

**[Report 1923] / Medical Officer of Health, County Council of the Palatine of Chester / Cheshire County Council.**

**Contributors**

Cheshire (England). County Council.

**Publication/Creation**

1923

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**REPORT**

OF THE

Medical Officer of Health

*For the Year ending December 31st, 1923.*

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*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.

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

MR. CHAIRMAN AND GENTLEMEN,

I beg to present you with my Report on the health of the Administrative County for the year 1923.

I would point to the steady though not great increase in the population which is now estimated to number 636,300, to the birth-rate, which shews a slight fall, to the death-rate which has further declined to 11.1 per thousand and to the infantile mortality which shews a slight but well maintained diminution. All these factors are matter for congratulation and indicate that the money spent on public health machinery is bringing in a good return.

For the first time it is possible to compare the cost of the various public health services of the County with other expenditure and I have selected the cost per head of the population from figures kindly supplied by the County Accountant. They are as under:—

|   | Pence.        |
|---|---------------|
| Maternity and Child Welfare ... ..        | 2.427         |
| Venereal Diseases ... ..                  | 0.218         |
| Tuberculosis ... ..                       | 4.783         |
| General Public Health ... ..              | 0.711         |
| Mental Deficiency ... ..                  | 0.844         |
| Medical Inspection of School Children ... | 2.623         |
| <b>Total</b> ... ..                       | <b>11.076</b> |

There are only nine other Counties in England and Wales where the total cost of these public medical services is lower than in Cheshire.

There is, of course, room for many improvements and advances and I feel confident from long experience that when these are in their proper turn brought to the notice of your Committee they will receive careful and generous consideration.

Once more I desire to place on record my sincere thanks to your Committee, to my brother officials and to all my colleagues both medical and lay for cheerfully accorded assistance at all times.

I have the honour to be,  
Your obedient Servant,

MEREDITH YOUNG,  
*County Medical Officer of Health.*

*43, Foregate Street,  
Chester,*

*September, 1924.*

# REPORT OF THE Medical Officer of Health,

For the Year ended December 31st, 1923.

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## Section I.—Area and Population.

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### Area.

In the Census Report of 1911 this is given as 640,823 acres and in the Preliminary Census Report 1921 as 640,791 acres.

### Population.

The population of the Administrative County, as enumerated at the Census of 1911, was 597,771 and in the Preliminary Census Report of 1921 as 625,001, an increase of 27,230 in the decennial period.

This year the population is estimated as under:—

|                                 |                |
|---------------------------------|----------------|
| 6 Municipal Boroughs ... ..     | 173,780        |
| 35 other Urban Districts ... .. | 267,520        |
| 12 Rural Districts ... ..       | 195,000        |
| Total ... ..                    | <u>636,300</u> |

The Registrar-General in a Memorandum published in March, 1924, states:—

The annual distribution of his returns of births and deaths and estimates of population for the past year affords the Registrar-General an opportunity of directing the attention of Medical Officers of Health and others using the returns to some points upon which experience has shown that misunderstandings tend to arise.

The numbers of births and deaths are those registered during the calendar year and are corrected for inward and outward transfers; they will differ therefore from uncorrected figures compiled locally either for the calendar year or for a period of fifty-two or fifty-three weeks.

The procedure followed in adjusting the local Census populations of 1921 in order to arrive at estimates of resident populations for that year which could suitably be used in connection with statistics of births and deaths classified according to area of residence is described in the Registrar-General's Annual Report for 1920.

The estimates of population as at 30th June, 1923, which are now provided have been based on the adjusted 1922 figures after allowance for the varying rates of natural increase as evidenced by the births and deaths in each area and of migration as indicated from other sources of information such as the changes in the numbers on the Parliamentary Register and the migration returns obtained by the Board of Trade and are supplied only for use in vital statistics.

The classification of some deaths is modified in the light of fuller information obtained from the certifying practitioner in response to special inquiries. The principal subjects of these inquiries are indicated in a table published in the annual reports of the Registrar-General; and this possible source of discrepancy between the returns of the Registrar-General and those compiled locally should be borne in mind, particularly in regard to the causes of death dealt with in that table.

The Registrar-General's estimate of the resident population is contained in column 2 of this table.

The figures for the several districts are as under:—

| Municipal Boroughs.<br>(6) | Population at<br>Census, 1921. | Population<br>supplied by<br>Registrar<br>General, 1924. | Area in<br>Acres. |
|----------------------------|--------------------------------|--|-------------------|
| Congleton ... ..           | 11764                          | 12130  | 2572              |
| Crewe ... ..               | 46477                          | 47410  | 2184              |
| Dukinfield ... ..          | 19493                          | 19930  | 1407              |
| Hyde ... ..                | 33437                          | 34030  | 3079              |
| Macclesfield ... ..        | 33846                          | 34610  | 3214              |
| Stalybridge ... ..         | 25233                          | 25670  | 3132              |
|                            | 170250                         | 173780   | 15588             |

| Urban Districts.<br>(33)           | Population at<br>Census, 1921. | Population<br>supplied by<br>Registrar<br>General, 1924. | Area in<br>Acres. |
|------------------------------------|--------------------------------|--|-------------------|
| Alderley Edge ...                  | 3072                           | 3058   | 678               |
| Alsager ...                        | 2693                           | 2675   | 2241              |
| Altrincham ...                     | 20461                          | 20920  | 1425              |
| Ashton-upon-Mersey ...             | 7780                           | 7939   | 1623              |
| Bebington and Brom-<br>borough ... | 19110                          | 19870  | 3446              |
| Bollington ...                     | 5094                           | 5220   | 1291              |
| Bowdon ...                         | 2967                           | 2914   | 850               |
| Bredbury and Romiley               | 9169                           | 9218   | 3990              |
| Buglawton ...                      | 1572                           | 1739   | 2911              |
| Cheadle and Gatley ...             | 11036                          | 11220  | 5087              |
| Compstall ...                      | 944                            | 948  | 903               |
| Ellesmere Port and<br>Whitby ...   | 13075                          | 13900  | 3449              |
| Hale ...                           | 9285                           | 9251   | 1288              |
| Handforth ...                      | 904                            | 953  | 1311              |
| Hazel Grove & Bramhall             | 10125                          | 10290  | 5447              |
| Hollingworth ...                   | 2465                           | 2480   | 2086              |
| Hoole ...                          | 5990                           | 6034   | 334               |
| Hoylake & West Kirby               | 17055                          | 16580  | 1979              |
| Knutsford ...                      | 5411                           | 5448   | 1760              |
| Lymm ...                           | 5288                           | 5361   | 4374              |
| Marple ...                         | 6613                           | 6564   | 3055              |
| Middlewich ...                     | 5116                           | 5437   | 1082              |
| Mottram in Longdendale             | 2882                           | 2882   | 1084              |
| Nantwich ...                       | 7296                           | 7458   | 703               |
| Neston and Parkgate ...            | 5191                           | 5232   | 3331              |
| Northwich ...                      | 18385                          | 18770  | 1398              |
| Runcorn ...                        | 18393                          | 19010  | 1274              |
| Sale ...                           | 16337                          | 16410  | 2006              |
| Sandbach ...                       | 5843                           | 6050   | 2694              |
| Tarporley ...                      | 2516                           | 2507   | 6195              |
| Wilmslow ...                       | 8286                           | 8300   | 5090              |
| Winsford ...                       | 10957                          | 11200  | 5778              |
| Yeardsley-cum-Whaley               | 1698                           | 1682   | 1323              |
|                                    | 263009                         | 267520   | 81486             |



| Rural Districts.<br>(12) | Population at<br>Census, 1921. | Population<br>supplied by<br>Registrar<br>General, 1924. | Area in<br>Acres. |
|--------------------------|--------------------------------|--|-------------------|
| Bucklow ... ..           | 22149                          | 22250  | 56806             |
| Chester ... ..           | 13327                          | 13590  | 34253             |
| Congleton ... ..         | 13217                          | 13440  | 40152             |
| Disley ... ..            | 3024                           | 2981   | 2466              |
| Macclesfield ... ..      | 17047                          | 17170  | 79494             |
| Malpas ... ..            | 4464                           | 4421   | 21405             |
| Nantwich ... ..          | 25013                          | 25390  | 98466             |
| Northwich ... ..         | 24434                          | 25110  | 54307             |
| Runcorn ... ..           | 28929                          | 29200  | 49117             |
| Tarvin ... ..            | 13410                          | 13410  | 56871             |
| Tintwistle ... ..        | 2071                           | 2048   | 13619             |
| Wirral ... ..            | 24657                          | 25990  | 36761             |
|                          | 191742                         | 195000   | 543717            |
| Administrative County    | 625001                         | 636300   | 640791            |

## Section II.—Births and Deaths.

### Births.

The total number of births registered in the Administrative County during 1923 was 11,061, equal to a birth-rate of 17.3 per 1,000 of the estimated population. This is a decrease from last year, when the number of births was 11,395, giving a rate of 17.9. Comparative statistics are:

|                   |     |     |      |
|-------------------|-----|-----|------|
| England and Wales | ... | ... | 19.7 |
| 105 Great Towns   | ... | ... | 20.4 |
| 155 Smaller Towns | ... | ... | 19.8 |
| London            | ... | ... | 20.2 |

The highest birth-rates were:—

|                     |     |     |      |
|---------------------|-----|-----|------|
| Ellesmere Port U.D. | ... | ... | 29.4 |
| Runcorn U.D.        | ... | ... | 22.7 |
| Middlewich U.D.     | ... | ... | 22.2 |
| Buglawton U.D.      | ... | ... | 21.2 |

The lowest birth-rates were:—

|                           |     |     |      |
|---------------------------|-----|-----|------|
| Bowdon U.D.               | ... | ... | 10.2 |
| Alsager U.D.              | ... | ... | 11.5 |
| Bredbury and Romiley U..D | ... | ... | 11.7 |

The illegitimate births numbered 446, as against 481 in 1922. Sixty of these infants died under the age of one year.

### Deaths.

The total number of deaths occurring in the Administrative County during 1923, was 7,101, equal to a death-rate of 11.1 per 1,000 of the estimated population. In 1922 the death-rate was 12.1. Comparative statistics are:—

|     |                   |     |     |      |
|-----|-------------------|-----|-----|------|
|     | England and Wales | ... | ... | 11.6 |
| 105 | Great Towns       | ... | ... | 10.6 |
| 155 | Smaller Towns     | ... | ... | 10.6 |
|     | London            | ... | ... | 11.2 |

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

|  |                    |     |     |      |
|--|--------------------|-----|-----|------|
|  | Tarporley U.D.     | ... | ... | 19.5 |
|  | Stalybridge M.B.   | ... | ... | 15.7 |
|  | Alderley Edge U.D. | ... | ... | 14.7 |
|  | Nantwich U.D.      | ... | ... | 13.9 |
|  | Compstall U.D.     | ... | ... | 13.7 |

The lowest rates are recorded in the following districts:—

|  |                           |     |     |
|--|---------------------------|-----|-----|
|  | Bebington and Bromborough | ... | 8.1 |
|  | Middlewich U.D.           | ... | 8.2 |
|  | Wirral R.D.               | ... | 8.3 |
|  | Hoole U.D.                | ... | 8.4 |
|  | Chester R.D.              | ... | 8.8 |
|  | Macclesfield R.D.         | ... | 9.0 |
|  | Disley R.D.               | ... | 9.0 |
|  | Buglawton U.D.            | ... | 9.0 |
|  | Cheadle and Gatley        | ... | 9.0 |
|  | Ellesmere Port U.D.       | ... | 9.8 |
|  | Bowdon U.D.               | ... | 9.9 |

The figures for the past 11 years are as follows:—

|      |     |     | Births. | Deaths. |
|------|-----|-----|---------|---------|
| 1923 | ... | ... | 11,061  | 7,101   |
| 1922 | ... | ... | 11,395  | 7,691   |
| 1921 | ... | ... | 12,440  | 7,197   |
| 1920 | ... | ... | 14,075  | 7,246   |
| 1919 | ... | ... | 9,999   | 8,066   |
| 1918 | ... | ... | 9,838   | 8,903   |
| 1917 | ... | ... | 9,970   | 7,278   |
| 1916 | ... | ... | 11,537  | 7,730   |
| 1915 | ... | ... | 12,078  | 8,286   |
| 1914 | ... | ... | 13,019  | 7,816   |
| 1913 | ... | ... | 13,206  | 7,867   |

## Zymotic Diseases.

The total number of deaths from this special group of diseases in the Administrative County during 1923 was 203, equal to a zymotic death-rate of .31 per 1,000 of the estimated population.

