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County Borough of Salford.

ANNUAL REPORT

OF THE

Medical Officer of Health

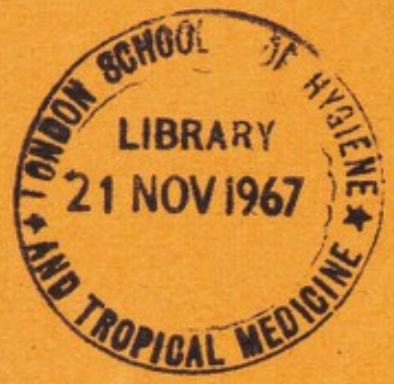
FOR THE YEAR

1925.

BY

H. OSBORNE,

MEDICAL OFFICER OF HEALTH.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BY

H. OSBORNE,

MEDICAL OFFICER OF HEALTH.

JOHN HEYWOOD LTD.,
Printers and Publishers, Manchester and London.

MEMBERS OF THE HEALTH COMMITTEE.

1925–1926.

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Chief Clerk	W. K. CHALONER.

TO THE HEALTH COMMITTEE OF THE CITY OF SALFORD.

GENTLEMEN,

The report which I now have the honour to present has been divided into two separate and distinct portions. Part I., which will be found on pages 14 to 34 is a "Survey Report" covering the years 1921 to 1925 inclusive, and has been prepared to meet the requirements of the Minister of Health. It is the intention of the Minister that a Survey Report should be prepared in respect of each administrative area every five years, and that each such Report should be prepared to deal comprehensively with :—

(*a*) The measure of progress made in the area during the preceding five years in the improvement of the public health.

(*b*) The extent and character of the changes made during that period in the public health services of the area ; and

(*c*) Any further action of importance in the organisation or development of public health services contemplated by the Local Authority, or considered desirable by the Medical Officer of Health.

In order that there should be no break in the continuity, the report dealing with the Health of the Borough during the year 1925 has been prepared on the same lines as heretofore, and will be found on pages 37 to 394 constituting part II. of this volume. While the prepara-

tion of the Report in this form will be found to be more convenient in many respects, it has led to a certain amount of duplication in respect of changes which occurred during 1925. It is considered, however, that the advantages of the form decided upon will outweigh any disadvantages resulting from that fact.

The last five years have been important years to Salford, as regards measures adopted for promoting the Health of the People. They have seen the opening of a large and well-equipped Tuberculosis Sanatorium, the establishment of a Municipal Maternity Home and Babies' Hospital, the enlargement and modernisation of the Infectious Diseases Hospital, the installation of a Municipal Bacteriological Laboratory, in addition to the development of a number of lesser activities, which are referred to elsewhere.

So far as the future is concerned, apart from the question of Housing, which is a problem in itself, one of the most urgent needs is the provision of premises better adapted for use as Maternity and Child Welfare Centres and Clinics than those at present in use, which can only be described as makeshift arrangements. Results commensurate with the time, energy, and money devoted to the Maternity and Child Welfare Scheme cannot be attained until considerable improvements are made in this respect. A special report upon the subject will be found on pages 389 to 394.

The most important event of the year in connection with Maternity and Child Welfare, was the opening of the Municipal Maternity Home and Babies' Hospital, providing accommodation for 10 maternity cases and 18 babies, in March, 1925.

In accordance with the expressed wish of your Committee, the report of a special investigation by your Medical Officer of Health, dealing with the effect of temperature on chemical disinfection, has been embodied in this Report—see Section IIb., pages 91 to 144.

The problem of atmospheric pollution, which was the subject of a special report in 1923, and which was further dealt with in 1924, is again discussed in Section IIa., pages 79 to 90. In this Section experiments bearing on the efficiency of firebrick grates burning carbonised fuel are set forth.

With regard to the Public Analyst's Section of the Report, Mr. Elsdon's "Notes on the present position of the adulteration of Food" and his resumé of the work carried on during the eleven years of his tenure of office, should prove of much interest.

In order to preserve continuity, the form of statistical tabulation used in the previous Reports has been maintained.

Attention is especially drawn to the Chart at the end of the Report, illustrating the various activities at present administered by your Medical Officer of Health.

I have the honour to be, Gentlemen,
Your obedient servant,
H. OSBORNE,
Medical Officer of Health.

The Public Health Department,
143, Regent Road, Salford,
1926.

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PART I.

Survey Report,

1921 to 1925.

Part I.—Survey Report, 1921 to 1925.

Vital Statistics.

Population.

The population of Salford has shown a steady increase since 1920, the estimated population then being 235,239, as compared with an estimated population of 244,700 at mid-year 1925, this being an increase of 9,461 during the five years.

Density of Population—Housing.

The total area covered by the County Borough of Salford is 5,202 acres.

As no expansion in the area of the Borough has taken place during the period under review, the mean density of the population has increased from 45·9 to 47·04 persons per acre.

This increase in density is a matter for apprehension, having regard to the already congested state of so large a portion of the Borough, and, in time, is bound to have an important effect upon public health. Included in this comparatively small space of 5,202 acres, we have over 50,000 dwelling houses, besides factories, docks, business premises, railways, and a racecourse.

The density of the population of Salford is far greater than that of any other town in Lancashire, and is only

surpassed in one other area in England, namely, West Ham. With the exception of one or two small open spaces, there is no more suitable building land left in Salford. On the other hand, there are 21 scheduled unhealthy areas, where streets and passages are so narrow and houses so crowded together as to interfere with the penetration of light and the circulation of air. Here the toddlers have to take their airing on the door-step or in the gutter. The only spaces where they can stretch their limbs are the small crofts where demolished slum dwellings once stood, and these spaces are far too few. The opening up and thinning out of Salford's unhealthy areas would mean the demolition of several thousand houses. Yet at the present time we have more than 3,000 people clamouring for houses. The great majority of these can never be housed in Salford, owing to the shortage of building land. This problem of overcrowding is most difficult, and seems almost hopeless. Salford may be regarded as a wedge whose apex is directed towards the heart of Manchester; the base of the wedge is hemmed in by the Borough of Eccles and the growing Urban Districts of Swinton, Pendlebury and Prestwich. Salford is so hopelessly hemmed in on every side that the problem of relief from overcrowding seems insuperable.

Death Rate.

The Death Rate, after several irregular fluctuations, remains the same in 1925 as in 1921, namely, 13·9, and the distribution of the causes of death was, generally speaking, very similar.

Birth Rate.

During the last five years the Birth Rate has shown a continuous fall, the figures being as follows :—

1921	25·2
1922	22·1
1923	20·9
1924	19·5
1925	18·8

This steady drop in the Birth Rate is not, of course, peculiar to the last five years, but is merely an extension of a process which has been taking place for many years. As an instance of this, one might mention that the Birth Rate in Salford in 1885 was 37·6, so that in forty years the rate has decreased by approximately 50 per cent.

Infant Mortality Rate.

The Infant Mortality Rate of 1925 is 105, as compared with 106 in 1921. The figures for the five years are as follows :—

1921	106
1922	110
1923	98
1924	122
1925	105

From these figures it will be seen that no material progress has been made during the five years under review in reducing the mortality rate of children under 1 year of age. But it should be borne in mind that the whole question of child welfare is largely dependent upon economic conditions, and so far as physical nourish

ment (apart from the "Free Milk" Scheme), clothing, and home conditions generally are concerned, this subject is not under the control of the Department. The Officers of the Department can only advise, but if through poverty the parents are unable to put this advice into practice, the value of this service, to a great extent, is nullified. This point will be referred to later in the section devoted to Maternity and Child Welfare.

Natural and Social Conditions.

No change has taken place in the natural conditions of the Borough during the last five years, and, so far as can be ascertained, the social conditions, apart from the economic factor, remain unaltered. No new industries of importance have sprung up, and the industries existing at the commencement of this period remain in being.

It may here be pointed out that distress, due to various causes, has been very prevalent in Salford during the period under review. I am enabled, through the kindness of the Clerk to the Salford Board of Guardians, to give the following particulars relating to the Salford Union (which, however, also includes the district of Pendlebury). At the end of December, 1920, the number of persons in receipt of out-door relief was less than 1,500. By the 17th June, 1922, this number had risen to 17,802, as the result of the 1921 Coal Strike and the last Engineers' Strike. By the end of July, 1922, the number fell to 9,000, but again rose in March, 1923, to nearly 12,000, as a result of the Docks Strike. Since then a considerable fall has taken place, but the general abnormal conditions have continued more or less up to December, 1925. The extent to which abnormal con-

ditions have prevailed is shown by the fact that the normal number of persons in receipt of out-door relief in the Salford Union is 1,000, whereas in December, 1925, it was 5,446.

Unemployment.

The Manager of the Salford Employment Exchange (Mr. D. Shine) has also been good enough to furnish me with the appended particulars as to Unemployment in Salford during the year 1925 :—

Table I.

1925.	Total Live Register of Unemployed Persons.	Amount Paid in Unemployed Insurance Benefit. £ s. d.
January	8,090	30,708 8 10
February	8,424	22,785 19 2
March	8,381	21,992 0 0
April	7,778	21,985 10 2
May	8,097	28,129 6 2
June	8,156	21,921 4 8
July	8,357	28,986 1 8
August	8,204	22,262 17 0
September	9,003	23,780 19 1
October	8,881	28,007 14 2
November	8,488	20,372 19 3
December	8,017	20,021 13 8

TABLE II.—STATISTICS SHOWING COMPARATIVE UNEMPLOYMENT IN PRINCIPAL INDUSTRIES OF SALFORD.

1925.	Building.		Engineering.		Textiles.		Dyeing and Bleaching.		Shipping.		Dock and Transport.		Distributive Trades.	
	Men.	Women	Men.	Women	Men.	Women	Men.	Women	Men.	Women	Men.	Women	Men.	Women
January ..	609	4	743	28	172	1121	246	619	196	..	443	1	422	352
February..	594	4	681	37	162	1208	327	632	208	..	321	2	412	294
March	526	4	620	29	131	1016	257	561	261	..	702	1	369	294
April	508	4	627	29	150	1296	282	364	258	..	878	1	401	280
May	446	1	588	20	172	884	242	329	269	..	1477	..	436	261
June	455	1	585	26	182	1321	192	301	301	..	1314	..	446	255
July	430	1	595	24	108	876	344	269	355	..	1687	..	381	196
August ...	440	1	585	22	198	1121	232	202	370	..	1333	1	441	201
September	442	1	599	22	271	1608	415	193	243	..	1499	1	449	192
October...	446	1	658	24	154	807	242	137	216	..	1338	..	445	172
November.	561	..	625	17	166	635	206	140	200	..	1104	..	432	203
December ..	629	..	552	18	117	437	197	216	206	..	688	..	377	180

National Health Insurance.

In view of the important effect of National Health Insurance upon social conditions, I have thought it desirable to include the following particulars relating to Medical Benefit in Salford, for which I am indebted to Mr. F. A. Anderson, Clerk to the Salford Insurance Committee :—

General Data.

The mean number of persons appearing on the Index Register of the Committee as entitled to Medical Benefit during the year 1925 was 108,078. Of this number 69,440 are recorded as having received medical attendance from insurance practitioners, each person receiving, on the average, 8·45 attendances during the year.

The total amount paid to insurance practitioners in respect of the year 1925 was £45,106.

The total number of prescriptions issued by practitioners and dispensed by Chemists during the year 1925 was 644,312, at a total cost of £23,314 2s. 10d.

At 31st December, 1925, the number of practitioners on the Salford Medical List was 122, and the number of doctors' surgeries in Salford was 78.

The number of Chemists on the List was 63, with 98 shops, of which shops 52 are situated within the Borough of Salford.

Testing of Drugs, Etc.

During the past ten years a Scheme for the Testing of Drugs, etc., has been administered jointly by the Insurance and Health Committees, under which Scheme 386

tests have been made. The result of the operation of the Scheme has been to maintain an efficient dispensing service in the Borough. This Scheme has now been superseded by a Scheme of a National character, inaugurated under the Medical Benefit Regulations by the Ministry of Health, the local administration being entirely in the hands of the Insurance Committee. The National Scheme does not, however, in any way affect the powers of the Medical Officer of Health under the Sale of Food and Drugs Acts.

Medical Service.

Since the inception of Medical Benefit in 1913, the insurance practitioners of Salford have been remunerated on an "Attendance" basis under what is known as the "Salford Scheme," *i.e.*, payment in respect of services rendered. The "Attendance" System has been in operation in three areas only—Salford, Manchester, and the Isle of Man. In all other areas remuneration has been paid on a Capitation basis, *i.e.*, payment for responsibility for treatment in respect of a number of insured persons. As from 1st January, 1927, the Capitation System will supersede the Attendance System in Salford.

Autogenous Vaccines.

Arrangements for the preparation and supply of Autogenous Vaccines in respect of insured persons have been made by the Insurance Committee with a local Pathologist. The vaccines are ordered by the patient's insurance practitioner, and are supplied at special rates.

Atmospheric Pollution.

A good deal of attention has been paid, during the last five years, to this question. Your Medical Officer of

Health has conducted an inquiry, together with a series of experiments extending over a considerable period, including the testing as to suitability of various carbonised fuels for domestic heating, when burned in specially constructed firebrick grates, the object being the reduction to a minimum of the emission of tarry substances into the atmosphere. As in the two preceding years, a special report bearing on this subject has been included, see pages 79 to 90.

Having regard to the geographical situation and associated climatic conditions, which, in themselves, place Salford in an unenviable position as a recipient of sunshine, it behoves all interested in public health to take a keen interest in any attempts which may be made to bring about a clearer atmosphere. The writer is of opinion, as stated on previous occasions, that the chief offender is the domestic grate, and he considers that every effort should be made by education of the public, the encouragement of the manufacture of smokeless fuel, and the construction of suitable grates for burning the same, to bring about a reduction in the quantity of raw coal consumed in private houses.

So far as works' chimneys are concerned, much may be accomplished by improved methods of construction of furnaces, etc., and greater care and skill in firing. In this connection, the provision of training classes for stokers, a course of which is now in being at the Royal Technical College, Salford, should have good results. The experience of other countries, coupled with the steps which are gradually being taken to create a much larger and cheaper supply of electricity for power purposes throughout the country, encourage us in the

belief that the day is not far distant when the necessity for prosecuting business firms for emitting large quantities of dense black smoke into the atmosphere will be a thing of the past.

Hospital Accommodation.

Considerable progress has been made in the provision of hospital accommodation since 1921, as will be seen from the following table :—

Nature of Accommodation.	Hospital.	Number of Beds. 1921.	1925.
Infectious Diseases.	Ladywell Sanatorium, Eccles New Road, Salford.	224	224
Tuberculosis	Drinkwater Park Hospital, Prestwich, Lancashire.	51	—
	Crossley Sanatorium, Delamere, Cheshire.	15	—
	Ladywell Sanatorium (for advanced cases).	48	48
	Nab Top Sanatorium, Marple, Cheshire (for early cases).	—	120
Maternity	Municipal Maternity Home, Seedley Terrace, Pendleton, Salford.	—	10
Sick Babies	Municipal Maternity Home, Seedley Terrace, Pendleton, Salford.	—	18
Smallpox	Drinkwater Park Hospital, Prestwich, Lancashire.	*—	40

* In 1921, by arrangement with the Manchester Corporation, smallpox cases occurring in Salford were treated in the Clayton Vale Hospital, Manchester. This arrangement with Manchester was determined with the opening of the new Tuberculosis Sanatorium at Nab Top, Marple, in December, 1922, whereupon the Drinkwater Park Hospital was evacuated, and resumed its former function of an Isolation Hospital for Smallpox.

It will be seen that the number of beds provided for the treatment of tuberculosis has been increased by approximately 50 per cent; a Maternity Home and

Babies' Hospital has been established; and the Drinkwater Park Hospital has been released for its original purpose of a Smallpox Isolation Hospital.

Ladywell Sanatorium.

This Institution has been greatly modernised during the past five years. The instalment of electric cooking apparatus, the provision of additional accommodation for nurses and domestics, the provision of an operating theatre, and modern laundry equipment were all necessary consequences of the decision to make the Sanatorium as complete and up-to-date as possible. Although modern research and the improvement in sanitary conditions generally have practically eliminated typhus fever, reduced typhoid fever to an almost negligible amount, and greatly diminished the deadliness of scarlet fever and diphtheria, it is still absolutely essential to maintain the Sanatorium at the highest point of efficiency, not only for the purpose of dealing with cases of ordinary infectious disease occurring in the Borough and those sent in by out-districts, but in order to provide for the treatment of advanced cases of tuberculosis, the accommodation for which will require to be considerably increased at a comparatively early date if adequate provision for these cases is to be made.

The daily average number of patients in the Hospital for the five years ended 31st December, 1925, was :—

1921	198·2
1922	198·5
1923	157·0
1924	132·0
1925	170·8

Sanitary Conditions.

The most important change which has taken place since 1921 in the sanitary conditions of Salford is in connection with the scheme for Sewage disposal, the provision for which has been greatly extended.

Sanitary Inspection.

The system of sanitary inspection of the Borough which existed prior to 1921 has been maintained. The results have been found to be quite satisfactory.

One of the most important features of the work is that during these five years 84 privies and 855 pail closets which were certified as insanitary were converted to water closets. Less than 50 pail closets are still remaining in the Borough.

Sanitary Conveniences.

Attempts have been made from time to time during the last two years to secure suitable sites for the erection of adequate public sanitary conveniences at various points in the Borough. One additional Convenience for Women has been erected in Cross Lane, and several Conveniences for Men have been substituted for older and less satisfactory Conveniences. It is hoped by degrees to extend this policy wherever circumstances may show the need to exist. A table, showing the existing provision, will be found on page 71.

Infectious Diseases.

Scarlet Fever.—The years 1921 and 1922 may be regarded as epidemic years in Salford, so far as scarlet

fever is concerned, for in these years the number of cases notified greatly exceeded the average, 1,746 and 1,275 cases respectively being notified, as compared with an average of 1,040 for the five years 1913 to 1917, and 1,019 for the five years 1918 to 1922.

Diphtheria.—The largest number of notifications of diphtheria during the quinquennium occurred in 1922, 359 cases being notified, as compared with an average of 252 for the five years 1913 to 1917, and 273 for the five years 1918 to 1922.

There has been little fluctuation in the incidence of other notifiable infectious diseases during the period under review, except in the cases of influenzal pneumonia, acute primary pneumonia, and encephalitis lethargica. In the first-named disease, it is satisfactory to note that there has been a marked decrease, indicating that the great influenzal wave, which made so much havoc during and for some time after the end of the war, has spent itself.

Bacteriological Laboratory.

An event of considerable importance has been the installation of a Bacteriological Laboratory in the Health Department under the direct control of the Health Committee. The Laboratory was opened on 1st July, 1924, and has fully justified its existence, both from the point of view of convenience and expense. During the first complete year since its inception, *i.e.*, the year ended 31st December, 1925, 2,900 specimens of various kinds, including those of sputum for tubercle bacilli, throat and nasal swabs for diphtheria bacilli, blood for typhoid bacilli, milk for tuberculosis, &c., &c., were examined in the Laboratory. It is hoped that,

with the approval of the Ministry of Health, it may be possible, in the near future, to arrange for tests for the Wasserman reaction for Venereal Disease to be carried out in the Laboratory.

Venereal Diseases.

The arrangements for the treatment of Venereal Diseases in Salford during the whole of the last five years have been made with the authorities of the Salford Royal Hospital.

Analysis of Food and Drugs.

The progress made in connection with this branch of the public health service has been ably dealt with by Mr. G. D. Elsdon, formerly Public Analyst to this Borough and recently appointed Public Analyst to the Lancashire County Council, in an addendum to his Report for the year 1925, which will be found on pages 317 to 336 Mr. Elsdon's Report covers the whole period of his tenure of office, that is to say from 1914 to 1925.

Health Week.

An interesting innovation was made in the holding of a " Health Week " from 16th to 22nd November, 1925. The arrangements for the " Week " were made in conjunction with the British Social Hygiene Council, and took the form, principally, of a series of lectures and free film shows given at the several Town Halls in the Borough and at the Scala Picture Theatre, Pendleton, which was kindly lent for the purpose. The lectures were given and the films exhibited by Mr. T. Bowen Partington, the Official Lecturer and Organiser of the

British Social Hygiene Council, and were specially arranged for Children, Women only, and Adults. In addition, lectures were given during dinner hours at a number of large works in the Borough. The lectures and film shows were well attended throughout the week, and a large quantity of literature dealing with Health subjects was distributed.

It is believed that the organising of this and similar "Weeks" will prove to be of great benefit to the public from the educational point of view. Arrangements are in hand for the holding of a "Health Week" from 7th to 13th February, 1927.

Tuberculosis.

Considerable progress has been made since 1921 in the provision of residential accommodation for the treatment of tuberculosis in Salford. The opening of the Nab Top Sanatorium, Marple, with 100 beds (since increased to 120 beds), at the end of 1922, considerably eased the position in so far as the treatment of early cases of tuberculosis was concerned. But in spite of this, there is still always a list of patients awaiting admission.

The numbers of cases of tuberculosis notified in Salford during the last five years were as follows :—

Year.	Pulmonary.	Non-Pulmonary.	Total.
1921 ..	553 ..	102 ..	655
1922 ..	510 ..	101 ..	611
1923 ..	547 ..	125 ..	672
1924 ..	557 ..	87 ..	644
1925 ..	507 ..	132 ..	639

The deaths from this disease, during the same period, were as follows :—

Year.	Pulmonary.	Non-Pulmonary.	Total.	Death Rate.
1921	320	71	391	1·63
1922	320	68	388	1·61
1923	311	71	382	1·58
1924	290	78	368	1·51
1925	324	67	391	1·59

While it cannot be claimed that any considerable advantage has been gained in the struggle with tuberculosis in Salford during the past five years, it should be borne in mind that five years is too short a period in which to expect any very marked improvement.

Open-air schools for Delicate Children play an important role in the prevention of tuberculosis. Salford has two open air day schools, capable of accommodating a total of 170 delicate children, and it is the policy of the Education Committee to build new elementary schools for *normal* children on open air lines wherever practicable. We believe that open air schools are a fine investment from the public health point of view, conferring great benefit at comparatively small cost.

Representatives of the Salford Health Committee, in conjunction with the Salford Insurance Committee, have recently discussed the possibility of having the Spahlinger Treatment made available in Salford, but, so far, they have been unable to arrive at any satisfactory arrangements for a trial of the remedies locally. Until some such remedy as this can be proved to be efficacious and made available in large quantities, there would seem to be no alternative to the continuation of the

present costly and necessarily limited system of sanatorium treatment. The principal drawback to the present system is that the period of treatment (usually 13 weeks) is too short to bring about a permanent cure. In most cases a distinct improvement is observed at the end of the period, but a return to normal conditions of living usually results in a speedy relapse. This being so, sanatorium treatment, as practised in the public institutions of the country at the present time, must, in the main, be regarded as educational and palliative, rather than curative.

As stated in the portion of this Report dealing with the Ladywell Sanatorium, greater provision will need to be made for advanced cases of tuberculosis, with the object of removing patients in a highly infectious state from surroundings in which they may infect others. The present provision for the isolation of the more infectious cases of tuberculosis (48 beds at Ladywell Sanatorium) is quite inadequate.

Arrangements with the Manchester and Salford Skin Diseases Hospital for the treatment of skin cases of tuberculosis have been in force during the whole of the quinquennium, and in 1924 arrangements were also made with the same Hospital for the treatment of certain cases by Artificial Sunlight. The results of this treatment have been sufficiently satisfactory to justify its continuation.

No scheme for the treatment of tuberculosis can be regarded as complete that does not include arrangements for the treatment of cases of surgical tuberculosis. Of these cases there are approximately 120 in Salford at the present time. Skilled surgical treatment, where

required, is obtainable under an arrangement with the Salford Royal Hospital.

The provision of apparatus for X-Ray photography in connection with treatment by artificial pneumothorax is a matter which will require the consideration of the Health Committee in the near future.

Maternity and Child Welfare.

The outstanding event of the past five years under this section of the public health service in Salford has been the opening in March, 1925, of the Maternity Home and Babies' Hospital, having accommodation for 10 maternity cases and 18 ailing babies. It is not too much to say that this may be regarded as one of the most important, if not the most important, of the Committee's new undertakings during this period.

Maternity Provision.

The class of Maternity cases with which the Home was primarily intended to deal is that in which home conditions and environment are unsuitable, for instance, overcrowded conditions in sub-let houses. It should be understood that this Institution does not aim at making provision for difficult and abnormal cases, such as are received into St. Mary's Hospital, Manchester, for lying-in women.

The opportunity afforded to expectant mothers of giving birth to their children under the best and brightest of conditions and under expert medical supervision can be productive of nothing but beneficial results. The avoidance of any delay in dealing with abnormal conditions which may arise is, in itself, an important factor.

This, combined with the great advantages possessed by a Maternity Home over ordinary domestic conditions for the purpose under consideration, is sure to be the means of avoiding complications, and expediting recovery. That this service is meeting with appreciation by the public is shown by the fact that the Maternity accommodation has already been found to be inadequate. Many cases have had to be refused on account of lack of accommodation, and there is need for an immediate increase of 50 per cent, making 15 beds for Mothers in all. Here again, while there can be only one opinion as to the desirability of the extension of the service, the question of expense will probably prove to be the determining factor.

Provision for Ailing Babies.

The chief types of ailing children admitted to the Hospital are (*a*) the rickety, and (*b*) the gastro intestinal and marasmic types. The provision for the treatment of rickety babies includes (1) a ward so arranged as to admit the maximum amount of daylight, and (2) artificial sunlight treatment. In almost all cases a great improvement is effected whilst the child is in Hospital. In some cases, however, it unfortunately happens that a return to home conditions undoes the good which has been obtained in Hospital. This cannot be said to be the fault of the parents in all cases. Poverty, unemployment, bad housing conditions, overcrowding, and unhealthy surroundings generally, all have a detrimental effect upon the life of a young and weakly child. It is social conditions such as these which, in a congested industrial area like Salford, almost surrounded as it is by other thickly populated districts, add greatly to the difficulties of your Child Welfare Officers.

The economic depression of the last few years is bound to have its effect upon the young life of the Borough, and makes it difficult to obtain the best results from any scheme. Pending an improvement in social conditions generally, it cannot be anticipated that there will be any great reduction in infant mortality in districts such as Salford.

With regard to the general Maternity and Child Welfare Scheme, there have been no changes of outstanding importance during the period under review. There have, of course, been variations from the scheme in operation prior to 1921, the principal of which are as follows :—

Milk Scheme.—There has been a big reduction in the last four years in the amount of milk distributed under the Corporation's scheme for supplying milk free or at a reduced rate in necessitous cases. Whereas in the year ended 31st March, 1922, more than £6,000 was expended in this connection, less than £2,000 was spent in the year ended 31st March, 1926.

Dental Treatment.—A scheme for the provision of dental treatment for expectant and nursing mothers has been established recently.

Massage.—The value of the massage treatment given to children has been very marked, so much so that it has been found desirable recently to engage an additional Masseuse. I am of the opinion that the development of this work will be more than justified by the results.

In 1925 a report was received from the Ministry of Health, to the effect that the Salford Child Welfare Centres were unsatisfactory. As a result, I submitted to the

Health Committee a report which comprised a scheme setting out the requirements in this connection, which, in my opinion, were desirable and necessary. Stated briefly, the main suggestions of the scheme are as follows :—

(1) *Primary Centres.*

The establishment of three Primary Centres, one in the Regent Road District, one in the Lower Broughton District, and one in the Pendleton District.

(2) *Subsidiary Centres.*

The provision of six Subsidiary Centres, including, if possible, one or two model centres. Apart from the model centres, the subsidiary centres might well be located in buildings hired for the purpose.

In my report I pointed out that it was not expected that the Committee could at once undertake the complete scheme, but that it might be proceeded with piecemeal.

Since the submission of the above, it has not been found possible to effect any improvement in the existing arrangements, although the Committee has approved of the proposal to establish a Subsidiary Centre in the Ordsall District. This proposal is, unfortunately, held up for the time being by a legal difficulty in connection with the site, and it will probably be some time before the matter can be proceeded with. In any case, the proposal will be subject to the approval of the Ministry of Health.

My report upon the present accommodation for Child Welfare Centres is printed in full on pages 369 to 394 of this Volume.

PART II.

Medical Officer's of Health Report, 1925.

SECTION 1.

Mortality Statistics.

STATISTICAL SUMMARY, 1925.

Area.—The Municipal Borough of Salford has a total area of 5,202 acres.

Population.—Estimated to the middle of the year 244,700

„ **(Census, 1921)** *234,045

Density.—The Mean Density of the Borough is equal to 47·04 persons per acre.

Deaths	**Males** 1,750 / **Females** 1,661	**Total**	3,411
Annual Rate of Mortality per 1,000—of the Population			13·9
Births	**Males** 2,292 / **Females** 2,305	**Total**	4,597
Annual Rate of Births per 1,000 of the Population			18·8
Deaths under one year of age per 1,000 Births			105
Number of women dying in consequence of childbirth			17

* Owing to the census having taken place during the holiday season, this figure is low. The Registrar-General estimated the normal resident population at mid-year 1921 to be 239,100.

TABLE M. 3.

DEATHS IN WARDS FOR THE YEAR 1925.

CAUSES OF DEATH.	AT ALL AGES.																
	Borough.	Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park.	Ordsall Park.	Regent.	St. Matthias'	St. Paul's.	St. Thomas'.	Seedley.	Trinity.	Weaste.
Malaria	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Enteric Fever	4	..	..	..	1	..	..	..	..	1	..	..	..	1	..	1	..
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles	28	1	3	1	7	..	..	1	1	1	2	..	3	2	..	3	3
Scarlet Fever	6	..	1	..	2	..	..	..	1	..	..	..	1	..	1	..	..
Whooping Cough	73	3	7	1	8	5	3	2	3	2	7	5	4	4	1	10	8
Diphtheria and Croup	25	1	2	..	1	1	2	1	1	..	..	2	5	1	1	7	..
Chicken Pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Influenza	84	8	3	6	7	6	3	4	4	8	10	6	2	6	2	4	5
Erysipelas	6	..	..	1	..	..	..	..	2	..	1	..	1	1	..	..	..
Encephalitis Lethargica	10	1	..	1	..	..	2	..	..	1	..	..	2	2	1	..	..
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Phthisis (Pulmonary Tuberc.)	324	21	18	3	31	11	8	14	24	26	32	25	32	20	10	34	15
Tuberc: Meningitis	26	1	1	..	3	1	4	1	..	3	2	2	1	..	..	6	1
Other tuberculous diseases	41	7	1	1	7	3	2	1	3	2	5	2	3	1	1	1	1
Cancer (Malignant Disease)	295	24	13	12	24	15	15	20	26	16	23	30	11	18	12	23	13
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Rheumatic Fever	8	1	1	..	..	..	..	..	..	..	..	2	..	2		1	..
Meningitis	18	1	..	..	2	..	2	..	1	2	1	2	1	2	..	4	..
Cerebro-Spinal Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Organic Heart Disease	240	32	11	10	19	20	13	8	19	13	12	19	13	11	14	17	9
Bronchitis	446	30	33	7	47	24	12	23	22	33	37	41	30	36	11	40	20
Pneumonia (all forms)	311	8	22	5	37	19	8	23	16	31	23	23	22	17	11	37	9
Other Diseases of Respiratory Organs	36	3	2	..	5	3	1	1	1	3	2	3	2	4	..	4	2
Diarrhœa and Enteritis	114	3	7	1	20	2	1	8	5	14	12	3	7	10	..	15	6
Appendicitis and Typhlitis	17	1	1	1	1	2	..	1	..	1	1	4	2	..	1	1	..
Cirrhosis of Liver	10	..	2	1	1	..	1	..	..	1	..	..	1	1	..	2	..
Alcoholism	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nephritis and Bright's Disease	64	5	6	5	7	4	2	2	2	6	3	3	5	6	..	6	2
Puerperal Fever	3	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Other Accidents and Diseases of Pregnancy and Parturition	14	..	1	..	..	..	1	..	2	1	6	..	1	1	2	..	2
Congenital Debility and Malformation	85	5	7	1	14	3	2	4	3	5	7	7	3	5	2	14	3
Premature Birth	71	2	9	..	9	3	5	3	4	4	10	5	8	2	..	6	1
Violent Deaths (excluding Suicide)	109	7	15	6	12	11	4	1	2	8	10	13	4	5	..	7	4
Suicide	20	2	2	2	1	..	..	1	1	1	1	..	1	1	2	4	1
Other Defined Diseases	901	78	62	35	82	53	56	38	59	60	70	64	53	41	42	67	41
Ill-defined or Unknown	21	1	..	..	2	1	..	2	..	5	1	2	3	1	2	1	..
Totals	3411	246	231	100	350	187	147	159	202	250	275	263	221	201	117	315	147

TABLE M. 4.

CAUSES OF, AND AGES AT, DEATH DURING THE YEAR 1925.

CAUSES OF DEATH.	NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.								
	All Ages.	Under 1 year.	1 and under 2 years.	2 and under 5 years.	5 and under 15 years.	15 and under 25 years.	25 and under 45 years.	45 and under 65 years.	65 and upwards.
ALL CAUSES—Certified	3409	482	130	135	108	162	432	963	997
Uncertified	2	..	..	..	..	..	..	1	1
Malaria	1	..	..	..	..	..	1	..	..
Enteric Fever	4	..	..	..	..	1	3	..	..
Small Pox	..	..	..	..	..	..	..	..	..
Measles	28	5	13	9	1	..	..	..	..
Scarlet Fever	6	..	..	2	3	1	..	..	..
Whooping Cough	73	29	25	18	1	..	..	..	..
Diphtheria and Croup	25	2	..	9	13	1	..	..	..
Chicken Pox	..	..	..	..	..	..	..	..	..
Influenza	84	3	1	3	1	2	16	27	31
Erysipelas	6	..	..	..	..	..	..	..	6
Encephalitis Lethargica	10	..	..	1	..	..	2	7	..
Anthrax	..	..	..	..	..	..	..	..	..
Phthisis (Pulmonary Tuberculosis)	324	1	1	2	5	74	126	104	11
Tuberculous Meningitis	26	4	3	8	6	3	2	..	..
Other Tuberculous Diseases	41	1	3	2	8	8	12	7	..
Cancer, malignant disease	295	1	..	1	1	1	33	145	113
Rheumatic Fever	8	..	..	1	4	1	1	..	1
Meningitis	18	5	4	4	..	2	1	2	..
Cerebro-Spinal Meningitis	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	..	..	..	..
Organic Heart Disease	240	..	..	..	5	10	30	95	100
Bronchitis	446	49	15	9	1	3	18	131	220
Pneumonia (all forms)	311	73	38	30	12	10	48	66	34
Other diseases of Respiratory organs	36	2	1	..	1	..	3	17	12
Diarrhœa and Enteritis	114	94	18	1	..	1	..	..	..
Appendicitis and Typhlitis	17	..	..	3	4	1	3	6	..
Cirrhosis of Liver	10	..	..	..	..	..	..	10	..
Alcoholism	..	..	..	..	..	..	..	..	..
Nephritis and Bright's Disease	64	..	..	..	3	2	12	34	13
Puerperal Fever	3	..	..	..	..	..	3	..	..
Other accidents and diseases of Pregnancy and Parturition	14	..	..	..	..	1	13	..	..
Congenital Debility and Malformation	85	77	3	4	1	..	..	..	..
Premature Birth	71	71	..	..	..	..	..	..	..
Violent Deaths, excluding Suicide	109	9	..	10	11	17	20	29	13
Suicide	20	..	..	..	..	1	1	16	2
Other Defined Diseases	901	55	5	18	27	20	80	259	437
Diseases ill-defined or unknown	21	1	..	..	..	2	4	9	5
Totals	3411	482	130	135	108	162	432	964	998

TABLE M. 7.

BIRTHS IN THE COUNTY BOROUGH OF SALFORD AND IN ITS WARDS, DISTINGUISHING DEATHS OF LEGITIMATE AND ILLEGITIMATE INFANTS UNDER ONE YEAR OLD.

FOR THE YEAR 1925.

Ward.	Births.		Percentage of Illegit. Births to total Births.	Deaths under One Year.		Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Illegit.		Total.	Illegit.	Total.	Legit.	Illegit.
Albert Park	286	10	3·5	20	3	70	62	300
Charlestown	330	7	2·1	45	4	136	127	571
Claremont	91	1	1·1	3	..	33	33	..
Crescent	454	17	3·7	67	5	148	142	294
Docks	186	5	2·7	22	..	118	122	..
Kersal	187	7	3·7	16	..	86	88	..
Langworthy	161	7	4·3	22	1	137	136	143
Mandley Park	228	5	2·2	18	1	79	76	200
Ordsall Park	364	15	4·1	44	1	121	123	67
Regent	361	5	1·4	46	5	127	115	1,000
St. Matthias'	392	9	2·3	34	2	87	84	222
St. Paul's	289	10	3·5	30	2	104	100	200
St. Thomas'	257	2	0·8	26	1	101	98	500
Seedley	194	2	1·0	7	..	36	36	..
Trinity	379	18	4·7	60	4	158	155	222
*Weaste	438	79	15·7	22	1	50	58	13
Totals	**4,597**	**199**	**4·3**	**482**	**30**	**105**	**103**	**151**
CORRESPONDING DATA FOR THE BOROUGH FOR THE TEN YEARS 1915-1924.								
Borough	**51,357**	**2,299**	**4·5**	**5,792**	**432**	**111**	**109**	**188**

* Includes births in the Hope Hospital.

TABLE M. 8.

SHOWING THE BIRTHS IN THE BOROUGH OF SALFORD, DISTINGUISHING DEATHS OF LEGITIMATE AND ILLEGITIMATE INFANTS UNDER ONE YEAR OLD DURING THE YEARS 1915 TO 1925.

Year.	Births.			Percentage of Illegitimate Births to Total Births.	Deaths under One Year.			Proportion of Deaths under One Year per 1,000 Births.		
	Total.	Legit.	Illegit.		Total.	Legit.	Illegit.	Total.	Legit.	Illegit.
1915....	5455	5257	198	3·6	733	692	41	134	132	207
1916....	5091	4894	197	3·9	587	544	43	115	112	218
1917....	4452	4234	218	4·9	551	498	53	124	118	243
1918....	4282	4043	239	5·5	478	436	42	111	107	175
1919....	4435	4179	256	5·8	501	466	35	113	111	137
1920....	6441	6170	271	4·2	630	584	46	97	94	169
1921....	5993	5702	291	4·8	641	585	56	107	102	192
1922....	5416	5169	247	4·5	599	564	35	110	109	141
1923....	5047	4841	206	4·1	493	458	35	98	95	170
1924....	4745	4569	176	3·7	579	533	46	122	117	261
1925....	4597	4398	199	4·3	482	452	30	105	103	151

TABLE M. 14.

SHOWING THE BIRTH-RATES, ALSO RATES OF MORTALITY FROM ALL CAUSES, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND FROM PHTHISIS, CANCER, NERVOUS DISEASES, HEART DISEASES, BRONCHITIS, PNEUMONIA, AND THE INFANT MORTALITY RATE, DURING THE YEARS 1878 TO 1925.

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate.
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1878..	160,277	44·7	27·1	5·4	2·7	0·5	3·5	1·1	3·6	1·8	185	17·9
1879*	165,899	43·0	26·7	4·2	2·9	0·4	3·7	1·2	4·3	1·8	170	15·2
1880..	171,727	41·4	27·9	7·4	2·7	0·4	3·2	0·9	3·4	1·9	197	16·6
1881..	177,760	38·8	22·5	3·0	2·5	0·5	3·1	1·1	3·6	1·6	163	16·4
1882..	179,855	39·7	23·7	4·0	2·4	0·4	3·6	1·1	2·8	1·7	177	16 9
Average 5 years.		**41·5**	**25·6**	**4·8**	**2·6**	**0·4**	**3·4**	**1·1**	**3·5**	**1·8**	**178**	**16·6**
1883..	181,951	37·3	23·6	3·4	2·7	0·4	3·1	1·2	3·0	1·7	171	16·1
1884*	184,047	38·8	24·4	4·4	2·6	0·5	2·9	1·1	2·8	1·7	184	16·1
1885..	186,142	37·6	23·0	3·6	2·6	0·5	2·9	1·2	3·0	1·9	174	16·1
1886..	188,238	38·5	24·8	4·1	2·6	0·5	2·8	1·3	3·3	1·8	197	15·3
1887..	190,334	36·6	25·5	4·9	2·3	0·5	3·2	1·3	2·9	2·2	195	15·4
Average 5 years.		**37·8**	**24·3**	**4·1**	**2·6**	**0·5**	**3·0**	**1·2**	**3·0**	**1·9**	**184**	**15·8**
1888..	192,429	37·1	24·8	3·9	2·3	0·5	3·0	1·1	3·0	2·1	184	15·2
1889..	194,525	35·9	25·1	5·3	1·9	0·6	2·5	1·3	2·6	1·9	181	16·7
1890*	196,621	36·1	27·7	4·4	2·2	0·5	2·0	1·3	3·4	3·8	198	17·5
1891..	198,775	36·3	26·0	3·4	2·2	0·5	2·2	1·1	3·7	3·0	194	18·1
1892..	200,833	35·8	24·6	4·6	1·9	0·6	2·0	1·2	2·6	2·9	186	16·7
Average 5 years.		**36·2**	**25·6**	**4·3**	**2·1**	**0·5**	**2·3**	**1·2**	**3·1**	**2·7**	**189**	**16·8**
1893..	203,015	34·7	24·1	4·2	1·9	0·6	2·0	1·4	2·6	2·3	211	16·2
1894..	205,220	34·3	21·1	3·3	1·8	0·6	2·0	1·1	1·9	2·3	174	17·1
1895..	207,449	35·9	25·6	5·0	1·9	0·6	2·0	1·3	2·6	2·7	229	17·4
1896*	209,703	35·6	23·1	4·2	1·5	0·6	2·3	1·4	2·2	2·7	200	18·1
1897..	211,981	35·2	23·9	5·6	1·8	0·6	2·1	1·3	2·4	2·1	219	18·6
Average 5 years.		**35·1**	**23·6**	**4·5**	**1·8**	**0·6**	**2·1**	**1·3**	**2·3**	**2·4**	**207**	**17·5**
1898..	214,284	34·9	22·8	4·2	1·8	0·8	2·2	1·2	2·2	2·2	213	18·6
1899..	216,612	34·1	23·9	4·4	1·8	0·6	2·3	1·4	2·5	2·7	211	18·7
1900..	218,965	33·3	25·3	4·1	1·8	0·6	2·4	1·7	3·2	2·8	208	17·3
1901.	221,212	29·2	21·7	4·2	1·8	0·7	1·9	1·5	2·3	1·9	205	17·9
1902*	222,233	34·0	19·3	2·7	1·7	0·7	2·0	1·5	2·2	2·1	157	18·4
Average 5 years.		**33·1**	**22·6**	**3·9**	**1·8**	**0·7**	**2·2**	**1·5**	**2·5**	**2·3**	**199**	**18·2**
1903..	223,260	32·6	19·4	2·9	1·8	0·7	1·9	1·4	2·1	1·9	168	18·1
1904..	224,299	32·4	21·4	4·4	2·0	0·6	1·8	1·7	2·2	1·9	193	21·5
1905..	225,327	31·8	17·7	2·6	1·5	0·6	1·7	1·6	1·8	1·8	148	17·8
1906..	226,367	31·2	19·1	3·3	1·7	0·8	1·7	1·5	2·0	1·8	162	18·6
1907..	227,413	30·6	18·5	2·2	1·7	0·7	1·7	1·6	2·1	2·3	140	17·9
Average 5 years.		**31·7**	**19·2**	**3·1**	**1·7**	**0·7**	**1·8**	**1·6**	**2·0**	**1·9**	**162**	**18·8**

TABLE M. 14—*continued.*

Years.	Population.	Rates per 1,000 Population from									Deaths under One Year to 1,000 Births.	Marriage Rate.
		Births.	Deaths, All Causes.	Seven Principal Zymotic Diseases.	Phthisis.	Cancer.	Nervous Diseases.	Heart Diseases.	Bronchitis.	Pneumonia.		
1908*	228,463	31·2	18·7	3·2	1·6	0·7	1·6	1·4	1·9	1·7	153	15·5
1909..	229,519	29·5	19·0	2·5	1·5	0·8	1·7	1·4	2·3	2·3	141	15·6
1910..	230,579	28·6	16·2	1·8	1·4	0·9	1·6	1·4	1·8	1·7	131	16·0
1911..	231,641	27·4	17·4	2·5	1·6	0·9	1·3	1·3	1·8	1·8	154	..
1912..	232,726	26·8	17.2	2·2	1·5	1.0	1·4	1·5	2·1	2·0	130	..
Average 5 years.		**28·7**	**17·7**	**2·4**	**1·5**	**0·9**	**1·5**	**1·4**	**2·0**	**1·9**	**142**	..
1913*	233,849	27·0	16·3	1·9	1·4	1·0	1·4	1·8	1·8	1·7	139	..
1914..	234,975	26·9	17·1	1·9	1·6	1·1	1·4	1·8	1 8	1·8	126	..
1915..	219,979†	24·8	19·1	2·8	1·7	1·1	1·4	1·6	2·3	1·9	134	..
1916..	214,229†	21·8	15·8	1·2	1·6	1·0	1·3	1·3	1·9	1·5	115	..
1917..	211,373†	18·9	16·0	1·6	1·5	1·2	1·4	1·3	2·0	1·4	124	..
Average 5 years.		**24·3**	**16·8**	**1·9**	**1·6**	**1·0**	**1·4**	**1·6**	**2·0**	**1·7**	**128**	..
1918..	209,274†	18·3	18·0	1·0	1·6	1·1	1·2	1·1	2·3	1·9	111	..
1919..	226,225†	18 8	15·8	0 8	1·2	1·1	1·1	1·1	2·4	1·5	113	..
1920..	235,239	27·3	13·7	0·9	1·2	1·0	1·0	1·0	1·8	1·1	98	..
1921..	239,100	25·2	13·9	1·1	1·3	1·0	1·0	1·2	1·7	1·5	106	..
1922..	240,700	22·1	14·6	1·3	1·3	1·1	0·9	1·1	1·9	1·7	110	..
Average 5 years.		**22·3**	**15·2**	**1·0**	**1·3**	**1·0**	**1·0**	**1·1**	**2·0**	**1·5**	**108**	..
1923..	241,600	20·9	13·5	0·8	1·3	1·2	0·9	1·1	1·6	1·5	98	..
1924..	243,700	19·5	14·5	1·3	1·2	1·3	0·7	1·0	1·8	1·6	122	..
1925..	244,700	18·8	13·9	1·0	1·3	1·2	0·8	1·0	1·8	1·3	105	..

