are working with most uncertain agents. Squills is capable of standardisation according to its alkaloidal content and we ought to insist on a guarantee with every delivery.

There are many varieties of squills—red, white and striped—and there is still more variety in the different extracts made from the bulb. There is also the fact to be considered that if rats are fed for a time on squill extract containing a non-poisonous dose of the toxin, they will become immune to its action and a very heavy dose will be required to kill them.

Zuseblag, the Superintendent of Rat Extermination in Denmark, states that in his experience the use of bacterial cultures of sufficient virulence, coupled with the use of suitable supplementary preparations for the extermination of immune rats, is more effective than any other method and involves no danger of poisoning to human beings or domestic animals. In his experience rats multiply more rapidly in places where poison is used.

The point which cannot be emphasised too strongly is that it is futile to expect that eight men or even eighty can clear a county of this size and of this nature of rats. If any radical extermination is to be achieved everyone concerned must pull his full weight. In order to try and secure this end the following leaflet has been widely distributed:—

EXTERMINATION OF RATS.

1. Besides destroying an enormous amount of foodstuffs (including growing crops, small domestic animals, many articles of merchandise, etc.), rats can assist in the carriage of disease. It is therefore highly important that they should be exterminated as far as is practicable and all who are directly interested in the matter are asked to co-operate as fully as possible to this end.
2. Rats get into buildings chiefly through the flooring, through doors which are badly fitting or broken at the foot, through imperfectly guarded ventilating openings, through the openings made for drainage and other pipes, etc.
3. Rats can be, to a great extent, prevented from getting into buildings by:—
 - (a) Making any flooring which is capable of being burrowed through impervious by asphalting,

cementing or concreting and by stopping up any burrows with a mixture of finely broken glass and cement.

- (b) Repairing doors and protecting the foot of the door to a height of about 12 inches from the floor with sheet iron, stout tin, zinc, corrugated iron, &c.
 - (c) By fixing fine-mesh wire-netting over ventilating and similar openings through which rats might gain access.
 - (d) By packing the openings in walls around drainage and other pipes with asphalt, cement or similar rat-proof material.
4. Rats cannot exist unless they have food, water and a place to nest in. *It is therefore of the utmost importance to get rid of collections of garbage and lumber by burning it. Burying it is not sufficient. See that disused buildings are cleared of rubbish and made and kept rat-proof.*
5. *Traps.*—A very useful trap is one made of an old tray or a piece of flat metal about 12 to 16 inches square, turned up slightly at the edge: smear this with bird-lime about $\frac{1}{4}$ -inch thick and place a bait in the centre. The kind of bait is all important. It is not much good putting grain as the bait in a grain-store or ham as a bait in a grocer's shop or store. The rat can get its grain or ham as the case may be without troubling the trap for it. Use something for baiting the trap which is not to be found in or near the place where the trap is to be set, *e.g.*, use ham in a grain-store, a few different varieties of grain in a tannery, some fennel seed in other places and so on, changing the bait from time to time. This trap can most usefully be set on a known rat run. There are many useful spring traps of different design on the market.

N.B.—Rats cannot be caught in traps which smell of a human being: when preparing traps and setting them wear gloves to prevent the smell of the hands clinging.

6. *Virus.*—There are a number of these, such as Ratine, Danysz Virus, Liverpool Virus, &c., which are procurable through Chemists. The drawback to most of these,

if not all, is that in a short time rats become immune from them (*i.e.*, protected from their effects) and this protection is passed on to their progeny for some time afterwards.

7. *Poisons*.—It is not safe to use poisons such as Phosphorus, Strychnine, &c., except under the most rigorous precautions. Simple poisons non-injurious to human beings and domestic animals are Barium Carbonate and Squills. Barium Carbonate is tasteless and odourless and can be mixed with bread-paste or similar material in the proportion of one part of barium to two of bread-paste, &c.

Squills can either be used in the solid form (chopped up) or as a liquid to be mixed with bread, flour, Indian meal, &c. The red variety of squills is the better one. A good way in which to use squills is to make a pancake, using some beef-dripping in the preparation and add about one quarter as much finely-chopped squills as you have pancake: the squills can be added either before or after frying the pancake. If added after frying, put the squills in between two layers of pancake. Cut the pancake up into pieces about $\frac{1}{2}$ -inch square and lay these in runs or holes.

8. *Poisonous Fumes*.—Sulphur (brimstone) is probably the best thing to use for fumigation. It should only be used in places where the fumes will not damage such things as foodstuffs, dyed goods, brass work, polished steel, &c.

First carefully seal up all openings in the room by blocking the chimney with a sack stuffed with paper or hay, pasting strips of brown paper over cracks and crevices in doors and windows and blocking up all ventilating openings.

Measure up the room to get its cubic capacity. This is done by multiplying together the length, breadth and height in feet, *e.g.*, in a room 30ft. long by 20ft. wide by 10ft. high the cubic capacity would be 6,000 cubic feet.

For every 1,000 cubic feet you require $1\frac{1}{2}$ lbs. of sulphur.

See that this is well broken up, put it in an old iron pan or similar vessel (in a very large place divide the total amount of sulphur amongst 3 or 4 pans) and place the pan on the floor well away from anything which might catch fire. On wooden floors or where there are fittings which might catch fire from the sulphur stand the pan containing the sulphur on an iron tray or similar thing with a good inch of earth or sand spread over it. Then if the sulphur should boil up and run over the edges of the pan in a burning state the sand or earth will extinguish it.

Set fire to the sulphur either by putting a few red-hot cinders into it or pouring a cupful of methylated spirits over it and lighting with a match.

Once the sulphur is well alight get out of the place as quickly as you can and seal the door on the outside by pasting on strips of brown paper.

Place men with stout sticks, dogs, &c., outside the building at all likely points to kill the escaping rats.

9. *Protection of Stacks.*—Stacks built on staddles are less likely to harbour rats.

Before threshing surround the stack with fine-mesh wire-netting not less than 4ft. high and far enough away from the stack to prevent rats jumping over it from the stack. Kill as before.

10. *Allotments, &c.*—The following is useful for clearing small sets of runs. Soak pieces of wadding or cotton-waste in Carbon Bisulphide solution till they are saturated. *N.B.*—*Carbon Bisulphide is highly inflammable and no smoking or naked lights should be permitted during its use.* Place the soaked wadding, &c., well into the rat-hole and immediately cover up with a lump of clay or wet soil so as to keep the fumes in. The fumes will do the rest.

This method is not adapted for buildings, because the rats are killed in the runs.

11. *Co-operation.*—It will not help the community much if you drive rats off your premises on to other people's premises. United action is necessary if this campaign is to be of any use. The formation of Rat Clubs

or joint action with neighbours on all sides are desirable if real success is to result.

12. The Rats Officer appointed by the County Council will be happy to assist anyone desiring to wage war on these pests. Communications addressed to him at 43, Foregate Street, Chester (Tel. Chester 1017), will receive prompt attention.

MEREDITH YOUNG, M.D., D.P.H.,
County Medical Officer of Health.

July, 1919.

The importance of the destruction of rats and mice from the public health point of view as well as from the point of view of national food economy cannot be denied and it is therefore the duty of all concerned to co-operate heartily with your Council in the endeavour they are making to reduce these dangerous pests. Local Authorities are very frequently the worst offenders by having house refuse tipped on open sites to which rats are soon attracted in large numbers. Once these tips become infested with rats it is a matter of extreme difficulty to clear them and almost an impossibility to keep them clear.

Administrative County of Chester.

SUMMARY

OF

REPORTS

OF

District Medical Officers of Health,

FOR THE YEAR

1919.

ADMINISTRATIVE COUNTY OF CHESHIRE

SUMMARY

REPORTS

DISTRICT MEDICAL OFFICERS OF HEALTH

FOR THE YEAR

1918

SUMMARY OF REPORTS
OF
District Medical Officers of Health,
FOR THE YEAR 1919.

CONGLETON

Municipal Borough.

Natural and Social conditions of the Borough.—
Congleton is not only an industrial centre, but is becoming more and more a residential town for people carrying on business in the Potteries. The chief occupations of the inhabitants are silk spinning, velvet cutting, towel weaving, tobacco manufacturing and the manufacture of shirts, skirts, blouses, hosiery and smallware. None of these occupations can be considered very unhealthy. There is a greater tendency to bronchitis among silk dressers than among the general population of the town, though I have not been able to ascertain that their longevity is seriously affected as a rule. The trade of the town is brisk at present, all the factories that are in a fit state to be used being occupied and there is a steady demand for factories amongst persons desirous of commencing business in this town. The bulk of the factories require chiefly female labour, many of the men working outside the town at collieries and iron works and what is chiefly required in this town is the introduction of new industries employing a large proportion of male labour.

The main portion of the town is very low-lying compared with the surrounding country, the lowest-lying portion of the town being only 260 feet above sea level, while it is surrounded by hills, the highest part of the Borough, Congleton Edge, being 700 feet above sea level. The Borough chiefly consists of agricultural land, about the centre of which the urban part is situated, mainly on the south bank of the River Dane. The greater part of the Borough has a sandy subsoil overlying marl, but Mossley, the chief residential district, has a clay soil.

Congleton Municipal Borough.

I have been unable to obtain a full account of the poor-law relief in 1919 in time for this report. There is a small Cottage Hospital, other patients who require hospital treatment going to Stoke-on-Trent or Manchester.

Vital Statistics.—Births 191. Males 104. Females 87. 1919 Birth-rate 15.5. 1918 Birth-rate 16.9. 1919 Birth-rate for England and Wales 18.5.

Illegitimate births 11. Illegitimate birth-rate 5.7 per cent. of births.

Deaths 157. Males 78. Females 79. 1919 Death-rate 13.2. 1918 Death-rate 19.2. 1919 Death-rate for England and Wales 13.8.

Deaths of infants under one year of age 25. 1919 Infantile mortality rate 130. 1918 Infantile mortality rate 76 per 1,000 births. 1919 Infantile mortality rate for England and Wales 89.

Number of deaths from zymotic diseases 4. 1919 Zymotic death-rate .3. 1918 Zymotic death-rate .5.

Number of deaths from tuberculosis 12. 1919 Tuberculosis rate 1.0. 1918 Tuberculosis rate 1.1.

Number of marriages in 1919, 125.

The Registrar-General gives a population of 12,300 for calculating the birth-rate and 11,808 for calculating the death-rate.

Water.—The water supply is obtained from the quicksands; the supply is ample and is constant. There is no possibility of contamination; it is not liable to have plumbo-solvent action and the Analyst's reports have invariably been satisfactory.

Rivers and Streams.—The River Dane is very slightly polluted by a stream containing the effluent treated before discharge from several works outside the Borough, where considerable amounts of chemicals are used in the manufacturing processes, slightly also by sewage from some of the outlying parts of the district and by the discharge of the

Congleton Municipal Borough.

water-closets of one Congleton factory. There is no pollution of rivers or streams from the public sewage works. Any action required is taken by the Rivers Pollution Committee of the County Council.

Drainage and Sewerage.—95% of the sewage is domestic and only about 5 per cent. trade. The sewerage of the town is satisfactory, though some of the outlying parts of the Borough are not sewered. The Sewage Disposal Works are sufficient at present, but if any new trades are started or outlying districts, *e.g.*, Dane-in-Shaw, West Heath, The Marsh and parts of Mossley, are connected up, these works would have to be enlarged. Certain portions of the Borough, *e.g.*, Congleton Edge and isolated farms, can never be sewered. The effluent from the Sewage Disposal Works is invariably found satisfactory on analysis.

Closet Accommodation.—Water Closets 981, Pail Closets 2617, Privy Middens 187.

CONVERSION OF CLOSETS.

Year.	Pail Closets to Water Closets.	Privy Middens to Pail Closets.
1919	3	19
1918	2	17
1917	3	50
1916	10	62

Scavenging.—House refuse is collected weekly, being removed to tips in outlying parts of the Borough. Pail-closets are emptied weekly; there are no earth-closets in the district. There are only 4 cesspools, these and the privy-middens being emptied on notice being given and the latter after being emptied are deodorized with Sanitas. There are 119 dry ashpits, which are emptied on notice being given.

Infectious Diseases.—During 1919, 125 cases were notified under the Infectious Disease Notification Regulations:—Pulmonary tuberculosis, 17; tuberculous meningitis, 1; other tuberculous diseases, 6; measles, 4; scarlet fever, 6; diphtheria, 12; ophthalmia neonatorum, 6; malaria, 7; dysentery, 1; influenzal pneumonia, 36; primary pneumonia, 21; erysipelas, 5; puerperal fever, 3.

Diphtheria anti-toxin is supplied by the Council to any medical practitioner for patients within the Borough, on

Congleton Municipal Borough.

application being made to me. On several occasions this year anti-toxin has been supplied, but in cases which have been immediately sent to the Fever Hospital on notification, no application for anti-toxin has been received.

Bacteriological examinations are made at the Public Health Laboratory, University of Manchester, of specimens from patients suspected of suffering from diphtheria, typhoid fever and cerebro-spinal meningitis; since 14th July, 1919, sputum from suspected cases of pulmonary tuberculosis has been examined at the County Laboratory, Chester.

Suspected disease.	Number of Specimens examined.	Positive Results.
Diphtheria	12	2
Pulmonary Tuberculosis	15	2

I do not think that bacteriological aids to diagnosis are as fully utilised in this district as they should be.

One case of dysentery was notified, which however had not been contracted in this district. Instructions were given with regard to destroying flies and protecting food, special precautions were taken with regard to the excreta. The case was reported to the Secretary to the Local Government Board and to the County Medical Officer of Health and the Sanitary Inspector took appropriate steps to have certain sanitary defects remedied. The man died about three weeks after notification and the house was thoroughly disinfected.

Seven cases of malaria were notified. I found on visiting these cases that they had all been contracted on military service abroad and that each patient was receiving quinine from his medical attendant.

The notification of tuberculosis is carried out much less promptly than is desirable, it is possible that this may be partly due to patients only consulting their doctor during the latter stages of the disease, but in one case which I considered should have been notified earlier, I reported the matter to the Sanitary Committee, who instructed the Town Clerk to write to each medical practitioner in the Borough urging the necessity of prompt notification and since then an improvement has been noticeable.

A case of tetanus occurred in a neighbouring district and was removed to and died in Congleton Cottage Hospital.

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Curiously enough it occurred the day following the receipt of an intimation from the Ministry of Health that anti-tetanic serum was being supplied to County Medical Officers, but the supplies had not been sent out at that time. At the inquest a verdict was returned of "Paralysis of the vagus nerve of the heart brought on by lockjaw caused by cutting a corn."

Influenza became again epidemic in the latter half of February, but prior to this there were a few cases. The epidemic continued more or less for about $2\frac{1}{2}$ months, though even after this cases cropped up from time to time.

The figures given in this section will not agree altogether with those in the earlier portion of the report, as the latter are the corrected figures, deducting non-residents of the town who died during a temporary stay here and adding those inhabitants of the town who died while temporarily in another locality; but I think in dealing with such an epidemic it is more important to put before you the deaths actually occurring in the town. The number of deaths occurring ascribed to influenza during 1919 was twenty.

You provided two nurses for visiting patients unable to provide or obtain nurses for themselves; they did very good work, paying 602 visits to 114 patients. I now hold a stock of influenza vaccine, which can be obtained by any medical practitioner requiring it for treatment or prophylaxis.

Isolation Hospital.—The West Heath Sanatorium, which is the Isolation Hospital for this Borough and for four Urban Districts and one Rural District, is within the Borough boundaries and accommodates cases of diphtheria, scarlet fever and typhoid fever and will take in cases of trench fever if there is room for them.

There is also a Small-pox Hospital at Arclid, in Congleton Rural District, available for Borough cases.

I do not consider that it is practicable to provide for influenza cases, but provision for hospital accommodation of cases of cerebro-spinal meningitis and dysentery is in my opinion necessary.

Maternity and Child Welfare.—I think it is very unfortunate that Maternity and Child Welfare Schemes and also

Congleton Municipal Borough.

the supervision of midwives are not under the Borough Council, as decentralization so often leads to a greater measure of efficiency.

Six cases of ophthalmia neonatorum were notified. I visited the house in each case and advised the parent or some relative with regard to spread of infection and the midwife was also seen and advised with regard to carrying infection. In only one case so far as I could ascertain was there any permanent injury to the sight; this child had both eyes badly affected and died from acute nephritis and prematurity at birth. In every case a medical man was early in attendance.

Housing.—(I) General housing conditions in the district:—

- | | | | | |
|----|--|-----|-----|-------|
| 1. | Total number of houses ... | ... | ... | 2794 |
| | Number of houses for the working classes ... | | ... | 2534 |
| | New houses for the working classes erected during the year ... | ... | ... | 0 |
| 2. | Population (estimated) ... | ... | ... | 11790 |
- Changes in population in 1919—Probably a small increase.
Anticipated future changes in population—Anticipated small steady increase if house accommodation can be found.
3. (a) Extent of shortage of houses ... 250
(b) Measures taken or contemplated to meet any shortage—250 applied for under survey, have been granted and building will shortly commence.

(II.) Overcrowding:—

1. Extent.—40 houses on the basis of 2 per room, but on a public health basis would be much greater, owing to smallness of rooms.
2. Causes.—Lack of houses.
3. Measures taken or contemplated to deal with overcrowding.—Erection of new houses of a better type.
4. Principal cases of overcrowding dealt with during the year and action taken.—None, it is impossible to take any action until some alternative accommodation can be offered, as every working class house in the town is occupied.

(III.) Fitness of houses:—

1. (a) General standard of housing in the district.—A

Congleton Municipal Borough.

moderate standard exists; very few of the houses are modern, there are in many of them defects—*e.g.*, ground dampness, windows not opening sufficiently and cobbled yards, and in very few of them is there a water carriage system.

- (b) General character of defects found to exist in unfit houses.—Deficient lighting and ventilation, deficient yard space and bad yard paving, defective pointing and spouting, ground damp, insufficient cubic space in rooms, deficient bedroom accommodation, defective closet accommodation, houses built in courts and yards, back-to-back houses and obstructive houses.
- 2. Action as regards unfit houses under:—
 - (a) The Public Health Acts.—Two formal and 58 informal notices for defects were served, which were remedied.
 - (b) The Housing Acts.—390 houses inspected; 20 were found unfit for habitation, excluding slum areas and obstructive buildings, which will be closed as soon as other houses are available.
- 3. Difficulties in remedying unfitness, special measures taken and any suggestions in the matter.—No available houses for occupiers, to take place of houses if demolished, or to house them whilst renovation is being carried out; certain houses are so crowded together as to make renovation impossible, demolition being only possible course. In case of repairable houses, there is shortage of skilled labour and materials.
- 4. Conditions so far as they affect housing, as regards water supply, closet accommodation and refuse disposal, together with measures taken during the year in these matters.—Water supply is sufficient for present conservancy system, but not for any large extension of water-carriage system; the Borough Surveyor is specially investigating this matter at present. There is no difficulty about removing refuse to tips, but there is no refuse destructor. No special measures taken during the year.

(IV.) Unhealthy areas:—

- 1. Action taken as regards areas represented before the beginning of the year under Part I. or Part II. of the Housing Act, 1890.—A few houses were demolished previous to the war and several closed without being demolished.

Congleton Municipal Borough.

2. Particulars of and action taken as regards areas represented during the year.—54 houses in slum or unhealthy areas were represented to the Town Council, also 8 obstructive buildings and 20 unfit houses coming under neither of these headings, which last are already mentioned under Section III. (2) (b) Housing. The Council decided that these houses should be closed as soon as others could be erected.
3. Information as to complaints made during the year that areas were unhealthy and action taken.—No complaints made except representation by Sanitary Inspector and myself. See previous Sub-Section (IV.) 2.

Action under Section 17 of the Housing Act of 1909.

- (a) Number of dwelling houses inspected under and for the purpose of the Section—390.
- (b) Number of dwelling houses which were considered unfit for human habitation—82.
- (c) Number of dwelling houses the defects in which were remedied without the making of closing orders—11.

Action under Section 28 of the Housing Act, 1919—None.

Closing Orders:—

- (a) Number of representations to the Local Authority with a view to the making of closing orders—82.
- (b) Number of closing orders—None, until new houses are erected.
- (c) Number of dwelling houses in regard to which closing orders were determined on the house being made fit for human habitation—None.

Obstructive Buildings:—

- (a) Number of representations made—8.
 - (b) Number of buildings demolished—None, pending erection of new houses.
-

CREWE

Municipal Borough.

Vital Statistics.—Area of Borough, 2,185 acres.

Population.—Census 1911, 44,960. Estimated to middle of 1919, 46,561.

Marriages.—The number of Marriages solemnized in the Borough in 1919 was 430, that is 145 more than in 1918 and 165 above the average for the ten years 1904—1913. This gives a marriage-rate of 17.31 as compared with that for England and Wales, 19.7.

Births.

Males.	No. Registered.		Total.	Birth-rate.	
	Females.	•		Crewe.	England & Wales.
391	364		755*	16.2	18.5

* This figure includes 9 births transferred to the town.

Of the births, 32 were illegitimate as compared with 38 in 1918.

Deaths.

	Males.	Females.	Total.
Deaths registered in the Borough	216 ...	234 ...	450
Deaths of non-residents deducted	4 ...	6 ...	10
Total in Borough ...	212 ...	228 ...	440
Transferred Deaths	40 ...	28 ...	68
Nett total in 1919 and rate	252 ...	256 ...	508 ...10.9

Cancer and other Malignant Diseases.

Number of Deaths	...	...	...	52
Death-rate per 1,000	...	...	...	1.09

The age distribution of the deaths was as follows:—

Years	...	25—45	45—65	65 and upwards.
Deaths	...	6	25	21

The parts of the body affected were:—Stomach, liver, etc., 24, buccal cavity 1, female genital organs 6, breast 4, peritoneum and intestines 7, other organs 10.

Crewe Municipal Borough.

Water Supply.—The water supply is provided by the London and North-Western Railway Company and obtained by artesian wells at Whitmore, Staffs. It continues to be of excellent quality for drinking purposes.

The total quantity of water given below is the amount actually paid for to the Railway Company, plus 20½ million gallons, the estimated amount supplied direct by the Company to their own property.

Year.	Quantity consumed during the year in gallons.	No. of Inhabited Houses.	Population estimated to middle of year.	Consumption per house per annum in gallons.	Consumption per head of Population per day in gallons.
Average 1895-1904	188,427,130	8,565	40,434	21,901	12.67
Average 1905-14	202,641,284	10,018	44,572	20,229	12.31
*1915	*70,952,740	10,359	45,825	*	*
1919	200,377,570	—	46,561	—	—

* Records only available for 1st 5 months of year.

Rivers and Streams.—The North Brook continues to be polluted by the overflow of the Northern Outfall Sewer before the same reaches the Pumping Station. A slight fall of rain suffices to cause this.

Now that the Corporation have obtained the land for the bacteria beds required to treat the sewage from the Northern Outfall on the same lines as that from the Southern Outfall, the time has arrived when the scheme to effect this improvement should be proceeded with as expeditiously as is practicable.

The new Sewage Works in full working order since 1914 receive all the sewage from the Southern Outfall.

The Reports from the County Analyst indicate that the bacteria beds discharge their function in an excellent manner and produce an effluent that is very satisfactory.

Sanitary Accommodation.—The following table gives approximately the number and the forms of closet accom-

Crewe Municipal Borough.

modation in the town at the end of the years 1916, 1917, 1918 and 1919 respectively:—

		1918.		1919.
Water-closets	...	7,598	...	7,758
Waste Water-closets	...	1,002	...	1,002
Pail Closets	...	2,911	...	2,787
Covered Privy Middens	...	114	..	106
		—	...	—
Total	...	11,625	...	11,653

Slaughter-houses.—There are six registered, four licensed and 2 licensed annually, making a total of 12 slaughter-houses in the Borough.

Most of these slaughter-houses are unsatisfactory. They are generally in close proximity to dwelling houses. As far as possible they are kept up to a creditable standard of cleanliness.

Cowsheds.—There are 46 cowsheds within the Borough. They are systematically inspected. Greater care might be exercised by the cow-keepers in respect to the cleanliness of the floors and channels. If they (the cow-keepers) could only be induced to dry clean the udders of the cows some little time previous to the commencement of milking, material advancement on the right lines would have been made.

Dairies and Milkshops.—There are 63 premises on the register where retail milk trade is carried on.

There has been no increase during the year. Many of the small shops are quite unsuitable for the sale of milk, due to the absence of proper storage facilities.

Cinemas and Theatres.—There are four cinemas and one theatre in the Borough. These are visited regularly and the following voluntary disinfection is carried out by the occupier:—

Name.	Situation.	Remarks.
Lyceum Theatre .	Heath Street ...	Washed and sprayed with Jeyes fluid each day.
Empire Cinema ...	Heath Street ...	Sprayed with "Deoda" and washed each day.
Kino	Co-operative Street .	Sprayed and washed each day with Jeyes fluid.
Queen's Hall .	High Street	Sprayed and washed each day with Jeyes fluid and Sanitine.
Palace	Edleston Road ...	Sprayed and washed each day with "Deoda."

*Crewe Municipal Borough.***Special Report on Conversion of Pail and Midden Closets to Water Carriage System.***To the Chairman and Members of the Water Carriage Sub-Committee.*

This Sub-Committee was appointed to consider a reference from the Health Committee arising out of correspondence received from the Ministry of Health.

The Ministry have asked the Town Council to consider the question of proceeding with the work of converting the remaining privies and pail closets in the district to the water carriage system.

The Minister of Health "desires to remind the Town Council that the conditions commonly associated with closets of this type in urban communities, however carefully they are emptied and cleansed, are invariably a menace to the public health of a district, and the Ministry would therefore urge the Council to prohibit in future the erection of this type of closet in new buildings, wherever sewers and water supply are available, and also to consider the question of formulating a scheme for the systematic conversion of the existing pail closets to fresh water closets. In this connection I am to draw attention to the powers with which the Town Council might be invested if Sections 39—42 of the Public Health Acts Amendment Act, 1907, were declared in force in the Borough."

Introductory Section.—Since the Sub-Committee was appointed some months ago the Sanitary Inspector and his staff have been engaged in compiling information with regard to the sanitary conveniences in the Borough and the work which will be involved in a scheme prepared to exercise the powers available under Sections 39—42 of the Public Health Acts Amendment Act, 1907.

Mr. Stazicker has furnished me with the following facts bearing on the question:—

Conservancy Conveniences in Borough:—

Pail Closets.	Privy Middens.	Cesspits.
2,787	106	2 = 2,895

Back Passages in rear of some of these conveniences:—

No. of 10 ft. back passages.	No. of 10 ft. back passages where W.C. drains can be connected to adjacent sewer after inspection.	No. of 10 ft. back passages where drains require examination.
107	15	92

Crewe Municipal Borough.

3 ft. 6 in. Passages or Entries involved in remainder :—

No. of 3 ft. 6 in. passages.	No. of 3 ft. 6 in. passages where con- nection to adjacent sewer can be made after inspection.	No. of 3 ft. 6 in. passages where drains require examination.
207	107	100

The total ashpits in the Borough number 2,684.

The Borough Surveyor informs me that in view of the large number of back passages involved, he recommends that the work be spread over a period of three to five years.

SECTION I.

Conversion Scheme.—Having carefully considered all the problems which arise in connection with this question, I beg to submit the following scheme:—

1.—*The statutory powers required to enable the work to be done.*

To carry out the conversion of all pail closets and privy middens and to prohibit the construction of these conveniences for the future, it will be necessary for the Council to adopt Sections 39, 40, 41 and 42 of the Public Health Acts Amendment Act, 1907.

Work involved in such a Conversion Scheme.

(a) *In each premises where a pail closet or privy midden is in use, the conversion will entail the provision of:—*

- (1) Water closet pedestal.
- (2) Necessary fixing and connections to the adjacent sewer.
- (3) Water supply, flushing cistern and fixing same.
- (4) Alterations to closet building and ashpit.

These should be such that dustbins can be substituted for ashpits.

In towns where dustbins replace ashpits it is found that the cost of collecting house refuse is one-fifth of that required to scavenge ashpits.

(b) *Drainage and Back Passages.*

Of 314 passages involved there are 92 10ft. passages and 100 3ft. 6in. passages where it is known that the

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drains concerned must be uncovered and examined before being converted into public sewers and that of the remainder each individual passage will be in need of drain inspection. The question is further complicated by the existence of a number of joint drains continued from one yard to another and only reaching the back passage at a point a considerable distance away from the top house served by the drain. Houses on such drains have in many instances passed into the hands of several owners since the agreement between the Corporation and the original owner was drawn up. In all such instances if an adjacent sewer is available, then the drains connecting the new water closets to the sewers will form part of and be paid for under the finance of the conversion scheme.

Where on the other hand no such sewer is available the provision of same must be made under Section 150 of the Public Health Act, 1875.

The best method of dealing with all these joint drain questions under the conversion scheme will be the provision of a sewer in the back passages.

The phrase "adjacent sewer" is used in the sense defined in the Public Health Act, 1875, *e.g.*, a sewer within 100 feet.

In only a few instances out of the 2,895 conveniences concerned is a sewer so far away that conversion will be difficult or impossible owing to gradients.

(c) *Water and Sewage Disposal.*

The increased quantity of water required, the water charges and the additional quantity of sewage for disposal will all call for careful adjustment and joint action by the several committees concerned.

In making application to the Ministry of Health for an order to put Sections 39 and 42 of the Act into force, information on these questions must accompany the same.

The Expenditure.

- (a) The cost of the work described in para. 2a, where it relates to pail closets, will all fall on the Local Authority, unless owners of property can be induced

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to effect the improvement on being given half of the expenditure.

Where the work appertains to midden privies half the cost must be borne by the owners.

Where a sewer is within 100 feet of the premises to be converted, the cost of the connection will form part of the conversion expenditure.

Where a length of sewer has to be provided under Section 150 of the Public Health Act, 1875, in order to enable the statutory notices *re* conversion to be served, then the outlay on same must be defrayed by the owners with property abutting on the back passage or street concerned.

From an adjacent County Borough it has been learned that the total estimated cost of the conversion there is £15 per convenience (pail or midden privy).

(b) *Present Expenditure in the Nightsoil Department.*

During the last 10 years the amount spent on horse hire and labour alone without the upkeep of carts, etc., amounted to £8,348 13s. 10d., or an average of £860 per annum for the last 5 years and of £810 for the previous 5.

The Annual Charges arising out of the conversion scheme when completed would be less the above amount.

SECTION II.

Advantages of Adopting the Powers Available.

1. The water carriage system of sewage disposal is the cleanest, best and most hygienic one obtainable. The prompt removal from dwellings of organic pollution is one of the wisest preventive measures.

The fact that some people misuse and abuse the advantages given by water carriage can only be overcome by wider knowledge and education and should not be allowed to weigh unduly in deciding the principle involved.

It must be remembered that although the Local Authority have had the water carriage system of disposal in all their schools (with 2 exceptions) for many years, the educational advantages to the children of this system has been counteracted in those homes where the older conservancy convenience has been in use. Until the

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home and the school are both provided with the best system full advantage is not taken of the principle adopted.

2. The abolition of the pail closets and the middens throughout the Borough will naturally result in the suspension of the carting of nightsoil through the streets and the disadvantages attached to emptying of the pails into the carts adjoining dwellings. The few instances in which the conversion will not be possible on the outskirts of the Borough—approximately some 12 in number—will require to be separately considered.
3. In the conversion of conservancy conveniences to water carriage, owners should be encouraged to also abolish the old ash pits and substitute for same covered dustbins for, as has been pointed out above, the scavenging of dustbins is a much more economical problem than that involved in scavenging ash pits. Further, covered dustbins are much more hygienic and better protection against fly nuisance in hot weather than ash pits.
4. In addition to the added powers as to conversion obtained under the 1907 Act, the acquiring of power to also prevent conservancy conveniences being erected in the future will be a great boon to the town.

SECTION III.

Recommendations.

I advise the Committee:—

1. That they should adopt the Sections of the Act of 1907 which will enable them to carry out the above conversion scheme.
2. That as the work of conversion involves considerations affecting the Health, Market and Water and Works Committees as well as the General Purposes Committee, a Joint Sub-Committee be appointed to consider the details of the work when the principle has been adopted.
3. That the conversion of the midden privies be undertaken first and when these are completed, then the pail closets be scheduled in areas for systematic action.

Special Report on Cinematograph Theatres.

As the Council will be considering at their next meeting the renewal of Cinema Licences in the town, I beg to advise the Health Committee that these renewals should carry certain defined conditions.

1. That the Council reserve to themselves the power to exclude school children from Cinema performances for such periods as your Medical Officer of Health may find it necessary to advise that this should be done.

The prevalence of measles, whooping-cough or influenza are the three diseases to which at present I consider this restriction should apply.

May I point out to the Committee that the Building Bye-laws, framed before Cinema Theatres came into existence, do not give you sufficient power in defining what the ventilation of these premises should be at the time of their construction; consequently until such times as special Bye-laws to deal with Cinematograph Theatres are formulated, the only remedy you have is to attach conditions to the licences.

3. With regard to the arrangements for inspection, raised by the Secretary of State in his letter dated 3rd November, 1914, Section 4, steps to secure (a) adequate ventilation, (b) cleanliness, (c) avoidance of overcrowding, are specially emphasized and local arrangements should exist for this to be carried out. All three naturally form part of the duties of your Sanitary Inspectors, while overcrowding is a question in which the Police might be asked to co-operate and definitely appointed as additional Inspectors for that purpose and paid by this authority.

Milk Supply.—Complaints received during the year with reference to unsatisfactory conditions of milk supplied to householders were inquired into and necessary action taken to prevent a recurrence of same.

The Town Council are satisfied that extended powers are needed to bring about improvement in the milk supply, consequently during the year the following resolution was adopted:—“That a representation be made to the Ministry of Health on the importance of bringing the Milk and Dairies (Consolidation) Act, 1915, into operation at as early a date

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as possible. In order to raise the standard of purity in the fresh milk distributed in the town it is essential that the extended powers under this Act become operative."

Special Report on Public Abattoirs.—In accordance with the instructions you gave me at the last meeting, I beg to submit the following report:—

1. *Introductory Observations.*

From the discussion on the question at the previous meeting, I gathered that the Committee agree with the principle of a Municipal Abattoir from a public health standpoint, but wish to know the administrative difficulties which have to be overcome by all Local Authorities before they use or erect such premises to the best advantage. Since one of my predecessors prepared a long report on the subject, the Model Abattoir Society was formed in London and in 1913 they issued a very valuable report. In 1912, when this Society collected information, there were 160 public slaughter-houses in the country under the control of Local Authorities and detailed information with regard to 86 of these was supplied. A study of this Society's Report has only confirmed my own previous opinion, *e.g.*, that to gain the full public health advantage from a public abattoir all private slaughter-houses in the same area must be abolished. In 1906 a Bill for this purpose was before Parliament, but it did not become law.

2. *Position in the Borough.*

There are 12 private slaughter-houses in the town, 6 of which are registered and were in existence prior to 1875, 4 others are licensed and 2 are licensed annually.

In the Autumn of 1918, the Ministry of Food used the Abattoir in Messrs. Lloyd's Cattle Market, Gresty Road, as a Government slaughter-house for grade 4 cattle. Prior to this, when the Ministry took over the control of the whole meat supply of the country (home and imported), slaughtering of cattle ceased in private slaughter-houses and was carried out at the Co-operative Society's slaughter-house for the Crewe area. Now all the slaughtering of cattle is done there, as the Government premises have been closed again. Pigs and some sheep are still killed

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in private slaughter-houses. At present about 100 cattle, 150 sheep and a number of pigs are killed each week at the Co-operative Society's slaughter-house and this quantity of dead meat supplies not only the Borough but also parts of the surrounding County.

The number of animals dealt with is greater than the plan of the premises was designed to accommodate.

3. *Action necessary before a Municipal Abattoir can be used to the maximum advantage.*

As stated in paragraph 1, it is only when all local private slaughter-houses are abolished that a Local Authority derives the full benefit from a public Abattoir. To make this possible in the town, a local Act of Parliament is necessary, as in order to compulsorily close private slaughter-houses a Local Authority should compensate the occupier.

4. *Recommendations.*

- (a) That the policy of the Town Council should be to eventually provide a public Abattoir.
- (b) That when the Town Council decide to proceed with a public Abattoir, a local Act of Parliament be obtained under which the 12 existing private premises can be closed.

...
If Parliamentary power is required to extend the Borough, the question might be dealt with then if your legal advisers deem it possible.

- (c) That if the Council wish to provide a public slaughter-house without the special additional powers recommended, the Council should first ascertain from the present occupiers of the private slaughter-houses if they are prepared to close them voluntarily.
- (d) That if the Ministry of Food continue to control the killing of cattle, the adequacy of the accommodation in the present slaughter-house will demand attention as the premises were not constructed to deal with the number of carcasses which now pass through them in a few days.
- (e) That in deciding when to proceed with the provision of an Abattoir, the other sanitary questions that call for pressing consideration should be taken into account.

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Infectious Diseases.—These fall into two groups those under the Infectious Diseases (Notification) Act, 1889, and those notifiable under the Public Health Act, 1875, Section 130, by order of the Local Government Board.

The number of notifications received during 1919 from medical practitioners was 281.

TABLE OF THE PRINCIPAL INFECTIOUS DISEASES.

Disease.	Cases notified.	No. of Deaths.	Case mortality.	Deaths per 1,000 of the Population	Removed to Hospital.
Diphtheria	60	3	5.0%	0.06	52
Scarlet Fever	44	1	2.2%	0.02	42
Enteric Fever	—	—	—	—	—
Measles	126	1	0.79%	0.02	2
Whooping Cough	—	2	—	0.04	—
Erysipelas	12	—	—	—	4
Puerperal Fever	4	—	—	—	2
Influenza	—	51	—	1.09	2

Diphtheria.

Age.	No. of Cases.	No. of Deaths.	Case Mortality.
Under 5 years	10	2	20%
5-15 ..	35	1	2.8%
15-25 ..	9	—	—
25-45 ..	6	—	—
45-65 ..	—	—	—

The number of swabs examined during 1919 was 434 :—

	THROAT.		NOSE.		Total.
	Positive.	Negative.	Positive.	Negative.	
Crewe Laboratory	47	210	15	88	360
London ..	11	33	1	26	71
Manchester ..	—	3	—	—	3
Total ...	58	246	16	114	434

Diphtheria antitoxin is available for use in all cases and is extensively used at the Isolation Hospital.

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Scarlet Fever.—The number of cases certified was 441.

Age.	No. of Cases.	No. of Deaths.
Under 5 years	14	—
5-15 "	26	—
15-25 "	3	—
25-45 "	1	1
45-65 "	—	—

Measles.—The number of notifications received was 126.

Influenza.—The outbreak of influenza that began again in February, 1919, was the third severe wave of infection to visit the Borough. The precautions reported in last year's Annual Report on the subject were continued with the addition that the Public Health (Influenza) Regulations, 1919, were put into force immediately and children excluded from Cinema Theatres from February 12th to March 3rd.

Five deaths from influenza transferred to Crewe from other towns are not included in this survey.

The incidence of the disease in previous years; the number of deaths from influenza, all forms of pneumonia and all forms of bronchitis were:—

	Influenza.	Pneumonia.	Bronchitis.
1919	... 51	28	50
1918	... 135	59	50

Prior to 1918 the deaths from influenza were few, but those from pneumonia and bronchitis were above the average in 1915 owing to measles; 34 of the deaths in that year were of children under 5 years of age.

Public Health (Pneumonia, Malaria, Dysentery, &c.,) Regulations, 1919.

Fourteen cases of malaria notified during the year were all instances of recurrence of the disease amongst men who had been infected while on service overseas.

On receipt of each notification the premises were visited, investigations were carried out as to the presence or otherwise of anopheline mosquitoes and whether there were any adjacent breeding grounds or places where such mosquitoes would be found.

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So far one has not been able to find the anopheline mosquito in the Borough, although careful search has been made and the experience gained while on active service in dealing with this question utilized to the fullest extent.

As was to be expected under these circumstances no indigenous case was reported.

One notification of a chronic carrier of amœbic dysentery was received during the year. When visited the man was found to be in good health, not suffering from any local evidence of disease and his business did not entail any risk of infection to other persons. He is being kept under observation.

Pulmonary Tuberculosis.

Cases notified	...	...	...	49
Deaths ...	...	..	..	25
Death-rate per 1,000 of the population			...	0.53

Twelve of the patients notified in 1919 died in the course of the year. Of the 25 deaths, two were "transferable" ones from other districts.

BACTERIOLOGICAL EXAMINATIONS.

	No. of Specimens.	Positive.	Negative.
Crewe Laboratory	83	21	62

OPEN-AIR SHELTER AT ISOLATION HOSPITAL.

Eight patients were admitted during the year, six males and two females.

SPUTUM BOXES.

During the year 552 cardboard sputum boxes were distributed from the department.

Other Tubercular Diseases.

Number of deaths	...	...	...	6
Death-rate per 1,000		...	...	0.12

The number of cases notified in 1919 was 15 as against 10 in 1918.

Tuberculosis—Pulmonary Hospital.—In response to the request of the County Council for increased accommodation

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for tubercular patients in need of treatment in a Pulmonary Hospital, the Town Council have submitted a scheme for a 16-bed Open-air Pavilion at the Isolation Hospital. This scheme was first prepared in 1913-1914 and adopted by the Council, but the outbreak of war compelled its postponement.

In view of altered circumstances improvements have been effected in both the design of the building and the planning of the grounds. In addition to the new Pavilion for patients, the scheme includes alterations to the existing Administrative Block to provide accommodation for the increased staff.

Satisfactory terms have been arranged between the Corporation and the County Council and the latter have submitted the Scheme to the Minister of Health for his approval, as an integral part of the tuberculosis crusade in Cheshire.

Venereal Diseases.—Information is furnished by the Medical Officer of Health to all persons who desire to take advantage of the treatment facilities provided by the County Council.

It is to be regretted that there is no local Centre for the treatment of these diseases—specially in so far as the needs of infected mothers and children are concerned.

That such is required is clearly indicated by the increase in the number of new-born infants admitted to the Isolation Hospital suffering from ophthalmia neonatorum.

Infantile Mortality.—The Infantile Mortality rates in the Borough in 1919 were as follows (the rates for previous years are also given):—

1919		1918		1917		1916
54	...	97	..	81	...	83

Still-born Children.

			No. of Still-Births.	Percentage of total Births.
1919	20	2.6
1918	32	4.1
1917	18	2.4
1916	52	5.8

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The death-rate per 1,000 births of each class among legitimate and illegitimate children are shewn below :—

	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
Inf'tile Mortality of legitimate children ..	108	101	106	102	162	82	106	85	115	81	81	96	52
Inf'tile Mortality of illegitimate children ...	142	166	68	116	209	80	47	75	209	113	71	105	93

Notification of Births Act.—During the year, 749 births were notified and 48 other births ascertained which had not been notified, the total being 797. The registered births in the Borough during the year were 746 and the transferred births were 9, a total of 755. The percentage of unnotified births was approximately 10.6 per cent.

Home Visiting.

This section of the work carried out under the Act has been developed during the year and the Senior Health Visitor (Nurse Rouen) submits the following report on the results of the first visits paid:—

	Notified Births.	Unnotified Births.
First Visits	650	43
Still-births	18	2
Refused advice	22	3
Died before visited	9	—
Visits to Infantile Mortality	10	—
Wrong addresses	2	—
First visits unpaid	48	—

The number of re-visits paid to infants under one year during 1919 were 3,823 and 301 visits to children one to five years of age.

Infant Welfare Centres.—In May last, larger premises were secured as a temporary measure in the Wedgwood Assembly Rooms, Heath Street.

During the year the Centre at 12, Cobden Street, was opened on Monday afternoons, from 2-30 to 5 p.m. and the

Centre at the Wedgwood Assembly Rooms on Thursday afternoons from 2-30 till 5 p.m.

The attendances at the two Centres were 2,127 made by 505 mothers and infants.

Distribution of Dried Milk.

During the year 3,648 pounds of "Glaxo" Dried Milk were distributed.

Fresh Milk.

The Milk (Mothers and Children) Order, 1918, came into force in December. Under this Act 24 families received 52½ pints of milk free and five families received 11 pints of milk at half cost according to the scale adopted by the Committee.

Ante-natal Work.

Visits were paid during the year to 34 expectant mothers by the Health Visitors and advice given.

Maternity and Child Welfare Act.—During the year in exercising the powers conferred under the Act, a Statutory Committee was formed with five co-opted members and immediate consideration given to the necessary extensions to the Maternity and Child Welfare work in the town.

The following Special Report by the Medical Officer of Health was made the basis for these extensions:—

Since the first report on the subject dated July 6th, 1918, was presented for your consideration the above-named Act became law and a valuable memorandum dealing therewith has been issued by the Local Government Board and circulated to each member of the Health Committee.

The Act gives the Local Authority extended powers for attending to the health of expectant mothers and nursing mothers and of children under five years of age who are not at school.

Owing to the difficulty of obtaining suitable premises the report dated March 10th has had to be modified as shewn below.

Sir Joseph Davies, M.P., the donor of the £500, has intimated that while he very much likes the proposals in the report dated July 6th, he is quite agreeable for the Committee to use the money for the extension of Maternity and Child

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Welfare work in the town in the manner they think most advisable.

To adequately meet the growing needs of welfare work the extensions should be upon the following lines:—

1. *To appoint a Maternity and Child Welfare Committee under the Act of 1918.*
2. *Additional Accommodation.*

As pointed out in the previous reports larger premises are essential.

A. For Main Centre.

In selecting the house or houses the following points require to be considered:—

1. Central position.
2. Large garden where children can be brought and kept in sun and delicate children have open-air treatment.
3. Position of rooms—all the good rooms should have a sunny aspect facing South or South-west.
4. The premises should be large enough to provide ten rooms for Centre purposes, with additional rooms (kitchen, sitting-room and bedroom) for caretaker.
5. Sufficient accommodation and arrangement of the premises to permit of future developments, both as Welfare Centre and School Clinic.

Through the kind interest and help of His Worship the Mayor, I have received an offer from the L. & N.-W. Railway Company, through the Council of the Mechanics' Institute placing at the disposal of this Committee certain accommodation in the Old Railway Hospital, Liverpool Street, for the Maternity and Child Welfare Centre. This offer is conditional on the Higher Education Committee of the County Council providing accommodation in the Technical School for the Locomotive Class which is held in one of the rooms. The Director of Education informs me that this condition can be complied with by the Higher Education Committee.

The accommodation available includes:—

1. Large room for Welfare Centre and lecture room.
2. Consulting room for Ante-natal Clinic.
3. Dressing room.

4. Dental operating room.
5. Dental recovery room and weighing room.
6. Dental lavatory.

This portion of the building is offered to the Corporation at a rental of £60 per annum, to include all rates, cost of cleaning, etc.

Some alterations will be carried out by the Company free of charge and it will be necessary for the Corporation to put electric light and the dental fixtures.

There is not all the accommodation available that I recommended in the last report, hence for office purposes the cottage in Cobden Street should be retained for the use of the Health Visitors.

The whole-time Health Visitor to be in charge of Main Centre under the Medical Officer.

B. Branch Centre.

A room either in a Church Institute, or a Chapel School to be hired for a fortnightly Clinic in one side of the town (South Ward). The part-time Health Visitor to be in charge of Branch Centre under the Medical Officer.

3. *Provision of Medical Advice.*

A doctor to attend each Centre weekly and advise mothers on the hygienic care of their babies and infant feeding, advise expectant mothers on their own care and inspect children under school age (two to five years) and advise parents on care.

4. *Dental Treatment.*

The provision of dental advice and treatment for mothers and children between two and five years of age who are not at school should form a valuable preventive section at the Centre. I advise the Committee to appoint Mr. Parsonage, the School Dentist, as Dental Surgeon to the Centre, to give one half-day a week to the work, at a fee of one and a half guineas per half day.

To centralize the dental work, it is important to confer with the Education Committee so that the present equipment

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may be transferred to the new premises and the School Dental Clinic and Maternity Dental Clinic have the use of the same apparatus. Additional dental furniture will be required for adult use, also anæsthetic apparatus. The Medical Officer to the Centre is to be present and administer any general anæsthetics that are required.

Details of the dental treatment on the lines recommended will be prepared by the Dental Surgeon for the information of the Committee when the equipment of the Centre comes up for consideration. The services of the School Dental Clinic Nurse will be available for this work as the Dentist requires them.

5. *Voluntary Workers at the Centre.*

Of the lady members of the Maternity and Child Welfare Sub-Committee one should be appointed to act as Lady President of the Main Centre and one as Lady President of the Branch Centre, while eight other ladies should be asked to co-operate in the work at the Centres, four for each, and assist the Medical Officers and Lady Health Visitors to carry out the scheme. In the administrative details of the Centres the voluntary workers will act under the direction of the Medical Officer of Health in organizing the work as laid down by the Town Council.

6. *Home Nursing.*

For some years the Local Government Board have been urging the Council to make provision for the home nursing of children suffering from measles, whooping-cough, epidemic diarrhœa and ophthalmia neonatorum. To these diseases must now be added pneumonia, which became notifiable on the 1st March.