## 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 721 deaths of infants under one year in the Administrative County during 1923, a number equivalent to 65 per 1,000 of the recorded births. In 1922 there were 766 deaths, the rate being 67 per 1,000.

Particulars of the infantile death-rate for the last 11 years are as follows:—

|      |     |     |     |     | Infantile<br>Death-rate. |
|------|-----|-----|-----|-----|--------------------------|
| 1923 | ... | ... | ... | ... | 65                       |
| 1922 | ... | ... | ... | ... | 67                       |
| 1921 | ... | ... | ... | ... | 79                       |
| 1920 | ... | ... | ... | ... | 71                       |
| 1919 | ... | ... | ... | ... | 83                       |
| 1918 | ... | ... | ... | ... | 85                       |
| 1917 | ... | ... | ... | ... | 86                       |
| 1916 | ... | ... | ... | ... | 75                       |
| 1915 | ... | ... | ... | ... | 98                       |
| 1914 | ... | ... | ... | ... | 94                       |
| 1913 | ... | ... | ... | ... | 104                      |

Comparative statistics are:—

|     |                      |     |     |    |
|-----|----------------------|-----|-----|----|
|     | England and Wales... | ... | ... | 69 |
| 105 | Great Towns          | ... | ... | 72 |
| 155 | Smaller Towns        | ... | ... | 69 |
|     | London               | ... | ... | 60 |

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

|  |                      |     |     |     |
|--|----------------------|-----|-----|-----|
|  | Hollingworth U.D.... | ... | ... | 121 |
|  | Nantwich U.D.        | ... | ... | 102 |
|  | Dukinfield M.B.      | ... | ... | 98  |
|  | Macclesfield M.B.    | ... | ... | 90  |

There were no deaths under one year in Alsager and Bowdon Urban Districts and Malpas Rural District.

Low rates were recorded in the following districts:—

|                               |     |     |     |    |
|-------------------------------|-----|-----|-----|----|
| Knutsford U.D.                | ... | ... | ... | 9  |
| Tarporley U.D.                | ... | ... | ... | 21 |
| Wilmslow U.D.                 | ... | ... | ... | 24 |
| Buglawton U.D.                | ... | ... | ... | 27 |
| Tintwistle R.D.               | ... | ... | ... | 28 |
| Yeardsley-cum-Whaley          | ... | ... | ... | 30 |
| Cheadle and Gatley U.D.       | ... | ... | ... | 34 |
| Hazel Grove and Bramhall U.D. | ... | ... | ... | 37 |
| Ashton-upon-Mersey U.D.       | ... | ... | ... | 39 |

### Tuberculosis.

The deaths recorded under this heading were as under:—

|                 | Urban<br>Districts. | Rural<br>Districts. | Total.         |
|-----------------|---------------------|---------------------|----------------|
| Pulmonary Forms | ... 270             | ... 74              | ... 344        |
| Other Forms     | ... 112             | ... 32              | ... 144        |
| Totals          | ... <u>382</u>      | ... <u>106</u>      | ... <u>488</u> |

### Influenza.

This has been responsible for the deaths of 117 males and 82 females—a total of 199 persons. The disease has been most fatal at ages between 45 and 65 years. In a few districts the disease took the form of an epidemic on a small scale.

### Pneumonia (all forms).

The death-rate from this group of diseases was a heavy one. In all 548 deaths were recorded, 334 in males and 214 in females. The figure is not quite so high as in 1922, when it was 556. There is a great need for the adoption of measures to control this serious loss of life. If a fraction of the money spent on Tuberculosis were spent on the hospital treatment or nursing of this disease I am convinced that a considerable reduction in its mortality would be achieved. The matter really needs bringing to the front in a practical manner. District Nurses do accomplish a great deal but after all there is a limit to the time they can devote to such cases having regard to their other responsibilities. What we need is a squad of highly

trained emergency nurses to attend to these cases and to other cases such as Influenza, Puerperal Fever, and Acute Rheumatism, to mention only three diseases where skilled nursing is the one thing that matters.

### Respiratory Diseases.

These, exclusive of Tuberculosis, caused 643 deaths during the year. Many of the medical profession and the public at large have still to learn that the prevention and cure of virtually every disease of the respiratory tract—from the common cold to acute pneumonia—are both bound up inseparably with fresh and moving air. Fresh stagnant air is of little or no use—fresh air *in movement* is the desideratum. The rate of movement need only be gentle but it must be continual. This has been demonstrated beyond criticism by Prof. Leonard Hill and the Medical Research Committee.

### Enteric (Typhoid) Fever.

The total number of deaths from this condition during 1923 was 13.

It is interesting to compare this figure with those for twenty or more years ago. We find that in the County the deaths from Typhoid Fever were as under in those days:—

| Year. |     |     |     |     | No. of deaths. |
|-------|-----|-----|-----|-----|----------------|
| 1902  | ... | ... | ... | ... | 66             |
| 1901  | ... | ... | ... | ... | 100            |
| 1900  | ... | ... | ... | ... | 107            |
| 1899  | ... | ... | ... | ... | 101            |
| 1898  | ... | ... | ... | ... | 106            |
| 1897  | ... | ... | ... | ... | 68             |
| 1896  | ... | ... | ... | ... | 86             |
| 1895  | ... | ... | ... | ... | 76             |
| 1894  | ... | ... | ... | ... | 81             |
| 1893  | ... | ... | ... | ... | 118            |

The progress made in the control of this disease is thus apparent. Perseverance in the abolition of filthy privy-middens and in securing cleanliness of the house and its surroundings should before many years make Typhoid Fever a thing of the past.

### Encephalitis Lethargica (Sleepy Sickness).

This disease caused 14 deaths during the year. These deaths occurred at all ages from one year onwards to 75.

The sporadic occurrence of this disease whilst not such as to occasion alarm does give rise to some uneasiness of mind because of its mysterious selection of victims. The most careful and detailed inquiries fail to elicit the source of infection and, in ignorance of this, precautionary methods have to be taken on a wholesale scale so that nothing may be missed. The disease presents itself in such different clinical varieties that the diagnosis is often missed or made at a late stage. In many cases the development of mental symptoms many months after a supposed case of Influenza causes a doubt as to whether the patient has not actually suffered from Encephalitis Lethargica instead of Influenza. As with other infectious diseases there are mild and severe varieties and it is the mild cases which, as ever, are the cause of most trouble because of their non-recognition. The disease when it occurs is being treated by the District Medical Officers of Health as one with very serious potentialities and no precaution is neglected however slight.

Hospital isolation has been secured for a few cases and it is expected that before long it will be available for all by the making of an Order under the Isolation Hospitals Act, 1893, declaring the disease an infectious one within the meaning of that Act.

### **Cancer (Malignant Disease).**

The total number of deaths from malignant disease during 1923 was 790, as compared with 794 in 1922. The death-rate per 1,000 of the population works out at 1.24 as compared with a rate of 1.26 in 1922, shewing that the ravages of the disease are virtually undiminished.

There is nothing of any note to add to what has been previously said about this deplorable condition. I am more convinced than ever that diet is the factor to be principally considered. A reduction in the consumption of butcher's meat would, I feel sure, result in a considerable diminution of malignant disease. So would careful attention to the action of the bowels by lessening intestinal stasis (or stagnation) with its accompanying fermentation and absorption of the toxins formed during that process. In support of this theory, for theory it can only be at present, we have such notable advocates as Metchinkoff, McCarrison and Arbuthnot Lane.

It is often stated that the increase of Cancer is due to better medical diagnosis. I am no believer in this theory

and I regard it as refuted by the very fact that cancer of those parts of the body where the disease is readily accessible is and has for some time been on the increase.

The warning leaflet issued by your Council many years ago which gave the early signs and symptoms of Cancer, coupled with advice as to the imperative necessity of securing a medical opinion on suspicious growths at the earliest possible moment has not been the success we hoped. One can only put this down to public apathy which, in such matters, is one of the hardest things to overcome. In things such as Tuberculosis and Venereal Disease educative propaganda work has undoubtedly helped the campaign. Yet in the case of a disease which beats them hollow in the causation of death the general public does not appear to want to know anything about the matter.

A man who both spends and makes a fortune in advertising once told me that when he had a good thing he could *make* the public have it. We know that in the campaign against Cancer we have in education the best weapon known to medical science and it is surely our public duty to follow the example cited above and make the public have it.

#### **Puerperal Sepsis (Child-bed Fever).**

The deaths from this numbered 15 during the year as against 7 in 1922. There were over 11,000 births so that the incidence of the disease cannot be said to be high. At the same time it should be possible with the means now available to prevent the occurrence of a single case of this kind.

#### **Congenital Debility and Premature Birth.**

The deaths due to these combined causes numbered 338. The extension of ante-natal work should do much to lessen this figure which is undoubtedly too high. There is, however, still a great deal to be learned about the conditions affecting the life of the unborn child in spite of recent investigations.

#### **Suicides and Deaths by Violence.**

The number of suicides recorded during 1923 was 75 and the deaths from violence numbered 213.

## Section III.—Infectious Diseases.

The following Tabular Statement prepared by the Registrar-General shews the number of cases of certain infectious diseases which were notified during the 52 weeks ended December 29th, 1923:—