* In the years 1879, 1884, 1890, 1896, 1902, 1908, and 1913, the facts are those registered in 53 instead of 52 weeks: corrections have therefore been made in calculating the rates. † Civil population.

SECTION II.

General Work of the Health Department.

Sanitary Circumstances and Sanitary Administration of the District.

Natural and Social Conditions of the District.

Salford is situated in the south-east of Lancashire and is partially divided from Manchester by the River Irwell. The older portion of the Borough lies along the right bank of the river and the ground rises gradually from an elevation of 85 feet above sea level to about 250 feet, the mean elevation being 140 feet.

The area of the County Borough of Salford is 5,202 acres. The subsoil consists principally of clay interspersed with sand and gravel, with occasional patches of red sandstone.

The population is largely industrial; a considerable portion of the Borough is occupied by cotton factories and engineering works, with collieries on the outskirts.

The principal Docks and a portion of the Manchester Ship Canal are situated in Salford.

There is no special influence of any particular occupation on the public health of the area.

Owing to the industrial character of the Borough, and the close proximity of a number of other industrial towns, the atmosphere of Salford is heavily smoke polluted. This pollution contains an excessive proportion of tarry substances given off from the burning of raw coal in domestic grates. Generally speaking, the rainfall is excessive and the atmosphere humid. Owing to the pollution of the atmosphere and the excess of cloud, there is a deficiency of sunshine.

The population of Salford avail themselves of the hospital accommodation of both Salford and Manchester.

The voluntary Hospitals are :—

The Salford Royal Hospital.
The Manchester Royal Infirmary.
The Manchester Eye Hospital.
The Manchester and Salford Hospital for Skin Diseases.
The Royal Manchester Children's Hospital, Pendlebury.
The Manchester Northern Hospital.
The Manchester Jewish Hospital.
The Manchester St. Mary's Hospital.
The Manchester Ear Hospital.

The Hospitals provided by the Salford Corporation are as follows :—

Name and Situation of Hospital.	Nature of Accommodation.	Beds Provided.
Nab Top Sanatorium, Marple, Cheshire.	Early Tuberculosis...	120
Maternity Home and Babies' Hospital, Seedley Terrace, Pendleton, Salford.	Maternity Cases	10
	Sick Babies	18
Ladywell Sanatorium, Eccles New Road, Salford.	Infectious Diseases...	224
	Tuberculosis	48
Drinkwater Park Hospital, Prestwich, Lancashire.	Smallpox	40

The Corporation have also made arrangements with the Hospitals named below for the treatment of the undermentioned diseases :—

Hospital.	Disease.
Salford Royal Hospital	Tonsils and Adenoids in School Children. Venereal Diseases. Surgical Tuberculosis.
The Manchester and Salford Hospital for Skin Diseases.	Tubercular Diseases of the Skin.

Hope Hospital, Pendleton, Salford (900 beds), is provided and maintained by the Salford Board of Guardians.

The amount distributed by way of Poor Law Relief in 1925 in the Salford Union (which includes Pendlebury) was £87,405 11s. 3d.

Salford Local Acts and Orders.

The Salford Borough Act, 1857.

The Salford Improvement Act, 1862.

The Salford Improvement Act, 1867.

The Salford Improvement Act, 1870.

The Salford Improvement Act, 1871.

The Salford Tramways and Improvement Act, 1875.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Order Confirmation (No. 8) Act, 1882.

An Order, dated 20th December, 1882, and made by the Local Government Board under the provisions of the Divided Parishes and Poor Law Amendment Act, 1876, as amended and extended by the Poor Law Act, 1879, amalgamating a detached part of the Township of Pendlebury with the Township of Pendleton.

The Salford Corporation Tramways Order, 1885, confirmed by the Tramways Orders Confirmation (No. 2) Act, 1885.

The Salford Corporation Act, 1886.

The Salford Corporation Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (No. 14) Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Orders Confirmation (Housing of Working Classes) Act, 1891.

Provisional Order relating to the Borough of Salford confirmed by the Local Government Board's Provisional Order Confirmation (No. 12) Act, 1892.

The Salford Improvement Act, 1893.

The Salford Corporation Act, 1897.

The Salford Order, 1898.

An Order, dated 2nd March, 1899, and made by the Local Government Board under the provisions of the Housing of the Working Classes Act, 1890, modifying an improvement scheme relating to the Borough of Salford.

The Salford Corporation Act, 1899.

The Salford Corporation Act, 1900.

The Salford Corporation Act, 1901.

The Salford Corporation Act, 1902.

The Salford Corporation Act, 1903.

Order in Council, dated 27th March, 1905, directing that none but persons duly licensed shall let Lodgings to Seamen in the Borough of Salford.

The Salford Order, 1906.

The Salford Order, 1908.

The Salford Order, 1912.

The Salford (Union of Townships) Order, 1918.

The Salford Corporation Act, 1920.

Confirming Order of Minister of Health, dated 7th April, 1921, under Section 112 of the Public Health Act, 1875, as amended by Section 51 of the Public Health Acts Amendment Act, 1907, declaring that certain trades be Offensive Trades.

Order in Council, dated 10th August, 1921, approving scheme determining the Wards of the Borough and apportioning the Councillors.

The Salford Order, 1922.

The Salford Order, 1925.

Acts of Parliament Adopted by the Council.

The Baths and Wash-house Acts. Adopted October 4th, 1876.

Infectious Diseases (Notification) Act, 1889. Adopted 5th February, 1920.

The Infectious Disease (Prevention) Act, 1890 (except Sections 14 and 19) and Parts 2, 3, 4 and 5 of the Public Health Acts Amendment Act, 1890. Adopted January 7th, 1891.

The Private Street Works Act, 1892. Adopted April 4th, 1894.

Notification of Births Act, 1907. Adopted January 7th, 1914.

Section 95 of the Public Health Acts Amendment Act, 1907. Order issued by Local Government Board, dated 27th October, 1908, declaring the above section to be in force in the County Borough of Salford.

Public Health Acts Amendment Act, 1907, Section 51.

Public Health Acts Amendment Act, 1907. Order of Local Government Board, dated 28th August, 1909, that on and after 16th October, 1909, Section 47 and Part V. of the Act should be in force in the County Borough of Salford.

Public Health Acts Amendment Act, 1907. Order of Local Government Board, dated 22nd April, 1914, that on and after 3rd June, 1914, Sections 23, 27, 33 and 76 of the Act should be in force in the County Borough of Salford.

Sanitary Circumstances.

Water.—The water supply is obtained from the Manchester Corporation's reservoirs at Woodhead and Thirlmere. It is ample in quantity and excellent in quality.

Rivers and Streams.—The question of river pollution is in the hands of the River Irwell Conservancy Committee.

Drainage and Sewerage.

Since the publication of my last Report, a new sewage disposal plant has been installed.

The drains of the District are satisfactory. Salford sewage is conveyed to the Sewage Works at Weaste by a combined system of Sewers. The sewage is treated with Lime and Copperas after which it is passed through settling tanks and thence through aerating filter-beds and humus tanks. The effluent from the humus tanks is discharged into the Manchester Ship Canal and the residual sludge carried out to sea by steamer.

Scavenging.—The removal and disposal of house refuse is under the authority of the Lighting and Cleansing Committee of the Corporation.

Sanitary Inspection of District.

Staff.—The staff employed in this connection consists of the Chief Inspector, a Deputy Chief Inspector, nine Assistant Inspectors, and one Lady Inspector.

The systematic inspection of the Borough was conducted during the year 1925 on the same lines as in previous years. The result of the inspections may be gathered from a perusal of the " Register of Work Done," which is to be found at the end of this section of the report. It shows that the number of complaints received at the office of the Department was **5,214**, as compared with **3,468** received in 1924, also that 10,667 dwelling houses were inspected during the year. The details of each section of the work will be found under the special heading.

During the year 207 pail closets and one privy midden which were certified as insanitary were converted to water closets.

Salford Corporation Act, 1899.

This Act gives power to the Local Authority to serve Notices on the Owners of property requiring them to convert privy middens and pail closets to water closets.

Since the Act came into operation, 21,906 privy middens and 7,309 pail closets have been converted to water closets. Eighty-four privies and 855 pail closets have been so converted during the past five years.

It is estimated that there are not more than about 50 privies and pail closets still existing in the City.

Most of these are already under Notice and the remainder are in conjunction with insanitary property which will be dealt with in due course.

Housing and Town Planning.

A third Survey of the City as required by the Housing (Inspection of District) Regulations, 1910, was commenced towards the latter end of the year. An inspection of two wards was completed. Owing to the re-arrangement of the wards since the completion of the last Survey, it is impossible to draw any comparison between the three Surveys.

HOUSING, TOWN PLANNING, ETC., ACT.

House to House Inspections.

	Wards.		Total.
	Ordsall Park.	Regent.	
Number of houses inspected	3666	3759	7425
Number of dwellings with 1 room	..	..	..
,, ,, 2 rooms	..	11	11
,, ,, 3 rooms	..	5	5
,, ,, 4 rooms	2230	1052	3282
,, ,, 5 rooms	652	1490	2142
,, ,, 6 rooms	628	937	1565
,, ,, over 6 rooms	156	264	420
Closet Accommodation—			
Water Closet	3666	3746	7412
Pail Closet	..	..	..
Privy Midden	..	..	..
Number of houses with closet accommodation in common with other dwelling	..	13	13
Ash Accommodation—			
Metallic Receptacle	3665	3745	7410
Tub	..	..	..
Ashpit	1	..	1
Unsatisfactory	..	11	11
In common	..	3	3
No accommodation	..	..	..
Defects—			
Insufficient light and ventilation	..	361	361
Defective drainage	..	..	..
No drainage	..	..	..
Serious dilapidation	..	14	14
Back-to-back houses	..	..	..
Houses unfit for habitation	..	..	..

TABLE G. 1.

COMMON LODGING HOUSES, 1925.

	Wards.				
	Crescent.	St. Paul's.	St. Thomas's.	Trinity.	Total.
Number on Register	7	1	2	6	**16**
Number added to Register in 1925	..	..	..	..	..
Number removed from Register in 1925	..	..	..	..	..
Number of Rooms	60	7	11	52	**130**
„ „ Beds	294	27	28	582	**931**
Average Number occupied each night—Males	197	17	25	500	**739**
Females	..	..	..	..	..
Notices served on Landiords	2	1	..	1	**4**
„ „ Keepers	..	..	..	..	..
Number of Day Inspections	141	16	16	225	**398**
Night „	..	..	..	..	..

Common Lodging Houses.

There were 16 Common Lodging Houses on the register at the end of the year, including Salford House in Bloom Street; seven are in the Crescent Ward, six in Trinity, one in St. Paul's, and two in St. Thomas' wards. These houses contain 130 rooms, with 931 beds. The average number of beds occupied per night was 739 for males and none for females. Three hundred and ninety-eight inspections were made during the day time.

Three houses, one in Trinity Ward, one in St. Thomas' Ward and one in St. Paul's Ward changed hands during the year.

These Lodging Houses have been kept in good and clean condition during the year, and the Bye-laws have been observed.

Houses Sub-let in Lodgings.

There are 291 houses let in apartments in the Borough ; these contain 1,241 rooms. Twenty-three houses were registered during the year and 25 discontinued.

The registration of these houses gives us power to inspect them at any time. They have been inspected from time to time, and they have received 3,581 inspections in the day time and 116 at night.

Seamen's Lodging Houses.

There are 15 Seamen's Lodging Houses in the Borough, containing 68 rooms and 181 beds. There have been 17 applications for renewals and new licences. One house changed hands on two occasions during the year.

The Byelaws in force regulating these houses have been carried out, and the houses generally kept in good and clean condition. Two hundred and six visits have been made during the day time and eight visits during the night time.

Workshops.

At the end of the year there were 973 workshops on the register. These have been regularly inspected

by the Lady Inspector of Workshops and by the District Inspectors, the Lady Inspector visiting those workshops where females are employed and the District Inspectors visiting those premises where males only are employed.

One hundred and thirty-one defects were found in the workshops, the particulars being given in Table B. The chief defect was want of cleanliness both in workshops and bakehouses, which were found in 40 cases and 62 cases respectively.

One workshop was found to be overcrowded. This was remedied without the necessity of serving a notice.

In three instances the ventilation was found to be defective.

Re OUTWORKERS.—The women outworkers' premises are visited by the Lady Inspector of Workshops, and those of the men by the District Inspectors.

During the year 267 visits have been paid.

Factories, Workshops, Workplaces, and Homework.

A.—Inspection.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR INSPECTORS OF NUISANCES DURING THE YEAR 1925.

Premises. (1)	Number of		
	Inspections. (2)	Written Notices. (3)	Prosecutions. (4)
Factories ..... (Including Factory Laundries.)	9	1	..
Workshops ..... (Including Workshop Laundries.)	2913	40	..
Workplaces ..... (Other than Outworkers' premises included in Part 3 of this Report.)	173	..	..
Total	3095	41	..

B.—Defects Found.

Premises.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
(1)	(2)	(3)	(4)	(5)
*Nuisances under the Public Health Act—**				
Want of cleanliness	40	48†	..	..
Want of ventilation	3	3	..	..
Overcrowding	1	1	..	..
Want of drainage of floors	..	..	..	..
Other nuisances	3	3	..	..
Sanitary accommodation — insufficient	7	15†	..	..
Sanitary accommodation — unsuitable or defective	13	15†	..	..
Sanitary accommodation — not separate for sexes	2	..	..	..
Offences under the Factory and Workshop Act—				
Illegal occupation of underground bakehouse (s. 101)	..		..	..
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	62	60	..	..
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report)	..	..	..	..
Total	131	145	..	..

* Including those specified in sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

† Including defects notified in previous year.

C.—Home Work.

NATURE OF WORK.	Outworkers' Lists, Section 107											Number of Inspections of Outworkers' premises.	Outwork in Unwholesome Premises, Section 108.			Outwork in Infected Premises, Sections 109, 110.		
	Lists received from Employers.						Number of Addresses of Outworkers received from other Authorities.	Number of Addresses of Outworkers forwarded to other Authorities.	Notices served on Occupiers as to keeping or sending lists.	Prosecutions.								
	Sending twice in the year.			Sending once in the year.						Failing to keep or permit inspection of lists.	Failing to send lists.		Instances.	Notices served.	Prosecutions.	Instances.	Orders made, S. 110.	Prosecutions, S.S. 109, 110.
	Lists	Outworkers.		Lists.	Outworkers.													
		Contractors.	Workmen.		Contractors.	Workmen.												
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Wearing Apparel—																		
1. Making, &c.	36	34	96	3	1	3	233	60	..	..	..	265	..	6	..	..	..	..
2. Cleaning and washing	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lace, lace curtains and nets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Artificial flowers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nets, other than wire nets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tents	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sacks	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Furniture and upholstery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fur pulling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Feather sorting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Umbrellas, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carding, &c., of buttons, &c.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paper bags and boxes	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Basket making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brush making	2	..	2	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..
Racquet and tennis balls	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stuffed toys	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
File making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Electro plate	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cables and chains	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cart gear	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Locks, latches and keys	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anchors and grapnels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pea picking	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	38	34	98	3	1	3	233	60	..	..	..	267	..	6	..	..	..	..

D.—Registered Workshops.

Workshops on the Register (s. 131) at the end of the year. (1)	Number. (2)
Tenement Workshops	10
Domestic Workshops	208
Laundries	16
Workshop Bakehouses	209
Other Workshops	530
Total number of Workshops on Register	973

E.—Other Matters.

Class. (1)		Number. (2)
Matters notified to H.M. Inspector of Factories—		
Failure to affix abstract of the Factory and Workshop Act (s. 133)		16
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5).	Notified by H.M. Inspector	16
	Reports (of action taken) sent to H.M. Inspector	34*
Other		
Underground Bakehouses (s. 101)—		
Certificates granted during the year		..
In use at the end of the year		4

* Including reports of action taken in cases notified in previous year.

F.—Additional Sanitation for Retail Bakehouses, Sections 97—102.

Number of such premises in the district, 216.

Note to their sanitary condition. Ground floor bakehouses—Good.
Underground— ,, —Satisfactory.

Action taken as to retail bakehouses in 1925, 6 Notices served.

Action taken.	No. of Defects found.	Notices served.	Legal Proceedings.	Defects remedied.	Remarks.
As to Closets, &c., Sec. 97	..	..	..	..	
As to Water Cisterns, Sec. 97	..	..	..	..	
As to Drain Openings, Sec. 97	..	..	..	..	
As to Limewashing, &c., Sec. 97	48	6	..	46	
As to Sleeping Places, Sec. 100	..	..	..	..	

Any proceedings under Section 98 as to retail bakehouses sanitarily unfit, Nil.

Underground Bakehouses.

Number of such premises in district, 4 certified, and 1 not in use at present.

Number certified by District Council under Section 101 (2) in 1925, Nil.

Bakehouses, 1925.

Registered	216
Added to Register	20
Discontinued	18
Number of Underground Bakehouses Certified by Authority	4 and 1 not at present in use.
Total Number of Ovens	269
Employees—Males	211
Females	381
Notices Served	6

Fertilisers and Feeding Stuffs Act, 1906.

No samples have been taken under this Act.

Pharmacy Act, 1868.

No licences have been granted in the Borough.

Smoke Nuisance.

Particulars as to smoke nuisances caused by firms during the year 1925, and dealt with by the Health Committee :—

Twelve notices were issued under the Public Health Act.

One firm was summoned by the Health Committee for contravening an order to abate in respect of smoke nuisances during the year. Nine summonses were taken against the firm, who were fined in the aggregate £33. Two summonses were taken against the Official Receiver and Manager of the Firm for aiding and abetting in two offences, but on the hearing both summonses were dismissed. During the year 1925, 3,261 smoke observations have been made, as against 3,143 in the year 1924 and 3,285 in the year 1923.

One hundred and two stokers and others were cautioned by the Inspector for negligence in firing the furnaces under their charge. At the same time 15 firms were reported to and dealt with by the Health Committee ; also 88 cautionary notices were issued to firms, with a table of smoke observations taken from their chimneys.

Arrangements have been made for the continuance of classes for Stokers at the Royal Technical College during the coming year.

Several chimneys have been raised during the year in connection with small workshops.

During this year the Health Committee decided to abolish the concession of the emission of three minutes dense black smoke in the half hour, and all steam raising firms in the Borough were circularised to that effect.

The following is a copy of the circular above mentioned :—

"Town Hall,
"Salford,
"14th December, 1925.

"Gentlemen,

"SMOKE NUISANCE.

"As you are of course aware, under the provisions of the Public "Health Act, 1875, summary proceedings may be instituted against "occupiers of premises (not being a private dwelling-house) upon "which a nuisance exists arising from a chimney thereon sending "forth black smoke in such quantity as to be a nuisance.

"For some years it has been the practice of the Salford Cor- "poration to institute proceedings only in those cases where the "emission of dense black smoke has exceeded three minutes in any "half hour. The Health Committee, however, feel that in view of "the serious results of the nuisance, it is essential in the interests "of public health that steps should be taken to reduce it to a "minimum.

"I am, therefore, directed to inform you that all observations "of emissions of dense black smoke, irrespective of the period of

"emission, will in future be reported to the Committee, who will "deal with each case on its merits.

"Yours faithfully,

"(Signed) H. H. TOMSON,
"Deputy Town Clerk."

TABLE SHOWING THE NUMBER OF HALF-HOURLY OBSERVATIONS TAKEN DURING THE YEAR 1925.

Minutes of Black Smoke emitted in half-an-hour.	No. of Observations taken.	Percentage to Total.
No Black Smoke	1,998	61·3
One Minute	904	27·7
Two Minutes	272	8·3
Three Minutes.....	56	1·8
Over Three Minutes.....	31	0·9
Total Observations taken..	3,261	100·0

Manure Receptacles, and Removal of Manure and other Offensive Matter.

The Byelaws with respect to receptacles for manure and the weekly removal of manure, filth, or other offensive or noxious matter, which came into operation towards the end of 1909, have been enforced during the past year, and special attention has been paid to stable yards where manure quickly accumulates and where no receptacle is provided.

The Byelaws as regards the regular removal of manure have been well observed.

Offensive Trades.

The following is a list of the offensive trades in the Borough :—

Nature of Trades.	Borough.	Discontinued.	Newly Registered.
Tripe Dressing	4	..	..
Soap Works	3	..	..
Fat Boiling	..	..	..
Tanneries	1	..	..
Skin Dressers	1	..	..
Gut Scrapers	2	..	..
Total	11	..	..

Canal Boats Acts.

Number of canal boats inspected	169
Number of canal boats conforming to Acts	164
Number of canal boats with one or more infringements ..	5
Total number of infringements	7
Registration	..
Absence of certificates	2
Dilapidation of certificate	..
Marking	..
Overcrowding	..
Separation of sexes	..
Cleanliness	..

Canal Boats Acts—*continued.*

Ventilation	..
Ventilators obstructed	..
Painting	1
Provision of water vessel	1
Water vessels broken	..
Removal of bilge water	..
Boats defective and leaking	..
Dilapidation	..
Stoves defective	..
Stove pipes defective	1
Pumps defective	..
Admittance of Inspector	..
Notification of infectious disease	..
Certificates not identifying owners	1
Loading manure without tight bulkheads	1
Number of notices served	2

Other steps taken to secure compliance:
One letter written to owners.

Detention of boats for cleansing and disinfection: None.

Legal proceedings taken: None.

Number of boats on register: Not a Registration Authority.

Canal boats registered to carry	759
Men found on the boats	304
Women found on the boats	33
Children under 12 years found on the boats	28

Drainage Inspection.

The testing and examination of all existing drainage is carried out by this Department. Two Inspectors and four labourers are kept continually at work examining drainage, and the following table gives the detailed results of their labours :—

Number of	tests made	720
,,	applications from householders	10
,,	houses affected by the tests	913
,,	notices and reports issued	274
,,	notices and reports complied with	272
,,	drain inlets opened and cleared	1,971

Insanitary Conditions Found.

Defects.

Number of	drains wholly and partly choked	799
,,	drains defectively constructed	213
,,	gully traps badly laid	22
,,	drains defectively trapped	33
,,	waste pipes defectively trapped or connected to drains	9
,,	downspouts connected to drains	15
,,	soil pipes with leaking joints or defectively ventilated	34
,,	defective water closets	106
	Total defects	1,231

Reconstruction of Drains and the Construction of New Drains.

Number of	tests applied	709
,, ,,	houses affected	571
,, ,,	passage main drains affected	10

Mode Wheel Ambulance and Disinfecting Station.

STAFF.—The work of this department is supervised by the Deputy-Chief Inspector. Under his control there are five drivers, one motor mechanic, five disinfectors, one of whom attends to the steam disinfecting machines, and one labourer who cleans the public conveniences in the Borough. There are three motor ambulances and four motor vans. The disinfecting machines are two large Goddard, Massey and Warner's high-pressure stoves.

The following are the details of the work carried out during the year :—

SALFORD CASES.—1,055 journeys were made by the ambulances ; 2,094 journeys were made for the removal of infected bedding and clothing, etc. ; 1,597 houses were disinfected, involving the disinfection of 3,625 rooms ; 3,793 bundles of clothing were disinfected by steam at the Station.

OUT-DISTRICT CASES.—279 journeys were made by the ambulances ; 42 journeys were made for the removal of infected bedding and clothing ; 398 bundles of clothing have been disinfected by steam at the Station. Disinfection has been carried out on 5 ships stationed at the Manchester Ship Canal, and 3 bundles of clothing were disinfected ; 343 journeys were made for the removal of convalescent cases from the Ladywell Sanatorium to their homes.

SALFORD CASES AND OUT-DISTRICT CASES.—7,939 journeys were made during the year, delivering disinfected bedding and clothing.

Eighty-three bundles of clothing and bedding were destroyed at the owners' request.

Disinfection has been carried out at four schools, and also at 57 public institutions in the Borough during the year. Two hundred and one books from public and private libraries have been disinfected.

Forty-five verminous children and two adults were bathed and their clothing disinfected.

Four hundred and seventy-four school children and one adult were bathed and their clothing disinfected after scabies.

Fifty-seven midwives were bathed at the station, and their clothing and various instruments disinfected.

Seventeen "contacts" with cases of Infectious Disease were bathed, and their clothing disinfected.

Four ambulances from other Institutions were disinfected.

One thousand three hundred and eighty-four journeys were made in connection with the various hospitals.

Two hundred and twenty-eight children were removed from the Salford Royal Hospital to their respective homes after operations for removal of tonsils for adenoids.

Sanitary Conveniences.

There are 20 conveniences in the Borough, under the control of the Health Committee, namely :—

Situation.	Males.				Females.		
	Urinal Stalls	Water Closets	Wash Basins	Attendant	Water Closets	Wash Basins	Attendant
Trinity Market	6	3	3	1	3	3	1
Trafford Road (Eccles New Road corner)	15	4	4	1	..	..	..
Trafford Road (Ordsall Park)	12	4	6	1	..	..	..
Cross Lane	..	..	..	..	4	4	1
Oldfield Road (Corner of Chapel Street)	6	..	..	..	..	..	..
Liverpool Street	4	..	..	..	..	..	..
Bolton Road (Junction of Claremont Road)	4	..	..	..	..	..	..
Broughton Road	16	..	..	..	..	..	..
Windsor Bridge	6	..	..	..	..	..	..
Blucher Street	8	..	..	..	..	..	..
Stevenson Street	3	..	..	..	..	..	..
Park Lane	5	..	..	..	..	..	..
Broad Street	3	..	..	..	..	..	..
Greengate Arch	6	..	..	..	..	..	..
Eccles New Road	2	..	..	..	..	..	..
Broughton Bridge	8	..	..	..	..	..	..
Frederick Road	4	..	..	..	..	..	..
Moor Lane	6	..	..	..	..	..	..
Cross Lane	5	..	..	..	..	..	..

The urinal in Whit Lane has been demolished and replaced on the site of the Maypole Park, Broughton Road, and the one at Greengate Arch reconstructed on an adjoining site.

TABLE G. 2.

NEW HOUSES ERECTED AND HOUSES DEMOLISHED IN 1925.

Wards.	Houses erected.	Houses demolished.
Kersal	98	—
Albert Park	6	—
Mandley Park	20	—
St. Matthias'	—	—
Trinity	—	—
Crescent	—	—
Regent	—	—
Ordsall Park	—	—
Docks	—	—
Charlestown	—	—
St. Thomas'	—	—
St. Paul's	—	—
Langworthy	—	—
Seedley	—	—
Weaste	57	—
Claremont	34	—
	—	—
	215	—

Of these, 72 have been erected under Housing Schemes of the Corporation. The remaining 143 have been built by private enterprise.

Increase of Rent and Mortgage Interest (Restrictions) Act, 1920.

During the year two applications were received for Certificates as to houses being either not reasonably fit for habitation or not in a reasonable state of repair. In one case a Certificate was granted.

Housing Schemes, Littleton Road and Tootal Estate.

Under the terms of the circular letter issued by the County Borough Treasurer, with reference to the ssue by the Medical Officer of Health of certificates to the effect that certain families were not living under sanitary conditions, 373 applications have been made and in 271 cases certificates were issued.

TABLE G. 3.

Cases heard before Magistrates, 1925.

Offence.	No. of Cases.	Decision of Magistrate.	Total Fines without Costs.
			£ s. d.
For consigning milk to a Salford Retail Dealer, which, on analysis, was found not to be of the nature, substance and quality of the article demanded, being deficient of fat and solids-not-fat.	5	Fined £2 in each case.	10 0 0
For similarly consigning milk, but deficient of solids-not-fat.	5	3 fined £2 each. 2 fined £1 each.	8 0 0
For similarly consigning milk, but deficient of fat only.	2	1 fined £3. 1 fined £1.	4 0 0
Retailer selling milk deficient of fat.	2	Fined £2 each.	4 0 0
Retailer selling whisky not of the nature, substance and quality of the article demanded, containing added water.	1	Fined.	10 0 0
Firm aiding and abetting and supplying to a Retailer certain Invalid Wine not of the nature, substance and quality of the article demanded, containing actually only flavoured sugar and water.	1	Fined, with 50 guineas costs in addition.	20 0 0
Retailer selling the same article.	1	Fined.	0 5 0
Tenant letting lodgings to a seaman in an unlicensed Seamen's Lodging house.	1	Dismissed.	—
Owner failing to comply with Notice under Salford Corporation Act, 1899, to convert pail closets to water closets.	2	1 fined £1 1s. 1 fined £1.	2 1 0
Firms contravening Orders to abate smoke nuisances.	9	5 fined £5 each. 4 fined £2 each.	33 0 0
Manager aiding and abetting in same offence.	2	Both dismissed.	—
Sub-tenant failing to give free access to Inspector of Nuisances to interior of room let contrary to Byelaws *re* sub-let houses.	1	Dismissed with a caution.	—
Carried forward	32		£91 6 0

CASES HEARD BEFORE MAGISTRATES, 1925—*Continued.*

Offence.	No. of Cases.	Decision of Magistrate.	Total Fines without Costs.
			£ s. d.
Brought forward.....	32		91 6 0
Owner moving a white heifer within a Foot and Mouth Disease Infected Area without a licence.	1	Dismissed.	—
Owner of vehicle charged with same offence.	1	Dismissed.	—
Driver of vehicle charged with same offence.	1	Dismissed.	—
Consigning Cream Cheese to a Salford Retailer, a sample of which, taken in course of delivery, was found not to be Cream Cheese but an ordinary whole milk cheese.	2	1 fined, with £10 10s. costs in addition. 1 withdrawn.	10 0 0
Retailer selling Dutch Half-Meat Cheese as Cheshire Cheese deficient of fat.	1	Fined.	5 0 0
TOTAL.....	38		£106 6 0

TABLE G. 4.

REGISTER OF WORK DONE—YEAR ENDING DECEMBER 31ST, 1925.

No. of Complaints received		5214
Inspections of	Dwelling-houses	10667
	,, ,, (under Housing, &c. Act	7370
	Schools	224
	Factories	9
	Canal Boats	169
	Common Lodging-houses (Day)	398
	,, ,, ,, (Night)	..
	Sub-let ,, ,, (Day)	3581
	,, ,, ,, (Night)	116
	Seamen's Lodging-houses (Day)	206
	,, ,, ,, (Night)	8
	Slaughterhouses	2518
	Dairies and Milkshops	755
	Shippons	41
	Van Dwellings	284
	Tips	20
	Bakehouses (Day)	680
	Workshops (Day)	2028
	,, (Night)	163
	Domestic Workshops	52
	Premises where food is prepared	454
	Outworkers' Premises	267
	Ice Cream Shops and Stalls	363
	Re Offensive Trades	3
	Re Midwives	472
	Re Still Births	69
	Re Infantile Deaths	33
	Re Ophthalmia Neonatorum	191
	Miscellaneous	7152
	Laundries	42
	Urinals —Public	384
	—Private	21
	Stables	167
	Re Infectious Diseases	2114
	Theatres, Cinemas, etc. (Day)	46
	,, ,, (Night)	45

Register of Work Done—*Continued.*

Re-inspections		24482
Action taken	Statutory Notices issued	2700
	,, ,, uncomplied with	392
	,, ,, cancelled	76
	Informal Notices issued	1786
	,, ,, uncomplied with	305
	,, ,, cancelled	55
	Letters written	3881
	Summonses issued	38
Disinfection—Houses Disinfected		1597
House Drains	Repaired	147
	Reconstructed	798
	Trapped	350
	Slopstone Pipes disconnected from	..
	Downspouts disconnected from	1
	Blockages removed	2089
Passage Inlets	Blockages Removed	2216
Water Closets	New, provided	208
	Ventilated	..
Ash Receptacles	New, provided	1914
	Bricked up or demolished	551
Limewashed	Dwelling-houses	6
	Ice Cream Shops	1
	Lodging-houses	32
	,, Sub-let	198
	,, Seamen's	4
	Bakehouses	162
	Slaughter-houses	16
	Workshops	46
	Workshops (Domestic)	1
	Outworker's premises	2
	Laundries	2
Newly Registered	Lodging-houses	..
	,, ,, Sub-let	23
	Slaughter-houses	..
	Workshops	51
	,, (Domestic)	5
	Dairies and Milkshops	23
	Bakehouses	20
	Second-hand Goods Stores	14
	Offensive Trades	..
Accumulations Removed	Manure and Refuse	93
	Stagnant Water	3
Manure Receptacles provided		4

REGISTER OF WORK DONE—*Continued.*

Smoke Nuisance	Observations taken	3261
	Notices served	12
	Cautionary Notices served	88
Passages and Yards	Flagged	22
	Repaired	371
	Drained	—
Infected Bedding and Clothing	Stoved	3793
	Destroyed	83
Food	Samples purchased for analysis	1396
Milk	Samples obtained for bacteriological examination	331
Unsound Food	Seizures made	1162
Animals removed from improper situations		3
Overcrowding of dwellings abated		3
Houses repaired by owners, after notice		4105
Canal Boats painted		4
,,	defective	—
,,	repaired	4

Housing Conditions.

YEAR ENDED 31ST DECEMBER, 1925.

GENERAL STATISTICS.

Area (acres)	5202
Population (1925)	244700
Number of Inhabited Houses (1925–1926, April)	about 50168
Number of families or separate occupiers (1925)	—
Rateable Value (1925–1926, April)	£1379648
Sum represented by a penny rate (Estimate)	£5250

HOUSING.

Number of new houses erected during the year :—

(a) Total	215
(b) As part of a municipal housing scheme	72

1. Unfit dwelling-houses.

Inspection—

(1) Total number of dwelling-houses inspected for housing defects (under Public Health Acts)	10667
(2) Number of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910	7370

(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation. **1**

(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation..... **6898**

2. Remedy of defects without service of formal Notices.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their officers..... **2485**

3. Action under Statutory Powers.

(A) Proceedings under Section 28 of the Housing, Town Planning, etc., Act, 1919 ... . Nil.

(1) Number of dwelling-houses in respect of which Notices were served requiring repairs ..... Nil.

(2) Number of dwelling houses which were rendered fit :—

(*a*) By owners .... Nil.

(*b*) By Local Authority in default of owners ..... Nil.

(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close ..... Nil.

(B) Proceedings under Public Health Acts.

(1) Number of dwelling-houses in respect of which Notices were served requiring defects to be remedied **3945**

(2) Number of dwelling-houses in which defects were remedied :—

(*a*) By owners..... **1620**

(*b*) By Local Authority in default of owners ..... Nil.

(C) Proceedings under Sections 17 and 18 of the Housing, Town Planning, &c., Act, 1909.

(1) Number of representations made with a view to the making of Closing Orders..... Nil.

(2) Number of dwelling-houses in respect of which Closing Orders were made ..... Nil

(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit.. Nil.

(4) Number of dwelling-houses in respect of which Demolition Orders were made ..... Nil.

(5) Number of dwelling-houses demolished in pursuance of Demolition Orders ..... Nil.

Local Acts in force.

SECTION IIA.

Atmospheric Pollution.

As pointed out in a previous report,* Salford's domestic smoke contributes very considerably greater and more serious pollution to our atmosphere than does smoke from industrial sources. This conclusion was arrived at after a systematic enquiry into the total amounts of coal consumed in factory furnaces and domestic grates throughout the Borough. It was shown that in the winter time the total amount of coal consumed in domestic grates is practically double the amount consumed in factories. It was also pointed out that, owing to the much higher temperature obtaining in the factory fire, coal is more completely burned than in domestic fires, from which unburnt "distillation products" pass up the chimney and so escape into the atmosphere in large quantity. These distillation products, including tarry matter and impalpable fume, emanating from the domestic grate are much more likely to be injurious to health than factory smoke, which contains relatively more inorganic ash and little tar.

It is now more generally realised that the timing of factory smoke emission by inspectors, with the consequent prosecution of firms allowing the emission of dense black

*Annual Report for the Year 1923.

smoke beyond a permissible time limit, however strictly carried out, will not in itself go very far towards effecting the desired improvement in our atmosphere, particularly when the domestic smoke problem remains unsolved.

The permissible time limit of factory smoke emission (under two minutes black smoke in the half-hour) which the Salford Health Committee have now adopted, is held by the Manchester Regional Joint Smoke Abatement Committee to be the most stringent that it is practicable to adopt at the present time.

But no matter how many inspectors we appoint to watch factory chimneys, and no matter how rigidly offenders exceeding the permissible time limit of black smoke emission are prosecuted, we shall still have our smoke problem, like the poor, always with us, so long as the use of raw coal as a fuel is permitted.

Prevention at the Source of the Trouble is the only Real Remedy.

When this country decides that coal must be carbonised before being burnt, then smoke inspectors will lose their jobs.

Of course, the attainment of the ideal is beset with many difficulties. Apart from considerations of the economic production of solid smokeless fuel and satisfactory disposal of by-products, powerful opposition from existing private interests has to be contended with. But a growing public opinion in favour of dealing with our coal in the only rational way will help to remove difficulties.

Reformers must continue to strive for the ideal and insistently demand a supply of solid smokeless fuel for domestic purposes.

We cannot altogether dispense with the open fire in our homes, and more especially here in Lancashire, where the climate is raw and damp for so large a portion of the year. The open fire is by far the healthiest method of warming the living room. But at the present time the open fire is the greatest contributor of impurity to the air we breathe, constituting an urgent problem of sanitation which can no longer be ignored. Every effort should be made to minimise the domestic smoke nuisance, and much can be done by improving existing types of grate and making the best use of the fuel at present available.

Experiments with Firebrick Grates.

During the latter part of the year 1925, experiments bearing on the problem of prevention of atmospheric pollution from the domestic fire have been carried out.

As a number of the original grates in the Health Office premises had become burned out and dilapidated, it was decided to replace them by the well type of all-firebrick grate, the efficiency of which had been scientifically demonstrated.

The particular series of experiments to which I would now draw the Committee's attention are those which have been carried out from the end of November, 1925, to the beginning of February, 1926, and which afford a comparison of the efficiency of two fuels (1)

ordinary house coal, and (2) dry gas coke from vertical retorts.

The comparative tests were performed in two rooms, "A" and "B," of similar size and shape, and having identical all-firebrick grates. For one week coal would be burned in room "A" and coke in room "B." The following week, the arrangement would be reversed, and coke burned in room "A" and coal in room "B," and so on, thus tending to further equalise the conditions of the experiment.

Thermometers in similar positions in each room (but not in the line of direct radiation from the fire) recorded the room temperature, which was taken at intervals during the day.

The comparative observations of this series—37 in all—were made on week-days from Monday to Friday, the fires being lighted each morning about 7 a.m., and allowed to die out after 5 p.m.

The amount of fuel supplied to either room was weighed each morning, and the amount remaining each evening was also weighed and deducted from the original weight of the supply, thus giving the net daily consumption.

The results of the experiments are set forth in the appended table, and may be summarised as follows:—

(1.) The average temperature of the room in which dry coke was used as fuel was slightly in excess of that supplied with coal, the figures being 58·8 deg. Fah. for coke, and 58·6 deg. Fah. for coal.

(2.) The average daily consumption of dry coke was 14·8 lb., whilst the average daily consumption of coal was 21·8 lb.

In other words, to produce the same heating effect, the weight of dry coke required was roughly two-thirds of the weight of coal. Moreover, the coke gave a beautiful radiant fire and no smoke whatever, nor was there at any time any evidence of sulphur fumes in the room in which this particular fuel was being used.

As the price charged for this vertical dry coke is the same as that for ordinary coke, namely, 26s. 8d. per ton, the daily cost of these coke fires averaged $2\frac{1}{8}$d. I understand that this price is also the retail price. If the charge for cartage be added, the daily cost per coke fire is slightly increased. For example, for the first mile, the charge is 2s. 6d. per ton; this would increase the daily average cost per fire from $2\frac{1}{8}$d. to $2\frac{1}{3}$d. As the additional charge for delivery for distances over one mile is only 10d., any increase due on this account may be ignored.

Reckoning the cost of coal at the price charged to the Health Committee, namely, 31s. 9d. per ton, the daily cost of the coal fires averaged $3\frac{3}{4}$d. If the coal had been bought at retail price, namely, 41s. 8d., this would have worked out at 5d. per day.

Thus, by burning vertical dry coke in the all-firebrick well grate, we not only eliminate an important source of atmospheric pollution, but effect a very considerable economy.

Since the amount of coal annually consumed in domestic fires in this country approximates to 40 million tons, while the total production of gas coke amounts to about eight million tons, it is not suggested that gas coke can, at present, largely replace coal for domestic use. But it appears to your Medical Officer of Health that, pending the production of smokeless fuel on a large scale, efforts ought to be made to bring about the more extended use of this fuel, and I feel that much might be achieved by the sympathetic co-operation of the Gas Department, involving increased output of this dry fuel, which, if once the public were aware of its comparatively free burning qualities, would be in considerable demand.

1925-6.

	Vertical Coke.			Coal.		
Date.	Average temperature.	Weight of fuel consumed.	Room.	Average temperature.	Weight of fuel consumed.	Room.
1925.		Lbs.			Lbs.	
Nov. 30	56⅓°	12	"B"	54⅔°	19	"A"
Dec. 1	57⅔°	16	"B"	56°	24	"A"
,, 2	58°	14	"B"	57¼°	20	"A"
,, 3	60°	17	"B"	57½°	18	"A"
,, 4	61°	17½	"B"	59½°	22½	"A"
,, 7	60°	18	"A"	59°	20½	"B"
,, 8	61°	16½	"A"	61°	23½	"B"
,, 9	60°	11	"A"	60½°	19	"B"
,, 10	60°	15½	"A"	59⅔°	21½	"B"
,, 11	60⅓°	10½	"A"	61°	19½	"B"
,, 14	55½°	19	"B"	54½°	24	"A"
,, 15	57°	18½	"B"	54½°	27½	"A"
,, 16	59°	17	"B"	58½°	24	"A"
,, 17	60½°	14	"B"	59¼°	21½	"A"
,, 18	61¾°	14½	"B"	60¾°	23½	"A"
,, 21	55°	18½	"A"	56⅔°	24	"B"
,, 22	56°	16	"A"	57⅓°	23½	"B"

1925-6—*Continued.*

Date.	Vertical Coke.			Coal.		
	Average temperature.	Weight of fuel consumed.	Room.	Average temperature.	Weight of fuel consumed.	Room.
1926.		Lbs.			Lbs.	
Jan. 4	56°	13	"A"	56°	21	"B"
.. 5	57⅜°	14½	"A"	57⅕°	22	"B"
.. 6	58⅜°	14½	"A"	60⅜°	23	"B"
.. 7	58⅜°	15	"A"	59⅜°	20	"B"
.. 8	59°	14½	"A"	60¼°	21	"B"
.. 11	61⅛°	13½	"B"	61°	19½	"A"
.. 12	60½°	16	"B"	59½°	23½	"A"
.. 14	58⅛°	13½	"B"	57⅕°	26	"A"
.. 15	58¼°	16	"B"	55°	23½	"A"
.. 18	55¾°	16½	"A"	55¼°	24	"B"
.. 19	54¼°	17	"A"	58°	22	"B"
.. 20	58⅛°	14	"A"	59⅕°	25	"B"
.. 22	58½°	14½	"A"	58⅜°	22½	"B"
.. 25	60°	12⅝	"B"	59⅛°	23	"A"
.. 26	60¾°	16½	"B"	59°	21	"A"
.. 27	62°	12⅝	"B"	61⅜°	21½	"A"
.. 28	60½°	9	"B"	59⅜°	15½	"A"
.. 29	61⅜°	11	"B"	61°	17	"A"
Feb. 1	59°	12½	"A"	58¼°	21½	"B"
.. 2	61½°	15	"A"	63°	20½	"B"
Total		547			808½	
Daily Average..	58·9°	14·8		58·6°	21·8	

Fireplace of Glazed Brick and Firebrick.