This is an important branch of infant welfare and the need for more home nursing was emphasized by the doctors when I discussed the medical arrangements of the Centres with them. Through the kindness and practical interest of His Worship the Mayor and the Lady Mayoress, I am in the happy position of being able to tell the Committee that the Trustees of the Webb Nursing Institute will place the services of a fully-trained nurse at their disposal, with additional assistance in epidemic times.

This home nursing service can be further extended as occasion arises through the V.A.D. workers, who have proved such helps during the influenza epidemic.

7. *Provision of Hospital Beds.*

The Health Committee have already made provision for the hospital treatment of patients suffering from puerperal fever and ophthalmia neonatorum at the Isolation Hospital.

To have available some beds for the treatment of non-infectious cases—both mothers and children—I advise the Committee to approach the Governors of the Cottage Hospital and suggest that in any extension of the Cottage Hospital as a war memorial, a small ward to accommodate five or six beds be provided. To these beds, cases from the Welfare Centre would be admitted and the cost of maintenance undertaken by the Corporation. Half the cost of any such maintenance will be defrayed by Government grant.

Since making this recommendation in March last, I have received an offer from His Worship the Mayor placing part of the Webb Orphanage at the disposal of the Council on terms to be arranged, for use as a Maternity Home. This offer will enable the Council to provide a Maternity Home in the near future and to use the beds suggested at the Cottage Hospital for children only.

8. *Provision of Milk, Virol, Teas.*

The Authority should provide milk or other nourishment in cases where such is required and this should be done through the Centre. Those able to pay for same will be asked to do so. Teas for the mothers when they attend the Clinic with their children are also required.

9. *Finance of Scheme.*

The finances are now based on the principle of renting rooms and not purchasing as was entertained by the Committee originally.

The furnishing and adaptation of the premises should be still financed on loan.

For the relief of the rates £100 a year has been allocated from the generous gift of £500 which Sir Joseph Davies gave the Corporation for the extended scheme.

As a further premise it is assumed that when application is made to the Local Government Board for their approval of the scheme and sanction for the loan, that the loan for

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furnishing and adaption of premises will be for 10 years at 10 per cent.

Owing to delay in obtaining the Old Railway Hospital premises in Liverpool Street, the organization of the new work has been retarded.

The Medical Officer of Health attends at each Centre weekly for medical purposes.

At the end of the year arrangements had been completed to open a Branch Centre in St. John's Church Room, Stalbridge Road, for the South Ward.

Facilities for home nursing are not yet organized, as the Trustees of the Webb Nursing Institute were unable to arrange facilities which they offered the Corporation.

Towards the end of the year an opportunity occurred of securing premises for use as a Maternity Home and the following report of the Medical Officer of Health on the subject has been adopted:—

Special Report on Maternity Home.—As the Town Council are now unable to obtain accommodation at the Webb Orphanage for the Maternity Home which was described in paragraph 10 of the scheme submitted to the Ministry of Health in August last, it is now recommended that other premises be obtained.

The Council have the opportunity of purchasing 1, Heathfield Avenue, recently occupied by the late Miss Wright. The house is situated in a quiet avenue, off the main thoroughfare, has a good garden and is, in the opinion of your Medical Officer, in every way suitable for use as a small Maternity Home. The area of the site is 594 sq. yards, with a frontage of 41 feet 6 inches and the price £1,350.

The administrative arrangements recommended are:—

(a) The nursing staff and domestic—

Matron Midwife.
Assistant Midwife.
Two Maids.

(b) Admission of patients—

Preference to be given to such expectant mothers as are liable to have complicated confinements and to cases

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where complications (non-septic) have arisen after confinement.

Patients who are expected to have normal confinements to be admitted when beds are available.

Patients suffering from puerperal fever will continue to be admitted to the Isolation Hospital.

- (c) Fees to be paid by patients in accordance with a scale to be prepared later. Such fees not to include medical attendance.

(d) Medical Attendance—

All patients who apply for admission will be asked to make arrangements with their own family doctors for such attendance and to pay his fees. Where no doctor has been engaged by the patient and medical assistance is required, the Matron to obtain such medical help in the manner laid down by the Rules of the Central Midwives Board.

In this instance the fees are paid by the Local Supervising Authority under the Midwives' Act.

- (e) The Matron Midwife will be responsible for the management of the Home and her reports will be submitted to the Committee by the Medical Officer of Health, who will act as Medical Administrator.

Voluntary Workers.

Some of the lady members of the Crewe Nursing Division of the St. John Ambulance Brigade have formed a voluntary Committee to assist in the work of the Local Authority. Definite duties have been allocated to them. These comprise:—

- (a) Assisting with the registers and records.
- (b) Preparing children for weighing.
- (c) Assisting with the distribution of "Glaxo" and other dried foods.
- (d) Assisting with the making of model garments and helping mothers with the same.

Educational Propaganda.

To stimulate interest amongst the parents in the Borough

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full advantage was taken of the *Daily Sketch* "Baby Competition" under the auspices of the National Baby Week Council. Seventy-two entries were received:—

(a) Children between 6 and 9 months	...	11
(b) Children between 9 and 18 months	..	38
(c) Children between 1½ and 3 years	...	23

Of these sixty-six attended for the preliminary judging which was held at Dr. Wilson's house, kindly lent for the occasion.

Social Side of the Work.

Teas were provided on Monday and Thursday afternoons at the two Centres and the mothers contributed through a small club fund towards the expenditure. At Christmas a special Christmas Tree was arranged for and tea kindly provided by Lady Davies, also prizes for six mothers who had secured the first six places for highest attendance. The voluntary workers gave small prizes to the other mothers who had attended regularly for six months.

Housing.**A. General Housing Conditions in the District.**

1. (a) Total number of houses, 10,497, situated in 296 streets.
- (b) Houses for working classes, 9,129.
- (c) New houses for working classes erected during year, or in course of erection, Nil.
2. Population.—This was estimated to be 48,600, but a revised estimate later in the year showed the figure to be 46,561. The population will increase in the near future owing to the contemplated erection of new works.
3. (a) Extent of shortage or excess of houses.—From a survey carried out last year it was found that in 441 houses in the Borough two families resided.
- (b) Measures taken or contemplated to meet any shortage.—The Town Council's housing scheme will remedy this.

B. Overcrowding.

1. Extent.—It was found during the year that in 736 houses eight or more persons resided and upon

further investigation it was found that in 172 of these houses more than two persons lived per room.

2. Causes.—Excessive shortage of houses.
3. Measures taken or contemplated to deal with overcrowding.—Until the new houses are available it is impossible to remedy this defect.
4. Principal cases of overcrowding dealt with during the year and action taken.—A scheme recommended to the Council of providing ultimately 750 houses in the Borough is the only radical remedy for this deficiency.

C. Fitness of Houses.

1. (a) General standard of housing in the district.—All the houses in the Borough are self-contained dwellings, with separate yards for each house.

There are no tenement houses.

Back-to-back houses.—There are 59 of these in the Borough. They are in blocks of four and each house has a separate garden and cross ventilation in some of the rooms. They represent the best type of back-to-back house.

Cellar dwellings.—There are none in the Borough.

- (b) General character of the defects found to exist in unfit houses.—General repairs, cleansing and alteration to sanitary conservancy conveniences are the chief defects known to exist.
2. Action taken as regards unfit houses under—
 - (a) The Public Health Acts.—Where defects can be remedied under these Acts the same is done.
 - (b) The Housing Acts.—Notices under Section 17 of the Housing and Town Planning Act, 1909, are issued as required.
3. Difficulties in remedying unfitness, special measures taken and any suggestions in the matter.—Certain houses in the town are known to be in such a condition that they should be closed, but as in the meantime there is no available alternative accommodation for the tenants to occupy, it is impracticable to adopt this attitude. When accommodation is available closing orders will be recommended for these houses.

Crewe Municipal Borough.

4. Conditions so far as they affect housing, as regards water supply, closet accommodation and refuse disposal, together with measures taken during the year in these matters.—These matters are dealt with in Part II. and a Special Report dealing with the conversion of pail closets and midden closets to the water carriage system has been prepared and will be found on page 34.

D. Unhealthy Areas.

1. Action taken as regards areas represented before the beginning of the year under Part I. or Part II. of the Housing Act of 1890.—No action had been taken prior to 1919.
2. Particulars of and action taken as regards areas represented during the year.—There is no area in the Borough which can be scheduled as an unhealthy area.
3. Information as to complaints made during the year that areas were unhealthy and action taken.—No complaints were made during the year.

E. Bye-laws Relating to Houses, to Houses let in Lodgings and to Tents, Vans, Sheds, &c.

1. As to working of existing Bye-laws.—The present Bye-laws in force are carried out.
2. As to need for new Bye-laws or revision of existing Bye-laws.—No new Bye-laws are contemplated at present.

F. General and Miscellaneous.

The following two Special Reports under the Housing and Town Planning Acts, 1890-1919, were submitted to the Authority during the year in addition to the Special Report published in last year's Annual Report:—

A.

In the Report which I submitted to you in June last I advised the Committee that 500 new houses should be provided to meet the present acute shortage of private dwellings.

Under the Housing and Town Planning Act, 1919, Section I., your Town Clerk has to forward a scheme showing the number of houses which you propose to erect in the next three years.

To provide for the natural increase in the population and in view of the fact that a new industry is about to come to the outskirts of the town which will employ about 1,000 workers, the Committee may desire to increase the number of houses.

The average annual number of marriages in the last ten years was shown in the previous Report to be 292 and the average percentage of empty houses in the same period only 2.

If the Committee wish to make provision for the needs of the town under the State-aided scheme three years hence, then I advise that another 250 houses will be adequate.

B.

I beg to submit a Report on the above Act and Order and the manual on unfit houses and unhealthy areas issued by the Ministry of Health.

This report has been delayed owing to the long interval that has elapsed between the issuing of the Act, the Order and the manual.

1. *Housing Acts and Orders.*

The greater portion of the Act deals with the provision of new houses under the State-aided scheme and concerns the Housing Committee of the Council.

Certain sections deal with unhealthy areas and unfit houses and give the Health Committee greater powers over these matters than the Housing Acts from 1890 to 1909. Section 28 of the new Act gives Local Authorities extended powers to ensure that all houses, occupied by persons of the working classes as defined in the principal Act, are reasonably fit for human habitation.

Under Section 15 of the Act of 1909 powers were given to enforce attention to the necessary repairs required to houses let below certain rentals after the passing of that Act. The new powers under Section 28 of the Act of 1919 apply, however, to any working class dwelling regardless of the rent or date on which it was let.

2. *Conditions in Fit Houses.*

It is laid down in the manual that fit houses should be (a) free from serious dampness, (b) satisfactorily lighted and ventilated, (c) properly drained and provided with adequate sanitary conveniences, (d) in good general repair and should have (e) satisfactory water supply, (f) adequate washing

Crewe Municipal Borough.

accommodation, (g) adequate accommodation for preparing and cooking food, (h) a well-ventilated store for food.

Houses deficient in any of the above respects are considered below the minimum standard of fitness.

The more common defects which are included under (d), general repair are summarised in the manual as:—

1. Paving in yards—defective.
2. Roofs—defective.
3. Walls—defective externally and internally, including perished or ineffective damp course.
4. Ceilings—broken or defective.
5. Floors—broken or defective.
6. Stairs—broken treads, lacking hand-rails, etc.
7. Windows—perished frames, broken fittings.
8. Doors—broken fittings or ill fitting.
9. Ventilators or Flues—broken or stopped up.
10. Cupboards—insufficient or defective.
11. Grates, Stoves and Ranges—broken or out of repair, etc.

The Committee will readily see that systematic attention to detail is an essential requirement to inspection under the Housing Act and that it will only be possible to affect improvements when property owners co-operate with the authority in the smooth working of the requirements.

3. *General Policy.*

As a general rule it will be advisable before issuing any formal statutory notice to give the owner of the property an informal indication of any repairs or alterations which are considered to be necessary after the premises have been inspected and naturally where the works required are of an extensive nature it will only be reasonable to give a fair length of time for the work to be carried out. This has always been the policy of your Health Department and its continuation is recommended.

Owners of property may be helped not only by informing them what work is needed, but also in suitable cases, lending them money for carrying out the necessary work (Section 22, 1919 Act). It must be noted, however, that this section allows of the loan of money only when the work required is reconstruction, enlargement, or other actual structural alterations. It does not authorise the loan of money for ordinary maintenance repairs.

Crewe Municipal Borough.

After an owner received notice to carry out repairs he can avail himself of the alternative to close only, if the house is not capable *without reconstruction* of being rendered fit for human habitation.

The chief difficulty which your officials are faced with at present is that in those instances where we already know that houses require extensive repairs which can only be carried out when a closing order has been made, there is no alternative accommodation for the tenants to occupy. It is therefore not practicable to deal with the houses which most require inspection at present until some alternative accommodation is available.

4. *Recommendations.*

1. That the inspection of the 1,360 houses already scheduled as due for inspection be commenced forthwith on a systematic basis. A few of the houses to be inspected and reported on together to the Committee, after which informal notices will be sent to the owners before any statutory notices are issued.

2. That the inspection of houses which are likely to require a closing order remain in abeyance until alternative accommodation is available.

3. That the sanitary improvement of property by the conversion of the conservancy conveniences to water carriage be undertaken as one of the measures necessary to raise the standard of fitness of houses in the town.

4. That at such times as it is found necessary to consider whether the Local Authority will carry out repairs to property, where the owner fails to do so, that the Borough Surveyor be asked to report as to the best method of exercising the powers available.

Housing Inspections.—In reviewing the situation in the Borough and scheduling houses for which routine inspection was required, the following numbers were dealt with :—

(a) All of the houses in 36 streets	...	=	864
(b) Some of the houses in 17 streets	...	=	496
<hr/>			
			1360
<hr/>			

These will be dealt with on the lines recommended in the above Special Report of the Medical Officer of Health.

Crewe Municipal Borough.

1. Number of dwelling-houses in respect of which complaints were made that they are unfit for human habitation—

(a) By householders—No complaints.

2. Action under Section 17 of the Housing Act of 1909—

(a) Number of dwelling-houses inspected under and for the purpose of the section—12.

(b) Number of dwelling-houses which were considered to be unfit for human habitation—Nil.

(c) Number of dwelling-houses the defects in which were remedied without the making of closing orders—9. In addition to these 9, 15 others inspected during 1918 were completely remedied during the year.

3. Action under Section 28 of the Housing Act, 1919—Nil.

DUKINFIELD

Municipal Borough.

Housing.—The house accommodation, owing to the scarcity of new buildings in recent years, is not sufficient. Much of the worst property has been demolished or remains unoccupied and very few houses have been built to replace them. The majority of the people in the town belong to the working class and from 1906 to 1911 excellent cottage houses were built, fitted with modern sanitary arrangements and conveniences and with plenty of air space. No plans were submitted and passed for new houses during the years 1915 to 1919, compared with two in 1914, eight in 1913 and five in 1912, and compares unfavourably with previous years, viz.:—30 in 1911, 40 in 1910, 50 in 1908, 61 in 1907, 61 in 1906 and 24 in 1905. In every case the drains are thoroughly tested by the Surveyor and strict supervision is taken by him as regards structure and air space and fitness for habitation.

Many cases of overcrowding due to insufficient house accommodation have been reported during the year. We have a complete list of four-roomed houses where eight and upwards are living and the Inspector is very assiduous in tactfully altering matters where practicable.

Dukinfield Municipal Borough.

We have a list of back-to-back houses and the worst class of property is kept under careful and periodical inspection and improvements and alterations are insisted upon being done when necessary. Overcrowding is carefully watched and the condition of the poorer and neglected children reported upon to the Inspector of the Prevention of Cruelty to Children Society.

Water Supply.—The domestic water in Dukinfield is excellent in quality and abundant in quantity. During the dry summer of 1911 there was no shortage. Dukinfield is joint owner of the Waterworks in the Swineshaw and Chew Valleys, together with the Boroughs of Ashton-under-Lyne, Stalybridge and Mossley. The present capacity of the reservoirs owned by the Joint Waterworks Committee is about 1,100 million gallons. The water, at present, comes from the wells, springs and streams in the Swineshaw Valley and is free from any risk of pollution. The water is soft, but since the year 1912 the whole of the domestic supply of water for this district has been filtered and treated. The method of treatment is carried out on the most modern scientific principles. Two filter houses have been opened at Swineshaw and Chew Valley respectively.

Closet Accommodation.—At present there are four systems of closets, viz., ashpit privies, pails, automatic flush closets and fresh-water closets. The Committee have advocated a steady substitution of water carriage for the two first systems just mentioned. Wherever practicable, fresh-water closets are put in rather than the automatic flush. There is no doubt if the annual charges for water supply (10s. per closet) were less, it would hasten materially the number of conversions. Thirty-three closets have been converted during the year. The intention is, where possible, to carry out the principle of *one house one closet*.

Infectious Diseases.—We have arrangements with the Hyde Hospital Authorities for four beds, two for small-pox and two for other infectious cases, but we have never had any difficulty in arranging for more cases to be admitted. The Hyde Fever Hospital has beds quite sufficient to allow of the treatment of all the infectious cases we are likely to send to Hospital. All our small-pox cases are sent to Hospital and other infectious cases are also sent at the discretion of the Sanitary Authority. Cases of typhoid fever and of scarlet fever were sent to hospital during the year.

Dukinfield Municipal Borough.

We use the disinfecting apparatus at the Hyde Hospital to disinfect bedding, clothing, etc., and the disinfecting baths there when required.

During the year 222 cases of infectious diseases have been notified and, including tuberculosis, 269 cases in all.

There were three cases of typhoid fever notified during the year.

Bacteriological Work.—In cases of diphtheria, typhoid fever, tuberculosis and other infectious diseases, arrangements are made with the Pathological Laboratory at Manchester for examinations of specimens and reporting on the same. Advantage is taken of this by the medical practitioners in the district.

Influenza.—There were 36 deaths from epidemic influenza, compared with 54 in 1918. These deaths occurred during the first quarter of the year.

The medical men are now supplied with serum for inoculation and a number of V.A.D.'s have offered their services in case of an epidemic.

Scarlet Fever.—One hundred and eleven cases were notified, with three deaths.

Diphtheria and Croup.—Five cases were notified, with four deaths, compared with four in 1918.

During the past year the death-rate from diphtheria was 80 per cent., which is abnormally high. It is remarkable that during previous years the deaths from this fatal disease have been so few. I attribute this to the fact that in most cases anti-diphtheritic serum is used very early on in the illness and with excellent results, as there is no reason to believe that the attacks themselves are less severe. The Sanitary Committee supply the serum free of charge in all cases.

Typhoid Fever.—Four cases of typhoid fever were notified, with one death.

War Diseases.—Thirty-two cases of malaria, two of dysentery and two of trench fever were notified during the year.

Dukinfield Municipal Borough.

Most of these cases have been sent into hospital by the Local Pensions Committee and treated there.

The cases of trench fever were fully enquired into and detailed reports sent on to the Ministry of Health.

Infantile Mortality.—There were 29 deaths of children under one year, the average for the previous five years being fifty.

A Maternity and Child Welfare Centre has been opened in the district under the supervision of the County Council, but worked by a Local Committee. This Centre is opened two days per week; dried milk—*e.g.*, “Glaxo” and “Cow and Gate”—together with Virol and sugar, are supplied to the mothers and children. The medical practitioners in the town officiate periodically, in rotation. There are over 400 members on the register, with an average attendance of over 90.

STALYBRIDGE

Municipal Borough.

Population, &c.—The Municipal Borough comprises 3,137 acres, including 1,680 of agricultural land and at the last Census in 1911 the population was 26,513.

The number of inhabited houses at that time was 6,401, with an average number of 4.14 persons per house.

The revised estimate of the population of the Borough as supplied by the Registrar-General is 27,150 for the purpose of calculating the birth-rate and 26,062 for the purpose of calculating the death-rate.

Births and Deaths.—During the year there were 428 births—a slight increase upon 404 in 1918 and 365 in 1917. Of the births 397 were legitimate and 31 illegitimate.

The birth-rate for the year works out as 15.76 as against 15.84 in 1918 and 13.9 in 1917. This rate is abnormally low.

Stalybridge Municipal Borough.

The deaths during the year numbered 471 as against 477 in 1918 and 373 in 1917. The high figures in the years 1919 and 1918 were largely due to the prevalence of influenza and of pneumonia, no less than 101 occurring from these diseases in 1919 and 106 in 1918.

The death-rate for the year works out as 18.0 as against 20.5 in 1918 and 15.9 in 1917.

The diseases which have been especially active in adding to the number of deaths are:—

	1919
Influenza	causing 57 deaths
Respiratory Diseases	„ 108 „
Heart Diseases	„ 45 „
Pulmonary Tuberculosis	„ 30 „
Cancer, Malignant Disease	„ 30 „
Congenital Debility, including Premature Birth	„ 17 „

Infantile Mortality.—The Deaths of Infants under one year of age were 54, as against an average of 80 for the previous ten years, but computed upon the number of births registered the infantile mortality was 126 against an average of 150 for the previous ten years.

It is pleasing to be able to record an improvement in the infantile mortality, though it is very far from satisfactory, the rate for the year in the 148 smaller towns averaging 90.

The Maternity and Infant Welfare Centre under the control of the County Council is no doubt doing much good and useful work with Dr. McCarthy's continued efforts and advice and in connexion with the Centre an Ante-Natal Clinic has also been opened with the services of a Specialist.

Influenza.—For a period of about six weeks—from the middle of February to the end of March—influenza again became epidemic and caused no fewer than 57 deaths.

This was the third outbreak within a year and similar precautions were taken as in the two outbreaks during 1918, but the impossibility of obtaining nurses and the lack of any hospital provision seriously handicapped the over-worked doctors whose staff was still much below its normal strength owing to the continued absence on service of several of its members.

Stalybridge Municipal Borough.

Fortunately steps have now been devised to at once provide nursing facilities and home helps where needed as well as to open up some place for the accommodation of those whose condition and surroundings give them little chance of recovery, should another outbreak at any time threaten the Borough. Moreover a supply of Anti-Influenza Vaccine has been obtained from the Government Lymph Establishment with a view to checking its spread and lessening its severity.

Infectious Diseases.—Although there were slight outbreaks of measles, scarlet fever and diphtheria, they never assumed an epidemic character, but remained localised, were of a mild type and gave no cause for alarm.

The following table gives the nature, number and distribution of the cases notified:—

		Number of Cases.		Number of Deaths.
Measles	...	54	...	2
Scarlet Fever	...	32	...	1
Diphtheria	...	6	...	1
Membranous Croup	..	2	...	1
Puerperal Fever	..	1	...	1
Erysipelas	...	10	...	0

It is remarkable that not a single case of typhoid fever was notified.

Diarrhoea and enteritis caused seven deaths only, six of which were under one year of age and one between one and two years of age.

Six cases of diphtheria and two cases of membranous croup were notified, of which two proved fatal, but three other deaths, of cases which had not been notified, were registered as two from "croup" and one from "cynanche trachealis" and these are classified under the same group. Antitoxin is now supplied to medical practitioners free of charge for use in necessitous cases within the Borough.

Five cases of ophthalmia neonatorum were notified during the year.

Nineteen cases of malaria and one case of dysentery were notified.

Stalybridge Municipal Borough.

Tuberculosis.—During the year 61 persons have been notified as suffering from pulmonary tuberculosis, of whom 35 were males and 26 females; while one male and three females have been notified as suffering from other forms of tuberculosis.

The deaths from pulmonary tuberculosis during the year numbered 30. From other forms of tuberculosis there were 10 deaths.

Cancer.—There were 30 deaths from Cancer (including “malignant disease”), the numbers for previous years being:—

1918	1917	1916	1915	1914	1913
<u>38</u>	<u>21</u>	<u>26</u>	<u>42</u>	<u>31</u>	<u>36</u>

As regards sex, 13 of the deaths were of males and 17 were of females. Premises where deaths from “malignant disease” have occurred are disinfected.

Housing.—Like most other districts Stalybridge is sadly short of dwelling-houses, for it is several years since any new dwellings were erected and also many of the old dwellings have for some reason or other become “unfit for habitation.”

I trust, however, we are now on the way to remedy this state of things by not only providing better and more commodious houses for the working classes, but also dealing drastically with the numerous unsatisfactory spots and areas throughout the Borough.

A Housing Scheme for the early erection of 400 new houses has been drafted and submitted to the Ministry of Health, but until these are commenced and some of them completed it is impossible to deal satisfactorily with numerous cases of overcrowding and of unfit dwellings which at present are a source of annoyance and anxiety to all who have anything whatever to do with them as well as a danger to the public health.

ALSAGER

Urban District.

Population, &c.

Civil population to June, 1918	...	...	2,469
Registered deaths	...	...	43
Deaths outside the district	...	...	8
Death-rate	...	..	17.41 per 1000
The birth-rate was	...	...	13.77 per 1000

Infectious Diseases.—During the month of January there were a few cases of influenza. About the end of the second week of February influenza turned up again and as in previous outbreaks, attacked the children first and rapidly laid low those attending schools. Towards the end of the month the schools had to be closed (February 26th) for a fortnight, but the time of closure had to be extended to a month owing to the severity of the epidemic. In March this disease was raging over the entire district, but the western end suffered more heavily than the other parts

This outbreak far exceeded in severity that of the preceding October–November one, complications being more numerous, more general and if possible more fatal.

Incautious acts—such as not going to bed at the onset of the disease, or getting up too soon after its subsidence, invariably resulting in acute and often fatal septic pneumonia, which resented any known method of treatment. Many who suffered in the October–November epidemic of 1918 again went down in the February–March outbreak, shewing that they had not been rendered immune for even that short period.

The end of March saw practically the end of this very severe outbreak, but there were a few remaining cases in April.

In August and September there were numerous cases of “summer diarrhoea,” and whooping cough was very prevalent. By October so many children were absent from school that it was necessary to close the infant schools on October 14th for a fortnight.

This epidemic gradually diminished and had ceased in December. In October, November and December there were many cases of what might be described as mild influenza and epidemic tonsillitis. The former ran a very mild course, the

Alsager Urban District.

sufferers soon being able to attend to their duties. The latter was naturally more acute, the temperature remaining up for a longer time, the malaise much more marked and convalescence rather protracted, but there were no complications or sequelæ.

Skin diseases of varied types, such as contagious impetigo, urticaria and pustular eruptions (in which streptococci and staphylococci were the principal microbes discovered) were present during this year, but seemed to be on the increase in the last quarter.

Water Supply.—The pumping plant has been giving trouble and the Engineer has been instructed to prepare plans for a new one.

No. 2 pump has been working for the later months of the year. No. 1 pump has been damaged, but has been repaired with a view to its being used as a stand-by in the event of No. 2 breaking down, which it might do at any time. Your Council has given this serious condition its closest attention.

Isolation Hospital.—There is nothing in particular to report, but the Institution is run as thoroughly as in previous years. We have had no cases in it this year.

Housing.

New houses built	...	nil
Houses inspected	...	33
„ unfit	...	nil
Closing orders	...	nil
Defects remedied without closing		37
“ „ after	„	nil

The 33 houses inspected this year were found to be in order with the exception of eight.

ALTRINCHAM

Urban District.

Births.—The births registered during the past year were 305. This number is equal to a rate of 15.6 per 1,000, as against 17.05 last year.

Deaths.—The deaths registered during the year, were, nett, 248—males 128, females 120. Infants under one year, 20. The number is equal to a rate of 13.1 per 1,000.

The deaths under one year of age were 20. The total is equivalent to an infantile death-rate of 65 per 1,000 children born, as compared with 86 for last year and an average of 104 for the past five years.

Infectious Diseases.—Notifications of infectious diseases from medical men were—scarlet fever 21, diphtheria 2, erysipelas 5, enteric 2, ophthalmia 2.

Arrangements exist between the Council and the Victoria University, Manchester, for all bacteriological examinations and antitoxin serum is supplied for any cases in the district.

Isolation Hospital.—The Sinderland Isolation Hospital, in Dunham Massey, was erected by the Council and opened in January, 1911, and provides for scarlet fever, 20 beds; diphtheria, 5 beds; typhoid fever, 5 beds. There are also two observation wards and all the necessary buildings and plant for the disinfection or destruction of infected articles. A separate arrangement for small-pox cases has been made with the Manchester City Council for the reception of cases from this district.

An arrangement exists to receive cases from Bowdon Urban District on a retainer fee.

Water Supply.—The water supply is derived from Manchester and is continuous, abundant and good.

Sewage, &c.—The treatment of the sewage of the district is carried out at the Council's farm at Dunham Massey, by sedimentation tanks and land filtration.

As regards the sufficiency of the arrangements at the sewage disposal works, an expert engineer was engaged upon a scheme of

Altrincham Urban District.

additions and improvements. Result—a contract has been let for £13,436 and will be commenced in Spring.

Sanitary Accommodation—A statement as to the privy and water closet accommodation is given below :—

No. of Common Privies	...	...	1635
„ „ Movable Receptacles	...	...	18
„ „ Fresh Water Closets	...	...	2284
„ „ Waste Water Closets	...	...	208
			<hr/>
			4145
			<hr/>

There are no cesspools in the district.

Housing.—The inspection of the district, under the (Inspection of District) Regulations, 1910, has been carried out under my direction by the Housing Inspector. Under the 1919 Act, 219 houses have been inspected.

Workmen's Dwellings.—A very suitable site has now been obtained, partly by the gift of 20 acres of land by the Earl of Stamford and partly by the purchase of 30 acres adjoining that site by the Council. Plans for laying out the site have been prepared and the Housing Committee is devoting itself energetically to the pushing forward of a scheme for the provision of about 480 houses. The population of Altrincham is already so dense and there is practically no suitable uncovered land for such a purpose with the result that the Council has been obliged to acquire a site outside its own boundary. An application to the County Council was made for extension of boundaries and an enquiry was held in October; the Council is waiting the result. The Council has erected dwelling-houses under the Housing Acts, and there are at present in occupation 25 five-roomed cottages, which let at a rental of 6/6 per week; 11 four-roomed cottages at 5/6 per week; 22 four-roomed cottages at 4/9 per week; 24 two-roomed cottage flats at 3/6 per week; and 4 two-roomed cottage flats at 3/- per week. The planning of the cottages has had special consideration and allowance has been made for abundant open space and ventilation.

Notification of Births Act, 1907.—Under this Act the Council appointed Nurse Bardsley as Visitor and the notice necessary having been given to practitioners, nurses, and parents in the district, she began her duties on May 1st, 1915, and has carried out much very useful work since. In the early part of

Altrincham Urban District.

this year a second health visitor was appointed. I was fortunately able to back the Council's provision with a pre-existing voluntary scheme for feeding poor mothers, expectant and nursing, and to make other arrangements, so that there is now working a fairly complete method of dealing with this matter. The Maternity Centre is now carried on at the Technical School.

I have been able to arrange with the Board of the Hospital that all children needing operation, etc., can be sent there for treatment. Also, the Board has extended its scope of operation so as to include the admission of mothers in labour, where such labour is dangerous or requiring operative treatment.

Special milk food is procured by the Council at special rates and sold to mothers at cost price. Virol at cost price is also supplied. Rate-aided milk is granted in necessitous cases.

ASHTON-UPON-MERSEY

Urban District.

Population, &c.—The population at the Census of 1911 was 7,234 and it is now estimated to be 8,000.

The Deaths registered in the district numbered 64. Those belonging to the district but dying out of it 10, giving a death-rate of 9.5 per 1000. Of the 64 deaths, 8 were certified as over 80 years of age.

There were 11 deaths of children under one year, giving a rate of 94 per 1,000 births.

The Births registered in the district were 117, giving a birth-rate of 15 per 1000.

Water.—This is supplied by the Manchester Corporation and is good in quality and quantity.

Closet Accommodation.—The number of privy middens in the district is 134. Of this number 40 are chiefly used as dry ashpits. 24 (mostly farms) are situated in the outlying parts of

Ashton-upon-Mersey Urban District.

the district where sewers and, in some cases, water supply is not available. The remaining houses are provided with water closets.

The dry ashpits number 375 and ashbins 1,000.

Infectious Diseases.—The infectious diseases reported were—tuberculosis 11 (pulmonary 9, other 2), diphtheria 3, scarlet fever 10, measles 251.

Housing.—The total number of houses in the district is 1931, of which 1010 are for the working classes. During the year plans have been approved for six houses for the working classes, two of which are in course of erection. There has been no abnormal variation in the population during the year, neither is any anticipated, the district as already mentioned being purely residential.

I am glad to learn that the Council have adopted a housing scheme for the provision of 60 houses.

No cases of overcrowding have been reported.

The work of house inspection is quite up to date, all the old property having been inspected and very few complaints made. These have received attention and the necessary work carried out without the serving of statutory notices. The general standard of housing in the district is good and there are no unhealthy areas.

HIGHER BEBINGTON

Urban District.

Population.—The population of Higher Bebington at the 1911 Census numbered 1689 and is estimated at the present time by the Registrar General to be 1851 for the calculation of the birth-rate, and 1777 for the death-rate. He states that his estimate is based largely upon the returns made by the food authorities, and that the difference in the estimates stated for birth-rate and death-rate is due to the former including all the elements of the population which contribute to the birth-rate, while the latter excludes all non-civilian males whether serving at home or abroad.

Higher Bebington Urban District

Physical Features and General Character of the District.—It is situated two miles to the south of Birkenhead, and is divided into an upper and lower ward, the former corresponding to the part of the district on the hillside, and the latter to the part at the base of the hill. The geological formation of this hill on which the greater part of the urban district is built is lower keuper sandstone belonging to the triassic rocks. The characteristic rock in the Wirral Peninsula is the new red sandstone of the Bunter group and occurs at a deeper level than the white free stone of Storeton Hill.

Agriculture is the staple industry and stone quarrying is an important source of employment, but working the stone does not seem to be associated to any extent with respiratory trouble.

Women in a number of instances find occupation in laundry work for households in Birkenhead.

The names of six adults and six children were on the last list of Outdoor Poor in September, 1919, as in receipt of relief.

Births.—There were 19 births (9 males and 10 females), and one of the male births was illegitimate.

The birth-rate was 10.2 as contrasted with 17.4 in 1917 and 15.8 in 1918.

Infantile Mortality.—Three infants died before attaining the age of one year; that is over 15 per cent. of the children born in Higher Bebington died before completing 12 months of age. The rate was 157.8 as contrasted with 156.2 in 1917 and 74 in 1918.

The cause of death in two of the infants was recorded as prematurity, and broncho-pneumonia in the remaining case.

Deaths.—There were 28 deaths of persons (11 males, 17 females) belonging to Higher Bebington.

Three deaths were attributed to influenza, two to pneumonia, three to bronchitis, four to organic heart disease. Three deaths were due to cancer:—

Female, 76 years, cancer of stomach.

Male, 71 years, cancer of intestine

Female, 31 years, sarcoma of lung.

The death-rate was 15.7 as contrasted with 17.6 in 1917, 14.1 in 1918.

Higher Bebington Urban District.

General Hospitals. — The Liverpool Hospitals and voluntarily maintained institutions for the sick are used by the residents and the Poor Law Infirmary is extensively used both for acute and chronic cases.

Water Supply.—The West Cheshire Water Company supply the area with an organically pure but very hard water. Relief from the annoyance caused by the use of this hard water was anticipated when the Company was compelled by statute to soften the water from their Hooton well to a degree not exceeding 10° on Clark's Scale, but this anticipation has not been realised as a very hard water, said to be a mixture from the Prenton and the Hooton well, is still delivered to the consumers.

Drainage and Sewerage.—A few outlying residences are not on the sewers, but the main portion of the area is well sewered and by arrangement with the Lower Bebington Council the sewage passes into an outfall sewer which discharges into the Mersey.

Closet Accommodation.—Nearly all the houses are provided with water closets, but in the more rural portion of the district there are 14 privy middens and six pail closets. There are 11 properties draining to cesspools.

Scavenging.—The work of scavenging is carried out by contract, and only short intervals are permitted to elapse between the times when the receptacles are emptied.

Considerably more than half of the houses are now supplied with bins in place of ashpits.

School.—The school is modern, well lighted, heated and ventilated and constructed in accordance with modern views relating thereto. It is supplied with water from the West Cheshire Water Company's main. It was closed during the influenza epidemic in the early part of the year.

Milk.—The district supplies milk to the neighbouring areas as well as producing enough for its own use. The milk sellers premises have been kept under close supervision and are all well conducted.

Infectious Diseases.—Seventeen cases of "zymotic" disease were notified, viz. :—diphtheria eight ; erysipelas two ; scarlet fever five ; German measles two. One death took place from diphtheria.

Higher Bebington Urban District.

Tuberculosis.—The County Council deal with tuberculosis under their general scheme for Cheshire, and their Dispensary is available for consumptives who desire advice or treatment. There were three deaths attributed to pulmonary tuberculosis and notifications of two cases were received.

Small-pox.—No cases of small-pox have been notified for some years. In the closely adjoining area of Lower Bebington there were several outbreaks of small-pox in 1919 all of a very limited character owing to the vaccinated state of the population. Should small-pox by any ill chance be introduced into Higher Bebington the large number of unprotected persons would constitute a fertile field for the cultivation of the seeds of this malign disease.

Maternity and Child Welfare.—The County Council have provided a Centre in Higher Bebington and much valuable work of an educative character among mothers is carried out through its influence. A midwife is subsidised by the County Council for work in the area.

Sanitary Administration.

STAFF.—There is one Sanitary Inspector.

Hospital Accommodation.—The hospital accommodation for infectious diseases is supplied by the Wirral Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

Bacteriological work is carried out for the Council by the Clinical Research Association.

The County Council Laboratory now examines specimens for tuberculosis and a steady increasing number is submitted for examination and report.

The County Analyst undertakes the analysis of Food, Water and Drugs.

Housing.—There 353 houses in the district, and rather more than half of these are within the limit of rent stated in Section 14 of the Housing Act, 1909.

One working-class house was built and occupied during the year. 55 Inspections were conducted under Section 17 of the Housing Act, 1919, and in 34 instances defects were found and remedied without the necessity for the service of closing orders.

LOWER BEBINGTON

Urban District.

Population.—The population at the census of 1911 was 11,401 and it is estimated at midsummer, 1919, to have been 14,510. This estimated population is based upon information provided by the Food Control Authority. If the estimate based on the factor supplied by the Registrar-General prior to the war be taken then the population would be 14,123. In all probability the larger figure more nearly represents the present population, for men have flocked to the industries of the town. Error is inevitable in every method of calculating a population when nine years have elapsed since the enumeration, but next year will be the year for again taking the census in the ordinary course of events.

Since writing the above the Registrar-General has supplied his estimate of the population, viz., 14,791 for the calculation of the birth-rate and 14,199 for the death-rate.

The former population is arrived at by including all the elements contributing to the birth-rate and the latter by excluding all non-civilian males, whether serving at home or abroad.

Physical Features and General Character.—Under the provisions of the Local Government Act, 1894, the Urban District Council control Bebington, Port Sunlight and New Ferry as their administrative area.

In New Ferry and Port Sunlight the soil is clay, whilst in Bebington a thin layer of marl and clay are superimposed on the new red sandstone.

To a certain extent the district is a residential one and many business men who pursue their avocations in Liverpool reside in it. The factories of Messrs. Lever are situated in Port Sunlight and provide work for the majority of the population.

1

The Medical Officer of Health is required in this annual report to deal with "the influence of any particular occupation on public health," therefore it should be stated that the construction and ventilation, the lighting and sanitation, the canteens, baths and rest rooms of these factories, with the educational and recreative measures provided by this firm tend to produce an industrial community with its health conditions perhaps unequalled by that of any other comparable body in the world.

Lower Bebington Urban District.

Births.—The births numbered 297 compared with 261 in 1918. Male births were 141 in number and females were 156. Illegitimate births were 14 in number or 5 per cent. of the births. The birth-rate was 20 per 1,000 of the total population.

Infantile Mortality.—22 infants died before attaining the age of one year (13 males and nine females). The infantile mortality rate was practically 7 per cent. of the infants born, or expressed in the usual form was 74·07 per 1,000 births.

Fifteen of the infants who died failed to survive the first four weeks of life. The cause of death in seven of these is recorded as prematurity and five died from conditions which may be regarded as associated with debility and imperfect absorption of nourishment. Throughout the year epidemic enteritis was non-existent and only one death, that of a nine months' old infant, was recorded, from diarrhoea. Among the deaths is that of an infant from "overlying." One illegitimate child died two days after birth and the cause of death was registered as prematurity.

A death-rate of 7 per cent. of the infants born before they attain one year of age cannot be considered satisfactory.

Two were transfers, one from a Maternity Hospital and one from a Poor Law Infirmary. Infantile mortality should be very low, for there are no industrial conditions in the district compelling or permitting mothers to work in factories during their pregnancies.

The hygienic conditions of the environment are good, but there is an appalling amount of ignorance among mothers as to the rearing of their offspring. This latter factor in swelling infantile mortality is being steadily combated in the Infant Welfare Centre.

The death-rate of infants is the most sensitive index we possess of physical welfare and of the effect of sanitary government.

Deaths.—133 deaths were registered in the district (66 males and 67 females), giving a death-rate of 9·1, but from information received as to the out and in transfers it is concluded that a total number of 162 represents the deaths belonging to the district (79 males and 83 females), giving a death-rate of 11·4 per 1,000.

Nine deaths took place in Hospital Institutions in the district, viz:—

Cottage Hospital, Port Sunlight	...	...	5
Port Sanitary Hospital	...	...	3
Hulme Hall Military Hospital	...	...	1

Lower Bebington Urban District.

35 of the in-transfers were deaths which occurred in Hospital Institutions outside the area, viz:—18 in Wirral Poor Law Infirmary, 6 in Wirral Fever Hospital, 7 in General Hospitals and 4 in the County Asylum.

Malignant Disease.—The deaths from cancer numbered 16, six of the victims were men and 10 women. The organs affected were—

Uterus.	Tongue.
Breast.	Oesophagus.
Liver.	Stomach.
	Bowel.

Amount of Poor Law Relief.—In September, 1919, there were 61 persons (27 adults and 34 children) belonging to the district on the "List of Outdoor Poor." 30 were resident in New Ferry, 16 in Port Sunlight and 15 in Bebington.

The extent to which the Poor Law Infirmary is made use of by the district can be gauged to a certain extent when it is recalled that 18 deaths were transferred to the Urban District from that Infirmary while only seven were transferred from General Hospitals.

General Hospital.—Extensive use of the Port Sunlight Cottage Hospital is made by the employees and their wives and families of Lever Brothers who may require hospital treatment. The hospital has been in active operation since 1907, and is a well-equipped modern institution. The management is vested in the hands of a Committee and a Medical Officer is in residence. All the Liverpool Hospitals receive patients from the district.

Water.—The West Cheshire Water Company supplies the whole of the Urban District. The supply is a constant one and is derived from wells in the New Red Sandstone. The quality of the water is good, but very hard. The Company is under a statutory obligation to soften the water derived from their Hooton well and the County Council are responsible for seeing that the obligation is carried out. During the past year the Company, owing to engineering difficulties relating to pumps at the Hooton well, which during the war had got out of repair, have been unable to supply the consumers without shutting off the water at an early hour in the evening. A considerable amount of irritation has been engendered in consequence and this was intensified when the Board of Trade permitted the Company to raise their charges as a sequel to

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the rise in the price of coal and labour. Whatever views may be held in regard to Municipal trading it must be conceded that there is practically unanimity in favour of public management of water supplies. The whole population is directly affected by the abundance and purity of the water and ever since recognition of the relationship of polluted water to certain infectious diseases an increasing number of districts have acquired the sources of their supply with a view to protecting them from contamination.

During 1919 there have been no extensions of the water supply and there is no part of the district without a proper supply.

Rivers and Streams.—Several streams pass through the district the waters of which have previously received sewage from houses and effluents from sewage purification works in the neighbouring areas. The ultimate destination of these streams is Bromborough Pool.

Drainage and Sewerage.—There is an efficient system of sewers on the combined system which receives sewage not only from the district, but also from Higher Bebington, Spital-cum-Poulton and part of Birkenhead. No method of purification is utilised. There are two main outfall sewers. New Ferry and Pool Wards drain to the northerly outfall which opens into the Mersey near New Ferry Pier. The crude sewage at the southern outfall is retained in a tank with a Penstock valve and is then discharged into the tidal waters of the Mersey. A record of the depth of sewage retained in the tank is kept from day to day and is brought before the Health Committee at each of its monthly meetings.

Bromborough Pool receives the storm-water from the southerly intercepting sewer.

No sewers were constructed during 1919.

The arrangements for drainage, sewerage and sewage disposal in all parts of the district are adequate.

Closet Accommodation.—Water carriage is the general rule, the conservancy system having been abolished so far as houses within reach of the sewers are concerned. The six midden privies which still exist have their contents emptied on garden land for manurial purposes. The closets are of satisfactory construction and are of the types known as "The Wash Down

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Pedestal" and the "Cottage Hopper and Basin" varieties. There are no representatives of either the Pan or the Long Hopper in use. There are three public conveniences maintained by the Council, viz :—in Park, in Pool Bank and in Sunlight Wards.

Scavenging.—Street scavenging is well done, the main roads are cleansed daily and other roads weekly or as often as may be required.

Manure from cowsheds and stables throughout the more urban parts of the area is removed once a week. A strict surveillance is constantly maintained and only 11 offensive accumulations had to be dealt with by notice.

There are 2,884 dwelling-houses of which 2,434 are provided with moveable refuse receptacles with proper covers: 450 have ashpits and six have ashpits in combination with privies.

During 1919 there were 16 replacements of ashpits by bins.

The Council's employees empty bins once a week and ashpits at monthly intervals. Covered carts are used in the collection, but where there are ashpits the material removed has to be temporarily deposited on the street surface.

In 1913 the Council acquired a convenient site for the erection of a destructor and Messrs. Dawson and Manfield constructed a 2 cell Back Feed Destructor steam jet blast, with combustion chamber having charging door for carcasses. The chimney is 65 feet in height and the destructor is guaranteed to reduce refuse to innocuous clinker. The capacity is 25–30 cwts. per hour and the work of the district is accomplished by the destruction of 10 loads on five days of the week and six on Saturdays.

At the Local Government Board Enquiry which preceded the erection of the destructor it was stated that this destructor would be sufficient for a population of 24,000.

The arrangements for removal and disposal of refuse are adequate.

Schools.—In accordance with the instructions of the Council a large amount of attention is directed to secure hygienic conditions in the Public Elementary Schools and the Inspector examines and reports on the sanitary arrangements at least once

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a month. The flushing of school drains at intervals, disinfection of class-rooms and close supervision over the sanitary conveniences are all measures which are bound to lessen the incidence of disease amongst the scholars.

Intimations of the occurrence of minor infectious complaints were received from the teachers and whooping-cough and mumps occurred but were by no means prevalent. It was not found necessary to close any school on account of infectious disease.

The Public Elementary Schools are mostly modern, well-constructed and properly lighted, warmed and ventilated. All of them are provided with an ample supply of wholesome drinking water from the mains and the arrangements for their drainage are satisfactory. Reference to schools in the Lower Bebington Urban District would be incomplete if no mention were made of Lever Brothers' Training College, where Employees of the firm under 18 years of age receive a continuation of their education. The scheme of education is perhaps unique in that the students do their school work in the firm's time and it was evolved from the failure of an attempt to make attendance at evening classes a condition of employment for all young persons of 18 years of age and under. The results were unsatisfactory as the pupils were found "not to be in the mental or bodily condition to receive education."

Food.—(a) *Milk Supply.*—On the register there are the names of four cowkeepers and dairymen and seven milkshops.

The lime-washing required by the regulations is carried out and the Dairies, Cowsheds and Milkshops Orders are properly administered. Much of the milk sold is derived from farms in the neighbouring rural area. Improvement in the storage and distribution of milk has been very marked in recent years and purveyors have gradually developed a much higher standard of cleanliness than formerly prevailed. Over 238 visits of inspection and advice were paid in connection with the milk trade and it was only necessary to serve five informal notices, which were at once complied with.

Milk (Mothers and Children) Order, 1918.—Under this Order the Medical Officer of Health certifies the quantity of milk necessary for expectant mothers, nursing mothers and children under five years of age. All the applications which have been made come from mothers in attendance at the Council's Welfare Centre. Dried milk or an authorisation to a dairymen to supply the prescribed quantity of milk is

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given to the applicant and after an enquiry into all the circumstances of the case the Health Committee determine whether the supply should be a free one or at less than cost price. Death or invalidity of the bread-winner, the large size of the family, the father of the family on active service as a soldier and illness among the younger children have been the pleas advanced by the recipients.

(b) *Other Foods.*—No unsound food was found exposed for sale. Food inspection is undertaken by the Medical Officer and Inspector. There is no public abattoir and there are four private slaughter-houses which are annually licensed by the Council. There are eleven vendors of meat with establishments within the urban area; 112 visits of inspection were paid to the slaughter-houses and premises where food is sold. It was unnecessary to serve any form of notice, but one meat dealer had to be cautioned with regard to the uncleanliness of his premises. The standard of cleanliness is a high one and the existence of keen competition tends to make vendors of eatables try to render their premises as attractive as possible to their customers.

Meat also comes into the district from the lairages in Birkenhead.

Infectious Diseases.—The total number of notifications received under the Infectious Disease Notifications Acts, Tuberculosis Registrations and the Regulations of 7th January, 1919, was 254. There was a complete absence of enteric fever. Erysipelas was notified on 11 occasions and although it is fully recognised that trivial cases may be reported under this heading, it must be borne in mind that it is an important disease in relation to vaccination and to lying-in women.