| ADMINISTRATIVE AREA.                 | Scarlet fever. |       | Diphtheria. |       | Enteric fever. |       | Puerperal fever. |       | Erysipelas. |       |
|--------------------------------------|----------------|-------|-------------|-------|----------------|-------|------------------|-------|-------------|-------|
|                                      | Cases.         | Rate. | Cases.      | Rate. | Cases.         | Rate. | Cases.           | Rate. | Cases.      | Rate. |
| <b>BOROUGH AND URBAN DISTRICTS:—</b> |                |       |             |       |                |       |                  |       |             |       |
| Alderley Edge ... ..                 | 10             | 3·27  | 11          | 3·60  | -              | -     | -                | -     | -           | -     |
| Alsager ... ..                       | 4              | 1·50  | -           | -     | -              | -     | 1                | 0·37  | 1           | 0·37  |
| Altrincham ... ..                    | 37             | 1·77  | 14          | 0·67  | -              | -     | -                | -     | 8           | 0·38  |
| Ashton upon Mersey ...               | 7              | 0·88  | 1           | 0·13  | -              | -     | -                | -     | 1           | 0·13  |
| Bebington & Bromborough              | 63             | 3·17  | 6           | 0·30  | -              | -     | -                | -     | 3           | 0·15  |
| Bollington ... ..                    | 31             | 5·94  | 2           | 0·38  | -              | -     | -                | -     | 1           | 0·19  |
| Bowdon ... ..                        | 4              | 1·37  | 1           | 0·34  | -              | -     | -                | -     | -           | -     |
| Bredbury and Romiley                 | 13             | 1·41  | 7           | 0·76  | -              | -     | -                | -     | 5           | 0·54  |
| Buglawton ... ..                     | 27             | 15·53 | 2           | 1·15  | -              | -     | 2                | 1·15  | -           | -     |
| Cheadle and Gatley ...               | 15             | 1·34  | 8           | 0·71  | -              | -     | -                | -     | 9           | 0·80  |
| Compstall ... ..                     | 1              | 1·05  | 42          | 44·30 | -              | -     | 1                | 1·05  | -           | -     |
| Congleton M.B. ... ..                | 127            | 10·47 | 14          | 1·15  | -              | -     | -                | -     | 6           | 0·49  |
| Crewe M.B. ... ..                    | 72             | 1·52  | 16          | 0·34  | 1              | 0·02  | -                | -     | 5           | 0·11  |
| Dukinfield M.B. ... ..               | 56             | 2·81  | 7           | 0·35  | 6              | 0·30  | 1                | 0·05  | 21          | 1·05  |
| Ellesmere Port & Whitby              | 11             | 0·79  | 12          | 0·86  | -              | -     | 1                | 0·07  | 4           | 0·29  |
| Hale ... ..                          | 5              | 0·54  | 4           | 0·43  | 2              | 0·22  | -                | -     | -           | -     |
| Handforth ... ..                     | 1              | 1·05  | -           | -     | -              | -     | -                | -     | -           | -     |
| Hazel Grove & Bramhall               | 10             | 0·97  | 4           | 0·39  | -              | -     | -                | -     | -           | -     |
| Hollingworth ... ..                  | 3              | 1·21  | 2           | 0·81  | 2              | 0·81  | -                | -     | -           | -     |
| Hoole ... ..                         | 6              | 0·99  | 7           | 1·16  | 1              | 0·17  | -                | -     | 2           | 0·33  |
| Hoyle and West Kirby                 | 71             | 4·28  | 11          | 0·66  | 3              | 0·18  | 1                | 0·06  | 6           | 0·36  |
| Hyde M.B. ... ..                     | 112            | 3·29  | 29          | 0·85  | 2              | 0·06  | 3                | 0·09  | 9           | 0·26  |
| Knutsford ... ..                     | 24             | 4·41  | 7           | 1·28  | -              | -     | -                | -     | 2           | 0·37  |
| Lymm ... ..                          | 19             | 3·54  | -           | -     | 1              | 0·19  | -                | -     | 4           | 0·75  |
| Macclesfield M.B. ...                | 97             | 2·80  | 8           | 0·23  | 7              | 0·20  | 4                | 0·12  | 12          | 0·35  |
| Marple ... ..                        | 11             | 1·68  | 2           | 0·30  | 1              | 0·15  | -                | -     | 1           | 0·15  |
| Middlewich ... ..                    | 6              | 1·10  | 61          | 11·22 | -              | -     | 1                | 0·18  | 4           | 0·74  |
| Mottram in Longdendale               | 1              | 0·35  | 1           | 0·35  | -              | -     | -                | -     | -           | -     |
| Nantwich ... ..                      | 5              | 0·67  | 2           | 0·27  | -              | -     | -                | -     | -           | -     |
| Neston and Parkgate ...              | 9              | 1·72  | 14          | 2·68  | -              | -     | -                | -     | -           | -     |
| Northwich ... ..                     | 52             | 2·77  | 11          | 0·59  | -              | -     | -                | -     | 2           | 0·11  |
| Runcorn ... ..                       | 58             | 3·05  | 16          | 0·84  | 1              | 0·05  | -                | -     | 8           | 0·42  |
| Sale ... ..                          | 18             | 1·10  | 2           | 0·12  | -              | -     | 2                | 0·12  | 2           | 0·12  |
| Sandbach ... ..                      | 59             | 9·75  | 11          | 1·82  | -              | -     | -                | -     | 4           | 0·66  |
| Stalybridge M.B. ...                 | 18             | 0·70  | 7           | 0·27  | -              | -     | 1                | 0·04  | 9           | 0·35  |
| Tarporley ... ..                     | -              | -     | -           | -     | -              | -     | -                | -     | -           | -     |
| Wilmslow ... ..                      | 16             | 1·93  | 9           | 1·08  | -              | -     | -                | -     | -           | -     |
| Winsford ... ..                      | 65             | 5·80  | 23          | 2·05  | 2              | 0·18  | -                | -     | 3           | 0·27  |
| Yeardsley cum Whaley                 | 8              | 4·76  | 1           | 0·59  | -              | -     | -                | -     | 1           | 0·59  |
| <b>RURAL DISTRICTS:—</b>             |                |       |             |       |                |       |                  |       |             |       |
| Bucklow ... ..                       | 31             | 1·39  | 31          | 1·39  | 1              | 0·04  | 1                | 0·04  | 2           | 0·09  |
| Chestert ... ..                      | 16             | 1·21  | 11          | 0·83  | 6              | 0·46  | -                | -     | 2           | 0·15  |
| Congleton ... ..                     | 40             | 2·98  | 30          | 2·23  | -              | -     | 1                | 0·07  | 2           | 0·15  |
| Disley ... ..                        | 12             | 4·03  | 2           | 0·67  | -              | -     | -                | -     | 2           | 0·67  |
| Macclesfield ... ..                  | 106            | 6·17  | 12          | 0·70  | 3              | 0·17  | 2                | 0·12  | 4           | 0·23  |
| Malpas ... ..                        | 16             | 3·62  | -           | -     | -              | -     | -                | -     | -           | -     |
| Nantwich ... ..                      | 22             | 0·87  | 15          | 0·59  | -              | -     | -                | -     | 1           | 0·04  |
| Northwich ... ..                     | 107            | 4·26  | 23          | 0·92  | -              | -     | 1                | 0·04  | 7           | 0·28  |
| Runcorn ... ..                       | 105            | 3·60  | 15          | 0·51  | 2              | 0·07  | -                | -     | 4           | 0·14  |
| Tarvin ... ..                        | 10             | 0·75  | 5           | 0·37  | -              | -     | -                | -     | 1           | 0·07  |
| Tintwistle ... ..                    | 1              | 0·49  | -           | -     | -              | -     | 1                | 0·49  | -           | -     |
| Wirral ... ..                        | 50             | 1·92  | 16          | 0·62  | 1              | 0·04  | 3                | 0·12  | 7           | 0·27  |



### Enteric (Typhoid) Fever.

Included under this heading are Para-typhoid fevers. The disease has not been prevalent except in the form of isolated cases. Only 8 deaths are recorded from it during the year.

### Scarlet Fever.

This disease has been mildly prevalent in most districts as the following statement shews:—

|                                | No. of<br>Cases notified. |
|--------------------------------|---------------------------|
| Crewe M.B. ... ..              | 72                        |
| Hyde M.B. ... ..               | 112                       |
| Macclesfield M.B. ... ..       | 97                        |
| Altrincham U.D. ... ..         | 37                        |
| Bollington U.D. ... ..         | 32                        |
| Alderley Edge U.D. ... ..      | 11                        |
| Bebington and Bromborough U.D. | 63                        |
| Hoylake U.D. ... ..            | 71                        |
| Knutsford U.D. ... ..          | 24                        |
| Northwich U.D. ... ..          | 52                        |
| Runcorn U.D. ... ..            | 58                        |
| Sale U.D. ... ..               | 23                        |
| Sandbach U.D. ... ..           | 59                        |
| Winsford U.D. ... ..           | 66                        |
| Bucklow R.D. ... ..            | 33                        |
| Congleton R.D. ... ..          | 40                        |
| Macclesfield R.D. ... ..       | 108                       |
| Northwich R.D. ... ..          | 107                       |
| Runcorn R.D. ... ..            | 105                       |

The number of deaths from Scarlet Fever was only 8.

In Lymm I think there is no doubt that infection was disseminated from a certain farm where the disease was not recognised at first. The cases presented some difficulty in diagnosis as there was some similarity to streptococcal sore throat. The throat symptoms were more common and more severe than I have seen for many years and reminded one of the typical Scarlet Fever of 30 years ago. Inflammation of submaxillary glands was seen in most of the cases. There were, however, no fatal cases. The milk was infected by human sources. A veterinary examination failed to reveal any disease in the cattle at the affected farm.

The diminution in the virulence of this disease during recent years is well known. The researches of Drs.

George and Gladys Dick in America now point to a possibility of the disease being brought still more under control by the use of an antitoxin and by the employment of toxin-antitoxin mixtures.

The Dick test which is conducted on similar lines to the Schick test in diphtheria has already given very reliable results in the hands of several observers. If these possibilities develop into realities this disease should be robbed of its few remaining terrors.

### Diphtheria.

This has been rather prevalent—quite a number of districts having had an unusual percentage of cases as the following figures demonstrate:—

|                           | No. of<br>Cases notified. |
|---------------------------|---------------------------|
| Crewe M.B. ... ..         | 17                        |
| Hyde M.B. ... ..          | 29                        |
| Altrincham U.D. ... ..    | 14                        |
| Alderley Edge U.D. ... .. | 11                        |
| Compstall U.D. ... ..     | 42                        |
| Hoylake U.D. ... ..       | 11                        |
| Neston U.D. ... ..        | 14                        |
| Middlewich U.D. ... ..    | 61                        |
| Northwich U.D. ... ..     | 11                        |
| Sandbach U.D. ... ..      | 11                        |
| Winsford U.D. ... ..      | 25                        |
| Bucklow R.D. ... ..       | 29                        |
| Congleton R.D. ... ..     | 28                        |
| Northwich R.D. ... ..     | 24                        |
| Runcorn R.D. ... ..       | 15                        |

The outbreak, if such it can be termed, continued in Middlewich U.D. throughout the whole year. No milk supply was implicated and there appeared to be no connection between the cases except actual contact infection.

In Compstall U.D. there were two separate outbreaks but no definite cause is assigned for either of these. The absence of a water-carriage system may have assisted in the causation of the illness.

### Pneumonia.

The infectivity of the lobar type of this disease from person to person is not sufficiently realised by most people. Those who are nursing it or coming in close contact with it should wear protective masks and should see that the sputum is disposed of as carefully for example as in cases

of Diphtheria and Tuberculosis. It is a disease which affects the poor and especially the badly-housed section of the community more than it does the well-to-do and well-housed. Cases nursed in a good hospital have a far better chance of recovery than those treated in a house with indifferent sanitary accommodation and surroundings. The practice of receiving such cases in Isolation Hospitals is one to be commended.

The extent of this disease may be judged from the following figures:—

|                                | No. of<br>Cases notified. |
|--------------------------------|---------------------------|
| Hyde M.B. ... ..               | 90                        |
| Ellesmere Port U.D. ... ..     | 19                        |
| Bebington and Bromborough U.D. | 39                        |
| Bredbury and Romiley U.D. ...  | 42                        |
| Cheadle U.D. ... ..            | 26                        |
| Hale U.D. ... ..               | 12                        |
| Hoole U.D. ... ..              | 15                        |
| Hoylake U.D. ... ..            | 20                        |
| Runcorn U.D. ... ..            | 86                        |
| Winsford U.D.... ..            | 19                        |
| Bucklow R.D. ... ..            | 28                        |
| Nantwich R.D. ... ..           | 24                        |
| Wirral R.D. ... ..             | 29                        |

The deaths from Pneumonia (all forms) numbered 412 during the year.

### **Encephalitis Lethargica (Sleepy Sickness).**

This disease is unfortunately becoming more common whether owing to better diagnosis or not it is difficult to say. It attacks people of all ages and seldom presents a really typical clinical picture in any two consecutive cases. The death-rate is usually a high one in young people but diminishes slowly as age advances. The disease has been reported from time to time in most districts but has not shewn any tendency to spread except in a very limited manner.

### **Bacteriological Examinations.**

Specimens sent from the Public Health Department are dealt with by the Manchester University (Public Health Laboratory). Nineteen such specimens were sent during the year, viz.: 15 diphtheria, 1 typhoid fever and 3 special throat swabs from cases of suspected streptococcal infection.