With the practical co-operation of Mr. J. Jones, of the Borough Engineer's Staff, and Mr. H. Cunliffe, of my own staff, a very satisfactory type of fireplace has been evolved and installed in a number of rooms at the Health Office.

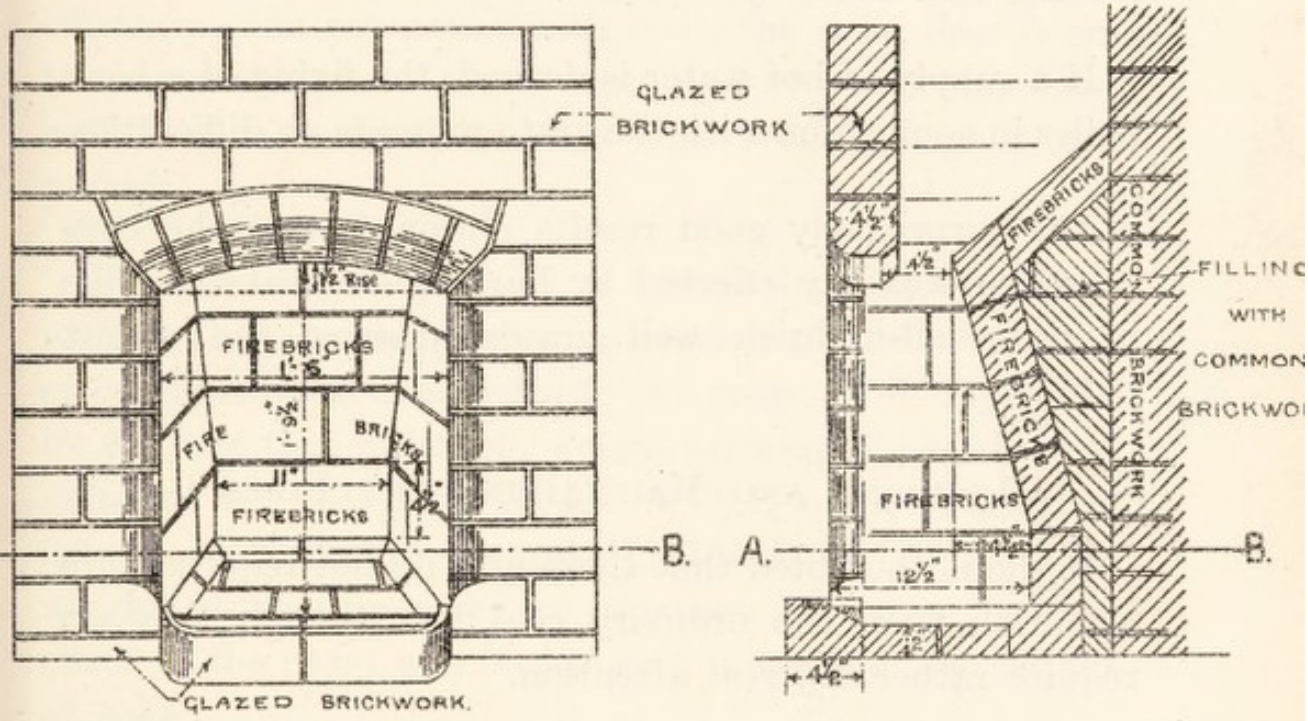
This fireplace is constructed entirely of glazed brick and firebrick. As iron and other metal is entirely eliminated, there is no labour involved in blackleading and polishing the grate. The glazed bricks take the place of

tiles, thereby effecting an economy in construction, and at the same time giving a neat finish to the fireplace. We estimate that the average cost of conversion from the old type of fireplace to the above, including labour and materials, is between £4 and £5.

In the accompanying drawings, plan, elevation, and section of the fireplace are shown.

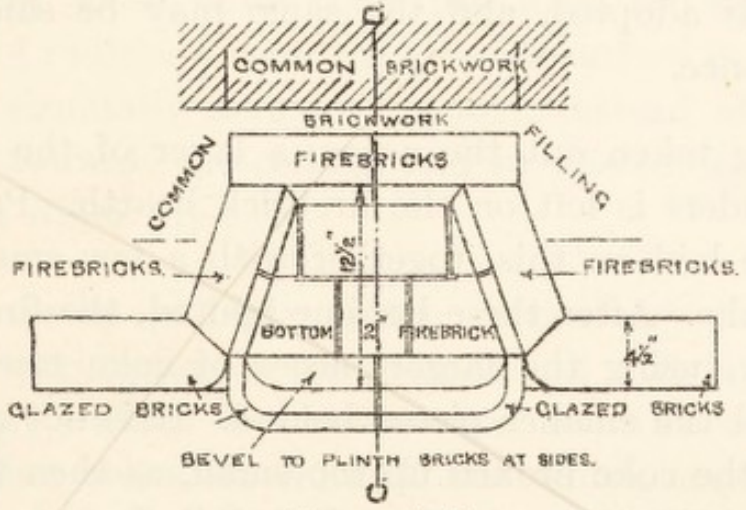
— SLOW COMBUSTION FIRE PLACE. —

CONSTRUCTED ENTIRELY WITH GLAZED & FIRE BRICK.



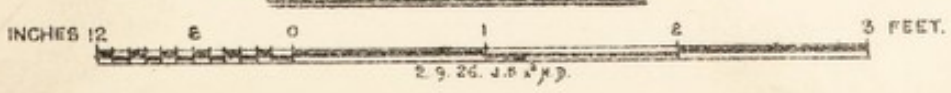
ELEVATION

SECTION C.D.



PLAN A.B.

SCALE 3/4 INCH TO 1 FOOT



It is, therefore, a comparatively easy and inexpensive matter to convert existing grates to this type, in which, as already indicated, there is complete absence of metal in construction, and no bottom draught whatever. Points of interest to the housewife, are the easy removal of ashes in the morning, and the elimination of black-leading and metal polishing.

If a supply of hot water is desired, the fixing of a back boiler in connection with the grate presents no difficulties.

The surprisingly good results obtained, and the considerable economy effected by burning vertical dry coke in these all-firebrick well grates, deserve the widest publicity.

Lighting and Maintaining the Fires.

It should be noted that these fires do not require more attention than the ordinary coal fire, though they do require rather *different* attention.

The lighting is quite an easy matter if the correct method is adopted, and the same may be said of the maintenance.

Having taken out the ashes, a layer of the previous day's cinders is left on the firebrick hearth. Paper and chips are laid on this, together with a few small pieces of dry coke. After these become ignited, the fire is built vertically, using the larger pieces of coke towards the front and the smaller pieces behind. It is not advisable to have the coke broken up too small, as then the penetration of air is impeded and a dull fire results. The

poker is only required when the fire is getting low, to raise the hot cinders above the ash, which falls into the bed: fresh fuel is then built over the glowing cinders, and this quickly becomes incandescent.

Indeed, one of the striking features of the fires is the rapidity with which they attain their maximum radiant efficiency. As compared with coal, the coke fires begin to warm the room much more quickly, and the heat radiation is maintained at a high level for prolonged periods.

The experiments seemed to show that, as compared with coal, a much greater proportion of the total heat of combustion is radiated into the room. This is proved by the fact that although, weight for weight, the thermal value of the coal used (13494 B.Th.U's) was somewhat greater than that of the coke (13151 B.Th.U's), yet the weight of coal required to produce the same heating effect in the room was 50 per cent more than the weight of coke.

It is easy to so build these fires that the maximum intensity of radiation from the glowing surface is directed almost horizontally across the room, instead of almost vertically towards the ceiling, and so wasted, as obtains with most other fires.

A noteworthy property of the vertical dry coke used in the experiments is the absence of "flying" and "crackling" which are sometimes experienced when certain other cokes are burned, and which may be due to excess of water. It is as well to note that ordinary

coke, which has been copiously quenched with water at the Gas Works, and which may sometimes contain over 30 per cent of water, will not burn freely in open grates.

To obtain the best results with coke fires, attention to details, already hinted at, is necessary.

Demonstrations on this method of domestic heating to persons interested are willingly given, by appointment.

It is almost needless to add that the type of domestic fire grate here described, which has proved so suitable for the burning of vertical dry coke, will be equally suitable for burning other types of solid smokeless fuel, when such become available for public supply on a big scale.

Comparative experiments on the burning of different smokeless fuels in domestic grates are being carried out at the Health Office, and it is hoped to report on this work at a later date.

SECTION IIb.

The Influence of Temperature on Chemical Disinfection.

I.—Introduction.

Disinfection by chemical means has of late years somewhat fallen into disfavour, owing to the doubtful efficiency of the process, as ordinarily carried out. Disinfection by pressure steam is rightly preferred, whenever applicable, as by this means complete sterilization of infected articles can be rapidly achieved. Hence, the present custom is to pass through the Steam disinfector all infected articles that can be so treated without damage.

The difficulty we have to face is that certain articles will not stand the temperature (115° to 120° Centigrade) attained in the Steam disinfector. For instance, woollen goods, such as blankets, greatly deteriorate after repeated steam sterilization, and shaving brushes which may be infected with anthrax spores will not stand the process. The choice in such cases, therefore, lies between destruction of the infected goods and some alternative method of disinfection.

The object of the present article is to examine the conditions under which chemical disinfection may be safely employed as an alternative to steam disinfection.

Many years ago, the writer carried out, under the direction of the late Professor Sheridan Delépine, an investigation of "The Effect of Temperature on Disinfection by Phenol." A large number of experiments were performed and some very interesting results were obtained, but these were not published at the time. It is proposed here to recapitulate these results, on the plea that the possibilities of chemical disinfection, combined with a moderate increase in temperature of the disinfecting medium, are even to-day insufficiently realised.

In these disinfection experiments, a fixed time exposure of 20 minutes was chosen, because this interval is a very convenient one to employ in actual practice, and it is also very convenient to work with experimentally.

The time of exposure to disinfection being fixed, the tests were carried out with varying strengths of disinfectant and varying temperatures of exposure.

As an example, silk threads infected with Bacillus Coli would be exposed for 20 minutes to the action of a number of different strengths of carbolic acid solution at ordinary room temperature, when it would be found that all solutions containing above a certain percentage of carbolic acid would kill the bacteria in the given time, whilst the weaker solutions of disinfectant failed to kill the germs in the same time. Thus, in one experiment, carbolic acid solution of a strength of one in sixty killed these bacilli, whilst a solution of one in sixty-five failed to kill them. That is, the "lethal point" for this particular germ at room temperature (13° C.) was, in the above

experiment, between one in sixty and one in sixty-five of carbolic acid solution. Similar experiments were carried out under *warmer* conditions (in the incubating chamber), and under *colder* conditions (in the cold storage room). The comparative results of the above three typical experiments (which were carried out simultaneously) are most interesting, thus :—

Near freezing point	(—1° Centigrade)	the required "lethal" strength of carbolic acid was between	1 in 40 and 1 in 45
At ordinary room temperature	(+13° Centigrade)	do.	1 in 60 and 1 in 65
Near body temperature	(+36° Centigrade)	do.	1 in 120 and 1 in 130

Therefore, the results of this one set of experiments seem to suggest that :—

> At blood temperature the disinfecting action of carbolic acid is twice as powerful as at ordinary room temperature, and three times as powerful as at freezing point.

One would not, of course, draw general conclusions from a single set of experiments. As a matter of fact, a very large number of experiments, both simultaneous and otherwise, were carried out during a period of well over a year, at different temperatures anywhere between freezing point and 50° Centigrade.

Also, the disinfecting action of carbolic acid at different temperatures was tested, not merely against one organism, but against the following :—

1. The Common Bacillus of the Intestine (Bacillus Coli Communis).

2. The Common Abscess forming organism (Staphylococcus Pyogenes Aureus).

3. The Bacillus of Oriental Plague (Bacillus Pestis).

4. Anthrax Spores (Bacillus Anthracis).

Moreover, in the case of the first three organisms, the experiments included the exposure to disinfectant of (*a*) germs dried on silk threads, and (*b*) naked germs from fresh cultures.

With respect to the varying resistance of different organisms to chemical disinfection, the experiments showed that the Plague Bacillus was the most easily killed by the disinfecting solution. On the other hand Anthrax Spores were extremely resistant and exposures to ordinary disinfecting solutions for 20 minutes had no lethal effect. They survived many days' exposure to strong carbolic acid at ordinary room temperature. It is interesting to note, however, that these Spores succumbed in two or three hours when the disinfectant attained the temperature of the body (37° C.), whilst at 47° C. they were killed within 20 minutes.

With regard to the non-sporing organisms, an analysis of all the results obtained confirms the impression afforded by the single set of experiments first stated, namely, that chemical disinfecting action increases almost directly with the temperature of the medium, being more powerful at room temperature than near freezing point, and much more powerful still at body temperature.

Above body temperature the efficiency of chemical disinfecting solutions rapidly increases, so that as we approach the neighbourhood of 55° Centigrade, a very minute percentage of the disinfectant is required to kill Bacillus Coli in 20 minutes.

For the sake of completeness, it has been thought desirable to give a detailed description of the methods employed in this investigation in Chapter II, and a description and tables of the experimental results in Chapter III. Chapter IV gives a general summary of results, together with conclusions ; whilst in the Appendix, all the experiments carried out at various times are tabulated.

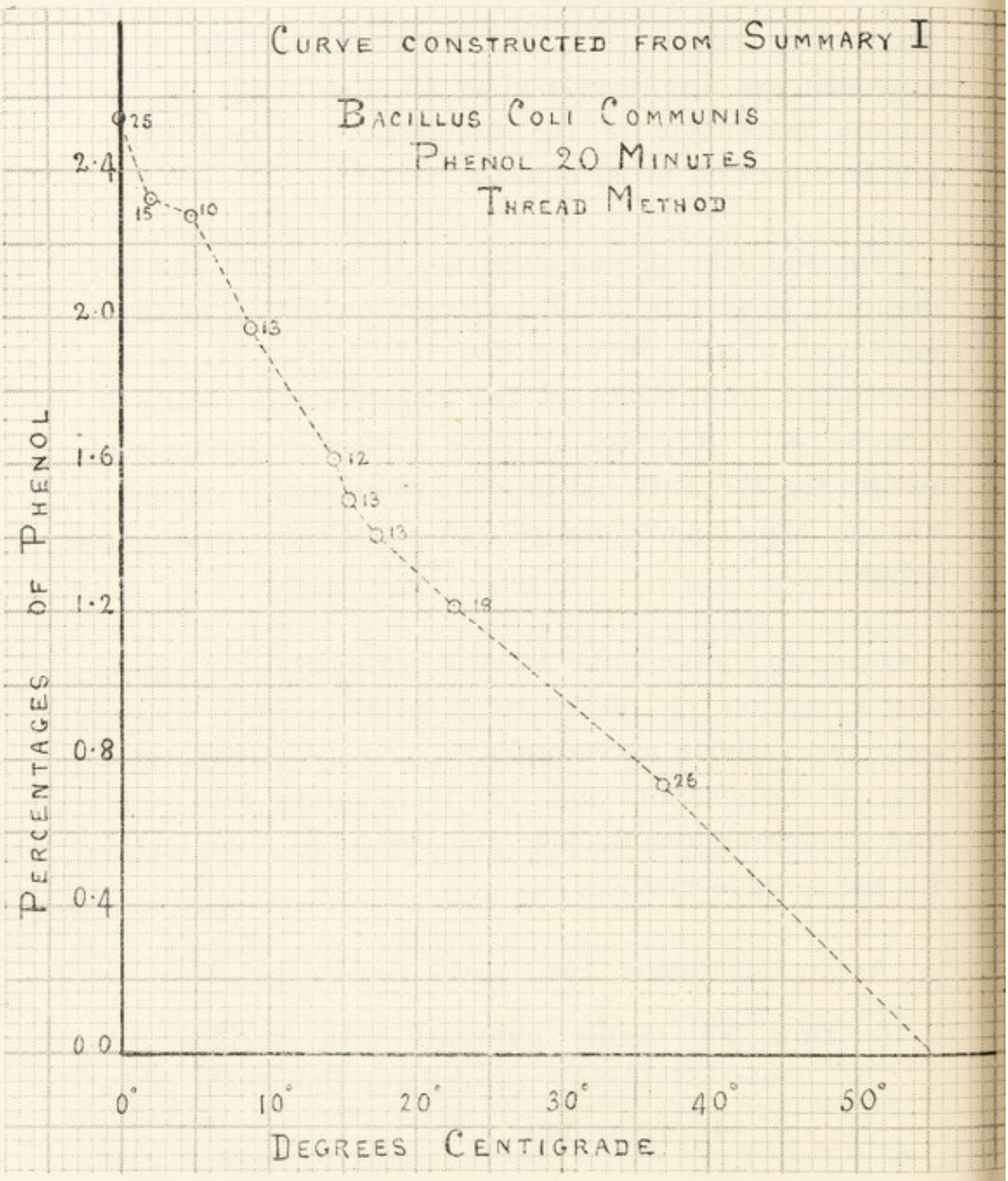
Owing to the fact that in all experimental work (with the exception of observations with anthrax spores) only two variants were employed, namely, (1) concentration of disinfectant, and (2) temperature the results and summaries readily lend themselves to reproduction by the graphic method.

As an illustration, two curves constructed—

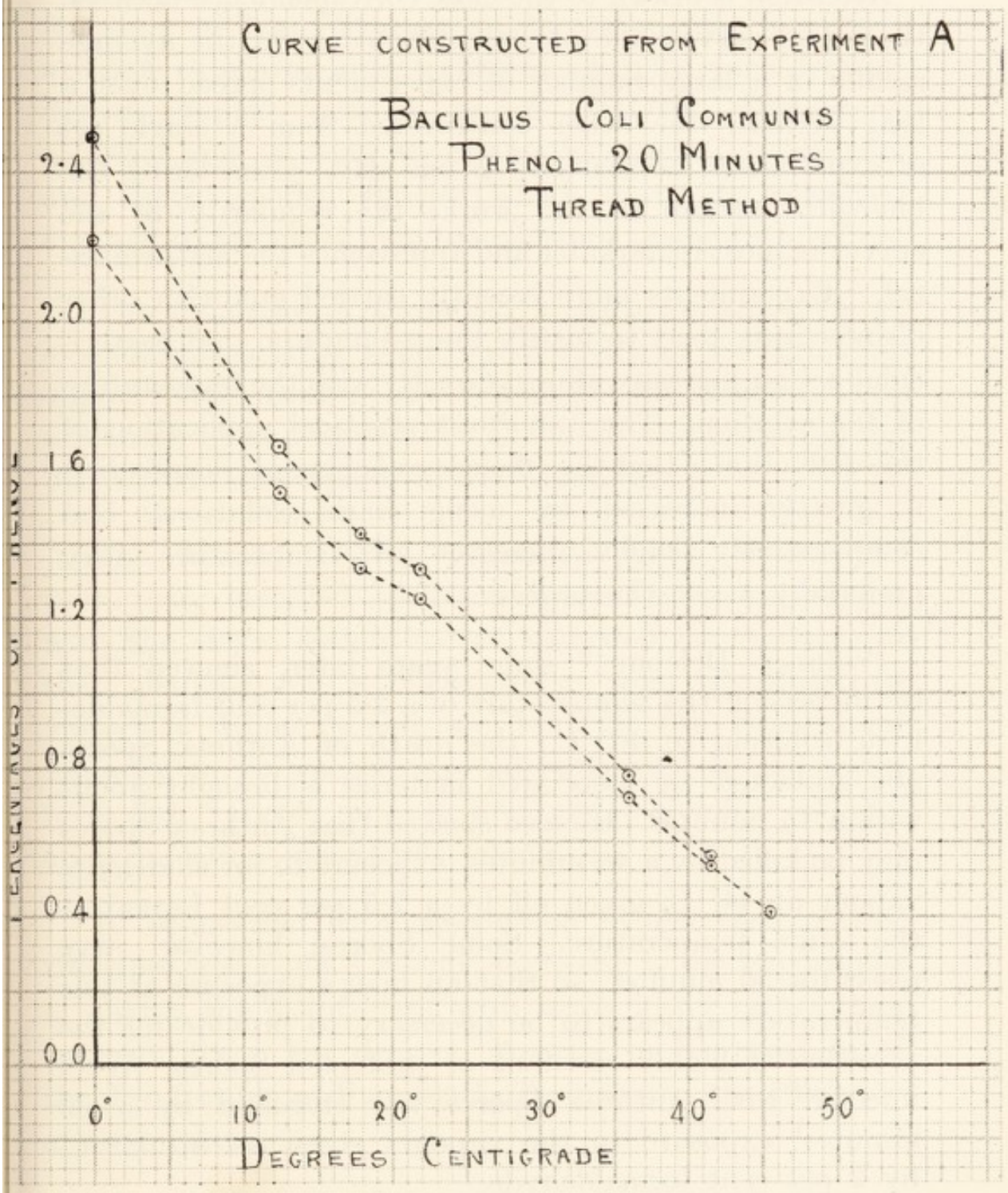
(*a*) from all results obtained with bacillus coli-infected threads throughout the whole period of the work, and

(*b*) from a simultaneous set of experiments carried out with similar threads all in one day,

are here set forth.



The points through which the curve passes represent the mean of the average lethal strengths of disinfectant for the different temperatures. The small figures against these points on the curve indicate the number of experiments from which the averages have been calculated.



nts in the upper curve show non-lethal strengths of disinfectant at various temperatures. nts in the lower curve show lethal strengths of disinfectant at these temperatures. The lethal nt of the disinfectant for different temperatures lies somewhere between the two curves.

Attention is drawn to the close correspondence between these two curves, the one constructed from the average results of a large number of experiments spread over a long period; the other constructed from a single set of experiments carried out in one day. Considering the biological nature of the work, the regularity of the curves is most remarkable and approaches the mathematical. Experiments more recently carried out with other disinfectants tend to justify the assumption that bactericidal action increases almost directly with the temperature of the solution. The important practical application of this deduction is that the efficiency of chemical disinfection is greatly increased by using warm solutions, and comparatively slight increases of temperature very materially assist the process.

Professor Delépine,* some years later, showed that by increasing the temperature of a 2·5 per cent formaldehyde solution to 40° C., the death of Anthrax Spores not protected by associated material is brought about within 15 minutes. He also showed that Anthrax Spores may be killed by a 40 minutes' exposure to formaldehyde vapour at 44° C. given off by a 2·5 per cent formal at the same temperature. Some Spores, however, may resist for 50 minutes, so that an hour's exposure at this temperature appears to be necessary to provide for the presence of highly resistant or protected Spores. Wool infected with Anthrax Spores was sterilised by a 30 minutes' exposure to the vapours given off at 62° C. by 2 per cent formaldehyde.

* Professor Delépine's report upon wool infected with Spores of Anthrax Bacilli and afterwards treated by formaldehyde according to the methods investigated at Bradford by the Disinfection Sub-Committee of the Anthrax Committee, June, 1917.

Acting on these important principles, some manufacturers of high pressure steam disinfecting machines are now supplying an attachment whereby warm formaldehyde vapour can be passed into the disinfecting chamber and so bring about the disinfection of blankets and other woollen articles which would be ruined if exposed to the usual high temperature steam disinfection.

The temperature employed in such an arrangement is sufficient to bring about lethal action of the formaline vapour, but insufficient to damage the articles. The efficiency of the apparatus has been demonstrated by placing Anthrax Spores in the chamber.

The Salford Health Committee have, within the past year, installed such an apparatus in connection with the steam disinfector at Ladywell Sanatorium, so that blankets and woollen articles from the Municipal Maternity Home which are sent to the Sanatorium Laundry to be washed, are all submitted to the warm formaline vapour process, and the possibility of any cross infection completely obviated.

In connection with destruction by chemical means, therefore, the point I would emphasise is the importance of mixing the disinfectant with *warm* water rather than cold, as every few degrees' increase in temperature of the disinfecting medium markedly increases the efficiency of the process.

II.—Methods of Investigation.

In experimenting with non-sporing bacteria, such as Bacillus Coli Communis, a uniform exposure time of 20

minutes was employed, in which broth cultures of the organisms or else cultures dried on threads, were allowed to remain in contact with phenol, in different dilutions. Two methods, namely, (i.) the "Suspension" method, and (ii.) the "Thread" method, were used according to the technique usually followed by Professor Delépine in his work on disinfectants.

In the "Suspension" method, definite amounts of a bouillon culture of the test organisms were added to the disinfectant, whilst in the "Thread" method, silk threads infected by soaking in a bacterial emulsion and allowing to dry, were used.

These two methods will be subsequently described in detail.

After exposure for 20 minutes to different dilutions of Phenol, the organisms were transferred to tubes of nutrient broth, and incubated for four days. Where the bacteria had survived the 20 minutes' exposure to the disinfectant, cloudiness in the broth tubes, indicating growth, was generally obtained within 24 hours, and almost always within 48 hours. On the other hand, where complete disinfection had taken place, the broth tubes remained quite clear indefinitely. The sterility of media remaining clear was tested on several occasions, likewise the presence of the living organisms in bouillon that had become turbid was proved by sub-cultures.

Test Organisms Used.

The test organisms employed were:—

(i.) Bacillus Coli Communis.
(ii.) Staphylococcus Pyogenes Aureus.
(iii.) Bacillus Pestis.
(iv.) Anthrax Spores.

The cultures employed gave all the characteristic reactions of the typical organisms of their kind.

Sub-cultures of the test organisms used in the experiments were prepared from recent agar stock-cultures.

Agar stock-cultures of the three above non-sporing organisms were kept vigorous by re-inoculating fresh tubes every two or three weeks. The mouths of the tubes, in addition to the usual cottonwool plugs, were fitted with rubber caps to prevent drying. In the case of Bacillus Coli Communis and Staphylococcus Pyogenes Aureus, the agar stock-cultures were incubated at 37° C. for 24 hours after inoculation. Agar stock-cultures of Bacillus Pestis were incubated at 28° C. for 48 hours. All stock-cultures were kept stored in a dark cupboard.

Preparations of Phenol Dilutions.

In preparing the dilutions of phenol, sterilised tap-water was used, the amount of dissolved matter in Manchester water not being sufficient to affect the results and hence necessitate the use of distilled water. This had previously been proved experimentally.

Liquefied Carbolic Acid of B.P. strength was first prepared as follows :—

400 grams of absolute phenol from a freshly opened bottle were quickly weighed out in a large beaker and 40 grams of distilled water were added. The vessel was covered over and placed in the warm incubator until liquefaction was complete. The liquefied Phenol was then transferred to a stoppered bottle, and its strength

estimated from time to time by the tri-brom-phenol method.

Two standard dilutions of 1 in 20 and 1 in 50 phenol were freshly prepared every two or three days, and from these all other dilutions were made by adding the requisite quantities of sterilised water.

To prepare 1 in 20 phenol, 27½ grams of the liquefied carbolic acid were weighed out and transferred to a 500 c.c. flask: sterilised water was then added up to the 500 c.c. mark. In the same way, 1 in 50 phenol was prepared by weighing out 11 grams of the liquefied phenol and diluting up to 500 c.c. with sterilised water.

These standard dilutions were transferred to stoppered bottles.

All other dilutions were prepared in sterilised Erlenmeyer flasks capped with beakers, by the addition of accurately-measured quantities of sterilised water to measured quantities of standardised phenol solution.

Having prepared a series of phenol dilutions for an experiment, say, for instance, 1 in 50, 1 in 55, 1 in 60, 1 in 65, 1 in 70, 1 in 75, 1 in 80, 1 in 85, equal quantities of each dilution (5 c.c. in the "Suspension" method and 10 c.c. in the "Thread" method) were pipetted out into a series of glass capsules of uniform capacity and provided with glass covers. In these capsules the test organisms were exposed to the action of the disinfectant, and the fluid was frequently agitated during each exposure.

Temperature of Exposure.

Fairly constant temperatures between the limits of 17° C. and 47° C. could be found upon different shelves in the large incubating chamber at the Public Health Laboratory.

Water baths were used to obtain temperatures above 47° C. Temperatures from — 2° C. to + 3° C. could be obtained within the cold room. Temperatures from 4° C. to 14° C. were obtained by placing metal trays holding the capsules at different heights above the ice wells in the roof of the cold room. Room temperatures of 14° C. to 18° C. were obtained at different times in the cubicle in which my work was conducted.

The capsules containing the dilutions were placed in position 2—4 hours before the experiment was performed, in order that the disinfectant might acquire a uniform temperature.

The temperature of a control capsule of disinfectant was always taken at the beginning and end of every experiment, so that the temperature at which each experiment was conducted was accurately noted in each case.

Suspension and Thread Methods.

(*a*) Suspension Method.—A 24-hours' bouillon culture of the organism was prepared as follows :—10 c.c. of peptone bouillon (reaction + 10 to phenol-phthalein) was inoculated with a loopful* of agar culture from recent

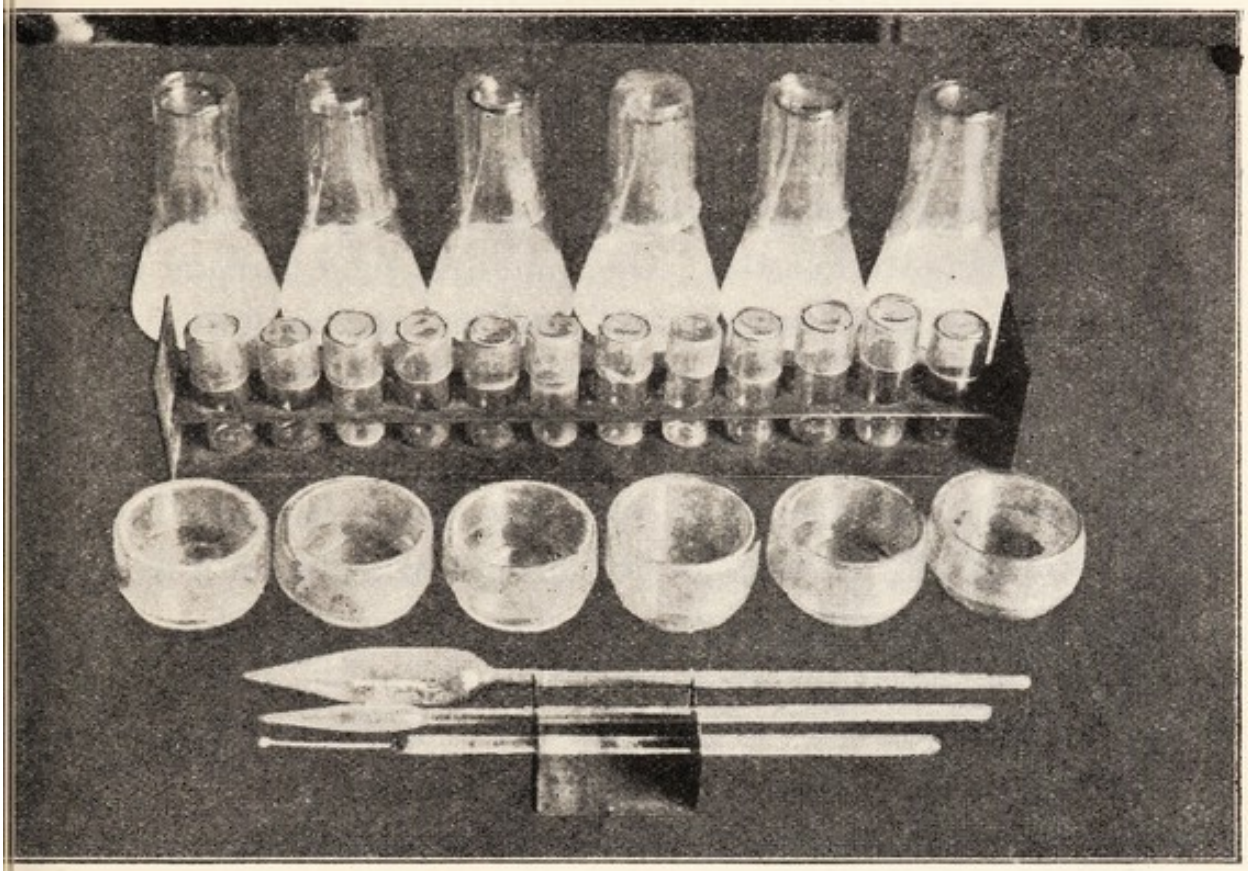
* The same platinum loop was used for the whole series of the experiments.

stock and then incubated for 24 hours at 37° C. This culture was well agitated, and by means of a sterile pipette 0.5 cubic centimetres were added to each of the series of glass capsules containing 5 c.c. of a dilution of phenol. Culture and disinfectant were thoroughly mixed in each case by stirring with platinum loop and by agitating the capsule in a rotatory fashion. The culture was added to successive capsules at intervals of 30 seconds, going from one end of the series to the other. After 20 minutes' exposure, two loopfuls of contents of each capsule were transferred to separate broth tubes, in which the usual cotton wool plugs were replaced by glass caps. These capped tubes were employed in order to obviate the falling into the fluid of organic matter derived from the cotton plug, and also to facilitate manipulation.

The same order and the same intervals of time were observed in transferring the loopfuls of fluid from different capsules, as in previously introducing the organisms to the disinfectant, thus ensuring the time exposure of exactly 20 minutes in every case.

After inoculation, the broth tubes were incubated at a temperature of 37° C., and were examined after 24 hours and 48-hours' intervals to ascertain whether growth had occurred.

Where the broth remained clear, even after three or four days, it was assumed that the disinfectant had exerted a lethal action, but where cloudiness appeared, the concentration of the disinfectant had not been sufficient to kill all the organisms during the time of exposure.



APPARATUS USED IN "SUSPENSION METHOD."

APPARATUS USED IN "THREAD METHOD."

(*b*) THREAD METHOD.*—Silk threads infected with the test organisms were prepared as follows :—A reel of china silk was carefully divided by means of a keen knife into two-centimetre lengths. One hundred such threads were placed in a glass capsule and sterilised in the autoclave.

The threads, after cooling, were infected with a bacterial emulsion. To prepare this bacterial emulsion the whole surfaces of two sloped agar tubes were each inseminated with a loopful of culture taken from a recent stock of the test organisms. The two agar tubes were then incubated for 48 hours at 37° C. in the case of the Bacillus Coli and Staphylococcus. (In the case of the Bacillus Pestis the tubes were incubated at 28° C. ; whilst for Anthrax spores the cultures were incubated for five days at 37° C.)

After removal of the agar tubes from the incubator, 2 c.c. of sterile bouillon were added to each, and the growth having been carefully separated from the surface of the agar (care being taken not to injure the surface of the medium), by means of a long fine platinum spatula, an emulsion was formed by thorough stirring and shaking. The emulsion from the two tubes (4 c.c. in all) was then poured upon the 100 silk threads, which, after stirring, were allowed to remain soaking for 20 minutes.

By means of sterilised fine-pointed forceps, the infected threads were then picked up singly, partly drained on the side of the capsule, and laid out separately so as not to touch one another, in a sterile Petri dish.

* For a full description of the thread method, see *Journal of the Royal Sanitary Institute*, Vol. XXVIII, No. 1, 1907.

The dish was then placed in the incubator at 37° C. for three hours, its lid being partially raised by means of a piece of bent wire, in order to allow the threads to dry.

The Petri dish was closed again when the drying was completed.

The dish of threads was then removed from the incubator and placed in a dark cupboard till required.

The amount of bacteria held by threads prepared in this way had previously been shown to be remarkably constant.

In experimenting by means of the thread method, phenol dilutions were prepared as already described, and 10 c.c. of each dilution were pipetted into separate capsules. Behind the row of capsules containing the phenol dilutions was placed a corresponding row of capsules, each containing 10 c.c. of sterile water. Two threads, picked up from different parts of the Petri dish, were dropped into each capsule of phenol dilution at intervals of 20 seconds, and, after shaking, were allowed to remain 20 minutes in the disinfectant.

They were then transferred to the sterile water capsules by means of forceps sterilised in the flame each time, the same order being observed.

The threads were allowed to remain 20 minutes in the sterile water, in order to wash them free from the disinfectant, and then transferred to glass-capped broth tubes and placed in the warm incubator.

Where the phenol had been sufficiently powerful to produce complete disinfection of the threads, no growth was obtained in the broth tubes, and they remained clear. On the other hand, where the phenol had been too dilute to exert complete lethal action, growth, indicated by turbidity, resulted.

Experiments with Anthrax Spores.

As previously mentioned, in experimenting with non-sporing organisms, the time of exposure to the disinfectant was always kept constant, *i.e.*, 20 minutes, the variant being the concentration of the disinfectant.

In experimenting with Anthrax spores, however, a time variant was employed whilst the concentration of the disinfectant remained constant.

This departure was found necessary owing to the much greater resistance of the spore to disinfection, a 20 minutes' exposure being quite inadequate even when the spores were immersed in the B.P. Acidum Carbolicum Liquefactum at blood heat. Moreover, in these experiments with Anthrax spores, instead of exposing the threads to the disinfectant contained in the ordinary glass capsules, small glass-capped tubes were used, the junction between the tube and its cap being sealed by a closely-fitting rubber band. This precaution was especially necessary at high temperatures to prevent evaporation of the phenol during a long exposure.

In these experiments the small tubes containing the disinfectant were placed in the incubator at a certain

temperature and left overnight so as to acquire that temperature. Then four threads were introduced into each tube, which was then capped and sealed with the rubber band. At suitable intervals threads were removed from the disinfectant and thoroughly washed in sterile water, then transferred to broth. Where threads had been exposed to the strong liquefied phenol, they were washed for about an hour in several lots of sterile water, in order to thoroughly free them from the disinfectant before transferring to nutrient broth.

III.—Experiments and Results.

A.—Experiments Carried Out at Various Times.

The whole of the experiments with each organism are set out in the form of tables (see Appendix at the end of the article) in which is shown for each experiment :—

(*a*) The mean temperature of the disinfectant during the experiment.

(*b*) The weakest lethal dilution of phenol, written as 1 part of phenol in so many parts of watery solution (vulgar fractions.)

(*c*) The strongest non-lethal dilution of phenol, written as in (*b*).

(*d*) The weakest lethal dilution (*b*), written as percentage of phenol and calculated to two decimal places.

(*e*) The strongest non-lethal dilution (*c*), written as in (*d*).

Table I. gives the results of all experiments performed with Bacillus Coli Communis, using the "Thread" method.

Table II. comprises the results of experiments performed with Bacillus Coli Communis, using the "Suspension" method.

Tables III. and IV. show the results of experiments performed with Staphylococcus Pyogenes Aureus, using the "Thread" and "Suspension" methods respectively.

Table V. gives the results of experiments performed with Bacillus Pestis by means of the "Thread" method.

Table VI. deals with the results obtained with Anthrax spore threads, and is presented in different form, as in this case it was necessary to employ a time variant.

For convenience, these tables are here condensed into summaries, from which can be constructed single line curves showing graphically the effect of temperature on disinfection.

These summaries were prepared from the more detailed tables by grouping together all experiments performed within small ranges of temperature of, say, 1° or 2°.

The summaries set forth for each group of experiments (1) the range of temperature, (2) the average of the temperatures within the above range, (3) the average of the lowest lethal percentages of phenol, (4) the average of the highest non-lethal percentages of phenol, (5) the mean of (3) and (4), (6) the number of experiments from which the above averages are computed.

Summaries I., II., III., IV., V., VI. correspond to Tables I., II., III., IV., V. and VI. respectively.

Selected charts corresponding to summaries I., II., III. and V. are here inserted. These charts are all constructed on the same basis and on squared paper. The temperature is measured along the abscissa from left to right, each division being made to represent 1° Centigrade. Percentage of phenol in the disinfecting solution is measured along the ordinate from below upwards, each division representing 0.04 per cent of phenol (equivalent to a solution of one part of pure phenol in 2,500 parts of water). Thus, by means of co-ordinates, points are obtained, which, when joined, yield a curve of disinfection. It follows, that if we take any point in the curve of disinfection, the horizontal co-ordinate of that point represents the temperature of exposure of the organism to the disinfectant, whilst the vertical co-ordinate of the point represents the approximate minimum percentage of phenol in watery solution required to kill the organism at that temperature in 20 minutes. (The small figures against points in the curves show the number of experiments from which the points have been calculated.)

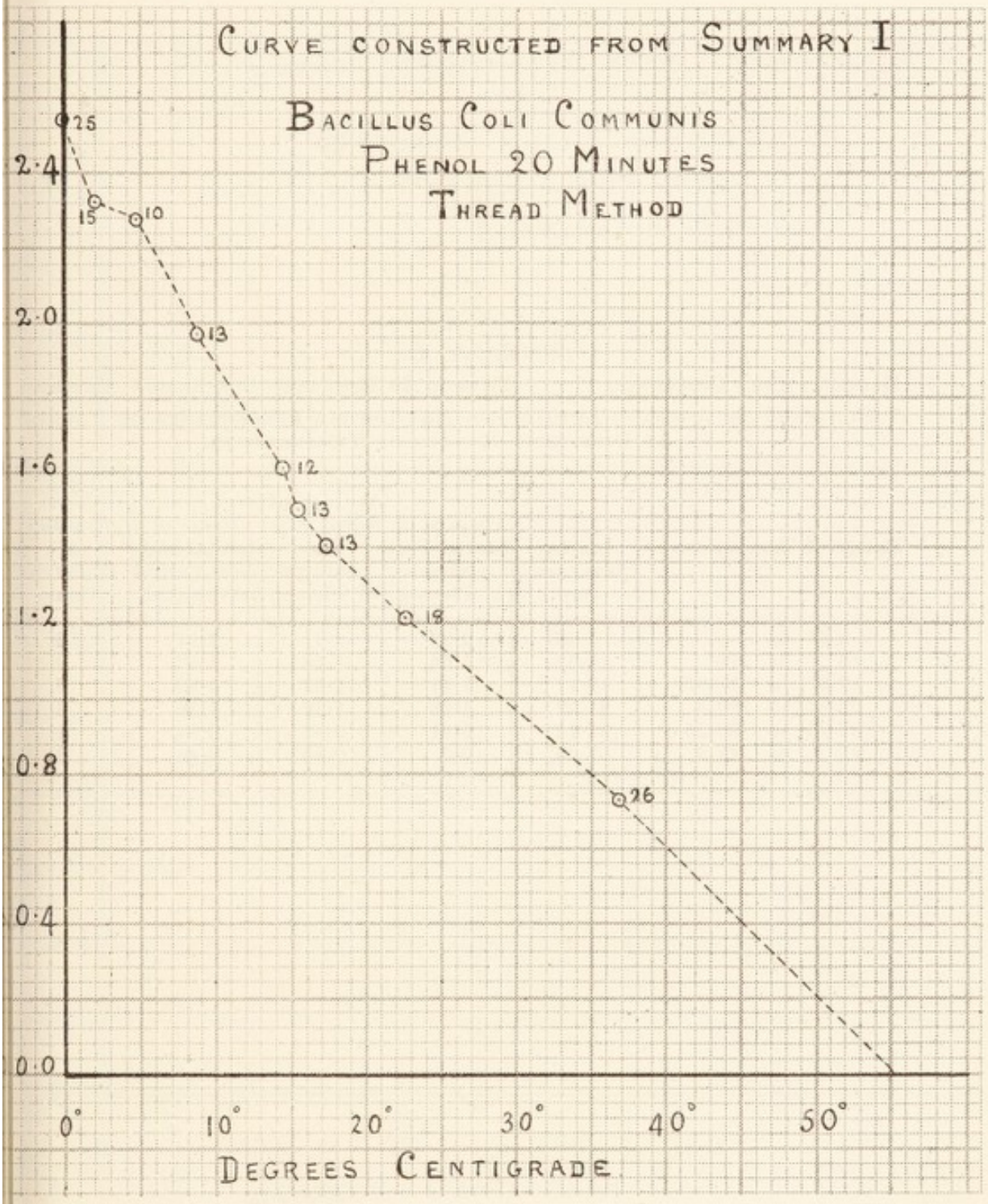
SUMMARY I.

BACILLUS COLI COMMUNIS. PHENOL 20 MINUTES—THREAD METHOD.

TABLE SHOWING AVERAGE LETHAL AND NON-LETHAL PERCENTAGES OF PHENOL AT DIFFERENT RANGES OF TEMPERATURE.