Diphtheria and membranous croup was the diagnosis in ten patients whose places of residence were almost equally distributed in the various wards. Nine of the cases were removed to hospital and as the case mortality was 50 per cent. the inference is that medical assistance was obtained too late. Confirmation of this inference is to be found in the hospital records, which show that deaths occurred very soon after admission. Medical practitioners made use of the Council's arrangements with the Clinical Research Association for the examination of swabs on four occasions. All the swabs examined turned out to be negative. It will be obvious from

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the few cases reported that no deduction can be made from these as to the sanitary condition or otherwise of the district, but the popular opinion so strongly held that diphtheria necessarily means "bad drains" induces me to quote a few lines from a standard medical work:—"The extremes of opinion are best illustrated by two classes of contentions: First, there are those who having to deal with diphtheria, find that in the locality or house where it prevails there are certain more or less obvious faulty sanitary conditions; and these persons are content to regard the coincidence as cause and effect. Secondly, there are those who often meeting with diphtheria, where there is no history of exposure to faulty sanitary conditions, have become convinced that the disease can in no way have relation to such conditions. The truth lies somewhere between these two extremes." In 1918 there were 14 cases, or a rate of 1.08 per 1,000.

SCARLET FEVER.—As in other districts of the North-west Cheshire combined area scarlet fever was widespread and occurred throughout the entire year. Cases were most numerous in the first and third quarters and in the latter quarter the incidence of 29 cases, 20 of which were notified in September from 14 houses, must be interpreted as having relation to the crowded condition of the Isolation Hospital at that time, which prevented prompt removal.

One hundred and twenty-seven cases were notified from 89 houses. Comparison may be made with 1918, when 74 cases occurred, or a rate of 5.71 per 1,000 of the population, or with 1917, when there were 28 cases and a rate of 2.13 per 1,000. In all 117 patients obtained Isolation Hospital treatment.

From Port Sunlight Ward practically all cases of serious infectious disease seek accommodation in the Isolation Hospital and should there be any circumstances precluding their admission and treatment therein, home isolation, under stringent rules, would be observed in order to prevent the introduction of infectious disease into the works. One of the rules in regulation of tenancies is to the effect that "In the case of infectious disease in any house on the estate, tenants are required at once to notify the same to the Company's doctor or Estate Office." Lever Brothers are kept informed of all outbreaks of infectious disease among the employees and their households.

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On the whole the type of scarlet fever was mild, but two deaths occurred.

In several instances when one patient in a house was notified, indications were found that another member of the family was suffering from scarlet fever and was admitted to hospital in a "peeling" state.

One hundred and fifteen of the patients were under 15 years of age, 92 of these were between the ages of five and fifteen. There was no case under the age of one year and it may be noted that the disease is a rare one in infancy. Furthermore, it cannot be too widely made known that "the average severity of attack measured by the proportion of fatal cases is greatest in infancy or in the second year and diminishes as age increases, but there is an apparent increase in the severity of the (very few) cases that occur in adults after the fifteenth or twentieth. The lessened liability with increasing age is greater than can be accounted for either by protection afforded by previous attacks or by diminished exposure to infection. There is therefore a gain in shielding a child from infection during the first few years of his life. Every year of escape after the fifth leaves him less and less susceptible until finally he becomes almost immune; and, secondly, if he should be attacked, every year that the attack is delayed reduces the danger to life and also the risk of formidable complications that may become chronic and disabling, even if not immediately fatal."

MEASLES.—Eleven "first" cases in households were notified and the failure of this disease to spread from these foci of infection would indicate that previous epidemics had rendered the present child population to a certain extent immune. Measles sometimes disappears from a district for a year or two, but it is rare for the interval between epidemics to last more than two or three years.

Three cases of malaria were notified, but there is no suspicion that malaria has been contracted in the district, as all three patients had been on service abroad in campaigns where malaria was prevalent.

Twenty-two cases of pneumonia were notified and there were eight deaths, but it must be borne in mind in this connection that the Regulations did not come into force until 1st March and therefore 22 does not represent the actual

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number of pneumonias which were diagnosed. Moreover, there were 18 deaths from influenza, in the majority of which inflammation of the lungs would be present.

NON-NOTIFIABLE INFECTIOUS DISEASE.—The occurrence of eight cases of chicken-pox was intimated and there were a few patients with whooping-cough, but the district has been remarkably free from minor infectious illnesses.

TUBERCULOSIS.—The Ministry ask for “information as to the extent to which the requirements as to notification of tuberculosis are observed by medical practitioners and of any action taken to enforce the regulations and secure prompt notification.” The experience which I have derived from attendance at the County Council Dispensary inclines me to state that tuberculosis is notified when marked lung, or constitutional changes have been induced by the ravages of the tubercle bacillus. In fact, it is notified when phthisis is present, *i.e.*, wasting, fever, sweating, cough and expectoration. This delay in notification takes place in all parts of the country and would continue whatever changes in the system of compulsory notification might be adopted. Every medical practitioner must have under his observation patients whom he suspects to have tuberculosis, but as conjecture is not diagnosis, he refrains from notification. Moreover, in numerous instances patients with pulmonary tuberculosis may go on working for years, knowing that they are out of health at times, but buoyed up by the wonderful “*spes phthisica*” that they are always going to be better to-morrow and therefore refrain from seeking medical advice. The campaign against tuberculosis, in diffusing information concerning the symptoms, has not been an unqualified gain to the community, for the horror of infection possessed by many individuals is successful in preventing persons who are known to have been notified, or to have been in Sanatoria, from obtaining employment. I have heard this subject discussed times without number among the patients in the Liverpool, Toxteth and West Derby Sanatorium and there the conclusion used to be, that a man who had been in a Sanatorium would not get work, but if he had a wife she would be able to work for him. This is not an apology for the failure of medical practitioners to notify in the early stage of tuberculosis, but it is an endeavour to contrast the practitioner’s view with that of the purely official conception that every case of tuberculosis must be promptly notified.

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For educative purposes I quote the words of the Chief Medical Officer to the Ministry:—"The medical treatment of tuberculosis must be fundamentally preventive and must recognise that latent tuberculous infection is so widespread as to be almost universal. There are grounds for believing that its seeds are sown chiefly in childhood. Certainly its activity bears a close relation to malnutrition, to nutritive processes, to other diseases and to environmental conditions. Housing, industrial life and the milk supply must be considered and public education, general sanitation, cheap bread and a hygienic way of life have much to do with the solution of the problem."

To the Dispensary during 1919 the local practitioners have sent patients both for diagnosis and for treatment. The Council's Health Visitor undertakes the duty of reporting on the home conditions of notified patients, searching for contacts and disseminating information on tuberculosis.

Eighteen deaths took place from tuberculous disease and 45 notifications were received. Fourteen of the deaths were due to pulmonary tuberculosis, two to tuberculous meningitis and two to other tuberculous diseases.

Twenty-eight of the cases notified were pulmonary and 17 were other forms of tuberculosis.

The County Tuberculosis Officer, in a report to his Committee, writes:—"The Principal Medical Officer of the Local Government Board, in commenting on Notification in his Annual Reports, repeatedly points out that in any area where the total number of notifications does not at least double the number of registered deaths, it is evidently not being sufficiently carried out." If it be legitimate to state this comment in the form that, where the number of notifications is at least double the number of registered deaths, notification is efficiently carried out, then in the Lower Bebington Urban District notification is satisfactorily performed, for there is considerably more than twice the number of notifications over that of registered deaths.

SMALL-POX.—The history of the Lower Bebington Urban District in relation to small-pox outbreaks in 1919 is within the knowledge of every member of the Council, but it will be of use to recapitulate briefly what has occurred.

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In January, 1919, a case of small-pox was notified, with features so marked that there could be no doubt about the diagnosis and the patient was removed to hospital. Thirteen days later Case ii., the wife of Case i., who had not been vaccinated in infancy, but had been vaccinated as soon as Case i. applied for treatment, developed a mild attack of modified small-pox and was moved to hospital. Sixteen days after the removal of Case i., Case iii., a disinfecter, 63 years of age, who had stripped the house of Case i., and who refused re-vaccination, developed small-pox. It is of interest to note that Case iii. had not infrequently been in contact with small-pox previously and that owing to difficulty in obtaining labour there was no alternative but to employ him to do the stripping of the premises. These three patients constitute the first associated group of individuals and the association resulting in infection is evident.

In February, a group of three persons in one house developed a rash, an atypical one, but with many of the features of small-pox. These three persons, Cases iv., v., vi., lived not far from the houses of Cases i., ii., iii. They were diagnosed by the practitioner in attendance and the diagnosis was confirmed by me as modified small-pox in vaccinated persons. Subsequently, in view of a diagnosis of varicella, by a Liverpool expert, I allowed myself to be persuaded that an error had been made and withdrew the earlier diagnosis. In the light of later events, I am convinced that these Cases iv., v., vi. were atypical or aberrant types, but recognised types of small-pox, notwithstanding the circumstance that at a later period two children belonging to the same household developed undoubted chicken-pox.

In July, Case vii., a young man just returned from foreign service in the East, but who had refused re-vaccination in the Army, developed a rash, with the localisation and characters of small-pox. Prior to removal to hospital he was seen by the Medical Officer of Health for Cheshire (who has had experience in small-pox not only in the Urban District of Lower Bebington, but also in Yorkshire and Stockport) and pronounced to be suffering from small-pox. The practitioner who was in attendance had also a considerable previous experience of the vagaries of a modified small-pox eruption and he had no doubt as to the diagnosis. The case was moved to hospital, where the patient was told he had varicella.

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In October, Cases viii., ix., x. occurred in one house. This house is one of the nearest inhabited houses to the Port Sanitary Hospital. Here one of the patients was a semi-confluent case, in an unvaccinated child aged 12 years, while the other two had merely a few pustules, which might under other circumstances have passed for acne spots.

The expert who doubted the diagnosis in Case vii. readily admitted that viii., ix. and x. were undoubtedly small-pox. Again in October but outside the incubation period for infection through contact with any known patient, Case xi. was diagnosed. In November Cases xii. and xiii. occurred with no traceable association either with one another or any other notified case. At the beginning of December Case xiv., the wife of Case xii., who had been revaccinated unsuccessfully, was removed to hospital with an attack of small-pox.

It should be emphasised that from the date of the exhibition of the semi-confluent case no query was raised as to the diagnosis by the Liverpool expert, although in fact the later cases were just as atypical as those which had been questioned.

The occurrence and recurrence of outbreaks of small-pox in the Lower Bebington area has caused grave concern to the District Council. Not only is the expense incurred a considerable addition to expenditure, but there is also the persistent danger that small-pox may be introduced into the works and the prosperity of the town be thereby jeopardised. With regard to the latter element, which bulks so largely in the public mind, it may at once be written that the numerous outbreaks of the last twenty years have resulted in the production of a well-vaccinated community, for each outbreak is accompanied by a large accession of revaccinations on the lists of the Public Vaccinator and medical practitioners. Experience has proved that the risk of a widespread outbreak in such a community is small.

Cases of small-pox are detected in the Lower Bebington area when none occur in the more inland portions of Cheshire. If either the medical practitioners or the inhabitants of the district are asked why this should be, there is no hesitation about the answer given and invariably the presence of the Port Sanitary Hospital is indicated as the focus from which the infection is derived. It is a simple matter for the theorist to assert that there may be undetected mild cases constantly

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present in the area, but such a theory premises the existence of unobservant medical practitioners, health officials negligent in pursuing contacts and a community blind to the presence of skin eruptions on its members. Such a theory is untenable by anyone with even a superficial knowledge of the prevailing conditions in the neighbourhood.

I feel no need for any apology for quoting *in extenso* the sections on this matter from the 12th edition of a book of which one of the authors is the present Chief Medical Officer of the Ministry of Health:—

“In 1884-5 it was found by Power that cases of small-pox in the surrounding districts followed the admission of acute cases into Fulham Hospital. He showed that if the district were divided into zones by means of circles drawn upon the map from the hospital as a centre with radii of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and 1 mile respectively, and an enumeration made of all the houses in each belt and also of all houses invaded by small-pox the proportion of invaded houses diminished as the distance from the hospital increased and this relation held good in each quadrant of each zone. Within the quarter mile zone there was only one approach to the hospital and this was in the N.W. quadrant. The distribution of cases in the several quadrants was not such as to suggest any relation to lines of traffic or ambulance routes. Power’s conclusion was that diffusion only occurred when acute cases were aggregated and perhaps only under certain atmospheric conditions that it is impossible as yet to define.

“Barry found a similar radiation of infection from hospital upon a larger scale in the Sheffield epidemic of 1887-8, but the possibility of personal convection could not be entirely excluded. Similar observations with similar results, namely, a graduated intensity of small-pox incidence as distance between small-pox hospital and a populous neighbourhood became less, have been made at Oldham in 1893; Warrington, 1892-3; Bradford, 1893; Glasgow, 1900-1; and the Orsett Union, adjoining the site of the small-pox hospital ships in the Thames, from 1884 to 1902. These and other careful investigations leave little room for doubt that under favourable conditions small-pox can be conveyed through the air and for considerable distances.”

There can be no absolute proof that the outbreaks originate from cases sent in to the Port Sanitary Hospital,

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but in face of the authoritative experience quoted in the above sentences the possibility of such conveyance cannot be doubted.

My own position is that having been educated to believe that aerial diffusion of small-pox was a myth, I have come to the conclusion that the presence of the Port Sanitary Hospital into which sea-borne small-pox cases are admitted is the essential factor in the local outbreaks. The site may have been satisfactory when in 1876 the temporary buildings which constitute the hospital were erected, but owing to the increased population and the nature of the industry its presence can no longer be defended. The argument put forward by members of the Council to the effect that the hospital is left where it is because the district is industrial and not a residential one, where no such hospital would be tolerated, is irrefutable. The presence of the Port Sanitary Hospital is such a source of irritation to the inhabitants of the district as voiced by their representatives that it ought to be removed to some less populous place where it would do less harm.

Under the Small-pox Prevention Regulations of 1917, which empower a Medical Officer of Health to perform vaccination or revaccination of persons who have been in immediate contact with persons suffering from small-pox and who are willing to be vaccinated, 22 contacts were re-vaccinated by me.

Maternity and Child Welfare.—The Council have Infant Welfare work in their own hands and the scheme is now vested in a Committee composed of the members of the Health Committee and voluntary workers. Claim may justly be made that considerable progress has been effected during the past year. There is one Health Visitor who is well trained and has had previous experience of the discharge of the required duties, in the service of another Local Authority. There is a gratifying increase in the number of expectant mothers who come to the centre for advice and the attendance of mothers with infants is so great that they cannot be accommodated in the cramped premises at the Council's disposal. This difficulty with regard to the premises will be obviated within the next three months, when the new Centre in New Ferry Park is completed. There will then be provided in Army huts a hall, consultation room, playroom for older children, Health Visitor's room and a food store. Where expectant or nursing mothers and young children

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require a supply of food and milk, authority has been given to the Medical Officer of Health to see that the need is dealt with. Although comparative accurate figures are not available just now, there can be no doubt that the Centre influences many women to feed their infants by the breast who would without supervision be inclined to adopt artificial feeding and although the advice of the grandmothers is sometimes followed in preference to that of the trained advisers, on the whole less weight is attached to it than was formerly the case. A plain and straightforward scheme has now evolved from what was more or less ill-directed effort. Records are accurately kept and will be available for the co-ordination of this work with that of the School Medical Service. It is anticipated that during the coming year local midwives will encourage their clients both before and after the birth of infants to attend at the Centre. There is still too great a tendency on the part of midwives to regard a Maternity and Infant Welfare Centre as an organisation hostile to their personal interests and this can be best overcome by their attendance with the mothers and infants.

There was only one case of ophthalmia neonatorum which was successfully treated and no permanent injury to the eyes resulted. Two cases of acute polio-encephalitis were notified and one died. In the house where the encephalitis death took place two members of the family were subsequently found to have pulmonary tuberculosis and it is possible that the death recorded as polio-encephalitis may have resulted from tubercular meningitis.

A special report on each of these cases was supplied to the Ministry of Health.

As mentioned previously, epidemic diarrhoea was almost totally absent during 1919.

Isolation Hospital.—The hospital accommodation for infectious diseases is supplied by the Wirral Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

Adoptive Acts.—The following Acts have been adopted by the Council and are in force in the district:—

Public Health Acts Amendment Act, 1890, Pts. 1, 2, 3.

Infectious Diseases (Prevention) Act, 1890.

Free Libraries Acts.

Electric Lighting Acts, 1882, 1888.

Private Street Works Act, 1892.

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Small Dwellings Acquisition Act, 1899.

Public Health Acts Amendment Act, 1907.

Notification of Births Act, 1907.

Housing.—A district which includes the model village of Port Sunlight will, as a matter of course, demand a very high standard of housing for the working classes. The Port Sunlight dwellings are undoubtedly the model which the people desire to have copied. Even these, however, are not without their critics and one sometimes hears in these days of rationed coal that the complaint is made that the kitchen living-room is too large to be comfortably warmed. It is interesting to read the following extract from a speech by Lord Leverhulme, who built the village:—"My own opinion is that the employer ought never to be in the position of landlord to the employee; but if the employer has to choose between being in the position of landlord and the people being badly housed, then the lesser evil is for him to build suitable houses and be landlord, but it is not the right relationship." "If one has to choose between good homes built by the employer, with a high birth-rate and a low death-rate, and the objection to the employer being in the position of landlord, I think the lesser evil is that he should be in the position of landlord."

1. GENERAL HOUSING CONDITIONS IN THE DISTRICT.—The total number of houses is 2,884, of which 2,386 are of the working class type—(a) 321 have living room, scullery and two bedrooms.

(b) 838 have living room, scullery and three bedrooms.

(c) 46 have parlour, living room, scullery and two bedrooms.

(d) 990 have parlour, living room, scullery and three bedrooms.

(e) 191 have parlour, living room, scullery and four bedrooms.

District.	A	B	C	D	E
New Ferry	278	47	29	569	96
Bebington	43	25	17	375	30
Port Sunlight	—	766	—	46	65
Total	321	838	46	990	191

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The new houses for the working classes erected during the year numbered 16.

The estimated population is 14,510.

There have been no important changes during the year, but many persons employed in Lever Brothers' Works are brought from comparatively long distances and it is presumed that if more houses were available they would live in the district.

There is a definite shortage of houses and 700 is a moderate estimate of the number required. The Council have acquired a site of 14.5 acres and the lay out and type of house to be erected have been approved. It is intended to proceed at once with the erection of 165 houses. The average number of houses per acre is to be 12.

2. OVERCROWDING.—(1) At the Census in 1911 6.2 per cent. of the population was overcrowded, on the basis of two per room. The tenements which have more than two occupants per room were 74 in number and their aggregate population was 702. At the present time there are 415 houses intended for one family only, which are now occupied by two or more families.

(2) The cause of overcrowding is owing to the circumstance that work is plentiful and there is a dearth of houses for the workers. It is not possible even to contemplate measures to remedy overcrowding except by proceeding with the scheme to erect more houses.

3. FITNESS OF HOUSES.—(1 and 2) This has been referred to in the opening paragraph of the Housing Section of the report and the general character of the defects found to exist in unfit houses will be gathered from statistical appendices.

(3) The difficulties which have arisen in remedying unfitness are, in the main, due to the impracticability of obtaining labour and materials. Contractors who have accepted work have found that after its commencement it was not possible to complete the contract. Industrial troubles with members of the building trades have delayed the attempts to remedy defects.

(4) Unhealthy areas are non-existent, but there are some 30 houses which cannot be made fit for human habitation

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without complete reconstruction and there are 134 houses which are seriously defective.

4. **BYE-LAWS.**—The existing Bye-laws appear to meet with approval and there has been no demand for their revision.

BOLLINGTON

Urban District.

Population, &c.—The population of the district according to the census of 1911 was 5,225.

The estimated total population on which the birth rate is based is 5,302, whilst the estimated civil population which is used for arriving at the death rate is 5,090.

The district covers 1,291 acres, situated in a valley and the adjacent hill sides, on the western fringe of the East Cheshire range of hills.

The character of the soil and sub-soil varies greatly ; for the most part it is sandstone and clay with some coal measures.

By far the greater portion of the population are employed in various mills of the place, of these the greater number work in the three large mills of the Fine Cotton Spinning and Doubling Association, others work in the Calico Printing works, Bleachworks, and Paper Staining works. Outdoor employment is found by others in various quarries of the neighbourhood, and at the Fire Clay and Brickworks, at Pott Shrigley, two miles off.

There are 1,280 inhabited houses in the district. No new houses have been built during the year. There is no doubt overcrowding exists to a certain, but not to a large extent, at the same time there is an urgent demand for more houses. The Housing Scheme before the Council proposes to erect 130 houses, one site that in Grimshaw Lane has been approved by the Ministry of Health's Inspector, and is in my opinion of the best that could be obtained in the district. It is proposed to erect on the site 60 houses. Another site passed by the Council and awaiting the approval of the Inspector is that at the top of Clarence Brow. This should prove a good site.

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Gratuitous medical relief is provided by the Poor Law Union of Macclesfield and also by the General Infirmary, Macclesfield, for operations and other cases of serious illness; these are of great service and freely used. For milder cases of illness only slight use is made of the Infirmary.

Deaths.—There were 78 deaths recorded of persons living in or belonging to the district during the year. Of these 37 were males and 41 were females. The death rate for the year on the estimated population is thus one of 15.3 per thousand.

Births.—There were 76 births—45 males and 31 females registered during the year. The birth rate on the estimated population of 5,302 is thus one of 14.5 per thousand.

Infantile Death Rate.—The deaths of eight children below 12 months of age are recorded—the infantile death rate is thus one 10.5 per thousand births registered.

Water Supply.—The Water Supply is obtained from two works, Lowerhouse and Danebent, in the neighbouring township of Rainow some two or three miles away. The supply is constant.

1. Lowerhouse.—The water is obtained at these works from three boreholes and adits driven in the mill stone grit.

2. Danebent.—The water at these works is also obtained from boring in the mill stone grit. When the supply at Lowerhouse fails, as it is apt to do in a long continued period of drought, the water is pumped from this bore-hole, Danebent, by an air lift pump.

The supply is sufficient only for the present needs of the district. In the near future, taking into consideration the number of conversions of privy middens that is absolutely necessary, and also the additional number of houses that are to be provided (130) under the Housing Scheme, the supply will be inadequate.

The quality of the water whilst not being continuously polluted is at times liable to intermittent pollution, due no doubt to the number of farms which are situated in the Watershed. Pollution of this nature—that is intermittent in character—is generally admitted to be most dangerous. For some months past this has been engaging the most serious attention of the Council

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and a scheme is being prepared to increase the quantity and at the same time to remove the pollution by installing filtration plant.

In this matter the Council is being advised by H. Lapworth, Esq., D.Sc., M.I.C.E., F.G.S., who has been over the ground and who has since the end of the year submitted his proposed scheme. This scheme is at the moment receiving the urgent attention of the Council.

Pollution of Streams.—This only occurs to a minor extent, all the mills discharging their trade effluent into the stream, having each their own purification plant. Refuse, however, is still thrown into the stream from houses situated along its course, in spite of the fact that householders have been continuously warned against this practice.

Drainage and Sewerage.—The Drainage and Sewerage System has worked satisfactorily. The disposal of the sewage is carried out by detritus tanks, first and second contact filter beds and land irrigation and has given complete satisfaction.

Closet Accommodation.—Approximately one half the number of houses are provided with water closets. There remains 479 privy closets with 270 privy middens. This is not altogether creditable to the district, and it should be a first duty of the Council to press forward more urgently the matter of conversions, and if necessary, to put into operation the Public Health Act, 1907.

Scavenging.—The removal of House Refuse is done fairly satisfactorily. It requires, however, a more frequent collection. The manner of the removal of the contents of the privy middens is of a decidedly primitive nature. The Council create a public nuisance every time such are emptied into the public streets. This alone should be a strong incentive to push forward the conversion of the remaining privies. In future conversions it would be advisable to insist on the provision of dust-bins in the place of fixed ashpits. In this way the more frequent removal of house refuse will be facilitated.

Infectious Diseases.—Ten cases of Diphtheria were notified, Eight of these were removed to the Isolation Hospital at Macclesfield, and two were treated at home. Two cases of scarlet fever were notified, both of which were removed to Hospital for treatment. The cost of hospital treatment is £60 14s. 1d. Measles was epidemic during the last quarter of the year.

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Ashpits and Privy Middens.—The Sanitary Inspector further reports as under :—

My predecessor, Mr. G. A. Smith, informed me he had difficulty in carrying out the emptying of the above on account of the lack of team labour.

This was due to various causes. There was a shortage of men due to the War, the high prices obtained for horses, etc.

These conditions continued and in addition the number of hours worked per day since the Armistice prevented farmers and others carrying out the pre-war practice.

A Sub-Committee was appointed to deal with the matter and eventually the Council obtained horses from the army, with the result the work can now be carried out in a satisfactory manner.

An increasing amount of house refuse is removed, due to the poor quality of fuel supplied and the economic conditions which permit the inhabitants to enjoy the amenities of life to a much greater extent than was possible in pre-war days.

A detailed report was presented to the Committee which showed there were 479 privy closets, 279 privy middens and 693 houses with water closets ; the total number of houses in the district is approximately 1,250.

Although every effort had been made to get a considerable number of privy middens and privy closets converted into water closets with the necessary ashpit accommodation or dust bins provided, I am unable to report much progress, although I have reason to think that fair progress will be made during the ensuing year.

There are several reasons to account for this.

There has been a scarcity of skilled labour in the building trade and the builders have been averse to giving an estimate owing to the abnormal conditions which have prevailed.

In addition there is a great amount of work required to be done in the district due to wear and tear of the last few years.

BOWDON

Urban District.

Population, &c.—The population of the district in 1911 was 3,044, present estimated population 3,200.

We may divide the Bowdon district into two parts, the urban and rural and the urban portion into the well-to-do class and the working class. The wealthier class live in houses situated on a hill, the soil of which is of a sandy nature; the working classes live in the plain on the South side of the Bowdon hill and the soil there is of a varied nature, but chiefly of a heavy loam or peat. The rural district consists chiefly of small farms partly arable and partly pasture.

The wealthier part of the population are chiefly Manchester merchants, professional men and men of independent means; the working classes are gardeners, coachmen and artizans. The latter occupy mostly six-roomed houses with well-paved yards, water closets and in a few cases earth closets. There are no back-to-back houses. The streets of these houses are wide and well paved.

There were 18 births (11 male and 7 female) giving the extremely low birth-rate of 5.8 per 1,000.

Deaths numbered 41 (18 male and 23 female) which gives a rate of 13.7 per 1,000. Of these deaths 6 were from cancer, 7 from influenza, 4 from heart disease and 2 from pulmonary tuberculosis.

Water.—Water is obtained from the Manchester Corporation supply and is very satisfactory both as regards quality and quantity.

Drainage.—Except for a few outlying farms the whole district is well drained into settling tanks and irrigation land and the sludge disposed of to farmers.

Closet Accommodation.—There are still fifty privies which have not been converted into the water carriage system. This conversion would have been completed but for the war and steps are to be taken to have it completed.

Food.—The cowsheds and dairies have been inspected and found to be well kept and in good sanitary condition. The dairy

Bowdon Urban District.

utensils were found in good condition and the milkers seemed careful to observe cleanliness with regard to their hands in milking.

The bakehouses were found to be in a satisfactory condition. There are no slaughter-houses in the district.

Infectious Disease.—Notifications numbered 26, of which 9 were influenzal pneumonia, 5 measles, 4 scarlet fever, 1 diphtheria, 4 pulmonary tuberculosis, 1 malaria.

Bacteriological examinations have been carried out in six cases by the Public Health Laboratory, Manchester.

Tuberculosis cases are visited and advice given.

Isolation Hospital.—Under an agreement with the Altrincham District Council three beds are retained in the Altrincham Isolation Hospital for Bowdon infectious cases. During the year three cases of scarlet fever and one of diphtheria were sent there.

Maternity and Child Welfare.—As there is such a small number of poor people no health visitor is appointed by the Council.

Housing.—Total number of houses 700, of which 200 are for working classes. No new houses have been built during the year. There is a slight shortage of houses and the Council have a scheme for building 36 new houses. Except in a few cases there is not any marked overcrowding.

There have been no closing or demolition orders; no dwelling houses have been demolished voluntarily.

BREDBURY AND ROMILEY

Urban District.

Population.—The population of this district at the 1911 Census was—Bredbury, 5,786; Romiley, 2,898.—Total, 8,684. The population estimated to the middle of 1919 by the Registrar-General is—Civilian 8,200, still serving at home or abroad 342; total 8,542.

Bredbury and Romiley Urban District.

Hospital Accommodation.—There are no hospitals in the district, but there are several very good ones in the neighbouring towns of which use is made when required. The Infectious Diseases Hospital is in Hyde, and we have an agreement whereby, for an annual payment, four beds are placed at our service; additional ones, if required, being paid for separately. The Union Infirmary and a General Infirmary are in Stockport; whilst the Manchester Hospitals, including an eye hospital, maternity and gynæcological hospitals, &c., are of great service to us. There are three Hospital Clinics for venereal diseases within reach, viz., Stockport, Ashton and Manchester Infirmaries.

Births and Deaths.—The nett number of births registered in 1919 was 141:—

Bredbury :	males, 50 ;	females, 38 (illegitimate, 2 males).
Romiley :	„ 23 ; „ 30 (	none)

Ten deaths of children under one year of age were registered in the district. The infant mortality per 1,000 births equals 71.

Water.—The district is now well supplied with a sufficient quantity of water of good quality. It is obtained from the New Kinder Waterworks of the Stockport Corporation and the Manchester Woodhead reservoirs; 120,000 gallons from the former and 55,000 from the latter being the order for one day's use. Since the Kinder water was brought here we have had sufficient pressure to supply the higher parts of the district which before was impossible. The supply is constant and free from contamination. The water is free from plumbo-solvent action, and its use has extended throughout the district, many wells and pumps having being replaced by the town's supply.

Closet Accommodation.—This subject has had special attention during 1919 and much work which had been postponed, on one excuse or another by the owners, has been put in hand. 2,940 inspections and re-inspections have been made of house drainage, and 79 informal and one statutory notices have been served, with the result that 78 have been complied with and two are in hand. 528 inspections of privy middens, pail closets and cesspools have been made, and 53 Statutory and five informal notices sent, resulting in 33 being complied with and 25 still in hand at the end of the year. 71 privy and pail closets have been done away with and 77 water closets provided in their place. Sanitary moveable ashbins with proper covering have been provided with each of these new W.C.'s.

Bredbury and Romiley Urban District.

Scavenging.—This work is now done by the Council's own men, horses and carts and has been much more efficiently and regularly done than before, when it was done by contractors; the ashpits, privies and cesspools being emptied oftener and more thoroughly too. The Inspector reports that 3,762 tons of refuse have been removed to the Council's tips, this being 106 tons more than last year.

Milk Supply.—All the milk consumed in the district is supplied by farms in the district. It is wholesome and there is sufficient quantity. Samples are taken by the County Inspector and examined by the Analyst, but no prosecutions have been necessary during 1919. The milk is retailed by the producers direct and I am of opinion that this is a good plan, as they take a personal pride in the quality of the milk and there is less danger of contamination than when it has to pass through an intermediate milk shop and if the old plan of delivering it when fresh, i.e., twice a day, were reverted to, I am sure it would be better than only once a day as at present.

Influenza.—In the last yearly report I gave full details of an epidemic lasting over the end of December, 1918, and the disease continued through January, February and early March, in 1919. Seven deaths were certified to that cause during 1919, and 12 cases of influenza pneumonia were notified in the first month of the new regulation. The same precautions and methods were continued as detailed in 1918 report, and since then no recurrence of the epidemic has been met with. The schools were visited regularly and the daily attendances taken up to Easter; but there was no evidence of the disease spreading amongst the children requiring action beyond exclusion of infected children.

Diphtheria.—The notified cases were spread through eight months of the year and were separate infections. Strict enquiry was made in every case, and in most of them some defective sanitary arrangement was found. In one case a girl came back from her seaside holiday with the disease, and another girl had spent several days in a neighbouring wakes ground. Serum was supplied by the District Council, and six of the little patients were sent to the Isolation Hospital to avoid stopping other members of the families continuing their work, or when efficient nursing was not available. None of the cases ended fatally.

Malaria.—Seven cases were notified between March and August and one in November. The patients were all soldiers just

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returned from some Eastern station who had had the disease whilst on active service. Appropriate treatment soon gave relief and they were able to resume their employment. No cases have arisen for the first time in this district.

Typhoid Fever.—Two cases were notified—one in September and one in November. Careful enquiry was made in each and the most thorough disinfection carried out. The first case probably arose from some food taken in Manchester, the suspected articles being meat pie and ice cream, both of which are open to contamination. The other case was a returned soldier from Gibraltar whose health had not been satisfactory whilst abroad. Both cases were treated in hospital and ended in recovery.

Bacteriological Aids to diagnosis have been utilised as follows :—

Sputum for Tuberculosis 3, showing 2 positive.
 „ „ Diphtheria 2, „ 2 „
 Contents of a gland for T.B., 1, result positive.

Housing.—No new houses were completed in 1919. The number in existence in the middle of the year was—

Bredbury	...	Inhabited, 1509 ; uninhabited, none.
Romiley	...	„ 818 ; „ „
Total		2327

A large amount of preparatory work has been done in connection with the new housing scheme ; roads and sewers have been laid and plans passed for the erection of the first 90 houses and negotiations have been conducted for the acquisition of nine houses partially built. It is hoped to get on with the building and completion of all these at an early date.

BROMBOROUGH**Urban District.**

Population.—At the 1911 Census the population numbered 1,974. The Registrar-General estimates the population at Midsummer, 1919, to have been 2,523 for the purpose of calculating the birth-rate and 2,422 for the death-rate. He explains that his estimates are based largely upon figures

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supplied by the Ministry of Food and that the difference between the birth-rate population and the death-rate population is due to the inclusion in the former of all the elements of the population contributing to the birth-rate, while the latter excludes all non-civilian males, whether serving at home or abroad.

If the population had increased in the same proportion as in the previous intercensal period, it would have been 2,049 and although the estimate of the Registrar-General is some 400 in excess of that figure, yet, in all probability, it is an under-estimate of the population at the present time.

Physical Features and General Character of the District.—Bromborough is situated on the River Mersey to the south of Lower Bebington and is on the main road from Chester to Birkenhead. It has a frontage of about two miles to the Mersey and extends inland for about the same distance at its greatest breadth. The geological formation belongs to the lower and upper hard sandstone of the Bunter Beds.

It is a residential area for Liverpool business men, but during the last few years there have been great industrial developments. Price's Candle Works, situated on the Bromborough Pool branch of the Mersey, employ a large number of workers and the whole river front has now been included in the development of factories allied to the Works of Lever Brothers. Large Margarine Works, Oil Refineries, Chemical Works, Oxygen Works and Electric Power Station and building constructional works of very large extent may be enumerated among the important industries. There is no occupation which can be regarded as detrimental to the health of the workers, but the comparatively short hours of labour and the high wages have tended to bring a population to the district far in excess of its housing capacity.

Vital Statistics.—The births numbered 39 (21 males and 18 females) and all of them were registered as legitimate.

The birth-rate was 15.4 per 1,000 of the population as contrasted with 17.8 in 1918 and 16.7 in 1917.

Infantile Mortality.—Two infants died under one year of age, or over 5 per cent. of the infants born. The infantile mortality rate was 51.2 per 1,000.

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Deaths.—22 deaths (12 males, 10 females) were registered, but the total deaths of persons belonging to the district were 23 (13 males, 10 females), as there were two out-transfers and three in-transfers.

The death-rate was 9.49, as contrasted with 13.8 in 1918 and 6.5 in 1917.

There were six deaths from cancer or malignant disease, four males, two females, viz.:—Carcinoma of stomach three males, aged respectively 49, 70, 62 years, one female, aged 32 years. Carcinoma of breast, one female, aged 65 years. Carcinoma of prostate, one male, aged 71 years. Five deaths were recorded from organic heart disease. There were four deaths from bronchitis and one from pneumonia.

Poor Law Relief.—On the last issued List of Out-door Poor there was the name of one Bromborough resident who, with her two children, was the recipient of relief.

The Poor Law Infirmary at Clatterbridge is used for the treatment of acute and chronic illness by the inhabitants and gratuitous treatment is also obtained in the Liverpool Voluntary Hospitals.

Water Supply.—The Water Supply is from the mains of the West Cheshire Water Company and is described by the analyst as organically of first-class quality. In common with the inhabitants of other areas supplied by this Company there has been cause for complaint among the consumers in Bromborough owing to the limited and irregular supply. The Company have explained that the pumping apparatus at the Hooton well had broken down owing to requisite engineering work not being available during the war. Samples of West Cheshire water submitted to the analyst in February, 1919, and as recently as last month, show that the Company are not carrying out their statutory obligation to deliver water to the consumers softened to a degree not exceeding 10 degrees on Clark's Scale.

At considerable cost the ratepayers of Bromborough and other places within the area of supply of the West Cheshire Water Company forced the Company to give an undertaking that water exceeding 10 degrees of hardness would not be supplied, but the samples show 18 degrees of hardness, of which 17 degrees are temporary, so that all the old troubles

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and annoyances consequent upon the use of this water are still in existence. Bromborough Pool village is supplied from a deep well in the new red sandstone at Price's Candle Works. This water is also of a very high degree of organic purity and is likewise very hard and leads to a large deposit of lime salts when it is boiled.

Rivers and Streams.—Several small streams which have traversed the greater part of the Wirral agricultural area, pass into Bromborough Pool. These streams have received house drainage and effluents from the filter beds of sewage works. There has been no complaint of any nuisance arising from their condition.

Drainage and Sewerage.—The more urban parts are well sewered. The sewage is treated on the septic tank principle with contact beds. The two main disposal works are known as the Dibbinsdale and the Tile Yard Works, but there are in addition, minor installations at large residences and a number of direct outfalls into the Mersey. During the past year, the Council have had schemes for the sewerage of the district in its entire extent laid before them and have retained the services of eminent sanitary engineers to advise on the carrying out of a comprehensive scheme. The character of the district makes it no easy task to provide a system which will be efficient and yet not excessive in cost. Moreover, the rapid development of works and the necessity for the provision of numerous houses for the workers, add to the difficulty of estimating the requirements of the area. The Council are now proceeding to construction work in connection with the scheme which has been advised upon.

Closet Accommodation.—Bromborough is to be congratulated upon the circumstance that in advance of many very much larger places, it has abolished privies, as in the whole area there are now only 20 in use and at least 12 of these will be converted within the next few months.

Scavenging.—Moveable bins have been substituted for ashpits and the Council's employees empty these systematically. The number of ashpits left in the district is now very small.

Schools.—The County Council have approved the plan for a school to accommodate 1,000 children, in order to cope with the scholastic needs connected with the development of the

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district. The schools in use are modern, well constructed, lighted and ventilated. No school was closed owing to infectious disease in 1919.

Infectious Disease.—No deaths were recorded from notifiable infectious diseases and the number of cases of which intimation was received was less than might have been anticipated when the prevalence of infectious conditions in the surrounding area is considered.

Scarlet Fever.—14 cases were notified, 12 in Bromborough and two in Bromborough Pool village. The patients were all treated in the Isolation Hospital.

Diphtheria.—Six cases were notified, four in Bromborough and two in Bromborough Pool village. All were treated in the Isolation Hospital.

One case of measles and one of erysipelas were notified.

Tuberculosis.—The only death recorded from tuberculosis was that of a child with tuberculous meningitis. Three notifications, viz., two of pulmonary and one "other" tuberculosis, were received. Bromborough patients receive treatment at the County Council Dispensary and the district is dealt with under that Council's scheme.

Small Pox.—No cases of Small Pox have been notified for some years, but it is essential that reference should be made to the increasing number of persons who do not have their infants vaccinated. Recently, in answer to a question in the House of Commons, the Minister of Health stated that it was approximately correct that more than half the children born at the present time were withheld from vaccination; that the proportion of unvaccinated children of each year's birth was steadily increasing; and that nearly 40 per cent. of the births in each year were exempted from vaccination by the statutory declaration of objection by the parents.

In the closely adjoining area of Lower Bebington there were several outbreaks of small-pox in 1919, all of a very limited character owing to the vaccinated state of the population.

Maternity and Child Welfare.—The County Council provide a centre situated a little distance from Bromborough.

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and have made arrangements for the transport of mothers and children who may wish to attend.

Hospital Accommodation.—The hospital accommodation for infectious diseases is supplied by the Wirral Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

The Greasby Hospital now used for scarlet fever patients was formerly the Small-pox Hospital of the Joint Hospital Board and it became unsuitable for its original purpose owing to the increase in the number of houses in its vicinity.

The Wirral Joint Hospital Board, in order to provide accommodation for small-pox patients, entered into an agreement with the Liverpool Port Sanitary Authority to provide the beds which might be required and the Port Sanitary Hospital at New Ferry has been utilised. The action of the Board in making any use whatever of the Port Sanitary Hospital has been strongly condemned by the Lower Bebington Urban District Council.

Bacteriological work is carried out for the Council by the Clinical Research Association.

The County Council Laboratory now examines specimens for tuberculosis and a steady increasing number is submitted for examination and report.

Housing.—The working class dwellings which number about 270 out of a total of 500, are all well constructed and of a good type, with the exception of a few cottages which are not modern. During the year eight cottages have been built and occupied and 123 are in the course of construction.

The Council have obtained sanction to the purchase of a suitable area of land and are proceeding to erect 300 cottages as soon as the necessary labour can be obtained.

BUGLAWTON

Urban District.

Vital Statistics.

Population at 1911 Census	...	...	1439
Estimated population in 1919	...	...	1427

Births, 31. Birth-rate, 18.2. Illegitimate births, 4. Illegitimate birth-rate, 12.9 per cent. of births.

Deaths, 24. Death-rate, 14.6. Deaths of infants under one year of age, 2. Infantile mortality rate, 64.5 per 1,000 births. Number of deaths from tuberculosis, 1. The causes of death of children under one year of age were:—Immaturity at birth 1 and influenza 1.

Water.—The water is obtained from upland springs on Cloud Side; there is no plumbo-solvent action and it is not liable to contamination. The supply has been satisfactory in amount, though eventually other springs will have to be taken in and further storage provided. On 1st January, 1919, I received the Analyst's Report on a sample taken from the storage tank; the water was of a satisfactory degree of organic purity and fit for general domestic use. In 1918 I drew your attention to the necessity of your Surveyor taking samples of your water regularly; owing probably to changes in the Surveyorship during the year this has been neglected. In February the Analyst reported that water from a well at Havannah Lane Farm was dangerously polluted with cesspool or allied drainage and this is not now used; the water from another well on this farm has also been analysed and the report was that it was satisfactory for dietetic purposes, subject to protection from contamination; the owner has now this matter in hand.

Rivers and Streams.—The Dane-in-Shaw Brook and the Timbersbrook are both slightly polluted by effluent treated before discharged from factories where chemicals are used in the manufacturing processes.

Sewerage.—Only the Urban portion is sewered, the sewage being almost entirely of a domestic character and is treated at the Congleton Borough Sewage Works, the final effluent from which is invariably satisfactory. None of the rural portions of the district are sewered and owing to the very scattered positions of the dwelling-houses, no scheme is practicable.

Buglawton Urban District.

Closet Accommodation.—Water-closets 53, pail-closets 189, privy-middens 144.

Infectious Diseases.—During 1919, twenty cases were notified.

Diphtheria Antitoxin is supplied by the Council to medical practitioners on application being made to me; none was required in 1919.

Lists of cases of infectious or suspected infectious disease from the Headmaster of the Council School are of great use when any epidemic disease is in the district and the cases given are carefully enquired into.

Isolation Hospital.—Scarlet fever, diphtheria and typhoid fever and trench fever if beds are available, are treated at the West Heath Sanatorium, Congleton, which is administered by the Congleton and District Joint Hospital Board and the accommodation has been found adequate. Small-pox cases can be admitted to the Small-pox Hospital at Arclid in Congleton Rural District.

Specimens from suspected cases of diphtheria, typhoid and cerebro-spinal meningitis are examined at the Public Health Laboratory, Manchester University, and sputum from suspected cases of tuberculosis since 14th July, 1919, at the County Laboratory, Chester.

Housing.*General Housing Conditions in the District—*

Number of houses in the district	...	417
Number of houses for the working-classes	...	377

The number, however, includes 44 unoccupied houses in the Havannah that cannot be made fit for habitation, four other unoccupied houses that require reconstruction before they can be used as dwellings and four used for business purposes.

New houses erected for working-classes during the year or in course of erection—Nil.

Changes during the year or anticipated in the future.—A small, steady increase, due to prosperity in trade, as new

Buglawton Urban District.

industries have been recently and are about to be started, always providing that house accommodation can be found.

- (a) Extent of shortage of houses ... 34 houses.
- (b) Measures taken or contemplated to meet any shortage.—Erection of 34 houses of a better type.

Overcrowding—

Extent ... 20 houses.

Causes.—In 14 instances due to large families and in six instances to two or more families occupying one house.

Measures taken or contemplated to deal with overcrowding.—Erection of new houses of a better type.

Principal cases of overcrowding dealt with during the year and action taken.—None, owing to no alternative accommodation being available in the district.

Fitness of Houses—

- (a) General standard of houses in the district.—A moderate standard, but practically no modern houses; water-carriage system only in a very few houses.
- (b) General character of the defects found to exist in unfit houses.—Ground dampness, defective lighting and ventilation, lack of yard space, lack of back doors, bedrooms deficient in number and size, defective pointing and spouting, unsuitable position and defective structure of closets.

Action taken as regards unfit houses under—

- (a) Public Health Acts.—Seven statutory and six informal notices served, all of which were complied with.
- (b) The Housing Acts.—71 defective houses were represented to the District Council; 44 houses which had been closed for a number of years and were neither dangerous nor a real factor in the housing of the district, owing to difficulty of approach, but were of considerable artistic value and local interest, the Council decided, on my advice, to take no immediate steps with regard to them; 27 others were represented for the purpose of reconstruction, which would entail turning the 27 houses into 25, a loss of two houses to the district.

Buglawton Urban District.

Difficulties in remedying unfitness, special measures taken and any suggestions in the matter.—No available houses for occupiers while reconstruction is being carried out; there is also a shortage of skilled labour and materials.

Conditions, so far as they affect housing, as regards water supply, closet accommodation and refuse disposal, together with measures taken during the year in these matters.—Water supply has been found sufficient under present conservancy system, but if water-carriage system was generally introduced into the urban portion of the district and many new houses were erected, other springs would require to be added to the present supply; this difficulty, however, could be overcome. There is no difficulty about removing refuse to tips, but naturally in a small district like this there is no refuse destructor.

Unhealthy Areas—

One house was demolished before the war and another belonging to the Overseers was so thoroughly reconstructed as to be practically rebuilt.

The Havannah village, which had already been voluntarily closed, consisted of 44 houses and the Council were advised to take no further steps for the present; 27 houses were represented for reconstruction, entailing a loss of two houses; this will be carried out when new houses are erected to house the displaced occupants of the two houses and when labour and materials are available.

CHEADLE AND GATLEY

Urban District.

Population, Births and Deaths.—The population of the district, Census 1911, was 9,914. The estimated population for the year 1919 is, including institutions, 11,850 and excluding institutions 10,924.

The number of deaths registered in the district from December 31st, 1918, to December 31st, 1919, was 176, of which 59 occurred at the various institutions in the district. Notice of 13 transferable deaths was received, making the total number of

Sheadle and Gatley Urban District.

deaths in the district proper 130. There were 7 deaths of infants under one year of age. The death-rate for the year per 1,000 persons living per annum for the total number of deaths registered in the district (estimated population 11,850) was 14.8.

The number of births registered in the district during the year was: boys 81, girls 85, total 166. Seven illegitimate births were registered. No notice of any transferable births was received during the year.

The death-rate for the district proper, including transferable deaths, per 1,000 persons living per annum (estimated population 10,924) was 11.9. The infant mortality for the year 1919 per 1,000 births registered was 42.2. The zymotic death-rate per 1,000 persons living per annum (including influenza) estimated population 10,924 is 0.91.

The death-rate from tuberculous diseases per 1,000 persons living per annum is 0.45.

The principal cause of the infant mortality was congenital debility including premature births.

There were no deaths due to zymotic disease except those due to influenza and its sequelæ. There were no fatal cases amongst cases sent to the fever hospital.

Notification of Births Act.—This Act with the provision for Maternity and Child Welfare is carried out by the County Medical Officer of Health under his scheme. As there are no registered midwives practising in the district, practically all the maternity cases are attended by medical men; this is, I think, a considerable factor in keeping the infant mortality so low.

Infectious Diseases.—During the year, 141 cases of infectious disease were notified, that is compared with 172 in 1918.

On March 1st an Order came into force requiring all cases of primary or influenzal pneumonia and bronchial pneumonia to be notified and also cases of malaria.

In the district proper there were notified:—

Scarlet Fever	...	...	...	48 cases
Erysipelas	...	...	...	7 „
Diphtheria	...	...	...	11 „

Cheadle and Gatley Urban District.