The various Local Authorities have arrangements with different places and persons. In a few Boroughs a certain number of specimens are examined by the Medical Officer of Health. The Reports from the several districts shew that the following total specimens have been examined:—

|                            |     | Total No. of Specimens examined.<br>Exclusive of Specimens of Sputum<br>done at Chester P.H. Department. |
|----------------------------|-----|--|
| <b>MUNICIPAL BOROUGHS—</b> |     |  |
| Congleton                  | ... | ...  |
| Crewe                      | ... | 324 (315 examined in Municipal Laboratory).  |
| Dukinfield                 | ... | Not stated.  |
| Hyde                       | ... | 369 (in addition 49 examined locally).   |
| Macclesfield               | ... | 116.   |
| Stalybridge                | ... | Not stated.  |
| <b>URBAN DISTRICTS—</b>    |     |  |
| Alderley Edge              | ... | 22 (including Tuberculosis sent to Chester)  |
| Alsager                    | ... | Nil.   |
| Altrincham                 | ... | 38.  |
| Ashton-upon-Mersey         | ..  | Nil.   |
| Bebington and Bromborough  | ... | 2.   |
| Bollington                 | ... | Not stated.  |
| Bowdon                     | ... | Not stated.  |
| Bredbury and Romiley       | ... | 4.   |
| Buglawton                  | ... | 1.   |
| Cheadle and Gatley         | ... | 38.  |
| Compstall                  | ... | 147.   |
| Ellesmere Port             | ... | 1.   |
| Hale                       | ... | 22.  |
| Handforth                  | ... | Nil.   |
| Hazel Grove and Bramhall   | ... | Nil.   |
| Hollingworth               | ... | Not stated.  |
| Hoole                      | ... | 39.  |
| Hoylake and West Kirby     | ... | 13.  |
| Knutsford                  | ... | 5.   |
| Lymm                       | ... | 17.  |
| Marple                     | ... | Not stated.  |
| Middlewich                 | ... | 68.  |
| Mottram-in-Longdendale     | ... | Not stated.  |
| Nantwich                   | ... | 18.  |
| Neston and Parkgate        | ... | 9.   |
| Northwich                  | ... | 50.  |
| Runcorn                    | ... | 16 ( <i>Plus Water Examinations</i> ).   |
| Sale                       | ... | Not stated.  |
| Sandbach                   | ... | Not stated.  |
| Tarporley                  | ... | 6.   |
| Wilmslow                   | ... | 29.  |
| Winsford                   | ... | 71.  |
| Yeardsley-cum-Whaley       | ... | 5.   |
| <b>RURAL DISTRICTS—</b>    |     |  |
| Bucklow                    | ... | 79.  |
| Chester                    | ... | 1.   |
| Congleton                  | ... | Not stated.  |
| Macclesfield               | ... | 23.  |
| Malpas                     | ... | Nil.   |
| Nantwich                   | ... | Not stated.  |
| Northwich                  | ... | 40.  |
| Runcorn                    | ... | 91.  |
| Tarvin                     | ... | Nil.   |
| Tintwistle                 | ... | Not stated.  |
| Wirral                     | ... | 10.  |
| Total                      | ... | 1773   |

It is not too much to say that if the public health is to be adequately guarded at all points and the medical practitioner furnished with the facilities necessary for prompt diagnosis these figures ought to be almost ten times as great as they are.

## Section IV.—Venereal Diseases.

Facilities for free diagnosis and treatment of Venereal Disease are given at a number of Hospitals under agreement with your Council. Patients may also attend at any other Hospital and the cost is debited to us. The following return shews the number of cases treated at various Hospitals during 1923:—

| Institution.                             | Persons attending for first time at Out-Patient Clinic suffering from : |               |             |                          | Total attendances at Out-Patient Clinic. | Number of In-Patient Days. | Doses of Salvarsan substitute given. |
|--|---|---------------|-------------|--------------------------|--|----------------------------|--------------------------------------|
|  | Syphilis.   | Soft Chancere | Gonorrhoea. | Non-Venereal conditions. |  |                            |                                      |
| Liverpool Royal Infirmary ...            | 9   | —             | 10          | 5                        | 331                                      | 4                          | 59                                   |
| Liverpool David Lewis Northern Hospital  | 1   | —             | 1           | —                        | 62                                       | Nil.                       | 18                                   |
| Ancoats Hospital, Manchester ...         | 4   | —             | 6           | 7                        | 439                                      | 23                         | 74                                   |
| Manchester Skin Hospital                 | 21  | —             | 1           | 10                       | 578                                      | 6                          | 100                                  |
| St. Luke's Hospital, Manchester ...      | 11  | 1             | 22          | 7                        | 365                                      | 117                        | 70                                   |
| Manchester Royal Infirmary ...           | 37  | —             | 28          | 5                        | 640                                      | Nil.                       | 118                                  |
| St. Mary's Hospital, Manchester ...      | 5   | —             | 3           | 7                        | 302                                      | Nil.                       | 90                                   |
| Chester Royal Infirmary                  | 28  | —             | 28          | 3                        | 1670                                     | 144                        | 441                                  |
| Ashton-under-Lyne District Infirmary ... | 24  | 2             | 6           | 7                        | 45                                       | 45                         | 416                                  |
| Stockport Clinic ...                     | 6   | —             | 11          | 3                        | 485                                      | —                          | 29                                   |
| Warrington Infirmary ...                 | 7   | —             | 9           | 4                        | 192                                      | —                          | 72                                   |
| Birkenhead Infirmary ...                 | 12  | —             | 8           | 2                        | 210                                      | 62                         | 89                                   |
| Bury Infirmary ..                        |   | Not           | stated.     |                          | 6  | —                          | —                                    |
| Seamen's Hospital, Greenwich ...         | 1   | —             | 1           | —                        | 10                                       | —                          | —                                    |
| <b>TOTALS</b> ...                        | 166   | 3             | 143         | 60                       | 5335                                     | 401                        | 1576                                 |

Comparing the figures just given with the 3 previous years we have the following:—

New cases of Syphilis:—

|      |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|
| 1920 | ... | ... | ... | ... | 313 |
| 1921 | ... | ... | ... | ... | 232 |
| 1922 | ... | ... | ... | ... | 210 |
| 1923 | ... | ... | ... | ... | 166 |

New cases of Gonorrhœa:—

|      |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|
| 1920 | ... | ... | ... | ... | 183 |
| 1921 | ... | ... | ... | ... | 181 |
| 1922 | ... | ... | ... | ... | 127 |
| 1923 | ... | ... | ... | ... | 143 |

Attendances at Out-Patient Clinics:—

|      |     |     |     |     |       |
|------|-----|-----|-----|-----|-------|
| 1920 | ... | ... | ... | ... | 6,693 |
| 1921 | ... | ... | ... | ... | 7,521 |
| 1922 | ... | ... | ... | ... | 6,560 |
| 1923 | ... | ... | ... | ... | 5,335 |

Doses of Salvarsan substitute administered:—

|      |     |     |     |     |       |
|------|-----|-----|-----|-----|-------|
| 1920 | ... | ... | ... | ... | 2,099 |
| 1921 | ... | ... | ... | ... | 2,291 |
| 1922 | ... | ... | ... | ... | 1,940 |
| 1923 | ... | ... | ... | ... | 1,576 |

No. of In-Patient Days:—

|      |     |     |     |     |       |
|------|-----|-----|-----|-----|-------|
| 1920 | ... | ... | ... | ... | 1,098 |
| 1921 | ... | ... | ... | ... | 1,158 |
| 1922 | ... | ... | ... | ... | 237   |
| 1923 | ... | ... | ... | ... | 401   |

The decline in the number of new cases of Syphilis is marked: the decline in the case of Gonorrhœa is proportionately less.

The attendances at the Chester Royal Infirmary it will be noted are very considerably larger proportionately than in the majority of other Institutions.

The number of In-patient days spent at the several Institutions depends, of course, on the nature and extent of the infection. It shews a marked increase on the figures for the previous year.

## Examination of Pathological Material.

| Institution.   | For       |            | Other<br>Organisms. |
|--|-----------|------------|---------------------|
|  | Syphilis. | Gonorrhœa. |                     |
| Manchester University (from general Practitioner) ... .. | 136       | 9          | —                   |
| *David Lewis Northern Hospital, Liverpool ... ..         | 463       | 132        | 6                   |
| *Chester Royal Infirmary ... ..                          | 353       | 120        | —                   |
| *Ashton-under-Lyne District Infirmary                    | 468       | 356        | —                   |
| *Stockport Clinic ... ..                                 | 180       | 40         | —                   |
| *Bury Infirmary ... ..                                   | 356       | 97         | —                   |

\* The figures given here are for all Hospital cases—not Cheshire alone.

## Section V.—Maternity and Child Welfare.

*Note.*—This Section, with the exception of the introductory paragraph, has been written by Dr. Jean R. Shaw, Lady Assistant Medical Officer of Health.

### Introductory.

My thanks are due to Dr. Jean R. Shaw for the untiring devotion to duty she has continued to shew in this many-sided work. In every branch of it individuality and close attention to detail are essential to success and Dr. Shaw has left nothing to chance in the pursuit of this.

Ante-natal work is developing though all too slowly and other branches of usefulness are growing. The midwifery service has been wonderfully improved of late but there are still a few areas where further improvement is desirable. The inspection of midwives—especially of the *bona-fide* type—is also capable of improvement, but I think very few cases of malpraxis, neglect or breach of the Rules of the Central Midwives Board escape attention.

The various Voluntary Committees have given the most hearty support at the several Centres and it is not too much to say that without their assistance we could not carry on the work that is done. They have continued to deserve our cordial and undiluted thanks for their splendid services.

### Number of Midwives in Practice.

There were 362 midwives who notified their intention to practise in the County Area during the year 1923.

- 250 Actually practising: 181 trained; 69 untrained.
- 29 Monthly Nurses.
- 22 Midwives living outside the County Area.
- 2 Died (1 trained; 1 untrained).
- 42 Have had no cases.
- 1 Struck off the roll (trained).
- 16 In Institutions.

The number of trained midwives practising in the County Area has increased only by eight this year and three more untrained midwives have taken cases. One of these has moved into Cheshire from an outside area. There is no doubt that part of the reduction in infantile mortality is due to the advent of the trained midwife; the risk of puerperal sepsis to the mother and the gynæcological complications which result therefrom are also diminished.

The County has at present six County midwives working at Nantwich, Lymm, Tarvin, Upton, Hollingworth and Scholar Green. The above midwives are granted £60 a year from the County and keep their own fees. The grant is given to enable a midwife to settle in an area where there is no trained midwife practising and is withdrawn when she has a practice sufficient to support herself.

### Inspections.

On the whole the bags are well kept. Each midwife has more than one lining for each bag and carries her appliances in separate washable bags. All the nurses are advised to have two bags so that one can be kept for use as a labour bag, and the other for daily visiting.

The inspections have been carried out as in previous years by the Lady Assistant Medical Officer of Health, assisted by the Health Visitors. There have been 881 visits paid to midwives; 681 were formal inspections and the other 200 were paid to make enquiries *re* still-births, puerperal fever cases, infant deaths, &c.



## 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 ... | 178      | 57          | 178       | 57          | 179      | 67          | 181      | 64          | 180      | 64          |
| Fair ...         | 3        | 10          | 3         | 10          | 2        | 2           | —        | 5           | 1        | 5           |
| Unsatisfactory   | —        | 2           | —         | 2           | —        | —           | —        | —           | —        | —           |

Twenty-six cannot take the temperature nor pulse of their patients.

### Malpractice.

During 1923 one midwife was reported to the Central Midwives Board and has been struck off the roll. This midwife was trained but very unsatisfactory and she lost her certificate because she neglected a patient.

### Notifications under C. M. B. Rules.

Table showing number and nature of notifications received during 1923:—

|           |     |               |               |                   |                         |                        |                      |                     |     |    |     |   |     |    |
|-----------|-----|---------------|---------------|-------------------|-------------------------|------------------------|----------------------|---------------------|-----|----|-----|---|-----|----|
|           |     | Medical Help. | Still-Births. | Death of a Child. | Laying out of the Dead. | Ophthalmia Neonatorum. | Source of Infection. | Artificial Feeding. |     |    |     |   |     |    |
| Trained   | ... | 723           | ...           | 76                | ...                     | 7                      | ...                  | 57                  | ... | 38 | ... | 9 | ... | 46 |
| Untrained | ... | 155           | ...           | 24                | ...                     | 1                      | ...                  | —                   | ... | 4  | ... | 1 | ... | 4  |

### Births, &c., Visitations by Health Visitors.

Under the Notification of Births Acts the visiting has been carried out as in previous years. All cases notified to the Chester Office have been written out on special forms and sent out daily to the Health Visitors of the district to which they belong. A considerable number of cases are not notified and particulars of these are obtained from the various Registrars. Very few parents seem to know there is an obligation on them to see that their child's birth is notified.