Range of Temperature.	Average Temperature.	Average of Lethal Percentages of Phenol.	Average of Non-Lethal Percentages of Phenol.	Mean of Lethal and Non-Lethal Averages.	Number of Observations.
— 1° to + 0·7°	— 0·164°	2·69	2·41	2·55	25
+ 1° to 2·8°	+ 1·98°	2·42	2·24	2·33	15
3·3° to 5·6°	4·62°	2·33	2·24	2·29	10
6·5° to 9·8°	8·64°	1·98	1·98	1·98	13
10·5° to 11·5°	11·07°	1·84	1·75	1·79	8
12° to 13·6°	12·56°	1·70	1·63	1·67	7
14° to 14·75°	14·36°	1·65	1·59	1·62	12
15° to 15·85°	15·35°	1·57	1·46	1·51	13
16° to 16·5°	16·27°	1·45	1·37	1·41	9
17° to 17·5°	17·2°	1·45	1·38	1·42	13
18° to 18·75°	18·26°	1·34	1·28	1·31	6
20° to 21·3°	20·814°	1·36	1·31	1·34	7
22° to 23·35°	22·53°	1·25	1·19	1·22	18
27° to 27°	27°	1·11	1·	1·06	2
31° to 32°	31·63°	0·94	0·90	0·92	6
36° to 38°	36·73°	0·75	0·70	0·73	26
41·5° to 42·5°	41·88°	0·58	0·52	0·55	8
45° to 46·5°	45·72°	0·42	0·38	0·40	7
47° to 47·75°	47·32°	0·38	0·28	0·33	7
52° to 53·5°	52·5°	0·09	0·08	0·09	7
55° to 55°	55°	0·00	..	0·00	1
56° to 56°	56°	0·00	..	0·00	1
59° to 59°	59°	0·00	..	0·00	1

Total observations = 222



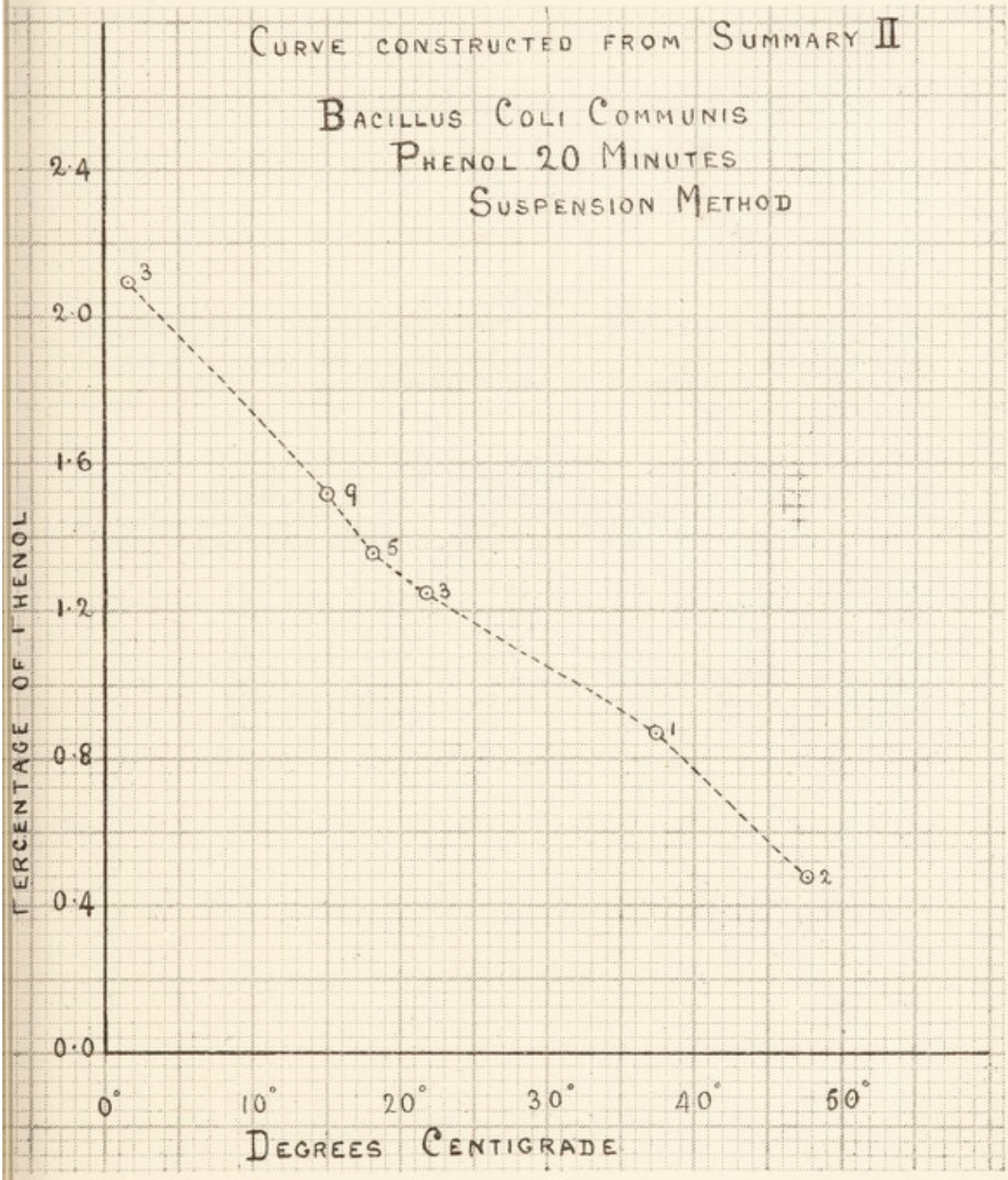
oints through which the curve passes represent the mean of the average lethal strengths sinfectant for the different temperatures. The small figures against these points on the indicate the number of experiments from which the averages have been calculated.

SUMMARY II.

BACILLUS COLI COMMUNIS. PHENOL 20 MINUTES—SUSPENSION METHOD.

TABLE SHOWING AVERAGE LETHAL AND NON-LETHAL PERCENTAGES OF PHENOL AT DIFFERENT RANGES OF TEMPERATURE.

Range of Temperature.	Average Temperature.	Average of Lethal Percentages of Phenol.	Average of Non-Lethal Percentages of Phenol.	Mean of Lethal and Non-Lethal Averages.	Number of Observations.
0·3° to 3°	1·85°	2·22	2·0	2·11	3
14° to 16°	15·08°	1·58	1·48	1·53	9
17·5° to 18·85°	18·27°	1·41	1·32	1·37	5
22·25° to 22·5	21·92°	1·29	1·22	1·26	3
37·25° to 37·25	37·25°	0·91	0·83	0·87	1
47° to 47·5°	47·25°	0·5	0·45	0·48	2



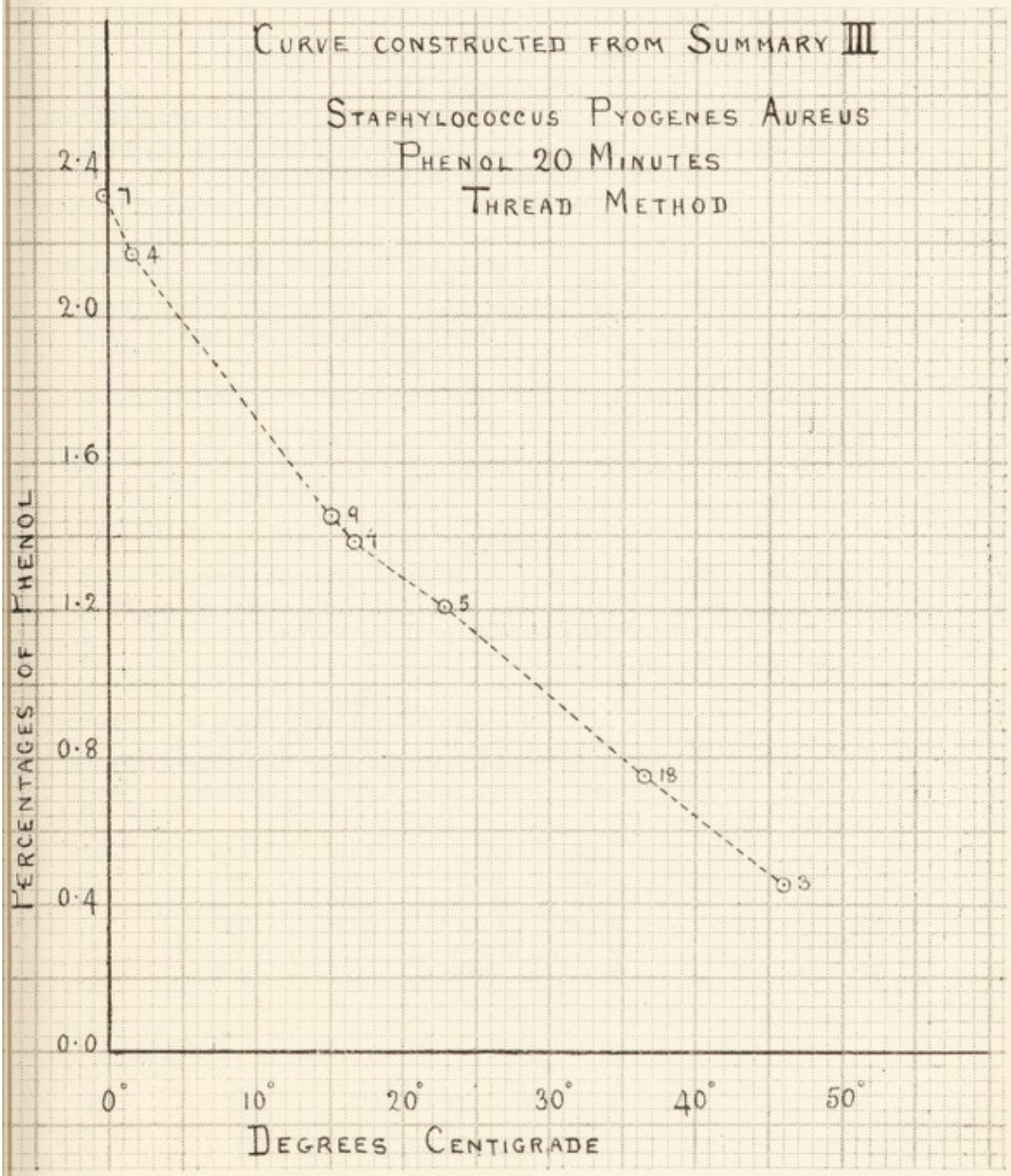
he points through which the curve passes represent the mean of the average lethal strengths disinfectant for the different temperatures. The small figures against these points on the rve indicate the number of experiments from which the averages have been calculated.

SUMMARY III.

STAPHYLOCOCCUS PYOGENES AUREUS. PHENOL 20 MINUTES—THREAD METHOD.

TABLE SHOWING AVERAGE LETHAL AND NON-LETHAL PERCENTAGES OF PHENOL AT DIFFERENT RANGES OF TEMPERATURE.

Range of Temperature.	Average Temperature.	Average of Lethal Percentages of Phenol.	Average of Non-Lethal Percentages of Phenol.	Mean of Lethal and Non-Lethal Averages.	Number of Observations.
— 0·75° to + 0·3°	— 0·17°	2·43	2·24	2·34	7
+ 1° to 2·3°	+ 1·64°	2·29	2·06	2·17	4
14° to 15·7°	15·08°	1·46	1·47	1·46	9
16° to 18°	16·86°	1·38	1·41	1·39	7
22·75° to 23·35°	22·97°	1·23	1·20	1·21	5
35·75° to 37·25°	36·53°	0·78	0·72	0·75	18
45·5° to 46·5°	46°	0·48	0·41	0·45	3



The points through which the curve passes represent the mean of the average lethal strengths of disinfectant for the different temperatures. The small figures against these points on the curve indicate the number of experiments from which the averages have been calculated.

SUMMARY IV.

STAPHYLOCOCCUS PYOGENES AUREUS. PHENOL 20 MINUTES—SUSPENSION METHOD.

TABLE SHOWING AVERAGE LETHAL AND NON-LETHAL PERCENTAGES OF PHENOL AT DIFFERENT RANGES OF TEMPERATURE.

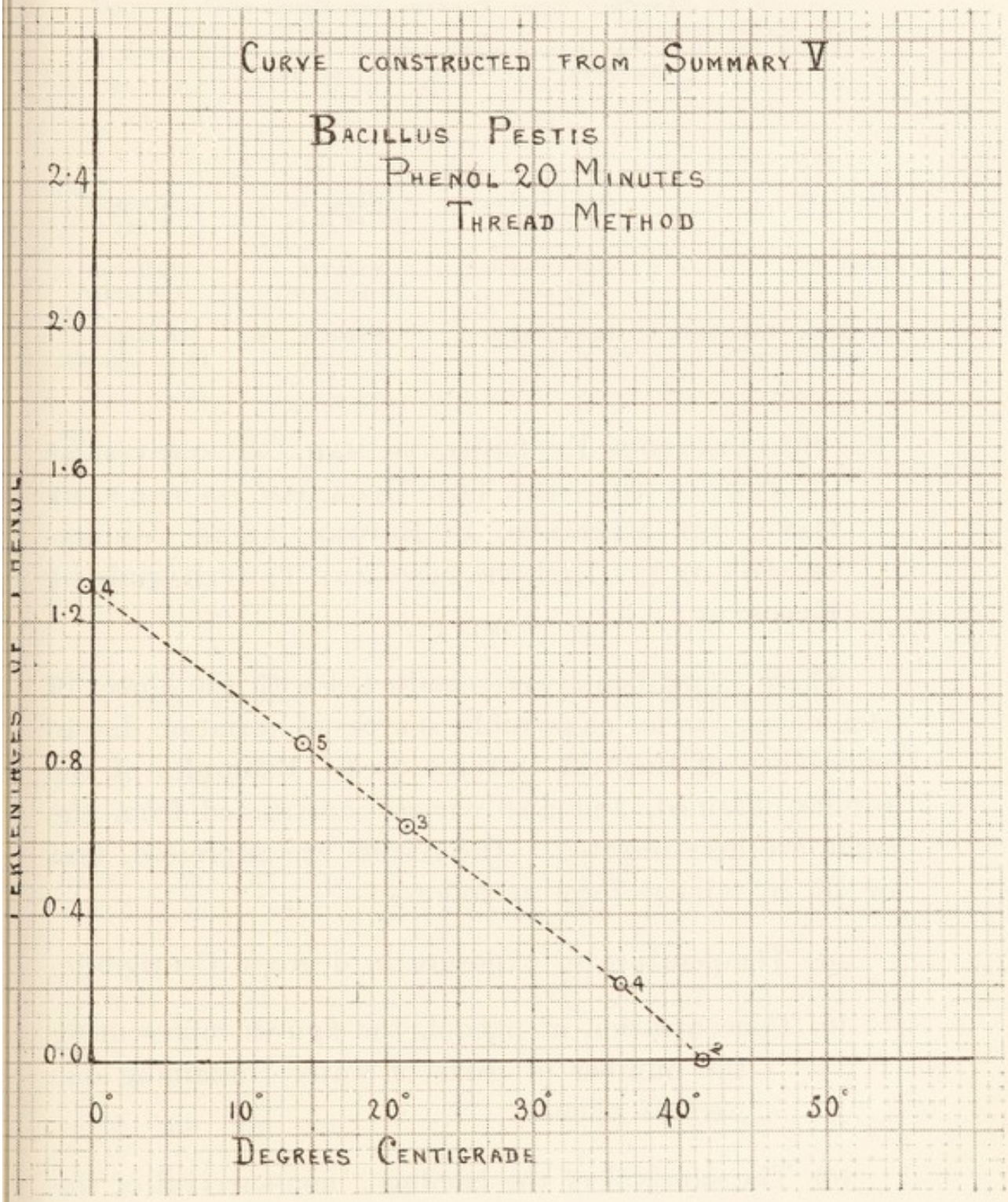
Range of Temperature.	Average Temperature.	Average of Lethal Percentages of Phenol.	Average of Non-Lethal Percentages of Phenol.	Mean of Lethal and Non-Lethal Averages.	Number of Observations.
— 0·25° to + 2·7°	1·35°	1·93	1·78	1·86	5
14° to 16°	15·14°	1·34	1·23	1·28	5
18·5° to 18·5°	18·5°	1·18	1·11	1·14	1
34·5° to 36·75°	35·98°	0·84	0·77	0·80	5

SUMMARY V.

BACILLUS PESTIS. PHENOL 20 MINUTES—THREAD METHOD.

TABLE SHOWING AVERAGE LETHAL AND NON-LETHAL PERCENTAGES OF PHENOL AT DIFFERENT RANGES OF TEMPERATURE.

Range of Temperature.	Average Temperature.	Average of Lethal Percentages of Phenol.	Average of Non-Lethal Percentages of Phenol.	Mean of Lethal and Non-Lethal Averages.	Number of Observations.
— 2° to 0°	— 0·625°	1·42	1·19	1·31	4
14° to 14·5°	14·3°	0·95	0·80	0·88	5
21° to 22°	21·43°	0·70	0·58	0·64	3
36° to 36·5°	36·125°	0·25	0·17	0·21	4
41·7° to 41·7°	41·7°	Above 0	..	Above 0	1
42° to 42°	42°	0·00	..	0·00	1



e points through which the curve passes represent the mean of the average lethal strengths disinfectant for the different temperatures. The small figures against these points on the rve indicate the number of experiments from which the averages have been calculated.

SUMMARY VI.

ANTHRAX SPORE THREADS AND PHENOL.

TABLE REPRESENTING APPROXIMATE LETHAL TIME OF EXPOSURE AT TEMPERATURES OF 18°, 37° AND 47°.

	18° C.	37° C.	47° C.
Phenol 2%.....	Not killed in 39¾ days.	Killed in 10–14 days.	Killed in 4 days.
Phenol 5%.....	Not killed in 41¾ days.	Killed in 12–18 hours.	Killed in 3–4 hours.
"Acidum Carbolicum Liquefactum."	Not killed in 9 days.	Killed in 2 hours.	Killed in 10–20 minutes.

B.—SIMULTANEOUS EXPERIMENTS, MADE WITH THE SAME CULTURE OF THE SAME TEST ORGANISM, ON THE SAME DAY; THE VARIANTS, AS BEFORE, BEING CONCENTRATION OF THE DISINFECTANT, AND TEMPERATURE OF EXPOSURE.

These experiments were conducted with the object of eliminating, as far as possible, sources of variation due to variability of the test cultures used. Examples of the results obtained, and also curves constructed from the same are here inserted. The results are expressed, first of all, in tabular form as follows:—

(*a*) Temperature of exposure in degrees Centigrade.

(*b*) Concentration of phenol, the figures representing the number of parts of water containing one part of phenol.

(*c*) The survival of the bacillus; non-survival of the organism after exposure being represented by a 0, survival being shown by a + sign.

EXPERIMENT A.

Bacillus Coli Communis. Thread Method.

(*a*)			0°		
(*b*)	30	35	40	45	
(*c*)	0	0	0	+	
(*a*)			18°		
(*b*)	60	65	70	75	80
(*c*)	0	0	0	+	+
(*a*)			36°		
(*b*)	110	120	130	140	150
(*c*)	0	0	0	+	+
(*a*)			45·5°		
(*b*)	250	275	300	325	350
(*c*)	+	+	+	+	+

Phenol 20 Minutes— (Threads 2 days old.)

(*a*)			12·5°		
(*b*)	50	55	60	65	
(*c*)	0	0	0	+	
(*a*)			22°		
(*b*)	70	75	80	85	90
(*c*)	0	0	+	+	+
(*a*)			41·5°		
(*b*)	160	170	180	190	200
(*c*)	0	0	0	+	+

EXPERIMENT B.

Bacillus Coli Communis. Thread Method.

(*a*)			1°		
(*b*)	30	35	40	45	
(*c*)	0	0	0	+	
(*a*)			13°		
(*b*)	55	60	65	70	
(*c*)	0	0	+	+	
(*a*)			21°		
(*b*)	75	80	85	90	
(*c*)	+	+	+	+	
(*a*)			32°		
(*b*)	100	110	120	130	
(*c*)	0	+	+	+	
(*a*)			42°		
(*b*)	170	180	190	200	
(*c*)	+	+	+	+	

Phenol 20 Minutes. (Threads 1 day old.)

(*a*)			9°		
(*b*)	45	50	55	60	65
(*c*)	0	0	+	+	+
(*a*)			17°		
(*b*)	65	70	75	80	
(*c*)	0	+	+	+	
(*a*)			27°		
(*b*)	80	90	100	110	
(*c*)	0	0	+	+	
(*a*)			36°		
(*b*)	120	130	140	150	
(*c*)	0	+	+	+	
(*a*)			45·5°		
(*b*)	250	275	300	325	
(*c*)	+	+	+	+	

EXPERIMENT C.

Bacillus Coli Communis.
Thread Method.

Phenol 20 Minutes.
(Threads 5 days old.)

(a)			1·5°			
(b)	35	37·5	40	42·5	45	47·5
(c)	0	0	+	+	+	+

(a)			12°			
(b)	52·5	55	57·5	60	62·5	65
(c)	0	0	0	+	+	+

(a)			16°			
(b)	60	62·5	65	67·5	70	72·5
(c)	0	0	0	0	+	+

(a)			18·5°			
(b)	65	67·5	70	72·5	75	77·5
(c)	0	0	0	0	+	+

(a)			22·5°			
(b)	70	72·5	75	77·5	80	82·5
(c)	0	0	0	0	+	+

EXPERIMENT D.

Bacillus Coli Communis.
Thread Method.

Phenol 20 Minutes.
(Threads 4 days old.)

(a)			0°		
(b)	35	37·5	40	42·5	
(c)	0	0	0	+	

(a)			11°		
(b)	52·5	55	57·5	60	62·5
(c)	0	0	+	+	+

(a)			15·3°		
(b)	62·5	65	67·5	70	72·5
(c)	0	0	0	+	+

(a)			18·3°		
(b)	67·5	70	72·5	75	77·5
(c)	0	0	0	0	+

(a)			22·5°			
(b)	75	77·5	80	82·5	85	
(c)	0	0	+	+	+	

(a)			31·3°			
(b)	95	100	105	110	115	120
(c)	0	0	0	+	+	+

(a)			37·5°		
(b)	120	130	140	150	
(c)	0	0	0	0	

(a)			42·5°		
(b)	160	170	180	190	200
(c)	0	0	0	0	+

(a)			46·3°		
(b)	220	250	275	300	350
(c)	0	0	0	+	+

EXPERIMENT E.

BACILLUS COLI COMMUNIS. THREAD METHOD.

(*a*)			0·3°			
(*b*)	32·5	35	37·5	40	42·5	45
(*c*)	0	0	0	+	+	+
(*a*)			5°			
(*b*)	37·5	40	42·5	45	47·5	50
(*c*)	0	0	0	+	+	+
(*a*)			11·3°			
(*b*)	50	52·5	55	57·5	60	62·5
(*c*)	0	0	+	+	+	+

PHENOL 20 MINUTES. (Threads 4 days old.)

(*a*)			2°			
(*b*)	35	37·5	40	42·5	45	47·5
(*c*)	0	0	0	+	+	+
(*a*)			9°			
(*b*)	42·5	45	47·5	50	52·5	55
(*c*)	0	0	0	+	+	+
(*a*)			14·2°			
(*b*)	57·5	60	62·5	65	67·5	70
(*c*)	0	+	+	+	+	+

EXPERIMENT F.

BACILLUS COLI COMMUNIS. THREAD METHOD.

(*a*)			0·6°			
(*b*)	32·5	35	37·5	40	42·5	45
(*c*)	0	0	0	+	+	+
(*a*)			5·5°			
(*b*)	37·5	40	42·5	45	47·5	50
(*c*)	0	0	0	+	+	+
(*a*)			11·2°			
(*b*)	47·5	50	52·5	55	57·5	60
(*c*)	0	0	+	+	+	+
(*a*)			17·5°			
(*b*)	65	67·5	70	72·5	75	77·5
(*c*)	+	+	+	+	+	+

PHENOL 20 MINUTES. (Threads 2 days old.)

(*a*)			2·8°			
(*b*)	35	37·5	40	42·5	45	47·5
(*c*)	0	0	0	+	+	+
(*a*)			9·1°			
(*b*)	42·5	45	47·5	50	52·5	55
(*c*)	0	0	0	+	+	+
(*a*)			15·2°			
(*b*)	55	57·5	60	62·5	65	67·5
(*c*)	0	0	0	+	+	+
(*a*)			21·2°			
(*b*)	70	72·5	75	77·5	80	82·5
(*c*)	0	0	+	+	+	+

EXPERIMENT G.

STAPHYLOCOCCUS PYOGENES AUREUS. THREAD METHOD.

(*a*)			0°			
(*b*)	30	35	40	45	50	60
(*c*)	0	0	+	+	+	+
(*a*)			36·25°			
(*b*)	110	120	130	140	150	170
(*c*)	0	0	+	+	+	+

PHENOL 20 MINUTES. (Threads 1 day old.)

(*a*)			17·5°			
(*b*)	60	65	70	75	80	90
(*c*)	0	0	+	+	+	+
(*a*)			46·5°			
(*b*)	200	225	250	275	300	
(*c*)	0	+	+	+	+	

EXPERIMENT H.

STAPHYLOCOCCUS PYOGENES AUREUS.
(1) THREAD METHOD.

PHENOL 20 MINUTES.
(Threads 4 days old.)

(*a*)			1°			(*a*)			16°		
(*b*)	35	40	45	50	55	(*b*)	60	65	70	75	80
(*c*)	0	0	0	+	+	(*c*)	0	0	0	0	+

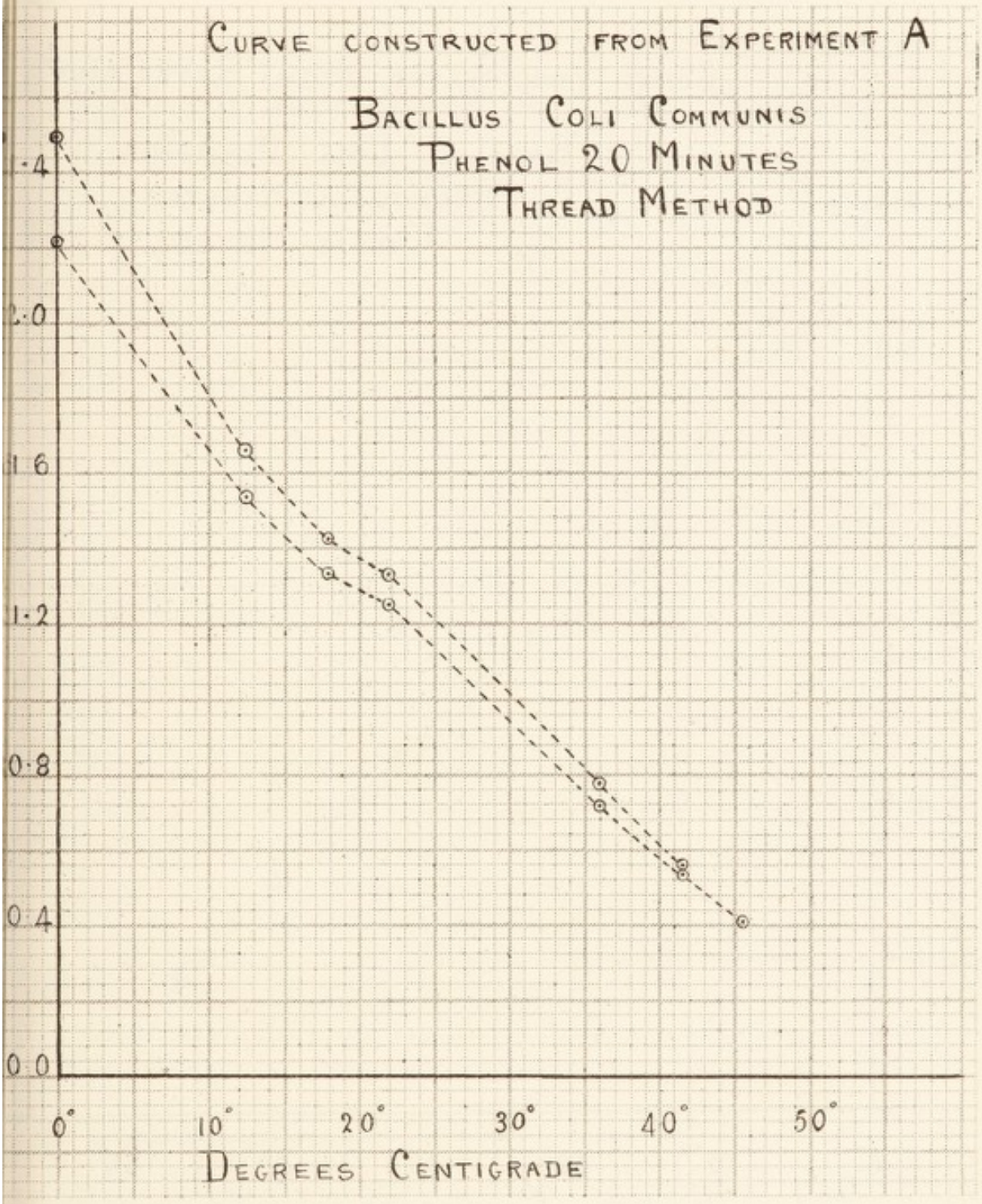
(*a*)			36·75°				(*a*)		45·5°		
(*b*)	110	120	130	140	150	160	(*b*)	175	200	225	250	300
(*c*)	0	0	0	0	0	+	(*c*)	0	0	0	+	+

(2) SUSPENSION METHOD.

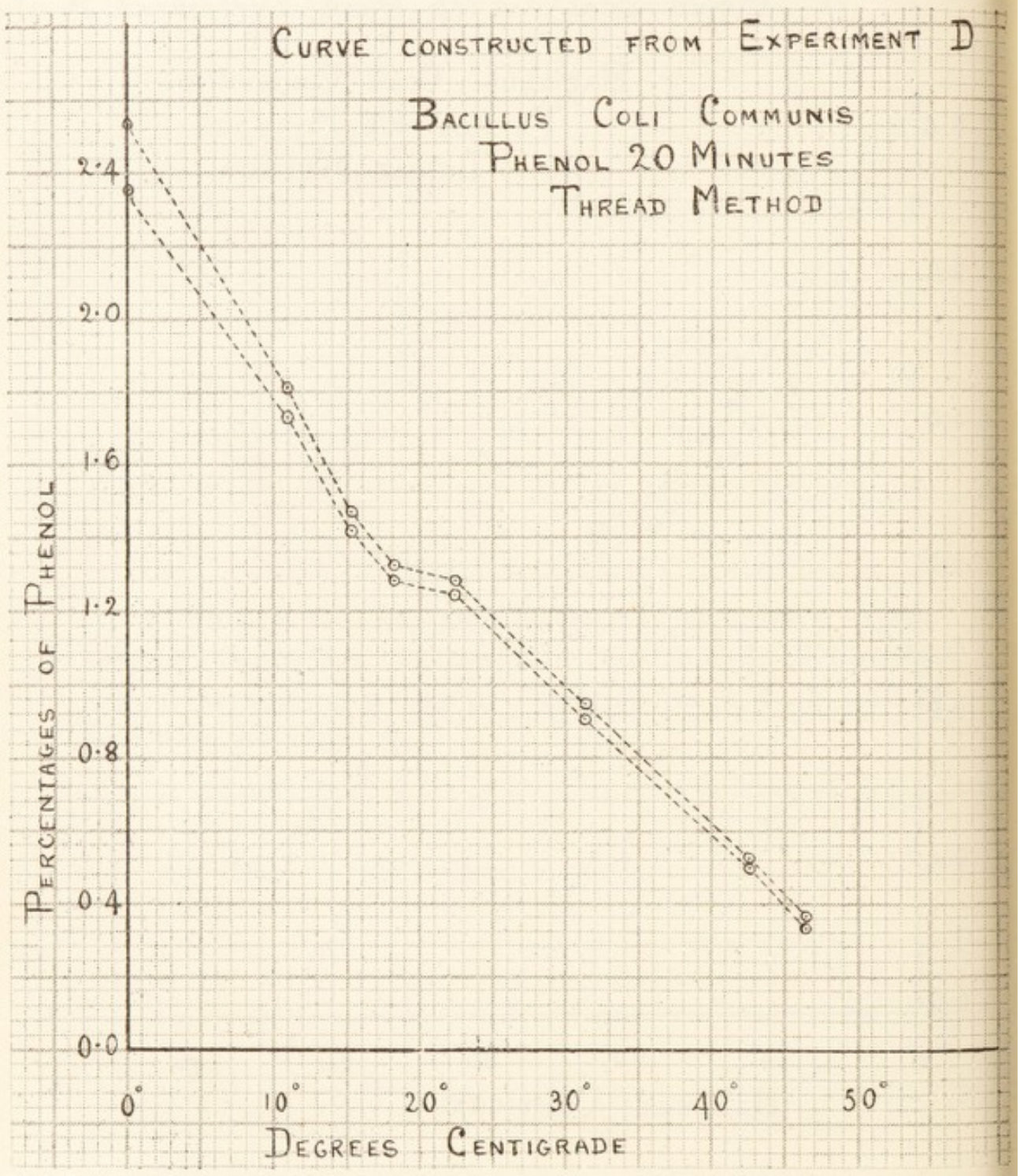
(*a*)				1·75°			(*a*)			16°			
(*b*)	45	50	55	60	65		(*b*)	70	75	80	85	90	100
(*c*)	0	0	+	+	+		(*c*)	0	+	+	+	+	+

(*a*)			36·75°				(*a*)		44·5°		
(*b*)	110	120	130	140	150		(*b*)	175	200	225	250	300
(*c*)	0	0	+	+	+		(*c*)	+	+	+	+	+

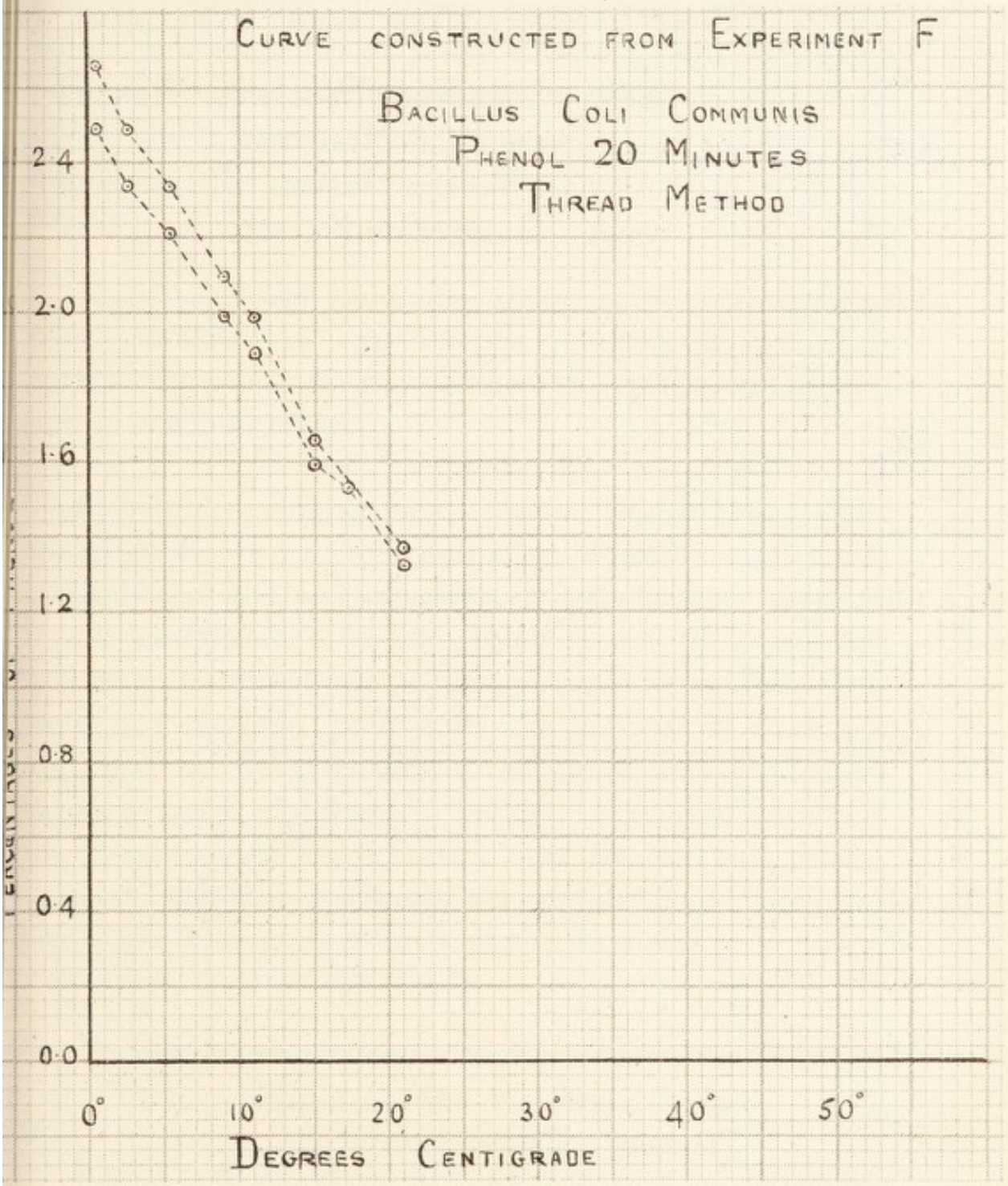
From the data supplied by each of the above experiments, disinfection curves can be constructed. Examples of curves corresponding to Experiments A, D, F and H are here inserted.



in the upper curve show non-lethal strengths of disinfectant at various temperatures. in the lower curve show lethal strengths of disinfectant at these temperatures. The lethal of the disinfectant for different temperatures lies somewhere between the two curves.



Points in the upper curve show non-lethal strengths of disinfectant at various temperatures. Points in the lower curve show lethal strengths of disinfectant at these temperatures. The lethal point of the disinfectant for different temperatures lies somewhere between the two curves.



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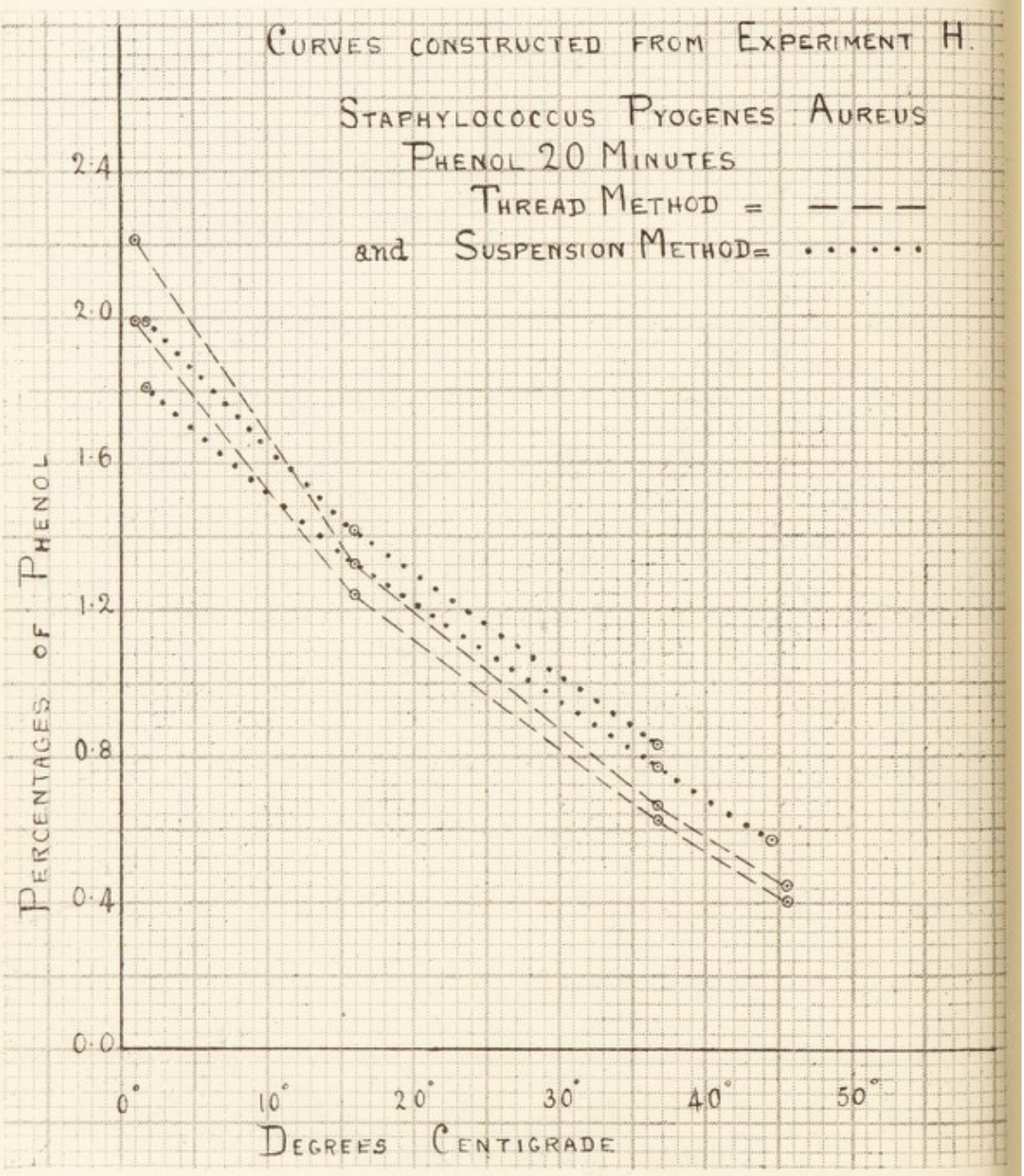

Points in the upper curve show non-lethal strengths of disinfectant at various temperatures. Points in the lower curve show lethal strengths of disinfectant at these temperatures. The lethal point of the disinfectant for different temperatures lies somewhere between the two curves.

By means of co-ordinates, as before, points are found representing lowest lethal dilutions of phenol used, and highest non-lethal dilutions respectively. By joining points indicating lowest lethal dilutions, and by joining points indicating highest non-lethal dilutions, we get an upper and a lower curve; it follows that the curve of minimum lethal dilutions will lie somewhere between the two.

It will be seen that the above curves, constructed from simultaneous experiments, resemble in form the curves representing the averages of experiments carried out at various times.

Simultaneous experiments present the advantage that the possible error of interpretation, due to variability in resistance of the test organism, is very greatly reduced, if not eliminated. On the other hand, there are the following disadvantages:—Firstly, the number of observations is necessarily limited by the amount of time and apparatus at disposal, hence the curve obtained passes through fewer determined points; secondly, although the resistance of an organism may be constant during one day, yet that resistance may be distinctly above or below the average resistance of the organism.

C.—Remarks upon Some Sources of Variation in Resistance of the Test Organism.

A glance at the tables of experiments in the Appendix will show to what extent such variation exists. I find it practically impossible to preserve invariably in the

organism the same degree of resistance even though sub-cultures are made at regular intervals on apparently identical culture media, and grown and kept under apparently similar conditions. When the conditions are actually constant, the variation appears to be comparatively slight. Sometimes, although the conditions appear to be constant, considerable loss in the resistance of the organisms is observed.

In experimenting by means of the Thread Method, quite regular results were obtained as a rule, especially if the culture in use was in vigorous condition, but occasionally it happened that gaps occurred in a series of experiments, *e.g.*, exposure of threads to 1 in 60 phenol would fail to kill them, whilst exposure of threads from the same batch to 1 in 62·5 phenol under similar conditions proved lethal. This apparent discrepancy is not necessarily due to faulty technique. It practically never occurred when experimenting with a highly resistant culture of Bacillus Coli; but less vigorous cultures, betraying a waning resistance, occasionally displayed this somewhat disconcerting tendency. Staphylococcus Pyogenes Aureus threads were much more prone to yield gaps in experiments, and in the case of this organism also the discrepancies were far more liable to occur when the cultures were losing their resistance.

Hence gaps or discrepancies in experiments were practically always associated with lowered resistance of the organism.

D.—Comparison of Results Obtained by "Thread" and "Suspension" Methods.

A comparison of the results obtained with my cultures by the Thread Method and the Suspension Method shows that at room temperature the resistance of Bacillus Coli dried on Threads was almost the same as that of Bacillus Coli in Suspension. But as we approach freezing temperature the resistance of the thread shows a gradual relative increase. On the other hand, the suspensions show a relative increase in resistance as the temperature rises towards blood heat and higher. This fact may be explained as follows:—In drying bacteria on threads, the vitality of the organisms is, in all probability, lowered to a certain extent; but, at the same time, individual bacteria become partly protected by a layer of dried albuminous material. The higher the temperature, the more easily is this protecting layer penetrated by disinfecting solutions. Thus, at freezing temperature, the albuminous envelope round the dried bacteria is penetrated with difficulty, and more than compensates for the lowered vitality; at room temperature the increased resistance just about balances decreased vitality; whilst at blood heat the protective film no longer forms a considerable barrier to penetration, and so the dessicated organism more readily succumbs.

Another fact brought out by this investigation, and admitting of the same explanation, is that threads lose their resistance for higher temperatures sooner than for lower degrees, *e.g.*, it has often been noticed in comparing the results obtained by two different batches of threads, that whilst for low temperatures the two sets of threads

may show practically the same resistance to disinfection, yet for higher temperatures there may be well-marked divergence, so that one batch may be considerably less resistant than the other. Hence, in the case of experiments with dried bacteria, lowered vitality of the organism is the important factor in exposure at higher temperatures, whilst at low temperatures, increased resistance due to the protective coating is relatively of more importance.

IV.—General Summary and Remarks.

It is to be inferred from these experiments that the disinfecting power of phenol solutions increases almost directly with the temperature, but not quite.

If the disinfection varied exactly as the temperature, the graphic representation would be a straight line, and the simple formula $y = a + bx$ would be applicable. A reference to the accompanying Charts at once shows how the curve of disinfection deviates from the straight line.