Measles...	...	...	...	33 cases.
Pulmonary Tuberculosis	...	...	...	13 „
Other forms of do.	...	...	...	5 „
Pneumonia	...	...	...	24 „
Ophthalmia Neonatorum	...	...	...	1 „
Malaria...	...	...	...	1 „

Ten cases of infectious diseases were notified from the various institutions in the districts.

Scarlet Fever.—48 cases were notified, of which two were notified from the institutions in the district. The district was very free from this disease until the last quarter of the year. The majority of cases occurred in Cheadle Hulme; the first cases to be notified occurred among the children who were attending a school outside the district, which had to be closed on account of an outbreak of the disease. As the disease began to spread and affect the children attending the Cheadle Hulme day school these schools were closed, partly on account of the poor attendance and partly as a precautionary measure by the County Medical Officer of Health, from October 25th to November 1st, when the schools were re-opened. The attendance improved considerably, but still cases continued to be notified. I made careful enquiries and came to the conclusion that the disease was of a very mild type and in many cases the rash was very indefinite and slight. There must have been several cases not recognised and allowed to go about, as in two or three instances patients were not seen until they had begun to peel. The outbreak came to an end at the end of the year. Fifteen cases were sent to hospital for treatment.

Diphtheria.—11 cases were notified. The whole except one occurred in the last quarter of the year. In nine cases I definitely traced the source of infection to outside the district. All possible precautions were taken to prevent the disease from spreading. Twenty-six swabs were sent to be examined, eight of which gave a positive result and 18 a negative.

Antitoxin, which is supplied by your Council, was used in every case, with very beneficial results, as no case proved fatal. Two cases were sent to hospital.

Measles.—31 cases were notified as compared with 140 in 1918. Of the 31 cases, two occurred at the Barnes Convalescent Hospital and one at the Warehousemen and Clerks' Schools. The disease was never very prevalent and in nearly all the cases the source of infection was outside the district.

Cheadle and Gatley Urban District.

Tuberculosis.—13 cases of pulmonary tuberculosis and five of other tubercular diseases were notified, including three cases from the Barnes Convalescent Hospital and one at the Royal Asylum. All the cases were visited and where necessary instructions given. Five deaths were registered in the district. Nine specimens were sent to be examined, two giving a positive result and seven a negative result.

Pneumonia.—This disease became notifiable on March 1st, 1919. Twenty-four cases were notified and the majority of them occurred in the second quarter of the year, when influenza was prevalent and were post-influenzal cases. Seven cases proved fatal.

Influenza.—After the outbreak of the previous year had subsided in January there was a fresh outbreak in February and March. Though it was not of such a very virulent type, several cases proved fatal. Since April the district has been very free from the disease. Owing to the prevalence of the disease it was thought necessary to close the Cheadle Heath infant school for 14 days.

Hospital Accommodation.—Arrangements have been made with the Manchester Corporation to send our cases to Monsall Fever Hospital, but during the outbreak at the end of the year and as they could not take more than three cases, an arrangement was made with the Hyde Corporation and they took all that we wanted. Seventeen cases were sent during the year. Fifteen cases of scarlet fever and two of diphtheria.

For treating cases of smallpox, arrangements have been made with the Hyde Corporation to take them, as the temporary hospital which belonged jointly between your Council and the Stockport Corporation was accidentally destroyed by fire and it was thought that it would be better to make other arrangements than to rebuild it.

Articles of bedding and clothing are still sent to the Stockport Corporation Disinfecting Station to be disinfected by steam. So far this arrangement has worked well and I think it is the most economical.

Housing Scheme.—During the year your Council has spent a great deal of time over this scheme. Four separate areas in different parts of the district have been bought and plans prepared for 182 houses and tenders asked for the erection of the same. Besides buying the land for the erection of houses your

Cheadle and Gatley Urban District.

Council has bought a plot of land in Cheadle Hulme to be laid out as a recreation ground, another plot to be used when necessary as a cemetery and in Gatley a plot as a recreation ground.

No systematic inspections have been made, but about 50 houses have been visited. No houses have been ordered to be closed; although there is a great shortage of houses, there have been no cases of overcrowding reported.

Dairies and Cowsheds.—The dairies in the district have all been regularly visited. In one case, owing to certain questions from the County Council, I visited the farm, with the result that the shippens are to be re-arranged. Samples of milk sold in the district have been taken for analysis, and in one case at the beginning of the year, as the sample was defective, a prosecution was ordered and the seller convicted.

Removal of House Refuse.—Your Council used to do this with your own men, but owing to the difficulty of labour it is now done by contract, under the supervision of your sanitary inspector. As far as I can ascertain this system is working well.

COMPSTALL

Urban District.

Population.—The population at the Census in 1901 was 875. The population at the Census in 1911 was 908. The population now—1919—calculated by the Registrar-General for statistical purposes is :—For birth-rate, 855; for death-rate, 821.

Estimated number of houses inhabited July, 1919, 236; average number per house, 3.6.

Water.—The supply of water is good, and the quality fine according to previous accounts. I have not yet had any analysis of same. The Council appear to be taking due care with regard to any contamination.

Drainage and Refuse Disposal.—The drainage and sewerage of the district is in a very primitive state. The

Compstall Urban District.

privy system is an abomination and I consider that ere long a system of sewerage will become absolutely necessary if the health of the district is to be kept up to the ordinary standard.

Infectious Diseases.—Two cases were reported during the year—one scarlet fever and one typhoid fever. The case of typhoid fever was removed to hospital and all care taken as to disinfection, fumigation, etc., to prevent the spread of the diseases.

Housing.—Plans, I believe, are being submitted to you for erection of dwelling-houses on Werneth Low, but until your new water supply is an accomplished fact and some system of sewage constructed I hope the Council will not entertain the same. All Bye-laws as to distance of closets from new houses should be rigidly enforced.

ELLESMERE PORT AND WHITBY

Urban District.

Population.—At the Census of 1911 the population was 10,366 and is estimated by the Registrar-General at Midsummer, 1919, to have been 13,932 for the purpose of calculating the birth-rate and 13,374 for the death-rate. The Registrar-General's estimate is based largely upon the rationing returns placed at his disposal by the Ministry of Food.

If Ellesmere Port had increased at the same rate during the last nine years as it did in the previous intercensal period, the present estimate of population would have been 15,887. In 1921 the next census will be enumerated and definite information as to the number of the people will be forthcoming.

General Character of the District.—The Urban District of Ellesmere Port and Whitby lies on the southern shore of the Mersey, at the junction of the Manchester Ship and the Shropshire Union Canals. The latter canal by its branches communicates with the Rivers Severn, Dee and Mersey and thus provides inland waterways from Liverpool to North Wales, Bristol, Birmingham, Wolverhampton and the Midlands.

Ellesmere Port and Whitby Urban District.

The town is industrial and is built upon a bed of recent brown or tidal clay, varying in thickness from 6 to 20 feet. Below this in certain sections the peat and forest beds occur, overlying in some places new red sandstone and in others boulder clay.

Among the chief occupations of the inhabitants are trades connected with the manufacture of corrugated iron. Ellesmere Port has been described as the chief depôt of iron ore brought from the North and forwarded to iron manufactories in Staffordshire and other places. It is a centre for shipbuilding and repairing and there has recently been a large extension of this industry. Cement manufacture provides occupation for a large number of hands. Flour mills of great capacity and with the most modern type of machinery and appurtenances have been established. As it is the terminus of the Shropshire Union Canal there are docks, warehouses, boat-repairing and engineering shops belonging to the Shropshire Railways and Canal Company.

Dye-works for the production of Aniline derivatives are in active operation and a very large extension of this industry along the water front of the Mersey is in contemplation. Large timber creasoting works have been established.

In the more inland areas of the district, agriculture is the staple industry.

At the present time there does not seem to be any undue prevalence of trade illnesses associated with the manufacturing processes mentioned above, nor has any industrial poisoning from civilian factories been brought to my notice. As the works are all modern and the growth of the past few years, it is to be presumed that hygienic measures are enforced to lessen the risk which cannot be completely banished from many of these industries.

Births.—The births numbered 315 (170 males and 145 females). Two hundred and ninety-six of these were registered as legitimate and 19 as illegitimate. The birth-rate was 22.6 per 1,000.

The birth-rate is a comparatively high one, but it has to be borne in mind that the number of females of child-bearing age in the population is greater than in some of the districts with whose rates comparison is made.

Ellesmere Port and Whitby Urban District.

Infantile Mortality.—Thirty-one infants died before attaining one year of age, or 9.8 per cent. The infantile mortality rate was 98.4 per 1,000 infants born. The rate is a high one and much in excess of what it ought to be.

The public conscience here requires to be quickened upon the subject of infant mortality and a diminution can only be looked for when a housing condition is reached in which not more than one family is accommodated in each house and when women learn to nurse their offspring.

Six illegitimate infants died before attaining one year of age out of the 19 born, or a death-rate of 32 per cent., as contrasted with 8.4 per cent. of the legitimately born. In the mortality of the unwanted infant there is the factor of active or passive want of care and also the psychological condition of the unmarried mother induced by anxiety and the social stigma attached to her condition. Certain provisions in the Bill to amend the Bastardy Laws promoted by the National Council for the Unmarried Mother and her Child can confidently be looked to, should the Bill become law, for the lessening of the handicap against the survival of the illegitimate infant.

Deaths.—The deaths registered numbered 122 (65 males, 57 females). When in and out transfers are accounted for, the district is credited with 156 deaths, or a death-rate of 11.6 per 1,000 of the population. The death-rate is a low one, but before any absolute statement could be made in comparison with rates in other places, we would have to know the distribution of the population in the various age groups.

Hospitals.—In September, 1919, when the last available List of Outdoor Poor was published, the names of 34 adults (2 males, 32 females) and 35 children were on it. The Wirral Poor Law Infirmary is made use of to a large extent both in acute and in chronic illness. The hospital institutions of a voluntary character in Liverpool and Chester are subscribed to and utilised by the inhabitants. In the last few months of 1919 a Cottage Hospital has been in working order, with a scheme in which all medical men practising in the district or in the neighbourhood will be the staff and it is confidently looked forward to that this institution will do much for the welfare of the inhabitants.

Water Supply.—The West Cheshire Water Company provides a supply of water which is derived from deep wells

Ellesmere Port and Whitby Urban District.

in the new red sandstone. The water when pumped from the bore holes is very hard and in consequence of this the Company has been laid under a statutory obligation not to deliver the water until it has been softened down to 10 degrees. The softening plant consists of material for the removal of iron and a sodium permutit apparatus. In the process of softening a quantity of carbonate of soda is added to the water and finally the water is delivered with approximately nine degrees of hardness.

During the past year the Company, owing to engineering difficulties relating to pumps at the Hooton well, which during the war had got out of repair, have been unable to supply the consumers without shutting off the water at an early hour in the evening. A considerable amount of irritation has been engendered in consequence and this was intensified when the Board of Trade permitted the Company to raise their charges as a sequel to the rise in the price of coal and labour. Whatever views may be held with regard to municipal trading, it must be conceded that there is practically unanimity in favour of public management of water supplies. The whole population is directly affected by the abundance and purity of the water and ever since recognition of the relationship of polluted water to certain infectious diseases, an increasing number of districts have acquired the sources of their supply with a view to protecting them from contamination. During 1919 there have been no extensions of the water supply and there is no part of the district without a supply.

At Stanlow Point there are three houses and in Great Stanney there are five houses dependent upon wells.

Rivers and Streams.—The Gowy, which constitutes the eastern boundary of the district, is said to receive house drainage. Several obstructed watercourses have been cleared and in two instances piped during the year.

Drainage and Sewerage.—The main portion of the town possesses a water carriage system, with adequate sewers. Extension of sewers is taking place in relation to the Council's new Housing Scheme. The question of the sufficiency and reconstruction of the disposal works is now before the Council in the form of a Report from an Engineering Expert who has been retained for the purpose of advising upon the needs of the area.

Ellesmere Port and Whitby Urban District.

Closet Accommodation.—In the main the town is provided with water-closets, but there is still a number of privy-middens in the outlying areas. These should be abolished wherever the houses are within reach of the sewers.

Scavenging.—This has been carried out as well as the exigencies of the situation associated with deficiency of labour would permit. House refuse is deposited at a rubbish tip and is then covered over with dry ashes obtained from one of the iron works. From the ashes there emanates a smell of sulphur, which has led to complaints of annoyance from the tip.

Milk Supply.—Milk is derived from the adjoining portion of the rural area or from within the district. There are 29 dairies and cowsheds and four milkshops upon the register. Many of the cowsheds are not up to the standard of modern requirements and although lime-washing is done with regularity, structural alterations would add considerably to the health of the animals and would tend to assure the purchaser of milk that it was supplied with due recognition of the need of cleanliness and freedom from contamination.

The application of one cow-keeper to be allowed to use an unsatisfactory shed as a shippin was refused by the Council.

Milk (Mothers and Children) Order, 1918.—Under this Order the Medical Officer of Health certifies the quantity of milk necessary for expectant mothers, nursing mothers and children under five years of age. All the applications which have been made have come from mothers in attendance at the Council's Welfare Centre. Dried milk, or an authorisation to a dairyman to supply the prescribed quantity of milk, is given to the applicant and after an enquiry into all the circumstances of the case the Health Committee determine whether the supply should be a free one or at less than cost price. Death or invalidity of the breadwinner, the large size of the family, the father of the family on active service as a soldier and illness among the younger children have been the pleas advanced by the recipients.

Infectious Disease.—Infectious disease has been very prevalent throughout 1919 and the factors in the widespread distribution of the more serious types of infectious illness may be stated to have been—(1) failure of the parents or guardians

Ellesmere Port and Whitby Urban District.

of the children to recognise that they were ill and a consequent neglect to obtain medical advice; (2) the marked tendency to ascribe the illness of children to influenza and to treat them with a "bottle from the chemist"; (3) the overcrowded condition of the dwelling-houses necessitating two and three families to live in the same house; (4) delay to remove the patients to the isolation hospital; (5) delay to obtain disinfection of bedding. The two latter were associated with the congestion of patients at the Fever Hospital, the ultimate result of which was a complete stagnation of the effort to control the incidence and spread of the infection. Diffusion of information concerning the common infectious diseases; the making of medical assistance available for all the sick and drastic punishment for neglect to obtain it; penalties for treatment of disease by the unqualified; a rapid pressing on with the first instalment of the housing scheme and the provision of adequate accommodation in the Isolation Hospital are all measures urgently required to combat the present condition of affairs.

680 cases were notified, made up by 344 measles, 218 scarlet fever, 37 diphtheria, 11 erysipelas, 29 tuberculosis, 23 pneumonia and 18 malaria.

Measles.—146 of the measles cases were between one and five years and 184 between five and 15. The patients were all visited and actively assisted by the Council's Health Visitor. The crowded condition of the cottages prevented any attempts at isolation in the great majority of instances. Six deaths were ascribed to measles.

Scarlet Fever.—218 cases were notified, but only 162 were able to be accommodated at the Isolation Hospital. Fifty-one of the patients were between one and five years and 149 between five and fifteen years. There were seven deaths from scarlet fever.

Children were frequently brought to me with the common after effects of scarlet fever, where diagnosis of a neighbour that the early manifestation was only a heat rash had been relied upon.

Diphtheria.—There were 37 notifications, and 25 of the patients were treated in the Isolation Hospital. Four deaths took place from diphtheria.

Malaria.—Malaria accounted for 18 notifications, all of the patients being returned soldiers.

Ellesmere Port and Whitby Urban District.

Pneumonia.—23 notifications. Here again the crowded sleeping accommodation of the district is liable to convert what might be a simple pneumonia into the much more virulent septic type, lessening the patient's chance of recovery and, if recovery should take place, leaving behind it chronic invalidism or diminished earning capacity. Twelve deaths took place from pneumonia.

Tuberculosis.—29 cases were notified, viz. :—17 pulmonary and 12 "other" tuberculosis.

There were 13 deaths from pulmonary tuberculosis and one from tuberculous meningitis.

The County Council by its Tuberculosis Scheme provides for a dispensary in Ellesmere Port and the total number of attendances for advice in 1919 on the 50 occasions on which the Dispensary was opened was 1,068. In numerous instances parents brought children who had recently recovered from acute illness and they were referred to their own doctors or given advice according to the nature of the sequelæ of the illness from which they had suffered. Painstaking efforts are made to induce persons who are known to have been in contact with active tuberculosis to remain under dispensary supervision. As the treatment of tuberculosis must be fundamentally preventive, such adjuncts to nutrition as malt and cod liver oil are supplied from the dispensary. Local medical practitioners have encouraged their patients to attend and reports of the results obtained are made to them.

Small-pox.—No cases of small-pox have been notified for some years, but it is essential that reference should be made to the increasing number of persons who do not have their infants vaccinated.

In the closely adjoining area of Lower Bebington there were several outbreaks of small-pox in 1919, all of a very limited character owing to the vaccinated state of the population. Should small-pox by any ill chance be introduced into Ellesmere Port the large number of unprotected persons would constitute a fertile field for the cultivation of the seeds of this malign disease.

Maternity and Child Welfare.—The County Council is the supervising authority under the Midwives Acts, 1902 and 1918.

Ellesmere Port and Whitby Urban District.

The District Council established their own Maternity and Child Welfare Centre and have appointed a Health Visitor to superintend this most important branch of Public Health work. Consultations are held at the Centre and by systematic home visiting attempts are made to educate the mothers. Unfortunately, just when results were anticipated from the Nurse having won the confidence of the mothers, her removal to another district took place. She undertook and carried out the visiting of children and also ante-natal visiting. Measles, whooping-cough, diarrhœa, impetigo and ringworm cases were investigated by her during the year and were the subjects of monthly reports to the Health and Child Welfare Committee.

The 18 still-births which were notified were investigated by her and she visited at the homes from which notifications of child birth were received.

The Medical Officer attends at the Centre every week and advises both expectant mothers and mothers with children.

There is still a strong but lessening tendency among the people to regard the Centre as a place at which cheap infant food may be purchased and there is a woeful amount of ignorance prevalent as to the nourishment of infants. Within a week or two of birth infants are placed upon artificial food stuffs, although the mothers have breast milk in abundance, merely because some neighbour advises that recourse be had to this indifferent substitute for natural suckling. Very much more extensive education will be required before the district can be considered satisfactory in this respect.

Puerperal Fever.—No notifications of puerperal fever were received, but four deaths occurred in connection with child-birth. Two of these were the result of puerperal fever, one from heart disease and one from scarlet fever in a recently confined woman.

Isolation Hospital.—The hospital accommodation for infectious diseases is supplied by the Wirral Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

Bacteriological work is carried out for the Council by the Clinical Research Association, by whom 29 specimens were examined in 1919.

Specimen.		Positive.	Negative.
Diphtheria	... ..	12	7
Tubercle	... ..	0	9
Enteric	... ..	0	1

Ellesmere Port and Whitby Urban District.

The County Council Laboratory now examines specimens for tuberculosis and a steadily increasing number is submitted for examination and report.

Housing.—In the Annual Report for the year 1913 the current wages at that date and in 1905 and 1912 in the building trades were stated. For purposes of comparison with 1919, they are again submitted.

Wages in Building Trades per hour in

	1905.	1912.	1913.	1919.
Bricklayers ...	9d.	9d.	9½d.	2/-
Masons ...	1d.	9d.	9d.	2/-
Joiners ...	8½d.	8½d.	8½d.	2/-
Plumbers ...	8½d.	8½d.	9d.	2/-
Plasterers ...	9½d.	9½d.	9d.	2/-
Painters ...	7½d.	7½d.	8¾d.	2/-

Labourers :—

Bricklayers ...	5¾d.	5¾d.	6d. & 7d.	1/8½
Masons ...	5½d.	5½d.	6d. & 7d.	1/8½
Plasterers ...	5d. to 5¾d.	5d. to 5¾d.	—	1/8½
General Labourers	—	—	—	1/8

From the same report the following sentences and financial statement are extracted :—

“The Council have considered the question of the advisability of building workmen’s dwellings, as there seemed to be a failure of private enterprise in this direction, but no scheme was approved. At their deliberations they had before them the following Draft Financial Statement, prepared by the Health Committee and deferred the further consideration of the matter for six months :—

SCHEME PROVIDING FOR THE ERECTION OF
SIXTY HOUSES.*Draft Financial Statement.*

	INCOME.		£	s.	d.
Rent of 60 Houses at 5/- per week	780	0	0
Deduct—Estimated voids and losses	30	0	0
			<hr/>		
			£750	0	0
			<hr/>		

Ellesmere Port and Whitby Urban District.

EXPENDITURE.

Land—3 acres at £250—£750. Annual instalment of Principal and Interest on £750 for 80 years at $3\frac{1}{2}$ per cent.	28	0	7
Buildings, Sewers, Architect, Clerk of Works, &c., £10,000. Annual Instalment of Principal and Interest thereon for 60 years at $3\frac{1}{2}$ per cent. ...	400	0	0
Roads, £900. Annual Instalment of Principal and Interest thereon for 60 years at $3\frac{1}{2}$ per cent. ...	63	6	0
Rates and Taxes	137	0	0
Insurance	7	10	0
Supervision and Collection of Rents	15	0	0
Repairs and Contingencies	65	0	0
	<hr/>	<hr/>	<hr/>
	715	16	7
Estimated Surplus	£34	3	5
	<hr/>	<hr/>	<hr/>
	£750	0	0

And for purposes of comparison the present position of the new housing scheme.

INCOME..

Rent of 65 Houses :—	£	s.	d.
17 at 10/6	464	0	0
48 at 12/6	1560	0	0
	<hr/>	<hr/>	<hr/>
	2024	0	0
Deduct Estimated Voids and Losses	100	0	0
	<hr/>	<hr/>	<hr/>
	1924	0	0
Estimated Deficit	3577	19	2
	<hr/>	<hr/>	<hr/>
	£5501	19	2

EXPENDITURE.

Loan Charges :—	£	s.	d.	£	s.	d.
Land	60	16	0			
Streets and Sewers	311	9	8			
Buildings	3570	0	0			
	<hr/>	<hr/>	<hr/>	3942	5	8
Rates and Taxes				1121	8	6
Insurance				38	5	0
Supervision and Collection of Rents				100	0	0
Repairs and Contingencies				300	0	0
				<hr/>	<hr/>	<hr/>
				£5501	19	2

Ellesmere Port and Whitby Urban District.

General Housing Conditions in the District.—The greater part of the town is modern and well built, with plenty of open space around the houses. There are 2,260 dwelling houses, of which 2,247 are of the type known as working-class.

In the five years preceding the war an average of 157 working-class dwellings was built per year, but during and since the war building has not taken place.

From a recent survey it was calculated that there were 297 houses, intended for one family, which were occupied by two or more families and that there were 96 dwellings with more than two occupants per room, with a population of 1,145 persons.

There is no question that as soon as working-class dwellings are available that there will be a large ingress of workers. The place is ripe for industrial development which is limited by the paucity of labour.

Ellesmere Port workers are living in all the surrounding villages and increasing their congestion. Construction of large works for the British Dye Stuffs Corporation, construction of docks and tanks for storage of petrol for the Manchester Ship Canal Company, extensions of Cement, Ship-building and Repairing, Flour, and Corrugated Iron Works have all been announced. Sites have been acquired by three Petroleum Companies as centres for storage and distribution of petrol. All of these developments are contingent upon the provision of dwellings for the working classes.

It is estimated that 1,365 working-class dwellings should be erected in the course of the next three years to meet the needs of the area.

The Council are now engaged on the first instalment of their housing scheme, consisting of 65 houses.

It is not possible to deal with overcrowding until more houses are erected. The absence of the necessary labour has interfered seriously with the enforcement of their obligation upon landlords to keep the houses in all respects fit for habitation and the whole of the procedure in 1919 to minimise nuisance has been taken under the Public Health Acts. There were 300 inspections of dwelling houses and 73 statutory and 159 informal notices were necessary to obtain

Ellesmere Port and Whitby Urban District.

remedial action. In one instance a landlord when required to do certain repairs of no great extent proposed to close his houses, do the repairs and then re-let them. In the existing dearth of houses and the urgent need of men at the works the Council were of opinion that no steps should be taken by them to facilitate any such action on the part of the landlord.

HALE

Urban District.

Population.—The population is based upon information supplied by the Local Food Office, which is given as 9,689. This is an increase on that of the previous year, the increase being chiefly due to demobilisation. On these figures the vital statistics of this report are framed.

There were at the end of the year 124 houses, occupied by two or more families. No overcrowding as defined by the Ministry of Health (more than two persons per room) has occurred, but in some three or four instances this limit has been reached, and to my mind, from a hygienic point and possibly also from a moral point, these few houses are overcrowded. The houses concerned are all classed as six rooms and the number of occupiers is equivalent to 12 adults. There are only three bedrooms in each house and in each case one is small. The number of cubic foot of air space per head in the bedrooms is barely 200.

Births.—The number of births in the district during the year 1919 was 119—boys 66, girls 53; of these, 5 boys and 4 girls were illegitimate. The birth-rate per 1,000 of population was 12.281.

Maternity and Child Welfare.—During the year 48 births were referred to the Health Visitor. The majority of these children are progressing exceedingly well. There were two deaths amongst the above 48 cases, one being from bronchitis and one from pneumonia. The number of visits paid by the Health Visitor were:—

Visits to infants under one year	...	580
Visits to children over one year but		
under five years	... ..	228
Visits to expectant mothers	... ..	30
		<hr/>
		838
		<hr/>

Hale Urban District.

As in previous years the Maternity and Child Welfare Committee have supplied "Glaxo" and Milk in necessitous cases free, or at a reduced rate, according to circumstances.

Infantile Mortality.—During the year 8 deaths occurred of children under one year of age, but as one belonged to an outside district the nett number is 7, and the rate for the year is 58.8 per 1,000 births.

Deaths at all ages.—The number of deaths registered in the district during the year 1919 was 87. Of these, five belong to other districts. Twenty-six deaths of residents occurred outside the district, so that the nett number of deaths belonging to the district was 108, giving the nett death rate of 11.146. This rate is below that of 1918, which was 11.773, but in excess of that of 1917, which was 8.758.

Tuberculous Diseases.—Eight deaths from tuberculous disease were registered during the year. Of these, seven were from phthisis and one from tuberculous meningitis. The death-rate for phthisis for the year was 0.722 per 1,000 living and for other tuberculous diseases 0.103.

As heretofore, provision has been made by the Council for the examination, free of charge, of sputa and discharges from tuberculous cases. Nine specimens were submitted for examination, of which three proved positive and six negative.

Cancer.—During the year, as mentioned previously, there were eight deaths from cancer. This is a decrease of one compared with 1918, and also of one in 1917, and is the smallest number recorded in any year since 1912, the rate being 0.825. There were four males and four females, the organs affected being: Males—abdomen, 1; rectum, 1; bladder, 1; stomach, 1. Females—intestines, 1; breast, 1; abdomen, 1; vagina, 1.

Infectious Diseases.—During the year 23 cases of infectious diseases were notified under the Infectious Diseases Notification Act, viz.:—Scarlet fever, 14; erysipelas, 6; diphtheria, 2; puerperal fever, 1.

Six cases of scarlet fever and one case of diphtheria were removed to the hospital.

The distribution throughout the year was fairly wide, the most in any one month being three cases. No connection was

Hale Urban District.

found between any of the cases with the exceptions of two cases in September, both of which occurred in the one house and was evidently imported from another district and two cases in December, both occurring in one house

As in previous years, by arrangement with the Public Health Laboratory, Manchester University, "throat swabs" for examination of those suspected of diphtheria have been provided, and also "typhoid outfits" for those suspected of typhoid fever. The cost of these examinations has been borne by the Council.

During the year 14 swabs have been submitted, three of which proved positive and 11 negative.

The Council authorises the distribution of diphtheria antitoxin to such as cannot be reasonably supposed to bear the cost of the same.

Thirteen cases of phthisis and five cases of other tuberculous diseases were notified under the Tuberculosis Regulations. Fifty-two cases of measles and German measles were notified under the Measles Order. Twenty-five cases of pneumonia and three cases of malaria were notified under the Pneumonia, Malaria and Dysentery Regulations, 1919.

The number of cases of phthisis (13) is an increase of eight compared with 1918 and the number of other forms of tuberculosis diseases (5) is an increase of three on 1918. Visits on notification and such subsequent visits as appear necessary are made. At such visits advice is given with a view to preventing further infection and enquiries are also made to ascertain whether this may have taken place. Wherever a case ends fatally, or where a case "removes" or recovers, the premises are disinfected, as in other infectious diseases.

This district, as part of the Bucklow Joint Hospital Board, has the use of 12 beds at the Baguley Sanatorium. No cases from Hale have been treated there during the year.

Scavenging.—The method in vogue as heretofore aims at the removal of refuse without soil pollution, as follows:—A low-built lurry, laden with air-tight bins, is drawn to the various parts of the district. To the rear of the lurry a rubber-tyred trolley is attached. Having arrived at the destination, a bin is placed on the trolley, and this is drawn and placed against or

Hale Urban District.

near the receptacle to be emptied and the contents of the latter are emptied direct into the bin. When full, the bins are taken to a tip and emptied there. This method is employed in all privies, pail-closets and ashpits and has proved very satisfactory indeed and economical.

The air-tight bins used for the removal of the refuse are from time to time washed out with disinfecting solution and at other times are dusted with carbolic acid powder, each being done according to requirements.

Privy ashpits are emptied every four weeks, dry ashpits every second month and bins weekly and in all cases oftener if required. Any request or complaint is at once attended to.

Housing.—No developments have taken place during the year 1919. I anticipate that the housing scheme now undertaken by the Council, together with work done by private enterprise will amply meet the requirements of the working classes in the district.

Some larger houses are also in the course of erection.

The Housing Town Planning Act, 1909 (Part I.), has, during the year, been carried out, but the inspections have mainly been devoted to the prevention of overcrowding, securing of cleanliness and enquiries with regard to the future needs of the district.

Closet Accommodation, &c.—The provision existing in the district is shown by the following details:—

Double Privy Ashpits ...	56	} = 164 houses
Single „ „ ...	52	
Privy Pails ...	...	18 „
Water Closets ...	...	2137 „
		<hr/> 2319 <hr/>

Of the above privy ashpits, 14 double and 42 single (60 privies) are at houses which have also one or more w.c.'s, leaving 104 houses with privies alone.

Sewage Disposal.—The portion of the sewage from the south side of Hale Road with a little on the north side is dealt with at the Council's Sewage Farm, while the major portion of that from the north side of Hale Road is dealt with (by arrangement) at the Altrincham Sewage Farm.

Hale Urban District.

No new work has been done during the year and the method employed is as in past years by settling tanks and broad irrigation.

The result of the year's working was comparatively satisfactory. The samples of effluent taken in all cases satisfied the requirements of the Mersey and Irwell Joint Board and no complaints of odorous emanations have been received. As you are aware, the question of removal of the sewage farm or of structural alteration has been in abeyance owing to the war, but the enquiries and investigations instigated pre-war and since continued, will, I venture to think, if circumstances are at all favourable, lead to a completely satisfactory solution of this problem.

Water Supply.—The water supply to practically the whole of the district is supplied by the North Cheshire Water Company from Manchester Corporation reservoirs and is satisfactory. There are only four springs in the district from which drinking water is obtained.

Milk Supply.—The milk supply of the district I consider only fair; no complaint can be made as to cleanliness. The samples taken show the quality of the milk to be, in only a few instances, any appreciable per centage above the *low* standard laid down by the Board of Agriculture and Fisheries.

A portion is from farms situated within the district, but the main supply is from farms in adjoining districts.

HAZEL GROVE AND BRAMHALL

Urban District.

Birth-rate.—There have been registered in the Council's District 126 births, against 139 for 1918, 146 for 1917, and 175 for 1916, which shows a decline in the birth-rate. Birth-rate equals 11.6.

Death-rate.—Number of deaths registered for the year are 121 of residents who have died in the district and 16 of residents who have died outside the district. Death-rate equals 12.6.

Water Supply.—Is good and free from contamination. It is derived in about equal parts from Kinder and Lyme reservoirs.

*Hazel Grove and Bramhall Urban District.***Infectious Diseases.**

Measles.	Number notified—German Measles	22
	Measles	4
		—
		26
Diphtheria—	One case was removed to hospital.	—
Erysipelas—	One case.	
Enteric—	Two cases, one removed to hospital.	
Scarletina—	Thirty-two cases, five removed to hospital.	
Tuberculosis—	Lungs, three cases ; other forms, one.	
Zymotic diseases	resulted in two deaths.	

Hospital Accommodation.—Two beds are reserved in Hyde Isolation Hospital and cases which cannot satisfactorily be isolated at home are removed there.

Housing.—There are no unoccupied houses in the area. It is free from cellar dwellings and back-to-back houses. No cases of overcrowding have come to my knowledge and no offensive trades have been carried on.

During the year I recommended the inspection of 49 houses.

The following work has been carried out during the year :—

Number of new houses built	...	...	None
Number of dwelling houses inspected under S. 17 Act of 1909 (General Inspection)	...	...	400
Number of dwelling houses considered unfit for habitation	...	...	None
Number of representations made to Local Authority	...	...	None
Number of closing orders made by Local Authority	...	...	None
Number of houses where defects remedied without closing orders being made	...	...	50
Number of houses where defects remedied after closing orders made	...	...	None
Estimated or ascertained number of houses within limits of rent in S. 14 of Act of 1919	...	...	1452
Number of such houses in respect of which notice was served during 1919	...	...	50
Number of such houses closed after notice	...	...	None
Number of houses where Local Authority has executed repairs, etc.	...	...	None
Approximate number of back-to-back houses in district	...	...	None

Town Planning.—Nothing has been done in regard to this matter.

HOLLINGWORTH

Urban District.

Population, &c.—The figures shewn in the statements received from the Registrar-General give the population of Hollingworth as 2,299 for the birth-rate and 2,207 for the death-rate, as compared with the 1911 Census figures of 2,580.

Population Census	...	2,580
Area of District in Acres	...	2,086
Number of Inhabited Houses...		634
Average number of persons per house	...	4.07

The decrease in population can, I consider, be mainly attributed to dearth of suitable dwelling houses and I am glad to think that there is a reasonable prospect of an improvement in this direction in the near future. The war has made its mark on Hollingworth, no less than 31 of its inhabitants having made the great sacrifice.

Births.—Twenty-six births were registered during 1919, which is much below the average for the past five years and less than half the number recorded in my report for the year 1912.

Of the 26 births 12 were males and 14 females—two of the births being illegitimate. This gives an actual birth-rate of 11.3 which may be compared with 13.6, the average birth-rate for the past five years.

Deaths.—The total number of deaths registered during 1919 was 38, of which 18 were males and 20 females. This gives a death rate of 12.7. I have received notices of nine transferable deaths of residents, not registered in the district. This raises the nett number of deaths belonging to the district to 47, giving a rate of 21.3, which may be compared with the average rate of 14.9 for the past five years.

Water Supply—This is a constant public service. The water is obtained from a spring rising high up the Arnfield Clough. Analysis has repeatedly shown the water to be of exceptional purity. It is slightly acid and no doubt must to some degree possess plumbo-solvent properties. The short service pipes in use are well tinned and no trace of lead has ever been detected in this water. In parts not supplied with this public service I know of no instance nor isolated dwelling not in possession of a proper private supply of pure drinking water.

Hollingworth Urban District.

Drainage and Sewerage.—The district is well equipped with a good main sewer, which has an ample fall and flush. House drains and sewers are, with the exception of a few isolated cases, all connected with the main sewer.

The farmsteads on the hill sides have their own proper system of sewers and the drains mostly empty into cesspools, well removed from the building. Such cesspools are periodically cleansed by the farmers and the contents spread as manure on the land.

A well arranged water-carriage system conveys the sewage to disposal works, which are situated down by the river Etherow, a mile from all dwelling-houses.

Milk Supply.—The milk supplied to this district is almost entirely produced on farms within the district and I have no complaints to record as to either quantity or quality. There are 18 dairies and no milkshops and the dairies which I have inspected I have found clean and well kept.

Infectious Diseases.—The district has been remarkably free from infectious diseases during the past year.

Three cases of measles and two cases of diphtheria were reported during the year. The diphtheria cases both occurred in the same house, the first proving fatal owing to medical aid being sought too late and the second recovering after repeated injections of antitoxin.

It was not found possible to trace the source of infection.

There were no cases of tuberculosis reported during the past year.

Isolation Hospital.—There is an Isolation Hospital for small-pox situated on Mottram Moor, the ownership being vested in the three Councils of Mottram, Hollingworth and Tintwistle. It has been very little used since it was built and in my opinion is now useless.

Housing.—Very little progress in regard to house building has taken place during the past 20 years and as I have several times pointed out, there is a decided need for a house with three bedrooms.

Hollingworth Urban District.

A considerable proportion of the inhabitants are living under conditions which were far from satisfactory 20 years ago and will become intolerable within the course of the next few years. Hollingworth will have to fall into line with other districts and progressive improvements in housing will have to be effected, otherwise I foresee a still further decline in the population. Improvements will naturally lead to raising of rents, but this will have to be faced.

The general standard of the houses is no worse than that in the neighbouring districts of Mottram and Tintwistle and the district which moves first in the direction of improved housing will not only attract the best type of resident, but also materially improve the whole district.

There are no unhealthy areas.

There are 22 back-to-back houses, which are well-built and kept in a fair state of repair, but are distinctly undesirable.

HOOLE

Urban District.

Population, &c.—The population at the Census was 5,929, which included 561, the population of the Chester Union Workhouse.

I have estimated the population in 1919 at 6,000.

N.B.—The Union Workhouse was occupied by the Military as a War Hospital and is not taken into account in the above estimate.

Vital Statistics.—The Registrar-General has estimated the population as 5,857, but from data that I have received from the Food Controller I have estimated it as 6,000 and as 54 deaths were registered during the year as having occurred in the district, the death-rate taking my estimate as correct would be equivalent to a rate of 9 per 1000. There were three deaths from influenza, seven from cancer, six from bronchitis and two from pneumonia. The death-rate for children under one year was 30 per 1000 births.

Hoole Urban District.

The number of births registered during the year was 97, 40 of which were males and 57 females. This is equivalent to a birth-rate of 15.8. Of the 97 births registered five were illegitimate.

Children under one year per 1000 births, 89. Birth-rate, 18.5.

Water Supply.—There is an ample supply of good water, which is supplied to the whole of the district by the Chester Waterworks Company.

Drainage and Sewerage.—Within the last four years the district has been largely reseeded and the sewerage system is now in a very satisfactory condition. The sewers empty into the Chester system.

Closet Accommodation.—The whole of the privies in the district have been converted except in the outskirts and there is ample accommodation. In Pipers Ash there are 30 privies and eight pail closets.

Housing.—Sixty-five houses were inspected during the year and informal notices given to remedy defects in twelve cases, all of which were duly complied with. No house was found unfit for human habitation.

Infectious Disease.—There were very few cases of notifiable infectious disease and nothing of the nature of an epidemic. There were eleven cases of scarlet fever, seven of diphtheria, three of typhoid fever and one of puerperal fever. Of the eleven cases of scarlet fever, seven were removed to hospital, the remaining four being isolated at home. Six of the seven cases of diphtheria were removed to hospital and one of the three cases of typhoid fever.

Isolation Hospital.—The arrangements which exist with the City of Chester for the reception of infectious diseases into their Isolation Hospital at Sealand have proved quite satisfactory and no difficulty has been experienced in obtaining hospital accommodation for such of our cases as required removal.

Milk Supply.—There has been an adequate supply of milk of good character. Samples have been taken from time to time by the County Council Inspector. The Chief Inspector of Weights and Measures reports that 37 samples were obtained

Hoole Urban District.

and forwarded to the Public Analyst for examination. There were only two samples reported against, one being certified as being deficient in fat to the extent of 5 per cent. and the seller was cautioned; the other contained a slight sediment, but the degree of contamination was not sufficiently high to warrant a prosecution. The seller was cautioned and this apparently had the desired effect, as another sample afterwards obtained was found to be satisfactory.

Hospital accommodation for infectious diseases and arrangements existing for chemical and bacteriological examination have been referred to in the earlier part of this report.

Housing.—The general housing conditions in the district are good.

- | | |
|--|------|
| (1) Total number of dwelling houses in the district .. | 1278 |
| Number of working-class houses | 947 |

Plans were passed for one house which is in the course of erection.

(2) Population of district estimated at 6,000. In the early part of the year and during the latter period of the war, the population was undoubtedly much larger than the above figure owing to the very large number of munition workers at the Queensferry and other works who had found accommodation in the district; these have now left for other parts of the country and I do not anticipate any large increase during the coming year.

(3) There is a shortage of houses due to the suspension of building operations during the war; the Council have decided to erect 100 houses and have entered into a provisional agreement to purchase $8\frac{1}{2}$ acres of land for the purpose of their housing scheme.

(4) Along with other districts which had large munition works a few miles away, this district has suffered to a slight extent from overcrowding during the war, but with the closure of these works and the return to normal conditions, overcrowding has to a large extent disappeared: still there are a fair number of of houses, possibly a hundred, having more than one family.

The general standard of the housing in the district is good. There are no slum areas and no back-to-back houses.

HOYLAKE AND WEST KIRBY

Urban District.

Population.—The population at the census in 1911 was 14,029 and is estimated at midsummer, 1919, to have been 16,855. This estimate is based upon the assumption that the district has gone on increasing at the same rate as it did in the intercensal period 1901—1911. No evidence is available that this assumption can be considered accurate and when it is recollected that the war years, with their drain upon the population, have intervened since the last census and that nine years have elapsed since that enumeration was carried out, it will be easy to comprehend that there is room for a large margin of error.

For the purposes of this report it has seemed better to discard the estimate above given and to utilise data derived from the issue of ration cards in the Food Department, which show a population of 15,453—viz. :—

Hoylake	...	..	...	7,362
Meols	...	..	...	1,648
West Kirby	...	...	...	6,443

Since writing the above I have received the Registrar-General's statement and note that he uses a population of 15,987 for the calculation of the birth-rate and 15,347 for the death-rate.

Births.—The total number of births was 207 (128 males, 79 females), eight of which were registered as illegitimate.

The birth-rate was 12.9 per 1,000.

The birth-rate of 12.9 per 1,000 is simply the ratio of births registered to the population at all ages and it is a low rate, but it must be borne in mind in making comparisons with other districts that there are no figures available to shew the number of women who are potential mothers in the area and that to Hoylake and West Kirby many persons retire who are beyond the ordinary reproductive periods.

Infantile Mortality.—12 infants (7 males, 5 females), died before attaining the age of one year, or 5.8 per cent. of the children born.

The infantile mortality rate was 58 per 1,000 births.

Four infants did not survive the first 24 hours after birth and three of these were stated to be premature.

Hoylake and West Kirby Urban District.

Three others did not survive the first month and one of these was registered as dying from pneumonia and one from enteritis.

Three died between four weeks and three months and one of these deaths was due to syphilis.

Two died between three months and one year and the cause of death in each case was recorded as bronchitis.

The deaths under one year of legitimately born infants was 4.5 per cent. of those born and 37.5 per cent. of the illegitimate.

Deaths.—The number of deaths registered in the district was 195 (80 males, 115 females).

Forty-one of these were transferred to other districts and there were 27 transfers to Hoylake and West Kirby. The total number of deaths belonging to the district was 181 (70 males, 111 females), or a rate of 11.8 per 1,000 of the population.

Eleven deaths took place in the Cottage Hospital, 11 in the Children's Convalescent Home and one in the Day Nursery.

Among the transfers to the district were eight deaths, which occurred in the Clatterbridge Poor Law Infirmary, four in mental hospitals and five in the voluntary hospitals of neighbouring towns.

It is satisfactory to note that there were no deaths of children belonging to the district in the Isolation Hospital.

One death was an inquest case under one year, where the verdict was "No evidence to show cause of death." Fourteen were those of persons over 65 years of age and were returned as senile decay.

There was one death attributed to enteric fever; but this is omitted from the Registrar-General's return, indicating that he has received further information concerning it and necessitating its reference to some other group of diseases; one was due to diphtheria. In neither the enteric nor the diphtheria case was there any bacteriological confirmation of the cause.

There were 19 deaths from influenza, 13 from pneumonia, 9 from bronchitis and 2 from other respiratory diseases.

Cancer accounted for 14 deaths (3 males, 11 females). The malignant growth in 10 of these was associated with the digestive system.

Hoylake and West Kirby Urban District

Twenty-five deaths were attributed to organic heart disease and in this connection the following extracts are of an enlightening character :

“Cardiac disease under 60 years of age is in large measure a preventable disease. In childhood and youth the undeveloped circulatory system is unstable, both in the heart itself and in the nervous control of the heart ; there is a low and inequable vasomotor tone, easily disturbed and there is a considerable range of physiological variation, which must not be mistaken for evidence of disease. At and after the age of 4 or 5 years, rheumatic fever, scarlet fever, pyæmia and pneumococcal infection begin to exert effects upon the circulatory system which, if neglected, may readily become permanent. In adult life there must be added fatigue, degeneration of the arteries, chronic bronchitis, emphysema and renal disease, alcoholism and syphilis and the direct effect of bodily and mechanical strain on a heart enfeebled by infection. The dominant factor, says Dr. Lewis, is invasion of the heart by infective organisms or their product and a consequent weakening of the myocardium. When it is thoroughly grasped that infection has more to do in heart failure than has strain or a mechanical defect in the heart itself, at all stages of the disease—in its initiation, in its development and in its progress to immediate circulatory embarrassment and death—then and only then, is the natural history of heart disease understood. The patient seeks medical advice always at a given stage, almost invariably at a late stage and what is necessary to reduce the heavy tax now made both on the capacity and on the vitality of a community in respect of heart disease, is something of a new attitude towards it.”

Water.—There is a constant supply of excellent water throughout the area from the works of the Hoylake and West Kirby Gas and Water Company. This Company has deep wells and borings in the new red sandstone at Grange Hill and Newton. Not only is the water of high organic purity but the supply is also sufficient for all purposes.

The Analyst to the Company examines samples at the sources of supply and also after delivery through the town mains.

Drainage and Sewerage.—All the main sewers usually run full bore and are therefore self-cleansing, but where from lack of gradient or flow this condition does not pertain to them, systematic flushing is resorted to. The Engineer to the Council

Hoylake and West Kirby Urban District.

reports that extension of the sewer along the Parade and Reconstruction Works in connection with Barton Road and Parade Sewers were carried out during the year. He is engaged in preparing a scheme for improvement of the sewer outfalls.

At a small charge to cover the cost of labour and water the Council flush the drains of houses where application is made for this service,

Closet Accommodation.—Throughout its entire extent the town is provided with modern water closets and the conservancy system has been abolished.

Scavenging.—Scavenging is carried out by a staff in the employment of the Council and under ordinary conditions it is adequately performed. As in other towns during 1919, so in Hoylake and West Kirby, labour troubles associated with demands for higher wages for this class of work led to accumulation of refuse in the vicinity of dwelling-houses and shops, but the difficulties have been overcome and the arrangements are again satisfactory.

The conveyance of refuse through the town is by means of motor lorries and covered carts. Ultimate disposal is accomplished by tipping on a rural site and nuisance is obviated by a strict observation of a rule to compel the covering of the deposit with 18 inches of soil.

All new houses are required to be supplied with bins provided with proper covers and these are now obtainable at cost price from the Council Yard, in cases where local tradesmen are unable to furnish them. The general scheme carried out is the removal of all house refuse at weekly intervals. Trade refuse is dealt with at the cost of the owners by conveyance to the tip. The occupiers of cowsheds, mews and stables, receive notices requiring the periodical removal of manure and the exact local circumstances are taken into consideration in determining how long the accumulation may be permitted to be stored.

With regard to the disposal of refuse, the Council have under consideration the plan of a scheme prepared by their Engineer to erect a pulverizing plant. He has kindly supplied the following information :—

It is proposed to erect a pulverizer plant to deal with the whole of the house refuse.

Hoylelake and West Kirby Urban District.

The refuse in this system is roughly sorted and raked into a hopper mouth on the pulverizer. It issues at the lower end of the machine in a finely-divided, innocuous, odourless and loamy state. The pulverized material is of good manurial value.

A conveyor catches it in its exit from the pulverizer and lifts it a sufficient height to discharge over a lorry for removal.

It is proposed to extend the preliminary scheme in time to include oscillating screen and picking and sorting belts.

Infectious Diseases.—In any attempt to comprehend the prevalence of infectious diseases in Hoylelake and West Kirby it must be borne in mind that it is a seaside health-resort to which people flock, not only for an annual holiday, but also for convalescence after acute illness. It is an undoubted fact that numerous individuals are brought into the district after infectious illness and it also cannot be doubted that in many cases infection accompanies them and spreads to the susceptible part of the population. The migratory character of the visitors and the transitory nature of their residence, complicate the problem of tracing infection to its source. The lodging-house occupier, dependent on the letting of rooms for a livelihood, cannot be expected to demand health certificates from the applicants for apartments. Furthermore, in institutions such as the Children's Convalescent Home, where a certificate of freedom from infectious disease and no known contact with an infectious case prior to admission is invariably required, it is by no means unusual to find infectious disease introduced.