The number of visits to notified babies under one year has worked out at an average of 4.8 visits per child. This is below the average for 1922. It is disappointing to find the average number of home visits is slightly less in this most important branch of the Health Visitor's Child Welfare work. The work of the Health Visitors has grown so much during the last few years that unless the staff can be increased there is little likelihood of getting a better average.

Health visiting by Nurses has now been in force in Cheshire for 8 years. It can be truly said that each year their work among the mothers and children is more and more appreciated by them. It is such a help to mothers to have a woman visiting in her home who not only sympathises with her domestic trials and troubles but helps her to see daylight through them.

The following is a summary of visits paid by the Lady Assistant Medical Officer and Health Visitors during 1923:—

|   |        |        |
|---|--------|--------|
| First visits to infants under 1 year                    | ...    | 6,742  |
| Re-visits to children under 1 year<br>(Ophthalmia, &c.) | ... .. | 35,575 |
| Re-visits to children over 1 year                       | ... .. | 40,655 |
| Still-births and death enquiries                        | ... .. | 648    |
| Visits to midwives                                      | ... .. | 881    |
| Visits to expectant mothers                             | ... .. | 1,372  |

### Method of Feeding Babies.

The following table shows the method of feeding of children over 6 months and under one year old. There were 1,284 rural cases and 1,343 urban cases:—

|            | BREAST.   |           |           |           |           | MIXED.    |           |           |           |           | ARTIFICIAL. |           |           |           |           |
|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|
|            | 1919<br>% | 1920<br>% | 1921<br>% | 1922<br>% | 1923<br>% | 1919<br>% | 1920<br>% | 1921<br>% | 1922<br>% | 1923<br>% | 1919<br>%   | 1920<br>% | 1921<br>% | 1922<br>% | 1923<br>% |
| 1st Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 84        | 84        | 81        | 83        | 80        | 3         | 2         | 4         | 3         | 2         | 13          | 14        | 15        | 14        | 18        |
| Urban ...  | 83        | 77        | 80        | 84        | 77        | 2         | 4         | 5         | 2         | 5         | 15          | 19        | 15        | 14        | 16        |
| 2nd Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 80        | 81        | 78        | 78        | 75        | 3         | 3         | 5         | 4         | 5         | 17          | 16        | 18        | 18        | 20        |
| Urban ...  | 76        | 70        | 76        | 79        | 74        | 4         | 5         | 7         | 4         | 6         | 20          | 25        | 17        | 17        | 20        |
| 3rd Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 74        | 77        | 74        | 73        | 72        | 6         | 4         | 7         | 5         | 8         | 20          | 19        | 20        | 22        | 20        |
| Urban ...  | 70        | 65        | 72        | 74        | 70        | 6         | 6         | 9         | 5         | 8         | 24          | 29        | 21        | 21        | 22        |
| 4th Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 70        | 70        | 70        | 70        | 70        | 7         | 7         | 9         | 6         | 8         | 23          | 23        | 23        | 24        | 22        |
| Urban ...  | 65        | 63        | 67        | 68        | 65        | 6         | 6         | 10        | 6         | 10        | 29          | 31        | 24        | 26        | 25        |
| 5th Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 66        | 69        | 67        | 65        | 70        | 8         | 7         | 9         | 8         | 8         | 26          | 24        | 24        | 27        | 26        |
| Urban ...  | 62        | 60        | 65        | 66        | 73        | 6         | 7         | 10        | 7         | 11        | 32          | 33        | 35        | 27        | 26        |
| 6th Month— |           |           |           |           |           |           |           |           |           |           |             |           |           |           |           |
| Rural ...  | 63        | 67        | 66        | 63        | 66        | 9         | 8         | 9         | 9         | 8         | 31          | 25        | 25        | 28        | 26        |
| Urban ...  | 60        | 58        | 64        | 65        | 61        | 7         | 8         | 10        | 7         | 12        | 33          | 34        | 26        | 28        | 27        |

At the end of 6 months about 63.5 per cent. of the mothers were able to feed their babies entirely on breast, 10 per cent. had breast feeding and some form of artificial feeding and 26.5 per cent. were artificially fed. As reported last year for the first quarter of the year 1923 there was no free milk supplied to the mothers and babies as the grant of £1,500 was spent by December, 1922. This year to prevent such a contingency arising every case was specially investigated and only cases of extreme poverty were considered as eligible for free milk. The grant has been raised to £2,000. It is hoped that in every case when the total income, after deduction of the rent, amounts to 6/- or less per head, that a free supply of milk will be given for a child under 3 years of age or an expectant mother.

The method of feeding till six months old and health of child at 12 months is shown below (4,469 cases):—

|            |             | Good. | Fair | Poor. |
|------------|-------------|-------|------|-------|
|            |             | %     | %    | %     |
| Breast     | { Rural ... | 87    | 11   | 2     |
|            | { Urban ... | 84    | 13   | 3     |
| Mixed      | { Rural ... | 68    | 27   | 5     |
|            | { Urban ... | 71    | 22   | 7     |
| Artificial | { Rural ... | 61    | 34   | 5     |
|            | { Urban ... | 56    | 35   | 9     |

### Health of Infants.

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

|                      | Total.  | Birth           | 3 months        | 6 months        | 9 months         |
|----------------------|---------|-----------------|-----------------|-----------------|------------------|
|                      |         | to<br>3 months. | to<br>6 months. | to<br>9 months. | to<br>12 months. |
|                      |         | %               | %               | %               | %                |
| Respiratory Diseases | ... 25% | 2               | 9               | 8               | 6                |
| Convulsions          | ... 9%  | 4               | 1               | 2               | 2                |
| Diarrhoea            | ... 10% | 1               | 4               | 3               | 2                |
| Measles              | ... 3%  | —               | 5               | 1               | 1.5              |
| Whooping Cough       | 10%     | 5               | 1.5             | 4               | 4                |
| Marasmus             | ... 4%  | 5               | 1               | 1.5             | 1                |

The winter has been a specially trying one for babies and consequently there have been more cases than usual of broncho-pneumonia and bronchitis. The majority of the cases of measles occurred in the beginning of the

year; whooping-cough was prevalent in several districts during the spring and early summer.

### Health of the Older Children.

In the following table the health of the children at 2 years, 3 years and those at 4 years who have been visited during 1923 is shown (method of feeding during first six months of life):—

| Feeding.    | Health.<br>2 years.<br>4817 children. |       |       | Health.<br>3 years.<br>5039 children. |       |       | Health.<br>4 years.<br>3057 children. |       |       |  |
|-------------|---------------------------------------|-------|-------|---------------------------------------|-------|-------|---------------------------------------|-------|-------|--|
|             | Good.                                 | Fair. | Poor. | Good.                                 | Fair. | Poor. | Good.                                 | Fair. | Poor. |  |
|             | %                                     | %     | %     | %                                     | %     | %     | %                                     | %     | %     |  |
| Breast—     |                                       |       |       |                                       |       |       |                                       |       |       |  |
| Rural ...   | 83                                    | 13    | 4     | 84                                    | 13    | 3     | 82                                    | 13    | 5     |  |
| Urban ...   | 84                                    | 13    | 3     | 82                                    | 16    | 2     | 82                                    | 14    | 4     |  |
| Mixed—      |                                       |       |       |                                       |       |       |                                       |       |       |  |
| Rural ...   | 68                                    | 27    | 5     | 73                                    | 22    | 5     | 70                                    | 27    | 3     |  |
| Urban ...   | 72                                    | 24    | 4     | 73                                    | 24    | 4     | 71                                    | 24    | 5     |  |
| Artificial— |                                       |       |       |                                       |       |       |                                       |       |       |  |
| Rural ...   | 60                                    | 32    | 8     | 60                                    | 34    | 6     | 62                                    | 33    | 5     |  |
| Urban ...   | 62                                    | 32    | 6     | 63                                    | 31    | 6     | 61                                    | 31    | 8     |  |

There is no doubt that the continued unemployment and consequent poverty is having a very deleterious effect on the children from 1—5 years of age—far more so than the war and rationing of food. In many homes the children have to live on a diet of little else than bread and tea. It is hardly surprising to learn that the mortality among toddlers is not being reduced but shows a slight tendency to increase.

The illnesses from which these children aged 2—3 years of age, 3—4 years of age and 4—5 years of age have suffered respectively are as follows:—

|                          | 2 years<br>% | 3 years<br>% | 4 years<br>% |
|--------------------------|--------------|--------------|--------------|
| Respiratory Diseases ... | 8            | 6            | 3            |
| Measles ...              | 4            | 4            | 3            |
| Convulsions ...          | 1            | .1           | —            |
| Diarrhœa ...             | 3            | 1            | 1            |
| Whooping Cough ...       | 6            | 6            | 3            |
| Chicken Pox ...          | 2            | 1            | 1            |
| Scarlet Fever ...        | .1           | .2           | .7           |

Of the children between 1—4 years who suffered from bronchitis 7 per cent. of them had repeated attacks.

Signs of rickets (early and late) were noted in 10 per cent. of the children between 1—4 years of age (7 per cent. slight, 3 per cent. marked).

## Deaths of Infants under 1 year.

Table giving particulars of deaths of 204 children under 1 year and over ten days old:—

|                                     | Method of Feeding. | 10 days to 3 months | 3 months to 6 months | 6 months to 9 months | 9 months to 12 months |
|-------------------------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Respiratory Diseases                | Breast             | 9                   | 6                    | 6                    | 10                    |
|                                     | Artificial         | 4                   | 6                    | 12                   | 8                     |
| Convulsions                         | Breast             | 12                  | 3                    | 1                    | 3                     |
|                                     | Artificial         | 3                   | 4                    | 6                    | 5                     |
| Marasmus                            | Breast             | 2                   | —                    | —                    | 1                     |
|                                     | Artificial         | 5                   | 1                    | 2                    | 1                     |
| Whooping Cough                      | Breast             | 2                   | 5                    | 1                    | 3                     |
|                                     | Artificial         | 1                   | 5                    | 4                    | 6                     |
| Gastro Enteritis                    | Breast             | 1                   | —                    | 1                    | —                     |
|                                     | Artificial         | 4                   | 1                    | 1                    | —                     |
| Measles                             | Breast             | —                   | —                    | —                    | 1                     |
|                                     | Artificial         | —                   | —                    | 1                    | —                     |
| Malformation                        | Breast             | 5                   | 2                    | 1                    | —                     |
|                                     | Artificial         | 5                   | 1                    | —                    | —                     |
| Meningitis                          | Breast             | —                   | —                    | 2                    | 1                     |
|                                     | Artificial         | 1                   | 1                    | 2                    | 3                     |
| Debility                            | Breast             | 1                   | —                    | —                    | —                     |
|                                     | Artificial         | 6                   | 1                    | 1                    | —                     |
| Icterus Neonatorum                  |                    | 2                   | —                    | —                    | —                     |
| Tubercular Glands                   |                    | —                   | —                    | 1                    | —                     |
| Tubercular Meningitis               | Breast             | —                   | 1                    | —                    | —                     |
|                                     | Artificial         | 1                   | 1                    | 1                    | —                     |
| Prematurity                         | Breast             | 3                   | —                    | —                    | —                     |
|                                     | Artificial         | 4                   | —                    | —                    | —                     |
| Cerebral Hemorrhage                 |                    | 1                   | —                    | —                    | —                     |
| *Overlain                           |                    | 1                   | —                    | —                    | —                     |
| *Suffocation                        |                    | 2                   | —                    | —                    | —                     |
| Hemorrhage from Umbilicus           |                    | 1                   | —                    | —                    | —                     |
| Cretin                              |                    | —                   | —                    | —                    | 1                     |
| Septic Poisoning                    |                    | —                   | 1                    | —                    | —                     |
| Erysipelas                          |                    | 1                   | 1                    | —                    | —                     |
| *Enlarged Stomach pressing on Heart |                    | —                   | 1                    | —                    | —                     |

\* Inquests.