Summary I., which is based on 222 experiments performed with Bacillus Coli threads, shows that at 0 degrees the minimum lethal dilution of phenol is approximately 2·5 per cent ; in other words, a concentration of 1 in 40 phenol is required to kill Bacillus Coli-infected threads in 20 minutes at 0 degrees Centigrade. On the other hand, at 55° C., a 20-minutes' exposure of the infected threads to water alone, without any disinfectant, is sufficient to kill the organisms. The graphical representation for disinfection of Bacillus Coli threads by phenol is therefore approximately a gentle curve whose convexity is directed downwards and whose departure

from the straight line is greatest about room temperature. The form of curve is seen to be very similar in the case of both Bacillus Coli Communis and Staphylococcus Pyogenes Aureus, Thread and Suspension methods. Simultaneous experiments also yield similar curves.

Supposing, for practical purposes, we assume that the disinfecting power of phenol increases directly with the temperature, then using the formula $y = a + bx$, we can calculate the approximate concentration of phenol required to exert lethal action at any temperature.

Here y represents lethal percentage of phenol, $x =$ temperature in degrees Centigrade; whilst a and b are constants which can readily be calculated by putting x and $y =$ zero alternately. For instance, in the case of Bacillus Coli threads (Chart to Summary I.),

(i) when $x = 0$, $y = 2{\cdot}5$;
(ii) when $y = 0$, $x = 55$.

Substituting these values of x and y in the formula, $y = a + bx$, we get:—

(i) $2{\cdot}5 = a + (b \times 0)$ or $a = 2{\cdot}5$

(ii) $0 = a + (b \times 55)$ or $b = \dfrac{-2{\cdot}5}{55.}$

Therefore $y = 2{\cdot}5 - \dfrac{2{\cdot}5}{55}\,x$

In other words, $C = 2{\cdot}5\ (1 - \dfrac{T}{55})$, where

C = lethal percentage of phenol, and
T = temperature of exposure.

Conclusions.

The disinfecting power of phenol increases almost directly with the temperature.

For a constant time exposure of 20 minutes, a solution of phenol is about three times as powerful a disinfectant at blood heat as it is at freezing point.

Non-sporing organisms such as Bacillus Coli Communis and Staphylococcus Pyogenes Aureus, when dried on threads, are more resistant to disinfection by phenol at *low* temperatures than are broth cultures of the same organisms; whilst the reverse is the case at high temperatures.

Whereas neither moderate heat nor weak solutions of a disinfectant may separately be able to exert lethal action on bacteria, yet the two combined may readily bring about disinfection. The difficulty of killing Anthrax spores either by disinfecting solutions or by heat is well known. The spores of Bacillus Anthracis can survive many days' exposure to strong phenol at room temperature; but the same spores may succumb in two or three hours when the disinfectant attains the temperature of the body; whilst at a temperature of 47° C., strong phenol may exert a lethal action within 20 minutes.

APPENDIX.

Tables of Experiments carried out at various times.

TABLE I.

BACILLUS COLI COMMUNIS. PHENOL 20 MINUTES—THREAD METHOD.

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
— 1°	1 in 40	1 in 45	2·5	2·22
— 1°	1 in 35	1 in 40	2·86	2·5
— 1°	1 in 40	1 in 45	2·5	2·22
— 1°	1 in 35	1 in 37·5	2·86	2·67
— 0·85°	1 in 40	1 in 45	2·5	2·22
— 0·7°	1 in 35	1 in 37·5	2·86	2·67
— 0·5°	1 in 35	1 in 37·5	2·86	2·67
— 0·5°	1 in 40	1 in 45	2·5	2·22
— 0·3°	1 in 37·5	1 in 40	2·67	2·5
0°	..	1 in 50	..	2·0
0°	1 in 40	1 in 45	2·5	2·22
0°	1 in 35	1 in 40	2·86	2·5
0°	1 in 30	1 in 35	3·33	2·86
0°	1 in 40	1 in 45	2·5	2·22
0°	1 in 45	1 in 42·5	2·22	2·35
0°	1 in 35	1 in 40	2·86	2·5
0°	1 in 35	1 in 40	2·86	2·5
0°	1 in 35	1 in 40	2·86	2·5
0°	1 in 37·5	1 in 40	2·67	2·5
0·2°	1 in 40	1 in 42·5	2·5	2·35
0·3°	1 in 35	1 in 40	2·86	2·5
0·45°	1 in 40	1 in 50	2·5	2·0
0·5°	..	1 in 40	..	2·5
0·6°	1 in 37·5	1 in 40	2·67	2·5
0·7°	1 in 40	1 in 42·5	2·5	2·35
1°	1 in 50	1 in 60	2·0	1·67
1·3°	1 in 35	1 in 37·5	2·86	2·67
1·25°	1 in 40	1 in 45	2·5	2·22
1·5°	1 in 37·5	1 in 40	2·67	2·5
1·8°	1 in 37·5	1 in 40	2·67	2·5
1·95°	1 in 40	1 in 45	2·5	2·22
2°	1 in 40	1 in 45	2·5	2·22
2°	1 in 40	1 in 42·5	2·5	2·35
2°	1 in 45	1 in 50	2·22	2·0
2·2°	1 in 45	..	2·22	..
2·3°	1 in 45	1 in 42·5	2·22	2·35
2·5°	1 in 45	1 in 50	2·22	2·0
2·8°	1 in 40	1 in 42·5	2·5	2·35
2·8°	1 in 40	1 in 42·5	2·5	2·35
2·3°	1 in 45	1 in 50	2·22	2·0
3·3°	..	1 in 42·5	..	2·35
3·5°	1 in 45	1 in 47·5	2·22	2·11
4°	1 in 42·5	1 in 45	2·35	2·22
4·3°	1 in 42·5	1 in 45	2·35	2·22
4·7°	1 in 47·5	..	2·11	..
4·8°	1 in 37·5	1 in 40	2·67	2·5
5°	1 in 42·5	1 in 45	2·35	2·22
5·5°	1 in 42·5	1 in 45	2·35	2·22

TABLE I.—*continued.*

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
5·5°	1 in 45	1 in 47·5	2·22	2·11
5·6°	1 in 42·5	1 in 45	2·35	2·22
6·5°	1 in 52·5	..	1·90	..
7°	1 in 52·5	1 in 55	1·90	1·82
7·5°	..	1 in 47·5	..	2·11
8°	1 in 52·5	1 in 50	1·90	2·0
8·5°	..	1 in 42·5	..	2·35
9°	1 in 47·5	1 in 50	2·11	2·0
9°	1 in 50	1 in 55	2·0	1·82
9°	1 in 47·5	1 in 50	2·11	2·0
9·1°	1 in 47·5	1 in 50	2·11	2·0
9·5°	..	1 in 47·5	..	2·11
9·7°	..	1 in 52·5	..	1·90
9·7°	1 in 55	1 in 57·5	1·82	1·74
9·8°	1 in 50	1 in 52·5	2·0	1·90
10·5°	1 in 57·5	1 in 60	1·74	1·67
10·5°	1 in 50	1 in 52·5	2·0	1·90
11·2°	1 in 50	1 in 52·5	2·0	1·90
11·25°	1 in 60	1 in 65	1·67	1·54
11°	1 in 55	1 in 57·5	1·82	1·74
11·3°	1 in 52·5	1 in 55	1·90	1·82
11·3°	1 in 57·5	1 in 60	1·74	1·67
11·5°	1 in 55	1 in 57·5	1·82	1·74
12·3°	1 in 55	1 in 57·5	1·82	1·74
12°	1 in 57·5	1 in 60	1·74	1·67
12°	1 in 65	1 in 62·5	1·54	1·6
12·5°	1 in 60	1 in 62·5	1·67	1·6
12·5°	1 in 60	1 in 65	1·67	1·54
13°	1 in 60	1 in 65	1·67	1·54
13·6°	1 in 55	1 in 57·5	1·82	1·74
14°	1 in 55	1 in 60	1·82	1·67
14°	..	1 in 60	..	1·67
14°	..	1 in 60	..	1·67
14·2°	1 in 57·5	1 in 60	1·74	1·67
14·2°	1 in 57·5	1 in 60	1·74	1·67
14·5°	1 in 60	1 in 65	1·67	1·54
14·5°	1 in 65	1 in 70	1·54	1·43
14·5°	1 in 67·5	1 in 70	1·48	1·43
14·5°	1 in 65	..	1·54	..
14·5°	1 in 60	1 in 65	1·67	1·54
14·7°	1 in 55	1 in 57·5	1·81	1·74
14·75°	1 in 65	1 in 70	1·54	1·43
15°	1 in 60	1 in 65	1·67	1·54
15°	1 in 65	1 in 70	1·54	1·43
15°	1 in 70	1 in 72·5	1·43	1·38
15·15°	1 in 65	1 in 70	1·54	1·43
15·2°	1 in 60	1 in 62·5	1·67	1·6
15·25°	1 in 65	1 in 70	1·54	1·43
15·3°	1 in 67·5	1 in 70	1·48	1·43
15·5°	1 in 60	1 in 70	1·67	1·43

TABLE I.—*continued.*

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
15·5°	1 in 60	1 in 65	1·67	1·54
15·6°	1 in 60	1 in 65	1·67	1·54
15·6°	1 in 65	1 in 70	1·54	1·43
15·6°	..	1 in 67·5	..	1·48
15·85°	1 in 70	1 in 75	1·43	1·33
16°	1 in 65	1 in 70	1·54	1·43
16°	1 in 67·5	1 in 70	1·48	1·43
16·15°	1 in 70	1 in 72·5	1·43	1·38
16·15°	1 in 75	1 in 80	1·33	1·25
16·25°	1 in 75	1 in 77·5	1·33	1·29
16·4°	1 in 65	1 in 70	1·54	1·43
16·5°	1 in 65	1 in 70	1·54	1·43
16·5°	1 in 70	1 in 75	1·43	1·33
16·5°	1 in 70	1 in 75	1·43	1·33
17°	1 in 70	1 in 80	1·43	1·25
17°	1 in 70	1 in 80	1·43	1·25
17°	1 in 70	1 in 75	1·43	1·33
17°	..	1 in 70	..	1·43
17°	1 in 72·5	1 in 75	1·38	1·33
17°	1 in 75	1 in 77·5	1·33	1·29
17°	1 in 65	1 in 70	1·54	1·43
17·3°	1 in 72·5	1 in 75	1·38	1·33
17·3°	1 in 70	1 in 75	1·43	1·33
17·5°	..	1 in 65	..	1·54
17·5°	1 in 62·5	1 in 65	1·6	1·54
17·5°	1 in 60	1 in 65	1·67	1·54
17·5°	1 in 75	..	1·33	..
18°	1 in 77·5	1 in 80	1·29	1·25
18°	1 in 70	1 in 75	1·43	1·33
18°	1 in 75	1 in 80	1·33	1·25
18·3°	1 in 75	1 in 77·5	1·33	1·29
18·5°	1 in 72·5	1 in 75	1·38	1·33
18·75°	1 in 77·5	1 in 80	1·29	1·25
20°	1 in 70	1 in 75	1·43	1·33
20·5°	1 in 80	1 in 85	1·25	1·18
20·7°	1 in 70	1 in 75	1·43	1·33
21°	..	1 in 75	..	1·33
21°	..	1 in 70	..	1·43
21·2°	1 in 72·5	1 in 75	1·38	1·33
21·3°	1 in 75	1 in 80	1·33	1·25
22°	..	1 in 80	..	1·25
22°	1 in 75	1 in 80	1·33	1·25
22°	1 in 80	1 in 82·5	1·25	1·21
22°	1 in 85	1 in 90	1·18	1·11
22°	1 in 75	1 in 80	1·33	1·25
22·25°	1 in 85	1 in 80	1·18	1·25
22·5°	1 in 75	1 in 80	1·33	1·25
22·5°	1 in 77·5	1 in 80	1·29	1·25
22·5°	1 in 77·5	1 in 80	1·29	1·25
22·75°	1 in 85	1 in 87·5	1·18	1·14

TABLE I.—*continued.*

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
22·75°	1 in 90	1 in 100	1·11	1·0
22·75°	1 in 85	1 in 90	1·18	1·11
22·75°	1 in 85	1 in 90	1·18	1·11
22·75°	1 in 80	1 in 85	1·25	1·18
22·75°	1 in 80	1 in 85	1·25	1·18
22·75°	1 in 75	1 in 80	1·33	1·25
23·25°	1 in 80	1 in 85	1·25	1·18
23·35°	1 in 75	1 in 80	1·33	1·25
27°	1 in 90	1 in 100	1·11	1·0
27°	1 in 90	1 in 100	1·11	1·0
31°	1 in 110	1 in 120	0·91	0·83
31·3°	1 in 105	1 in 110	0·95	0·91
31·5°	1 in 110	1 in 120	0·91	0·83
32°	..	1 in 100	..	1·0
32°	1 in 110	..	0·91	..
32°	1 in 100	1 in 110	1·0	0·91
36°	1 in 130	1 in 140	0·77	0·71
36°	1 in 120	1 in 130	0·83	0·77
36°	1 in 130	1 in 140	0·77	0·71
36°	1 in 170	..	0·59	..
36°	1 in 130	1 in 140	0·77	0·71
36·15°	1 in 130	1 in 140	0·77	0·71
36·5°	1 in 130	1 in 140	0·77	0·71
36·5°	1 in 130	1 in 140	0·77	0·71
36·5°	1 in 140	1 in 150	0·71	0·67
36·75°	1 in 140	1 in 150	0·71	0·67
36·75°	1 in 160	1 in 150	0·62	0·67
36·75°	1 in 150	1 in 140	0·67	0·71
36·75°	1 in 120	1 in 130	0·83	0·77
36·75°	1 in 120	1 in 150	0·83	0·67
36·75°	1 in 150	1 in 160	0·67	0·62
37°	1 in 110	..	0·91	..
37°	1 in 120	1 in 150	0·83	0·67
37°	1 in 120	1 in 140	0·83	0·71
37°	1 in 140	1 in 150	0·71	0·67
37°	1 in 130	1 to 140	0·77	0·71
37°	1 in 120	1 in 130	0·83	0·77
37°	1 in 130	1 in 140	0·77	0·71
37·15°	1 in 140	1 in 150	0·71	0·67
37·25°	1 in 140	1 in 150	0·71	0·67
37·5°	1 in 150	..	0·67	..
38°	1 in 140	1 in 150	0·71	0·67
41·5°	1 in 160	1 in 180	0·62	0·56
41·5°	1 in 180	1 in 190	0·56	0·53
41·75°	1 in 150	1 in 200	0·67	0·5
41·8°	1 in 160	1 in 180	0·62	0·56
42°	1 in 180	1 in 190	0·56	0·53
42°	1 in 200	1 in 250	0·5	0·4
42°	..	1 in 170	..	0·59
42·5°	1 in 190	1 in 200	0·53	0·5

TABLE I.—*continued.*

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
45°	1 in 200	1 in 250	0·5	0·4
45·5°	1 in 250	1 in 300	0·4	0·33
45·5°	..	1 in 250	..	0·4
45·5°	..	1 in 250	..	0·4
45·75°	1 in 225	1 in 250	0·44	0·4
46·3°	1 in 275	1 in 300	0·36	0·33
46·5°	1 in 250	1 in 275	0·4	0·36
47°	1 in 250	1 in 300	0·4	0·33
47°	1 in 300	1 in 400	0·33	0·25
47°	1 in 200	1 in 300	0·5	0·33
47·5°	1 in 250	1 in 500	0·4	0·2
47·5°	1 in 300	1 in 400	0·33	0·25
47·5°	1 in 300	1 in 350	0·33	0·29
47·75°	1 in 300	1 in 350	0·33	0·29
52°	1 in 2000	..	0·05	..
52°	1 in 500	1 in 1000	0·2	0·1
52·5°	1 in 1000	1 in 2000	0·1	0·05
52·5°	1 in 1500	1 in 2000	0·07	0·05
52·5°	..	1 in 1000	..	0·1
52·5°	..	1 in 1000	..	0·1
53·5°	1 in 2000	1 in infinity.	0·05	0·0
55°	1 in infinity.	..	0·00	..
56°	1 in infinity.	..	0·00	..
59°	1 in infinity.	..	0·00	..

TABLE II.

BACILLUS COLI COMMUNIS. PHENOL 20 MINUTES—SUSPENSION METHOD.

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
0·3°	1 in 45	1 in 50	2·22	2·0
2·25°	1 in 45	1 in 50	2·22	2·0
3°	1 in 45	1 in 50	2·22	2·0
14°	1 in 55	1 in 60	1·82	1·67
14°	1 in 65	1 in 70	1·54	1·43
15°	1 in 65	1 in 70	1·54	1·43
15°	1 in 70	..	1·43	..
15°	1 in 75	1 in 80	1·33	1·25
15·5°	1 in 60	1 in 65	1·67	1·54
15·5°	1 in 65	1 in 70	1·54	1·43
15·7°	1 in 60	1 in 65	1·67	1·54
16°	1 in 60	1 in 65	1·67	1·54
17·5°	1 in 70	1 in 72·5	1·43	1·38
18°	1 in 75	1 in 77·5	1·33	1·29
18·5°	1 in 70	1 in 80	1·43	1·25
18·5°	1 in 75	1 in 80	1·33	1·25
18·85°	1 in 65	1 in 70	1·54	1·43
21·25°	1 in 72·5	1 in 75	1·38	1·33
22°	1 in 80	1 in 82·5	1·25	1·21
22·5°	1 in 80	1 in 90	1·25	1·11
34·5°	..	1 in 120	..	0·83
36·15°	..	1 in 120	..	0·83
36·25°	..	1 in 110	..	0·91
37·25°	1 in 110	1 in 120	0·91	0·83
42·5°	..	1 in 160	..	0·62
47·5°	..	1 in 200	..	0·50
47°	1 in 200	1 in 250	0·50	0·40

TABLE III.

STAPHYLOCOCCUS PYOGENES AUREUS. PHENOL 20 MINUTES—THREAD METHOD.

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
— 0·75°	1 in 40	1 in 45	2·5	2·22
— 0·75°	1 in 45	1 in 40	2·22	2·5
0°	1 in 40	1 in 45	2·5	2·22
0°	1 in 45	1 in 50	2·22	2·0
0°	1 in 35	1 in 40	2·86	2·5
0°	1 in 40	1 in 45	2·5	2·22
0·3°	1 in 45	1 in 50	2·22	2·0
1°	1 in 45	1 in 50	2·22	2·0
1·25°	1 in 40	1 in 45	2·5	2·22
2°	1 in 45	1 in 50	2·22	2·0
2·3°	1 in 45	1 in 50	2·22	2·0
14°	1 in 65	1 in 70	1·54	1·43
14·5°	..	1 in 60	..	1·67
14·75°	..	1 in 60	..	1·67
15°	1 in 70	1 in 75	1·43	1·33
15·15°	1 in 70	1 in 75	1·43	1·33
15·25°	1 in 80	1 in 75	1·25	1·33
15·5°	1 in 60	1 in 70	1·67	1·43
15·9°	1 in 70	1 in 75	1·43	1·33
15·7°	..	1 in 60	..	1·67
16°	1 in 75	1 in 80	1·33	1·25
16·15°	1 in 75	1 in 70	1·33	1·43
16·4°	1 in 75	1 in 70	1·33	1·43
16·5°	1 in 75	1 in 70	1·33	1·43
17·5°	1 in 70	1 in 75	1·43	1·33
17·5°	1 in 65	1 in 70	1·54	1·43
18°	..	1 in 65	..	1·54
20°	1 in 65	1 in 70	1·54	1·43
22·75°	1 in 80	1 in 85	1·25	1·18
22·75°	1 in 75	1 in 80	1·33	1·25
22·75°	1 in 75	1 in 80	1·33	1·25
23·25°	1 in 85	1 in 90	1·18	1·11
23·35°	1 in 95	..	1·05	..
34·5°	1 in 130	1 in 140	0·77	0·71
35·75°	1 in 130	1 in 140	0·77	0·71
35·85°	1 in 120	1 in 130	0·83	0·77
35·85°	1 in 140	1 in 150	0·71	0·67
36·25°	1 in 120	1 in 130	0·83	0·77
36·25°	1 in 130	1 in 140	0·77	0·71
36·25°	1 in 130	1 in 140	0·77	0·71
36·5°	1 in 140	1 in 130	0·71	0·77
36·5°	1 in 130	1 in 120	0·77	0·83
36·5°	1 in 130	1 in 140	0·77	0·71
36·75°	1 in 150	1 in 160	0·67	0·62
36·75°	1 in 140	1 in 150	0·71	0·67
36·75°	1 in 120	1 in 130	0·83	0·77
36·75°	1 in 100	1 in 200	1·0	0·5
36·75°	1 in 120	1 in 150	0·83	0·67
36·75°	1 in 120	1 in 130	0·83	0·77
37°	..	1 in 120	..	0·83
37·25°	1 in 140	1 in 130	0·71	0·77
37·15°	1 in 150	..	0·67	..
45·5°	1 in 225	1 in 250	0·44	0·4
46°	1 in 200	1 in 250	0·5	0·4
46·5°	1 in 200	1 in 225	0·5	0·44

TABLE IV.

STAPHYLOCOCCUS PYOGENES AUREUS.

PHENOL 20 MINUTES—SUSPENSION METHOD.

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
— 0·25°	1 in 50	1 in 60	2·0	1·67
+ 0·3°	1 in 60	..	1·67	..
2·25°	1 in 50	1 in 55	2·0	1·82
2·7°	1 in 50	1 in 55	2·0	1·82
1·75°	1 in 50	1 in 55	2·0	1·82
14°	1 in 75	1 in 80	1·33	1·25
15°	1 in 80	1 in 95	1·25	1·05
15°	1 in 75	1 in 80	1·33	1·25
15·7°	1 in 75	1 in 80	1·33	1·25
16°	1 in 70	1 in 75	1·43	1·33
18·5°	1 in 85	1 in 90	1·18	1·11
34·5°	1 in 130	1 in 140	0·77	0·71
36°	1 in 120	1 in 130	0·83	0·77
36°	1 in 110	1 in 120	0·91	0·83
36·65°	1 in 120	1 in 130	0·83	0·77
36·75°	1 in 120	1 in 130	0·83	0·77
44·5°	..	1 in 175	..	0·57

TABLE V.

BACILLUS PESTIS. PHENOL 20 MINUTES—THREAD METHOD.

Mean Temperature of Experiment.	Weakest Lethal Dilution.	Strongest Non-Lethal Dilution.	Lowest Lethal Percentage of Phenol.	Highest Non-Lethal Percentage of Phenol.
— 2°	1 in 50	1 in 75	2·0	1·33
— 0·5°	1 in 80	1 in 85	1·25	1·18
0°	1 in 75	1 in 80	1·33	1·25
0°	1 in 90	1 in 100	1·11	1·0
14°	1 in 100	1 in 110	1·0	0·91
14°	1 in 100	1 in 150	1·0	0·67
14·5°	1 in 100	1 in 120	1·0	0·83
14·5°	1 in 110	1 in 120	0·91	0·83
14·5°	1 in 120	1 in 130	0·83	0·77
21°	1 in 140	1 in 160	0·71	0·62
21·3°	1 in 140	1 in 160	0·71	0·62
22°	1 in 150	1 in 200	0·67	0·5
36°	1 in 250	1 in 500	0·4	0·2
36°	1 in 400	1 in 500	0·25	0·2
36°	1 in 500	1 in 700	0·2	0·14
36·5°	1 in 600	1 in 700	0·17	0·14
40·5°	..	1 in infinity.	..	0·00
41·7°	..	1 in infinity.	..	0·00
42·1°	1 in infinity.	..	0·00	..
42·9°	1 in infinity.	..	0·00	..
43°	1 in infinity.	..	0·00	..
45°	1 in infinity.	..	0·00	..
47·5°	1 in infinity.	..	0·00	..
42°	1 in infinity.	..	0·00	..
42·7°	1 in infinity.	..	0·00	..

TABLE VI.

Anthrax Spore Threads.

A.—Exposed to 1 in 50 (*i.e.*, 2 per cent) Phenol.

18°	Alive after 39·25 days.	..
37°	Alive after 1 hour.	Dead after 14 days.
37°	Alive after 48 hours.	..
37°	Alive after 10 days.	Dead after 45 days.
47°	Alive after 1 hour.	Dead after 14 days.
47°	Alive after 48 hours.	..
47°	Alive after 79 hours.	Dead after 96·5 hours.
47°	Alive after 97 hours.	Dead after 92 hours.

B.—Exposed to 1 in 20 (*i.e.*, 5 per cent) Phenol.

18°	Alive after 97 hours.	..
18°	Alive after 41¼ days.	..
37°	Alive after 1 hour.	Dead after 14 days.
37°	Alive after 5 hours.	Dead after 24 hours.
37°	Alive after 6 hours.	Dead after 26·5 hours.
37°	Alive after 11·5 hours.	..
37°	..	Dead after 12·75 hours.
37°	Alive after 18 hours.	Dead after 16 hours.
47°	Alive after 1 hour.	Dead after 14 days.
47°	Alive after 1 hour.	Dead after 5 hours.
47°	Alive after 3 hours.	Dead after 4 hours.

C.—Exposed to "Acidum Carbolicum Liquefactum" (B.P. Strength).

18°	Alive after 53·5 hours.	..
18°	Alive after 9 days.	..
37°	Alive after 3 hours.	Dead after 2 hours.
37°	Alive after 1 hour.	Dead after 2 hours.
37°	..	Dead after 12·75 hours.
47°	..	Dead after 30 minutes.
47°	Alive after 10 minutes.	Dead after 20 minutes.
47°	Alive after 10 minutes.	Dead after 5 minutes.

SECTION III.

Infectious Diseases.

PREVALENCE OF AND CONTROL OVER INFECTIOUS DISEASE.

The number of notifications of notifiable infectious diseases shows a large increase for 1925, the total number of cases notified being 3,484, this being an increase of 1,295 as compared with 1924. This is largely accounted for by the fact that chicken pox (of which 1,145 cases were notified) was made compulsorily notifiable on 22nd January, 1925.

There were, however, comparatively large increases in other diseases, as follows :—

Disease.	Increase over 1924
Diphtheria	90
Erysipelas	45
Scarlet Fever	107

The principal decreases were as follows :—

Disease.	Decrease from 1924.
Acute primary pneumonia	52
Encephalitis Lethargica	32

As regards Scarlet Fever, there is no doubt that the present-day type is much milder than that of former years.

Details of the number of cases of infectious disease notified are given in Tables 1 and 2 (pages 147, 148 and 149).

The usual methods, described in previous reports, for the prevention of the spread of these diseases were continued, special attention being again given to measles. Although this disease was not compulsorily notifiable, cases were notified to this department voluntarily by some Medical Practitioners and by parents and school teachers. Each case was visited by a Lady Inspector and, where necessary, the services of the Nurses from the District Nursing Association were obtained, the Health Committee paying the Association for these services. School teachers are encouraged to report, in addition, cases of non-notifiable disease, which are at once investigated by the School Medical Officers.

Supplies of Diphtheria Antitoxin are kept by the department and are available, free of charge, immediately to any Medical Practitioner who applies for the same.

There were 132 cases of Influenzal-Pneumonia notified, but there has been no recrudescence of Influenza in epidemic form, 84 deaths occurring from this disease.

One case of Malaria was notified.

The Salford Corporation have an Infectious Diseases Hospital (Ladywell Sanatorium) to which cases which cannot be isolated at home are removed for treatment (including advanced cases of Tuberculosis in males). The Sanitary Staff of the Department carry out disinfection of the premises where cases of infectious disease have occurred.

The Corporation have a Special Disinfecting Station at Mode Wheel, where a considerable number of verminous persons, principally children, are dealt with every year.

Notifiable Diseases.	Cases notified in Whole District.								Cases removed to Hospital.																
	At All Ages.	At Ages—Years.							Albert Park.	Charlestown.	Claremont.	Crescent.	Docks.	Kersal.	Langworthy.	Mandley Park	Ordsall Park.	Regent.	St. Matthias'	St. Paul's.	St. Thomas'.	Seedley.	Trinity.	Weaste.	
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and upwards.																	
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diphtheria (including Membranous croup)	376	5	105	214	41	10	1	..	14	17	5	35	38	9	20	18	33	27	22	46	19	22	39	12	362
Erysipelas	134	1	3	9	21	45	33	22	5	6	3	14	9	3	7	9	10	14	7	13	9	2	16	7	54
Scarlet fever	510	3	144	313	31	18	1	..	63	26	9	28	24	21	25	60	48	53	36	15	9	30	20	43	411
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Enteric fever	30	..	1	5	5	15	4	..	1	1	1	3	4	1	2	2	3	1	3	..	3	1	3	1	27
Continued fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Relapsing fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal fever	17	..	..	..	3	14	..	..	1	..	1	3	..	..	1	2	3	..	3	1	..	..	2	..	9
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cerebro-Spinal Meningitis	2	..	..	2	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2
Acute-Poliomyelitis	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Glanders	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia Neonatorum	60	60	..	..	..	..	..	..	4	4	1	4	5	..	4	4	6	4	10	3	3	2	5	1	..
Pulmonary tuberc'lsis	507	..	12	61	121	206	104	3	33	29	11	52	29	25	27	25	43	41	36	37	30	23	37	29	618
Other forms of tuberculosis	132	8	38	51	21	10	3	1	10	7	1	16	4	6	6	8	11	12	7	9	9	2	19	5	12
Trench Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Malaria	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Acute Primary Pneumonia	409	..	..	..	..	..	..	..	17	7	7	42	18	10	43	16	21	18	47	56	26	10	59	12	..
Influenzal Pneumonia	132	..	..	..	..	..	..	..	8	3	1	14	9	2	14	7	6	11	4	20	16	8	4	5	..
Encephalitis Leth.	27	..	4	7	3	5	8	..	2	3	..	4	1	2	2	3	1	..	1	3	2	..	2	1	8
Acute Polio Encephalitis	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Chicken Pox	1145	78	400	643	18	6	..	..	53	49	24	155	67	48	54	90	104	139	114	70	55	24	48	51	..
Total	**3484**	**155**	**707**	**1306**	**264**	**330**	**155**	**26**	**212**	**152**	**64**	**370**	**209**	**127**	**206**	**244**	**290**	**320**	**290**	**273**	**181**	**125**	**254**	**167**	**1505**

Excluding Pneumonia.

VENEREAL DISEASES.

The arrangements for the provision of a Venereal Diseases Clinic have been made with the Salford Royal Hospital, where beds for the provision of in-patient treatment are also provided.

Particulars of the Staff, times of Clinics and the facilities available for irrigation of cases of Gonorrhœa during the intervals between the Clinics are as follows :—

Staff of Salford Royal Hospital (Venereal Disease Section).

Dr. R. Gibson.
Mr. J. D. Macalpine.

Clinical Assistants—
Dr. J. Ghosh.
Dr. W. Elwood.

Pathologist—
Dr. C. E. Jenkins.

The Clinics held are as follows :—

Skin Department—

Monday, 12 noon .. Men, Women and Children.
Wednesday, 6 p.m. .. Women and Children.
Wednesday, 7 p.m. Men.

Genito-Urinary Clinic—

Tuesday, 12 noon.
Friday, 6 p.m.

The days and hours for irrigation of cases of Gonorrhœa during the intervals between the Clinics are as follows :—

Males : Monday and Tuesday, 4-30 to 6-30 p.m. ; Saturday 10-30 a.m. to 12-30 p.m.
Females : Daily (except Sunday), 8 to 9 a.m.

The following table shows the number of cases treated, and the total attendances at the Clinic during 1925 :—

	Syphilis.	Soft Chancre.	Gonorrhœa
Salford Cases treated	304	.. .. ..	352
Out-District Cases treated	130	.. .. ..	244
Total Cases treated	434	.. .. ..	596
Total Attendances	4433	.. .. ..	10675

Below are given miscellaneous particulars regarding the operation of the scheme :—

1. Fifteen Medical Practitioners in the Borough are qualified to receive Salvarsan substitutes.

2. Novarsenobillon has been supplied to four Salford Practitioners as follows :—

·15	— doses.
·3	— doses.
·45	15 doses.
·6	51 doses.
·75	3 doses.
·9	— doses.

TABLE I. 2.

SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASE NOTIFIED TO THE HEALTH DEPARTMENT DURING THE YEARS 1883 TO 1925.

Year.	Small Pox.	Scarlet Fever.	Diphtheria.	Fever.					Erysipelas.	Cholera.	Plague.	Anthrax.	Glanders.	Cerebro-Spinal Meningitis.	Acute Poliomyelitis.	Ophthalmia Neonatorum.	Measles.	Tuberculosis.		Total.
				Enteric.	Typhus.	Continued.	Relapsing.	Puerperal.										Pulmonary.	Non-Pulmonary.	
1883	6	805	81	293	14	..	..	21	..	..	..	..	..	..	..	..	..	..	..	1220
1884	5	1154	99	422	35	..	..	14	..	..	..	..	..	..	..	..	..	..	..	1729
1885	11	632	54	205	32	..	..	15	..	..	..	..	..	..	..	..	..	..	..	949
1886	..	1536	41	288	5	..	..	12	..	..	..	..	..	..	..	..	..	..	..	1882
1887	4	1427	83	368	7	..	..	11	..	..	..	..	..	..	..	..	..	..	..	1900
Average 5 years ..	**5**	**1111**	**72**	**315**	**19**	..	..	**15**	..	..	..	..	..	..	..	..	..	..	..	**1537**
1888	52	1128	175	572	31	..	..	26	..	..	..	..	..	..	..	..	..	..	..	1984
1889	..	1283	691	485	3	..	..	14	..	..	..	..	..	..	..	..	..	..	..	2476
1890	..	985	704	383	6	4	..	22	76	..	..	..	..	..	..	..	..	..	..	2180
1891	..	483	231	377	1	6	..	13	53	..	..	..	..	..	..	..	..	..	..	1164
1892	7	865	231	347	5	5	..	26	86	..	..	..	..	..	..	..	..	..	..	1572
Average 5 years ..	**12**	**948**	**406**	**433**	**9**	**3**	..	**20**	**43**	..	..	..	..	..	..	..	..	..	..	**1874**
1893	168	865	261	563	5	12	..	30	147	..	..	..	..	..	..	..	..	..	..	2051
1894	35	1043	242	316	1	14	..	21	130	..	..	..	..	..	..	..	..	..	..	1802
1895	4	1167	194	382	..	11	..	19	111	..	..	..	..	..	..	..	..	..	..	1888
1896	2	1579	158	291	7	12	..	24	114	..	..	..	..	..	..	..	..	..	..	2187
1897	..	714	103	291	..	14	..	13	121	..	..	..	..	..	..	..	..	..	..	1256
Average 5 years ..	**42**	**1074**	**192**	**369**	**3**	**13**	..	**21**	**125**	..	..	..	..	..	..	..	..	..	..	**1836**

Year.	†Chicken Pox	Small Pox	Scarlet Fever	Diphtheria	Enteric.	Typhus.	Continued.	Puerperal.	Erysipelas	Anthrax	Cerebro-Spinal Meningitis	Acute Poliomyelitis	Ophthalmia Neonatarum	* Measles.	Tuberculosis: Pulmonary.	Tuberculosis: Non-Pulmonary	Trench Fever	Malaria.	Acute Polio Encephalitis	Dysentery	Acute Primary Pneumonia	Influenza Pneumonia	Encephalitis Lethargica	Total.
1898	..	..	659	97	367	16	14	31	146	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1330
1899	..	..	723	184	273	3	20	26	153	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1382
1900	..	6	1317	309	335	2	8	21	179	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2177
1901	..	..	1320	420	317	1	8	33	230	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2329
1902	..	23	780	292	207	43	6	16	164	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1531
Average 5 years	..	**6**	**960**	**260**	**300**	**13**	**11**	**25**	**174**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	**1750**
1903	..	175	737	335	178	..	1	13	161	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1600
1904	..	57	1043	422	202	10	7	21	168	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1930
1905	..	3	960	363	142	..	7	26	176	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1677
1906	..	..	904	432	225	..	1	21	142	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1725
1907	..	8	1044	384	92	..	5	23	136	..	..	..	..	..	356	..	..	..	..	..	..	..	..	2048
Average 5 years	..	**49**	**938**	**387**	**168**	**2**	**4**	**21**	**157**	..	..	..	..	..	..	..	..	..	..	..	..	..	..	**1796**
1908	..	..	1341	629	181	..	7	27	127	..	..	..	..	..	563	..	..	..	..	..	..	..	..	2875
1909	..	..	1577	562	138	..	2	26	182	..	..	..	..	..	581	..	..	..	..	..	..	..	..	3068
1910	..	..	909	333	113	..	..	24	129	..	..	..	..	..	651	..	..	..	..	..	..	..	..	2159
1911	..	..	911	375	108	..	1	24	217	..	..	..	..	..	714	..	..	..	..	..	..	..	..	2350
1912	..	..	541	242	76	..	7	26	181	..	1	29	..	..	1073	..	..	..	..	..	..	..	..	2206
Average 5 years	..	..	**1056**	**428**	**123**	..	**3**	**25**	**167**	..	..	..	..	..	**716**	..	..	..	..	..	..	..	..	**2532**
1913	..	4	1224	336	113	..	1	17	203	3	4	2	..	..	1206	503	..	..	..	..	..	..	..	3616
1914	..	1	2336	352	63	..	..	20	248	1	3	5	80	..	1126	236	..	..	..	..	..	..	..	4471
1915	..	1	997	236	84	..	..	23	172	..	9	7	97	..	816	195	..	..	..	..	..	..	..	2637
1916	..	8	442	204	47	..	..	13	124	..	9	1	60	2065	745	241	..	..	..	..	..	..	..	3959
1917	..	..	200	183	40	..	..	2	91	..	2	2	43	3100	575	213	..	..	..	..	..	..	..	4401
Average 5 years	..	**3**	**1040**	**252**	**69**	..	**1**	**15**	**167**	**1**	**5**	**3**	**70**	**2582**	**893**	**278**	..	..	..	..	..	..	..	**3817**
1918	..	..	289	148	42	..	..	17	92	..	2	2	53	766	556	143	..	..	..	..	..	..	..	2110
1919	..	4	663	211	20	..	..	32	131	..	6	3	85	2689	583	107	2	117	..	56	..	365	4	5078
1920	..	1	1124	334	49	..	1	40	135	..	10	1	116	..	574	120	..	42	..	8	..	230	6	2791
1921	..	..	1746	313	41	..	2	19	146	..	9	..	81	..	553	102	..	11	..	1	..	394	7	3425
1922	..	..	1275	359	37	..	..	25	141	..	4	..	72	..	510	101	..	6	..	..	..	426	1	2957
Average 5 years	..	**1**	**1019**	**273**	**37**	..	**1**	**26**	**129**	..	**6**	**1**	**81**	**1727**	**555**	**115**	**1**	**35**	..	**13**	..	**283**	**4**	**3272**
1923	..	..	868	304	27	..	..	22	98	1	5	1	57	..	547	125	..	4	..	1	114	86	8	2268
1924	..	..	403	286	26	..	..	18	89	..	4	1	56	..	557	87	..	1	2	1	461	138	59	2189
1925	1145	..	510	376	30	..	..	17	134	..	2	1	60	..	507	132	..	1	1	..	409	132	27	3484

*Measles notifiable in Salford 1916 to 1919. †Chicken Pox notifiable in Salford 1925 (Jan. 22nd to Dec. 31st).

Novarsenobillon has been supplied to four and Sulfarsenol to one Manchester Practitioners, for Salford patients as follows :—

Novarsenobillon	·45	10 doses.
	·6	110 doses.
	·75	10 doses.

Of the 199 doses supplied 90 have been supplied to the Medical Officers for His Majesty's Prison, Strangeways, Manchester.

Sixty-nine Tests were made for the Wasserman reaction for Salford Medical Practitioners.

Twelve Specimens were sent for Microscopical examination by Salford Medical Practitioners.

It has not been found necessary to take any action under the Venereal Diseases Act, 1917.

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		Total.	
	Males.	females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1. Number of cases which—										
(*a*) at the beginning of the year under report were under treatment or observation for	174	116	..	..	318	42	27	17	519	175
(*b*) had been marked off in a previous year as having ceased to attend or as transferred to other Centres, and which returned to the Treatment Centre during the year under report suffering from the same infection.....	3	..	..	..	2	..	..	..	5	..
Total—Items 1 (*a*) and 1 (*b*)	177	116	..	..	320	42	27	17	524	175
2. (*a*) Number of cases dealt with at the Treatment Centre during the year for the first time	106	35	..	..	203	31	78	40	387	106
Total—Items 1 (*a*), 1 (*b*) and 2 (*a*)..	283	151	..	..	523	73	105	57	911	281
2. (*b*) Number of cases included in Item 2 (*a*) known to have received previous treatment at other Centres for the same infection	..	..	..	..	..	..	..	..	..	..
3. Number of cases which ceased to attend—										
(*a*) before completing the first course of treatment for...	48	4	..	..	117	3	..	..	165	7
(*b*) after one or more courses but before completion of treatment for	..	..	..	..	..	..	..	..	..	..
(*c*) after completion of treatment, but before final tests as to cure of	..	..	..	..	..	..	..	..	..	..

VENEREAL DISEASES—*Continued.*

	Syphilis.		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
4. Number of cases transferred to other Treatment Centres after treatment for	3	..	..	..	..	..	..	..	3	..
5. Number of cases discharged after completion of treatment and observation for.....	14	7	..	..	8	..	66	34	88	41
6. Number of cases which, at the end of the year under treatment or observation for	218	140	..	..	398	70	39	23	655	233
Total—Items 3, 4, 5 and 6.....	283	151	..	..	523	73	105	57	911	281
7. Out-patient attendances—										
(*a*) For individual attention by the Medical Officer	2906	1527	..	..	4443	241	457	149	7806	1917
(*b*) For intermediate treatment, *e.g.*, irrigation, dressings, etc.	..	..	..	..	4819	1172	..	..	4819	1172
Total Attendances	2906	1527	..	..	9262	1413	457	149	12625	3089
8. Aggregate number of "In-patient days" of treatment given to persons who were suffering from	214	109	..	..	277	74	..	..	491	183

	For detection of			For Wassermann Reaction.
	Spirochetes.	Gonococci.	Other Organisms.	
9. Examinations of Pathological material :—				
(*a*) Specimens which were examined at, and by the Medical Officer of, the Treatment Centre....	..	2374	..	449
(*b*) Specimens from persons attending at the Treatment Centre which were sent for examination to an approved laboratory....	..	..	..	..

The Salvarsan substitute used in the treatment of Syphilis is Neokharsivan, and Stabilarsan.

Amount and kind of treatment usually administered to a case of Syphilis of each of the types usually dealt with at a Treatment Centre :—

First Course—Weekly injections of Neokharsivan and Mercury (Males).

Grammes of Neokharsivan.									
·45	·6	·75	·75	·9	·9	·9	·9		
Hg.	Hg.	Hg.	Hg.	Hg.	Hg.	Hg.	Hg.	Hg.	Hg.

If case is seen in pre-positive Wasserman stage further treatment may not be necessary, but if Lysis is delayed, or if there is a Wasserman positive when seen, then further intra-venous injections of Neokharsivan and Mercury are continued. The first of the second series of courses is given six weeks after first course ends, and the interval is increased by two weeks each time. The whole course lasts nearly two years.

Nature of tests applied in deciding as to discharge of patients :—

Repeated blood tests at three monthly intervals over two years after all treatment has been discontinued, in addition to absence of clinical signs and symptoms. Final test (Blood Test) after provocative intra-venous injection.

TABLE SHOWING THE BACTERIOLOGICAL EXAMINATIONS CARRIED OUT AT THE UNIVERSITY LABORATORY.

Venereal Diseases.

Wasserman Reaction.		Spirochoetæ.		Gonccccccus.	
Total.	+	Total.	+	Total.	+
1059	218	..	..	12	..

WORK CARRIED OUT IN THE MUNICIPAL BACTERIOLOGICAL LABORATORIES FROM 1ST JANUARY TO 31ST DECEMBER, 1925.

Examinations of the undermentioned specimens have been carried out :—

Sputa	1359
Diphtheria	831
Blood Typhoid	60
Milk Inoculation	421
Milk, microscopically positive	19
Milk Counts	31
Inoculation for Virulence	20
Faeces, Food Poisoning	12
Blood ,, ,,	7
Faeces } Typhoid	48
Urine } Typhoid	33
Examinations for Maternity and Child Welfare Department	16
Hair for Ringworm	14
Disinfectants	14
Various	22

In addition, 33 gross of serum tubes have been supplied to the Ladywell Sanatorium.

TUBERCULOSIS.

(i.) The premises available for Dispensary treatment during 1925 consisted of two consulting rooms with dressing and waiting rooms attached, situate at Nos. 135 & 137, Regent Road, Salford. There are no branch dispensaries or visiting stations.

(ii.) Tuberculosis Officer . . E. N. Ramsbottom, M.D. (Lond.) B.Sc., D.P.H.

Assist. ,, ,, . . J. G. McKinlay, M.B., Ch.B., D.P.H.

The staff also includes four Health Visitors and three clerks.

The residential institutions in connection with the scheme are :—

(*a*) NAB TOP SANATORIUM, Marple, for early and intermediate cases of tuberculosis (120 beds).

Resident Medical Officer : H. M. Fleming, M.D., B.A.