Children with whooping cough, measles and undetected scarlet fever, from the larger centres of population, are rushed off to the seaside by ignorant or careless guardians, in the vain hope of restoration to health and with a resultant spread of infection in the vehicles by which they travel and in the seaside resorts to which they are conveyed. It can only be by a more general diffusion of knowledge concerning the common infectious diseases that improvement in this direction can take place.

The recent addition of dysentery, malaria, pneumonia, tuberculosis, poliomyelitis, ophthalmia neonatorum, etc., to the list of notifiable diseases must also be recalled to the memory in examining the crude figures of notification.

177 notifications were received.

Hoylelake and West Kirby Urban District.

Isolation Hospital.—The hospitals of the Wirral Joint Hospital Board provide the necessary accommodation. Owing to the unusual prevalence of scarlet fever, the arrangements in 1919 proved inadequate for the demands upon them.

Housing.—At the 1911 census 535 families were enumerated in tenements of 10 rooms and upwards, with an aggregate population of 2,985; 268 were in tenements of 9 rooms, with a population of 1,289; 322 were in tenements of 8 rooms, with a population of 1,408; 374 were in tenements of 7 rooms, with a population of 1,623. From these figures it may be stated that more than half the population lived in mansions.

From the census statistics it may also be gathered that there were 43 tenements (aggregate population, 372), with more than two occupants per room, giving a proportion of 2.8 per cent. to the population in private families. This figure was the lowest of any in the districts in the North-west Cheshire area and it is open to question whether there are many towns in England, of the same size as Hoylelake and West Kirby, with so low a proportion.

I would again draw your attention to the following extract from the Annual Report of 1913:—

“There does not appear to be any deficiency of cottages for the working classes and the great majority of dwellings are modern and well-built, with plenty of cubic space internally and free circulation of air around. The latter requisite for healthy habitations is enforced by a rigid application of the Bye-laws for preventing the erection of any structures upon the air space allocated to each dwelling, except such as are legally permissible. Most of the houses are in good repair and apart from minor defects habitable in every respect. There is no place within my experience, including model villages, where the standard of comfort in cottage habitations is as high as it is in Hoylelake and West Kirby.”

There is no evidence to show that the character of the district has in any way altered since 1913. In a report to the Housing Commissioner, the District Council indicated that there was no necessity to build houses to accommodate persons belonging to the district and that many persons of the industrial class are now housed within it who are occupied in shipbuilding yards and factories elsewhere.

The Housing Accommodation cannot be considered as deficient so long as the summer population of (approximately) 23,000 can be received without undue overcrowding.

Hoylake and West Kirby Urban District.

The general standard of housing is very high and far beyond that of any industrial town that I am acquainted with.

During 1919 all the inspections of dwelling-houses, viz., 442, were made under S. 91 of the Public Health Act, 1875 and the defects dealt with all related to matters of repair and not of reconstruction.

As capacity to pay rent and the cost of building are matters of general interest, the following list of rates of wages per hour in the district are appended.

	1905.	1913.	1919.
Joiners and Bricklayers ...	9½d.	11d.	2/-
Plasterers ...	9½d.	10d.	2/-
Masons ...	9½d.	11½d.	2/-
Painters ...	8½d.	9½d.	2/-
Plumbers ...	9½d.	11d.	2/-
Labourers { Bricklayers' and			
Plasterers' ...	6½d.	7d.	1/8½
Masons' ...	5½d.	7d.	1/8½
General Labourers (per week)	20/-, 22/-, 24/-		Hr. 1/8

KNUTSFORD**Urban District.****Statistics—**

Estimated population, 1919, for birth-rate, 5,044.

 " " " for death-rate, 4,842.

Number of inhabited houses, at Census of 1911, 1,135.

Average number of persons per house, at Census of 1911, 4.5.

Birth-rate per 1,000 living, 15.0.

Death-rate per 1,000 living, 13.8.

Deaths under one year in proportion to 1,000 births, 13.

Water Supply.—Pedley and Marthall Brooks, impounded and filtered (private Company). During the year there has been occasional apparently harmless turbidity. There has never at any time been any reason to consider the water supply to blame for any outbreak of disease either of the ordinary infectious diseases or otherwise. All parts of the district have a proper supply. There have been no complaints suggesting any undue action on lead. No samples have been analysed during 1919.

Knutsford Urban District.

Closet Accommodation.—There are approximately 64 privies, 132 pail closets, 149 waste water-closets, and 906 water-closets in the district. I hope that during 1920 measures for the conversion of a number of the two former will be taken. All ashbins and pail-closets are cleansed weekly and all ashpits and privies about once a month and immediately on request.

Infectious Disease.—Ten cases of scarlet fever were notified during the year. There seemed to be little connection between them as one occurred in January, one in March, one in April, two in June, one in August, one in October, one in November and two in December. These last two were probably connected and one of them notified on December 30th had only returned from hospital on December 23rd, after being notified as scarlet fever on November 11th. Inquiries seem to indicate that the first attack was really measles. All the cases, except one, were removed to hospital.

Three cases of diphtheria were notified. There was also a child removed to Monsall Hospital suffering from this disease from a Manchester hospital, where it contracted the disease while an in-patient suffering from some other illness and one month after this child's return home two other children in the same house were notified as suffering from diphtheria. As there can be little doubt that the first child brought the infection home, it would seem that only one case of diphtheria originated in Knutsford during 1919.

One case of typhoid fever was notified, but it was not really a Knutsford case, as the patient had only been admitted to the Union Infirmary from an outlying township the day before.

Of all the above, the Infirmary case of typhoid was the only one to end fatally.

Diphtheria antitoxin is available free of charge, in suitable cases, to any medical practitioner and is obtainable at any time of the day or night on application at the Council Offices, or at the private residence of the Inspector when the offices are closed. A supply is constantly maintained at both places.

A visitor for measles cases is retained at a small fee to act as and when required. Owing to the very small number of cases her services were not requisitioned during 1919.

Knutsford Urban District.

Isolation Hospital Accommodation.—Excellent. Provided by the Bucklow Joint Hospital Board at the Manchester Isolation Hospital. Also the same Board has accommodation for advanced tuberculous cases at the Baguley Sanatorium.

Housing.—The Council is preparing to erect 100 houses. One house for the working classes has been provided by private enterprise during 1919.

No new representations have been made under the Housing Act. Steps are being taken to have the "Princess Street area" dealt with as formerly intended, but there are the usual difficulties of the present time, namely, high prices.

Maternity and Child Welfare.—This is attended to under the Knutsford's Council's own scheme, which comprises—

(1) A centre open in the Unitarian Schoolroom on alternate Monday afternoons, where a Medical Officer in Charge (Dr. Lees) attends for consultations upon children up to the age of five years and upon prospective and nursing mothers. He is assisted by the Health Visitor and a number of voluntary lady helpers. During 1919, 324 attendances were made by 55 children, an average of 12.5 per session. The attendance by women patients is very limited. Possibly this may increase in time, but in any town the size of Knutsford there can only be very few women suffering from abnormal conditions of real gravity during pregnancy and lactation.

(2) Home-visiting by the Health Visitor (Nurse Johnstone). This work is also most efficiently performed. During 1919 the Health Visitor paid 2,063 visits to children, 786 to children under one year, and 1,277 to children from one to five years old. She is now provided with cards, arranged to provide a short record of each child's medical history up to five years of age, which may be of use to the School Medical Inspectors later on.

The hospitals of Manchester and Altrincham are accessible for cases requiring hospital treatment.

Milk is being provided on the recommendation of the Medical Officer of the Centre for a few children who require more than their parents can afford to provide.

A baby show was held in the summer and the judges, who came from the Manchester Children's Hospital, commented most favourably on those competing.

Knutsford Urban District.

A garden party for the mothers attending the centre was given by one of the lady helpers.

A Maternity and Child Welfare Scheme should be judged by results and such results should be apparent after quite a short period of working. The results obtained by the working of the Knutsford Scheme are indeed striking and satisfactory.

The infantile mortality figure in Knutsford in 1917 was 68. That means that at the rate of infantile mortality then existing in Knutsford, out of every thousand children born 68 would die before they were one year old. (Even this was a low rate, compared with the country as a whole).

In April, 1918, the Knutsford Child Welfare Scheme commenced work and although it therefore only worked nine months of the year, the infantile mortality dropped to 44 per thousand.

In 1919 (the first whole year of work) the infantile mortality was at the very low rate of 13 per thousand, that of the country as a whole being 89 per thousand.

The figures are expressed as above to correspond for purposes of comparison with other districts, which express their infantile mortality in the same way, but as the total number of infants in a town the size of Knutsford is small, it will perhaps be more instructive to the general reader if I explain it as follows:—There are in Knutsford six children alive to-day who would have been dead if the same rate of infantile mortality had continued through 1918 and 1919 as existed in 1917. When it is remembered that this is in addition to the improved health of many others, it will be agreed by all that the Knutsford Maternity and Child Welfare Scheme has already shown results which more than justify its existence.

LYMM

Urban District.

Population.—The mean population, calculated for 1914, was 5,084.

From 1891 to 1901 (census years) there was an artificial decrease, previously accounted for, from 4,995 to 4,707, that is, 288 or 5.76 per cent.

Lymm Urban District.

From 1901 to 1911 there was a census increase from 4,707 to 4,989, that is, 282 or 6.2 per cent.

For 1919 the population of the district as given by the Registrar-General is 5,025 for births and 4,824 for death-rate.

Births.—In 1919 there were in all 78 births—being 39 male and 39 female, of which number three males and four females were illegitimate.

The birth-rate for 1919 is 15.5.

Deaths.—There occurred 64 deaths of residents during the year, of which 13 took place outside the district. Of these deaths 31 were of males and 33 of females.

The death-rate for 1919, with a population of 4,824 for death-rate, was 13.3.

Infant Mortality.—In 1919 there was one death in the district of an infant under 12 months of age. I have reports of seven still-born and non-viable infants.

In connection with the prevention of infant mortality an Infant Welfare Centre, under the direction of the County of Chester, was opened in Lymm on February 4th, 1919. From that date to December 31st, 1919, 134 expectant mothers have been advised and attended to. 736 attendances of infants and children under five years of age have been made. During 44 weeks this gives an approximate average of 17 per week.

Infectious Disease.—During the year 1919, 194 cases of infectious diseases were notified.

We had during the latter half of the year an epidemic of measles. It was wide-spread and involved nearly the whole of the susceptible population. It began in the Oughtrington Infants' School, which was closed early on by the County Authorities on my recommendation. The cases were fairly acute, but without serious complications as a rule and so far, I have seen no *sequelæ*. Some were suffering from whooping cough at the time of infection. The eyes were not badly affected, the laryngeal symptoms not very marked. Koplik spots were frequently observed, there were no gastro-enteric symptoms and the chest symptoms were those of a simple bronchitis, not involving the smaller bronchial tubes.

Lymm Urban District.

Four cases of enteric (all in one family) were notified, the first one (an adult) died. The diagnosis was bacteriologically confirmed. They had not been inoculated against any of the typhoid group of organisms. The disease does not seem to have been of local origin.

Isolation Hospital.—The Isolation Hospital was opened from the 23rd of June, 1919, to the 23rd of January, 1920, except from the 4th to the 16th December, for 3 groups of cases; 3 cases of typhus from one family; 5 cases of diphtheria, 3 from one family; and 4 cases of scarlet fever from one family.

Water Supply.—Owned and managed by the local authority, water is laid on throughout the district where possible. A few outlying farms and cottages cannot be connected. The supply is constant. The water is pumped up from Artesian borings to a water tower for delivery under pressure. The water is hard (both temporary and permanent hardness), but is bacteriologically pure on analysis.

Housing.—No new houses have been erected in 1919, or since 1915.

Fifty new houses have been applied for to the Council.

There is some overcrowding, but 100 suitable new houses should entirely relieve this, both at present and probably for some time to come. Sites have been purchased and plans for 50 new houses are to be submitted. All the houses will have three bedrooms and bath and water-closet accommodation and the required floor area for the rooms.

MARPLE**Urban District.**

Population.—The population at the last census was 6,250, calculated by the Registrar-General; for 1919 it is 6,647 for birth-rate and 6,381 for death-rate.

Refuse Disposal.—The disposal of excrement is done by three methods—water-carriage, pails and middens. Except in the outlying districts the sewage is now practically all water-borne.

There are 958 water-closets and 309 slop water-closets.

Marple Urban District.

There are only 20 cesspools in the district. The pails and middens are emptied at night-time, but in isolated parts of the district some congestion must unavoidably occur and will do so until we have universal drainage. The tins and pails are collected weekly. There are 1,132 ashbins now, compared with 90 nine years ago.

Water.—Marple obtains its water supply from the Stockport Corporation, through Lyme and Kinder. The water is good in quality and the analysis shows it to be pure.

Infectious Diseases.—There were only 7 cases of infectious diseases reported: scarlet fever 3 cases, diphtheria 2 cases, typhoid fever 1 case, puerperal fever 1 case. All the scarlet fever cases were kept at home and isolated, with very satisfactory results. The typhoid and diphtheria cases were sent to hospital.

Water Closets, Privies, etc.—The number of Water Closets and other conveniences in the District are as follows:—

Water Closets	...	...	...	958
Slop Water Closets	...	...	...	309
Privy Middens	...	...	...	419
Pail Closets	...	...	...	44
Dry Ashpits	...	...	..	170
Ashbins	...	...	...	1132
Cesspools	...	...	...	20

Housing.—The number of houses in the District is 1,691.

The number of working-class houses in the district is 1,392.

The housing scheme, which consists of the provision of 101 houses on Brindley's farm, has made considerable progress. The land has been purchased, the Council obtaining vacant possession on March 25th. The lay-out plan, together with plans and estimates for streets and sewers, have been prepared in the Surveyor's department and have received the official approval of the Housing Commissioner. The house plans are now being prepared.

MOTTRAM-IN-LONGDENDALE

Urban District.

Statistics.—

Population (Census 1911)	...	...	3,049
Population for Death Rate	...	...	2,844
„ „ Birth Rate	...	...	2,538
Area in Acres	...	...	1,084

Deaths.—During the year 1919 the number of deaths registered in the district was 40 and of the inhabitants who died in public institutions outside the district six, making the total number of deaths belonging to the district 46. This gives a death-rate of 16·4 per 1,000 persons living.

Births.—The total number births registered during the year was 38, equal to a birth-rate of 13 per 1,000 persons living.

Two illegitimate births.

Infantile Mortality.—Five deaths of infants under one year of age were registered, being equal to a death-rate of 131 per 1,000 births registered.

Causes of death were as follows :—

Convulsions	...	...	1
Premature Birth	.	...	4

This seems rather a big death-rate, but when it is taken into account that four of the deaths were in children prematurely born, it is not so bad.

Infectious Diseases.—The cases notified were :—

Membranous Croup	...	...	1
Scarlet Fever	...	...	1
Measles	...	...	1

Your district has been remarkably free of infectious diseases during the year. The case of membranous croup proved fatal. The patient contracted scarlet fever in Hadfield and the case of measles came from Stalybridge. Both the cases were isolated and the houses fumigated after the patient's convalescence. Arrangements have been made with Hyde to take into their Fever Hospital all cases of membranous croup and diphtheria. It is impossible to perform tracheotomy and have good results in an ordinary cottage. By making the above arrangement it is giving the patient the best possible chance.

Mottram-in-Longdendale Urban District.

Pulmonary Tuberculosis.—One case was notified during the year. The patient being a married woman, refused to go into a sanatorium, but is carrying out the instructions set forth in the pamphlet issued by the Cheshire County Council. People are being impressed upon to allow as much fresh-air and sunshine into their houses as possible—that together with preventing overcrowding is the best means of stamping out tuberculosis in country districts. Suspected cases are sent to the County Council Clinic (Tuberculosis), Hyde.

Midwives.—The County Council have appointed a certified midwife for your district. She also attends cases in the Hollingworth Urban District area. Owing to the scarcity of houses she is obliged to live in Hollingworth. It would be much more convenient for the people if she resided in Mottram, which is the centre of her district. The appointment has been a great boon to the inhabitants.

Water Supply.—The district has an excellent water supply from springs situated near the village of Arnfield. There is not nearly so much peat in the water as formerly.

Refuse Disposal.—The emptying of ashpits and pails is done by contract. Unfortunately the tenders are often so low that the man finds when he commences to do the work he is losing money. Consequently, there is a great deal of grumbling on account of the ashpits not being emptied more frequently.

Housing.—Together with your Sanitary Inspector, I have gone round your district. A great deal of the property has got into a bad state of repair. In some houses the structural arrangements are bad and require considerable alteration.

I asked Dr. Young, the County Medical Officer of Health, to come over and advise. Owing to the shortage of houses he only recommended the pulling down of one house in order to make others habitable. Others he suggested structural alterations in converting two into one. Eleven houses in Mill Street, which have been closed for some time, are now being put in order for habitation.

No new houses have been built during the year.

There are 790 houses in your district. Ninety per cent. are occupied by the working-classes.

Mottram-in-Longdendale Urban District.

The population remains stationary and likely to do so, as there is not much prospect of any new industries being started in the district.

There is a shortage of houses with three bedrooms, but not to any great extent. The chief reason of the shortage is that a number of people who work in Manchester live here. Consequently any of the workers in the district who get married find it very difficult to get a house.

Twelve new houses are going to be built. Sites have been selected and approved by the Housing Commissioner.

There are a few cases of overcrowding, due to people only having two bedrooms where there is large family.

The causes of the overcrowding are : Shortage of houses for the newly-married and houses with three bedrooms. It is hoped that the erection of the 12 new houses will relieve this state of affairs.

The general standard of the houses in this district is good. They are chiefly built of stone, with two bedrooms, a living room and back kitchen. Dampness, no back doors and windows which will not open, short slopstone pipe, are the chief defects. As before-mentioned, it is impossible to compel owners of property to do any extensive repairs until the rents are raised.

There are no unhealthy areas.

There are six back-to-back houses and four cellar dwellings.

The carrying out of the Housing and Town Planning Act, 1909, is in abeyance, on account of the low rents, cost of material and the high wages demanded by the workpeople.

Cowsheds and Dairies.—There are 25 dairies and cowsheds in the district. In my last Annual Report I mentioned that three were in an unsanitary condition. Since then one has been closed, another has been put in order and one remains unaltered. When one thinks of the number of infants who depend upon milk for their life it is our duty to see that everything appertaining to it is kept as clean as possible.

Venereal Disease.—Arrangements have been made by the County Council to send venereal cases to the Clinic at the Ashton

Mottram-in-Longdendale Urban District.

Infirmary. I find that patients as a rule are willing to avail themselves of the opportunity of attending there. Venereal disease is more prevalent now than it was before the war.

Sanitary Conveniences.—

Number of privies with fixed receptacles	...	390
" " " " moveable receptacles		210
" " Fresh water-closets	... ...	100
" " Waste water closets	... ...	2

Privy closets are gradually being dispensed with and water-closets adopted where possible, pails being substituted for privy closets where sewer is not available. Dustbins are being substituted for old privy ashpits.

NANTWICH**Urban District.****Natural and Social Conditions of the District.—**

Nantwich, which is an ancient town, is situated in the south-west corner of the County of Chester.

The climate is equable and mild and the geological formation consists of red marl.

It is a market town for a large and important agricultural area.

The Brine Baths Hotel is situated on the outskirts of the town, and is visited by a large number of patients suffering from rheumatism, gout, sciatica, neuritis, etc.

The district is served by the London and North Western and Great Western Railways and the Shropshire Union Canal. Motor Bus services are also run between Nantwich and Crewe, Sandbach, Market Drayton, Whitchurch, Tarporley and Chester.

The industries consist of Wholesale Clothing Manufactories, Boot and Shoe Manufactories and a large Tannery.

Population.—The estimated population for 1919 and for the purpose of my report is 6,952. This figure has been obtained from the Local Food Office, being the number of persons rationed for the year.

Nantwich Urban District.

Births.—Births registered, 116. Birth-rate per 1,000 population, 16.6.

The above figures shew a very low rate and a decrease compared with 1918. This rate is the second lowest recorded.

Of the births registered four were illegitimate.

Deaths.—Crude death-rate, 11.7. Net death-rate, 14.09.

Deaths at all ages registered in the district numbered 82.

Deaths of residents not registered in the district (including 12 deaths in the Workhouse Infirmary) numbered 16.

The nett deaths during the year of persons belonging to the Urban District of Nantwich therefore amount to 98, and the corrected death-rate is 14.09 per 1,000 of the population.

Infantile Mortality.—Fifteen deaths occurred under one year of age, being 12.9 per cent. of the total births registered during the year and a death-rate of 129.3 per 1,000 births.

Causes of death as follows :—Bronchitis, 1 ; chronic gastro-enteritis, 3 ; broncho-pneumonia, 2 ; premature birth, 5 ; debility from birth, 2 ; meningitis, 1 ; marasmus, 1.

This rate is higher compared with that of 98.3 per 1,000 births for 1918.

Infectious Disease.—The list of infectious diseases given shews the prevalence of acute infectious diseases in the district for 1919, 124 cases being notified :—Measles, 71 ; scarlet fever, 28 ; diphtheria, 4 ; pulmonary tuberculosis, 11 ; erysipelas, 2 ; ophthalmia neonatorum, 1 ; influenzal pneumonia, 3 ; malaria, 4 ; total, 124.

Twenty-eight cases of scarlet fever occurred. This shows a decrease of twenty against the number notified during 1918.

Twenty-four cases were removed to the Isolation Hospital for treatment. Four cases were treated at home and recovered.

Seventy-one cases of measles were notified, shewing an increase of twenty-one cases against the figure for 1918.

One death occurred from measles during the year.

Nantwich Urban District.

A return of the influenza epidemic occurred in the first quarter of the year, many cases being complicated with pneumonia and ten deaths occurred.

Four cases of malaria, all of which were discharged soldiers, were notified during the year.

Tuberculosis.—The number of cases of pulmonary tuberculosis notified during the year was 11 ; other forms of tuberculosis, Nil. Three of the cases notified have proved fatal.

Four cases, three of whom are discharged soldiers, have been sent for Sanatorium treatment.

One case was removed home to Manchester.

Three cases are being treated at home, the ages of these patients being 57, 71, and 73 years.

The deaths registered from phthisis numbered 6 and from other forms of tuberculosis 1.

During the year all cases of consumption reported have been frequently visited, sputum cups and disinfectants provided gratis and leaflets containing information for those suffering from the disease have been distributed. Disinfection is carried out of rooms, bedding, etc.

Isolation Hospitals.—28 cases of infectious disease were admitted to the Isolation Hospital from this District, i.e., four diphtheria, twenty-four scarlet fever. This shews a decrease of twenty as compared with the figure for 1918. No deaths occurred in the Hospital of cases admitted from this district.

The Small-pox Hospital is always ready for use if required. No case of Small-pox has occurred during the year.

Water Supply.—The water is obtained from waterworks at Baddiley and is a constant supply. Owing to the dry weather, pumping from the Mere had again to be resorted to on the 27th July and continued for seventeen weeks.

Sewage Disposal.—The whole of the sewage from the district discharges into the river Weaver below the town. Nothing further has yet been done with regard to the new Sewage Disposal Scheme.

Closest Accommodation and Scavenging.—A number of complaints were received with reference to the scavenging of ashpits and dustbins, and a report was sent to the Local Authority. On investigation the reason why the scavenging was not satisfactorily carried out was :—shortage of team labour : heavy and insanitary boxes being used in place of dustbins : and garden refuse being put into ashpits and dustbins. It was decided to circularise all householders with reference to putting garden refuse into ashpits and dustbins, and to ask all owners to substitute galvanised iron dustbins in place of wooden boxes. The Council also purchased another horse, and the whole of the ashpits, etc., were emptied and put in a satisfactory state.

There are still a number of offensive midden-privies in the district and the work of abolishing same is in hand. Two have been converted into water-closets, and thirty-eight converted into pail-closets during the year. Owing to the insufficient water supply it is not desirable to put same on the water-carriage system.

Housing.—In connection with the Housing Commissioner's Circulars, a report was prepared for the Housing Committee, as follows :

The number of dwelling-houses in the district is 1743, and of this number 1289 are of a working-class type. There are no empty houses and no buildings which can be made suitable by alterations or conversion to flats for the working class. The number of houses built between the years 1909 and 1919 is 23, and against this figure 10 have been pulled down.

There have been no new houses built during the year.

The number of persons per house is 3.99.

There are 89 houses overcrowded on a basis of 2 adults allowed per room, with a population of 712, which is 8 per house. Of the 89 houses overcrowded there are 15 with 3 bedrooms and 74 with 2 bedrooms. There are also 30 houses intended for one family which are now occupied by two or more families.

There are no specially unhealthy areas in the district.

At the present time there are approximately 90 houses which are seriously defective, a large proportion of which can be made habitable. The houses generally have considerably depreciated during the war owing to the high cost of materials and scarcity of labour. Pressure should be brought to bear upon the owners of defective houses in order that same can be put in proper sanitary condition.

NESTON AND PARKGATE

Urban District.

Introductory.—A recent circular letter of the Ministry, addressed to the Clerk of your Council, asks him to bring before you the necessity “of taking special steps, now that the war is over, to inform yourselves without further delay, as to the general condition of the health of the population of your area and of the various health services for which you are responsible to the population of your area.”

The circular referred to also states that the acquisition of the information is requisite “in order to form the basis for that careful and comprehensive scheme of health developments generally, which it is hoped may shortly follow in every locality, upon the recent unification in the Ministry of Health of the various central functions in respect to all matters affecting the health of the people. Since this unification of the central administration implies, and indeed, cannot be effective without a corresponding co-ordination of local health activities.”

Mention may be made in passing to the circumstance that an Act, cited as the Ministry of Health Act, 1919, has been enacted by Parliament and establishes a Ministry of Health, which exercises powers with respect to Health and Local Government. The Act has been passed for the purpose of promoting the health of the people throughout England and Wales and provides for the appointment of a Health Minister, whose duty it is “to take all such steps as may be desirable to secure the preparation, effective carrying out and co-ordination of measures conducive to the health of the people, including measures for the prevention and cure of diseases, the avoidance of fraud in connection with alleged remedies therefor, the treatment of physical and mental defects, the treatment and care of the blind, the initiation and direction of research, the collection, preparation, publication and dissemination of information and statistics relating thereto and the training of persons for health services.”

The powers and duties of the Local Government Board, the Insurance Commissioners, certain powers and duties of the Board of Education, the Privy Council and the Home Secretary are transferred to the Minister.

The Chief Medical Officer of the Ministry of Health in a Memorandum issued in 1919, writes:—“It is not, however, the Ministry of Health, but the local authority in whose hands will

Neston and Parkgate Urban District.

rest the main business of the execution of a national health policy. It is the local area, in direct touch with the patient that the integration of medicine is to be achieved. It is there that early diagnosis and a prompt and adequate medical service is to find its fulfilment. It is there that the systematic and continuous attack is to be made, for there is the fighting line. It is there and not in Whitehall that the actual battle will be lost or won. Eugenics, maternity, child welfare, industrial hygiene, the problem of environment, the prevention of disease, the education of the public—these matters can only be dealt with where the people are born and live and work and die.”

The passing of the Ministry of Health Act inaugurates a new epoch in the history of our nation and just as “the Elementary Education Act, 1870 and the Public Health Act, 1875, were forms of germinative legislation bearing fruit in a single generation” it may be hopefully anticipated that the application of the Act will rapidly fructify in diminishing preventable disease and increasing the prosperity of the whole nation. In the war years local authorities had perforce to mark time, there was no possibility of advance and the most that could be accomplished was the combating of the grosser forms of nuisance, but now, in peace, a period of reconstruction with a policy clearly defined lies before us.

Population.—The population at the census in 1911 was 4,596 and was estimated at Midsummer, 1919, at 4,930. Next year the census will be taken in the ordinary course of events and it should be noted that the present estimate is based upon food control figures and is liable to even greater inaccuracy than is inevitable at a period of nine years from the previous census owing to the intervening war years. Nevertheless it corresponds very closely with the figure of 4,996, arrived at by utilisation of the factor supplied by the Registrar-General for the purpose of making the calculation.

Since writing the above I have received the Registrar-General's estimate of the population, derived largely from returns to the Food Department. He gives 4,597 as the figure for the calculation of the birth-rate and 4,413 for the death-rate. The difference in these two populations is due to the inclusion in the birth-rate population of all the elements contributing to the birth-rate and the exclusion of all non-civilian males, whether serving at home or abroad, from the death-rate population.

Physical Features and General Character of the District.—The area of the Urban District is 3,627 acres, of which

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3,264 acres are land, 3 acres inland water and 36 acres tidal water. It is situated on the south-west side of the peninsula formed by the Dee and the Mersey.

The geological formation underlying the area is new red sandstone. For two miles to the south-east along the Dee, the middle coal measures occur under the boulder clay and are faulted against lower soft sandstone of the Bunter formation on the north-east. These coal seams are worked by the Wirral Colliery Company. The soil and sub-soil are both usually of a sandy character, but here and there pockets of clay overlie the sandstone. The district attracts members of the Liverpool business community to seek residence in it and any building activity which has taken place in the last few years has been directed to the erection of the mansion class of dwelling house.

In all the townships agricultural pursuits give employment to the inhabitants and at Parkgate in the Leighton Ward there is a fishing community carrying on its occupation in the Estuary of the Dee. Colliery workers, artisans and building trade employees live in all parts of the area. There are said to be 250 men employed in the colliery as contrasted with 200 in 1914. A steam laundry which was established some years ago at Parkgate employs over 50 hands of whom the majority are females. There is no occupation which exerts a deleterious influence on the public health and there is only one case of "coal miners' phthisis" within my recollection over a period exceeding twenty years. The local sandstone is worked to so small an extent that this also has no noxious effect upon the workers.

Births.—Births numbered 112 (60 males and 52 females), as contrasted with 85 in 1918 and 88 in 1917.

Seven of the births were registered as illegitimate.

The birth-rate was 24.3 per 1,000.

Infantile Mortality.—"This is the most sensitive index of the health of a community, partly because of the frailty of infant life, partly because a variety of factors are involved and partly because many of these factors are social and personal as well as environmental. A high infant mortality implies an increased death-rate up to five years of age and a high prevalence of the conditions which determine national physical inferiority. Breast feeding is a natural protection against infant mortality."

The deaths under one year numbered 6 (4 males, 2 females) or 5.2 per cent. of the births. Expressed in the usual way the

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infantile mortality was 53.5 per 1,000 births. Three died under four weeks of age from premature birth and imperfect development, one is stated to have died from influenza, one from septic pneumonia and one from marasmus associated with prematurity. There was one death among the seven infants registered as illegitimate and this death was the subject of a coroner's inquest.

Deaths.—The number of deaths registered in the district was 46 (23 males, 23 females) giving a death rate of 9.3 per 1,000. Four deaths of persons belonging to other areas were registered here and 19 deaths of persons referable to Neston took place elsewhere, so that 62 deaths (30 males, 32 females) should be credited to Neston and Parkgate Urban District or a death-rate of 14.0 per 1,000.

Influenza was registered as the cause of nine deaths, all of which with one exception occurred in persons over the age of 25 years.

Five deaths from pneumonia took place and six from organic heart disease.

There were six deaths from cancer or malignant disease, all of females. In three instances the site of the cancer was the breast and in the remainder the digestive system was involved. Eleven of the deaths occurred in the Wirral Union Infirmary, 2 in the Wirral Fever Hospital, 3 in Mental Hospitals and 1 in the Liverpool Royal Infirmary.

Poor Law Relief.—The number of out-door poor in receipt of relief in September, 1919, the date at which a revised list of names was issued, was 21 adults (2 males and 19 females) and 16 children. The amount allowed to these persons weekly was £8 9s. 6d. On the corresponding list in 1913 there were 43 names with an allowance of £6 10s. 6d.

General Hospitals.—Extensive use is made by the poor of the hospital institutions of Liverpool and Chester, but considerable difficulty is often experienced in meeting the charges for treatment, so that there is urgent need for a cottage hospital, which would obviate the necessity for the journeying of patients to the neighbouring towns. These words were written by me in the annual report for 1913 and now facilities for the transference of sick persons are available through the provision of a motor ambulance, which is maintained by the Council. A small charge for its use is exacted where those who employ it are in a position to pay.

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Moreover, charitable persons have subscribed large amounts for a hospital and a house has been purchased and is in process of conversion into hospital wards. The hospital, as at present mooted, is a private philanthropic concern and in its initiation no reference has been made to the District Council as the representative Health Administrators of the area. There has not been that "formal and deliberate consideration of the whole question of proper hospital accommodation for the area" which results in efficiency. Another criticism of the scheme arises from the preliminary announcement in the appeal for subscriptions, that one firm of medical practitioners is to constitute the staff of the hospital, whereby there is a resulting dissociation between those in medical practice in the area and their patients. The whole question of the organisation of the hospital bristles with difficulties and the scheme should not be launched without full and mature deliberation. Neston, with over 500 of its population housed in dwellings where there are only two or a less number of bedrooms and with 7.3 per cent. of its population overcrowded, certainly requires the provision of hospital beds for the needs of lying-in women and this demand in the projected institution should not be lost sight of. Furthermore, there ought to be some central co-ordinating organisation, whereby the District Nursing Association and the Committee providing Mid-wifery assistance may be brought into unison. There would be a great gain through this centralisation in the hands of the District Council.

Water Supply.—The water supply is the property of the Council, whereby consumers are enabled to receive water at a cost considerably less than is incurred by the inhabitants of neighbouring districts, in which private dividend-earning companies are the suppliers. A considerable revenue is derived from the sale of water to one of the railway companies, whose lines pass through the district. In 1919 the Council retained an engineer, skilled in water undertakings, to examine, review and report on the whole business of their supply, reservoir and engineering plant, etc. A period of almost 50 years have elapsed from the time when the Council acquired the supply.

A well, with a bore hole in the new red sandstone, sunk to a depth of 300 feet, provides, by pumping, a constant supply, which is distributed by gravitation. From the expert's report it appears that 400,000 gallons per day are pumped from the well and from his calculations he deduces that the consumption per head of population per day, in 1919, was 40 gallons. After allowing for water used for trade purposes, the consumption worked out at 36.2 gallons per head. When it is recalled to memory that certai

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premises using large quantities of water (*e.g.*, steam laundry and boys' school, with a population of about 200), are not on the public supply and that very many of the cottages have neither water-closets nor baths, it will be apparent how excessive the waste must be.

The engineering expert has made certain suggestions as to how waste may be minimised and his report is now before the Council for their consideration.

The Birkenhead Corporation have carried their pipe line from the Alwen across the district and the Council have powers to purchase this water should they desire to do so. The Liverpool Corporation mains from Lake Vyrnwy likewise pass through the urban district and in the past, when break-downs in the pumping machinery made such action necessary, a connection was attached to this source of supply.

The water supplied is of a high degree of organic purity and has a hardness of 12.5 degrees, of which 3.5 degrees are permanent hardness. The comparative softness of the water from the Neston deep well is frequently the subject of comment, when experts contrast it with the hardness of other deep wells in the new red sandstone formation.

River Pollution.—There are no polluted rivers or streams, but ditches into which houses with private sewage installations are drained are apt to become offensive when the septic tanks are insufficiently supervised.

Drainage, Sewerage, Closet Accommodation.—It can be legitimately claimed that the area is well sewered, but as groups of dwellings are erected on the outskirts of the more populated townships, the necessity for extension of the sewers must not be overlooked. There has been large expenditure of public money on the present sewerage scheme, but full benefit of this expenditure cannot be realized until all properties within reasonable distance are connected up. Although sewers and a plentiful water supply are available, there is no disposition on the part of property owners to adopt voluntarily the water-carriage system. The present policy of not compelling conversions is not only wasteful in relation to the money spent on sewers and water supply, but undoubtedly has a detrimental influence on the general health of the population. The more central parts of Neston have long outgrown their former rural character and it is no longer relevant to argue, as in the past, that the people cannot be entrusted

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with ordinary modern sanitary conveniences. At the present time, when labour and appliances are so high priced, that hardship may be inflicted on individual owners, owing to cost being relatively disproportionate to the value of the properties in which conversions are required, it ought to be borne in mind that under S. 39 of the Public Health Acts Amendment Act, 1907, the Council can bear one-half of the charges. Such work is indubitably for the benefit of the community and therefore there is no injustice in half the cost being charged to the district.

The approximate number of each type of closet is:—

Midden Privies	...	...	...	375
Water Closets	...	...	...	652
Houses Drained to Cesspools			...	39

Sewage Disposal.—Great and Little Neston discharge their sewage to septic tanks and bacteria beds and the effluent passes to the river Dee by a piped drain.

Parkgate sewage is discharged into tidal water and the sewer is flushed periodically by means of the discharge of 18,000 gallon^s of water from a private swimming bath fed from an artesian well. Ten years ago complaints were made to the Local Government Board with reference to this sewer and after the holding of an enquiry certain works were authorised to be carried out. Alterations in the sand banks and the river bed have been so profound that no cause for complaint of any kind has been forthcoming in recent years.

Scavenging.—The problems of scavenging are closely allied to the subject matter of the foregoing paragraph. Difficulties were experienced in getting men to empty the foul and loathsome midden-privies. In the process of emptying them their contents are deposited on the public streets where (although covered with disinfectant powder) evidence of the presence of offensive matter sometimes persists for weeks. All sanitarians are convinced that accumulation of garbage, human excreta and rubbish in the neighbourhood of houses is detrimental to the health of the community and the time has certainly arrived when the Council should exercise its powers and prevent the possibility of the presence of these offensive middens.

The intervals between the periods of emptying ashpits owing to labour difficulties have been too long for good sanitation and the slowness of the present system of using horses and carts requires speeding up by more modern methods. The ultimate disposal of the refuse is by tipping on agricultural land.

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Schools.—The Public Elementary Schools are supplied with water by the public mains. The buildings are all of them properly constructed and well adapted to their use for educational purposes. The Local Education Authority is the Cheshire County Council and they have provided a School Medical Service with Medical Inspectors and Nurses. I quote for your information seven propositions which the Chief Medical Officer of the Ministry of Health propounds as the "irreducible minimum" necessary to secure the full value of the School Medical Service to every child of school age.

1. "That every school child shall periodically come under direct medical and dental supervision and if found defective shall be followed up."

2. "That every school child found ill-nourished shall somehow or other be properly nourished and every child found verminous shall somehow or other be cleaned."

3. "That for every sick, diseased or defective child skilled medical treatment shall be made available either by the Local Education Authority or otherwise."

4. "That every child shall be educated in a well ventilated schoolroom or classroom or in some form of open air schoolroom or classroom."

5. "That every child shall have daily organised physical exercise of appropriate character."

6. "That no child of school age shall be employed for profit except under approved conditions"

7. "That the school environment and the means of education shall be such as can in no case exert unfavourable or injurious influences upon the health, growth and development of the child."

He concludes with the words "These are simple propositions, but together they constitute a minimum standard of the physical claim of the individual child—of the child of the poor equally with the child of the rich—toward which the more enlightened Authorities are year by year making substantial progress."

The schools were closed for one week owing to epidemic influenza in the first quarter of 1919.

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From some of the schools intimations of the occurrence of minor infectious disease, which are of great value in checking the spread of disease are not received and without the information which should be obtained in this way there is a lack of co-ordination between the work of the Sanitary Authority and that of the school teachers in their mutual attempt to lessen the incidence of infectious conditions among the children.

Milk Supply.—The neighbouring rural district sends milk into Neston and from the urban district milk is forwarded to Birkenhead and Wallasey. There are 31 names upon the register. Fourteen samples of milk were taken by the Inspector under the Food and Drugs Acts and as the result of analysis five were found adulterated or deficient in fat. Three prosecutions were instituted and there was one conviction as in two instances the seller was able to prove a warranty.

Lime washing was done with regularity and there was no necessity to serve any notices. Cows are only kept in the shippens during severe winter weather and at other times are turned out to graze.

Infectious Diseases.—Notification was received of the occurrence of 82 cases of infectious disease.

It must be borne in mind that during 1919 a number of additional diseases was added to the list of compulsorily notifiable conditions, *e.g.*, pneumonia and malaria. Furthermore, the remote results of infectious disease must not be lost sight of, for the number of cases occurring and the death-rate are only two of the component factors in their influence upon the health of the people. Chronic ill-health, invalidism, diminished working capacity and recourse to the use of alcoholic stimulants may in many instances be referable to the *sequelæ* of an attack of infectious disease.

Too much stress is laid upon outbreaks of infectious disease and too little attention is paid to the conditions of environment of the population, which are the predisposing elements in the production of epidemics. Not until there is a much more widely diffused knowledge of the elementary principles of hygiene can a reduction in the number of infectious outbreaks be anticipated. Although these diseases are preventable, the general mass of people view them with absolute fatalism and even state "that if the children are going to have them they will have them."

Infectious disease is much less prevalent in the nurseries of the rich than in the "warrens of the poor" and it behoves the

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Neston Council to exercise their powers and remove these fundamentally bad conditions which foster infection.

Diphtheria.—41 cases were notified and there were three deaths, or a case mortality of 7.3 per cent. Eleven cases occurred in children under the age of 5 years; 25 between the ages of 5 and 15; and 5 between 15 and 45. The 3 children who died were under the age of 5 years. 28 of the cases were notified in Great Neston, 11 in Little Neston and 2 in Parkgate. The disease was undoubtedly spread by undetected carrier cases in one of the elementary schools.

If these outbreaks are to be combated successfully, a necessary preliminary must be a cessation in the retention of organic debris in the vicinity of the cottages. I do not contend that even the most drastic reform in this direction will completely eliminate diphtheria from the villages, but it will go far to lessen epidemic outbreak, even if there are undetected carriers.

Hospital accommodation was provided for all the patients. During epidemic and at other times, frequent use is made by practitioners of the facilities provided by the Council for the bacteriological examination of specimens by the Clinical Research Association.

Unsuccessful attempts were made to detect carrier cases and school children were taught the use of an antiseptic gargle and nasal disinfection.

Scarlet Fever.—11 cases were notified. Four between 1 and 5 years; 6 between 5 and 15 years and 1 between 15 and 25. Eight of the patients were treated in the Isolation Hospital at Clatterbridge and in the case of the 3 (members of one family) who were not removed, the necessary conditions for effectual isolation were available in their own home. Seven were notified in Great Neston, 3 in Little Neston and 1 in Parkgate.

Tuberculosis.—11 cases were notified, 9 of these were tuberculosis of the lungs and 2 were "other" forms. Two deaths were recorded and in both instances the disease was of comparatively long duration. Four of the pulmonary cases received treatment in sanatoria or hospital beds. I would draw your attention to the following extract from a recent memorandum by the Chief Medical Officer of the Ministry of Health. "The medical treatment of tuberculosis on national lines must be comprehensive and a scheme of notification and sanatorium and colony treatment,

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is but a part of the whole policy which must be held in due perspective. It cannot be concerned with the handling of the tuberculous person. It must be fundamentally preventive and must recognise that latent tuberculous infection is so widespread as to be almost universal. There are grounds for believing that its seeds are sown chiefly in childhood. Certainly its activity bears a close relation to malnutrition, to nutritive processes, to other diseases and to environmental conditions. Housing, industrial life and the milk supply must be considered and public education, general sanitation, cheap bread and a hygienic way of life have much to do with the solution of the problem."

Tuberculosis in all its forms is much too rife in this district and the provision of working-class houses of good construction, lessening overcrowding and enabling the people to live hygienically, will ultimately result in far reaching benefit to the whole nation in diminishing its incidence.

Small Pox.—No cases of small pox have been notified for some years, but it is essential that reference should be made to the increasing number of persons who do not have their infants vaccinated. Recently in answer to a question in the House of Commons, the Minister of Health stated that it was approximately correct that more than half the children born at the present time were withheld from vaccination; that the proportion of unvaccinated children of each year's birth was steadily increasing; and that nearly 40 per cent. of the births in each year were exempted from vaccination by the statutory declaration of objection by the parents.

The statistics from the four registration areas in north-west Cheshire in 1917, 1918, 1919, are submitted for your information:—

District.	Births.			No. of Certificates of successful primary vaccination received during the year.			No. of Statutory declarations of con- scientious objection received during the year.		
	1917	1918	1919	1917	1918	1919	1917	1918	1919
Bebington	356	335	368	180	196	279	55	60	56
Neston	188	181	200	174	107	172	22	75	8
Eastham	368	359	375	248	185	176	113	106	139
Woodechurch	279	317	301	433	220	200	30	27	44

In the closely adjoining area of Lower Bebington there were several outbreaks of small-pox in 1919, all of a very limited character owing to the vaccinated state of the population.

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Maternity and Child Welfare.—There is a Centre in Neston, which is administered by the County Council and officered by the local practitioners. A voluntary Committee lends its assistance in conducting the Centre. One case of ophthalmia neonatorum was notified and treated.

Isolation Hospital.—The hospital accommodation for infectious diseases is supplied by the Wirral Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

The number of beds provided and the diseases treated are as follows:—

Clatterbridge Hospital	...	12 beds, diphtheria.
		6 beds, typhoid fever.
		40 beds, scarlet fever.
		2 beds, observation.
Pensby	...	12 beds, convalescent block,
		scarlet fever patients.
Greasby	...	12 beds.

The staff at Clatterbridge is a matron, 2 charge nurses, 3 assistant nurses and 7 probationers.

The Greasby Hospital now used for scarlet fever patients was formerly the small-pox hospital of the Joint Hospital Board and it became unsuitable for its original purpose owing to the increase in the number of houses in its vicinity.

The Wirral Joint Hospital Board, in order to provide accommodation for small-pox patients entered into an agreement with the Liverpool Port Sanitary Authority to provide the beds which might be required and the Port Sanitary Hospital at New Ferry has been utilised. The action of the Board in making any use whatever of the Port Sanitary Hospital has been strongly condemned by the Lower Bebington Urban District Council.

The wide-spread outbreak of scarlet fever with its large incidence of cases over-taxed the hospital and an attempt is now being made to prevent the recurrence of insufficient accommodation by the provision of a well constructed army hut in which between 20 and 30 patients may be treated.

Housing.

1. GENERAL HOUSING CONDITIONS IN THE DISTRICT.—935 houses were enumerated at the 1911 census and 46 houses have

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been erected in the intervening years, but very few of these are working-class dwellings. Two working-class houses were built in 1919. For the proper appreciation of the present housing conditions it must be called to recollection that the townships are very old and that many of the houses were erected prior to the period of passing and enforcing bye-laws. As a consequence, much of the cottage property is old, poorly constructed, without damp courses and from the standpoint of to-day, possessing all the defects which characterise unfit dwellings. Examined in the light of standards of fitness as stated in the official manual:—

1. They are not free from serious dampness.
2. They are not satisfactorily lighted and ventilated.
3. They are not properly drained and provided with adequate sanitary conveniences and with a sink and suitable arrangements for disposal of slop water.
4. They are not in good general repair.
5. They have not adequate washing accommodation.
6. They have not adequate facilities for preparing and cooking food.
7. They have not well ventilated stores for food.

The most that can be said for them is that they have a copious supply of good water and they are let at rentals very little above a nominal figure.

During the war period it was not practicable to carry out even the most ordinary repairs and now the general dilapidation makes housing inspection a most depressing procedure. Some members of the Council may think that this picture is overdrawn, but I would ask them before coming to that conclusion to examine the rear walls and interiors of some even of the dwellings facing the main streets. Doubtless many of the inhabitants owing to long familiarity have become accustomed to regard the state of dampness and disintegration as more or less part and parcel of a condition which cannot be remedied. Also where there are no houses available any sort of habitation is better than none at all. In fact these houses have served their day and generation and are no longer in accordance with modern standards fit for the rearing of a healthy race.

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The state of affairs at the census of 1911 can be gathered from the following table of the 928 private families :—

				Aggregate. Population
8	were enumerated in tenements of	1 room	...	13
26	"	2 rooms	...	60
102	"	3 "	...	445
282	"	4 "	...	1342
193	"	5 "	...	857
111	"	6 "	...	587
57	"	7 "	...	289
35	"	8 "	...	183
35	"	9 "	...	171
79	"	10 " and upwards	...	471

The tenements which had more than 2 occupants per room numbered 38, with an aggregate population of 324. The proportion of overcrowding in the population in private families was 7.3 per cent.

2. POPULATION.—No important changes in the number or character of the population are anticipated.

3. EXTENT OF SHORTAGE OF HOUSES.—(a) For years there has not been an empty habitable cottage anywhere in the area and now the dire shortage is shewn by evictions in order to provide room for imported workers. (b) The Council purpose to build 100 cottages, 70 in Neston and 30 in Parkgate.

4. OVERCROWDING.—

(1) *Extent*.—7.3 per cent. of the population in 1911 and now appreciably greater.

(2) *Causes*.—A want of proper relationship between the growth of the population and the housing accommodation.

Demolition of grossly insanitary buildings under the 1909 Housing Act, without adequate new buildings to replace the demolished dwellings.

(3) *Measures* to cope with overcrowding cannot be contemplated until building of working-class houses in the district is again in progress.

NORTHWICH

Urban District.

Population, &c,

Population (Census 1911)	...	18,151
For birth-rate, 1919	...	19,892
For death-rate, 1919	...	19,096

Births.—The number of births as returned by the Registrars is 347, of which 24 were illegitimate children.

This gives a birth-rate of 17.4 per 1,000 and an illegitimate birth-rate of 1.2. The birth-rate calculated on the M.H. figure would be 20.0 per 1,000.