Table giving some particulars of deaths of 119 children between 1 year and 5 years occurring during 1923:—

|                          | 1 year to 2 years. | 2 years to 3 years. | 3 years to 4 years. | 4 years to 5 years. |
|--------------------------|--------------------|---------------------|---------------------|---------------------|
| Respiratory Diseases     | 20                 | 9                   | 6                   | 3                   |
| Convulsions              | 5                  | 1                   | —                   | —                   |
| Whooping Cough           | 7                  | 6                   | 2                   | —                   |
| Measles                  | 11                 | 4                   | —                   | —                   |
| Gastro-Enteritis         | 1                  | 1                   | —                   | —                   |
| Meningitis               | 8                  | 2                   | 6                   | 1                   |
| Tubercular Meningitis    | —                  | 5                   | —                   | 1                   |
| Tabes Mesenterica        | 1                  | 1                   | —                   | —                   |
| Diphtheria               | 1                  | 2                   | —                   | 2                   |
| Accidental Death—        |                    |                     |                     |                     |
| Drowning                 | 1                  | 1                   | —                   | 2                   |
| Motor                    | —                  | —                   | 1                   | —                   |
| Burnt or Scalded         | 3                  | —                   | —                   | —                   |
| Cardiac Disease          | —                  | 1                   | —                   | —                   |
| Nephritis                | 1                  | —                   | —                   | —                   |
| Tubercular Hip           | —                  | —                   | —                   | 1                   |
| Marasmus                 | —                  | 1                   | —                   | —                   |
| Generalised Tuberculosis | 1                  | —                   | —                   | —                   |
|                          | <hr/> 60           | <hr/> 34            | <hr/> 15            | <hr/> 10            |

Table giving some particulars of deaths of 107 children aged 10 days or less (58 males, 49 females):—

|                     |     |     |       |                    |          |
|---------------------|-----|-----|-------|--------------------|----------|
| Premature birth     | ... | ... | 36—18 | births attended by | Doctor.  |
|                     |     |     | 18    | " "                | Midwife. |
| Difficult labour    | ... | ... | 20    | " "                | Doctor.  |
| Atelectasis         | ... | ... | 1     | " "                | Midwife. |
| Feebleness          | ... | ... | 15—5  | " "                | Doctor.  |
|                     |     |     | 10    | " "                | Midwife. |
| Convulsions         | ... | ... | 13—8  | " "                | Doctor.  |
|                     |     |     | 5     | " "                | Midwife. |
| Pemphigus           | ... | ... | 4     | " "                | Doctor.  |
| Malformation        | ... | ... | 13—9  | " "                | Doctor.  |
|                     |     |     | 4     | " "                | Midwife. |
| Internal Hemorrhage | ... | ... | 1     | " "                | Doctor.  |
| Meningitis          | ... | ... | 1     | " "                | Doctor.  |
| Pneumonia           | ... | ... | 3     | " "                | Doctor.  |

In three of the above cases the mother had been working in a factory and three other mothers had done cleaning and laundry work during pregnancy. Seven of the infants were of illegitimate birth. Among the above deaths there were six twin pregnancies, two of them survived. In 17 of the above cases the babies were first babies.

### Still-births.

The following table gives some particulars of 118 still-births that have been enquired into (68 males and 50 females):—

|                                      |     |    |     |           |     |    |
|--------------------------------------|-----|----|-----|-----------|-----|----|
| History of Shock, accident or fright | ... | 11 | ... | Premature | ... | 6  |
|                                      |     |    |     | Full-time | ... | 5  |
| Born before arrival                  | ... | 14 | ... | Premature | ... | 8  |
|                                      |     |    |     | Full-time | ... | 6  |
| Malformation of Child                | ... | 7  | ... |           | ... | —  |
| Placenta Prævia                      | ... | 4  | ... |           | ... | —  |
| Antepartum Hemorrhage                | ... | 2  | ... |           | ... | —  |
| History of Ill-health of Mother      | ... | 5  | ... | Full-time | ... | —  |
| Malpresentation or Difficult Labour  | ... | 25 | ... |           | ... | —  |
| No known cause                       | ... | 34 | ... | Premature | ... | 29 |
|                                      |     |    |     | Full-time | ... | 5  |
| Prolapse of Cord                     | ... | 6  | ... | Premature | ... | 1  |
|                                      |     |    |     | Full-time | ... | 5  |
| Albuminuria                          | ... | 5  | ... | Premature | ... | 4  |
|                                      |     |    |     | Full-time | ... | 1  |
| Hydramnios                           | ... | 2  | ... |           | ... | —  |
| Eclampsia                            | ... | 1  | ... | Premature | ... | —  |
| Cord round neck                      | ... | 2  | ... | Full-time | ... | —  |

In five cases the still-births were illegitimate births. Thirty-one cases occurred in Primiparae. In 7 cases there was a previous history of more than one miscarriage or still-birth and in 8 cases a history of one miscarriage or still-birth. In 5 cases of the 8 cases the still-birth occurred in the second pregnancy, so that the mother had not given birth to a live child. Of the 118 mothers ten of them worked in a factory and two others followed

other occupations. In the above still-births there were three twin pregnancies.

### Expectant Mothers.

During 1923 there were 1,372 visits and re-visits paid to expectant mothers. Of the 305 cases that were visited during 1923 (the baby being born that year) the following are interesting points that have been noted:—

|                  |     |       |     |       |     |       |
|------------------|-----|-------|-----|-------|-----|-------|
|                  |     | Good. |     | Fair. |     | Poor. |
| Health of Mother | ... | 71%   | ... | 22%   | ... | 7%    |

Seven per cent. of the mothers were advised to seek medical aid, 1.5 per cent. of whom were advised on account of passing a scanty amount of urine; 22 per cent. suffered from constipation, 54 per cent. had carious teeth, and in 20 per cent. of the cases the teeth were noted to be in a very bad condition. Twenty-nine women had set or sets of artificial teeth.

|     |                       |   |     |             |
|-----|-----------------------|---|-----|-------------|
| 92% | Normal babies         | { | 77% | Breast.     |
|     |                       |   | 23% | Artificial. |
| 3%  | Not strong.           |   |     |             |
| 4%  | Still-born.           |   |     |             |
| 4%  | Miscarriages.         |   |     |             |
| 6%  | Died within ten days. |   |     |             |

Among the 305 mothers three of them worked in factories. All three babies were normal but artificially fed.

Of the five primiparae among the above all had normal babies, four fed naturally and one artificially.

### Ophthalmia Neonatorum.

There have been notified 56 cases of inflammation of or discharge from the eyes in new born babies. Twenty-nine of these cases were only slight. The ages of the infants on the day of onset ranged from two days to eleven days; most of the cases occurred between the 3rd and 5th days.

In 16 of the cases the births were attended by doctors and 40 were attended by midwives. Four of the cases attended by midwives were reported by Health Visitors, who also notified the midwife and warned her of her neglect to notify.



## Description of cases:—

|                               |     |     |    |
|-------------------------------|-----|-----|----|
| Slight cases—One eye affected | ... | ... | 1  |
| Both eyes „                   | ... | ... | 28 |
| Severe „ —One eye „           | ... | ... | 6  |
| Both eyes „                   | ... | ... | 21 |

Four of the severe cases were treated in hospital, and Nurse was engaged to attend four other cases. All the cases recovered without any scar or injury to the sight.

The number of cases of Ophthalmia has decreased by 13 this year. Each midwife is provided by the County with Collosol Argentum in a drop bottle. Since this drug has been in use the number of cases has steadily lessened.

**Illegitimate Children.**

Special enquiries have been made into the circumstances of 154 illegitimate children born in 1923 and living in Cheshire. Two of these children died. In 72 of the cases the mothers were unemployed and in 82 instances they were employed. One hundred and forty-two of the homes were found to be quite satisfactory and eleven fairly satisfactory, and in one case unsatisfactory. In this case the mother was a mill hand and the grand parents, aged 82 and 81 respectively and getting feeble, looked after the child. It is hoped to have the child placed under better guardianship at an early date.

The father was known to be contributing in 59 cases and in 14 cases it was impossible to ascertain. Sixty-five fathers made no contribution to the upkeep of their child. Ten of the fathers had married the mothers. Seventy-six of the babies were being cared for by the mother herself, 56 by the grandmother, nine by other relatives, seven cared for by neighbours, five were boarded out and one was adopted.

**Maternity and Child Welfare Centres.**

During 1923 Middlewich Urban District Council asked the County Council to take over its Maternity and Child Welfare work. The Urban Council specially asked that a Centre would be continued and that the home visiting be done by the County Health Visitor.

The new Centre at Sandbach is progressing satisfactorily and is now meeting twice monthly. The Doctor is able to attend only once a month. In May a small

Centre was opened at Owley Wood, near Weaverham, and Messrs. Brunner, Mond & Co. very kindly gave £10 towards its equipment. Through the courtesy of the Working Men's Club, Owley Wood, the Centre is held in the Club rooms. A small rent is charged. A Doctor attends the fortnightly meetings. The same Doctor attends the Northwich Rural Centre, so that one week he is at Parkfield, Northwich, and the next week at Owley Wood. It is hoped that in the near future it can be arranged that a Doctor will attend each week at Parkfield.

As explained before each of the 19 Centres, with the exception of Nantwich, have three rooms in use—a large room where the mothers assemble, have talks, tea, &c., a small room where from three to six are undressed, at a time, and weighed, and a Doctor's room.

With one exception a local Doctor attends each Centre for consultations on the weighing days. The arrangements for the work of the Centres have been the same as in the previous years.

The County is very fortunate in the band of voluntary workers, who do such good and faithful work at each of its Centres.

The Mothers' Welcome at Utkinton is still continuing to do excellent work among the mothers and babies of that village. It is maintained and run by a local lady. During the autumn of 1923 there was a very serious outbreak of diarrhoea in Utkinton. Nineteen children were affected, three under 1 year, ten under 5 years and six of school age. The children's symptoms resembled enteric rather than epidemic diarrhoea. The County Health Visitor stayed in the village and nursed these cases. Thanks to good nursing, and nourishment, &c., provided by the Centre lady all the cases recovered.

During 1923 the Cheshire Gold Cross Society met three times. As explained in a previous report the object of this Society is to bring the Voluntary Workers together to discuss difficulties arising in the work of the Centres and to exchange ideas. The Annual Meeting was held in Chester in June, 1923. At this meeting the work for the competitions was on view and the Shield and Pictures were presented to representatives of the winning Centres. Several of the Voluntary Committees brought the mothers who had competed by charabanc to Chester.

The Gold Cross Society's Shield which is competed for by the Centres annually was won in 1922-1923 by Marple Centre for the fourth year in succession.