(*b*) LADYWELL SANATORIUM, Salford. This Sanatorium is the Infectious Diseases Hospital for the Borough, and a separate pavilion containing 48 beds is set apart for the isolation and treatment of advanced cases of tuberculosis.

Resident Medical Officer : W. Edge, M.R.C.S., L.R.C.P., D.P.H.

Assistant Medical Officer : H. M. Turner, M.B., Ch.B.

(iii.) (*a*) Arrangements have been made and are in operation for the treatment of Surgical Tuberculosis, after approval by the Tuberculosis Officer, with the Salford Royal Hospital. Two cases were treated in 1925.

(*b*) Special arrangements have been made with the Manchester and Salford Hospital for Skin Diseases for the treatment of lupus and other tuberculous skin diseases and a large number of cases were approved for artificial sunlight treatment. There is no doubt that this form of treatment has very considerable beneficial effect in the treatment of tuberculous skin disease, recovery being much more rapid than in cases treated

by local applications only. The number of visits paid by patients for artificial sunlight treatment during the year was 613. The total number of tuberculous skin cases treated was 79, the total number of attendances at the Skin Hospital 1407, and the number of examinations made at the Dispensary 219.

(*c*) There is close co-operation with the School Clinic of the Salford Education Committee, and all cases suspected of tuberculosis are reported to the Tuberculosis Officers. Much delay is saved on account of the fact that the School Clinic is situated in the same building.

(iv.) (*a*) The total number of cases referred by Medical Practitioners during last year was 449. All sputum examinations desired by Medical Practitioners are made at the dispensary. (*See* Table I.; total number of specimens examined last year, 1420.)

(*b*) Medical Practitioners attending insured (National Health Insurance) cases at home furnish the Health Department with records of progress every three months, and such cases are examined periodically by the Tuberculosis Officers.

(v.) In cases where the diagnosis is doubtful, the patient is kept under dispensary observation until a definite diagnosis can be made. In certain cases where such patients remain under their own doctor, they are periodically re-invited to the dispensary for re-examination. (*See* Table I.; cases retained for further observation, 1172); contacts retained for further observation, 193.

(vi.) The Health Visitors visit the home of every notified case at frequent intervals. (*See* Table I.; 8,870

visits last year). The Health Visitors make every effort to secure the attendance at the dispensary of all contacts residing in the same house. (*See* Table I. ; 568 examinations of contacts).

(*b*) X-ray examination has been largely used as an aid to diagnosis and has been found to be invaluable in many cases where physical signs are indefinite. Number of cases X-rayed during the year 230.

(*c*) Ladywell Sanatorium.—The method of isolation of advanced cases in this manner is undoubtedly of great value in lessening the danger of massive infections in the home, but is detracted from by the difficulty of keeping the patients in hospital indefinitely. So far the compulsory powers obtained under the Salford Corporation Act, 1919, and the Public Health Act, 1925, have not been enforced because the accommodation for advanced cases has been fully utilised without recourse to these powers.

Dispensary Treatment.—The effect of dispensary treatment depends chiefly upon the degree of acuteness of disease in each individual case, the home conditions, the facilities for obtaining suitable food and the general habits of the patient. Acute cases do not do well as a rule, but the bulk of the patients attending are cases suffering from chronic disease, who in most cases appear to keep stationary for long periods.

(viii.) There is no special dental treatment provided by the Council for Tuberculous patients.

(ix.) (*a*) Arrangements have been made by the Tuberculosis Committee with the District Nursing Association for the nursing of tuberculosis patients at home.

(*b*) Extra Nourishment.—Milk and Eggs are provided in suitable cases, according to the recommendations of the Ministry of Health.

(x.) Arrangements have been made for the treatment of non-pulmonary tuberculosis at the Salford Royal Hospital, who provide their own surgical apparatus.

(xi.) There is no "After Care" Committee in Salford, and these duties are largely undertaken by the Health Visitors. Valuable assistance has been rendered from time to time by the Salford Civic League of Help.

(xii.) No special arrangements are made locally for finding employment for Tuberculosis patients.

(xiii.) Shelters are not supplied to patients at their homes, and in the great bulk of cases their use would be impracticable.

(xiv.) There are no special points relating to the local incidence of Tuberculosis.

(xv.) (*a*) Special Difficulties.—The disinclination of advanced cases for isolation.

(*b*) The difficulty experienced by arrested cases in obtaining employment.

(*c*) The difficulty of impressing upon patients the gravity of the complaint and ensuring that they are consistently following the treatment prescribed.

(*d*) The insidious nature of the onset of the disease in many cases unfortunately allows the patient to reach an advanced stage before he realises that he is actually ill and seeks medical advice.

(*e*) There is some improvement in the earlier reference of cases to the Tuberculosis Officers by local practitioners but far too many are still sent to the Dispensary in such advanced a condition that no treatment can be of lasting value. Examination of table 2 shows that there are still 22% of the cases dying from pulmonary tuberculosis who have never been notified and about 21% notified either after death or within three months of death.

Particulars of the cases notified, treated at the Nab Top Sanatorium, Ladywell Sanatorium, and at the Dispensary, are given in the following Tables; Table 2 gives the period elapsing between notification and death of the fatal cases, and illustrates one of the great difficulties of preventive work, 22 per cent being not notified at all.

During the year 71 new cases of discharged tuberculous soldiers and 289 old cases came under our notice. Of this number 105 were admitted to residential institutions as follows:—

62 Ex-Service men admitted to Nab Top Sanatorium, Marple.

41 Ex-Service men admitted to Ladywell Sanatorium.

2 other men were admitted to outside institutions and training centres.

TABLE 1.

SUMMARY OF WORK DONE AT THE TUBERCULOSIS CLINIC IN 1925.

	Insured Cases.			Others.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
New Cases Examined—									
(*a*) Diagnosed as Tuberculous	142	65	207	51	76	127	193	141	334
(*b*) Diagnosed as Non-tuberculous	55	31	86	20	39	59	75	70	145
(*c*) Taken under Observation	98	54	152	40	68	108	138	122	260
Cases Re-examined—									
(*a*) Diagnosed as Tuberculous (Old Cases)	1733	392	2125	422	615	1037	2155	1007	3162
(*b*) Diagnosed as Non-tuberculous	86	48	134	78	113	191	164	161	325
(*c*) For further Observation	212	125	337	252	323	575	464	448	912
Cases Sent by Medical Practitioners	216	114	330	44	75	119	260	189	449
Cases Discharged—									
(*a*) From Treatment	2	2	4	8	6	14	10	8	18
(*b*) From Observation	50	33	83	55	89	144	105	122	227
Contacts Examined—Positive	2	..	2	..	1	1	2	1	3
Negative	40	40	80	32	89	121	72	129	201
Taken under Observation	11	18	29	15	37	52	26	55	81
Contacts Examined (School Children)—Positive	..	..	..	..	1	1	..	1	1
Negative	..	..	..	89	81	170	89	81	170
Taken under Observation	..	..	..	56	56	112	56	56	112
No. of Attendances	2328	870	3198	1954	2460	4414	4282	3330	7612
Deaths of Dispensary Cases	166	39	145	16	47	63	122	86	208
Cases Returned from Nab Top Sanatorium and taken under Observation	180	86	266	42	100	142	222	186	408
Cases returned from Ladywell and taken under Observation	69	27	96	5	53	58	74	80	154
New Cases attended during 1925 (Ins. and Non-Ins.)	..	..	..	..	..	..	436	327	763
Old Cases attended during 1925 (Ins. and Non-Ins)	..	..	..	..	..	..	917	826	1743

Samples of Sputum Examined—	Negative.	Positive.	Total.
Dispensary Cases	611	194	805
General Practitioners' Cases	497	118	615

Nurses' Visits to Homes of Patients	8,870
Nurses' Visits to Homes of Discharged Soldiers and Sailors	1,567
Doctors' Visits to Homes of Patients	70

TABLE 2.

SHOWING PERIOD ELAPSING BETWEEN NOTIFICATION AND DEATH IN FATAL CASES OF PHTHISIS.

	Number.	Per-centage.
Not notified	72	22·22
Notified day of death or after	3	·92
within three months of death	66	20·37
,, from three months to one year before death	72	22·22
,, from one year to two years before death	54	16·67
Over two years	57	17·60

Total number of deaths, 324.

Ratio of non-notified cases to total fatal cases, 72—324.

The notification of tuberculosis in the district has tended to improve during the year, but there is still much further room for improvement.

For further information see paragraph iv.

TABLE 3.

NEW CASES AND MORTALITY DURING 1925.

Age Periods.	New Cases.				Deaths.			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M.	F.	M.	F.	M.	F.	M.	F.
0	..	..	3	5	..	1	4	1
1	7	5	23	15	3	..	7	9
5	9	14	16	8	..	1	4	3
10	18	20	12	15	1	3	3	4
15	27	21	5	5	13	16	6	1
20	35	38	6	5	18	27	3	1
25	58	65	5	3	30	30	3	6
35	49	34	2	..	46	20	2	3
45	47	26	..	..	41	15	2	..
55	24	7	2	1	30	18	4	1
65 and upwards	2	1	1	..	6	5	..	..
Totals	276	231	75	57	188	136	38	29

TABLE 4.

OCCUPATIONS OF THE 507 CASES NOTIFIED.

MALES.

1.	Joiners, House Decorators and Building Trades ..	11	
2.	Carters, Hawkers, and Car Drivers	7	
3.	Labourers and Navvies	47	
4.	Railway Workers	9	
5.	Seamen	2	
6.	Firemen	2	
7.	Clerks & Warehousemen	23	
8.	Packers	8	
9.	Metal Workers.	10	
10.	Makers of Wearing Apparel	6	
11.	Colliers	2	
12.	Cabinet Makers	3	
13.	Mechanics and Engineers	14	
14.	Children under 5	5	
15.	Scholars	25	
16.	Commercial Travellers	1	
17.	Box Makers	2	
18.	Printers and Bookbinders	7	
19.	Brewery Hands	1	
20.	Shop Assistants	10	
21.	Employees in Cotton Mills	5	
22.	Painters.....	1	
23.	Timber Workers	4	
24.	No Occupation	19	
25.	No Occupation Stated..	16	
26.	Electricians.....	3	
27.	Plumbers.....	2	
28.	Motor Drivers	2	
29.	Lamplighters	1	
30.	Hairdressers	1	
31.	Greengrocers.....	2	
32.	Dyers	3	
33.	Insurance Agents.....	1	
34.	Butchers	1	
35.	Police Constables	1	
36.	Medical Practitioners...	1	
37.	Other Various Occupapations	18	
	Total	276	

Of these 276 primary cases of Tuberculosis 90 were ex-service men.

FEMALES.

1.	Mill Workers	16	
2.	Dyeworkers	1	
3.	Housewives.....	78	
4.	Charwomen and laundresses	10	
5.	Makers of Wearing Apparel	20	
6.	Clerks and Typists	9	
7.	Printers and Bookbinders	2	
8.	Servants	9	
9.	Packers	5	
10.	Cooks	1	
11.	Box Makers	2	
12.	Shop Assistants	5	
13.	Waitresses	1	
14.	Teachers	2	
15.	Children under 5	4	
16.	Scholars	28	
17.	Rubber Workers	2	
18.	No Occupation	16	
19.	No Occupation Stated ..	9	
20.	Publicans	1	
21.	Other various Occupations	10	
	Total	231	

TABLE 5.

INSPECTOR'S REPORT ON THE DURATION OF THE DISEASE IN CASES VISITED AT THE TIME OF NOTIFICATION.

When Notified.	
Under six months	148
Over 6 months to 1 year.....	143
„ 1 year to 18 months.....	67
„ 18 months to 2 years	11
„ 2 years to 3 years	18
„ 3 years	41
No Time Stated	68
	496*

* Eleven notifications were marked not to be visited.

The School Medical Officers notified 7 new cases on Form "B" as suffering from Tuberculosis:—

5 Cases Pulmonary Tuberculosis.

2 Cases Other Forms of Tuberculosis.

During the year 1925, 174 notifications of non-pulmonary tuberculosis have been received. 42 of these are re-notifications of cases already on the books, and 132 are new cases.

The new cases of non-pulmonary tuberculosis notified are classified in the following table :—

	Glands.	Bones.	Abdo-men.	Skin.	Men-inges.	Other forms.	Totals.
Under 10 years ...	19	6	16	7	10	11	69
10 to 20 years	14	4	8	8	1	4	39
20 ,, 30 ,, ...	2	1	..	5	..	7	15
30 ,, 40 ,, ...	1	..	1	3	..	..	5
Over 40 ,, ...	1	..	1	2	..	..	4
Totals	37	11	26	25	11	22	132

LADYWELL SANATORIUM.

TABLE SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER OF "PATIENT DAYS" FOR 1925.

TUBERCULOSIS CASES.

	Males.	Females.	Totals.
Total Number of Admissions during 1925	105	98	203
Number of Persons Admitted in 1924 who remained in Hospital for some part of 1925	24	23	47
Total Number of Discharges during 1925	105	103	208
Patients in Hospital on the 31st December, 1925	24	18	42
Number of "Patient Days" for Persons Admitted during 1925	6779	5769	12548
Number of "Patient Days" (in 1925) for Persons Admitted in 1924 who remained in Hospital for some part of 1925	1921	1577	3498
Total Number of "Patient Days" for 1925	8700	7346	16046
Average Number of Patients in Hospital each day during 1925	23·8	20·1	43·9

Report of the Resident Medical Officer of the Ladywell Sanatorium.

During this year, 1,575 cases came under treatment as compared with 1,252 in 1924, and with 2,000·6, the average of the numbers treated in the five years ending December 31st, 1924. The cases treated were 625 of Scarlet Fever, 8 of Measles, 22 of Enteric Fever, 365 of Diphtheria, 52 of Erysipelas, 13 of Puerperal Fever, 250 of Tuberculosis (Advanced), and 240 of Other Diseases. Three hundred and forty-nine of the cases treated were from Out Districts, as compared with 228 in 1924.

One thousand four hundred and two were admitted as compared with 1,113 in 1924, and with 1,821·8, the average of the numbers admitted in the five years ended December 31st, 1924. The cases admitted proved after observation to be 558 of Scarlet Fever, 7 of Measles, 20 of Enteric Fever, 325 of Diphtheria, 48 of Erysipelas, 13 of Puerperal Fever, 10 of Encephalitis Lethargica, 2 of Cerebro-spinal Fever, 203 of Tuberculosis (Advanced) and 216 of Other Diseases. These cases, with the exception of the Tuberculosis cases, were admitted under the following diagnosis:—629 of Scarlet Fever, 438 as Diphtheria, 39 as Enteric Fever, 5 as Cerebro-spinal Fever, 15 as Encephalitis Lethargica, 49 as Erysipelas, 15 as Puerperal Fever, 5 for observation, and 4 for treatment (miscellaneous illnesses of staff). Table 5 gives details of what the cases admitted proved after observation to be. From this table it may be inferred that under the head of "Other Diseases" a number of diseases are included which will be found in the appended tabulation of cases classified as "Other Diseases."

MIXED INFECTION.—Twenty-one of the patients admitted were suffering from 2 distinct infectious diseases as follows:—

Scarlet Fever and Diphtheria	14
Scarlet Fever and Chicken Pox	3
Scarlet Fever and Measles	1
Scarlet Fever and Whooping Cough	2
Diphtheria and Measles	1

Of these 16 were sent in as Scarlet Fever and 5 as Diptheria. In addition 7 patients were found to be incubating another infectious disease.

4	Scarlet Fever patients	incubating	Measles.
2	Diphtheria ,,	,,	Whooping Cough.
1	Diphtheria ,,	,,	Measles.

CROSS INFECTION.—The above cases of mixed infection, those admitted whilst incubating another disease, and cases with a wrong diagnosis in which the diagnosis could only be correctly ascertained after a while, gave rise to secondary infections in the wards. During the year under consideration 33 patients developed a second infection, these being as follows:—

13	sent in as	Diphtheria developed Scarlet Fever.
2	,,	Scarlet Fever developed Scarlet Fever.
1	,,	Enteric Fever developed Scarlet Fever.
8	,,	Scarlet Fever developed Measles.
1	,,	Diphtheria developed Measles.
3	,,	Scarlet Fever developed Whooping Cough.
1	,,	Scarlet Fever developed Whooping Cough and Chicken Pox.
3	,,	Scarlet Fever developed Chicken Pox.
1	,,	Scarlet Fever developed Diphtheria.

In addition to these, 36 convalescing Scarlet Fever patients were discovered to be harbouring Diphtheria bacilli in the throat or nose. None of these patients manifested any clinical signs of Diphtheria, the only symptom that was present sometimes being a slight soreness and discharge from the nose. Most of these carriers were found by means of routine swab taking in contacts.

Three hundred and twenty of the cases admitted were from Out Districts, as compared with 203 in 1924.

One hundred and fourteen cases proved fatal, namely: 5 from Scarlet Fever, giving a mortality rate of 0·97%, 1 from Enteric Fever, mortality rate 5·87%, 24 from Diphtheria, mortality rate 7·9%, 1 from Erysipelas, mortality rate 2·1%, 1 from Puerperal Fever, mortality rate 8·3%, 67 from Tuberculosis (Advanced), mortality rate 32·2%, and 15 from Various Diseases as follows:—4 from Encephalitis Lethargica, 2 from Cerebro-spinal Fever, 3 from Concurrent Affections: 1 from Diphtheria and Scarlet Fever, 1 from Diphtheria and Premature Birth, 1 from Scarlet Fever and Whooping Cough; in addition there were 1 death from Influenzal Broncho-pneumonia, 1 from Meningitis following middle ear disease, 1 from Pulmonary Tuberculosis, 2 from Tuberculous Meningitis, 1 from Lobar Pneumonia, and 1 from Broncho-pneumonia.

One thousand two hundred and seventy-five cases were discharged, namely:—557 of Scarlet Fever, 8 of Measles, 16 of Enteric Fever, 276 of Diphtheria, 47 of Erysipelas, 11 of Puerperal Fever, 141 of Tuberculosis (Advanced), and 219 of Other Diseases.

The average stay in hospital for all cases was 40·25 days, for Scarlet Fever 36·36 days, for Enteric Fever 52·00 days, for Diphtheria 45·30 days, for Other Diseases 25·00 days, for Tuberculosis (Advanced) 62·26 days.

The daily average number of patients in hospital in 1925 was 170·8 as compared with 132·5 in 1924 and with 177·7, the daily average of the numbers in the five years ended December 31st, 1924.

There were remaining in hospital on December 31st, 185 cases as compared with 173 on the same date in 1924. The cases remaining were 61 of Scarlet Fever, 5 of Enteric Fever, 62 of Diphtheria, 4 of Erysipelas, 1 of Puerperal Fever, 42 of Tuberculosis (Advanced), and 10 of Other Diseases.

Forty-two of the cases remaining were from Out Districts as compared with 29 on the corresponding date in 1924.

Health of Staff.—During the year there were several cases of infectious diseases amongst the staff. Three nurses contracted Scarlet Fever, 6 nurses and 1 maid contracted Diphtheria, 1 nurse contracted Erysipelas. One nurse fell ill with Pulmonary Tuberculosis and has been sent to a Sanatorium. All the others made complete recoveries.

In view of the serious loss of working time caused by Diphtheria and the dangerous nature of this disease I immunised the susceptibles of the whole staff with

Toxin-Antitoxin mixture. The Schick test revealed 20 susceptibles among 64, giving 31·2 % of positive reactors.

The following are some particulars about the principal diseases:—

Scarlet Fever.—Five hundred and fifty-eight cases proved to have Scarlet Fever out of 629 certified as such. The disease, generally speaking, was mild, the five deaths being all due to Septic Scarlet Fever (Scarlatina Anginosa). This gives a mortality rate of 0·9 %. The complications were as follows:—

	No. of Cases.	Percentage.
Rhinorrhœa	16	2·78 %
Otorrhœa	54	9·41 %

of these five had an acute mastoid and had to be operated on.

Albuminuria	16	2·78 %
Adenitis and Abscess	162	28·22 %
Endocarditis	1	0·17 %
Arthritis	13	2·26 %

The Dick test was done on all doubtful cases and on a number of Scarlet Fever patients and proved to be of great value for diagnosis.

Scarlatinal Antitoxin was used for treatment and prophylaxis with good results. The unconcentrated Antitoxin gave a large number of serum complications; the concentrated was free from that trouble.

Dick Test in Scarlet Fever.—The following are the results of testing 95 Scarlet Fever patients, in which

the diagnosis was clinically confirmed. The numbers are too small for any conclusions to be drawn. The last group shows an unusual percentage of positive reactors; the reactions in this group were all definite though faint, and I have no explanation for this irregularity.

No. of Cases.	Duration of Disease.	Percentage of Positives.
24	1—5 days	60 % positive.
25	6—10 ,,	32 % ,,
13	11—15 ,,	30·7 % ,,
17	16—20 ,,	5·8 % ,,
24	21 and over	33·3 % ,,

DIPHTHERIA.—Three hundred and twenty-five patients out of 438 admitted proved to have Diphtheria. The disease showed no signs of being milder, there being quite a number of rather severe cases. For these cases the intravenous route of administering Antitoxin was tried with encouraging results, the routine method being Intra-muscular. There were 21 deaths. The average stay in hospital for cases that died was 3·1 days.

17 cases had Tracheotomy performed, with three deaths, percentage mortality 17·6 %. The percentage mortality for all cases of Diphtheria was 7·9 %. The mortality for the last ten years was as follows:—

	Percentage.
1915	16·4
1916	19·5
1917	7·19
1918	14·2
1919	9·1
1920	11·8

	Percentage.
1921	9·7
1922	12·3
1923	12·6
1924	8·6
1925	7·9

The complications were as follows:—

	No. of Cases.	Percentage.
Otorrhœa	10	3·34
Broncho-pneumonia	3	1·00
All forms of Paralysis	44	14·71
Palatal Paralysis alone	14	4·69
Circulatory Paralysis	20	6·68
Other Paralysis	10	3·34
Serum Rashes	4	1·34

The great rarity of any after-effects of the serum I attribute to the fact that only concentrated serum is used. This is in striking contrast to the frequency of serum complications after the unconcentrated Scarlatina Anti-toxin used both on Diphtheria for prophylaxis and Scarlet Fever for treatment and prophylaxis, the great majority giving well-marked reactions, in striking contrast also to those hospitals which use unconcentrated Diphtheria Anti-toxin. The Dick test was performed whenever there was a case of Scarlet Fever in the Diphtheria ward, and the positive reactors were given 5 c.c. of unconcentrated Anti-toxin, the passive immunity after this dose hardly lasting for three weeks. This procedure was enough to stop any further spread of the infection. Before discharge, cultures of throat and nose were taken on two separate days. A number of patients

remained carriers for varying lengths of time. They were tested for virulence, and when found avirulent were discharged. No local anti-septic treatment proved of any value in such carriers.

Enteric Fever.—	Complications.
Relapse	1
Broncho-pneumonia	2
Otorrhœa	1

There were no cases of Enteric Fever with hæmorrhage or perforation.

Hospital Laboratory.—In the Hospital Laboratory no fewer than 4,316 examinations were made, including cultures from throat, nose, ear, cerebro-spinal fluid from cases of Meningitis, also agglutination reaction by Dreyer's method for the enteric group of diseases, and examinations of sputum for tubercle bacilli.

Additional Staff Accommodation.—During 1925, the official opening, on May 8th, of the new nurses' home, maids' home and new kitchen was performed by the Mayor, Alderman Billington. The homes provide for a separate bedroom for each nurse and maid, comfortable sitting-rooms and plentiful provision of baths. In the kitchen, the cooking is done by electricity and steam.

Appended are the usual Statistical Tables.

TABULATION OF CASES WHICH HAVE BEEN CLASSIFIED AS "OTHER DISEASES."

Adenitis	2
Asthma-Bronchitis	1
Acute Pemphigus	1
Broncho-pneumonia	7
Bronchitis Chronic	2
Bronchiectasis	1
Cerebro-spinal Meningitis	2
Cerebral Hæmorrhage	1
Colitis, Erythema	1
Coryza	1
Erythema	19
,, Nodosum	1
Encephalitis Lethargica	9
Enema Rash	1
Enteritis	1
Gastro-Enteritis	3
Gastritis	2
Gonorrhœa	1
Influenza	4
Impetiginous Dermatitis	1
Intestinal Stasis	1
Laryngitis	12
Lobar Pneumonia	4
Laryngismus Stridulus	1
Lymphatic Leukæmia	1
Mastitis	1
Metrorrhagia	1
Mitral Stenosis and Regurgitation	1
Meningitis (Tubercular)	3
Miliary Tuberculosis	1
Nephritis	1
Nil	1
Otitis Media Suppurativa	1
Otorrhœa	1
Pneumonia	3
Para Typhosus B.	4
Peri Tonsillar Abscess	1
Peritonitis (Tuberculous)	1
Pyelitis	1
Quinsey	1
Rheumatism (Acute)	1
,, (Muscular)	1
Rubella	24
Stomatitis	2
,, (Ulcerative)	1
Small Cut on Face	1
Scarlet Fever Contact	2
Tabes Mesenterica	1
Tonsillitis	90
Vincent's Angina	1
Whooping Cough	2
	228

TABLE I.

STATEMENT OF THE NUMBER OF PATIENTS UNDER TREATMENT IN LADYWELL SANATORIUM IN 1925.

	Males.		Females.		
	Under 5 years	Over 5 years	Under 5 years	Over 5 years	Totals
I.—PATIENTS REMAINING IN HOSPITAL ON DECEMBER 31st, 1925, AFFECTED WITH—					
Scarlet Fever	13	16	11	27	67
Measles	1	..	..	..	1
Enteric Fever	..	1	..	1	2
Diphtheria	8	12	4	15	39
Erysipelas	..	1	..	3	4
Puerperal Fever	..	..	..	..	..
Tuberculosis (Advanced)	..	23	..	24	47
Other Diseases	1	5	2	5	13
Total	23	58	17	75	173
II.—ADMITTED DURING THE YEAR ENDED DECEMBER 31st, 1925, AFFECTED WITH—					
Scarlet Fever	70	181	77	230	558
Measles	5	1	..	1	7
Enteric Fever	..	7	1	12	20
Diphtheria	42	106	49	128	325
Erysipelas	1	22	1	24	48
Puerperal Fever	..	..	..	13	13
Tuberculosis (Advanced)	..	105	..	98	203
Other Diseases	40	74	35	79	228
Total	158	496	163	585	1402
Total under treatment in 1925	181	554	180	660	1575
III.—OF THE ABOVE THERE WERE DISCHARGED RECOVERED FROM—					
Scarlet Fever	73	177	77	231	558
Measles	6	1	..	1	8
Enteric Fever	..	5	1	10	16
Diphtheria	38	93	30	115	276
Erysipelas	1	21	1	24	47
Puerperal Fever	..	..	..	11	11
Tuberculosis (Advanced)	..	64	..	77	141
Other Diseases	39	69	33	78	219
Total	157	430	142	547	1276

TABLE I.—*Continued.*

STATEMENT OF NUMBER OF PATIENTS.—*Continued.*

	Males.		Females.		Totals
	Under 5 years	Over 5 years	Under 5 years	Over 5 years	
IV.—DIED FROM—					
Scarlet Fever	2	1	1	2	6
Measles	..	..	..	..	..
Enteric Fever	..	..	..	1	1
Diphtheria	5	5	6	10	26
Erysipelas	..	..	..	1	1
Puerperal Fever	..	..	..	1	1
Tuberculosis (Advanced)	..	40	..	27	67
Other Diseases	1	5	2	4	12
Total	8	51	9	46	114
V.—REMAINING IN HOSPITAL ON DECEMBER 31st, 1925, AFFECTED WITH—					
Scarlet Fever	8	19	10	24	61
Measles	..	..	..	..	..
Enteric Fever	..	3	..	2	5
Diphtheria	7	20	17	18	62
Erysipelas	..	2	..	2	4
Puerperal Fever	..	..	..	1	1
Tuberculosis (Advanced)	..	24	..	18	42
Other Diseases	1	5	2	2	10
Total	16	73	29	67	185
Total under treatment in 1925	181	554	180	660	1575

TABLE II.

MONTHLY STATEMENT OF PATIENTS FOR THE YEAR ENDED DECEMBER 31st, 1925; TOGETHER WITH A COMPARISON WITH THE YEAR 1924, AND WITH THE MEAN OF THE FIVE (5) AND FORTY-TWO (42) YEARS ENDED DECEMBER 31st, 1924.

Month.	Admissions, 1925.	Admissions, 1924.	Mean of Admissions, 5 years, 1920-24.	Mean of Admissions, 42 years, 1883-1924.	Daily Average No. of Patients in Hospital, 1925.	Daily Average No. of Patients in Hospital, 1924.	Mean of Daily Average No. of Patients in Hospital, 5 yrs., 1920-24.	Mean of Daily Average No. of Patients in Hospital, 42 yrs., 1883-1924.
January	130	116	180·2	110·6	177·9	140·9	189·6	139·5
February	88	93	155·2	127·8	177·9	138·1	192·0	131·2
March	117	98	152·4	128·4	176·5	132·9	182·8	151·2
April	89	77	120·0	110·5	166·8	144·9	163·8	115·9
May	111	75	125·8	116·5	154·9	114·0	146·5	112·6
June	95	58	108·8	107·4	148·4	93·2	129·1	100·9
July	127	73	140·2	122·8	151·9	77·9	131·1	114·5
August	97	91	133·2	113·1	141·6	101·0	199·8	119·4
September	116	88	151·8	148·8	147·1	123·0	198·5	134·2
October	186	126	198·2	191·0	202·2	157·8	196·8	153·6
November.....	140	110	191·4	190·6	222·7	178·3	207·2	155·3
December	106	108	164·6	170·2	182·5	188·8	195·0	157·0
Totals	1402	1113	..	..	..	..	..	..
M'thly Av'ges.	116·8	92·7	151·8	136·4	170·8	132·5	177·7	132·1

TABLE III.

SHOWING THE NUMBER OF ADMISSIONS OF THE PRINCIPAL INFECTIOUS DISEASES FOR THE YEAR ENDED DECEMBER 31ST, 1925; ALSO A COMPARISON WITH THE YEAR 1924, AND WITH THE MEAN OF THE FIVE (5) AND FORTY-TWO (42) YEARS ENDED DECEMBER 31ST, 1924.

Month.	Scarlet Fever.	Measles.	Enteric Fever.	Typhus Fever.	Diphtheria.	Erysipelas.	Puerperal Fever.	Small-pox.	Advanced Tuberculosis.	Other Diseases.	Totals.
January	55	1	..	..	27	7	2	..	18	20	130
February	38	1	1	..	21	4	2	..	12	9	88
March	38	1	..	..	28	2	..	..	30	18	117
April	37	..	1	..	18	2	1	..	23	7	89
May	51	1	..	..	19	3	2	..	17	18	111
June	37	1	1	..	18	4	2	..	12	20	95
July	50	1	3	..	34	3	..	..	19	17	127
August	44	..	1	..	20	4	..	..	18	10	97
September ..	44	..	4	..	32	..	..	..	18	18	116
October	76	..	1	..	42	8	2	..	14	43	186
November ...	50	1	8	..	35	5	..	..	12	29	140
December....	38	..	..	..	31	6	2	..	10	19	106
Totals	558	7	20	..	325	48	13	..	203	228	1402
Totals 1924 ..	508	9	22	..	198	26	9	..	217	192	1113
Increase 1925	50	1	..	..	127	22	4	..	..	36	289
Decrease 1925	..	2	2	..	..	..	..	..	14	..	..
Mean of 5 years 1920 to 1924	1145·2	7·4	26·8	..	214·0	41·2	18·6	..	177·2	191·4	1821·8
Mean of 42 years— 1883 to 1924	812·2	12·3	131·9	..	173·2	25·5	9·3	14·0	21·7	101·5	1310·0

TABLE IV.

ANNUAL STATEMENT.

Disease.	No. of Cases Treated.	No. of Cases Admitted.	No. of Cases Discharged	No. of Deaths.	No. of Cases Remaining.
Scarlet Fever	625	558	558	6	61
Measles	8	7	8	..	..
Enteric Fever	22	20	16	1	5
Typhus Fever	..	..	..	..	..
Diphtheria	365	325	277	26	62
Erysipelas	52	48	47	1	4
Puerperal Fever	13	13	11	1	1
T. B.	250	203	141	67	42
Other Diseases	240	228	218	12	10
Total	*1575	†1402	1276	114	‡185
Corresponding date 1924.	1252	1113	963	116	173
Average five years	2006·6	1821·8	1697·0	126·6	183·0

December 31st, 1925.

	From "Out-Districts."	From "Out-Districts."	From "Out-Districts"
1925	*349	†320	‡42
1924	*228	†203	‡29

TABLE V.—Diseases Admitted.

Cases Sent In As	Number.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Paratyphoid Fever.	Cerebro-Spinal Fever.	Encephalitis Lethargica.	Erysipelas.	Puerperal Fever.	Rubella.	Measles.	Whooping Cough.	Influenza.	Pneumonia.	Non-Infectious Skin Eruptions.	Other Mouth and Throat Affections.	Other Affections of the Larynx.	Other Intestinal Diseases.	Tuberculous Meningitis.	Tuberculous Peritonitis.	Pulmonary and General Tuberculosis.	Cerebral Thrombosis.	Cerebral Abscess.	Cerebral Hæmorrhage.	Mastitis.	Metrorrhagia.	Nephritis.	Pyelitis.	Lymphatic Leukæmia.	Acute Pemphigus.	Acute Rheumatism.	Erythemanodosum.	Indefinite.
		Hospital Diagnosis.																															
Scarlet Fever........	629	551	1	..	..	..	..	..	..	24	3	1	2	4	22	17	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	3
Diphtheria	438	7	324	..	..	..	..	..	..	..	4	2	..	2	1	86	11	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Enteric Fever	39	..	..	20	3	..	1	..	..	..	..	..	1	6	..	..	..	2	..	1	3	..	..	..	..	..	..	1	1	..	..	..	..
Cerebro-Spinal Fever.	5	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Encephalitis Lethargica	15	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	1	2	..	..	1	1	1	..	..	..	..	..	..	..	..	..
Erysipelas...........	49	..	..	..	..	..	..	48	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Fever	15	..	..	..	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..
Cases sent in for observation	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Miscellaneous Diseases of Staff	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..

Report of the Resident Medical Officer at Nab Top Sanatorium, Marple, 1925.

RESIDENT STAFF.—Resident Medical Officer, Matron, Home Sister, two Ward Sisters, eleven Nurses, Cook, Laundress, seventeen Maids and Lodge Porter.

NON-RESIDENT STAFF.—Engineer, Porter and two Gardeners.

ACCOMMODATION.—There is accommodation for 120 patients (62 adult males, 42 adult females, 8 male children, and 8 female children).

TYPE OF CASE TREATED.—The Sanatorium is used for the treatment of early and intermediate cases of Phthisis.

A few advanced cases who show good resistance to the disease are also treated. A number of "observation" cases are admitted.

LINES OF TREATMENT.—The treatment adopted is chiefly Hygienic—open air, rest and graduated exercise.

On admission, patients, after a period of rest in bed, are put on walking exercise, the distance being gradually increased. Afterwards this is supplemented by light ward work. Those who show a satisfactory resistance are then placed on graduated work, beginning with light gardening work and rising to heavier work such as grass cutting and lawn rolling, wheelbarrow work

and digging. Walking exercise is taken round two fields, the circumference of that reserved for women being one-quarter mile, and that for men one-third of a mile. The Hygienic treatment is supplemented, when necessary, by drug treatment. Suitable cases are treated by tuberculin.

Farm.—A poultry farm maintained on the premises supplies many of the eggs required for consumption. Most of the vegetables used in this Institution are also grown in the grounds of the Sanatorium.

Recreation.—The dining hall is set apart for the use of patients every Saturday evening after supper, where whist and other card games are indulged in. A wireless set is in daily use, each bed being provided with a pair of ear phones. There is also a loud speaker in the dining hall. Concerts are arranged about once a month from October to April, given by outside talent, and on many occasions during the winter plays have been staged.

There is also a large bowling green and clock golf green for the men, and a bowling and croquet green for the women.

Canteen.—A canteen has been established in the grounds wherein are sold those articles likely to be used in everyday life.

Education.—The Resident Medical Officer at frequent intervals delivers lectures to the patients on such subjects as "Pulmonary Tuberculosis," "Rules of Health" and "The Care of the Mouth and Teeth." It is hoped that,

on leaving, patients may carry out the instructions given in these lectures and thus minimise the spread of infection in their own homes.

A school, under the guidance of a competent teacher, has been established for patients under 16 years of age. This has been a boon to those children whose state of health has not permitted them to attend the ordinary school at home. No child is allowed to attend school unless certified physically fit by the Resident Medical Officer.

Appended is a table showing the number of admissions, etc., and the number of patient days during the year 1925.

TABLE A—(Nab Top Sanatorium.)

SHOWING THE NUMBER OF ADMISSIONS, ETC., AND THE NUMBER OF 'PATIENT-DAYS DURING THE YEAR 1925.

	Total Adults.		Children under 16.			Totals.		
	Males.	Females	Males.	Females	Both.	Males.	Females	Both.
Number of Patients admitted in 1924 who remained in Sanatorium for some part of 1925	39	33	9	9	18	48	42	90
Number of "Patient days" in 1925 for patients admitted in 1924 and who remained in Sanatorium for some part of 1925....	4383	2737	344	454	798	4727	3193	7920
Total admissions 1925..	198	144	40	30	70	238	174	412
Total discharges 1925...	196	158	37	26	63	233	184	417
Number of "Patient-days" for persons admitted during 1925.	15872	10362	2952	2184	5187	18824	12595	31419
Total number of "patient-days" for 1925.....	20255	13099	3296	2689	5985	23551	15788	39339
Average number of Patients in Sanatorium each day during 1925.	55·1	35·8	9	7·3	16·3	64·1	43·1	107·2

NOTE.—The term "Patient-days" represents the product of the number of patients and the number of days spent by these patients in the Sanatorium.

TABLE B.

PATIENTS DISCHARGED FROM NAB TOP 1925.

	Disease Apparently Arrested.	Much Improved.	Improved.	Stationary.	Worse.	Death.	Total.
ılt Male	13	40	70	53	16	4	196
ılt Females..	5	38	62	40	13	0	158
le Children...	0	4	27	5	1	0	37
naale Children	0	3	19	4	0	0	26
al	18	85	178	102	30	4	417

SECTION IV.

Medical Inspection of Schools.

Staff.

Medical Officer to the Education Committee (Also Medical Officer of Health)	H. Osborne, M.D., M.R.C.S., D.P.H., etc.
Assistant Medical Officers	H. Heathcote, M.D., D.P.H. G. Heathcote, M.B., Ch.B. J. G. McKinlay, M.B., Ch.B., D.P.H. P. D. Connolly, M.B., B.Ch., B.A.O., D.P.H.
School Ophthalmic Officer	J. L. Meynell, M.D., M.R.C.S., D.P.H.
School Dentists	H. Mallinson, L.D.S., F.P.S. A. E. Sherratt, L.D.S., R.C.S. A. V. Littlewood, L.D.S.

SCHOOL NURSES.

Miss L. Hopson (Superintendent).

Miss G. Williams.
,, R. Lee.
,, C. Weir.
Mrs. A. G. Willmott.
Miss M. Moore.
,, A. Hairs.
Miss A. Rowland.
,, J. Barton.
,, H. Elliott.
,, W. M. Mellor.
,, L. Taggart.
,, E. Clements.

Miss E. F. Littlewood.

CLERICAL STAFF.

Mr. J. A. Darbyshire (Senior).

Miss D. M. Barnes.
,, D. Arnold.
,, E. Frieser.
,, E. Barlow.
Miss M. Dutton.
,, D. Leech.
,, V. D. Hepburn.
,, M. Grundy

Miss F. Hodge.

Co-ordination.

(*a*) Infant and Child Welfare.—Medical records are now transferred from the Child Welfare Department to the School Medical Department when children attain school age. As the two Child Welfare Centres at Regent Road and Teneriffe Street are housed in the same buildings as the two School Clinics co-operation of the two departments is further assured.

(*b*) Nursery Schools.—The Child Welfare Medical Officer pays weekly visits to the Nursery School for the purpose of examining the children. The school is also visited by the School Nurses.

(*c*) Debilitated Children under school age are dealt with in the Child Welfare Department.

School Hygiene.

Broadly speaking, we can hope for no material improvement until the present type of school building has been replaced by structures built more on the lines of Open-Air Schools, or some of the up-to-date Special Schools, where classrooms are open on one side at least to the outer air.

If such provision has proved of marked benefit to the *ailing* child, why should it be withheld from the *normal* child ?

The present provision is much to be condemned, inasmuch as the cases of glandular tuberculosis with which we fill our Open-Air Schools are, in the first place,

often developed under the unhealthy conditions experienced in the ordinary Elementary Schools.

With regard to the new schools at present under contemplation, it will be the Committee's policy to provide classrooms on the lines of the Open Air Schools, where the character of site and other conditions permit.

As regards sanitation the schools were regularly visited by the Sanitary Inspectors, who have paid altogether 184 visits. Improvement in the sanitary condition of outside offices, yards, etc., has been maintained.

Sanitary Inspectors' Visits to Schools		184
Defects Found		50
Wall being fouled	2	
Downspouts defective	4	
W.C.'s defective.....	17	
Yard gully choked	3	
Yard surfaces out of repair	5	
Flushing cisterns defective	9	
Channel pipe broken	1	
Urinal gullies defective	2	
Ash accommodation defective	7	
		50

Routine Medical Inspection.

School doctors visit the whole of the Elementary Schools of the Borough for the purpose of medical inspection.

The Routine Inspection comprises three age groups of children, namely, children of five years, eight years

and twelve years of age ; these are the "Code Groups" examined every year, so that each child should be medically examined at least three times during its school career.

(*A*) Routine Medical Inspection in the Schools by the Medical Inspectors.

The arrangements for routine medical inspection are as follows :—

Each school is notified some weeks in advance of medical inspection, the Head Teacher receiving a form requesting a return of the numbers of children of the three Code Groups on the Register. A further notification of the actual date of inspection is later forwarded to the teacher, the notification being accompanied by printed forms for the invitation of parents to be present at the inspection. These invitation forms give the hour as well as the date of inspection, and so obviate unnecessary waiting of parents on the school premises.

At each inspection the Medical Officer has the assistance of a School Nurse.

The School Nurse weighs and measures the children, tests vision with the ordinary types, and loosens the child's clothing for the doctor.

As the clerical staff has been reduced in the interests of economy, the School Medical Inspectors now enter all details of medical inspection on the cards in the schools.

Parents present at the inspection are, of course, notified directly of any defect discovered, and they are advised as to the necessary treatment.

The work of following up by Attendance Officers has now been replaced by re-examination of such cases by the Medical Inspector at the Inspection Clinic, and also by home visits carried out by the School Nurses.

(*B*) Inspection in the Schools by Nurses.

One of the most important duties of the School Nurse is to visit the schools for the purpose of "cleanliness inspection."

On such occasions the whole of the children in attendance at a given school are submitted to inspection by the School Nurse, all heads being rapidly examined for Pediculosis, and in suspected cases the bodies also. A classification of the children's heads is made :—

A.—Signifying freedom from vermin or nits.
B.—The presence of a few nits only.
C.—The presence of a large number of nits or live verm'n.

Class B children are given marked cards with warning and instructions, but are not excluded from school.

Class C children are given marked cards and are also excluded from school for 24 hours, when they are re-examined by the Nurse. In the latter case if it is found that the warning has been neglected, verminous notices are issued and the case dealt with according to Section 122 of the Children's Act, 1908.

At the present time the aim is to submit every school in the Borough to "cleanliness inspection" three times during the year. This means, in practice, the inspection of every school for this purpose during the period—

(*a*) From the beginning of the year to Easter ;
(*b*) from Easter to the Midsummer Holidays ;
(*c*) from the Midsummer Holidays to the end of the year.

This aim has been accomplished during the past year, when 100,283 "cleanliness inspections" were carried out by the School Nurses.

Subsequent to the visits of the Nurses to the schools for "cleanliness inspection," the schools are notified of the results of such inspection, and a notice is posted up showing the number of children classified A, B and C. This procedure is believed to have a stimulating effect.

In addition to periodical visits for "cleanliness inspection," special visits are paid by the Nurses at the request of the teacher for the specific purpose of examining children suspected of harbouring vermin or of suffering from contagious skin disease, &c.

Again, the Nurses visit schools during epidemic outbreak, and in this connection the Nurse with special fever training and experienced in throat examinations is useful.

(*C*) The Inspection Clinic.

Three Medical Officers now attend each afternoon, and one each morning, for the purpose of examining "special cases." These include—

(1) Cases referred by the Medical Officers themselves in the course of routine medical inspection in the schools.

(2) Cases referred by School Nurses from the schools.

(3) Cases referred by School Teachers.

(4) Cases referred by the Attendance Officers.

(5) Cases in which medical examination is requested by the parents.

With reference to these examinations it is necessary to issue a fixed number of invitations for each session, the number varying according to the type of case, otherwise the Medical Officers would be overwhelmed on some occasions.

The Inspection Clinic serves a number of purposes.