Deaths.—The number of deaths registered was 255. Of these deaths 28 were of infants under one year and 75 of persons over 65 years of age. Thirty-one died in the Public Institutions (Workhouse and Victoria Infirmary) and 27 were the subject of a Coroner's Inquest.

There was one death from measles, 52 from influenza, of which 47 occurred in the first quarter, three in the second and two in the last. Respiratory diseases (non-tubercular) caused 43 deaths, 26 of them occurring in the first quarter when the influenza epidemic was rife. Twelve deaths were from tuberculosis, 22 from cancer, 24 from heart disease, 25 from old age, three from diarrhoea, 10 from premature birth, 12 from violence and two from suicide.

Infantile Deaths.—Of infants who died before reaching one year of age there were 28, 10 of which occurred during the month of February when the influenza epidemic was raging.

Premature birth was the cause of seven deaths and there is no record or available method of ascertaining how many abortions take place. Some practitioners think they are increasing in number.

Water.—The whole district is supplied on the constant service system from the waterworks at Cote Brook. The water is of great purity but somewhat hard. Owing to the loss caused by subsidence the supply is shut off at night.

The gathering ground of the springs is protected and tilling of the soil in the immediate vicinity guarded against.

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Extensions authorized by Act of Parliament in 1914 have been deferred during the war, but temporary works have been carried out for supplementing the supply to the district.

Closet Accommodation.—There are 1531 pail closets in the district which are emptied weekly. The pails are renewed at the expense of the Council (about £130 per annum) and the majority are now the Council's property. One hundred-and-fifty new pails have been issued during the year.

The excrement is "tipped" upon land and utilized by farmers for manure, but the provision of suitable "tips" in the urban area is becoming more difficult each year.

There are 242 cesspools and 40 statutory notices to convert to the water-carriage system have been served—eight of which have been already complied with, 32 remaining in hand.

Infectious Diseases.—Of the notifiable infectious diseases, 73 (excluding measles) were received during the year. There were 18 cases of diphtheria, two of which were pathologically confirmed, 15 of tuberculosis, 17 of pneumonia, two of erysipelas, four of malaria (all imported), one of puerperal fever, four of ophthalmia neonatorum and seven only of scarlet fever.

Of measles an epidemic occurred during the late autumn and 146 cases were notified, 89 being by doctors and 57 by others, chiefly school teachers. The notices from this source being of great value in regard to those infectious diseases which are not compulsorily notifiable.

All practitioners are supplied with diphtheria antitoxin on demand for any person in the area and any practitioner requiring pathological examination of throat swabs, sputum or blood, has only to send the specimen to Professor Delepine's Public Health Laboratory and he can get a reply by telegram. These arrangements have been in operation for many years.

A very severe outbreak of influenza during the first quarter occurred and 15 persons were removed to hospital, of whom eight died. The epidemic was so severe and so universal that there were not sufficient people well to nurse the sick and "carry on." It was for that reason the 15 cases were removed. A voluntary staff of nurses and home helpers was organized. The National Kitchen anticipated its opening and provided gruel, soup, beef tea and

Northwich Urban District.

light diets for invalids. All schools (including Sunday schools) were closed and the cinema shows were prohibited to children under 14 years by the managers on request from the Medical Officer of Health.

Child Welfare—The work of the centre was interrupted during the year owing to change of premises. The Market Street premises which had been kindly lent by Mrs. J. F. L. Brunner, were given up by her in the spring and at the time no other place was available. After some time the building in Witton Street which had formerly been the Post Office and latterly the National Kitchen, was acquired and fitted up as a welfare centre and forms a commodious, accessible and central station. It was opened on September 30th and has been open each week since. The Medical Officer is in attendance, also the Health Visitor and a rota of two of the six ladies who are on the Committee.

Virol is supplied at cost price, also artificial food and a supply of sugar has been obtained to give to bottle-fed infants an extra ration.

Miss Keating has been appointed as part-time Secretary and attends the sessions, keeping the books and accounts.

Owing to the change of residence and epidemics of infectious disease, the Centre was open only 26 days of the year. The number of children on the books was 93 and the average attendance 18.

All notified births are visited by the Health Visitor and records made and filed. 419 first visits and 3,076 repeat visits were recorded during the year.

Expectant mothers received 57 visits and a certain number attend the Centre.

All cases of still birth (17 in number) and infantile deaths (26 in number) are visited by the Health Visitor, records made, and any insanitary conditions noted and dealt with. The records are kept for reference.

The number of illegitimate children is not large and of these a good proportion are born in the workhouse and on liberation from there the Guardians generally satisfy themselves that the mother and child have a suitable home to go to.

Northwich Urban District.

The Ladies Committee also interest themselves in these cases and supervise them so far as they can.

Only one case of puerperal fever occurred and that recovered. Four cases of ophthalmia neonatorum were notified, all of both eyes, mostly slight and all completely cured. These cases are carefully supervised by the Health Visitor.

Housing.—The number of dwelling houses at the census of 1911 was 3,831 and the number within R.V. of £16 per annum is estimated to be 3,560. Two new houses have been built or rather completed during the year.

The population is difficult to estimate. During the war great extension of works ensued and drew a big population, which was to some extent discarded on the termination of hostilities. Against that the permanent works of the adjoining district are increasing in extent and likely to do so for some time. At any rate it is clear that the shortage of houses is very acute indeed and there is considerable overcrowding. Two schemes are afoot for the provision of some 500 houses. All seems in order except the provision of the money for an early start.

No effort has been spared to try and prevent overcrowding by lodgers, but to try and cope with overcrowding at present is like trying to accommodate a quart of liquid in a pint measure.

The standard of housing is generally speaking good, *i.e.*, the structural solidity and material, but like all towns the rows of houses with a minimum of garden and yard spaces do not elevate the amenities—hygiene, social, moral, or æsthetic—of a town. In addition to this there is a supply of houses which are practically too old to pay for proper repair and yet cannot be abandoned because the tenants have nowhere else to go.

Water supply is entirely from the Council's mains.

There are no unhealthy areas.

There were no complaints by householders of houses unfit for habitation and 4,254 inspections were made and 59 considered unfit for occupation. There were no houses closed and repaired by the Sanitary Authority, nor any voluntarily closed by the owners. No closing orders were made by the Local Authority, nor were any representations made to that effect.

Northwich Urban District.

Two houses have closing orders for demolition against them, the cause being subsidence. The demolition is pending. The difficulties resultant from subsidence cannot easily be realised by persons not acquainted with the district.

The housing work is carried out by the Inspector. Fifty-six acres have been planned for some 500 houses and architects engaged to produce the lay-out and plans which await the consent of the Ministry, and the provision of the necessary capital. When these are obtained the work is ready for execution.

SALE

Urban District.

Population.—At the Census taken in 1911, the population of Sale was 15,044. On the 31st December, 1919, the population was estimated at 17,000. For this report, the estimated population is taken at 16,825.

Births.—During the year there were 259 births registered, giving a birth-rate of 15.39 per 1,000 per annum.

Deaths.—One hundred and seventy-four deaths were registered, giving a death-rate of 10.34. With the deaths registered in outside districts to the number of 38, the inclusive death-rate is 12.6 per 1,000 per annum.

There were 17 deaths—eight males and nine females of infants under one year of age, giving an infantile mortality of 65.63. This is satisfactory, in that it points to a decline in the rate and also shows the Child Welfare Centre's work is bearing fruit.

Infectious Diseases.—There were 418 notifications of infectious diseases. Measles made up a large proportion owing to an extensive outbreak in the last three months of the year. By means of returns from the schools and notifications from doctors and parents, most of the cases were seen by the Medical Officer of Health and advice given. A certain number of cases undoubtedly occurred which escaped the notice of the authorities.

Sale Urban District.

Tuberculosis.—There were 15 cases of pulmonary and five of general tuberculosis notified during the year. Seven cases were treated in sanatoria and four discharged.

There is great need for more sanatoria, so that cases can be removed in the early stages of the disease.

Cancer.—There were 13 deaths from cancer—seven males and six females.

Housing, &c.—One hundred and twenty houses were inspected under Section 7 of the Act of 1909. No closing orders were made. Twelve houses were completed in the year in Framingham Road. There are few vacant houses in the district, but building operations are in progress. There are 2,020 houses within the limits of rent of Section 14 of the Act of 1909.

The Surveyor to the Council has a sanctioned scheme of 40 houses, 11 to be commenced directly and negotiations for 19 more are well in hand.

Water.—There is a good and constant supply of water from Manchester Waterworks.

Drainage and Sewerage is, considering the flatness of the district, satisfactory.

SANDBACH

Urban District.

Population—

The population at Census 1911, was 5,723.

„ Estimated 1919, was 6,399.

Births and Deaths.—During the year there have been 122 births—60 boys and 62 girls—of these 11 have been illegitimate.

During the year 73 deaths have taken place within the district and 7 outside the district, making a total of 80, an average per 1,000 of 12.5.

Sandbach Urban District.

10 Deaths have occurred under 1 year of age. Causes were : four influenza and pneumonia, two whooping cough, one tubercular peritonitis, three debility from birth.

Water Supply.—This comes from an upland source and is brought down by two mains, a ten and a seven inch, only one being used at a time. It is taken to the waterworks and treated by Clarke's process.

The new clear tank, 74 × 51 × 10 feet, with a capacity of 200,000 gallons, can be used every day, and with the help of Roturbo pump capable of lifting 18,000 gallons of water per hour, has relieved the anxiety at the waterworks in dry weather and as the water has now more time to settle the quality is better than ever.

Sewerage System.—The sewerage system is in very good order and the effluent is satisfactory. The sewers of the town have been connected up with the new system.

A few houses in the outlying districts are supplied with cess-pools of a suitable character and are emptied and cleaned out as required.

Closet Accommodation. — Conversions to the water-carriage system are very slow. Three water-closets have been fixed with proper flushing apparatus in the place of two pail-closets and one privy. Eleven privies have been converted to the pail system.

The number of the different types of closets are as follows :—

Water-closets	...	...	...	291
Pail ..	...	..	...	606
Earthenware	...	..	...	23
Privies ...	...	...	...	460

The work of removal of refuse is carried out by the Council's employees. The populated parts of the district outside the town are rather scattered over a large area. The outlying portions, Sandbach Heath, Coldmoss Heath, Ettiley Heath and Wheelock render a constant and systematic work of scavenging with our regular two carts and tubs somewhat difficult.

Infectious Diseases.—During the year there has been 60 cases of infectious diseases reported : scarlet fever 7, diphtheria 1, measles 18, pneumonia 22, ophthalmia 2, encephalitis lethargica 1, erysipelas 1, tuberculosis 8.

Sandbach Urban District.

In cases of diphtheria, antitoxin is provided by the Council free of charge and all cases are at once removed to West Heath Sanatorium, Congleton.

Maternity and Child Welfare.—Enquiries were made by the County Council as to the advisability of opening a centre here, but as I had little faith in the mothers here attending the clinics to the extent to make it a success I felt it my duty to advise Dr. Young that it would be better to hold the matter over for a period.

The midwives and their bags are inspected and supervised by the Health Visitor. The two cases of ophthalmic neonatorum were seen by myself and neither case proved serious, nor was the eyesight anyway impaired.

Housing.**(a) GENERAL HOUSING CONDITIONS IN THE DISTRICT.**

Number of houses in the district, 1422.

Number of houses for working classes, 1138.

No new houses have been erected during the year.

The estimated population is 6,399 (may be larger).

Extent of shortage. One cannot definitely state this until normal conditions return and many of the people who came here for munition purposes drift back to their own towns and occupations.

Measures taken. The Council have adopted a housing scheme and propose to build twenty-four houses and if they find it necessary when these are built they will consider the matter further with a view to building more.

(b) OVERCROWDING.

Extent. There are two hundred and twenty-five houses with more than one family living in them.

Causes: Lodgers for munitions. Wives whose husbands went to the war and they came here with their children to reside with their parents and relatives.

Measures taken or contemplated to deal with the overcrowding. The proposal to build twenty-four houses. The housing scheme was adopted on the 24th October, 1919, and the

Sandbach Urban District.

land for same practically arranged for, but it has been hung up ever since through the District Valuer not agreeing with price arranged by the Council. In many instances sons and daughters who have married, living with aged parent or parents, would not live in another house if there was one vacant. The enlargement of works in the neighbourhood. One of the firms are building a number of houses for their employees and propose to erect more, which will assist in relieving the overcrowding.

Principal cases of overcrowding dealt with during the year. Through the moving of tenants some of the cases of overcrowding have been dealt with.

(c) FITNESS OF HOUSES.

The general standard of the houses is satisfactory.

There have only been found minor defects in houses with the exception of three houses.

(d) GENERAL.

There is no doubt that there is a shortage of houses in the district, but as a great number of people living here work at Fodens Limited, and that they are building a number of new houses, this will help to relieve the congestion in our own district. The proposal to build twenty-four new houses by our Council will, with the help stated above, go a long way to relieve the congestion and beside, a large number who at present live with their aged parents would not in my estimation leave their present abodes even if more and better houses were provided for them.

TARPORLEY
Urban District.

Births.—During the fifty-two weeks of the year ending December 31st, 1919, the Returns of the Registrar recorded 42 births—the corrected number is 45, which is equal to a birth-rate of 16.7 per 1,000 of the population.

Deaths.—The total number of deaths registered in the district was 34. Two non-residents died in the district and five residents died out of the district, the corrected number being 37, which is equal to a death-rate of 14.3 per 1,000. Five of these deaths were of children under one year of age.

Tarporley Urban District.

Infant Mortality.—The causes of the death of the five infants were one of gastro-enteritis, two premature birth, one debility and one marasmus. The death-rate is very heavy, being at the rate of 111.1 per 1,000 births.

Water Supply.—Tarporley Urban District is supplied by the Liverpool Corporation from their Lake Vyrnwy supply, the water mains passing through this district. The out-lying parts are supplied by springs, dip-wells and ordinary wells. All the supplies are constant and wholesome and fairly free from the risk of pollution. The Vyrnwy water is very soft water and iron pipes are in general use. No contamination of the water by lead has occurred. No extensions have been carried out during 1919 and the district was well supplied with water, except cottages at Brownhill's and Harrop's, Cotebrook, Utkinton Lane Cottages. The owners of these cottages are being pressed to provide a better supply.

Pollution of Rivers and Streams.—The streams are fairly free from pollution, with the exception of the brooks in the Townships of Eaton and Utkinton, which are polluted by house drainage and farm sewage; there is no manufacturing waste or effluents entering them.

Drainage, Sewerage, and Sewage Disposal.—There have been no extensions of the sewers in Tarporley Urban District during 1919. Some parts of the villages viz., Eaton, Rushton and Utkinton, are still without a proper system of sewers, having tanks and cesspools which they empty on to their gardens and land. Nearly all the cottages in Tarporley have been provided with w.c.'s. The Tarporley sewage is disposed of by means of a precipitation tank, sludge beds and land treatment. These sewage works are in good condition. There has been a complaint that irrigation of the land makes some adjoining low-lying land wet and unfit for cultivation. No alterations have taken place at the Disposal Works during 1919, but it is proposed to build extra sludge beds and filters to improve the effluent.

The Sewage Outfall Works are in good condition and the filtration of sewage by irrigation is successful, cultivation and cropping of the land keeping the soil open and sweet and in good order. Crops have done fairly well.

Refuse Removal.—Scavenging is not carried out by the Local Authority but by private arrangement, each householder as a rule disposing of his own refuse. Your Council provides tips.

Tarporley Urban District.

The approximate number of

Midden privies	...	...	178
Dry Ashpits	...	...	137
Pail Closets	...	...	61
Dustbins	...	...	0
Cesspools	...	about	200
Water Closets	...	...	115

In Tarporley some of the privies are old and inadequate, and in the other Townships, where there are old and dirty privies, pail closets are being substituted as most of the cottages have good gardens.

Housing.—General housing conditions in the District.

No. of houses for working classes	...	356
New houses or in course of erection, 1919		0
Population 2,572. Anticipated changes,		0
Extent of shortage, about 12 to 20.		
Measures taken or contemplated to meet shortage.—Council propose to build 12 cottages.		

Infectious Diseases.—There was one case of scarlet fever notified during the year. Influenza was very prevalent during the months of February and March. Tarporley schools and Cotebrook having to be closed.

There were five deaths from influenza during the two months.

Isolation Hospital.—Infectious diseases may be sent to Chester Isolation Hospital, Sealand, near Chester—Tarporley, Tarvin and Malpas constituting a Joint Hospital Board. No cases were sent to hospital during 1919.

WILMSLOW**Urban District.**

Population.—The population was 8,153 at the Census of 1911, as against 7,361 in 1901, being an increase of 792, or 10.7 per cent. Between 1891 and 1901 the increase was 14.4 per cent. The population was estimated to be 8,553 in 1919. A considerable part of the population is residential, chiefly composed of persons engaged in business in Manchester, with their families.

Wilmslow Urban District.

Births and Deaths.—100 births (50 male and 50 female), and 93 deaths (42 male and 51 female) were registered in 1919. Twelve births were illegitimate. The birth-rate was 11.6 per 1,000 living. The death-rate was 11.3.

There were six deaths of infants under one year, one of these being illegitimate. The infant mortality—*i.e.*, the death-rate of infants under one year per 1,000 births was 60.

Water Supply.—The new works at Kinder belonging to the Stockport Corporation were opened in 1912 and the district is now supplied from this source. The supply is constant, good and ample for all needs. No softening treatment is required. Some parts of the rural area are supplied from wells. No complaints were made during the year.

Drainage and Sewerage.—The sewage is treated by precipitation tanks and broad irrigation.

No complaints were made during the year.

The rural parts of Morley, Hough and Dean Row are without a proper sewerage system.

No new works were carried out during the year.

Closet Accommodation.—This consists of 967 water-closets and 960 privies, 25 per cent. of the latter being in the rural areas. No privies were converted to water-closets during the year.

Infectious Diseases.—160 cases of infectious disease were notified, including 89 measles and 57 rubella (German measles).

One case of cerebro-spinal fever (fatal) occurred in a boy aged 13. Meningococci were found in the cerebro-spinal fluid. Four "contacts" from this case were examined at the Manchester Public Health Laboratory with negative results.

The Council has arranged for the examination of pathological specimens at the Manchester Public Health Laboratory as an aid to diagnosis.

Wilmslow Urban District.

During the year 1919 specimens sent for bacteriological examination included five throat swabs (diphtheria negative in all), one specimen of blood from an enteric suspect (result negative) and one of sputum (tuberculosis negative).

Four nasopharyngeal swabs from cerebro-spinal fever contacts were also examined, with negative results.

Antitoxin is provided for use in the treatment of diphtheria and was so used in the one case that occurred before its removal to hospital.

Isolation Hospital.—By arrangement with the Manchester Corporation, the Bucklow Joint Hospital Board, on which the Wilmslow Urban District Council is represented, is provided with a sufficient number of beds at Monsall Hospital for infectious diseases, including small-pox. A case of scarlet fever and one of diphtheria were removed to hospital during the year.

Housing.—Total number of houses, 2080. Number for the working classes, 1,285.

No new houses for the working classes were erected during the year, nor are there any in course of erection.

There is a considerable shortage of houses. The Council has decided that 100 cottages are required under the recent Housing Act.

There are some cases of overcrowding due to shortage of houses and lack of three bedrooms in houses. No measures to deal with overcrowding (apart from erection of new houses) have been taken or are contemplated. No action has been taken in regard to cases of overcrowding.

The general standard of housing in the district is satisfactory. No action has been taken as regards unfit houses under the Public Health Acts or the Housing Acts. Conditions, so far as they affect housing, as regards water supply, closet accommodation and refuse disposal are fairly satisfactory. No measures taken during the year in these matters.

WINSFORD

Urban District.

Population.—

At 1911 Census	...	...	...	10,772
1919 Estimate—By Registrar-General's Office, Somerset House—Birth-rate	...	...	...	*11,935
Death-rate	...	...	...	11,457

*The estimate made in this office is rather higher, viz., 12,145

Births and Deaths.—The births numbered 231 giving a birth-rate per 1,000 living of 19.3.

The deaths numbered 174, giving a death-rate per 1,000 living (civilian population) of 15.1.

The deaths under one year, including the deaths of two illegitimate children (males) and including three who died elsewhere than in Winsford, numbered 22. Death-rate per 1,000 births of children under one year was 95.

Infectious Diseases.—These were as under:—

	Cases.	Deaths.
Measles	25	—
Scarlet Fever	10	—
Diphtheria	24	2
Whooping Cough	Unknown	1
Typhoid Fever	1	—
Diarrhoea (under 2 years of age)	Unknown	1

Isolation Hospital for Infectious Diseases, Davenham (34 beds).—This Isolation Hospital takes cases from Northwich Rural, Northwich Urban and Middlewich Urban Districts as well as Winsford, a total population of about 60,000 and is under the control of a Joint Board. A motor ambulance has recently been provided. The old buildings at Marbury are reserved for small-pox.

Water.—Mr. Wilkinson, the Surveyor, takes charge of the water supply. The supply is spring water from three springs in Little Budworth Parish, namely, "Stretches," "Austin" and "Butts" Springs. Thence it is led through a 10-inch pipe to a reservoir in Whitby's Lane in Over. This reservoir will hold 1,500,000 gallons. A gravitation main from the reservoir supplies the greater part of the town.

Winsford Urban District.

For the higher portions, above Well Street, water is pumped up into a water tower adjacent to the reservoir.

250,000 gallons are delivered in 24 hours by the springs. A small auxiliary supply, of 15,000 gallons in 24 hours, can, if needed, be pumped from a well sunk near the course of a brook that runs through the Council's Little Budworth property. The supply is constant. This water is just enough for present purposes. There is no margin for drought. 250,000 gallons allows a population of roughly 12,000 about 21 gallons a head per day. The amount generally considered necessary is 30 gallons.

The "average requirements" of the text-books include from five to seven gallons per head for water-closets. If 868 cesspool-privies in Winsford were to be converted into water-closets, then 27,342 gallons per day, or 191,394 gallons per week, extra water would be required.

If, further, 299 of the peat pail-closets, in areas where sewerage is available, were to be converted to the water-carriage system, then 9,415 gallons of water per day, or 65,905 gallons per week, extra would be needed.

Thus, if a proper water-carriage system were to replace the present insanitary cesspool-privy arrangements and to partially replace the conservancy system (peat pails), about 36,715 gallons a day, or 257,299 gallons per week, extra water would be necessary.

The solution of this problem is a necessary precedent to any extensive action in dealing with insanitary property. The Council has for some years had under consideration an extensive addition to its sources of water supply.

A very few cottages in the outlying parts of Winsford are under rural conditions and depend on wells for their water supply.

The last reported analyses were in 1913, which, Dr. Garstang mentioned, pronounced the quality "excellent on chemical analysis," but revealed an undesirable number of the bacillus coli. The presence of these germs proves contamination either by manure, nightsoil or sewage. "Careful examination of the springs discloses the fact," he wrote in 1913, "that the soil is extremely light and porous and that the

Winsford Urban District.

surrounding land is heavily manured. The contamination is manurial and of no immediate danger to the public. . . ."

The manuring complained of in 1913 has been discontinued; the surrounding land is under grass and the quality of the water is believed to be excellent. No dangers of contamination between source and delivery are believed to exist.

No contamination by lead is known.

Notifications of Births.

Notified by Doctors	...	...	...	109
„ „ Midwives	...	...	...	128
Total	...	...	...	237

Number of Children in the town under 1 year	...	210
Children over 1 year and under 5 years	...	680
		890

Visits made by the Health Visitor.—

Children under 1 year	...	1,289
Children from 1 year to 5 years	...	2,720

Child Welfare Centre.—The Centre was open every Friday afternoon during the year, with the exception of December 26th (Boxing Day) and April 18th (Good Friday).

Each child at each visit was stripped and weighed and then examined by the Medical Officer. After redressing, tea, bread and butter and milk was provided for the mothers and children. Each week a full return of the names and addresses of all the children who had attended, together with any hygienic or dietetic advice given was sent to the Medical Officer of Health and a similar list containing the names of his patients was sent to each medical man in the town.

The Health Visitor attended each clinic and generally supervised the mothers and children and, as last year, regularly followed up and visited each case at home. I feel certain that her regular home visiting greatly assists the work and keeps up the attendance at the clinic.

Winsford Urban District.

The Nursing Association has kindly allowed one of their nurses to attend each week and assist at the Centre. This help is greatly appreciated.

Several members of the Ladies' Committee continue to attend each week preparing and serving the tea and in general greatly assisting the mothers and children. Their attendance is voluntary and very regular and I express here my sincere gratitude to them for their valuable help.

The propaganda work consisted of:—

(1) Entering for the "Daily Sketch" Baby Competition, with all the interest, excitement and rivalry which that caused amongst the mothers. Five babies gained certificates of merit, two won silver prizes in the semi-final heat and one won a £10 prize in the final heat. The Centre received a prize of £5, which has very wisely been spent in providing a very substantial and useful draught-screen for the Centre.

(2) The giving of two or three Lectures and Demonstrations on subjects of interest to mothers and prospective mothers. These were not attended as well as they ought to have been and this part of the work wants a lot of working up. Mrs. Vaughan Stubbs kindly gave one demonstration and Nurse Percival another.

(3) The provision of a Christmas Tree and tea for the children and mothers who regularly attended the Centre during the year.

The Library remains as last year and several of the mothers have made good use of the various books.

Maternity Work.—During the whole year only three prospective mothers were seen and these were only "casuals" who did not come up for systematic examination and advice, but who merely happened to mention the matter to the Health Visitor when up with older children.

This is extremely disappointing and unsatisfactory inasmuch as the care of the unborn child is quite as important as, nay sometimes more important than, the care of the child after birth.

Our difficulty in this respect was mentioned to the Inspector from the Health Ministry, but she could offer no advice.

Winsford Urban District.

So far as I can see the reasons for the failure in this respect are chiefly two, viz.:—

(1) The natural reticence of a prospective mother in a small town like Winsford to advertise her condition by coming to the Centre and her ignorance of the importance of the pre-natal period to herself and her child.

(2) The indifference of the local midwives to the importance of this pre-natal period.

If the second reason can be overcome, I think the first will largely cease to exist. We must therefore enlist the sympathy and co-operation of every local midwife. The midwife's sphere of work lies chiefly amongst the class we wish to get at and it is the midwife who is usually the first to become the confidante of the prospective mother. She is, therefore, the person, *par excellence*, whom we ought to interest in ante-natal work and we should impress on her that the Centre is not out to rob her (as I am sure she thinks it is) but to help her.

In addition we might enlist the more active co-operation and sympathy of any other local body of workers on similar lines, *e.g.*, the Mothers' Union.

I would therefore suggest for improving this part of our work:—

(1) That the local midwives be approached by the Medical Officer of Health or other responsible individual, *e.g.*, the County Medical Officer of Health, and urged to send, or at least strongly persuade, all their cases to come to the Centre for examination, or, better still, bring up their cases personally. I further suggest that a report be sent to each midwife of all her cases who come up somewhat similar to that which we now send to each medical man respecting the children.

(2) That other local bodies of workers on similar lines be approached and asked to impress upon their members the importance of the pre-natal period and the benefit of coming to the Centre. Also we might provide such bodies with literature advertising the Centre, *e.g.*, leaflets published by the National League for Health, Maternity and Child Welfare and ask them to distribute such literature amongst their members and friends.

Winsford Urban District.

(3) That the Child Welfare Committee should be made more "alive" than it is at present and meet as a committee of the Council at stated periods as other Council Committees do.

(4) That a separate day and hour be set aside for Maternity cases at the Centre if thought advisable.

YEARDSLEY-CUM-WHALEY**Urban District.**

Population and Area.—Population at last Census (1911) 1,659. Estimated population (1919), 1,704.

Area of district (exclusive of area covered by water) 1,323 acres.

General Conditions.—With regard to the physical features of the district it is approximately 600 feet above sea-level, but the height in places runs up to 1,000 feet or more. The area lies in one of the upper reaches of the Mersey watershed, amongst the foot hills of the Peak.

The surface of the area of the district is very diversified: in parts mill stone grit rock, in other parts clay or sand.

The chief occupations of the district are calico-printing, cotton weaving, cotton bleaching and colliery work.

Births, Deaths, &c.—The number of births registered in the district during the year 1919 is 20, equal to a birth-rate of 11.7 per 1,000 persons living.

The number of deaths registered within the district is 16. To these have to be added six deaths of residents which occurred away from the district and which have been transferred back to it, making the total number of deaths for the year 22. The death-rate is 13.4 per 1,000 as compared with 20 for the previous year.

There have been no deaths of infants under one year of age, which is very satisfactory.

Yeardsley-cum-Whaley Urban District.

Hospitals.—The Manchester Royal Infirmary, the Stockport Infirmary, the Manchester Royal Eye Hospital and St. Mary's Hospital, well supply the needs of the district for urgent surgical and medical cases and a number of cases are treated at these institutions annually from the district.

Water.—The water supply of the district continues satisfactory as regards quality, but during the summer months there is nearly always more or less a shortage and I think this one of the most serious undertakings for your Council to consider, as I have urged in former reports.

The river flowing through your district is the River Goyt, which is directly under the Mersey and Irwell Joint Committee so far as the control of pollution is concerned.

Drainage and Sewerage.—Most of the district is supplied with a sewerage system. Those parts without a sewerage system are Stoneheads, Hockerley and part of Hockerley Lane and outlying farms. Five houses have recently been connected to the main sewer, and plans are being prepared for other houses to be connected up.

Closet Accommodation.—The approximate number of each type: Privy, 303; Water closets, 120.

Scavenging.—This is done by the Council, but I should like to see it more systematically carried out. During recent years 40 movable ashbins have been substituted for fixed receptacles.

Infectious Diseases.—During the year 24 cases of infectious diseases have been notified, compared with 9 cases in 1918. This seems a big increase, but of these, 18 were of measles. There were 4 cases of scarlet fever and 2 of influenzal-pneumonia. The cases of scarlet fever were of a sporadic character, not being associated with any other known cases of the disease. Two of the cases of scarlet fever were removed to the High Peak Isolation Hospital, 1 to the Hyde Isolation Hospital and 1 case was satisfactorily isolated at home.

Your Council provides a supply of diphtheria antitoxin, but none has been required during the year.

I should like to impress upon the Council the necessity for making some arrangement for the bacteriological examination of

Yeardsley-cum-Whaley Urban District.

swabs and sputum, etc. There has only been one case of tuberculosis during the year, which is highly satisfactory.

At the latter end of January, influenza was again epidemic in your district and continued until the end of March, resulting in three deaths from this disease.

Housing.—The housing has been much discussed at the Council Meetings. I quite realise that houses cannot be built without an adequate supply of water, but it is to be deplored that the Council have no housing scheme ready to place before the Ministry when the opportunity for building and the supply of water is finally available. The general standard of housing in the district is good.

General.—I trust the Council will tackle the Mill Race without delay and not leave this matter to hang on until the summer months. It is in urgent need of cleaning out, as at present most of the water which is surface-water is dammed back owing to the silting up of the race under Market Street and I would suggest that the Council have this water piped right down to the river.

A complaint was made during the year with regard to smoke issuing from one of the mill chimneys. Steps were taken in the matter and things were somewhat improved, but there is still room for a great deal more improvement and I hope your Inspector in the coming year will deal severely with those who are committing a smoke nuisance.

Finally, in my last report I referred to the advantages of increasing the area of your district. A Public Meeting was held in the latter part of the year, when it was unanimously carried that amalgamation was urgently needed. I hope that this very desirable step will be accomplished in the near future, as I am confident that no marked progress can be made in the development of your district until this is brought about.

BUCKLOW

Rural District.

Water Supply.—Three water certificates were granted for new houses, when a wholesome supply of water had been provided under the provisions of the Public Health Water Act, 1878, Section 6. The three houses were supplied with a piped service from the mains of the Manchester Corporation.

Six samples of water were submitted for analysis to the County Analyst during the year from the following townships:—

Northenden	...	1 sample
Peover Superior	...	1 „
Ollerton	...	1 „
Rostherne	...	1 „
Mobberley	...	2 samples

The results showed two as satisfactory supplies and four as unsatisfactory. Action was taken with regard to the four to obtain a satisfactory supply in each case. One of the two satisfactory samples was submitted to bacteriological examination and proved satisfactory from that point of view.

The consideration of a public water supply for the townships of Mobberley and Carrington has been proceeded with. So far as Mobberley is concerned, the investigations carried out as to the possibility of obtaining an adequate and wholesome supply from the outcrop of two springs at Dairyhouse Farm shows the water to vary much in quantity and quality and therefore such a supply, on account of insufficiency, cannot be recommended. It is to be hoped, for the welfare of the inhabitants of this township, that suitable arrangements can be made with the Stockport Corporation to obtain a bulk supply from their main at Warford, which would be adequate for all purposes and is situate within 300 yards of the township boundary.

Information has been computed, with a view to an extension of water main in Carrington from the existing Manchester Corporation main near Partington Station. At the moment of writing this scheme is held up, pending a decision of the Cheshire County Council to purchase a large area of this township for small-holdings. The extension should be carried out at an early date.

Rivers Pollution.—Many inspections and enquiries were made as to the rivers in the district. Several samples were taken for examination, but none were submitted for analysis. Where pollutions were discovered from private premises these were dealt with immediately. When the pollutions were

Bucklow Rural District.

from Sewage Works the matter was referred to the Mersey and Irwell Joint Board. Mobberley Brook was polluted from the Wilmslow Sewage Works and the cause was said to be due to the breakdown of the pumping apparatus. Duplicate pumping apparatus would perhaps (?) prevent further pollution.

The pollution of Sinderland Brook was found to be from the Altrincham Sewage Works and proved to be done deliberately. Carefully concealed outlets had been constructed under the bed of the river and discharging in the centre. This had been going on for many years and was found on the river being cleaned out by the Cheshire War Agricultural Committee's staff. It is well that the guilt has been proved, but there does not appear to be a proper penalty for such conduct. Since the mystery was solved there has been great improvement shown.

Drainage and Sewerage.—Fourteen houses were completely re-drained during the year and amendments carried out to 33 others. In all cases the water-test was applied and the drains proved to be sound and tight before being covered in. Fifty-four lengths of drains were tested in this way. Ten privy-closets and four pail-closets were abolished and water-closets substituted. Dustbins were provided to each house in lieu of the middens and ashpits abolished.

Sewer Extensions.—Short lengths of sewer extensions have been carried out at Albert Road and Palatine Road, Northenden.

Scavenging and Removal of Refuse.—The scavenging of Dunham Massey and Timperley has been carried out by the Council's own staff of workmen and in the townships of Northenden, Northen Etchells, Mobberley and Styal by contract. The following is a return of the accommodation in each township:—

	Houses.	Dry Ashpits.	Dust Bin.	Middens.	Pails.
Timperley ...	15525	695	13858	366	1830
Dunham Massey ...	10278	205	13106	124	34
Northenden ...	9298	239	8100	492	39
Mobberley ..	1389	145	28	44	1320
Northen Etchells ...	1570	—	1480	—	906
Styal ...	4172	49	457	48	3720
Total ...	42232	1333	37029	1074	7849

The refuse is removed regularly in the various townships. Pails and some of the dustbins are cleared weekly, other dustbins fortnightly and ashpits and middens about every six weeks.

The question of disposal of refuse in the townships of Northenden, Dunham Massey and Timperley has become a serious matter. Suitable tipping places are almost exhausted and the question of other means of disposal has now to be considered. The present arrangements are both unsatisfactory and insanitary.

A special report on this matter will be prepared and presented to the Committee concerned as soon as possible.

Statistics—

Estimated population, 24102.

Average number of persons per house, 4.6.

Population at Census 1901, 19850.

„ „ 1911, 22870.

Area of District in Acres (exclusive of area covered by water)) 57642—544, 57098.

Milk Supply.—Inspections of dairies and cowsheds have been carried out. Very little has been done with regard to the carrying out of structural alterations. Particular attention was given to the cleanliness of vessels, cowsheds, cows and attendants. I regret to state that the standard in this respect has fallen considerably when compared with our pre-war standard. The regulations will be rigorously enforced and any defaulters discovered will be at once reported to the Council for legal action to be taken. There are in the district 528 cow-keepers, 242 being milk-sellers and 6 milk-sellers not being cow-keepers. One tuberculous cow was reported by the Medical Officer of Health of Manchester. The cow and farm implicated was in Aston-by-Budworth. The cow was slaughtered and disposed of.

Housing—

Houses inspected under S. 17, Act of 1909	...	78
„ found unfit...	...	1
Number of representations to Local Authority	...	1
„ closing orders made	...	1
Houses where defects remedied without closing orders	...	18

Bucklow Rural District.

Number of houses within limits of rent of S. 14 ...	3120
„ notices served on such houses ...	41
„ closed ...	nil
„ back-to-back houses ...	nil
„ cellar dwellings ...	nil

The work under these Acts was proceeded with and 78 houses were inspected. One representation was made to the Council in respect of one house unfit for human habitation and a closing order issued. This was a very bad case. The cottage was a very old one and had been closed (voluntarily) for a number of years and had been allowed to be again occupied by the new owner. It was in a very dilapidated and dangerous state and the general conditions deplorable. Defects were remedied without closing order at 18 houses. Particular attention was paid to the township of Carrington and the inspection of this township was almost completed. The cottages here are of a low standard, let at a cheap rent and some of them are occupied by old persons rent free. From a health point of view there is room for much improvement and several new cottages are required. The defects were those usually attached to this class of property and need not be detailed. The work will be pushed on with during 1920 and I hope to be able to show more satisfactory progress in the next report. The estimated number of new houses required in this district and for each township is as follows:— Ashley 4, Baguley 12, Carrington 14, Marthall 6, Ollerton 4, Peover Inferior and Superior 8, Ringway 12, Styal 12, Tabley Inferior and Superior 12, Northenden 25, Partington 25, Mobberley 24, Northen Etchells 12, Timperley and Dunham 250 and Warburton 2, making a total of 422 houses.

Canal Boats.—During the year 57 boats have been inspected in 25 visits. They were registered to carry 207 persons and on inspection were found occupied by 109, viz.:—

Men ...	57
Women ...	46
Children (all under school age) ...	6
	<hr/> 109 <hr/>

No infectious cases were reported or met with during the year. Three complaint notices were sent out for—

- (1) No water vessel on board.
- (2) Markings indistinct.
- (3) No certificate on board.

Bucklow Rural District.

The counterfoils in each case have been returned, certifying that the alterations necessary had been carried out. The boats generally were found clean and in a satisfactory condition, with the exception of those named above.

Hospitals.—There is ample accommodation in the hospitals of the Manchester Corporation, which is under agreement with the Bucklow Joint Hospital Board. We have nothing to do with Hospital administration.

Infectious Diseases.—Bacteriological investigations are made at the Manchester Public Health Laboratory. The work is most valuable and is excellently performed. Thirty-nine specimens were examined for us in 1919, twenty-eight in suspected cases of diphtheria, four typhoid, six tuberculosis and one dysentery. The cases are visited on notification and inquiries made as to origin of the infection. With few exceptions the cases are treated in the Manchester Isolation Hospital, under the scheme of the Bucklow Joint Hospital Board, of which the Bucklow Rural District Council is one of the constituent authorities. This arrangement is an excellent one and has worked satisfactorily throughout the year. There has been no small-pox and no vaccinations have been performed by the Medical Officer of Health under the Public Health (Small-pox Prevention) Regulations, 1917.

Tuberculosis.—With a few exceptions (for special reasons) the cases are visited by me. There is no scheme of treatment except the County Council's. I think I notice improvement in the rate of admission to Sanatoria. For advanced cases the beds retained by the Bucklow Joint Hospital Board in Baguley Sanatorium are available, but only one Bucklow case was so admitted during 1919. Premises are disinfected after a death from this disease and on other occasions. Notification by medical practitioners is, I think, as prompt as is to be expected in a disease of this character, but as regards notification by School Medical Inspectors, either the regulation is a dead letter or there have been no cases discovered in the schools in this area during 1918 or 1919.

Owing to removals, unconfirmed diagnoses, notification of extremely chronic cases by Army Medical Boards, etc., it would serve no useful purpose to make out statistics of the termination or present states of notified cases of tuberculosis, but out of 49 cases of pulmonary tuberculosis notified during 1917 and 1918, I know 19 have already died. The only cases

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of apparent cures I know of amongst notified cases are a few, mostly in children, where the notification was sent on evidence which did not justify a certain diagnosis. In all I have seen in three years as Medical Officer of Health there has been nothing to change my opinion formed after experience in various kinds of medical practice that although Sanatorium treatment, like many other methods, has a place in a complete equipment for dealing with tuberculosis, there are few real cures of undoubted cases to be attributed to it and more energy and money should be spent on preventive measures, even if this should entail less Sanatorium provision. A similar remark would apply with even greater force to the expenditure, financial and otherwise incurred in maintaining tuberculosis dispensaries and in following up cases, keeping records and compiling statistics, of which surely there are enough already. I know this is the day of "Schemes," but I firmly believe that the Bucklow Council can save more individuals from death from tuberculosis by attention to the healthiness of the houses, workshops, offices, cowsheds, etc., in its district and so diminishing the number of persons affected, than can be saved by any scheme of the County Council (or any other body) for dealing with persons already ill with the disease, however great the elaboration or paper efficiency of such scheme may be.

CHESTER
Rural District.**Vital Statistics for 1919.—**

Area ...	...	...	...	35,517 acres
Census Population	...	...	...	12,448
Population estimated to June 30th,				
	1919 (for births)	...	...	11,267
Do.	(for deaths)	...	...	10,816

Births.—During the fifty-two weeks of the year ending December 31st, 1919, the returns of the Registers recorded 156 (nett) births, which is equal to a birth-rate of 13·8 per 1,000 of the population.

Deaths.—The nett total number of deaths was 134, which is equal to a death-rate of 12·3.

Chester Rural District.

There were 8 deaths from phthisis and two from "other tuberculous diseases."

Infant Mortality.—There were 13 deaths under one year of age, giving an infant mortality rate of 83·3 per 1,000 births.

Water Supply.—Chester Rural District is supplied by the Chester Water Company, by the Wrexham Water Company and by the West Cheshire Water Company. The out-lying parishes are supplied by springs, dip-wells and ordinary wells. These waters are fairly wholesome and sufficient, except in the parishes of Mickle Trafford and Ince and parts of Mollington and Lea. The water supply of Dunham Hill is satisfactory, arrangements having been made with Runcorn Rural District to supply from their Waterworks at Helsby. Ince is still under consideration.

No extensions have been carried out during 1919.

Pollution of Rivers and Streams.—In the Chester Rural District some of the streams are polluted or are likely to be polluted. At Great Saughall the stream is polluted by the house drainage of the whole village. A second sewage scheme has been prepared for Great Saughall and has been accepted, but the work has not been commenced owing to the war. House drainage pollutes the River Gowy at Mickle Trafford and has been before you for consideration and some cottages pollute the brook at Abbots Mead. No manufacturing waste or effluents caused pollution.

A filter bed at Balderton treats a good portion of the Dodleston sewerage, as well as Balderton.

A similar filter bed has been provided for Poulton.

There have been no complaints during 1919 as to the disposal works in your district.

Infectious Diseases.—There were 99 cases of infectious disease notified during the year 1919.

Eight of the diphtheria cases were removed to Hospital, 24 cases of scarlet fever and one enteric—33 in all; and two cases of scarlet fever were removed in error to Clatterbridge I. D. Hospital.

Chester Rural District.

Housing.—Since my last Report we do not seem to be much more forward with regard to building operations. The sites have been passed and you have decided to build 150 Houses. The following parishes to have numbers as detailed, viz. :—Upton, 8 ; Eccleston, 4 ; Great Saughall, 38 ; Mollington, 14 ; Newton, 24 ; Pulford, 4 ; Backford, 8 ; Doddleston, 4 ; Mickle Trafford, 2 ; Dunham Hill, 14 ; Wervin, 4.

The cottages to be built will have, approximately, an eighth of an acre of land attached to each and will contain parlour, kitchen, scullery, with room and provision for bath if required, coal-shed and w.c., or pail-closet and three bedrooms.

General Housing Conditions of the District.—

No. of houses, 2,020.

No. for working classes, 1,592.

New houses, or in course of erection, 1,919 ; erected three bungalows and three houses (six).

Population, 13,680. Anticipated changes, none.

Extent of shortage or excess—150 houses.

Measures taken or contemplated to meet shortage—
Scheme in hand.

CONGLETON**Rural District.****Vital Statistics—**

Population at Census 1911, 12,845.

Birth-rate per 1,000, 17.04.

Death-rate per 1,000, 13.3.

Deaths under one year per 1,000 births, 118.44.

Death-rate from the seven principal zymotic diseases, .38.

Infectious Diseases.—I have received 52 notifications of infectious diseases other than measles, namely, typhoid 1, scarletina 30, malaria 3, diphtheria 6, erysipelas 2, chicken-pox 2, whooping cough 8.

Sixteen cases of pneumonia were reported. They were mostly following the epidemic of influenza in the early part of the year.

Congleton Rural District.

Thirty-seven cases of measles were reported. Most of these cases occurred at Wheelock, Malkins Bank and Elworth in the latter quarter of the year.

Influenza.—I propose to act in accordance with the advice of the Ministry of Health and fix up a rota of nurses who have time at their disposal and also have passed the St. John's or Red Cross Classes to undertake to help nursing in time of epidemics of influenza. I also should like you to appoint a small Committee to have power to act in case of another epidemic and do what they thought advisable.

Isolation Hospital.—This has been used for several cases and has given every satisfaction to the district.

Water Supply.—A good deal of this district is supplied by local wells. Mow Cop is still without a satisfactory supply and also Mount Pleasant. The supply at Hassall and Betchton is not good and I hope the Council will be able to remedy this, this year. The Supply at Holmes Chapel is taken from the Middlewich Urban District but is not very satisfactory as the supply is very intermittent.

Cranage and Newfold Astbury both want a supply.

Sewage Disposal Works.—There has been great improvement in the Sewerage Disposal Works at Holmes Chapel, a new tank has been supplied and I think now the sewerage is very satisfactory. Malkin's Bank Sewerage is very satisfactory in its working. Elworth.—This Scheme at present is not satisfactory, it is very concentrated and trade waste getting into the sewerage interferes with the working, but I think we shall divert the trade waste and the beds will work better after being cleaned out. Mowbank is badly drained but I must specially call the attention of the Council to Thurlwood where the sewerage is in a very bad condition.

Pollution of Rivers.—The trade refuse from Birchenwood Colliery in Staffordshire and the refuse from Brunner Mond, Malkin's Bank, still pollutes the river Wheelock, rendering it unfit for the cattle.

Housing.—No houses have been inspected under the Act of 1909, but 29 new houses are being built and the Council are going to proceed with the Housing Scheme for the district which will be carried out in accordance with the plans with the Ministry of Health.

DISLEY

Rural District.

Population.—Census 1911, 2,958.

For the year 1919, the population has been estimated by the Registrar-General.

He gives two figures.

One, the "Death-rate" population, excludes all non-civilian males, whether serving at home or abroad. This is given as 2,997.

The other, the "Birth-rate" population, includes all the elements of the population contributing to the birth and marriage rates. It consists, therefore, of the "death-rate" or civilian population plus all non-civilian males from the district.

The figure for this is given as 3,122.

Physical Features and General Character of the District.—The elevation of the district varies from 340 ft. (o.d.) at the river level to nearly 1,200 ft. (o.d.) on the hill tops. The main road is 600 ft.

The subsoil is generally clay, overlying the gritstone.

The chief occupations are textile and agricultural.

An Ambulance has been given by the Red Cross Society to serve New Mills and District and Disley has shared in the benefit.

Births and Deaths.—There were 44 deaths. The death-rate was 14.68. There were 41 births. The birth-rate was 13.1.

The Birth-rate is low and is less than that for the country generally.

The Death-rate is somewhat higher than that for the country generally.

There were four deaths of Infants under one year of age

The infantile mortality rate was 97.5.

Disley Rural District.

This is a high mortality and must be ascribed to the prevalence of acute Infectious Disease.

Water Supply.—Higher Disley is still without a proper supply of water.

There are a few houses whose supply, obtained from private sources, might be improved. Five samples of water were examined bacteriologically. In three cases the water was found unfit for domestic use.

Rivers Pollution.—The stream which divides your district from Newtown is polluted by sewage. Steps should be taken to remedy this.

Drainage and Sewerage.—Newtown is still without a proper system of sewers.

This should be remedied without further delay. Most of the cases of diphtheria in Disley have occurred in the Newtown district and although it has not been shown that insanitary conditions generate diphtheria, I am of opinion that the disease, once started, lingers longer in insanitary surroundings.

In Furness Vale, although there is a proper system of sewers, the houses are not connected therewith. Only seven are so connected ; four of them this year. I would urge the Council to expedite these connections. The proposed extension of the disposal works was held up by the War.

Refuse Disposal.—The Sanitary Inspector reports that the privies are rather a source of anxiety. I fully endorse his opinion that these should be converted to water closets as soon as possible. Scavenging is done by the Council.

Infectious Disease.—There was a recrudescence of influenza in the Spring ; but the epidemic was not so severe as in the previous year. Two deaths were attributed to this disease.

Diphtheria has been prevalent since the beginning of July. There were 30 cases and two deaths, one at home, the other at Hyde Fever Hospital. 17 of the cases and one "carrier" case were admitted to Hyde.