### Attendances at Centres.

|   | Hoylake<br>(1 day per<br>week). | Runcorn<br>(2 days per<br>week). | Sale<br>(2 days per<br>week). | Stalybridge<br>(2 days per<br>week). | Nantwich<br>(1 day per<br>week). | Utkinton<br>(No Consul-<br>tations). | Whaley<br>Bridge(Fort-<br>nightly). | Marple<br>(Fort-<br>nightly). | Heswall<br>(Fort-<br>nightly). | Congleton<br>(1 day per<br>week). |
|---|---------------------------------|----------------------------------|-------------------------------|--------------------------------------|----------------------------------|--------------------------------------|-------------------------------------|-------------------------------|--------------------------------|-----------------------------------|
| Consultations held ...                    | 854                             | 1014                             | 1247                          | 1898                                 | 844                              | —                                    | 341                                 | 497                           | 521                            | 612                               |
| Total Attendances<br>made ...             | 2412                            | 2502                             | 4220                          | 4909                                 | 1287                             | 302                                  | 441                                 | 798                           | 765                            | 850                               |
| Average Attendance<br>per Meeting ...     | 50                              | 27                               | 44                            | 51                                   | 27                               | 14                                   | 18                                  | 31                            | 33                             | 20                                |
| Attendances made by<br>Ante-natal Mothers | 1                               | —                                | 41                            | —                                    | —                                | —                                    | —                                   | —                             | —                              | —                                 |

|   | Dukinfield<br>(2 days per<br>week). | Owley Wood<br>Fort-<br>nightly). | Lynn<br>(1 day per<br>week). | Neston<br>(1 day per<br>week). | Northwich<br>Rural<br>(1 day,<br>Consulta-<br>tions Fort-<br>nightly). | Bollington<br>(Fort-<br>nightly). | Disley<br>(Fort-<br>nightly). | Sandbach<br>(Monthly). | Middlewich<br>(1 day per<br>week). |
|---|-------------------------------------|----------------------------------|------------------------------|--------------------------------|--|-----------------------------------|-------------------------------|------------------------|------------------------------------|
| Consultations held ...                    | 1219                                | 173                              | 642                          | 635                            | 499  | 285                               | 212                           | 156                    | 74                                 |
| Total Attendances<br>made ...             | 3409                                | 397                              | 1153                         | 1990                           | 1399   | 385                               | 237                           | 305                    | 121                                |
| Average Attendance<br>per Meeting ...     | 36                                  | 22                               | 25                           | 42                             | 28   | 18                                | 11                            | 18                     | 4                                  |
| Attendances made by<br>Ante-natal Mothers | —                                   | —                                | —                            | —                              | —  | —                                 | —                             | —                      | —                                  |

## Section VI.—Miscellaneous.

### Housing.

Building activity has been moderately well maintained as the following tabular statement shews. In the Wirral Rural District a very considerable number of houses have been built and there is a tendency to urbanisation in many parts of this area in consequence. Other districts where building has been going on at a fairly rapid rate are Cheadle and Gatley, Ellesmere Port and Whitby, Hale,

Hazel Grove and Bramhall, Hoylake and West Kirby, Neston and Parkgate, Sale, Wilmslow, Chester Rural District, Macclesfield Rural District, and Northwich Rural District.

Number of new houses built in Cheshire during 1923 either by private enterprise or as part of a Municipal Housing Scheme:—

| District.                      |     |     |     |               |      |
|--------------------------------|-----|-----|-----|---------------|------|
| Congleton M.B.                 | ... | ... | ... | ...           | —    |
| Crewe M.B.                     | ... | ... | ... | ...           | 14   |
| Dukinfield M.B.                | ... | ... | ... | ...           | 14   |
| Hyde M.B.                      | ... | ... | ... | ...           | 7    |
| Macclesfield                   | ... | ... | ... | ...           | 8    |
| Stalybridge M.B.               | ... | ... | ... | ...           | 3    |
| Alderley Edge                  | ... | ... | ... | ...           | 10   |
| Alsager U.D.                   | ... | ... | ... | ...           | 3    |
| Altrincham U.D.                | ... | ... | ... | ...           | 22   |
| Ashton-on-Mersey               | ... | ... | ... | ...           | 26   |
| Bebington and Bromborough U.D. | ... | ... | ... | ...           | 78   |
| Bollington U.D.                | ... | ... | ... | ...           | 4    |
| Bowdon U.D.                    | ... | ... | ... | ...not stated |      |
| Bredbury and Romiley U.D.      | ... | ... | ... | ...           | 36   |
| Buglawton U.D.                 | ... | ... | ... | ...           | 3    |
| Cheadle and Gatley U.D.        | ... | ... | ... | ...           | 61   |
| Compstall U.D.                 | ... | ... | ... | ...           | Nil. |
| Ellesmere Port and Whitby U.D. | ... | ... | ... | ...           | 131  |
| Hale U.D. ...                  | ... | ... | ... | ...           | 52   |
| Handforth U.D.                 | ... | ... | ... | ...not stated |      |
| Hazel Grove and Bramhall U.D.  | ... | ... | ... | ...           | 81   |
| Hollingworth U.D. ...          | ... | ... | ... | ...           | Nil. |
| Hoole U.D.                     | ... | ... | ... | ...           | 4    |
| Hoylake and West Kirby U.D.    | ... | ... | ... | ...           | 59   |
| Knutsford U.D.                 | ... | ... | ... | ...           | 6    |
| Lymm U.D.                      | ... | ... | ... | ...           | 6    |
| Marple U.D.                    | ... | ... | ... | ...           | 24   |
| Middlewich U.D.                | ... | ... | ... | ...           | 1    |
| Mottram-in-Longdendale U.D.    | ... | ... | ... | ...           | 2    |
| Nantwich U.D.                  | ... | ... | ... | ...           | 1    |
| Neston and Parkgate U.D.       | ... | ... | ... | ...           | 38   |
| Northwich U.D.                 | ... | ... | ... | ...           | 3    |
| Runcorn U.D.                   | ... | ... | ... | ...           | 5    |
| Sale U.D. ...                  | ... | ... | ... | ...           | 39   |
| Sandbach U.D.                  | ... | ... | ... | ...           | 7    |
| Tarporley U.D.                 | ... | ... | ... | ...           | Nil. |
| Wilmslow U.D.                  | ... | ... | ... | ...           | 45   |
| Winsford U.D.                  | ... | ... | ... | ...           | 21   |
| Yeardsley-cum-Whaley U.D.      | ... | ... | ... | ...           | 5    |
| Bucklow R.D.                   | ... | ... | ... | ...           | 28   |
| Chester R.D.                   | ... | ... | ... | ...           | 49   |
| Congleton R.D.                 | ... | ... | ... | ...           | 18   |
| Disley R.D.                    | ... | ... | ... | ...           | —    |
| Macclesfield R.D.              | ... | ... | ... | ...           | 79   |
| Malpas R.D.                    | ... | ... | ... | ...           | 1    |
| Nantwich R.D.                  | ... | ... | ... | ...           | 34   |
| Northwich R.D.                 | ... | ... | ... | ...           | 45   |
| Runcorn R.D.                   | ... | ... | ... | ...           | 35   |
| Tarvin R.D.                    | ... | ... | ... | ...           | 15   |
| Tintwistle R.D.                | ... | ... | ... | ...           | 1    |
| Wirral R.D.                    | ... | ... | ... | ...           | 349  |

### **Milk Supply.**

Very few Local Authorities have put into operation the full powers conferred by the Milk and Dairies (Amendment) Act. These powers should be brought to the notice of all Local Authorities for if fully enforced they would give the public a vastly greater security from impure milk than they have ever possessed before. Most of the farm-buildings I have inspected leave a great deal to be desired in the matter of cubic space, ventilation and, I regret to say, cleanliness. The vast majority of farmers are keen and willing to learn: they have, I think, got beyond the stage of turning down an improvement just because it was "new fangled." Their National Union has done much to educate them to higher standards and as time goes on it will do much more.

The fact that such a quantity of milk leaves Cheshire daily for a number of large towns should make all the Local Authorities in the County carry out very strictly their duties relating to the inspection of farms and dairies. Some Local Authorities are particularly active in this respect but many are distinctly lax. Very few of them have initiated any system by which tuberculosis in cattle can be detected.

The Medical Officer of Health of a large town may frequently find himself foiled when endeavouring to trace the source of an outbreak due to milk by the mere fact that the milk may be a mixture of that obtained from a score or more farms. It would be an immense help to him in protecting the public if he were able to rule out a number of farms known to be well inspected and carefully managed and so be able to concentrate on the known undesirable or suspicious ones. In the case of an outbreak reported recently in a Metropolitan Borough the suspected milk supply came from 100 different farms.

### **Water Supply.**

The Borough of Macclesfield are commencing work to secure an additional supply, such work to include the construction of a new reservoir to impound river and spring water at Trentabank. An extension of the supply to Alsager has been completed.

In the Bollington Urban District a new pumping station has been opened with a borehole in the Millstone grit (depth 262 feet) delivering 10,000 gallons per hour into the reservoirs.

A scheme is in hand to improve the supply to the outlying parts of Bredbury and Romiley, where water-mains are not available.

Buglawton Urban District has a new scheme in hand for the improvement of the supply. Havannah Village has now got a supply under pressure.

A chlorinating plant is shortly to be installed at the Knutsford Water Works. Samples are frequently taken for chemical and bacteriological analysis.

Some extensions of mains have been carried out in Marple Urban District. The only part of this district inadequately supplied is Dooley Lane.

Nantwich Urban District is endeavouring to obtain a supplementary and badly needed supply. A borehole sunk near the Mere proved unsuccessful.

In Northwich Urban District the new water scheme estimated to cost £50,000 has been commenced and is progressing well.

In Chester Rural District a supply has been carried to Mollington, where it was very badly needed.

The Tarvin Rural District Council have decided to purchase the Ashton Hayes private water undertaking to supply this parish and the adjoining parishes of Mouldsworth and Longley.

Winsford Urban District is short of water but a scheme is in hand for the purchase of Oakmere Lake to augment this and to supply other areas in the neighbourhood.

The new scheme at Fox Holme for the Yeardsley-cum-Whaley Urban District is in hand.

Mobberley and Carrington, in the Bucklow Rural District, are still without an adequate supply.

In the Congleton Rural District Mow Cop and Mount Pleasant, Astbury, Cranage, Betchton and Hassall are still in need of an improved supply.

Audlem, Wrenbury and a number of other parishes in Nantwich Rural District are without a proper supply, but a comprehensive scheme to remedy this is in hand.

A well-considered and comprehensive scheme for the supply of Acton, Anderton, Barnton, Crowton, Comberbach, Cogshall, Little Leigh, Weaverham and Winnington in the Northwich Rural District is in progress.

In the Runcorn Rural District some extensions of mains to Dutton and Bartington have been carried out. Antrobus, Seven Oaks, Higher and Lower Whitley, Crowley, Appleton (Eastern portion), Kingsley and part of Aston are still in need of a better supply.

### **Sewerage and Sewage Disposal.**

In Crewe a new sewer has been constructed to convey the sewage from the Northern to the Southern outfall works and some additions have been made to the disposal works.

A scheme of sewage disposal is badly needed for the Compstall Urban District.

Handforth Urban District is also in need of an adequate system of sewerage and sewage disposal.

A similar remark applies to the Nantwich Urban District.

The outlying districts near Wheelock, Ettiley Heath and Cold Moss Heath, in the Sandbach Urban District, are without a proper system of sewers.

In the Chester Rural District Great Saughall and Mickle Trafford are in need of a sewerage system.

In the Tarvin Rural District complaints are still being received about the want of a sewerage system at Tattenhall. The disposal of the sewage from the Barrowmore Tuberculosis Colony needs careful attention as the effluent passes into a very small stream.

The three outfall works in the Malpas Rural District are not entirely satisfactory, but some improvement has been effected of late.

A new sewer 560 yards in length has been completed in Start Lane, Yeardsley-cum-Whaley.

Thurlwood and Mow Bank, in the Congleton Rural District, need attention in the matter of sewerage.

In Nantwich Rural District Broad Lane and Coppenthal ought to be properly sewered at an early date as the ditches are badly polluted here.

In the Northwich Rural District the scheme at Rudheath is near completion, and that at Moulton, which was not very satisfactory, has been greatly improved. The disposal works at Hartford need attention.

Kingsley, in the Runcorn Rural District, stands badly in need of a proper system of sewers and sewage disposal. Stretton in this district has been dealt with after some little delay.

In the Wirral Rural District a comprehensive scheme is proposed to deal with the sewage of Moreton, Irby, Newton, Saughall Massie, &c.

In other parts of the County coming under the jurisdiction of the Mersey and Irwell Joint Committee a good deal of work has been carried out by various Local Authorities.

### **Rivers Pollution.**

There is little new to be said on this subject as the cases where serious pollution are taking place are reported from time to time to the Committee concerned.

In my opinion we are greatly hampered in dealing with industrial pollutions by the wording of the Rivers Pollution Acts, which confine us in taking action to cases where "the best practicable and reasonably available means" of preventing pollution are at hand. The precise meaning of these words has, so far as I know, never been elicited by judicial decision or by Departmental interpretation.

Present day methods of sewage disposal are based on physical, chemical and bacteriological findings and with these three sciences to assist it should not prove impossible to find, for example, a method of rendering ammonium sulphate spent-liquor (which is one of the very worst pollutions we have to deal with) non-polluting at a cost which the industry concerned could afford. A few abortive efforts have been made to deal with this particular pollution and then the problem has been abandoned as insoluble. Most manufacturers have, very naturally, now abandoned all except the crudest method of treating this trade waste and we are powerless to intervene.