First of all, it serves as a clearing house for children referred from different sources. For instance, cases with defects are advised as to the necessity for treatment, and are sent to the family doctor where such exists. Otherwise, cases are sent to one of the Voluntary Hospitals, or are dealt with under the Local Authority's scheme: needy cases requiring operation are referred to hospital, minor ailments are sent to the Minor Ailments Clinic, oral sepsis to the Dental Clinic, visual defects to the Eye Clinic, and scalp ringworm to the X-Ray Clinic.

Secondly, the Inspection Clinic serves as a Court of Appeal for children booked by the Attendance Officer for absence from school on the grounds of alleged ill-health.

Thirdly, it plays a great part in the "following up" of cases referred for treatment, especially where such is not obtained under the Local Authority's scheme, invitation to attend the Inspection Clinic for re-examination

being issued a certain period after the recommendation for treatment. Here the "following up" is done by the Medical Officer himself.

Fourthly, the Inspection Clinic serves for the examination and grading of exceptional children, such as mentally defective.

Fifthly, it serves as a discharging centre for cases previously excluded on medical grounds. For instance, no case of scalp ringworm once excluded from school may be re-admitted until officially discharged and certified "fit for school" by the School Medical Officer.

During the year 1925 the total number of examinations of children at the Inspection Clinic was 19,474.

Findings of Medical Inspection.

Uncleanliness.

Children's heads and bodies were examined for pediculosis on the occasion of the Nurses' visits to schools, when children of all ages were submitted to examination.

The number of children examined by the Nurses in the elementary schools totalled 100,283.

The Nurses have been able to visit all the schools in the Borough on three separate occasions during the year for the purpose of "cleanliness inspection," and the standard of cleanliness now adopted is very strict.

Tables showing prevalence of pediculosis are hereby appended :—

TABLES SHOWING PREVALENCE OF PEDICULOSIS IN DEPARTMENTS WHERE ALL THE SCHOLARS PRESENT WERE EXAMINED BY THE SCHOOL NURSES.

INFANTS' DEPARTMENTS.

	BOYS.					GIRLS.				
	No. examin'd	Heads. *A.	Heads. B.	Heads. C.	Verminous bodies.	No. examin'd	Heads. *A.	Heads. B.	Heads. C.	Verminous bodies.
(A) Aggregate Numbers ..	15958	14982	838	138	59	16523	9957	5559	1007	30
(B) Percentages ..	—	93·88	5·25	·87	—	—	60·26	33·64	6·10	—

UPPER DEPARTMENTS.

	BOYS.					GIRLS.				
	No. examin'd	Heads. *A.	Heads. B.	Heads. C.	Verminous bodies.	No. examin'd	Heads. *A.	Heads. B.	Heads. C.	Verminous bodies.
(A) Aggregate Numbers ..	34542	32966	1299	277	193	33260	19878	11559	1823	83
(B) Percentages ..	—	95·44	3·76	·80	—	—	59·76	34·75	5·49	—

* Heads A—Where neither vermin nor nits are present.
B—Containing a small number of nits only.
C—Containing live vermin or numerous nits.

The accompanying table shows the work done under Section 122 of the Children Act, 1908 :—

BOYS.					GIRLS.				
Number of Cleansing Notices Served.	Hair Cut. By Nurse.	Hair Cut. By Parent.	Cleansed at Mode Wheel Disinfecting Station.	Cleansed at Home.	Number of Cleansing Notices Served.	Hair Cut. By Nurse.	Hair Cut. By Parent.	Cleansed at Mode Wheel Disinfecting Station.	Cleansed at Home.
203	13	77	19	83	1364	871	422	10	9

Tonsils and Adenoids.

In routine cases 635 were found to be suffering from enlarged tonsils or adenoids, or both, whilst in addition 959 special cases were found with the same condition. As in previous years it was found that a number of cases of enlarged tonsils were temporary in character, the condition disappearing in a short period of time, thus emphasising the importance of re-examining all these cases after an interval of a month or so before deciding on surgical measures.

Tuberculosis.

Amongst the inspection cases there were 407 children diagnosed as suffering from tuberculosis, 80 being fairly definite, and 327 suspected cases. At the same time there were very few advanced cases of phthisis, the majority being probably chiefly confined to the bronchial or mediastinal lymphatic glands and giving rise to indefinite physical signs, although the children were obviously suffering from the effects of toxic absorption, such as languor, anorexia, loss of flesh, night sweats, etc. The majority of such children are adversely affected by compulsory attendance at an ordinary school.

The Committee have fully realised the necessity for further Open-Air School provision, and there are now in the Borough two Open Air Schools for the reception of delicate children.

Ringworm.

Cases of ringworm are notified by Teachers and Attendance Officers, as well as by the Medical Inspection Staff. All cases are invited to attend periodically at the

Centre for inspection, and no child who has been known to have ringworm is allowed to return to school without a certificate from the Medical Officer.

During the year 1925, 111 new cases of scalp ringworm and 98 cases of body ringworm have been under supervision at the Inspection Clinic, and the total number of examinations in these cases amounted to 672.

Alopecia.

There have been 133 new cases under supervision at the Inspection Centre, with a total of 493 examinations.

The practice of exclusion of these cases until disappearance of alopecia stumps and appearance of new hair growth over the affected patches has been continued.

The Treatment of Alopecia by the High Frequency Current.

The use of the high frequency current has been continued during 1925. The children are now instructed to attend three times a week, as owing to other demands on the nurses' time, it has been found impossible to give the treatment daily, as in 1924. The high frequency current ($\frac{1}{4}$ inch spark) is given for five minutes, which is sufficient to produce a slight reddening of the affected area. The application is painless. All other treatment, *e.g.*, lotion, is stopped while the child is being treated by the high frequency current.

Eleven boys and four girls were under treatment in 1925. Six of the boys have been discharged as cured,

three show improvement, one has left the district, and the eleventh does not yet show any improvement.

Two of the four girls show improvement, one (a five year old) has been unable to continue attendance, and one shows no improvement.

The average duration of treatment by the high frequency current, for the six cases discharged as cured, has been four months, and these cases had been under lotion treatment for an average of ten months prior to the high frequency current being used, which suggests that the high frequency current is of considerable value in the more obstinate type of case.

Eczema, Impetigo and Sores.

The number of new cases of these diseases under observation during the past year was 2,197, and the number of examinations 5,364.

Scabies.

There were 60 cases under supervision and 161 examinations.

External Eye Disease.

The bulk of the cases of external eye disease found on inspection, as usual, proved to be conjunctivitis or blepharitis of a fairly mild type.

There have been no serious outbreaks of ophthalmia in any of the schools. The practice adopted is to exclude every case of conjunctivitis in which there is possibility of infection.

Vision.

Routine medical inspection in the case of the eight-year-old group and twelve-year-old group includes the testing of vision by means of the usual types at a distance of six metres. Children whose distant vision is represented by 6/18 or worse, also any children who appear to be suffering from the effects of eye strain, or children of five years suffering from strabismus are all referred for examination at the Refraction Clinic by the Eye Specialist.

During the year under consideration, 1,273 cases have been referred for examination at the Refraction Clinic.

Ear Disease and Hearing.

The great majority of cases of ear disease met with in routine inspection are children suffering from suppurating discharge from the middle ear. These are the cases which in the old days were generally allowed to go untreated, and they often became very offensive for want of attention.

Eight hundred and eighty-eight cases were met with by the Medical Inspectors and most of these were dealt with at the School Clinic.

Dental Defects.

The following tables show (*a*) the number of sound and decayed teeth (both temporary and permanent) and (*b*) the actual state of teeth and gums, and the grinding capacity; (*c*) the actual number of decayed teeth, *per child*, among the children examined by the School Dentists.

TABLE A.

ROUTINE DENTAL INSPECTION.

	Age.	Number examined.	Temporary Teeth.				Permanent Teeth.			
			Number present.	Average per child.	Number decayed	Average per child.	Number present.	Average per child.	Number decayed.	Average per child.
Boys	6	841	15124	17·98	5388	6·41	2579	3·07	196	·23
	7	854	12651	14·81	5133	6·01	5788	6·78	503	·59
	8	957	10883	11·37	5142	5·37	9714	10·15	977	1·02
	9	660	5949	9·01	2842	4·31	8502	12·88	760	1·15
	10	852	5496	6·45	2737	3·21	13101	15·38	1159	1·36
	11	856	3302	3·86	1719	2·01	16002	18·69	1392	1·63
	12	729	1473	2·02	884	1·21	16119	22·11	1328	1·82
	13	377	354	·94	204	·54	9172	24·33	798	2·11
	14	25	13	·52	8	·32	644	25·76	59	2·36
	Total ...	6151	55245	8·98	24057	3·91	81621	13·27	7172	1·17
Girls	6	867	15113	17·43	5386	6·21	3464	3·99	238	·27
	7	807	10914	13·52	4662	5·77	6626	8·21	557	·69
	8	867	9307	10·73	4267	4·92	9410	10·85	925	1·07
	9	771	6275	8·14	2938	3·81	10693	13·87	956	1·24
	10	812	4280	5·27	2017	2·48	14012	17·25	1141	1·40
	11	777	2065	2·65	1164	1·49	16349	21·04	1400	1·80
	12	621	785	1·26	435	·70	14413	23·21	1281	2·06
	13	356	245	·69	139	·39	9168	25·75	812	2·28
	14	12	2	·16	2	·16	319	26·58	39	3·25
	Total ...	5890	48986	8·32	21010	3·57	84454	14·34	7349	1·25
Boys and Girls ..	Total ...	12041	104231	8·66	45067	3·74	166075	13·80	14521	1·21

TABLE B.

Routine Dental Inspection.

	Age.	Number examined.	State of Teeth.			Condition of Gums.			Grinding Capacity.			Temporary Teeth.		Permanent Teeth.			Hypoplastic.
			Clean.	Fairly clean.	Dirty.	Healthy	Inflamed.	Septic.	Good.	Average.	Bad.	Sound.	Decayed	Sound.	Decayed.		
															Saveable	Unsaveable	
Boys	6	841	547	273	21	440	190	211	124	665	52	9736	5388	2383	158	38	42
	7	854	567	275	12	448	193	213	76	737	41	7518	5133	5285	379	124	100
	8	957	572	364	21	464	236	257	58	850	49	5741	5142	8737	645	332	194
	9	660	440	211	9	397	138	125	20	615	25	3107	2842	7742	462	298	204
	10	852	482	354	16	524	190	138	58	741	53	2759	2737	11942	634	525	314
	11	856	522	319	15	586	172	98	68	750	38	1583	1719	14610	761	631	234
	12	729	415	301	13	528	142	59	85	621	23	589	884	14791	736	592	160
	13	377	212	161	4	283	78	16	75	291	11	150	204	8374	452	346	81
	14	25	8	12	5	17	6	2	9	15	1	5	8	585	34	25	..
	Total	6151	3765	2270	116	3687	1345	1119	573	5285	293	31188	24057	74449	4261	2911	1329
Girls	6	867	580	270	17	492	154	221	135	688	44	9727	5386	3226	211	27	49
	7	807	541	254	12	405	185	217	71	707	29	6252	4662	6069	445	112	131
	8	867	544	308	15	472	200	195	74	741	52	5040	4267	8485	647	278	191
	9	771	517	248	6	476	157	138	47	676	48	3337	2938	9737	623	333	239
	10	812	500	299	13	532	156	124	88	665	59	2203	2017	12871	616	525	198
	11	777	459	306	12	521	192	64	96	643	38	901	1164	14949	747	653	158
	12	621	394	219	8	454	131	36	116	487	18	350	435	13132	684	597	249
	13	356	211	139	6	272	70	14	94	254	8	106	139	8356	457	355	84
	14	12	6	5	1	8	4	..	3	7	2	..	2	280	24	15	..
	Total	5890	3752	2048	90	3632	1249	1009	724	4868	298	27976	21010	77105	4454	2895	1299
Boys & Girls	Total	12041	7517	4318	206	7319	2594	2128	1297	10153	591	59164	45067	151554	8715	5806	2628

TABLE C.—Routine Dental Inspection.

Table showing Number of Decayed Teeth among School Children Examined in the School by School Dentists during the Year 1925.

Number of Decayed Teeth.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 and upwards.	Total No. of Decayed Teeth.	Total No. of Children.
Boys aged 6—																							
Aggregate No. of Children	42	21	85	54	83	79	77	64	78	60	52	36	32	28	19	10	14	3	1	3	..	5584	841
Percentages	4·99	2·49	10·11	6·42	9·87	9·39	9·15	7·61	9·27	7·13	6·19	4·28	3·81	3·33	2·26	1·19	1·67	·36	·12	·36	..	..	100·00
Girls aged 6—																							
Aggregate No. of Children	50	28	68	59	100	84	88	69	64	64	48	45	29	24	16	10	10	5	5	..	1	5624	867
Percentages	5·76	3·23	7·84	6·80	11·53	9·69	10·15	7·96	7·39	7·39	5·54	5·19	3·34	2·77	1·84	1·15	1·15	·58	·58	..	·12	..	100·00
Boys aged 7—																							
Aggregate No. of Children	41	20	57	80	77	87	81	91	77	65	43	29	36	24	16	14	7	6	3	..	..	5636	854
Percentages	4·80	2·34	6·67	9·36	9·02	10·19	9·48	10·66	9·02	7·61	5·04	3·40	4·22	2·81	1·87	1·64	·82	·70	·35	..	..	..	100·00
Girls aged 7—																							
Aggregate No. of Children	22	23	46	68	97	88	107	79	72	58	34	40	21	19	14	7	7	3	2	..	..	5219	807
Percentages	2·73	2·85	5·70	8·43	12·02	10·90	13·26	9·79	8·92	7·19	4·21	4·96	2·60	2·36	1·73	·86	·86	·38	·25	..	..	..	100·00
Boys aged 8—																							
Aggregate No. of Children	22	29	71	82	99	121	104	87	89	64	73	40	32	18	12	6	6	1	..	..	1	6119	957
Percentages	2·30	3·03	7·42	8·57	10·34	12·64	10·87	9·09	9·30	6·69	7·63	4·18	3·35	1·88	1·25	·63	·63	·10	..	..	·10	..	100·00
Girls aged 8—																							
Aggregate No. of Children	30	23	73	91	101	87	94	97	90	58	44	30	24	5	10	4	1	4	..	1	..	5192	867
Percentages	3·46	2·65	8·42	10·50	11·65	10·04	10·84	11·19	10·38	6·69	5·07	3·46	2·77	·58	1·16	·46	·11	·46	..	·11	..	..	100·00
Boys aged 9—																							
Aggregate No. of Children	26	32	54	79	85	81	75	62	56	42	23	23	11	5	4	..	1	..	1	..	..	3602	660
Percentages	3·95	4·85	8·18	11·97	12·88	12·27	11·36	9·39	8·48	6·36	3·48	3·48	1·67	·75	·61	..	·16	..	·16	..	..	..	100·00
Girls aged 9—																							
Aggregate No. of Children	31	53	75	99	96	110	80	69	63	35	20	22	11	1	3	1	1	..	1	..	..	3894	771
Percentages	4·02	6·87	9·73	12·84	12·45	14·27	10·37	8·95	8·17	4·54	2·59	2·85	1·43	·13	·40	·13	·13	..	·13	..	..	..	100·00
Boys aged 10—																							
Aggregate No. of Children	43	71	121	111	104	125	83	59	46	37	17	16	9	3	3	2	2	..	..	..	..	3896	852
Percentages	5·05	8·33	14·20	13·03	12·21	14·67	9·74	6·93	5·39	4·34	1·99	1·88	1·06	·36	·36	·23	·23	..	..	..	..	..	100·00
Girls aged 10—																							

Number of Decayed Teeth.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 and upwards	Total No. of Decayed Teeth.	Total No. of Children.
Boys aged 11—																							
Aggregate No. of Children	55	110	158	136	132	87	73	43	14	28	13	5	..	2	..	..	..	..	..	..	..	3111	856
Percentages	6·42	12·84	18·45	15·89	15·42	10·17	8·53	5·02	1·64	3·28	1·52	·59	..	·23	..	..	..	..	..	..	..	..	100·00
Girls aged 11—																							
Aggregate No. of Children	79	107	143	120	122	79	57	24	21	11	7	5	..	2	..	..	..	..	..	..	..	2564	777
Percentages	10·17	13·77	18·40	15·44	15·70	10·17	7·34	3·09	2·70	1·41	·90	·65	..	·26	..	..	..	..	..	..	..	..	100·00
Boys aged 12—																							
Aggregate No. of Children	96	117	121	127	102	68	43	19	18	5	6	4	1	..	2	..	..	..	..	..	..	2212	729
Percentages	13·14	16·05	16·60	17·42	14·00	9·33	5·90	2·61	2·47	·69	·82	·55	·14	..	·28	..	..	..	..	..	..	..	100·00
Girls aged 12—																							
Aggregate No. of Children	113	91	106	101	76	62	39	13	12	6	1	1	..	..	..	..	..	..	..	..	..	1716	621
Percentages	18·20	14·66	17·07	16·26	12·24	9·99	6·28	2·09	1·93	·96	·16	·16	..	..	..	..	..	..	..	..	..	..	100·00
Boys aged 13—																							
Aggregate No. of Children	58	68	78	56	47	36	15	7	7	3	2	..	..	..	..	..	..	..	..	..	..	1002	377
Percentages	15·38	18·04	20·69	14·85	12·47	9·55	3·98	1·86	1·86	·79	·53	..	..	..	..	..	..	..	..	..	..	..	100·00
Girls aged 13—																							
Aggregate No. of Children	66	58	60	52	49	37	17	10	3	1	2	1	..	..	..	..	..	..	..	..	..	951	356
Percentages	18·54	16·30	16·86	14·61	13·76	10·39	4·77	2·81	·84	·28	·56	·28	..	..	..	..	..	..	..	..	..	..	100·00
Boys aged 14—																							
Aggregate No. of Children	4	4	6	2	6	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	67	25
Percentages	16·00	16·00	24·00	8·00	24·00	..	4·00	4·00	4·00	..	..	..	..	..	..	..	..	..	..	..	..	..	100·00
Girls aged 14—																							
Aggregate No. of Children	1	1	3	1	2	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	41	12
Percentages	8·33	8·33	25·00	8·34	16·66	25·00	..	..	8·34	..	..	..	..	..	..	..	..	..	..	..	..	..	100·00
TOTAL Boys and Girls—																							
Aggregate No. of Children	839	953	1458	1432	1489	1321	1113	840	749	560	399	303	210	131	99	54	49	22	13	4	3	59588	12041
Percentages	6·96	7·91	12·11	11·89	12·37	10·97	9·24	6·98	6·22	4·65	3·31	2·52	1·74	1·09	·83	·45	·41	·19	·11	·03	·02	..	100·00

Average No. of Decayed Teeth per Child—**4.95.**

Crippling Defects.

Amongst the Code Group cases 36 children were referred for treatment on account of rickets.

Infectious Disease.

A system of notification is in force whereby the Head Teachers forward to the Medical Officer of Health particulars of the cause of absence from sickness of the children attending their schools. These returns are sent in weekly, and are classified in the following table :—

RETURN OF SICKNESS IN SCHOOLS DURING THE YEAR 1925

Notifiable Diseases.	Measles.	Whooping Cough.	Chicken Pox.	Mumps.	Ringworm.	Ophthalmia.	Sore Throat.	Bronchitis and Pneumonia.	Colds.	Other Diseases.
553	1630	953	1771	472	191	216	3793	2452	27629	13760

Following Up.

The work of following up has been carried out by (*a*) the School Medical Officers, and (*b*) School Nurses.

A large number of cases seen in the schools during the course of routine inspection are referred to the Inspection Clinic for further examination at a later date.

Formerly " Home Visits " for the purpose of following up were carried out almost entirely by the Attendance Officers. The School Nurses, however, are now undertaking this work. During the last year they paid over 701 home visits.

Medical Treatment.

A number of defects requiring treatment are dealt with under the Local Authorities' Scheme. This

includes :—(1) The treatment of Minor Ailments at the School Clinic ; (2) The treatment of scalp ringworm at the X-Ray Clinic ; (3) The treatment of Alopecia by the High Frequency Current ; (4) the treatment of Dental defects at the Dental Clinic ; (5) the treatment of visual defects at the Eye Clinic ; and (6) the surgical treatment of tonsils and adenoids at the Salford Royal Hospital.

The Minor Ailments Clinic.

During the past year 1,841 new cases were treated at the Minor Ailments Clinics, Regent Road, Teneriffe Street and Police Street, and the attendances of patients totalled 35,310. The cases which received treatment were those who would otherwise have received little or no attention, such as chronic ear discharge, chronic nasal discharge, often accompanied by impaired hearing ; skin diseases such as tinea, alopecia, eczema, impetigo, sores and septic conditions, and such common external eye diseases as conjunctivitis and blepharitis.

It is found that the great majority of these cases rapidly improve under thorough treatment, and, as a rule, even the bad cases are soon able to resume school.

The treatment is carried out by the School Nurses under the direction of the Medical Officers.

Two School Nurses attend the Regent Road Clinic each morning, one attends the Teneriffe Street Clinic each afternoon and one attends the Police Street Clinic each morning.

All cases attending the Clinic are first examined either at the Inspection Clinic or at school by the Medical

Officers, who issue cards authorising the child's attendance at the Treatment Clinic.

The cards show the doctor's diagnosis and instructions for treatment, and the date of attendance is stamped thereon for the information of the teacher. No child is treated at the Minor Ailments Clinic unless first authorised and given a card by the Medical Officer, otherwise the Nurses would be quickly overwhelmed.

The following table shows the number of new cases and attendances up to December 31st, 1925 :—

	Boys.	Girls.	Total.
New Cases	975	866	1841
Attendances	19565	15745	35310

Tonsils and Adenoids.

The Education Committee have an arrangement for the surgical treatment of these cases at the Salford Royal Hospital.

A list of cases considered suitable for operation is submitted to the hospital. After operation, children are re-examined at the Inspection Clinic by a School Medical Officer.

A charge of 25s. is made by the hospital for each case operated upon, and a portion of this charge is recovered from parents who can afford to contribute towards the cost; 301 cases have been successfully operated on during the year.

Tuberculosis.

Children found to be suffering from definite tuberculosis are generally referred for treatment to the Tuberculosis Department. A certain number of children

suffering from suspected tuberculosis are dealt with at the Open Air Schools.

Skin Disease.

Ringworm.—The X-Ray Clinic.

The very efficient X-Ray apparatus for the treatment of ringworm was installed early in the year 1913.

From the beginning this Clinic has been highly successful in coping with the large amount of scalp ringworm of an obstinate type formerly prevalent in the Borough.

It was generally found necessary to epilate the whole scalp in each case according to the five-exposure method of Kienböck. By this method the whole of the scalp is exposed at one sitting of approximately two hours, epilation being complete by about the end of the third week.

After X-Ray application the children are allowed to return to school, wearing a cap, as soon as epilation is complete and no ringworm stumps remain in the scalp.

A nominal charge of 5s. per child treated is made to the parent.

X-Rays have been administered to 36 cases of scalp ringworm during the year. Thirty-four cases were certified fit at the end of December.

Of the above 36 cases, it was necessary to epilate the whole scalp in 29 cases, one patch in 6 cases, and two patches in 1 case.

Number of re-examinations after X-Rays, 214.

The children were fit to return to school again, on the average, seven weeks after the application of the Rays.

On the other hand the 36 cases cured without the application of X-Rays were only fit to return to school on the average 20 weeks after the commencement of treatment, some cases taking as long as one and a-half years, and the large majority several months.

It may be too much to hope that the disease will ever be entirely eradicated, but compared with the prevalence of the disease before the provision of X-Ray treatment, the number of cases of scalp ringworm met with at the present time is small indeed.

Eczema, Impetigo and Sores.

A large number of such cases are now being dealt with very successfully at the School Clinics, and many obstinate cases of impetigo are returned to school after a few days' treatment.

Scabies.

Cases are now treated daily by the School Nurses at the Mode Wheel Disinfecting Station, and the children are first given a warm bath, after which the appropriate remedies are applied. In most of these cases the bedding is also disinfected. It is found that this treatment very considerably shortens the duration of the disease.

Ear Disease and Hearing.

Cases of ear disease and defective hearing are generally kept under observation by the School Doctor at the Inspection Clinic, and many of these receive treatment at the School Clinic. This treatment includes the daily syringing, etc., of cases of otorrhœa and also the giving of nasal douches where the impaired hearing is due to catarrh and obstruction of the nasal passages.

Dental Clinic.

The School Dentists, as in previous years, devoted most of their time to conservative dental treatment of the first permanent teeth (six-year old molars). Actual dental inspection in the schools was carried out on six mornings per week, the remainder of the week being occupied with the treatment of defects found in the course of this inspection.

The attendance of the children at the Clinics has been extremely good, very few of them failing to keep their appointments.

Altogether 4,358 children were treated at the Dental Clinics, making 7,013 attendances. There were 6,224 extractions of teeth, 3,087 fillings, 221 dressings and 789 scalings.

The tables on pages 14–17 show in detail the work carried out during the year 1925.

Owing to the impossibility of undertaking dental treatment for all school children in the Borough with the present staff of three, the School Dentists now confine their activities to a limited number of schools, the most needy being selected. This arrangement allows the School Dentists to follow up the cases already treated, and so keep the mouths of the children in order.

Crippling Defects.

A number of children suffering from well-marked ricketty and certain other deformities are very successfully dealt with at the Greengate Dispensary under the supervision of Dr. Mumford. The children so treated are resident in the institution for a period.

The Committee are agreed that the provision of a day school to accommodate 100 crippled children is a necessity. During the year the Committee acquired a piece of land adjoining Buile Hill Park which it was thought might be utilised as a site for a Cripple School.

On further consideration it was realised that a considerable amount of money would have to be expended in preparing this site, which again was not quite as open as it might be.

The Committee are therefore in negotiation with the Parks Committee with a view to effecting an exchange for a more level and more open plot of ground, which would be eminently suitable for the purpose.

Heart and Circulation.

In all well-marked cases of heart disease, the parents were interviewed and warned of the defect, and the children were referred for further examination in three months' time. The teachers were also warned of such defects and advised as to the child's fitness for drill or otherwise.

The Refraction Clinic.

Dr. Meynell's report is herewith appended :—

REPORT OF THE OPHTHALMIC CLINIC, SALFORD EDUCATION COMMITTEE.

During the past year the work of the Committee's Ophthalmic Clinic has been extended to embrace certain duties under the Blind Persons' Welfare Act. Now the whole of the certification in Salford, under this Act, is undertaken.

Previously this certification was in the highest degree unsatisfactory, mainly due to the divers standards adopted by certifying surgeons. The recent issue by the Ministry of Health of a standard

acceptable by it would no doubt have amended this: but the taking over of these duties by a central authority is perhaps the better solution.

The routine work of the Clinic can be gauged by a study of the accompanying table. In interpreting the figures, however, it should be understood that each case is examined fully twice, once objectively under a mydriatic, and again subjectively at a week's interval. Superficial re-examinations would make the figures assume imposing proportions with little extra work.

It is desirable that the standard adopted at the Clinic should be clearly defined and the principles on which they are based stated.

Spectacles should be provided for school children for two definite purposes: firstly where vision falls below a certain standard they should be given to enable the child to benefit to a greater extent by the eduction provided at the public expense, secondly, where vision is not reduced but calls for such effort on the part of the child as to impair his general health, reduce his ability to concentrate, and adversely affect his later economic value. There can be no other reason for spending public money on the provision of spectacles.

Broadly speaking there are three classes of visual defect to be dealt with, hypermetropia or long sight, myopia or short sight, and astigmatism or irregular sight.

In hypermetropia vision is usually good but is exercised at the expense of effort. In low grade hypermetropia the effort needed is negligible, is attended by no symptom of strain, and relief is not obtained by the use of glasses. But should the child be in a poor state of health the possessor of an ill-balanced nervous system, the effort demanded by a very small error might be more than he could support. High-grade hypermetropes, it is quite obvious, need the assistance of glasses.

Visual acuity gives but little assistance in the detection of cases needing attention. It is due largely to the co-operation of parents and teachers that these cases are brought to notice and treated.

Hypermetropia varies little with the passage of years. In only one case examined at the Clinic has a marked difference between the first and second observations been noted, and in that case the mydriatic was not above suspicion.

Given then parents and teachers who are watchful and interested, re-examinations except at their instigation are wasteful and are productive of no good.

In myopia visual acuity is always reduced, and when reduced below a certain standard, is insufficient for the easy acquisition of education. Myopia is seldom found except in the children or grandchildren of myopes. It is the one refractive error that calls for repeated estimation, for as the child grows the myopia increases, the growth and the increase being dependent variables. Authorities still offer close work as an explanation for myopia, and glasses are given for the purpose of limiting the progress of the condition. They succeed when growth has ceased and other factors are absent.

Astigmatism is productive of both reduction of acuity and symptoms of strain. Very rarely can it be allowed to go uncorrected.

Squints are muscular imbalances, and can be benefitted—perhaps cured—if seen sufficiently early. Almost always three conditions are present, associated with them apparently in casual relationship. In the first place there is a refractive error, which can be and is corrected by glasses; in the second place there is an unstable nervous system, with which no organised attempt is made to deal; and lastly there is an exciting cause, mental or physical such as fright or an exhausting illness. Generally speaking children under six years of age should be given glasses and orpthoptic exercises suitable to the circumstances of the parents. But each case needs treating on its merits—for instance an intermittent squint should have treatment at whatever age it is discovered.

The preliminary use of a cycloplegic is necessary for the examination of children. The necessity arises from the very active accommodation possessed by the young, an activity which is abolished by the use of drops containing one or other of these substances. In refraction an estimation is made of certain physical quantities possessed by the eye under examination. When these quantities are in a state of flux, as is the case when a cycloplegic is not used, it is obvious that the estimation cannot be uniformally accurate. A perfect cycloplegic would enable the observer to examine the eye in a state of rest. Unfortunately no cycloplegic is perfect. In some Clinics atropine is used. To produce complete cycloplegia by means of this drug it is necessary to instil drops containing it for several days; and the effect lasting a fortnight would result, in Salford, in the loss of over 2,000 school weeks per year. Homatropine, which is used at this Clinic, is quick in action and the effect passes with equal speed, so that the child is fit to return to school the following day. The state of passivity induced is however only partial, so that an error of at

least 2 dioptres is possible. (I have never found more than two dioptres of accommodation present after the use of homatropine, other observers have found as much as four.) Other drugs are similar in action to homatropine, and possess its deficiencies. All cycloplegics by dilating the pupil bring within the field of examination the peripheral zones of the lens, that are ordinarily unused, and if these zones have a different focal length, as they frequently do, to that of the centre, some error is probable. The perfect cycloplegic would act quickly, its effect would pass off without delay, it would produce perfect passivity of accommodation, and it would leave the pupil of average size. Homatropine is used at Salford because it produces a moderate passivity, its effect passes quickly, and the resulting refraction when properly interpreted leads to an accuracy sufficient for practical purposes.

Finally, as to the standard of vision demanded, children whose vision falls below 6/12 with the better eye and who see less than J.2. are deemed to have insufficient vision for the purposes of education. Children who in spite of good vision have symptoms of strain, headaches, wrinkling of the facial muscles on attempting to read or sew, or who assume faulty positions at close work should be examined. Then all cases of squint below the age of six years, and certain cases at any age

TABLE S IVa.

SUMMARY OF CASES SEEN BY THE OPHTHALMIC OFFICER AT THE EDUCATION OFFICE DURING THE YEAR 1925.

A.—REFRACTIONS.

	Boys.	Girls.	Total.
Hypermetropia	118	81	199
Hypermetropic Astigmatism	36	37	73
Compound Hypermetropic Astigmatism	221	208	429
Myopia	48	64	112
Myopic Astigmatism	7	5	12
Compound Myopic Astigmatism	41	67	108
Mixed Astigmatism	56	92	148
Anisometropia	9	11	20
Nil	108	108	216
TOTALS	644	673	1317

TABLE S IVa.—*Continued.*

B.—Diseases of the Eye.

	Boys.	Girls.	Total.
Muscle Disorders—			
Nystagmus	3	4	7
Squint	106	66	172
Disease of the Conjunctivæ and Lids—			
Conjunctivitis	20	26	46
Blepharitis	3	1	4
Disease of the Cornea—			
Keratitis (active)	7	12	19
Nebulæ	8	9	17
Disease of the Lens—			
Cataract	2	3	5
Disease of the Uveal Tract—			
Retinitis Pigmentosa	..	1	1
Disease of the Optic Nerve—			
Retrobulbar Neuritis	3	3	6

Open-air Schools.

David Lewis.

This Day School was opened on the 28th August, 1916, in the open shed and premises in the David Lewis Recreation Ground. The staff consists of a head teacher with two assistants.

Barr Hill.

This school which provides accommodation for 100 delicate children, was opened on the 30th May, 1924.

The school is built on an elevated site, standing well above the valley, and its open front looks due south. The plan resembles the letter "E" with the middle tongue missing, the central portion being a shed left permanently open to the south, and windowed to the north. One projecting wing comprises two classrooms, and the other wing the administrative portion, including kitchen and cloakroom. The classrooms, by means of folding glass doors, can be opened to the east, south and west, but are permanently closed to the north.

Delicate children from 6 to 14 years of age, are admitted, and are daily conveyed to and from the school, free of charge, by a service of special tramcars.

Children arrive at school at 9 o'clock a.m. and remain the whole day, leaving at 6 o'clock p.m. during the summer, and 4-30 p.m. in the winter.

The staff consists of a head teacher and three assistants.

The children admitted to the Open Air Schools, are selected by examination by the Medical Staff, and the parents are urged to get any defects, such as enlarged tonsils and adenoids, or decayed teeth, remedied, before admission to the schools.

No children are admitted who are considered likely to be a source of infection to others.

The school nurse attends each school daily, the children are weighed each week, and the Medical Inspector also visits the schools once a week.

Three meals are provided—breakfast, dinner and tea, for which a maximum charge of 5s. per week is made. After dinner the children rest in the recumbent position for two hours, either in the open when weather permits, or under cover, when wet.

Children who have been discharged from the Open Air Schools to the ordinary schools, are invited periodically to the Clinic, for observation of their further progress.

Open-air Schools, Year 1925.

DAVID LEWIS.

	Boys.	Girls.	Total.
Number of Admissions during 1925	30	44	74
Number of Discharges during 1925	32	41	73
Number of Children on Register at end of Year 1925	33	43	76

Children Discharged During 1925.

	Boys.	Girls.	Total.
Average "Stay" in School (weeks)	35·0	45·0	40·0
Average Gain in Weight	5·3	7·5	6·7 lbs.
	yr. mth.	yr. mth.	yr. mth.
Average age on Admission	10 3	10 3	10 3

	Boys.	Girls.	Total.
Transferred to Ordinary School	11	29	40
Left, aged 14	5	4	9
Admitted to Nab Top, Marple	1	1	2
Unfit for any School	2	2	4
Taken off Rolls (poor attendance)	1	3	4
,, ,, ,, (removed from district)	1	..	1
,, ,, ,, (parents' wish)	4	2	6
	25	41	66

CLASSIFICATION OF DISEASES FROM WHICH THE ABOVE DISCHARGED CHILDREN WERE SUFFERING.

	Boys.	Girls.	Total.
Tuberculosis Lungs (Early)	1	3	4
,, ,, (Suspected)	4	2	6
,, Glands	4	3	7
,, ,, (Suspected)	..	1	1
,, Abdomen,	1	..	1
,, ,, (Suspected)	1	..	1
,, Glands and Skin	1	..	1
Delicate	4	25	29
Anæmia	5	3	8
Rickets	1	1	2
Malnutrition and Infantile Paralysis	1	..	1
Asthma and Bronchitis	1	..	1
Mitral Disease and Bronchitis	1	..	1
Enlarged Bronchial Gland	..	1	1
Epilepsy (Suspected)	..	1	1
Congenital Dislocation of Hip and suspected tubercular glands	..	1	1
	25	41	66

BARR HILL.

	Boys.	Girls.	Total.
Number of admissions during 1925	44	52	96
Number of Discharges during 1925	45	47	92
Number of Children on Register at end of Year 1925	52	56	108

CHILDREN DISCHARGED DURING 1925.

	Boys.	Girls.	Total.
Average "Stay" in School (weeks)	22·0	33·0	27·5
AVERAGE GAIN IN WEIGHT	5·1	6·6	5·9 lbs.
	yr. mth.	yr. mth.	yr. mth.
Average age on Admission	9 11	10 5	10 2

	Boys.	Girls.	Total.
Transferred to Ordinary School	35	41	76
Left, aged 14	5	3	8
Mentally Defective	1	..	1
Tuberculosis	..	1	1
Taken off Rolls (refused to pay)	1	1	2
,, ,, (parents wish)	1	..	1
,, ,, (removed from district)	2	1	3
	45	47	92

CLASSIFICATION OF DISEASES FROM WHICH THE ABOVE DISCHARGED CHILDREN WERE SUFFERING.

	Boys.	Girls.	Total.
Tuberculosis, Lungs, (Early)	..	1	1
,, ,, (Suspected)	3	4	7
,, Abdomen	..	1	1
,, Glands	2	..	2
Enlarged Glands (Non-Tubercular)	..	1	1
Delicate	21	13	34
Anæmia	13	17	30
Anæmia and Bronchitis	1	..	1
Bronchitis	3	2	5
Unresolved Pneumonia	1	..	1
Thickened Pleura	1	..	1
Malnutrition	..	3	3
Diabetes Insipidus	..	1	1
Chorea and Bronchitis	..	1	1
Chorea and Anæmia	..	1	1
Debility after Appendicitis	..	1	1
Gastric Catarrh	..	1	1
	45	47	92

Physical Training.

The School Medical Officers advise as to the kind of exercises to be adopted in some cases of temporary deformity, such as slight scoliosis.

Provision of Meals.

The usual arrangements with regard to cooking of dinners and the conveyance to the feeding centres were followed.

The number of children requiring free meals shows a decrease during the year, the average monthly number being 174, as compared with 175 for the previous year.

Children examined in the schools by the Medical Officers and found to be suffering from malnutrition are referred for investigation into the parents' means and, where necessary, free meals are given.

Swimming Instruction.

During the season just closed, 22 Swimming Instructors were appointed for boys and four for girls, and the number of attendances of children during school hours at the several baths was 28,999 in the case of boys, and 24,451 in the case of girls, making a total of 53,450, as compared with 52,053 in the previous year. Reports were received from the Instructors that, of the children attending the baths, 1,271 boys and 781 girls proved themselves able to swim.

In order to encourage the children to learn swimming, the Baths Committee have continued the arrangement under which a free season ticket for the ensuing year is given to each scholar who, at the commencement of the season, is unable to swim more than ten yards, and who at the end of the season has proved himself able to swim one length of the bath. Certificates of proficiency are also awarded by the Education Committee, after an examination conducted by a Committee of Head Teachers. The number of such certificates gained during the past

season was 1,643, compared with 1,538 for the previous year.

Co-operation of Parents.

Parents present at the inspection are, of course, notified directly of any defect discovered, and they are advised as to the necessary treatment. When parents are absent at the time of the inspection, and it is desirable that they should be interviewed with respect to defects discovered, invitations for these parents to attend the inspection clinic, together with the children, are issued, and so the cases are followed up.

Co-operation of Teachers.

Previous to the visit of the School Doctor, teachers notify parents of the date and time at which their children will be examined.

Each Head Teacher supplies weekly to the Medical Officer a return of sickness in the schools. In this way early information is obtained as to the outbreak of any infectious sickness amongst school children.

Again, a large number of the special cases examined at the Inspection Clinic are children who have been referred by school teachers for medical examination.

In the case of mentally defective children the work of the Medical Officer is greatly facilitated by the special reports which are furnished by Head Teachers.

Co-operation of School Attendance Officers.

The assistance of the School Attendance Officers is obtained in the case of children who have been invited to the Inspection Clinic and do not attend.

Cleansing notices issued in accordance with Section 122 of the Children Act, 1908, are delivered by the Attendance Officers, who insure the attendance of the verminous children at the cleansing centre.

The Superintendent of Attendance Officers is daily supplied with all information with respect to periods of school exclusion, or fitness for school in the case of children examined at the Inspection and Treatment Clinics.

Co-operation of Voluntary Bodies.

The co-operation of the Invalid Children's Aid Association and the Crippled Children's Help Association has been obtained in a number of cases. Through these agencies a considerable number of children have been sent to Holiday and Convalescent Homes at the seaside, or in the country, and in the case of some of the cripples suitable apparatus has been supplied by these voluntary bodies.

Blind, Deaf, Defective and Epileptic Children.

A list of the above children maintained in special institutions will be found in Tables S IIIA. and S IIIB. in the Statistical Tables.

A school for the accommodation of partially blind children was opened in the Borough on March 7th, 1921. This school serves as a Day School for children who are not totally blind, but whose vision is too defective for them to be taught in the ordinary schools. Twenty children were admitted during the year.

Cases of total blindness are sent to a residential institution.

One of the School Medical Officers, Dr. H. Heathcote, is engaged in the examination and classification of mentally defective children with respect to their suitability for treatment in :—

(*a*) Resident Institutions for Imbeciles.

(*b*) Special Residential Schools for Mentally Defective Children.

(*c*) Special Day Schools for Mentally Defective Children.

(*d*) Special Classes in Ordinary Schools.

A similar list is prepared in the case of physically defective children in respect of their suitability for treatment in :—

(*a*) Residential Open-Air Schools.

(*b*) Day Open-Air Schools.

(*c*) Sanatorium Schools.

(*d*) Special Residential Schools for Cripples.

(*e*) Special Day Schools for Cripples.

(*f*) Special Residential Schools for Epileptics.

Mentally defective children who are not in Special Schools are referred to the South East Lancashire Association for Mental Welfare for supervision, and some of them attend an Occupation Centre.

The only Special School that the Local Education Authority possesses is the South Bank Day School for the partially blind, and there are 76 children on the rolls. The teachers at the school constitute the after-care committee. Sixty-two children have left the school since it was opened in 1921 and the following is a summary of the records of their after-careers. Thirty-one children over the age of sixteen have left the school, for work, of these 18 are working, 3 are undergoing a course of training at an institution for blind, 2 are in hospital, and 8 are unemployed. Thirty-one children under the age of 16, have left the school for the following reasons, 6 have returned to elementary schools, 1 has returned to a private school, 5 have been excluded on account of mental defect, 4 have been transferred to a resident institution for the blind, 2 have died, 6 have been excluded for medical reasons, 1 is in a convalescent home, and 6 have left the district.

Nursery Schools.

As yet there is but one in the Borough, namely, at Encombe Place, where about sixty children are in daily attendance. This school is visited each week by the Child Welfare Medical Officer.

The school is also visited by the School Nurse for the purpose of "cleanliness inspection."

Secondary Schools.

The work of medical inspection in respect of the Secondary Schools has been undertaken by one of the Medical Inspection Staff, Dr. H. Heathcote.

On the occasion of the visit of the doctor to each of these schools the whole of the pupils in attendance have been submitted to medical examination. This examination is the same in character as in the case of Elementary Schools, and in the same way parents have an opportunity of being present.

Children who may be suffering from tonsils and adenoids or defective vision may now participate in the Education Committee's scheme for treatment.

Following up is undertaken by Dr. H. Heathcote, who re-visits the school in order to ascertain whether the treatment recommended has been carried out.

Tables showing the number of pupils examined and the findings of the Medical Inspector will be found in the Statistical Tables.

Miscellaneous.

A number of Teachers, Exhibitioners, Bursars, and special cases have been medically examined by the Medical Officers during the year. (*See* Table S Ib. in the Statistical Tables.)

The total number of children medically examined in the Elementary Schools during the year amounted to 11,612.

During the year 27,272 invitations were sent out to children referred for medical treatment, and there were 18,764 attendances; 6,163 cases were discharged from the Clinic, 88·71 per cent of which were remedied. (*See* Pages 51–52 of Statistical Tables.)

Summary of Examinations.

During the year 1925, 50,822 examinations were conducted by the Medical Officers of the Education Committee.

These examinations were made up as follows :—

(*a*) Children belonging to Code Groups examined in the Schools	11,612
(*b*) Cases of visual defects examined by retinoscopy at Chapel Street	1,317
(*c*) Absentees and cases of disease or defect examined by the Medical Officers at Regent Road Centre Teneriffe Street Centre and Police Street Centre	19,474
(*d*) Verminous cases in which cleansing notices have been served under Section 122 of the Children Act, 1908, examined at Regent Road..	1,567
(*e*) Teachers, pupil teachers, bursars, and various special cases examined	984
(*f*) Children examined in the schools by the School Dentist	13,745
(*g*) Children examined in Secondary Schools.....	1,934
(*h*) Employment Certificates issued ..	189

STATISTICAL TABLES.

Elementary Schools.

TABLE I.

RETURN OF MEDICAL INSPECTIONS DURING THE YEAR ENDED 31ST DECEMBER, 1925.

A.—ROUTINE MEDICAL INSPECTIONS.

	Boys.	Girls.	Total.
Number of Code Group Inspections—			
Entrants	2130	2024	4154
Intermediates	1727	1774	3501
Leavers	1989	1968	3957
Total	5846	5766	11612

Number of other Routine Inspection ....

B.—OTHER INSPECTIONS.