Medical practitioners have availed themselves of the facilities for diagnosis afforded by the Public Health Laboratory, Manchester. Your Council has provided for the free issue of

Disley Rural District.

antitoxin. Most of the children affected attended the Newtown Council School and "swabs" were taken from all the pupils by the Derbyshire Public Health Authority. Only two "carrier" cases were discovered from your district. One of them was isolated at home, the other went to Hyde.

The milk supply to the houses mainly affected was examined bacteriologically, but no diphtheria bacilli were found. The epidemic had not the character of a milk-borne infection.

It was found that several cats had died of, or were destroyed on account of severe throat trouble. This was probably diphtheria: these cats were probably secondarily infected and may have had an influence in spreading the disease.

I think the Council might issue a notice advising the destruction of any animal suffering from severe throat symptoms. I have several times visited Albert Terrace, but could find no obvious cause of the epidemic. The Nuisance Inspector accompanied me on one occasion and some sanitary defects were attended to.

Dr. Parsons of the Ministry of Health held a conference with the Medical Officer of Health for New Mills and myself, but we could not trace the cause of the epidemic. I understand that Dr. Parsons also visited Albert Terrace to make investigations.

Measles was epidemic during the year. 111 cases were notified. The cases occurred from the beginning of the year to late Autumn, with special incidence in April and May. One death was attributed to this disease.

Tuberculosis.—There were six cases of phthisis pulmonalis and one of other tuberculosis. Four cases died of phthisis, giving a mortality rate of 1·3.

Isolation Hospital, &c.—The hospital accommodation available for infectious diseases is ample and has been fully utilized for diphtheria.

The Council is to be congratulated on granting full facilities for bacteriological examinations at the Public Health Laboratory, Manchester. Medical Practitioners have fully availed themselves of this privilege, which has been of great service in suspected diphtheria cases, especially.

Disley Rural District.

Pathological specimens were sent to Manchester, 11 of which related to diphtheria. In addition, two samples of water were sent for analysis.

Housing.—There are 644 houses for the working classes. No new houses were erected during the year. There is a shortage of houses in the Newtown district. The Council has decided that 30 houses are required under the recent Housing Act.

MACCLESFIELD

Rural District.

The Natural and Social Conditions of the District.—

AREA AND POPULATION.—The Rural District of Macclesfield is situated in the East of the County of Chester and adjoins Derbyshire on the East and Staffordshire on the South-east and South. It consists of 79,495 acres and surrounds the Borough of Macclesfield and the Urban District of Bollington, its diameter being about 15 miles. It is largely drained by the Rivers Bollin and Dean, which run through it in a northerly direction and by the Goyt and the Dane, which respectively form part of the eastern and southern boundaries. The district is divided naturally into a hilly eastern portion and a lowland western portion, this division corresponding with a geological "fault" running almost direct north and south through the district in a line indicated fairly accurately by the direction taken by the Great Central and the North Stafford Railways. East of this fracture, the physical features contrast very strongly with those on the western aspect. On the eastern side are lofty hills rising nearly 1,800 feet above the sea level and in many parts consisting of barren moorlands suitable only for grazing; while on the west the district is well wooded and capable of being highly cultivated. The London and North-Western, the North Stafford and the Great Central Railways traverse the district, as also does the Macclesfield Canal.

The Rural District consists of thirty-seven townships, which are grouped into five registration sub-districts.

The population of the district at the last Census of 1911 was 16,629 and the estimate of the population in 1919 by the Registrar-General is:—

For Birth-rate	...	...	16,003
For Death-rate	...	...	15,362

Macclesfield Rural District.

These estimates are mainly derived from the rationing returns and in the case of the birth-rates include men of the Army and Navy, as these contribute to the birth and marriage rates of the district. The great majority of the population are engaged in dairy farming. The larger portion of the milk produced is supplied to the neighbouring towns and to Manchester, while the remainder is manufactured into Cheshire cheese. The other principal industries are quarrying, coal-mining and silk-printing. — Some of the male inhabitants find employment in adjacent districts as calico printers and cotton spinners, a few of the women being engaged in felt hat trimming and the making of blouses and shirts.

It cannot be said that any of these occupations has a deleterious effect upon the health of those employed.

Births.—The total births of which I received notice were 210, while the Registrar-General's figures are 214. The illegitimate births are returned to me as being eight in number, while the Registrar-General records 14.

The birth-rate for the district is 13.12 per 1,000 living.

Deaths.—The gross total number of deaths registered within the district during 1919 amounted to 169, from which has to be deducted 13 deaths of non-residents and to which 35 deaths of residents—not registered in the district—have to be added, thus giving a total nett number of deaths of all ages of 191. The death-rate calculated upon the estimate of the population, as supplied by the Registrar-General, is 12.43 per 1,000 per annum, which is 1.01 per 1,000 lower than last year.

Thirteen deaths occurred in children under 12 months, seven of these being in children less than one week old.

Water.—As might be expected in a Rural District which comprises villages, isolated farmhouses and scattered cottages, the sources of the water supplies are varied. Some parts of the area adjoining Urban Districts with water undertakings are supplied from these. Thus parts of Poynton, Chorley, Great Warford and Woodford are directly supplied by the Stockport Corporation; Upton, Prestbury, Tytherington, Butley and Adlington obtain water from the Macclesfield Corporation under Section 61 of the Public Health Act, 1875; water is conveyed to Eaton from Buglawton Urban District

Macclesfield Rural District.

Council Waterworks and Bollington Urban District Council supply 11 houses in Rainow, two in Tytherington and one in Butley.

Taxal is supplied from this Council's water undertaking. Approximately 350 houses in the district are supplied from these sources.

Other parts of the district are provided with water from supplies privately owned. In this way 580 houses in Poynton receive water from Lord Vernon's waterworks; 80 houses in Hurdsfield from Col. Brocklehurst's waterworks; 95 in Rainow from Mr. Allen's and 104 houses in Sutton from that of Mr. Whiston.

In the more rural portions a large proportion of the inhabitants is dependent for its water supply upon springs and shallow wells in the vicinity of their houses.

During the year eight samples of water were analysed chemically and in six cases unfavourable reports were received. Steps were taken to trace and check the source of contamination or an alternative supply was adopted.

Closet Accommodation.—There are approximately 3,500 closets in the district, by far the most common type of which is the combined privy-ashpit. Of these it is estimated there are 2,910, the remainder being—water-closets 330 and pail-closets 260. During the year 1919 ten privy-middens have been converted into water-closets.

Scavenging.—No provision is made by the Council for the removal of house-refuse, or the cleansing of earth-closets, privies, cesspools, &c., this work being chiefly carried out by the occupier at irregular intervals. Public tips are provided in five townships.

Milk Supply.—The supervision of dairies and cowsheds has been diligently performed and 240 visits to these have been made during the year. Three cases of tuberculosis of the udder of cows were detected in the district by the Manchester Health Authorities. In each case the cow was slaughtered and where defects in the cowsheds were found the owners were required to have the necessary work carried out.

Macclesfield Rural District.

Infectious Diseases.—During the year 202 cases of infectious diseases have been notified. These were as follows:—Diphtheria, 12 cases; erysipelas, 7 cases; scarlet fever, 16 cases; malaria, 3 cases; measles, 146 cases; tuberculosis (all forms), 10 cases; poliomyelitis, 1 case; pneumonia, 7 cases.

The cases of measles occurred principally in the township of Poynton and the adjacent townships during the months of June and July. No "return" cases of scarlet fever were recorded. The cases of malaria were recurrent attacks, the original disease having probably been acquired during service in Salonika. The case of poliomyelitis occurred in a boy of nine years of age and has resulted in complete paralysis of both legs.

Tuberculosis.—As stated above ten cases of tuberculosis have been notified in 1919—four males and six females. Of these two were non-pulmonary, the fibula and the spine being affected, the lungs also being affected in the second case. One of the cases of pulmonary tuberculosis was transferred from Northampton and was only resident in the district a few months prior to his death. Each of these cases has been investigated on receipt of notification, printed and verbal instructions being given as to the means of preventing the spread of the disease.

Isolation Hospital.—The Hospital accommodation available for infectious diseases consists of:—(a) 14 beds at the Macclesfield Corporation Isolation Hospital for ordinary cases and (b) two beds in the Hyde Corporation Small-pox Hospital for cases of this disease, with further provision if necessary.

Housing.—(I.) General housing conditions in the District.—There are estimated to be 3,700 houses within the district, of which 3,210 are for the working classes. No new working-men's dwellings were erected during the year.

It is estimated that there is a shortage of houses in 15 townships and at the present time the District Council is proceeding with a scheme for the provision of 150 houses to meet the deficiency.

(II.) OVERCROWDING.—This is not considered to exist to any marked extent and where cases arise, the evil can usually

Macclesfield Rural District.

be remedied by an inter-change of houses. The absence of building operations during the past six years may be reckoned as the chief contributing cause.

(III.) **FITNESS OF HOUSES.**—A reasonable standard of housing exists throughout the district. The chief defects noted on inspection are damp walls due to dilapidations and to a smaller extent defective drainage. When nuisances are observed or where a working-class house is not “in all respects reasonably fit,” the usual procedure is to report the facts to the Health Committee, who issue instructions that a formal notice should be served, to be followed up by a legal notice or by a Closing Order as the circumstances may demand. The chief difficulties in remedying defects are due to indifferent house agents, inability to obtain material and the excessive cost of material and labour.

(IV.) No unhealthy areas exist within the district.

(V.) **STATISTICS FOR THE 12 MONTHS ENDING 31ST DECEMBER, 1919—**

1. No complaints were made in respect to any dwelling-houses being unfit for human habitation.

2. The number of houses inspected during the year under Section 17 of the Housing Act, 1909, was 560, one dwelling-house being unfit for human habitation, while the number of dwelling-houses in which the defects were remedied without making Closing Orders was 75.

3. No action has yet been taken under Section 28 of the Housing Act, 1919.

4. *Closing Orders.*—One representation was made to the Local Authority with a view to making a Closing Order, which was subsequently carried out. No Closing Orders were determined on the houses being made fit for human habitation.

5. There were no demolition orders made during the year and no houses were demolished voluntarily or in pursuance of orders.

MALPAS

Rural District.

Population.—

Census, 1911	...	...	4,643
Population estimated in 1919—			
For Birth-rate	...	...	4,473
For Death-rate	...	...	4,294

Births.—During the fifty-two weeks of the year ending December 31st, 1919, the returns of the Registrars recorded 79 births (corrected), which is equal to a birth-rate of 14·2 per 1,000 of the population. There were four illegitimate births.

Deaths.—The total number of deaths was 61 (corrected), which is equal to a death-rate of 14·2. Nine residents died out of the district. Eleven of the total deaths occurred in children under one year of age. The number of deaths from influenza was three.

Water Supply.—Malpas Rural District is supplied largely from the Liverpool Corporation main. The main runs through the town of Malpas which it supplies, also the parish of Bickley, a farm and two cottages at Oldcastle and part of Norbury. Other parishes are supplied from public or private wells. The supply is constant and there are no complaints as to action on lead. There is a sufficient supply except in dry weather and the wells are fairly free from the risks of pollution. Three samples of water were chemically analysed during the year.

No extensions have been carried out.

Pollution of Rivers and Streams.—In the Malpas Rural District there seems to be little pollution of the streams except from house and farm drainage. The farm drainage and sewage is nearly all dealt with on the land. No manufacturing waste or effluents cause pollution.

New works of sewerage have been carried out at Whitchurch Road. Last year a new settling tank was made and the filter beds renewed and better distributing arrangements made this year. The sewage for Malpas Town is disposed of by bacteriological treatment. There are three outfalls, one at Wells Lane, one at Whitchurch Road and one at Wrexham road, each consisting of a sedimentation tank which empties on to three lots of filter beds, arranged in two tiers.

Malpas Rural District.

None of the district, except Malpas Town, has any system of sewers. In the small villages most of the houses have separate cesspools. Isolated cottages run their sewage into cesspools or into the nearest water-course. Most of the farms deposit their sewage on to the land. A farm at Choriton has a Dibdin's slate bed installed for the treatment of its sewage.

Refuse Removal.—The approximate number of

(a) Midden-privies	128
(b) Dry Ashpits	40
(c) Pail-closets	217
(d) Dustbins	6
(e) Cesspools	570

The present system seems fairly adequate, but improvements are needed and midden-privies ought to be abolished—pail-closets and covered dust bins or ash bins substituted.

Infectious Diseases.—There were 19 cases of infectious diseases notified during the year.

The case of diphtheria was removed to the Chester Isolation Hospital at Sealand (Malpas constituting one of the Conjoint Hospital Board with Tarporley and Tarvin).

Administration of Local Acts, etc.—None of the following Adoptive Acts are in force in your district :—

- 1.—Infectious Diseases Prevention Act.
- 2.—Public Health Amendment Act, 1907.

No other Adoptive Acts, Bye-laws and Regulations have been adopted in 1919.

There were three samples of water chemically analysed during 1919, none bacteriologically.

The amount of Poor-Law Relief for 1919 was £222 6s. 6d.

Factory and Workshops Act, 1901.

	Inspections.	Notices.	Prosecu- tions.
Factories ... ..	...	...	...
Workshops (including Bakehouses) 76	76	9	0
Workplaces ... ..	...	...	...

*Malpas Rural District.***Workshops on Register at end of year 1919.—**

Bakehouses	...	...	...	9
Blacksmiths	...	...	...	9
Wheelwrights	...	...	...	3
Tailors	...	...	...	3
Dressmakers	...	...	..	2
Saddlers	...	...	...	2
Shoemakers	...	...	...	5

Housing.—Extent of shortage or excess.—Twenty or more short. Measures taken or contemplated to meet shortage. It has been decided to build houses in the following Parishes :—Edge, Hampton, Larkton, Macefen, Malpas, Norbury, Tushingham.

NANTWICH**Rural District.****Vital Statistics.—**

Population at Census, 1911—24,995.

Estimated population (for death-rate purposes) at middle of 1919—22,798.

Estimated population (for birth-rate purposes) at middle of 1919—23,749.

Birth-rate per 1,000 living at all ages—17 6.

Death-rate per 1,000 living at all ages—14.1.

Deaths under one year of age per 1,000 births—88

Water.—The geological formation of this Rural District renders the obtaining of good water by the sinking of domestic wells extremely unlikely. As a consequence of this the Rural Sanitary Authority has had to look afield for the supply of its District. Fortunately two large water-mains traverse the District. These are the L. & N. W. Rly. Coy's main which supplies the Borough of Crewe, and the Liverpool Corporation's Vyrnwy Aqueduct. These are largely made use of and practically three quarters of the Council's area is supplied with water from these mains. But for the occurrence of the War a further large portion

Nantwich Rural District.

of the district would have been supplied from the Liverpool main ; pipes, &c., being already on the ground for the purpose. Unfortunately these pipes were re-sold and the prospects of going on with the work are not at present good on account of the greatly enhanced cost of labour and materials. The townships which would have been supplied under this scheme are Audlem, Buerton, Hankelow, Newhall, Dodcott-cum-Wilkesley, Wrenbury, Sound, Broomhall, Coole Pilate, Austerson and Baddington. All these townships are badly in need of an improved supply, their present supplies being from shallow wells, many of which show evidences of organic pollution and practically all of which are liable thereto.

Besides these townships the following need a public supply :—Hatherton, Hunsterson, Doddington, Blakenhall, Bridgemere and Walgherton.

Rivers and Streams.—The streams entering the district from the Staffordshire border all show more or less pollution by mining and chemical refuse.

Drainage and Sewerage.—Public sewerage works exist in the townships of Willaston, Wistaston, Haslington and part of Audlem. A very great improvement has taken place in the sanitary condition of these villages as a result of these works, which have been carried out during the last few years.

The townships of Shavington, Bunbury, Church Coppenhall and the remaining portion of Audlem need attention as soon as circumstances will permit.

The Sewage Disposal Works at Haslington during the summer were rendered useless for a considerable time by the discharge of sour whey into the sewers from a cheese factory.

Closet Accommodation.—The vast majority of the closets of the district are either of the cess-pit type or of the pail type, the latter being almost universal in the larger villages. These are emptied at the expense of the Council at Audlem, Willaston, Wistaston, Wybunbury, Shavington, Haslington and Bunbury.

A comparatively few water-closets exist at large private residences and in the villages where public works of sewerage exist.

Milk Supply.—The supply of milk is derived from local sources and as regards farm employees has been generally speaking adequate, many farmers supplying their work-people with

Nantwich Rural District.

milk at less than controlled prices. In the more industrial areas there is no doubt that the very high price of milk has considerably diminished its consumption.

The conditions under which milk is produced, though they have been much improved, are still in many cases far from satisfactory. The cleanliness of the hands and clothing of milkers and the cleansing of cows' udders and bodies do not receive the attention which so easily contaminable a substance as milk demands.

Infectious Diseases.—The year 1919 was remarkable for the fewness of the cases of infectious disease notified.

Scarlet Fever.—Cases occurred in fourteen of the townships. In no case did the disease become epidemic, a fact which would appear to denote that all the cases which occurred were notified and thus efficiently isolated during the infectious period.

Diphtheria and Membranous Croup.—Cases occurred in twelve of the townships. The same remarks as made above with regard to scarlet fever apply also to this disease. Anti-diphtheria serum is supplied by the Council.

Puerperal Fever.—Three cases were notified—one from Hough and two from Bunbury. The case at Hough occurred in February and rapidly proved fatal. The two cases notified from Bunbury occurred in August and November respectively. They were exceedingly mild cases of rise of temperature following confinement and made good recoveries. Careful instructions were given to the midwife in charge of these cases and I satisfied myself that no blame attached to her as regards her treatment of the cases at the time of the confinement.

Pneumonia.—This disease became notifiable when the influenza epidemic of the spring had largely died out. Six cases were notified during the year. I am certainly of opinion that more cases than were notified occurred in the Rural District. It was chiefly dying cases which were reported. The Council has taken no steps as a Council for the provision of nursing for cases of pneumonia, but the district is largely covered by a scheme of district nursing on a voluntary basis and I see no reason at present to advise the Council to embark on a scheme of its own. It might well take into consideration the subsidising of District Nursing Associations in places where it is difficult to find the necessary funds.

Nantwich Rural District.

Malaria.—Eight cases, all recently demobilised soldiers, were reported during the year. In no case was any spread of the disease noted. I have been in touch with practically all these cases at fairly frequent intervals and have every reason to believe that they have been efficiently treated. I have not found it necessary to advise that it was necessary to provide mosquito netting in any case.

Measles and German Measles.—Sixty-two cases were reported during the year. I have always been of opinion that the compulsory notification of measles was of no advantage to the public health and I am glad that the Ministry of Health has rescinded the Order. I have always been of opinion that all the information necessary could be obtained from the Elementary School Teachers. It is most important that the occurrence of the first case in any school should be **promptly** reported. If this is done and appropriate steps are taken at once it is in many cases in a Rural District possible to nip an epidemic in the bud. If, however, secondary cases are allowed to develop in the school practically nothing can be done except to close the school and allow the epidemic to wear itself out.

Pulmonary Tuberculosis.—Eighteen cases were notified during the year. As far as I am able to judge from observation of the cases reported it is only exceptional to find any but rather advanced and obvious cases amongst them. It is an undoubted fact that the reduction of the fee for notification by medical practitioners from 2/6 to 1/- has had a distinctly deleterious effect as regards early notification of cases of every kind of infectious disease. This small economy, which was more than discounted by the introduction of the notification of measles, has damped the enthusiasm of many practitioners, as they have felt that it was unfair to cut down their fees at a time when their expenses were increasing to an enormous extent.

It is, moreover, a fact that the enthusiasm for the notification of early cases has been largely destroyed by the difficulty which has been experienced in getting the cases put under proper conditions for their cure. There can be no doubt that the Sanatorium Benefit of the National Insurance Act has proved a great disappointment both to patients and doctors.

I am of opinion that no real progress in the dealing with the Tuberculosis problem will take place until (1) the housing difficulty is solved, (2) Sanatoria exist in sufficient numbers to receive all early cases belonging to the poorer classes, (3) Hospitals

Nantwich Rural District.

are provided for the advanced and dying cases, such hospitals being situate within reasonable distances from the patients' homes so that friends can visit under proper precautions at frequent intervals, and (4) the price of food again comes down sufficiently to render it possible with the wages received for adequate nourishment to be provided for all persons of every class.

The attempt to deal with this great problem by the injection of tuberculin at dispensaries or by other measures of a like class without the above essentials is equivalent to the taking of a pill to cure an earthquake.

Venereal Diseases.—I am in possession of information from private sources which leads me to the belief that venereal disease is much more common in this district than it ever was in the past.

Bacteriological Diagnosis.—The Rural District Council has an arrangement with the Public Health Laboratory, Manchester, whereby specimens from suspected cases of diphtheria, enteric fever, tuberculosis, &c., can be examined without charge to the practitioner sending the specimen or to the patient from whom the specimen is obtained. These facilities are made use of to a considerable extent, more especially with regard to specimens of sputum suspected of being tubercular. Cases of suspected diphtheria are examined to a much less extent and as enteric fever is practically always absent from the district it is very seldom that specimens from cases suspected of being enteric fever are sent for examination.

The Staff of the Sanitary Department consists of the Medical Officer of Health, the Surveyor, and the Sanitary Inspector. The Sanitary Inspector acts also as Inspector under the Petroleum Acts and under the Dairies, Cowsheds and Milkshops Order.

Isolation Hospitals.—The hospital accommodation for infectious diseases consists of the following :—

(a) The Nantwich Joint Hospital Board's Isolation Hospital, Worleston, a modern hospital comprising two large pavilions and one observation pavilion with disinfection and discharge block and administration block. It is capable of accommodating twenty adults or thirty children. It is capable of treating three diseases at the same time. It is largely used by residents of the Rural District. During 1919 21 cases of scarlet fever and 22 cases of diphtheria were admitted from the Rural District. In my opinion the provision.

Nantwich Rural District.

as regards ordinary infectious disease is sufficient. A permanent nursing staff is kept at the hospital.

(b) The Small-pox Hospital, Ravensmoor, which consists of a temporary building of galvanised iron, with three cottages which can be used as administrative buildings. It is kept in good order, is in a suitable place and is in my opinion a sufficient provision for the disease it is intended to isolate. A caretaker lives on the premises and keeps the grounds and wards in good order.

The Infectious Hospitals are under the management of the Nantwich Joint Hospital Board and I hold the office of Medical Officer in charge of both institutions.

There is plenty of land adjoining the Isolation Hospital on which to erect a pavilion for the treatment of cases of advanced pulmonary tuberculosis and in my opinion such a pavilion would be of the greatest use.

General Housing Conditions of the District.—The number of inhabited houses at the Census of 1911 was 5,458, of which approximately four-fifths are for the occupation of the working classes. Since 1911 we have records of the erection of 72 houses. Since that year 27 houses have ceased to be occupied. No working-class houses were erected during the year 1919 and none are at present in course of erection.

No important changes in the distribution of the population have taken place during the year.

A Committee sat during the year and after careful consideration and after careful local enquiry in each parish came to the conclusion that there was a shortage of working-class dwellings amounting to 408. After further consideration this estimate was reduced to 308. A scheme for the erection of this number of cottages has been laid before the Ministry of Health and it is hoped shortly to proceed with this scheme.

The following table shews the number of cottages considered necessary in the district and the measures proposed for meeting the requirements :—

NUMBER OF HOUSES TO BE BUILT.

Originally proposed.	As now amended.	To be built privately.
408	294	14
	<div style="display: flex; align-items: center; justify-content: center;"> { } </div> 308	

Nantwich Rural District.

The Sanitary Department of the Council has record of 28 overcrowded houses. The causes of overcrowding are those operating in other places, the chief one being the fact that cottages of a more roomy type are unobtainable by families which have grown too large for their present dwelling-place.

No measures except the building of new dwellings or the enlargement of those already in occupation can be of any use in the prevention of overcrowding.

The general standard of houses in this Rural District is distinctly above that of the average of Rural Districts.

There are no specially unhealthy areas in the District.

NORTHWICH Rural District.

Vital Statistics.—

Population (Census, 1911)	...	...	23,270
Population for Births, 1919	...	...	24,373
Population for Deaths, 1919	...	..	23,397

The number of births as returned by the Registrar is 417 for the whole year giving a rate per 1,000 of 17.1. Of these births 198 were males and 219 females, while 21 were of illegitimate children, giving a rate per 1,000 of .86.

The number of deaths which occurred during the year was 296. Of these deaths 1 was from scarlet fever, 4 from whooping cough, 60 from influenza (59 of which occurred in the first quarter), 16 from tubercular diseases, 20 from cancer, 19 from heart disease, 3 from diarrhoea, 11 from violence, 3 from suicide and 30 from old age.

Fourteen deaths occurred in the Isolation Hospital of which 11 were influenza cases which were removed thither during the epidemic for want of accommodation or people to look after them.

Of infants under 1 year of age 34 deaths were recorded, 1 being from diphtheria, 1 from tubercle, 2 from convulsions, 10 from respiratory diseases, 11 from being prematurely born, ill-developed or malformed infants and 5 from influenza.

The general death-rate was 12.6 per 1,000 of the population.

„ infantile	„	81	per 1,000 children born.
„ illegitimate	„	5	„ „ (nearly).

Northwich Rural District.

Water Supplies.—The following table shows the source of supply in the various townships:—

	Private Wells.	Private Works.	Other Council's Mains.	N.R.D.C. own Works.	
Acton ...	...	...	...	X	
Allostock ...	X	...	...	...
Anderton ...	...	...	...	X	} Intermittent supply only
Barnton ...	...	...	...	X	
Bostock ...	X	X	X	...	
Byley ...	X	...	...	...
Clive ...	...	...	X	...	
Cogshall ...	X	...	...	...
Comberbach ...	X	...	...	...
Crowton ...	X	...	...	X	} Public fountain only
Cuddington ...	...	...	...	X	
Darnhall ...	X	X	...	...
Davenham ...	...	...	...	X	
Delamere ...	X	X	X	...	
Eaton ...	X	...	...	X	
Eddisbury ...	X	X	X	...	
Hartford ...	...	...	...	X	
Kinderton ..	X	...	X	...	
Lach Dennis ...	X	...	...	...
Leftwich ...	...	...	...	X	
Little Budworth	X	...	X	...	
Little Leigh ...	X	...	...	...
Lostock Gralam	...	...	...	X	
Marbury ...	X	...	...	X	
Marston ..	...	...	...	X	
Marton ...	X	X	X	...	} The private supplies are from Northwich Urban and Winsford Urban Councils' Mains
Moulton ...	...	...	...	X	
Nether Peover ..	X	...	...	...
Oakmere ...	...	...	X	...	
Rudheath ...	X	...	X	...	
Sproston ...	X	X	X	...	} The private supply is from Middlewich Urban Council's Main
Stanthorne ...	...	...	X	...	
Weaverham ...	...	...	...	X	
Whatecroft ...	X	...	...	X	
Wimboldsley ...	...	...	X	...	} Township mainly supplied from Brunner, Mond & Co's. private works plus a quantity from the Council's main in return for a similar quantity supplied by them to Barnton. A few private supplies from N. Urban Main
Wincham ...	...	...	...	X	
Winnington ...	X	...	...	X	

Northwich Rural District.

A total of 24 samples of water were analysed during the year. Eight were sent for chemical analysis to the County Analyst, of which six were "good," one "doubtful" and one "bad." The "bad" sample was from the High House Farm, Rudheath and to give a proper supply an extension of the Council's main to this farm was agreed upon, which will also serve a church and two houses on the line which are at present without any supply on the premises. The "doubtful" sample was afterwards submitted for bacteriological examination which gave "evidence of pollution."

Four samples from the water supply to Organsdale Farm and nine cottages and two samples from the supply to four cottages belonging to the Crown situate at Limner's Moss, Eddisbury, were sent for chemical and bacteriological analysis and the result was "evidence of pollution" in the first case and "pollution" in the second case. The extension of mains to give a clean supply is under consideration.

Three chemical and seven bacteriological analyses were made of water from various wells and collecting drains at the Crabtree Green Works and from Sandiway and Hartford mains, shewing a high degree of purity; the supply is a stable one as the present result is the same as 14 years ago.

During the year six new houses at Kinderton have been supplied from the Council's mains.

There are 12 townships without an adequate supply and which depend upon shallow wells for their water. They are Allstock, Byley, Cogshall, Comberbach, Crowton, Lach Dennis, Little Budworth, Little Leigh, Marbury, Nether Peover, Rudheath (part of) and Whatcroft.

No extensions have been carried out during the year.

Rivers and Streams.—There are upwards of 17 miles of rivers, 10 of which are navigable and 15 miles of canals within the district.

Serious sewage pollution of Norley Brook was found to be taking place from a large house outside this area. The owner has been called upon to construct adequate works to purify the drainage and the result is quite satisfactory.

Another stream—Crowton Brook—is alleged to be polluted with sewage from the same district and the matter is under consideration. Samples have been taken and submitted for analysis.

Northwich Rural District.

Drainage and Sewerage.—The following townships have Sewerage works and Outfall works :—

		Sewerage Works.		Outfall Works.				Sewerage Works.		Outfall Works.	
Acton	1	...	1	Leftwich	...	...	1	...	2
Anderton	1	...	0	Little Budworth	...	...	1	...	1
Barnton	1	...	2	Lostock Gralam	...	...	1	...	1
Clive	1	...	1	Marston	...	...	1	...	0
Comberbach	1	...	1	Moulton	...	...	1	...	1
Davenham	1	...	2	Rudheath	...	...	1	...	1
Eddisbury	1	...	1	Weaverham	...	...	1	...	2
Hartford	1	...	2	Wincham	...	...	1	...	2
Kinderton	1	...	2	Winnington	...	...	1	...	1*

* Northwich Urban and Northwich Rural Joint Outfall Works.

Closest Accommodation.—The only type of closet which does not exist in this district is the privy-midden, all the others being in evidence: the more rural parts of the district being either cesspools or pails. In the 12 most populous townships the Council undertake the scavenging by contract and in 10 of them the whole number is of the pail type whilst in the other two the majority are water-closets.

Of the 3,412 houses in these townships 2,663 are on the pail system and 749 on the water-carriage system: and of this list 210 have been built with new houses and 209 been converted under the Public Health Acts, since 1911.

Milk.—There are 396 registered cowkeepers and purveyors of milk in the district.

In accordance with recommendations of a Standing Committee of the Council, three cowsheds have been entirely re-constructed and a fourth is to be similarly dealt with when materials are available, owing to insufficient ventilation.

Owing to the general dispersion of estates in the district many farms have changed hands and the transfer of registration is not as complete as it might be although the requirements of the Dairies, Cowsheds and Milkshops Order, 1885, has been thrice advertised in each local paper. By inspection of farms the register will be complete during 1920.

The result of the inspection demonstrates that farmers are alive to their responsibilities regarding cleanliness of cowsheds, dairies and vessels, as no cause for complaint has arisen during the year.

Northwich Rural District.

Infectious Diseases.—The number of notifications received during the year (exclusive of measles) was 104. 40 were of diphtheria, 22 scarlet fever, 19 pneumonia, 12 phthisis, 5 ophthalmia neonatorum, 2 erysipelas, 2 malaria, 1 enteric fever and 1 polio-encephalitis.

Of the 40 cases of diphtheria, 30 were removed to hospital, as were 16 of the 22 scarlatina cases; the case of typhoid fever was also removed. The two cases of malaria were of returned soldiers; all the cases of ophthalmia neonatorum recovered.

Measles was prevalent in the district during the latter half of the year, 80 cases being notified.

Any practitioner can have samples of sputum, blood or throat swabs examined at the Public Health Laboratory, Manchester and diphtheria antitoxin is supplied on request, 112,000 units being supplied during the year.

Twelve swabs from infected throats were examined of which 10 were negative, one positive and one doubtful. Five samples of blood were examined for typhoid—all negative.

Isolation Hospital.—This is at Leftwich in this district and serves the whole Union. The small-pox hospital is at Marbury in this district and is administered by the same hospital board and serves the same area.

Housing.—The number of houses in this district is 5,310, of which 4,518 are estimated to be under £16 per annum rental.

Only six new houses have been erected during the year.

The population is growing and overcrowding prevalent. Considerable extensions of chemical works are in progress and attract new residents who have, of course, to reside where best they can in proximity to their work.

The number of houses is 5,310 which is an increase upon the number at the census of 1911 by 308.

The following statement shews the total of the building schemes which have actually been adopted and also those which are contemplated :—

General Housing Conditions in District, 1919.

		(1).	(2a).	(2b).	
	Number of houses in District.	Estimated number of houses under £16 R. Y.	Number of houses under £16 R. Y., erected during 1919.	Estimated shortage of Working- class Houses.	Building Schemes.
					Contemplated. Adopted.
Plus temporary Bungalows at Winnington }	5260	4456	6	611	183
	50	50	..	...	...
	5310	4506	6	611	611

Overcrowding.—The following numbers are very nearly given from known cases of two and more families living in a house :—Anderton, 7 ; Barnton, 35 ; Cuddington, 2 ; Davenham, 4 ; Eddisbury, 1 ; Hartford, 2 ; Kinderton, 8 ; Leftwich, 9 ; Lostock Gralam, 29 ; Marston, 15 ; Moulton, 30 ; Rudheath, 13 ; Weaverham, 6 ; Wincham, 16 ; Winnington, 30.—Total, 207.

The cause of this overcrowding is the want of houses and the increased industrial activity. No systematic action can be taken beyond the building schemes already mentioned, except where lodgers are the chief cause of the congestion. The standard of houses is lowered by many of the older ones being dilapidated and deficient in domestic and sanitary arrangements.

As regards the action taken with regard to “unfit houses,” the Sanitary Officer and a Committee of the Council have arranged meetings with the owners to arrange for temporary improvements. (This has at the time of writing proved very successful). The difficulty in getting “unfitness” remedied is entirely an economic one. It is no use asking an owner to spend several years’ rent on property which is not worth it. By reasonable requests the sanitary arrangements have mostly been met quite readily by property owners.

The more rural townships suffer from want of water. There are no unhealthy areas. No houses let for lodgings.

To meet the acute need for houses an effort to obtain some munition huts at Wincham and convert them into 21 dwellings was attempted and a desirable scheme adopted.

RUNCORN

Rural District.

Vital Statistics—

Population of district (1911 Census), 28,216.

Do., do., as estimated by the Registrar-General—(1) For births, 28,291. (2) For deaths, 27,159.

Births.—The births registered were 455, viz., males 239 and females 216, giving a birth-rate of 16 per 1,000.

Deaths.—During the year there were 347 deaths, giving a death-rate of 12.7 per 1,000.

Twenty eight infants died under one year of age.

Infectious Diseases.—There has been a very gratifying reduction in the number of notifications of scarlet fever, diphtheria and enteric, as compared with the previous ten years' average, attributable probably to prompt removal of patients to Hospital or frequent visits from the Inspector if not removed to Hospital; to the introduction of the motor ambulance and to new methods of disinfection.

There have been several minor outbreaks of scarlet fever and diphtheria, but neither has even become seriously epidemic. The most serious outbreak was that of scarlet fever in Stockton Heath in January, which had been introduced into the district near the end of 1918 by a boy living in the district but attending a school in Warrington and having sat next to a boy who was taken to the Warrington Infectious Diseases Hospital suffering from this disease.

During the year there have been admitted to Hospital:—

Scarlet Fever	...	...	65 cases.
Diphtheria	...	...	32 „
Typhoid	...	...	2 „

There were six deaths in Hospital during the year.

In the whole district (including the Hospital) there were three deaths from scarlet fever and five from diphtheria.

A number of cases of malaria and dysentery have been reported, but only one case of dysentery could really be termed indigenous, all the remainder occurring among soldiers or recently demobilised men. All reported cases were visited by myself or your Inspector or both and all necessary precautions advised and taken, with the satisfactory

Runcorn Rural District.

result that no second case of either of these has occurred in the same household.

Phthisis.—This disease has been very prevalent again and the cause of many deaths. Several deaths have occurred among soldiers and it would appear that Army life has contributed to the increased mortality from this disease. The Helsby district seems especially prone to phthisis—a fact difficult to explain seeing that it is built for the most part on red sandstone, of which there are high overhanging crags and that it is open to the Mersey estuary, from which it is separated by two to three miles of low-lying meadow land. Can it be that the well-known moisture-retaining properties of the red sandstone and a principally south-western aspect of the village create a warm moist atmosphere which may be conducive to the development of the causative bacillus? Frodsham also contributes to the phthisis death-rate and particularly the upper or Overton end and here again we have the red sandstone foundation, but it has a much more open aspect than Helsby and a less proportionate number of cases. Stockton Heath contributes quite a substantial number of phthisis cases—probably its proximity to the busy manufacturing town of Warrington, where many of its inhabitants are employed, accounts in some measure for this.

Two things strike one as being most likely to bring about the abolition of phthisis, namely, improved housing and factory conditions and the refusal of men and women to marry anyone known to be tuberculous. “Excessive” drinking, with its tendency to demoralize the individual and make the home a hovel, filthy and neglected, is undoubtedly a contributory cause.

The Housing Scheme.—Owing to the shortage of houses, overcrowding has been not uncommon and has probably contributed to the sickness rate. The housing scheme has been kept well to the front, several sites have been taken and plans adopted, but no new houses have as yet been erected.

During the general inspection in the Autumn under the 1919 Acts of all houses reported to be defective there were found to be in:—

- | | | | |
|----------------------|-----|-----|-----------------------|
| 1. Budworth sub-area | ... | 49 | unfit for habitation. |
| 2. Frodsham sub-area | ... | 102 | do. |

Total	...	151
-------	-----	-----

Runcorn Rural District.

Owing to the shortage of houses it was found impossible to close the above houses returned as "unfit." Over 1,000 houses were inspected altogether.

Water Supplies.—Seven samples were taken from the Budworth sub-area, of which four were unsatisfactory. Two were examined bacteriologically, one being condemned and arrangements have been made for a satisfactory supply, the other being found fit for human consumption after well and drainage improvement.

Two samples of water from the Frodsham sub-area were analysed, one from Pike Lane, Kingsley, which was found to be unfit for use and a good supply has been substituted; the other, from Kingsley Brook, was found to be exceptionally pure and good. This latter was examined owing to a complaint from the Northwich Rural District Council.

Bacteriological Examinations.—During the year there have been submitted the following specimens to the Public Health Laboratory, Manchester, viz.:—

Diphtheria	...	75—positive results	...	18
Typhoid	...	1—do.	...	1
Tuberculosis	...	1—do.	...	1
Dysentery	...	1—do.	...	1

It should be borne in mind that a large proportion of the diphtheria specimens were sent with a view to proving that patients were free from infection after having had an attack, most of which would of course be returned as negative.

TARVIN

Rural District.

Population.—Census population, 1911, 13,187. Population estimated in 1919: for birth-rate, 12,757; for death-rate, 12,246.

Births.—During the fifty-two weeks of the year ending December 31st, 1919, the returns of the Registrar recorded 225 (nett) births, which is equal to a birth-rate of 17.6 per 1,000 of the population. There were 16 illegitimate births.

Tarvin Rural District.

Deaths.—The total number of deaths was 167, which is equal to a death-rate of 13.6. Sixteen of these deaths occurred in children under one year of age.

Infant Mortality.—Sixteen deaths occurred under one year of age, giving an infant mortality rate of 71.1 per 1,000 births. Of the sixteen deaths two were illegitimate infants.

Water Supply.—The northern portion of the district is supplied partially by pipe supply and partially from public and private wells. The parishes of Ashton, Mouldsworth, Kelsall, Willington, Beeston, Tilston Fearnall, Tiverton, Saughton and Waverton, comprising about 410 houses, are supplied by pipe; the remaining parishes, with about 1,430 houses, from wells.

The southern portion of the Tarvin Rural District is supplied as to the parishes or parts of the parishes of Aldford, Buerton, Churton-by-Aldford, by the Wrexham Water Works; the remaining parishes by springs and deep and shallow wells.

The following extensions and improvements have been carried out:—

A new tube well has been made at Churton-by-Farndon.
A new well has been made at Marsh Lanes, King's Marsh.
A new well at Shochlach Hall.
New pump at Shochlach.

Four samples of water were taken and analysed chemically and none bacteriologically.

Two houses at Woodside, Ashton, are still without a proper supply and two houses at Mouldsworth. These houses could easily be supplied from the water main, the same owner owning cottages and main.

Farndon, Burwardsley, Broxton, Tilston, Churton and Tattenhall water supplies are in need of improvement.

The existing water supplies are fairly free from the risks of pollution.

Pollution of Rivers and Streams.—In the Tarvin Rural Districts all the tributary streams of the Gowy are more or less polluted by farm sewage, which should be dealt with on

Tarvin Rural District.

the land. Public Sewage Disposal Works are likely to pollute the Dee and Aldford Brook. Private Sewage Disposal Works are likely to pollute the brook at Tattenhall and the Dee at Farndon. Solid matters, accumulation of cinders, refuse, sludge, etc.—the River Dee at Farndon, the brook at Tattenhall, Tilston brook. House drainage—the River Dee at Farndon, Tilston brook, Churton Heath, Tattenhall, Milton brook at Barrow, Clotton brook from farm and house sewage, at Clotton, Guilden Sutton, from house drainage. Manufacturing waste or effluents—the Bone and Glue Works, Tattenhall Road, pollute the Gowy; the Creamery, Tattenhall; and a cheese factory at Churton Heath.

New works of sewerage have been carried out in your district during 1919, at Aldersey Hall new drainage through-out, also at Marsh Home Farm and Cottages. Farndon, Tattenhall and Churton are still without a proper system of sewerage; the two new works at Churton are being dealt with and are still before you for consideration. The sewage is disposed of in most cases into the nearest watercourse in a crude state. In some cases it is filtered before entering the stream; in other cases it is deposited on the land. There have been three complaints during 1919 as to the disposal of sewage, at Churton, Shochlach and Tattenhall. No alterations or extensions have taken place in disposal works during 1919, except the above.

Aldford village is the only part of the district with a proper system of sewers.

Refuse Removal.—Approximately there are about 1560 midden-privies, 1,200 dry ashpits, 1,000 pail-closets (emptied weekly, no record of dustbins, 780 cesspools.

There are too many midden-privies in your district. These are being condemned and the pail-closet system introduced whenever opportunity offers, but there is a difficulty in obtaining pails.

Infectious Diseases.—There were 128 cases of infectious disease notified during the year 1919.

There were three deaths from measles, four deaths from phthisis and two from "other tuberculous diseases." Of the six deaths from tuberculous diseases, four had not been previously notified.

Tarvin Rural District.

Three cases of diphtheria and one of scarlet fever were removed to Hospital.

Isolation Hospital.—The fever hospital at Sealand, Chester, Tarvin constituting one of the Conjoint Hospital Board. Ten cases in all were sent to the Fever Hospital during 1919, seven of these being scarlet fever and three diphtheria.

Housing.—It has been decided to build new houses in the district as detailed below :—

Barton	...	...	...	4
Tattenhall	...	...	...	7
Clutton	...	...	..	4
Tiverton	...	..	...	4
Clotton	...	...	...	8
Hockenhull	...	...	...	8

also at Newton, Caldicott, Coddington, Golborn David and Huntington. The numbers to be decided upon later for the last-named parishes.

TINTWISTLE

Rural District.

Statistics :—

Population (estimated) for Birth Rate	...	1987
„ for Death Rate	... ..	1907
Birth Rate per 1000 Living	... ..	12.5
Death Rate per 1000 Living	... ..	14.1
Death Rate from Zymotic Disease	...	1.04
Deaths under one year to 1000 Births	...	160

Infantile Mortality.—Four deaths of infants under one year of age were registered, being equal to a death-rate of 160 per 1,000 births registered.

Causes of death were as follows :—

Premature Birth	...	3
Marasmus	...	1

Tintwistle Rural District.

Infectious Diseases.—The following infectious diseases were notified during 1919—

Ophthalmia Neonatorum	...	2	Cases.
Scarlet Fever	...	2	„
Diphtheria	...	1	„
Measles	...	38	„

Measles.—Two cases of measles were reported on January 11th, 1919. The disease was contracted in Sheffield. The next case was not reported until February 11th, so I do not think that the infection was from the cases reported in January. The January cases were completely isolated. To the end of March 38 cases were reported, but this does not by any means represent the number of children infected. The Independent School was closed for three weeks during the month of March on account of measles.

There was one death during the outbreak.

Scarlet Fever.—Two cases reported during the year. Both occurred in the Hattersley portion of your district. One was contracted in Hyde—source of the other difficult to establish. Both cases were isolated and there was no further spread of the disease.

Diphtheria.—One case of this disease was notified from Tintwistle and proved fatal.

Tuberculosis.—Three cases notified during the year. One was a case of tuberculosis of the larynx and the other two pulmonary infection. People are being impressed upon to allow as much fresh air and sunshine into their houses as possible—that, together with preventing overcrowding, is the best means of stamping out tuberculosis in country districts. Suspected cases are sent to the County Council Clinic (Tuberculosis), Hyde.

Water Supply.—The sources of supply have been inspected. Two samples have been taken from Gallows' Cough, Matley, and Standbricks, Tintwistle. These, on analysis, have been found to be good samples of drinking water—that from Standbricks being described as first-class. No complaints have been made as regards any shortage. In Hattersley each block of cottages has its own spring or well.

Tintwistle Rural District.

Cowsheds and Dairies.—Regulation under the Dairies, Cowsheds and Milkshops' Act were made by the Council in 1901 and came into force in October of the same year. There are 52 cowkeepers registered in your district. Some of the shippens lack the necessary cubic space and others might be kept a great deal cleaner.

Refuse Disposal.—In the more rural portions of the district the refuse is removed by the occupier. Where there are a number of houses together the Inspector orders a farmer to cart it away and charges the property owner with the cost.

Sewage Disposal.—The sewage works situated at Tintwistle discharge their work well. Samples of the effluent were taken by the Inspector of the Mersey and Irwell Joint Committee and reported as good, being first on the list. The disposal plant for portion of Matley Works is as satisfactory as can be expected, seeing that there is only one set of tank and filter beds.

Housing.—The work under the above Act is in abeyance on account of the low rents, cost of material and the high wages demanded by the workpeople.

In your district there are 571 houses, 75 per cent. being inhabited by the working-class. Rents average from 2/- to 3/6 per week. No new houses have been erected during the year.

The population remains about the same. I do not see any likelihood of there being any increase or diminution in it.

There is no immediate shortage of ordinary houses with two bedrooms, but there is a shortage of houses with three bedrooms.

The Council at the present time are considering the best means of meeting this shortage.

So far as I am aware there is no case of overcrowding.

The houses are for the most part constructed of stone, covered with grey or blue slates. With few exceptions they are well built. Chief defects are: Dampness, uneven flagging of backyards, defective traps, and windows unable to be opened.

Tintwistle Rural District.

No houses have been closed on account of being unfit for habitation, but four are going to be. Owing to house shortage their closing has been postponed.

Six houses are structurally defective, but could be made temporarily habitable.

At the present time public scavenging is under the discussion of the Council and should it be decided to adopt it there will thus be a great number of privy ashpits converted into pail-closets.

Sanitary Conveniences.—

Number of Privies with Fixed Receptacles	...	283
" " with Moveable Receptacles		68
" " Fresh Water Closets	...	87
" " Waste Water and Hand Flushed Closets	...	13

Venereal Disease.—Arrangements have been made by the County Council to send venereal cases to the clinic at the Ashton Infirmary. I find that patients, as a rule, are willing to avail themselves of the opportunity of attending there. Venereal disease is more prevalent now than it was before the war.

Isolation Hospitals.—There is a fever hospital situated in Mottram Moor for the accommodation of eight people.

Arrangements have been made with the Hyde Corporation to take in all cases of membranous croup and diphtheria.

Any specimens for chemical or bacteriological examination are sent to the County Council Laboratory, Chester.

River Pollution.—The effluent from the Tannery situated at Spout Green and which runs through a portion of your district and about which many complaints have been made regarding the pollution of a stream, is in the hands of the Mersey and Irwell Joint Committee.

WIRRAL

Rural District.

Population.—At the 1911 census, the population numbered 19,022. The Registrar-General estimates the present population to be 22,020 for the purpose of calculating the birth-rate and 21,138 for the calculation of the death-rate. His estimates are based largely upon figures placed at his disposal by the Ministry of Food. The difference between the birth-rate population and the death-rate population is due to the inclusion in the former of all the elements of the population contributing to the birth-rate, while the latter excludes all non-civilian males whether serving at home or abroad.

Vital Statistics.—The births numbered 283, 18 births were registered as illegitimate. The birth-rate was 12.2 per 1,000. In 1918, this rate was 14.2; in 1917 it was 16.7; in 1916 it was 17.3; in 1915 it was 19.4. This steadily progressive fall in the birth-rate is to be deplored, more especially when the amount of wealth and the standard of comfort in the district are called to mind.

Infantile Mortality.—18 infants died before attaining one year of age, or 6.3 per cent. of the total births. The infantile mortality rate was 63.6 per 1,000 infants born. Amongst legitimate infants 5.6 per cent. and amongst illegitimate infants 16.6 per cent. died under one year of age.

Deaths.—The deaths belonging to the district numbered 238 or a death-rate of 11.2 per 1,000 living.