As for the other sources of pollution I think a fair degree of success can be claimed. I always find manufacturers willing to accede to the suggestions I make, though District Councils, owing doubtless to the less responsible position of their individual members, are more difficult to persuade. Here it is only the knowledge that there is power behind one which enables one to carry the appropriate remedy through.

There are still many cases of pollution in which a remedy is possible to be dealt with and in these judicious pressure is being employed.

An Advisory Committee to deal with the pollution of the River Dee was formed some time ago and representations of a strong character were sent up to the Government Department concerned—particularly as to the pollution of this river by the crude sewage of Llangollen. So far as I am aware—and I am a member of that Advisory Committee—these representations might just as well have been dropped into the Dead Sea. This sadly weakens one's trust in Government support.

The following extracts from a paper entitled "Living Indicators of Intensity of Stream Pollution," by an American author (name unknown) are worthy of note and of preservation:—

"Fish themselves are not always the best indicators of the condition of a stream. Some fish are migratory, all are mobile and all have considerable ability to keep out of sight. Failure to catch fish does not prove that a condition of serious pollution exists. Absence, real or apparent, may be explained by over-fishing, invisibility, failure to take the hook, or the fish may have gone elsewhere on their own affairs and not on account of pollution. If fish placed in the polluted stream die at once, it may be presumed that the law has been violated; but ability of the fish to live, coupled with failure to find fish, requires further proof of adverse conditions. This proof may be afforded by a study of the natural stream condition and of the smaller animal and vegetable aquatic life present. These small animals and plants either cannot move or cannot move far, so that they show the average stream condition better than do the more active fish.

"Dead organic matter must be oxidized back into its original constituents before it can again serve as food

for green plants. This action is finally brought about by the non-green plants—fungi, moulds, etc.—and by the bacteria. The process requires oxygen and gives up carbon dioxide, water and minerals. Decomposition of organic waste matter in a stream absorbs the oxygen in the water and until the process is completed, the water will contain less than the usual amount of oxygen. It takes time for decomposition processes to become active and only a definite quantity of oxygen can be absorbed by a given amount of waste, so the condition of serious pollution may be developed only at some distance below the point of entry of the waste and will continue only for a definite distance. A small volume of waste in a large stream will not exhaust the dissolved oxygen and there will be a fairly quick return to normal conditions. If the proportion of waste to water is high, there may be complete exhaustion of the oxygen and slow recovery. In this last case certain bacteria break up some of the material present without oxidizing it, producing foul-smelling gases and creating a nuisance. This condition is called "septic" and a septic stream can support no animal or plant life that requires dissolved oxygen for respiration. It can support bacteria and air-breathing aquatic animals, such as rat-tail maggots. All smelly streams, however, are not septic.

"Fish requirements for dissolved oxygen vary with the species of the fish and the age of the individual. It has been said by one authority that few fish are found when the oxygen saturation is below 50 per cent. and none where it is below 30 per cent. These figures are perhaps high, for fish have been known to live where the dissolved oxygen was 1.5 parts per million, probably less than 20 per cent. saturation. Conditions favorable for the growth of fungi would tend also to favor the various fungus diseases to which fish are subject. Fish eggs deposited in organic sludge or in the zone of fungus growth would be destroyed in a short time.

"A stream polluted by organic wastes can be conveniently divided into three zones: zone of recent pollution, septic zone, and zone of recovery. Typical indicators of these three zones are, respectively: water fungi, rat-tail maggots, and bloodworms. There is no hard and fast line of demarcation between these zones and only a portion of the middle zone may be truly septic. The upper limit of the second and the lower limit of the other two corresponds approximately with 40 per cent.

saturation of oxygen, or about 3.5 parts per million at summer temperatures. If the volume of waste is great, all these zones will be found and the two last may extend over many miles. With a lesser volume of waste, the middle zone may not be found. A still smaller intensity of pollution may curtail or eliminate the last zone. Slight pollution may fail even to give the first, except perhaps over a small patch of stream bed. Fish can live in the first zone and not infrequently are found there. They can also live in the third zone. If the second zone is present, there is good reason to believe that fish are injuriously affected. Although they might be able to penetrate for a short distance into that zone, they probably would not stay there, and certainly fish spawn could not develop in any such location. A septic stretch of stream would seem to be an effectual bar to the migration of fish up and down the stream.

*“Zone of Recent Pollution.* Where an organic waste enters a stream, it may at first merely cause turbidity. The organic material may still be fresh and it frequently is relished by fish, which, therefore, frequent the vicinity of the outfall. As decomposition processes become established, the typical water fungi appear. These form in dense masses, covering the stones of the bottom and clinging to submerged sticks and plants. In still water they may be in bulbous form, like summer clouds: where there is more current the masses are more shaggy or fleecy with jagged edges and points swaying in the current. Fragments are frequently detached by the current and carried downstream into the lower zones. While submerged, these plants have somewhat the appearance of cotton wool, though made up of gelatinous threads. The newly developed forms are frequently white, but the older parts tend towards an olive green or “putty” gray color, turning to a rusty brown in the oldest portions. These fungi feed on and disintegrate waste material and absorb oxygen. They persist until the oxygen saturation is pulled down to about 45 per cent., 4 parts per million at summer temperatures, when they die and in turn support the lower forms of fungo-bacteria. Near the lower limit of this zone, tubifex worms appear, working in the sludge, made up of wastes and decomposing fungi. Green plants are found in this zone, the larger and more highly organized forms in the upper portion, giving place to smaller and lower forms, which

finally become microscopic in size and visible only in masses. These last disappear as the lower limit is reached.

*“Septic Zone.* Fungus life in its lowest forms is plentiful at first, somewhat similar in appearance to that of the first zone, but having a more distinctly thread-like structure and tending to cream, pink or gray coloring, which may become very dark. Tubifex worms disappear and are replaced by the larvae of the sewage fly and the rat-tail maggot. As the oxygen continues to be absorbed the water moulds disappear, but may again recur if an intervening riffle re-oxygenates the water. Pools may become really septic, with no oxygen, black deposits and evolution of foul-smelling gases. Rat-tailed maggots are found all through this zone, except perhaps in the most septic parts. Green plants are absent, except where the microscopic forms start the work of regeneration at the lower end. Throughout this zone there is an accumulation of sludge, forming a pollution carpet, the condition of which as to oxygen is worse than that of the water. Fish may penetrate the upper and lower limits, but cannot live where conditions are the worst. At the end of this zone, where the work of decomposition and oxygen absorption is nearly completed, green plants start to appear and re-oxygenate the water.

*“Zone of Recovery.* Here there is usually an accumulation of sludge brought down from above, but it is usually brown rather than black. In this sludge the blood-worm, typical of this zone, flourishes. Tubifex may be found at the upper end. Green plants multiply and eventually the water becomes re-oxygenated and the clean water forms re-established. Certain fish, such as the sucker, stone roller, creek chub and shiner, are found in this zone, growing fat on blood-worms and on the bottom sludge. Game fish probably penetrate it from below in pursuit of these smaller fish and also eat blood-worms which are washed down into the lower reaches. The lower limit of this zone is marked by the increase in green plants, such as brook silks, mosses, water nets and tolerant rooted plants, which are powerful oxidizers of the water.

*“Tolerant Forms.* Some species of plants and animals are of little value as indicators of pollution because they are found in both clean and polluted waters. Snails, black fly larvae, water boatmen and similar

forms have a wide range and therefore are not good guides to water condition, except to the scientists who can distinguish between the different species of these animals.

“These biological indicators of the oxygen condition of a stream and of its availability for fish life, we feel, will be of material aid in determining the harm, if any, done by a given case of pollution. They are aids only. A solitary fragment of sewage fungus does not indicate wholesale destruction of fish life. An evil odour about a polluted stream may come from the factory and not from the wastes which it discharges into the stream. The finding of a few rat-tail maggots in an eddy does not indicate that the whole stream is septic and therefore a bar to fish migration. In the study of stream pollution, as in most other departments of life, an open mind and a little common sense are most valuable assets.”

### **Refuse Removal and Disposal.**

A fair degree of activity has been shewn in converting those foul and insanitary receptacles, privy-middens, to the water-carriage system. Some Authorities have displayed praiseworthy zeal in this matter and have adopted schemes for the wholesale abolition of these filthy structures. One of the best recent examples of this forward move is to be found in the Borough of Dukinfield. The task here is a big one but it is being undertaken on really progressive lines and the Corporation are to be congratulated on the bold policy they have adopted.

Some districts are hampered by an inadequate supply of water but when this difficulty is removed more progress should be made.

It is really remarkable that after the many years in which sanitation has been making progress there should still exist such a large number of these unhealthy abominations.

I quote a few instances where I think greater progress should be made in conversions to the water-carriage system:—

|                               | No. of<br>Privy-middens<br>at end of 1923. |
|-------------------------------|--|
| Hyde M.B. ... ..              | 151  |
| Macclesfield M.B. ... ..      | 176  |
| Stalybridge M.B. ... ..       | 541  |
| Bollington U.D. ... ..        | 227  |
| Bredbury and Romiley U.D....  | 280  |
| Cheadle and Gatley U.D. ...   | 496  |
| Hazel Grove and Bramhall U.D. | 606  |
| Lymm U.D. ... ..              | 670  |
| Marple U.D. ... ..            | 216  |
| Mottram-in-Longdendale U.D.   | 357  |
| Sandbach U.D. ... ..          | 352  |
| Wilmslow U.D. ... ..          | 750  |
| Winsford U.D. ... ..          | 885 (cesspool<br>privies)                  |

The figures are not given in a number of Reports or even a worse state of affairs might have been revealed.

#### Blind Persons Act, 1920.

I have made inquiries into the administration of this Act by the five Home Teaching Societies in the County, and am satisfied that it is being carried out satisfactorily having regard to the funds available from private and public sources.

The number of blind persons on the registers of the Societies in respect of whom grant at the rate of £2 10s. od. per annum was paid during the quarter ending December 31st, 1923, was 435, distributed as under:—

|                               |     |
|-------------------------------|-----|
| Chester Area ... ..           | 202 |
| Macclesfield Area ... ..      | 101 |
| Stockport Area ... ..         | 17  |
| Ashton-under-Lyne Area ... .. | 103 |
| Liverpool Area ... ..         | 12  |

These figures have increased by 30 since the date mentioned. Your Committee are also paying at the rate of £78 per annum—half the Salary of a Home Teacher in the Macclesfield district. Approximately £1,100 per annum is being spent at present by way of grant by your Council.

Home Teachers visit all cases and carry out general welfare work. Grants of clothing and bedding, convalescent treatment, provision of tools, have been made.

The earnings of blind persons vary very considerably— from 4/- to 10/- per week in the case of Home workers and from 1/6 to 3/- per week in the case of casual workers. The augmentation paid to these workers varies in different areas. For example the Ashton-under-Lyne Society grants 2/6 per week augmentation to home workers and 1/- a week to casual workers: the Macclesfield Society grant 50 per cent. of the earned wages by way of augmentation. In neither case does this augmentation bring the amount received by the blind person up to 15/- per week, which is generally regarded as the minimum they should receive.

The unemployable blind are dealt with by means of either permanent grants from the Societies or by special relief from Boards of Guardians. The grants from the Societies vary from 2/- to 15/- per week according to the needs of the grantees. The Guardians deal with each case on its merits, and at Stockport and Ashton-under-Lyne the principle adopted is to bring the income of the recipients up to 15/- per week.

Several applications have been received from Henshaw's Blind Institution, Manchester, for grants of £20 per annum for each blind person to enable them to pay an augmentation of 15/- per week to their workshops employees. The Secretary of the Institution states that the Ministry of Health gives a grant of £20 per annum, and that all the other Councils who send blind persons to their workshops give a grant equal to that received from the Ministry. He states that these two grants barely enable this augmentation to be paid when absences are taken into account and the Institution has to make up the grant out of their Charity Funds in many cases. Your Committee have made grants in several cases.

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

*October, 1924.*