There were 27 deaths from influenza, 13 from pneumonia, 14 from bronchitis and four from other diseases of the respiratory organs. Twenty-three deaths took place from organic heart disease.

There were 15 deaths from cancer or malignant disease and in nine of these the site of the growth was the digestive canal or its associated glands.

No deaths were recorded from alcoholism, but six were due to cirrhosis of the liver and seven to Bright's disease.

Water.—Two townships, viz.:—Prenton and Noctorum are supplied by the Wirral Water Works Company.

Wirral Rural District.

Twenty-seven townships derive their supply from the West Cheshire Water Company.

Caldy, Moreton, Saughall Massie, Frankby and Grange are supplied from the West Kirby Water Works and Bidston obtains its water from Birkenhead.

By the terms of the West Cheshire Water Act, 1911, the Company have to supply water softened, so that the hardness will not exceed 10 degrees on Clark's scale.

A sample of water from part of the area supplied by this Company was taken during February and forwarded to the County Analyst for his report. From this analysis it can be inferred that at present the Water Company are not carrying out their statutory obligations, for the sample shows 18.2 degrees of hardness on Clark's scale. Moreover, the Analyst does not record the presence of free carbonate of soda in the sample, an ingredient which is derived from the Permutit system of softening and is invariably present in the water delivered when the Company are carrying out their obligation. Throughout 1919 the Company have had trouble with their pumping plant and in consequence they were unable to keep a constant supply in the mains. Representations were made by the members of the Council on behalf of ratepayers demanding that "the present intolerable conditions should be remedied forthwith," and protests were made against the Company being permitted by the Board of Trade to raise their charges in excess of those specified in the West Cheshire Water Acts, 1884 and 1911, unless a proper supply was delivered. From Noctorum complaints were received of the inadequacy of supply from the Wirral Water Works Company.

At Irby Mill Hill, Puddington, New Houses, Ness and Saughall Massie, there are cottages without a supply of pipe water. In the case of New Houses, Ness (a group of isolated and old cottages), negotiations are in progress with the West Cheshire Company to obtain a supply.

Rivers and Streams.—A stream which runs from Heswall to Raby Mere through Brimstage receives the effluents from Clatterbridge Poor Law Institution and Fever Hospital, after they have passed through filter beds. There have been no complaints in relation to the condition of this stream during the past few years.

The stream which runs through Thornton Hough and Raby Vale into Raby Mere is much cleaner since the completion of the Thornton Hough Sewage Works.

Ditches require constant supervision to prevent insanitary conditions supervening upon the tendency of owners of isolated residences to connect overflows from their cesspools to the ditches. One statutory and two informal notices were required to obtain remedial action where ditches were found in a foul state.

Sewerage.—The Fender Valley outfall sewer drains the townships of Prenton, Noctorum, Upton, Bidston, Moreton and part of Barnston. Disposal works with septic tanks and bacteria beds deal with sewage from Willaston, Childer Thornton, Hooton and part of Eastham. Sewage or effluents from Heswall, part of Eastham, Great Sutton, Little Sutton and Caldy discharge into tidal waters. From Poulton-cum-Spital sewage passes into the sewers of Lower Bebington and from Grange into Hoylake sewers. During 1919 a 300 yards extension of sewer was made at Upton Road, Moreton, 100 yards at Childer Thornton and 150 yards at Barnston.

Closet Accommodation.—All the newer houses in Wirral are provided with modern sanitary conveniences, but many of the old cottages have privy-middens. The contents of these privy-middens are utilised for manurial purposes on agricultural land, but every year there is increasing difficulty to obtain contracts to empty these receptacles. The remedy is to enforce conversion wherever the cottages are within reach of a sewer. The difficulty in the Rural District is undoubtedly intensified by the small rentals of the cottages which are altogether disproportionate to the present-day cost of such conversions. Moreover, in consequence of the Rent Restriction Act, owners of property where the necessity for conversion was indicated to them, pointed out that it would be more profitable to close the cottages than to do the work required. The opinion of the Council was that the matter should be deferred until more normal times.

Scavenging.—In eight of the townships scavenging is let to contractors. It is a constant struggle to get the work satisfactorily performed. The tips are upon agricultural land and are far enough from houses to exclude the possibility of the origination of nuisance.

Wirral Rural District.

Milk Supply.—There are 265 licensed cowsheds and milk sellers in your district. Not only are the neighbouring Urban Districts supplied, but also the towns of Birkenhead, Wallasey and Liverpool. The cowsheds are regularly inspected and frequent lime-washings insisted upon wherever they are required. The shippens vary from the model structures of wealthy persons, who make farming a hobby, down to primitive sheds where both ventilation and lighting are deficient. During the last ten years there has been a considerable advance in the provision of light and air for the animals, as there is a general recognition of the fact that cows are more profitable when well housed. The arguments used against further improvement in this direction are generally (1) that it is the occupier who is called upon to do the improvement and not the owner, which is unfair; (2) that better housing is not required, as the cows are in the open air most of the time. At some of the farms the milking arrangements are of a model kind. No inspector with veterinary knowledge has been appointed to examine cows.

Infectious Disease.—In 1919, infectious disease was more prevalent than in 1917 and 1918. There was an absence of any outbreak of measles or infantile diarrhoea of an epidemic character.

121 cases of scarlet fever were notified in 1919; 57 in 1918 and 44 in 1917. Cases occurred throughout the year, with the exception of the month of June. It was the cause of five deaths.

In the last quarter of the year, owing to the congested state of the Isolation Hospital, delay occurred in the removal of the infected persons and their bedding and without doubt a more widely diffused outbreak was induced. Eighty-three cases received treatment in the Clatterbridge Isolation Hospital and 11 in Liverpool Fever Hospitals. The latter patients came from a Liverpool Institution situate within the Rural District.

The cases of diphtheria notified were 21 in number and there were two deaths. Nine swabs were sent to the Clinical Research Association—six proved positive and three negative.

No cases of enteric fever were notified.

Notification was received of seven cases of malaria in soldiers who have served abroad.

There were eight notifications of pneumonia.

Wirral Rural District.

Small Pox.—No cases of small pox have been notified for some years, but it is essential that reference should be made to the increasing number of persons who do not have their infants vaccinated.

Recently, in answer to a question in the House of Commons, the Minister of Health stated that it was approximately correct that more than half the children born at the present time were withheld from vaccination; that the proportion of unvaccinated children of each year's birth was steadily increasing; and that nearly 40 per cent. of the births in each year were exempted from vaccination by the statutory declaration of objection by the parents.

The statistics from the four Registration Areas in North-west Cheshire in 1917, 1918 and 1919 are submitted for your information:—

District.	BIRTHS.	No. of Certificates of successful primary vaccination received during the year 1919	No. of Statutory declarations of conscientious objection received during the year 1919
Bebington ...	368 ...	279 ...	56
Neston ...	200 ...	172 ...	8
Eastham ...	375 ...	176 ...	139
Woodchurch ...	301 ...	200 ...	44

In the closely adjoining area of Lower Bebington, there were several outbreaks of small-pox in 1919, all of a very limited character owing to the vaccinated state of the population.

Tuberculosis.—For the treatment of tuberculosis in North-west Cheshire, the County Council have established branch Dispensaries at Birkenhead, West Kirby and Ellesmere Port. Each branch Dispensary is available for the use of patients with tuberculosis who reside in the neighbouring portions of the rural area.

Inhabitants of the rural district have taken full advantage of the Dispensaries during 1919, to obtain examination, advice and treatment. Thirty-five cases were notified—31 were tuberculosis of the lungs and four were patients with tuberculosis elsewhere than in the lungs. Fourteen of the notified cases received further treatment in Sanatoria. Nineteen deaths of persons belonging to the Rural District were recorded from pulmonary tuberculosis and three from

Wirral Rural District.

other tuberculous diseases. Some indication of the extent to which Institutions in the Rural District are used in the treatment of tuberculosis may be gathered from the statement that 30 persons died from tuberculous disease in these Institutions during 1919.

Hospital Accommodation.—The hospital accommodation for infectious diseases is supplied by the Rural Joint Hospital Board in their hospitals at Clatterbridge, Pensby and Greasby.

The Greasby Hospital, now used for scarlet fever patients, was formerly the Small-pox Hospital of the Joint Hospital Board and it became unsuitable for its original purpose owing to the increase in the number of houses in its vicinity.

The Wirral Joint Hospital Board, in order to provide accommodation for small-pox patients, entered into an agreement with the Liverpool Port Sanitary Authority to provide the beds which might be required and the Port Sanitary Hospital at New Ferry has been utilised. The action of the Board in making any use whatever of the Port Sanitary Hospital has been strongly condemned by the Lower Bebington Urban District Council.

Housing.—I take this opportunity to reproduce a paragraph from my annual report for 1913:—

“The change which is taking place all over Wirral may be summed up in the one word, ‘Urbanisation.’ The whole area is in a state of transition and should the plans for more direct communication with the Lancashire side of the Mersey mature, the rural character of Wirral will rapidly become a matter of past history. New, wide modern roads are being laid out in various parts of the peninsula, the ultimate effect of which will be the conversion of what is now agricultural land into residential sites for the dwellings of town workers. Here and there, old thatched cottages are still to be found, but modern habitations are largely in the majority in every township. The trend of the development at the present time is in the direction of building residences and not in the erection of habitations for the working-classes. Reference to the Report on ‘Migration from Rural Districts,’ published by the Board of Agriculture and Fisheries, shows the difficulty of obtaining accurate information concerning Wirral, for it is stated that ‘only in the North Lonsdale District of

Wirral Rural District

Lancashire and in the Wirral District of Cheshire has any reduction in the number of farmers during the last ten years been noted and in the latter district correspondents differ.' Again, in relation to the question of decrease in permanent labourers employed, correspondents differ with regard to Wirral. The reduction of temporary labour is reported by some informants and no reduction is asserted by others. The supply of farm labourers in the neighbourhood of Birkenhead is given as 'barely sufficient.' Under the heading of 'Extent, Cause and Direction of Migration' it is interesting to note that no reference is made to Wirral, but that some correspondents account for migration by 'the present system of education and the lengthened period of schooling is stated to render country life unattractive to children' and 'a scarcity of cottages' is also given as a cause. The report states that 'the lack of housing accommodation is frequently mentioned as influencing men to leave the villages. It appears paradoxical that complaint should be made at the same time of dwindling population and insufficient cottages, but there can be no doubt that the question of rural housing is acute. In this connection the competition of the townsmen has aggravated the situation and allusion is made to the turning of cottages into villas and to the increasing tendency fostered by bicycles of urban workers to live in the rural districts.'

The last paragraph summarises the causal factors of any cottage difficulties which are encountered in Wirral and these would be minimised if, on plans being passed for large residences, cottages were insisted upon for the habitation of gardeners, motor drivers and others, who are bound to be associated with the mansion."

This paragraph still sums up the housing state in Wirral. The Council have given earnest consideration to the question of the advisability of building cottages and in order to obtain the views of the townships, opportunity was given to the Parish Councils to express their opinions as to the need for more cottages. One Parish Council replied that more cottages were required in their area, but that they held the view that the provision of more cottages should be left to private enterprise. Several Parish Councils pointed out that their cottages were occupied by workers from neighbouring industrial areas and that if these areas provided for their own inhabitants, there would be more than were required for farm labourers who might be regarded as the legitimate occupiers.

Wirral Rural District.

It was finally decided to acquire sites in the Little Sutton and Willaston townships and proceed with the erection of 26 cottages primarily for farm labourers, 12 in Willaston and 14 in Little Sutton.

At the 1911 Census there were 3,836 houses.

In many of the townships, an old cottage here and there may be found which has outlasted its period of usefulness, but on the whole the housing conditions are excellent if comparison be made with the state of affairs in purely agricultural areas. Over 4,000 general inspections of dwelling-houses were made during 1919 and defects found were remedied by procedure under the Public Health Acts. Under Sec. 17 of the Housing Act, 1909, 42 houses were examined and one of these was considered unfit for habitation. A Closing Order and a Demolition Order were issued. The cottage referred to is situated in Willaston and as soon as another cottage is available for those who are dispossessed, the Demolition Order will be enforced. In 12 cottages the defects found were remedied without the necessity for the issue of the Closing Orders.

Administrative County of Chester.

APPENDIX TO STATISTICS FOR 1919.

TABLE A.—Vital Statistics for all Districts in the
Administrative County of Chester, 1919.

TABLE B.—Causes of Death at Different Periods of
Life in the Administrative County of Chester, 1919.

TABLE C.—Population, Area, Births, Deaths, &c.—

Showing enumerated and estimated population, area,
births and deaths, birth-rates, and death-rates, proportion
of deaths of Infants to births, deaths from seven principal
zymotic diseases and corresponding death-rates.

Administrative County of Chester

APPENDIX TO STATISTICS

FOR 1912

TABLE A—Vital Statistics for all Districts in the Administrative County of Chester, 1912.

TABLE B—Causes of Death at Different Periods of Life in the Administrative County of Chester, 1912.

TABLE C—Population, Area, Births, Deaths, &c.

Showing enumerated and estimated population, area, births and deaths, marriages and divorces, proportion of deaths at home and deaths from seven principal zymotic diseases and corresponding death rates.

TABLE A.
VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1919.

CAUSES OF DEATH.	Alderley Edge U.D.		Alsager U.D.		Altrincham U.D.		Ashton-upon-Mersey U.D.		Bollington U.D.		Bowdon U.D.		Bredbury and Romiley U.D.		Brom-borough U.D.		Burglawn U.D.		Cheadle and Gatley U.D.		Compstall U.D.		Congleton M.B.		Crewe M.B.		Dukinfield M.B.		Ellesmere Port and Whitty U.D.		Hale U.D.		Handforth U.D.		Hazel Grove and Bram-hall U.D.		
(Civilians only)	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.	M.	F.	M.	F.	M.	F.	
ALL CAUSES	15	19	21	20	128	120	33	40	37	41	18	23	62	46	13	10	13	11	50	82	6	10	78	79	249	257	160	155	86	70	54	54	6	3	61	79	
1 Enteric Fever																											1										
2 Small-pox																																					
3 Measles							1												1				1		1				4	2							
4 Scarlet Fever																										1	2	1	2	5		1					
5 Whooping Cough					1	1									1										1	1			1	1							
6 Diphtheria and Croup									1																1	2	2	2	1	3	1					2	
7 Influenza	2	3	7	6	10	10	6	1	1	5	5	2	3	4			4	1	5	6			9	11	21	30	21	15	7	3	3	10			6	2	
8 Erysipelas											1														2						2						
9 Pulmonary Tuberculosis	1	1	3	1	14	13	2	2	2		1	1	2				1		1	2		1	5	6	14	12	7	9	8	5	6	1			3	4	
10 Tuberculous Meningitis						5	1						2			1							1	1	2	1	3		1	1							
11 Other Tuberculous Diseases					3	1							2						1					1	2	5	3								1	2	
12 Cancer, Malignant Disease		4			5	6	2	8	3	3	3	3	4	7	4	2	1	2	3	13		1	8	15	19	34	11	15	4	7	5	4			7	11	
13 Rheumatic Fever																		1	1					1	1	1			2						2		
14 Meningitis		1			1	1	1		1	1													1			2	1	1	1		1						
15 Organic Heart Disease	3	3		3	14	13	1	6	5	3	1	3	11	8	3	2	2		8	13	1	2	3	4	19	22	17	12	5	3	7	8	1	1	5	10	
16 Bronchitis	1	2	1		9	18	3	4	2	3		2	6	4	1	3		2	3	11	1	2	9	8	30	28	18	16	10	7	7	7	1		6	9	
17 Pneumonia (all forms)	1		1		12	9	1	1	2	3	1	1	5	1		1	1	2	4	2	2	1	4	4	16	12	13	9	8	4	3	3	1		4	7	
18 Other Respiratory Diseases				1	4			2	1				1	1			1		1						8	4	1		2	1	2				1	1	
19 Diarrhoea, &c. (under 2 years)	1				1	1						1	1		1			1						2	1	1	2	2	3	2	4						
20 Appendicitis and Typhilitis					1					1														1	3	3	1										
21 Cirrhosis of Liver	1				1								1											3	1			2									
21A Alcoholism																																					
22 Nephritis and Bright's Disease		2		1	1	3		1	5	1	1		4	1				4	2			2	1	5	7	4	5	1	2		1		1	3	2		
23 Puerperal Fever					2																				1		1		2		1						
24 Parturition, apart from Puer-peral Fever							1																		3		4									2	
25 Congenital Debility, &c.			2	2	7	3	4	3	1	4			3	2	1		1			3		6	6	14	3	5	5	5	8	1	3				4	1	
26 Violence, apart from Suicide	1				4	5	3	1	2	1		2	4	1	2		1	1	3	3					9	4	7	5	2	1	1		1		3		
27 Suicide					1	1							1											1	4						1	1			1		
28 Other Defined Diseases	4	3	7	6	39	28	8	10	11	16	5	7	12	17		1	1	2	15	26	2	3	29	18	76	78	42	45	20	8	13	14	2	1	12	28	
29 Causes ill-defined or Unknown											1															1		1	1						1		
Special Causes (included above)—																																					
Cerebro-spinal Fever																														1							
Poliomyelitis																									1												
Deaths of Infants under 1 year of age	1		3	2	11	9	9	3	2	6	1	1	8	3	2		2		2	5		2	13	12	27	15	14	20	15	16	3	5			7	4	
Total Illegitimate			1	1	2	1							1												3	2	1	1	2	4		2			2		
TOTAL BIRTHS...	18	20	17	15	172	133	66	53	45	31	11	7	73	68	21	18	17	14	83	87	4	5	104	87	391	364	178	181	170	145	66	49	7	5	71	63	
Legitimate	17	19	16	14	154	120	65	53	41	29	11	6	71	68	21	18	16	11	76	85	4	5	96	84	372	351	168	167	160	136	62	47	6	5	64	61	
Illegitimate	1	1	1	1	18	13	1		4	2		1	2				1	3	7	2			8	3	19	13	10	14	10	9	4	2	1		7	2	
POPULATION FOR BIRTH RATE	3579		2897		19516		8226		5302		3107		8542		2523		1701		10714		855		12300		47544		19467		13932		9983		961		10062		
" " DEATH RATE	3436		2781		16735		7897		5090		2983		8200		2422		1633		10285		821		11808		45640		19688		13374		9583		923		9659		

No.	Name of Plant	Altitude		Altitude		Remarks
		ft.	m.	ft.	m.	
1	Pinus torreyana	...	...	...	...
2	Pinus strobus	...	...	...	...
3	Pinus resinosa	...	...	...	...
4	Pinus mitis	...	...	...	...
5	Pinus strobus	...	...	...	...
6	Pinus strobus	...	...	...	...
7	Pinus strobus	...	...	...	...
8	Pinus strobus	...	...	...	...
9	Pinus strobus	...	...	...	...
10	Pinus strobus	...	...	...	...
11	Pinus strobus	...	...	...	...
12	Pinus strobus	...	...	...	...
13	Pinus strobus	...	...	...	...
14	Pinus strobus	...	...	...	...
15	Pinus strobus	...	...	...	...
16	Pinus strobus	...	...	...	...
17	Pinus strobus	...	...	...	...
18	Pinus strobus	...	...	...	...
19	Pinus strobus	...	...	...	...
20	Pinus strobus	...	...	...	...
21	Pinus strobus	...	...	...	...
22	Pinus strobus	...	...	...	...
23	Pinus strobus	...	...	...	...
24	Pinus strobus	...	...	...	...
25	Pinus strobus	...	...	...	...
26	Pinus strobus	...	...	...	...
27	Pinus strobus	...	...	...	...
28	Pinus strobus	...	...	...	...
29	Pinus strobus	...	...	...	...
30	Pinus strobus	...	...	...	...

TABLE A.—Continued.

VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1919.

CAUSES OF DEATH.	Higher Bebington U.D.		Holling- worth U.D.		Hoole U.D.		Hoylake and West Kirby U.D.		Hyde M.B.		Knutsford U.D.		Lower Bebington U.D.		Lymm U.D.		Macclesfield M.B.		Marple U.D.		Middlewich U.D.		Mottram-in- Longendale U.D.		Nantwich U.D.		Neston and Parkgate U.D.		Northwich U.D.		Runcorn U.D.		Sale U.D.		Sandbach U.D.		
(Civilians only)	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.	M.	F.	M.	F.	M.	F.	
ALL CAUSES	11	17	18	20	28	26	70	111	256	270	25	35	79	83	31	33	254	256	34	44	28	36	20	25	52	46	30	32	129	125	150	126	101	105	47	40	
1 Enteric Fever					1										1																						
2 Small-pox																																					
3 Measles											2				1		2	4							1				1					1	4		
4 Scarlet Fever													1	1			1																				
5 Whooping Cough					1																										1						
6 Diphtheria and Croup		1	1			1	1			3			2	4			3	1				1	1				1	2									
7 Influenza	1	2		1	1	2	4	15	19	22	3	4	10	8	2	4	14	9	1	5	3	3	2		4	7	1	8	28	22	22	21	10	9	6	5	
8 Erysipelas		1												1	1			1																1	1		
9 Pulmonary Tuberculosis	1	2		3	3		8	12	16	16	1	4	10	4	2	4	21	15	1	1		1	1	1	1	5	2			6	4	3	3	5	4	2	
10 Tuberculous Meningitis							1	1	2	3	1		2		1		2				1									1	1	1	1	1		1	1
11 Other Tuberculous Diseases			1	1		1		1	2		1		2				3	1	1		1		1		1					2	1			2	4	2	
12 Cancer, Malignant Disease	1	2	2		4	3	3	11	19	25	1	9	6	10	1	4	21	31	1	6		6		3	8	7		6	13	11	13	13	11	7	4	1	
13 Rheumatic Fever									1	3				1					1							1						1		1			
14 Meningitis							1		4	3			1		1	1		2							1						1		1		1	1	
15 Organic Heart Disease	2	2	1	2	2	4	8	17	18	28	3	3	2	8	3	5	31	37	9	13	4	3	2	6	4	2	2	4	19	15	15	12	13	10	4	8	
16 Bronchitis		3	3	2	5	1	2	7	27	41	1	3	2	6	3	2	12	21	2	7	1	3	1	2	4	3	1	1	11	10	7		8	14	1	1	
17 Pneumonia (all forms)	2		1	3	2		3	10	29	22	1	2	4	4	1	1	23	10	1	3	2	4		1	5	5	4	1	11	9	27	20	5	7	3	3	
18 Other Respiratory Diseases					1	2		3	1		1	1	1				1	1	2						1		1				3		5	1			
19 Diarrhoea, &c. (under 2 years)							1	3				1	1				1	2	1					2	1				1	2		1					
20 Appendicitis and Typhlitis								1					1		1	1		2			1									1	1						
21 Cirrhosis of Liver							1	2	1		1						2						1			1				1	1						
21a Alcoholism																														1	1						
22 Nephritis and Bright's Disease		1			1	1	3	2	15	8		1	1	3	1	2	11	10			2	1	1	3	1	1	1		1	1	3	2	1	1			
23 Puerperal Fever					1									1				1																			
24 Parturition, apart from Puer- peral Fever			1							1								3							1								1		2		
25 Congenital Debility, &c.	2				1	1	3	1	19	9			9	6			22	11	1		3	2	4		3	4	3		5	5	5	6	5	6		3	
26 Violence, apart from Suicide		2			1		2	5	4			1	2	4	1	9	7	2	2	1	1			1		2		5	5	8	4	7		4	1		
27 Suicide		1					1	1	2	1							2	1		1			1			1		1		1	1		2		1	1	1
28 Other Defined Diseases	3	2	5	7	7	9	29	27	70	78	12	7	23	23	8	7	75	84	10	6	9	11	6	9	16	7	12	9	27	35	37	34	27	37	15	12	
29 Causes ill-defined or Unknown	1							1								1	1																				
Special Causes (included above)—																																					
Cerebro-spinal Fever																																					
Poliomyelitis													1																								
Septicæmia pestis													1																								
Deaths of Infants under 1 year of age	1	2			2	1	7	5	39	21		1	13	9			42	20	3	2	6	4	4	1	9	6	4	2	15	13	22	15	9	9	4	6	
Total Illegitimate							3	4	1			1					8	2	1					1	1		1	3		2	1		2				
TOTAL BIRTHS	9	10	12	14	40	57	128	79	260	255	39	36	141	156	39	39	255	230	49	44	56	47	21	17	59	59	60	52	216	183	200	198	147	121	60	60	
Legitimate	8	10	11	13	40	52	125	74	249	239	35	33	130	153	36	35	235	213	44	42	54	44	19	17	56	56	56	49	203	176	197	190	138	115	55	54	
Illegitimate	1		1	1		5	3	5	11	16	4	3	11	3	3	4	20	17	5	2	2	3	2		3	3	4	3	13	7	3	8	9	6	5	6	
POPULATION FOR BIRTH RATE	1851		2299		6101		15987		33908		5044		14791		5025		33785		6647		4788		2921		7346		4597		19892		19315		17009		5837		
" DEATH RATE	1777		2207		5857		15347		32550		4842		14199		4824		32432		6381		4596		2804		7052		4413		19096		18542		16328		5603		

Case No.	Date of Onset	Age		Sex	Cause of Infection	Remarks
		Yr.	Mo.			
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TABLE B.

CAUSES OF DEATH AT DIFFERENT PERIODS OF LIFE IN THE ADMINISTRATIVE
COUNTY OF CHESHIRE, 1919.

CAUSES OF DEATH.	Sex.	AGGREGATE OF URBAN DISTRICTS.										AGGREGATE OF RURAL DISTRICTS.									
		All Ages	0—	1—	2—	5—	15—	25—	45—	65—	All Ages	0—	1—	2—	5—	15—	25—	45—	65—		
ALL CAUSES	M	2811	343	73	88	126	132	386	742	921	1138	134	24	23	41	71	141	274	430		
	F	2987	263	48	93	110	130	453	692	1198	1130	90	18	32	49	58	173	232	478		
1. Enteric fever	M	2	...	...	...	1	...	...	1	...	2	...	...	...	...	...	1	1	...
	F	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Small-pox	M	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	F	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. Measles	M	14	3	5	3	3	...	...	...	...	1	...	...	1	...	...	...	...	...
	F	14	3	4	5	2	...	...	...	...	2	1	...	1	...	...	...	...	...
4. Scarlet fever	M	7	...	...	3	2	2	...	...	...	4	...	...	...	3	1	...	...	...
	F	10	...	1	2	4	...	3	...	...	6	...	...	5	...	...	1	...	...
5. Whooping cough	M	7	1	3	3	...	...	...	...	...	4	1	3	...	...	...	...	...	...
	F	10	6	1	2	1	...	...	...	...	7	5	...	2	...	...	...	...	...
6. Diphtheria and croup	M	20	2	1	6	11	...	...	...	...	8	...	1	1	6	...	...	...	...
	F	24	2	...	13	7	2	...	...	...	14	1	...	3	8	...	1	1	...
7. Influenza	M	290	12	4	18	17	19	103	75	42	138	3	7	5	7	17	43	32	24		
	F	318	8	8	15	16	36	104	77	54	138	3	3	2	8	15	55	29	23		
8. Erysipelas	M	7	...	...	...	...	...	1	5	1	1	...	...	...	...	...	...	...	1
	F	4	1	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	1
9. Pulmonary tuberculosis	M	177	...	...	4	4	35	69	57	8	55	2	...	1	3	17	17	14	1
	F	160	...	3	1	10	38	72	33	3	60	...	...	...	4	17	25	10	4
10. Tuberculous meningitis	M	18	1	4	7	3	2	...	1	...	6	1	2	...	3	...	...	...	...
	F	26	4	1	9	6	5	...	1	...	5	2	...	1	2	...	...	...	...
11. Other tuberculous diseases	M	32	6	1	3	6	7	6	3	...	8	1	1	1	2	2	...	1	...		
	F	26	2	1	3	4	1	9	3	3	19	1	...	3	4	3	3	5	...		
12. Cancer, malignant disease	M	216	...	...	...	...	1	26	103	86	92	...	...	...	1	1	6	47	37
	F	325	...	...	...	...	...	45	147	133	114	...	...	...	1	1	12	44	56
13. Rheumatic fever	M	7	...	...	...	2	...	1	4	...	...	...	...	...	...	...	...	...	...
	F	12	...	...	...	4	3	2	1	2	5	...	...	1	1	...	...	2	...
14. Meningitis	M	24	10	5	2	5	...	2	...	...	4	...	...	1	1	...	1	1	...
	F	16	3	1	3	3	3	2	...	1	5	2	...	1	1	...	1	...	...
15. Organic heart disease	M	284	...	1	...	3	8	24	100	148	120	...	...	...	...	...	9	44	67
	F	344	1	...	1	6	6	38	102	190	124	...	...	...	1	3	9	33	78
16. Bronchitis	M	238	36	7	3	1	1	8	52	130	86	13	1	3	...	...	3	13	53
	F	305	17	5	3	2	...	11	62	205	96	9	5	...	...	7	13	62	...
17. Pneumonia (all forms)	M	223	31	24	18	19	15	39	43	34	79	14	7	1	6	5	12	23	11		
	F	196	30	14	22	11	7	29	32	51	67	11	7	3	9	6	12	4	15		
18. Other respiratory diseases	M	46	3	1	...	2	2	5	23	10	13	...	...	...	...	1	4	4	4
	F	21	...	...	...	1	...	4	11	5	10	...	...	1	...	1	1	1	6
19. Diarrhoea, &c.	M	51	27	1	4	2	...	4	9	4	22	10	...	1	...	1	3	3	4		
	F	54	20	3	2	2	1	6	9	11	7	4	...	...	...	...	3	...	...
20. Appendicitis and typhlitis	M	12	...	...	...	5	1	1	5	...	3	...	...	1	...	1	...	...	1
	F	10	...	...	...	2	5	3	...	...	5	...	...	...	2	2	1	...	...
21. Cirrhosis of liver	M	16	...	...	...	...	...	1	10	5	10	...	...	...	...	...	1	4	5
	F	6	...	...	1	...	...	...	2	3	4	...	...	...	...	...	1	2	1
21A Alcoholism	M	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...
	F	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22. Nephritis and Bright's disease	M	80	1	...	2	1	4	5	31	36	25	...	...	...	...	2	3	11	9
	F	74	...	...	1	3	4	8	33	25	29	...	...	...	2	1	4	13	9
23. Puerperal fever	M	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	F	11	...	...	...	...	...	11	...	...	4	...	...	...	...	4	...	...	...
24. Parturition, apart from puerperal fever	M	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	F	21	...	...	...	...	1	20	...	...	8	...	...	...	...	1	7	...	...
25. Congenital debility, &c.	M	150	149	...	...	1	...	...	...	...	53	52	...	...	1	...	...	...	...
	F	121	120	...	1	...	...	...	...	...	40	38	...	1	1	...	...	...	...
26. Violence, apart from suicide	M	99	4	3	3	16	11	25	22	15	52	2	...	2	3	12	15	8	10		
	F	58	4	2	6	10	3	8	4	21	17	1	1	1	2	2	2	3	5		
27. Suicide	M	18	...	...	...	...	1	3	11	3	4	...	...	...	...	1	2	1	...
	F	13	...	...	...	...	2	7	3	1	8	...	...	...	...	5	2	...	1
28. Other defined diseases	M	767	56	13	8	22	23	62	185	398	343	35	1	4	5	10	21	64	203		
	F	802	41	4	...	16	13	70	171	486	331	12	...	7	3	5	22	66	216		
29. Causes, ill-defined or unknown	M	6	1	...	1	...	...	1	2	1	3	...	1	1	...	...	1	...	...
	F	5	1	...	1	...	...	1	1	1	4	...	2	...	...	...	1	...	1

TABLE A.—Continued.
VITAL STATISTICS FOR ALL DISTRICTS IN ADMINISTRATIVE COUNTY OF CHESTER, 1919.

CAUSES OF DEATH.	Stalybridge M.B.		Tarporley U.D.		Widmore U.D.		Winsford U.D.		Yeardley-cum-Whaley U.D.		Bucklow R.D.		Chester R.D.		Congleton R.D.		Disley R.D.		Macclesfield R.D.		Malpas R.D.		Nantwich R.D.		Northwich R.D.		Runcorn R.D.		Tarvin R.D.		Tintwistle R.D.		Wirral R.D.		
(Civilians only)	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.	M.	F.	M.	F.	
ALL CAUSES	209	259	15	22	42	51	79	95	13	9	140	133	66	68	95	81	26	18	94	97	33	28	182	141	141	146	159	188	80	87	10	17	112	126	
1 Enteric Fever											1		1																						
2 Small-pox																																			
3 Measles	2																	1		1															
4 Scarlet Fever	1																														1				
5 Whooping Cough		1						1			1	1	2	1	1	1		1						2				1							
6 Diphtheria and Croup	2	3					1	1			1	2					1	1																	
7 Influenza	24	33		4	2	5	22	18	1	2	13	12	9	8	12	12		2	10	15		3	21	18	27	31	19	16	10	11			17	10	
8 Erysipelas																																			
9 Pulmonary Tuberculosis	15	15	1		3	6	4	2	1		9	11	3	5	4	2	3	1	4	4		2	5	5	8	6	6	5	3	9	1		9	10	
10 Tuberculous Meningitis	1	2						2				1	1													1									
11 Other Tuberculous Diseases	2	5						2				5	1							1							3	3		1					
12 Cancer, Malignant Disease	13	17	2	5	4	6	8	5	2	2	11	16	7	8	7	10	3	4	8	6	4	3	14	10	9	9	17	28	4	10		3	8	7	
13 Rheumatic Fever	1																																		
14 Meningitis	5	3			1								1	1														2							
15 Organic Heart Disease	19	26	3	1	2	4	11	18	1		12	13	11	6	3	9	2	3	11	16	8	4	26	21	12	12	18	17	9	6		2	8	15	
16 Bronchitis	24	33	1	1	5	7	8	11	1		12	14	2	3	6	5	2	1	13	8		2	17	12	9	16	10	18	8	9		1	7	7	
17 Pneumonia (all forms)	17	26			1	3	1	2	1		10	10	7	6	9	9	5		4	2	5	3	8	8	12	6	12	10	2	3		2	5	8	
18 Other Respiratory Diseases	2	3			3		1		1		1	1	1		2				2							1	3	3		2	1	1		2	2
19 Diarrhoea, &c. (under 2 years)	4	3	1		1		1						2	1	2	1	1			1					1	3	3		2	1	1		2	2	
20 Appendicitis and Typhilitis	1	1					1					2	1	1						1						2	1		1						
21 Cirrhosis of Liver	1	1									1			1												2	1		1						
21A Alcoholism											1			1										1		2		1		1			3	3	
22 Nephritis and Bright's Disease	3	3	1		1	2	1	3	1		1	3	3	4	4	4	1		3	3				1											
23 Puerperal Fever		1																																	
24 Parturition, apart from Puerperal Fever		1									1		1		1					1														1	
25 Congenital Debility, &c.	5	12	2	2	1	1	5	7			7	5	3		8	1		1	4	5	4	3	7	3	4	5	5	6	3	5	2	2	6	4	
26 Violence, apart from Suicide	5			2			1		1		4	1	1	1	3	2	1		6	3	2	1	6	1	7	1	9	1	2	1	2	1	9	4	
27 Suicide					1						1				1																				
28 Other Defined Diseases	61	69	4	7	17	17	15	22	4	3	55	34	10	21	36	22	5	3	26	29	8	4	66	46	43	41	46	64	29	23	2	4	29	43	
29 Causes ill-defined or Unknown	1	1																	1		1		1	3				1							
Special Causes (included above)—																																			
Cerebro-spinal Fever					1																														
Poliomyelitis											1																								
Deaths of Infants under 1 year of age	28	26	3	2	2	3	10	12			12	13	9	4	19	7	1	3	5	8	7	4	23	10	19	14	17	11	7	9	2	2	13	5	
Total Illegitimate	4		2	2		1	2				3			2					1		2		2	2	2		1	1	1	1			2	1	
TOTAL BIRTHS	199	229	24	21	50	50	108	123	7	14	179	147	80	76	117	101	21	20	114	108	39	40	227	191	200	219	239	216	125	100	10	15	149	134	
Legitimate	184	213	21	18	43	45	104	117	5	13	174	134	76	73	108	95	21	20	106	102	37	38	208	179	184	211	227	205	119	90	10	14	138	127	
Illegitimate	15	16	3	3	7	5	4	6	2	1	5	13	4	3	9	6			8	6	2	2	19	12	16	8	12	11	6	10		1	11	7	
POPULATION FOR BIRTH RATE	27150		2690		8553		11935		1704		24751		11267		12799		3122		16003		4473		23749		24373		28291		12757		1967		22020		
DEATH RATE	26062		2582		8211		11457		1636		23761		10816		12287		2997		15362		4294		22798		23397		27159		12246		1907		21138		

List of Books		Number of Volumes		Number of Pages	
No.	Title	Author	Year	No. of Vols.	No. of Pages
1	History of the United States	W. H. Rouse	1850	1	100
2	Geography of the United States	W. H. Rouse	1850	1	100
3	Political Economy of the United States	W. H. Rouse	1850	1	100
4	History of the United States	W. H. Rouse	1850	1	100
5	Geography of the United States	W. H. Rouse	1850	1	100
6	Political Economy of the United States	W. H. Rouse	1850	1	100
7	History of the United States	W. H. Rouse	1850	1	100
8	Geography of the United States	W. H. Rouse	1850	1	100
9	Political Economy of the United States	W. H. Rouse	1850	1	100
10	History of the United States	W. H. Rouse	1850	1	100
11	Geography of the United States	W. H. Rouse	1850	1	100
12	Political Economy of the United States	W. H. Rouse	1850	1	100
13	History of the United States	W. H. Rouse	1850	1	100
14	Geography of the United States	W. H. Rouse	1850	1	100
15	Political Economy of the United States	W. H. Rouse	1850	1	100
16	History of the United States	W. H. Rouse	1850	1	100
17	Geography of the United States	W. H. Rouse	1850	1	100
18	Political Economy of the United States	W. H. Rouse	1850	1	100
19	History of the United States	W. H. Rouse	1850	1	100
20	Geography of the United States	W. H. Rouse	1850	1	100
21	Political Economy of the United States	W. H. Rouse	1850	1	100
22	History of the United States	W. H. Rouse	1850	1	100
23	Geography of the United States	W. H. Rouse	1850	1	100
24	Political Economy of the United States	W. H. Rouse	1850	1	100
25	History of the United States	W. H. Rouse	1850	1	100
26	Geography of the United States	W. H. Rouse	1850	1	100
27	Political Economy of the United States	W. H. Rouse	1850	1	100
28	History of the United States	W. H. Rouse	1850	1	100
29	Geography of the United States	W. H. Rouse	1850	1	100
30	Political Economy of the United States	W. H. Rouse	1850	1	100

TABLE C.

TABULAR STATEMENT

prepared from figures supplied by the Registrar General for the various Sanitary Districts in the Administrative County of Chester for the year ending 31st December, 1919.

SANITARY DISTRICTS		Population at Census, 1911.	Population 1919 for Birth Rate.	Population 1919 for Death Rate	Area in Acres.	Births.	Birth-rate per 1000 Living.	Deaths.	Death-rate per 1000 Living.	Deaths from										Deaths under one year.	Deaths under one Year to 1000 Births.	Is Hospital Isolation for Infectious Diseases provided?	Name of Medical Officer of Health.				
Column Number		1	2	3	4	5	6	7	8	9	Small-pox.	Measles.	Scarlatina.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Deaths from Principal Zymotic Diseases.	Principal Zymotic Diseases.	Death-rate.	19	20	21	22			
MUNICIPAL BOROUGHS.																											
Congleton	11309	12300	11808	2372	191	15.5	11	157	13.2	1	1	3	2		3	9	76	25	130	Yes.	West Heath Joint	Dr. P. M. Davidson					
Crewe	44960	47444	45640	2184	755	15.8	12	506	11.0	1	1	4			3	9	19	42	55	Yes.	Crewe.	Dr. A. B. McMaster					
Dukinfield	19422	19467	18688	1407	359	18.4	14	315	16.8		3				1	5	9	48	34	94	Yes.	Hyde.	Dr. J. R. S. Park				
Hyde	83437	83908	82550	3079	615	15.1	17	526	16.1	2						3	8	24	60	116	Yes.	Hyde.	Dr. J. Bennett				
Macclesfield	84797	83783	82432	3214	485	14.3	17	510	15.4	6	1	5	1			7	16	61	54	125	Yes.	Macclesfield.	Dr. J. H. Marsh				
Stalybridge	26513	27150	26062	3132	428	15.7	31	468	17.9	2	1	5	1			7	16	61	54	126	Small-pox only, Hartshead.	Dr. W. J. Hancock					
	170438	174154	167180	15588	2783	15.6	102	2482	14.8	12	6	19	3	1	24	65	38	276	100								
OTHER URBAN DISTRICTS.																											
Alderley Edge	3143	3579	3436	678	38	10.6	2	34	9.8							1	1	20	1	23	Yes.	Monsall.	Dr. G. W. Dowling				
Alsager	2743	2897	2781	2241	32	11.0	9	41	14.5									5	156	Yes.	West Heath Joint.	Dr. H. F. Kingston					
Altrincham	17813	18516	18745	662	365	15.6	11	248	13.2							2	4	21	20	65	Yes.	Altrincham.	Dr. A. Golland				
Ashton-upon-Mersey	7234	8226	7897	1623	119	14.4	1	73	9.9	1							1	11	12	100	Yes.	Monsall.	Dr. Scott				
Higher Bebington	1689	1851	1777	699	19	10.2	1	28	15.7			1						1	56	8	157	Yes.	Wirral Joint.	Dr. J. B. Yeoman			
Lower Bebington	11401	14791	14159	1051	297	20.2	14	162	11.4			2	6			1	9	63	23	74	Yes.	Wirral Joint.	Dr. J. B. Yeoman				
Bollington	8254	8902	8500	1291	76	14.3	6	78	15.3							1	1	19	8	105	Yes.	Ditto.	Dr. J. B. Yeoman				
Bowdon	3044	3107	2983	859	18	5.7	1	41	13.7							1	1	33	2	111	Yes.	Macclesfield.	Dr. D. W. Main				
Bredbury and Romiley	8683	8542	8200	3990	141	15.5	2	108	13.1							1	1	12	11	78	Yes.	Altrincham.	Dr. M. Daggan				
Bromborough	1974	2323	2492	1678	39	15.4		28	9.4							1	2	82	2	61	Yes.	Hyde.	Dr. F. Cant				
Buglawton	1438	1701	1633	2911	31	18.2	4	24	14.0								1	2	19	7	41	Yes.	Wirral Jt. and Pool Works.	Dr. J. B. Yeoman			
Cheadle and Gatley	9913	10714	10285	5037	170	15.8	9	132	13.8								1	2	19	7	222	Yes.	West Heath Joint	Dr. P. M. Davidson			
Compstall	908	855	821	903	9	10.3		16	19.4										1	2	69	Yes.	Monsall and Small-pox Hospital.	Dr. J. H. Godson			
Ellesmere Port & Whiteby	10066	10932	10574	8151	315	22.6	19	156	11.6	6	7	4	2			6	25	1.8	31	98	Yes.	Hyde.	Dr. J. B. Yeoman				
Hale	8531	9983	9583	3386	93	13.9	1	78	12.2									2	20	8	Yes.	Wirral Joint	Dr. J. B. Yeoman				
Handforth	934	961	923	1311	12	12.4	1	9	9.7											69	Yes.	Monsall.	Dr. T. A. Rothwell				
Hazel Grove and Bramhall	9631	10062	9659	5447	134	13.3	9	140	14.4								2	2	20	11	62	No.		Dr. A. Nowell			
Hollingsworth	2580	2299	2207	2086	26	11.3	2	38	17.3								2	1	45	3	30	Yes.	Hyde.	Dr. Thos. Moore			
Hooton	6929	6101	5857	334	97	15.8	5	64	9.2								1	3	51	3	57	Small-pox, Mottram Moor.	Dr. R. Pomfret Wyld				
Hoylake and West Kirby	14029	13987	13347	2066	207	12.9	8	181	11.7								1	2	13	12	57	Yes.	Chester.	Dr. F. J. Butt			
Knutsford	5769	5044	4842	1700	75	14.8	7	60	12.3								1	1	20	1	13	Yes.	Wirral Joint.	Dr. J. B. Yeoman			
Lynton	4959	5025	4824	4374	78	15.6	7	64	18.3	1						1	1	2	41		53	Yes.	Monsall.	Dr. Blease			
Marple	6483	6647	6381	8035	93	13.9	1	78	12.2								1	1	15	5	13	Yes.	Lynton.	Dr. Burrows			
Middlewich	4909	4788	4596	1082	103	21.5	5	64	13.9								1	1	21	10	97	Yes.	Hyde.	Dr. H. Burton			
Mottram	3049	2921	2804	1084	38	10.8	2	46	16.4								1	1	21	10	97	Yes.	Northwich Joint and Marbury.	Dr. S. L. Melville			
Nantwich	7815	7346	7052	703	118	15.0	6	93	13.8	1							3	4	20	28	70	Yes.	Hyde and Small-pox, Mottram Moor.	Dr. G. J. A. W. Burn			
Neston and Parkgate	4596	4597	4413	3267	112	24.3	7	62	14.0								3	4	20	28	70	Yes.	Altrincham Joint.	Dr. J. D. Munro			
Northwich	18151	18692	18096	1898	399	20.0	20	254	13.3	1							3	4	20	28	70	Yes.	Wirral Joint.	Dr. J. B. Yeoman			
Runcorn	17353	18115	18542	1275	396	20.6	11	276	14.8								3	4	20	28	70	Yes.	Northwich Joint and Marbury.	Dr. H. E. Gough			
Sale	15044	17099	16328	2936	208	13.7	12	267	12.6	5							1	7	37	37	92	Yes.	Runcorn.	Dr. H. E. Annett			
Sandbach	6723	5887	5403	2694	120	20.5	11	87	15.5								2	3	35	10	83	Yes.	Monsall.	Dr. H. Miall Woodhead			
Tarpotley	2604	2690	2582	6105	45	16.7	4	37	14.3								1	1	38	5	111	Yes.	West Heath Jt. & Acreld for Small-pox.	Dr. R. Riddell			
Winslow	8153	8553	8211	5040	100	11.6	12	93	11.3								1	1	38	5	111	Yes.	Chester.	Dr. W. E. Burton			
Widnes	10770	11983	11457	5779	231	19.3	19	174	15.1								1	1	12	5	50	Yes.	Monsall.	Dr. A. Hyers			
Yearsley-cum-Wale	1659	1704	1636	1323	21	12.9	3	22	13.4								1	4	34	22	95	Yes.	Davenham and Marbury.	Dr. Pictou			
	244085	266232	255576	80732	4399	16.3	252	8316	12.9	16	11	25	14	2	27	95	37	329	72			Yes.	Hyde and High Peak.	Dr. F. G. Allan			
RURAL DISTRICTS																											
Bucklow	22668	24761	23761	57666	326	13.1	18	273	11.4								3	2	1	6	25	76	Yes.	Monsall.	Dr. Blease		
Chester	12447	11267	10816	34266	158	12.8	7	134	12.3								3	2	1	8	7	64	13	83	Yes.	Chester.	Dr. W. E. Burton
Congleton	12821	12799	12287	40152	218	17.0	15	176	14.3								3	5	40	26	119	Yes.	West Heath Joint.	Dr. C. H. Wentworth-Bennet			
Dialo	2958	3122	2997	2466	41	13.1	1	44	14.6								1	5	16	4	97	Yes.	Hyde.	Dr. G. B. Pemberton			
Macclesfield	16628	16003	15362	79495	223	12.6	14	191	12.4	1	1						1	3	19	13	58	Yes.	Macclesfield and Higher Sutton	Dr. R. Proudfoot			
Malpas	4643	4473	4294	21406	79	17.6	4	61	14.2												11	139	Yes.	Chester.	Dr. W. E. Burton		
Nantwich	24905	23749	22798	28467	418	17.6	31	323	14.1								3	8	25	33	78	Yes.	Nantwich Joint and Small-pox.	Dr. R. T. Turner			
Northwich	28970	24373	23397	54308	419	17.1	24	287	12.2								1	4	6	25	33	78	Yes.	Northwich Joint.	Dr. H. E. Gough		
Rudcorn	28216	28201	27159	49139	455	16.0	28	347	13.6								3	5	1	10	36	81	Yes.	Dutton. Moore (Small-pox).	Dr. Bennett		
Tatton	13187	12757	12246	56874	213	17.6	16	167	13.6								1	1	3	24	16	71	Yes.	Chester	Dr. W. E. Burton		
Tintwistle	2193	1987	1867	13619	35	12.5	1	27	14.1								1	1	2	10	4	160	Yes.	Mottram Moor.	Dr. G. J. A. W. Burn		
Wirral	19022	20200	21138	26635	283	12.8	18	238	11.2								2	7	33	18	63	Yes.	Wirral Joint.	Dr. J. B. Yeoman			
	183248	185592	178162	544503	2367	15.4	171	2268	12.7	3	10	22	11	2	14	62	34	224	78								
Administrative County	597771	621978	600918	640828	9999	15.9	585	8066	13.4	31	27	66	28	5	65	222	36	829	83								

Prepared from figures supplied by

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