	Boys.	Girls.	Total.
Number of Special Inspections	3805	3732	7537
Number of Re-inspections	7368	7694	15062
Total	11173	11426	22599

TABLE I—*Continued.*

AVERAGE HEIGHTS AND WEIGHTS OF CHILDREN EXAMINED AT THE ROUTINE MEDICAL INSPECTION.

BOYS. AVERAGE HEIGHT IN INCHES

Average age in years	$5\frac{5}{12}$	$8\frac{6}{12}$	$12\frac{6}{12}$
Number examined	2130	1727	1989
Anthropometric standard at 5, 8 and 12 years respectively	40·4	46·9	54·7
Salford average	40·8	46·8	53·7
Difference	+ ·4	− ·1	− 1·0

BOYS. AVERAGE WEIGHT IN LBS.

Average age in years	$5\frac{5}{12}$	$8\frac{6}{12}$	$12\frac{6}{12}$
Number Examined	2130	1727	1989
Anthropometric standard at 5, 8 and 12 years respectively	38·2	50·2	71·5
Salford average	38·8	50·8	69·9
Difference	+ ·6	+ ·6	− 1·6

GIRLS. AVERAGE HEIGHT IN INCHES.

Average age in years	$5\frac{6}{12}$	$8\frac{6}{12}$	$12\frac{6}{12}$
Number examined	2024	1774	1968
Anthropometric Standard at 5, 8 and 12 years respectively	40·2	46·3	54·9
Salford Average	40·5	46·6	54·2
Difference	+ ·3	+ ·3	− ·7

GIRLS. AVERAGE WEIGHT IN LBS.

Average age in years	$5\frac{6}{12}$	$8\frac{6}{12}$	$12\frac{6}{12}$
Number examined	2024	1774	1968
Anthropometric standard at 5, 8, and 12 years respectively	37·3	48·9	72·3
Salford average	38·0	49·5	71·3
Difference	+ ·7	+ ·6	− 1·0

TABLE II.

A.—Return of Defects found in the Course of Medical Inspection in 1925.

DEFECTS OR DISEASES.	ROUTINE INSPECTION.		SPECIALS.	
	No. referred for Treatment.	No. requiring to be kept under observation.	No. referred for Treatment.	No. requiring to be kept under observation, but not referred for treatment.
Malnutrition	17	21	25	7
Uncleanliness, head	..	..	..	..
„ body	..	..	..	..
(See Table IV., Group V).				
Skin—				
Ringworm, head	2	..	110	..
„ body	5	..	97	..
Scabies	14	..	60	..
Impetigo	99	..	1315	..
Other Diseases (Non-Tubercular)	94	12	1012	7
Eye—				
Blepharitis	57	5	187	1
Conjunctivitis	36	..	265	1
Keratitis	3	..	32	..
Corneal Ulcer	..	..	13	..
Corneal Opacities	2	..	7	..
Defective Vision	667	2	87	2
Squint	169	6	37	4
Other Conditions	13	..	71	2
Ear—				
Defective Hearing	34	25	136	17
Otitis Media	118	17	467	14
Other Ear Diseases	26	3	30	1
Nose and Throat—				
Enlarged Tonsils	138	168	269	77
Adenoids	54	57	175	26
Enlarged Tonsils and Adenoids.	146	72	370	42
Other Conditions	88	40	193	22
Enlarged Cervical Glands (Non-Tubercular)	28	31	202	35
Defective Speech	15	4	7	11
Teeth—Dental Disease	1040	..	214	..
Heart and Circulation—				
Heart Disease, Organic	22	37	49	110
„ „ Functional	16	66	36	42
Anæmia	99	26	227	115

TABLE II.—*Continued.*

A.—Return of Defects found in the Course of Medical Inspection in 1925.

DEFECTS OR DISEASES.	ROUTINE INSPECTION.		SPECIALS.	
	No. referred for Treatment.	No. requiring to be kept under observation.	No. referred for Treatment.	No. requiring to be kept under observation, but not referred for treatment.
Lungs—				
Bronchitis	202	166	306	243
Other Non-Tubercular Diseases.	70	37	165	117
Tuberculosis—				
Pulmonary, Definite	..	..	21	67
,, Suspected	11	21	50	269
Non-Pulmonary, Glands	4	2	41	14
,, Spine	2	..	4	3
Hip	1	1	4	1
Other Bones and Joints	..	..	3	3
Skin	1	..	8	5
Other Forms	4	..	19	12
Nervous System—				
Epilepsy	9	1	21	16
Chorea	22	10	116	38
Other Conditions	33	22	37	31
Deformities—				
Rickets	36	5	38	16
Spinal Curvature	3	4	7	4
Other Forms	34	11	31	12
Other Defects or Diseases	177	65	725	148
Delicate	69	53	319	173
Mentally Defective	6	14	9	11
Dull and Backward	4	7	1	8

TABLE II.—*Continued.*

B.—Number of Individual Children Found at Routine Medical Inspection to Require Treatment (Excluding Uncleanliness and Dental Diseases).

Group.	Number of Children.		Percentage of Children Found to Require Treatment.
	Inspected.	Found to Require Treatment.	
ode Groups—			Per cent.
Entrants	4154	825	19·86
Intermediates	3501	894	25·53
Leavers	3957	782	19·76
otal (code groups)	11612	2,501	21·54
ther Routine Inspections	..	..	..

TABLE II.—*Continued.*

C.—Details of Re-Examination of Children in Code Groups.

Defects or Diseases.	Had Treatment.	Not had Treatment.
Malnutrition	9	1
Uncleanliness, head	15	2
,, body	2	..
Skin—		
Ringworm, head	4	..
,, body	7	..
Scabies	12	..
Impetigo	86	2
Other Diseases (Non-Tubercular)	101	3
Eye—		
Blepharitis	44	1
Conjunctivitis	35	..
Keratitis	4	..
Corneal Ulcer	1	..
Corneal Opacities	2	..
Defective Vision	756	395
Squint	37	2
Other Conditions	9	..
Ear—		
Defective Hearing	46	9
Otitis Media	125	4
Other Ear Diseases	13	..
Nose and Throat—		
Enlarged Tonsils	132	69
Adenoids	56	14
Enlarged Tonsils and Adenoids	136	49
Other Conditions	86	5
Enlarged Cervical Glands (Non-Tubercular)	34	2
Defective Speech	11	4
Teeth—Dental Disease	246	141
Heart and Circulation—		
Heart Disease, Organic	30	..
,, ,, Functional	33	2
Anæmia	93	3
Lungs—		
Bronchitis	232	15
Other Non-Tubercular Diseases	73	3
Tuberculosis—		
Pulmonary	..	..
,, Suspected	10	2
Non-Pulmonary, Glands	6	..
,, Spine	1	..
,, Hip	1	..
,, Other Bones and Joints	2	..
,, Skin	1	..
,, Other Forms	2	..
Nervous System—		
Epilepsy	11	..
Chorea	21	2
Other Conditions	25	1
Deformities—		
Rickets	18	2
Spinal Curvature	3	..
Other Forms	21	2
Other Defects or Diseases	139	10
Delicate	97	5
Mentally Defective	8	..
Dull and Backward	2	..

Number of Children Re-Examined	3,125	
Had Treatment	2,468	= 78·98 per cent.
Not had Treatment	657	

TABLE III.

RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA.

			Boys.	Girls.	Total.
ind including partially blind).	(i.) Suitable for training in a School or Class for the totally blind.	Attending Certified Schools or Classes for the Blind....	4	2	6
		Attending Public Elementary Schools	..	..	..
		At other Institutions.....	..	..	..
		At no School or Institution..	..	..	..
	(ii.) Suitable for training in a School or Class for the partially blind.	Attending Certified Schools or Classes for the Blind....	32	44	76
		Attending Public Elementary Schools	..	..	..
		At other Institutions.....	..	..	..
		At no School or Institution..	..	..	..
eaf (including deaf and dumb and partially deaf).	(i.) Suitable for training in a School or Class for the totally deaf or deaf and dumb.	Attending Certified Schools or Classes for the Deaf....	20	14	34
		Attending Public Elementary Schools	..	..	..
		At other Institutions.....	..	..	..
		At no School or Institution..	3	1	4
	(ii.) Suitable for training in a School or Class for the partially deaf.	Attending Certified Schools or Classes for the Deaf....	..	..	..
		Attending Public Elementary Schools	..	..	..
		At other Institutions	..	..	..
		At no School or Institution..	1	..	1
lentally Defective.	Feeble-minded (cases not notifiable to the Local Control Authority).	Attending Certified Schools for Mentally Defective Children	2	..	2
		Attending Public Elementary Schools	49	30	79
		At other Institutions.....	..	..	..
		At no School or Institution..	37	39	76
	Notified to the Local Control Authority during the year	Feeble-minded	4	4	8
		Imbeciles	4	3	7
		Idiots	..	..	..
Epileptics	Suffering from Severe Epilepsy.	Attending Certified Special Schools for Epileptics.....	6	2	8
		In Institutions other than Certified Special Schools....	..	..	..
		Attending Public Elementary Schools	12	13	25
		At no School or Institution..	20	16	36
	Suffering from Epilepsy which is not severe.	Attending Public Elementary Schools	15	11	26
		At no School or Institution..	..	3	3

TABLE III.—*Continued.*

RETURN OF ALL EXCEPTIONAL CHILDREN IN THE AREA.

			Boys.	Girls.	Total.
Physically Defective.	Infectious pulmonary and glandular tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	10	9	19
		At other Institutions	..	..	..
		At no School or Institution	5	1	6
	Non-infectious but active pulmonary and glandular tuberculosis.	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board	..	..	..
		At Certified Residential Open-Air Schools	..	..	..
		At Certified Day Open-Air Schools	..	..	..
		At Public Elementary Schools	8	5	13
		At other Institutions	..	..	..
		At no School or Institution	3	4	7
	Delicate children (*e.g.*, pre or latent tuberculosis, malnutrition, debility, anæmia, &c.).	At Certified Residential Open-Air Schools	..	..	..
		At Certified Day Open-Air Schools	85	99	184
		At Public Elementary Schools	41	39	80
		At other Institutions	..	..	..
		At no School or Institution	4	14	18
	Active non-pulmonary tuberculosis.	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board	..	..	..
		At Public Elementary Schools	10	9	19
		At other Institutions	2	..	2
		At no School or Institution	16	9	25
	Crippled Children (other than those with active tuberculous Disease), *e.g.*, children suffering from paralysis, &c., and including those with severe heart disease.	At Certified Hospital Schools	..	..	..
		At Certified Residential Cripple Schools	18	13	31
		At Certified Day Cripple Schools	..	..	..
		At Public Elementary Schools	50	50	100
		At other Institutions	..	..	..
		At no School or Institution	31	30	61

TABLE IIIa.

MENTALLY DEFECTIVE CHILDREN EXAMINED DURING 1925 BY THE MEDICAL OFFICER.

	Boys.	Girls.	Total.
Imbeciles	6	5	11
Mentally Defectives	33	17	50
Epileptic Mentally Defectives	..	2	2
Dull and Backward	17	15	32
Found Normal	5	1	6
Total	61	40	101

Recommended for	Boys.	Girls.	Total.
Special Residential School for M.D.'s	2	3	5
Special Day School for M.D.'s	27	14	41
Resident Institution for Imbeciles	6	4	10
Resident Institution for low-grade Feeble-minded	4	3	7
Special Class for Dull and Backward	18	15	33
Ordinary School	4	1	5
Total	61	40	101

PHYSICALLY DEFECTIVE CHILDREN

(CRIPPLES, EPILEPTICS, &C.).

	Boys.	Girls.	Total.
Epileptics	19	7	26
Cripples	6	2	8
Cripples with Tuberculosis (Lungs)	1	..	1
Cripples with Tuberculosis (Non-Pulmonary)	10	3	13
Rickets	11	17	28
Infantile Paralysis	7	11	18
Paralysis other than Infantile	2	1	3
Hemiplegia	..	1	1
Congenital Malformation	3	..	3
Heart Disease —	2	..	2
Defective Speech	1	..	1
Deaf and Dumb	..	1	1
Deaf	1	..	1
Found Normal	2	..	2
Total	65	43	108

TABLE IIIa.—*Continued.*

Recommended for	Boys.	Girls.	Total
Special Residential School for Epileptics	9	3	12
Special Day School for Cripples	29	32	61
Sanatorium School for Surgical Tubercular Cases	9	1	10
Sanatorium for Pulmonary Tuberculosis	1	..	1
Deaf and Dumb School	1	1	2
Ordinary School	16	6	22
Total	65	43	108

TABLE IV.

RETURN OF DEFECTS TREATED DURING THE YEAR ENDED 31ST DECEMBER, 1925.

TREATMENT TABLE.

GROUP I.—MINOR AILMENTS (EXCLUDING UNCLEANLINESS, FOR WHICH SEE GROUP V.).

Disease or Defect.	Number of Defects Treated or under Treatment During the Year.		
	Under the Authority's Scheme.	Otherwise	Total.
Skin—			
Ringworm, Scalp	90	20	110
,, Body	85	12	97
Scabies	51	8	59
Impetigo	1126	76	1202
Other Skin Diseases	968	129	1097
Minor Eye Defects (External and other, but excluding cases failing in Group II.)	616	79	695
Minor Ear Defects	518	109	627
Miscellaneous (Minor Injuries, Bruises, Sores, etc.)	422	125	547
Total	3876	558	4434

GROUP II.—DEFECTIVE VISION AND SQUINT (EXCLUDING MINOR EYE DEFECTS TREATED AS MINOR AILMENTS, GROUP I.).

Defect or Disease.	Number of Defects dealt with.			
	Under the Authority's Scheme.	Submitted to refraction by private practitioner or at hospital, apart from the Authority's Scheme.	Otherwise.	Total.
Errors of Refraction (including Squint)	1317	..	..	1317
Other Defects or Diseases of the eyes (excluding those recorded in Group I.)	284	..	..	284
Total	**1601**	..	..	**1601**

Total number of children for whom spectacles were prescribed :—

(*a*) Under the Authority's Scheme 1101

(*b*) Otherwise ..... —

Total number of children who obtained or received spectacles :—

(*a*) Under the Authority's Scheme 854

(*b*) Otherwise ..... —

GROUP III.—TREATMENT OF DEFECTS OF NOSE AND THROAT.

Received Operative Treatment.			Received other Forms of Treatment.	Total Number Treated.
Under the Authority's Scheme in Clinic or Hospital.	By Private Practitioner or Hospital, apart from the Authority's Scheme.	Total.		
301	153	454	232	686

GROUP IV.—DENTAL DEFECTS.

	Number of Children.	Total.
(1) Number of children who were :—		
(*a*) Inspected by the Dentist :		
Aged :		
Routine Age Groups, 5 years	—	
6 ,,	1,708	
7 ,,	1,661	
8 ,,	1,824	
9 ,,	1,431	
10 ,,	1,664	
11 ,,	1,633	
12 ,,	1,350	
13 ,,	733	
14 ,,	37	
		12,041
Specials		1,704
Grand Total		13,745
(*b*) Found to require treatment		7,032
(*c*) Actually treated		4,358
(*d*) Re-treated during the year as the result of periodical examination (included under (*c*) above)		1,334
(2) Half-days devoted to (*a*) Inspection	177	
(*b*) Treatment	703	
		880
(3) Attendances made by children for treatment		7,013
(4) Fillings (*a*) Permanent Teeth	3,087	
(*b*) Temporary Teeth	—	3,087
(5) Extractions (*a*) Permanent Teeth	481	
(*b*) Temporary Teeth	5,743	
		6,224
(6) Administrations of local anæsthetics for extractions		4,862
(7) Other operations (*a*) Permanent Teeth	962	
(*b*) Temporary Teeth	48	
		1,010

GROUP V.—UNCLEANLINESS AND VERMINOUS CONDITIONS.

(i.) Average number of visits per school made during the year by the School Nurses	3
(ii.) Total number of examinations of children in the Schools by the School Nurses	100,283
(iii.) Number of individual children found unclean	3,245
(iv.) Number of children cleansed under arrangements made by the Local Education Authority	913
(v.) Number of cases in which legal proceedings were taken :—	
(*a*) Under the Education Act, 1921	—
(*b*) Under School Attendance Byelaws	—

Results of Treatment of Defects of Children Discharged from Clinics during 1925.

Defects or Diseases.	Remedied.	Improved.	No change or no report.	Total.	Percentage remedied.
Malnutrition	4	8	2	14	28·57
Uncleanliness, head	26	1	..	27	96·29
,, body	..	..	..	..	..
Skin—					
Ringworm, head	91	..	..	91	100·00
,, body	95	..	..	95	100·00
Scabies	59	..	..	59	100·00
Impetigo	1256	..	2	1258	99·84
Other Diseases— (Non-Tubercular)	864	6	10	880	98·18
Eye—					
Blepharitis	124	5	3	132	93·94
Conjunctivitis	223	2	3	228	97·80
Keratitis	18	3	..	21	85·71
Corneal Ulcer	10	2	..	12	83·33
Corneal Opacities	5	..	..	5	100·00
*Defective Vision	20	1	20	41	48·78
*Squint	25	6	7	38	65·79
Other Conditions	45	2	2	49	91·84
Ear—					
Defective Hearing	122	5	9	136	89·70
Otitis Media	312	8	8	328	95·12
Other Ear Diseases	24	2	4	30	80·00
Nose and Throat—					
Enlarged Tonsils	192	7	49	248	77·42
Adenoids	112	3	17	132	84·84
Enlarged Tonsils and Adenoids	228	4	36	268	85·07
Other Conditions	151	4	6	161	93·79
Enlarged Cervical Glands— (Non-Tubercular)	135	4	9	148	91·21
Defective Speech	3	3	..	6	50·00
*Teeth—Dental Disease	32	..	63	95	33·68
Heart and Circulation—					
Heart Disease, Organic	..	30	15	45	..
,, Functional	16	16	7	39	41·02
Anæmia	95	35	9	139	68·34

* These figures include cases coming under the notice of the School Doctors at the Inspection Clinic, and do not include the great bulk of cases treated at the Ophthalmic and Dental Clinics.

Results of Treatment of Defects of Children Discharged from Clinics during 1925—*Continued.*

Defects or Diseases.	Remedied.	Improved.	No change or no report.	Total.	Percentage remedied.
Lungs—					
Bronchitis	198	42	11	251	78·88
Other Non-Tubercular Diseases	113	13	5	131	86·26
Tuberculosis—					
Pulmonary, Definite	2	3	5	10	20.00
,, Suspected	66	21	11	98	67·34
Non-Pulmonary, Glands	15	7	1	23	65·22
,, Spine	..	..	..	..	..
,, Hip	1	3	..	4	25·00
,, Other Bones and Joints	..	..	..	..	.
,, Skin	5	1	..	6	83·33
,, Other Forms	7	2	..	9	77·78
Nervous System—					
Epilepsy	11	3	1	15	73·33
Chorea	55	8	2	65	84·61
Other Conditions	26	6	4	36	72·22
Deformities—					
Rickets	8	7	2	17	47·06
Spinal Curvature	..	3	..	3	..
Other Forms	1	6	3	10	10·00
Other Defects or Diseases	518	27	20	565	91·68
Delicate	154	23	10	187	82·35
Mentally Defective	..	2	3	5	..
Dull and Backward	..	2	1	3	..
Total	5467	336	360	6163	88·71

TABLE V.

SUMMARY OF TREATMENT OF DEFECTS SHOWN IN TABLE IV.

(GROUPS I., II., III., AND IV.)

Disease or Defect.	Number of children.			
	Referred for Treatment.	Treated.		
		Under Local Education Authority's Scheme.	Otherwise.	Total.
Minor Ailments	5437	3876	558	4434
Visual Defects	1601	1317	..	1317
Defects of Nose and Throat.	1433	301	385	686
Dental Defects	7032	4358	..	4358
Other Defects	5469	669	..	669
Total	20972	10521	943	11464

TABLE VI.

SUMMARY RELATING TO CHILDREN MEDICALLY INSPECTED AT THE ROUTINE INSPECTIONS DURING THE YEAR 1925.

(1) The total number of children medically inspected at the routine inspections	11612
(2) The number of children in (1) suffering from—	
Malnutrition	38
Skin Disease	226
Defective Vision (including Squint)	844
Eye Disease	116
Defective Hearing	59
Ear Disease	164
Nose and Throat Disease	763
Enlarged Cervical Glands (non-tubercular)	59
Defective Speech	19
Dental Disease	1040
Heart Disease—	
Organic	59
Functional	82
Anæmia	125
Lung Disease (non-tubercular)	475
Tuberculosis—	
Pulmonary, Definite	..
,, Suspected	32
Non-pulmonary	15
Disease of the Nervous System	97
Deformities	93
Other Defects and Diseases	395
(3) The number of children in (1) suffering from defects (other than uncleanliness or defective clothing or footgear) who require to be kept under observation (but not referred for treatment)	752
(4) The number of children in (1) who were referred for treatment (excluding uncleanliness, defective clothing, &c.)	3230
(5) The number of children in (4) who received treatment for one or more defects (excluding uncleanliness defective clothing, &c.)	2451

TABLE Ia.

NUMBER OF CHILDREN IN SECONDARY SCHOOLS INSPECTED DURING 1925.

A.—ROUTINE MEDICAL INSPECTION.

	Preparatory.	Entrants.		Intermediates.		Leavers.		Totals.
		12	13	14	15	16	17	
Boys	34	73	91	135	132	27	8	500
Girls	342	278	240	249	184	77	64	1434
Total ...	376	351	331	384	316	104	72	1934

B.—SPECIAL INSPECTIONS.

	Special Cases.	Re-examinations (*i.e.*, No. of Children re-examined).
Boys	..	105
Girls	..	57
Totals	..	162

C.—TOTAL NUMBER OF INDIVIDUAL CHILDREN INSPECTED BY THE MEDICAL OFFICER WHETHER AS ROUTINE OR SPECIAL CASES.

(No child to be counted more than once in a year.)

Number of Individual Children Inspected 1934

TABLE IIa.

A.—Routine Inspection of Secondary Schools.

Defects or Diseases.	No. referred for Treatment.	No. requiring to be kept under observation.
Malnutrition	..	..
Uncleanliness, head	159	..
,, body	1	..
Skin—		
Ringworm, head	..	..
,, body	1	..
Scabies	..	..
Impetigo	..	..
Other Diseases (Non-Tubercular)	24	9
Eye—		
Blepharitis	9	..
Conjunctivitis	4	..
Keratitis	..	..
Corneal Ulcer	..	..
Corneal Opacities	..	2
Defective Vision	142	295
Squint	2	29
Other Conditions	3	3
Ear—		
Defective Hearing	10	4
Otitis Media	13	1
Other Ear Diseases	..	..
Nose and Throat—		
Enlarged Tonsils	18	157
Adenoids	5	11
Enlarged Tonsils and Adenoids	12	14
Other Conditions	7	10
Enlarged Cervical Glands (Non-Tubercular)	1	35
Defective Speech	2	7
Teeth—Dental Disease	242	5
Heart and Circulation—		
Heart Disease, Organic	2	26
,, ,, Functional	..	33
Anæmia	16	11
Lungs—		
Bronchitis	5	13
Other Non-Tubercular Diseases	..	1

TABLE IIa.—*Continued.*

Defects or Diseases.	No. referred for Treatment.	No. requiring to be kept under observation.
Tuberculosis—		
Pulmonary, Definite	..	..
,, Suspected	2	4
Non-Pulmonary, Glands	2	8
,, Spine	..	1
,, Hip	1	..
,, Other Bones and Joints.	..	..
,, Skin	1	..
,, Other Forms	..	..
Nervous System—		
Epilepsy	1	..
Chorea	..	..
Other Conditions	4	18
Deformities—		
Rickets	..	..
Spinal Curvature	12	6
Other Forms	10	16
Other Defects or Diseases	25	66
Delicate	..	..
Mentally Defective	..	..
Dull and Backward	..	1
No. of Children Examined	1934	..
No. of Individual Children having Defects which required treatment or to be kept under Observation	598	497

TABLE IIa.—*Continued.*

B.—Details of Re-Examination of Children in Secondary Schools.

Defects or Diseases.	Had Treatment.	Not had Treatment.
Malnutrition	..	..
Uncleanliness, head	12	1
,, body	..	..
Skin—		
Ringworm, head	..	..
,, body	..	..
Scabies	..	..
Impetigo	..	..
Other Diseases (Non-Tubercular)	1	..
Eye—		
Blepharitis	2	..
Conjunctivitis	..	..
Keratitis	..	..
Corneal Ulcer	..	..
Corneal Opacities	..	..
Defective Vision	19	26
Squint	..	..
Other Conditions	..	..
Ear—		
Defective Hearing	1	..
Otitis Media	1	..
Other Ear Disease	1	..
Nose and Throat—		
Enlarged Tonsils	2	8
Adenoids	1	1
Enlarged Tonsils and Adenoids	2	2
Other Conditions	..	..
Enlarged Cervical Glands (Non-Tubercular)	..	2
Teeth—		
Dental Disease	44	15
Heart and Circulation—		
Heart Disease, Organic	..	3
,, Functional	..	2
Anæmia	4	3
Lungs—		
Tuberculosis, Suspected	..	..
Bronchitis	..	..
Other Non-Tubercular Diseases	..	..
Tuberculosis (Non-Pulmonary)—		
Glands	..	..
Nervous System—		
Epilepsy	..	..
Chorea	..	..
Other Conditions	..	..
Deformities—		
Rickets	..	..
Spinal Curvature	..	..
Other Forms	4	1
Other Defects or Diseases	5	4

Number of Children Re-Examined	162
,, Defects had Treatment	97
,, ,, not had Treatment	65

TABLE IIIa.

TABLE SHOWING PREVALENCE OF PEDICULOSIS IN SECONDARY SCHOOLS WHERE ALL THE PUPILS PRESENT WERE EXAMINED.

	BOYS.					GIRLS.				
	No. Examined.	Heads.			Verminous bodies.	No. Examined.	Heads.			Verminous bodies.
		A.	B.	C.			A.	B.	C.	
(A) Aggregate Numbers..	500	478	22	—	1	1,434	1,297	104	33	—
(B) Percentages..	—	95·60	4·40	—	—	—	90·45	7·25	2·30	—

TABLE S I.

CHILDREN EXAMINED AT THE INSPECTION CENTRES BY THE MEDICAL INSPECTORS.

	Boys.	Girls.	Total.
New Cases	3805	3732	7537
Re-examinations	5818	6119	11937
Total Examinations	9623	9851	19474

CHILDREN EXAMINED BY THE EYE SPECIALIST.

	Boys.	Girls.	Total.
Number examined	644	673	1317
Spectacles prescribed for	536	565	1101
,, supplied	392	462	854

TABLE S Ib.

MEDICAL EXAMINATION OF TEACHERS, ETC.

Teachers	22
Bursars	43
Entrants to Secondary Schools	563
Special Examinations for Open Air Schools	1
Other Special Examinations	355

TABLE S IIa.

CLASSIFICATION OF SPECIAL CASES

EXAMINED BY THE MEDICAL INSPECTORS, AT THE INSPECTION CENTRES,

DURING THE YEAR 1925.

	Boys.		Girls.		Total Examinations.
	1st Exam.	Re-examined.	1st Exam.	Re-examined.	
Number of cases examined.....	3805	5818	3732	6119	19474
Malnutrition	13	30	18	21	82
Cleanliness, head	1	2	24	36	63
„ body.....	3	2	1	2	8
Skin—					
Ringworm, head	62	167	49	121	399
„ body	43	91	55	84	273
Impetigo.....	694	1013	616	832	3155
Scabies	24	45	36	56	161
Alopecia	63	196	70	164	493
Other Diseases	498	685	389	637	2209
Eye—					
Defective Vision and Squint ..	58	47	72	31	208
External Eye Disease	287	810	298	829	2224
Ear—					
Defective Hearing	78	102	77	115	372
Ear Disease	283	680	233	606	1802
Teeth—					
Dental Disease	95	31	118	35	279
Nose and Throat—					
Enlarged Tonsils	158	111	188	157	614
Adenoids	100	114	102	144	460
Enlarged Tonsils and Adenoids	205	204	212	245	866
Tonsillitis	16	27	25	34	102
Rhinitis	6	5	5	2	18
Other Diseases	85	137	86	162	470
Defective Speech	16	9	3	3	31

TABLE S IIa.—*Continued.*

CLASSIFICATION OF SPECIAL CASES—*Continued.*

	Boys.		Girls.		Total Examinations.
	1st Exam.	Re-examined.	1st Exam.	Re-examined.	
Heart and Circulation—					
Organic Disease	74	122	83	169	448
Functional Disease	37	54	42	67	200
Anæmia	149	264	197	483	1093
Lungs—					
Pulmonary Tuberculosis { Definite	41	32	39	32	144
Pulmonary Tuberculosis { Suspected	171	274	156	248	849
Chronic Bronchitis	3 1	575	254	493	1623
Other Disease	144	247	139	201	731
Nervous System—					
Epilepsy	19	24	19	21	83
Chorea	68	199	86	250	603
Mentally Defective	10	2	11	5	28
Other Disease	38	46	34	55	173
Non-Pulmonary Tuberculosis—					
Glands	23	61	30	65	179
Bones and Joints	7	5	3	14	29
Other Forms	28	52	22	41	143
Enlarged Cervical Glands (Non-Tubercular)	134	246	109	253	742
Delicate	228	407	270	560	1465
Rickets	32	66	26	39	163
Deformities	21	48	26	47	142
Other Defects or Diseases	401	470	452	740	2063
Dull and Backward	6	4	3	6	19
Abscess	33	54	22	53	162
Fit for School	6989	..	6904	..	13893

TABLE S IIIa.

BLIND, DEAF, AND DEFECTIVE CHILDREN.

NEW CASES SENT TO SPECIAL SCHOOLS DURING 1925.

	Boys.	Girls.	Total.
To Royal Residential School for the Deaf	4	3	7
,, South Bank School for Partially Blind	10	10	20
,, Other Special Schools	4	2	6
TOTALS	18	15	33

TABLE S IIIb.

TOTAL NUMBER OF CHILDREN MAINTAINED IN INSTITUTIONS, AT THE PART COST OF THE COUNCIL, AS AT SEPTEMBER 30TH, 1925.

Name of Institution.	Boys.	Girls.	Total.
Henshaw's Institution for the Blind, Manchester..	3	2	5
Catholic Blind Asylum, Liverpool	1	..	1
Royal Residential Schools for the Deaf, Manchester.	15	13	28
Jews Deaf and Dumb Home.....	2	..	2
St. John's Institution for the Deaf and Dumb, Boston Spa	3	1	4
Soss Moss Epileptic Colony School	1	..	1
Starnthwaite Epileptic Home	5	..	5
Home for Epileptics, Maghull	..	2	2
Sandlebridge School for Feeble-minded	1	..	.
Pontville School for Mentally Defectives, Ormskirk.	1	.	1
Greengate Dispensary (Grimké Ward)	17	13	30
Heatherwood Hospital, Ascot	2	..	2
Bethesda Home for Cripples, Broughton.....	1	..	1
TOTALS	52	31	83

TABLE S V.

INSPECTION, TREATMENT, ETC., OF CHILDREN DURING 1925.

(1) The total number of children medically inspected (whether Code Group, special or ailing child)	19,149
(2) The number of children in (1) suffering from defects (other than uncleanliness or defective clothing or footgear) who require to be kept under observation (but not referred for treatment)	1,931
(3) The number of children in (1) who were referred for treatment (excluding uncleanliness, defective clothing, &c.)	8,432
(4) The number of children in (3) who received treatment for one or more defects (excluding uncleanliness, defective clothing, &c.)	6,136

SECTION V.

Veterinary Inspector's Report

Diseases of Animals Acts.

Parasitic Mange.

Two outbreaks of this disease occurred during the year.

Out of a total number of eleven horses on the infected premises, only two were affected with the disease, and these recovered under treatment.

Both cases were notified by the Veterinary Surgeons attending.

The work of disinfecting the stables, harness, etc., was carried out by the owners, and there has been no recurrence of the disease on these premises.

Swine Fever.

This disease was discovered on four occasions in slaughterhouses used solely for the slaughter of pigs.

On each occasion, the Ministry of Agriculture were notified and portions of the lesions forwarded to their laboratory, where, after investigation, the diagnosis of all the cases reported was confirmed.

In the first outbreak, ten animals were found affected from a consignment of eighty-six pigs from a piggery in the County of Lancaster.

The second outbreak occurred in a consignment of fifty dressed carcasses from a public institution: five carcasses were found to be affected.

The third outbreak concerned one animal which was from a consignment of thirty pigs from the County of Lancaster.

The fourth outbreak was found among thirty-six pigs from the County of Huntingdon; nine animals were found to be affected with the disease. The diseased carcasses and offals were removed and destroyed and the slaughterhouse premises and utensils were disinfected, as required by the Swine Fever Order.

In connection with the first outbreak mentioned, these pigs were from the West Lancashire district, and proceedings were instituted against the owner of these pigs by the County Police for failing to notify the existence of disease.

Animals (Transit and General) Order, 1895. Railway and Cattle Docks.

The Railway Cattle Docks and Sidings are visited daily to observe whether the requirements of this Order are carried out.

The number of animals received into the Borough and forwarded out of the Borough during the past year are as follows:—

FORWARDED OUT OF THE BOROUGH.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
28,762	160,883	4,932	63	308

RECEIVED INTO THE BOROUGH.

Cattle.	Sheep.	Pigs.	Calves.	Horses.
79,167	592,888	9,263	4,019	378

Special attention and supervision over the cleansing and disinfection of all cattle waggons has been given.

The two Cattle Stations in Salford are the chief cleansing depôts for this part of Lancashire, and since the Ministry of Agriculture instituted the new Order in 1924, there has been a great improvement in the cleanliness of waggons.

There were 39,534 waggons cleaned on the Salford stations during the year.

Foot and Mouth Disease.

Foot and Mouth Disease Restrictions did not affect Salford until the 20th October, when, owing to an outbreak in the vicinity, Salford was included in a Foot and Mouth Disease Infected Area. Owing to outbreaks in neighbouring districts and an outbreak which occurred in the Borough, restrictions remained in operation until the end of the year. Salford was free from any outbreaks until the 26th October, when Foot and Mouth Disease was discovered in the carcasses of eight pigs which had arrived from a public institution in Cheshire.

The Ministry of Agriculture, London, were immediately notified by telephone, and one of their Inspectors, stationed at Stockport, was also telephoned. He at once visited the institution and found Foot and Mouth Disease to exist amongst the animals on these premises, and also the following day confirmed the existence of disease in Salford.

All movement of live stock in this district was prohibited until the disinfection of the slaughterhouses had been effected and the diseased carcasses destroyed.

Owing to the restrictions imposed by the Foot and Mouth Disease (Infected Areas) Order of 1925, no animals from outside this infected area could be exhibited for sale in the Salford Market, and whilst the Market was technically open for the sale of animals for immediate slaughter, the Market was devoid of live stock from November to the end of the year in consequence of these restrictions,

Tuberculosis Order of 1925.

This Order came into operation on 1st September, and provides for the notification of certain types of tuberculosis.

The permanent cow population of Salford is very low, and in consequence of the Market being closed, no action has been necessary.

Cattle Market.

The Market has been visited and inspected each market day throughout the year, the number of animals exhibited for sale being :—

Cattle	41,590
Sheep	320,115
Dairy Cows.....	3,285
Calves	—
Total.....	364,990

The decrease in the number of animals exposed for sale in comparison with previous years is accounted for by the fact that the Foot and Mouth Disease restrictions were in operation from the 20th October, and continued for the remainder of the year.

Meat and Food Inspection.

Slaughterhouses.

The inspection of meat is carried out under the Salford Byelaws, which came into force in advance of the Public Health Meat Regulations, 1924.

All condemned meat is removed to the Corporation Destructor.

There are seven private slaughterhouses in the Borough, six being licensed annually and one having a continuing licence.

Three of these are used solely for the slaughtering of pigs, and all have been in use continuously throughout the year.

The number of slaughterhouses in the Borough on the undermentioned dates was as follows:—

	In 1920.	In Jan., 1925.	In Dec., 1925.
Continuing Licence* ..	1	1	1
Annual Licence	9	6	6

The private slaughterhouses are generally kept in a clean condition.

The number of visits made to these premises and the number of carcasses inspected during the year was as follows:—

Number of Visits .. 2,340

CARCASSES INSPECTED.

Cattle	2,426
Sheep	7,552
Pigs	15,684
Dressed Pigs	1,900
Calves	12
Total	27,574

In addition to the private slaughterhouses, there are public slaughterhouses at the Cattle Market. The Public Slaughterhouses consist of six slaughtering booths. Two of these are rented, one by a butcher and one by a horse slaughterer, the remaining four are for general use. The management of the Public Slaughterhouses is under the jurisdiction of the Markets Committee.

*Under Section 116 Salford Corporation Act, 1862.

These premises are visited daily.

The number of animals slaughtered during the year was :—

Cattle	401
Sheep	1,053
Pigs	11
Calves	10
Horses	389

TABLE OF MONTHLY SEIZURES OF DISEASED AND UNSOUND FOOD DISCOVERED DURING ROUTINE INSPECTION AND OF UNSOUND FOOD SURRENDERED BY THE OWNERS THEREOF.

Month.	No. of Seizures.	Beef.	Mutton.	Pork.	Veal.	Horse Flesh.	Tinned Food.	Miscellaneous.	Total.
		Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
January	152	3407	1287	4074	..	..	..	..	8768
February	114	3192	1080	2387	..	..	3937	..	10596
March	188	4085	933	6164	..	..	..	..	11182
April	133	842	1025	2515	..	..	..	..	4382
May	66	2099	420	1404	..	..	..	..	3923
June	67	1120	525	1736	80	..	..	..	3461
July	55	129	374	1014	..	400	..	291	2208
August	49	40	320	1118	..	672	..	..	2150
September	95	440	784	3002	..	..	..	..	4226
October	68	2644	135	2884	..	..	..	..	5663
November.....	97	335	..	7647	..	672	..	..	8654
December	78	30	..	1869	..	..	..	..	1899
	1162	18363	6883	35814	80	1744	3937	291	67112

UNSOUND FOOD—TABLE SHOWING PLACE OF SURRENDER OR SEIZURE.

Premises.	Beef.	Mutton.	Pork.	Veal.	Horse Flesh.	Tinned Food.	Miscellaneous.	No. of Seizures.	Total Weight.
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.		Lbs.
Public Slaughterhouse.....	15728	6793	20	80	1744	..	..	251	24365
Private Slaughterhouse.....	2054	..	34573	..	..	..	..	888	36627
Retail Shop.....	181	90	61	..	..	..	224	9	556
Warehouse	..	..	..	..	..	3937	12	4	3949
Railway Sidings	..	..	1160	..	..	..	55	9	1215
Farm	400	..	..	..	..	..	..	1	400
	18363	6883	35814	80	1744	3937	291	1162	67112

Unsound Food Condemned for the Following Causes.

No. of Seizures.	Cause of Seizure.	Weight in lbs.
763	Tuberculosis	34,850
158	Asphyxia	10,933
116	Swine Fever	4,106
58	Parasitic Affections	982
16	Decomposition	8,907
10	Jaundice	1,260
10	Septic Conditions	1,715
8	Foot and Mouth Disease	1,278
7	Emaciation	2,100
7	Injury	145
4	Dropsy	155
2	Brine Taint	181
1	Peritonitis	400
1	Pneumonia	80
1	Rickets	20
1,162		67,112

Tuberculosis in Meat.

The following table is a summary of the various types of animals in which Tuberculosis was found :—

Description.	Total No. of Seizures.	Whole Carcasses and Organs	Parts of Carcasses (including head) and Organs	Organs Only.
Cows	30	27	2	1
Heifers	19	3	15	1
Bullocks	17	—	17	—
Pigs	697	86	576	35
Total	763	116	610	37

The following table shows the percentage of Pigs found to be affected with Tuberculosis during routine inspection of carcasses since 1920 :—

Year.	Number Inspected.	Diseased.	Percentage.
1920.....	6,925	260	3·75
1921.....	11,111	512	4·6
1922.....	14,809	824	5·5
1923.....	13,015	606	4·6
1924.....	18,742	931	4·9
1925.....	15,684	697	4·4

Public Health (Meat) Regulations, 1924.

STALLS, SHOPS, STORES, VEHICLES, ETC.

STALLS.—There are only a very small number of stall-holders selling meat in the Borough : the necessary coverings have been provided in all cases.

SHOPS.—No meat is exposed outside shops, but many of the shops still have the open window, which is not prohibited by these Regulations. In the poorer districts the butchers cling very much to the open window and state that it facilitates trade.

VEHICLES.—Several carriers conveying meat were warned as to the insufficient covering of the meat. Generally, the vehicles and the coverings were found to be in a clean condition and quite satisfactory.

MEAT MARKING.—With reference to this section of these Regulations, as there has been no request from the traders for the marking of meat, no marking has been carried out.

Inspection of Premises where Food is Prepared.

Four hundred and fifty-four inspections of this class of business have been made throughout the year; in four instances the premises have been reconstructed, and now comply with the Byelaws in operation. Strict supervision has been kept over all food-preparing places with a view to securing the cleanliness of premises, machines and utensils.

Imported Meat Regulations.

Under these Regulations, all imported meat must be labelled as such. Special attention has been paid to this matter, and butchers' shops have been regularly inspected with a view to this provision being carried out.

Several proprietors of shops were warned as to the non-labelling of imported meat. On subsequent occasions observation was kept on these shops, and in all cases the labelling was found to be satisfactory.

MILK.

Dairy Inspection.

There are five cowkeepers in the Borough, who have 11 shippons with accommodation for 140 cows.

The number of cows kept averaged 75.

Forty-one inspections of these animals were made during the year, the number of cows individually examined being 647.

Two cows affected with Tuberculosis of the Udder were discovered in cowsheds in the Borough and were removed for slaughter.

Dairies and Milkshops.

There are 767 dairies and milkshops in the Borough ; these include both wholesale and retail premises.

Seven hundred and fifty-five inspections of these premises have been made during the year.

On the whole, the general cleanliness of these premises has been satisfactory.

Milk Supply.

The Salford milk supply is practically all brought into this area.

It will be observed that there are only, on the average, about 75 dairy cows in the Borough. The milk supply comes chiefly from Cheshire, Lancashire and Yorkshire.

The distribution of milk in Salford is carried out by :—

Large Depôts in the Borough ;
Large Depôts in Manchester.

Small house-to-house retailers and retailers from outside districts.

In addition, a comparatively large business has grown up in Sterilised Bottled Milk; a very small percentage of this milk is manufactured in the Borough. In the summer time this milk seems to meet the requirements of a large number of the people in the poorer districts.

Much of the milk sold by the larger firms is pasteurised during the summer, but is not sold under this designation, and therefore does not come under the Milk (Special Designations) Order, 1923.

Most of the milk, other than sterilised bottled milk, is sold in the old way, *i.e.*, by measure.

The bacterial content of the milk produced in the Borough was found to be very much lower than ordinary milk coming in by railway and motor. The outside milk is, of course, several hours old when sampled, and the home produced milk is sampled soon after milking.

Unfortunately, some of the larger dairymen who have installed milk cleaners and pasteurisers are of the opinion that this treatment remedies contamination by dirt and manurial matter, which, in the first place, should never have occurred.

Licences Granted under the Milk (Special Designations) Order, 1923.

The number of licences granted under the above Order were as follows:—

2 Supplementary Licences to retail Certified Milk;
1 Licence to produce Pasteurised Milk;
3 Licences to sell Pasteurised Milk.

The plant used for the pasteurisation of milk is the Tarbutt Retarder; another firm have an Enoch Retarder but have not applied for a licence.

Tuberculous Milk.

During the year 1925, 331 samples of milk direct from farms were obtained at railway stations or dairies and examined for the presence of tubercle bacilli.

Twenty-nine of these samples were reported to contain tubercle bacilli, this being a percentage of 8.75.

The following table shows the District and number of samples obtained and the percentage of tuberculous milk :—

District.	Number of samples obtained and submitted for examination.	Number of samples found to contain Tubercle Bacilli.	Per cent Tuberculous.
Cheshire	203	22	10·8
Lancashire	90	4	4·4
Yorkshire	16	1	6·2
Derbyshire	14	2	14·3
Staffordshire	2	..	..
Shropshire	2	..	..
Scotland	1	..	..
Wales	1	..	..
Mixed	2	..	..
Total	331	29	8·75

The percentage of tuberculous samples discovered during previous years was as follows:—

1919.	1920.	1921.	1922.	1923.	1924.
8·3	7·2	6·7	5·08	8·63	8·7

The 29 tuberculous samples were direct farm samples, and the farms were visited and a total number of 598 cows examined.

On 26 farms, 30 cows were found affected with tuberculosis of the udder. In every case the clinical diagnosis was confirmed by bacteriological examination, and at the same time controlled samples of the milk from the remainder of the herd were obtained to prove that no cases had been overlooked.

On the remaining three farms no diseased cows were discovered, but information was obtained in every case that cows had been removed from the farm between the date of the taking of the sample and the date of the inspection visit.

It must be borne in mind, in connection with the taking of samples of milk for examination for the presence of tubercle bacilli, that it takes at least three weeks for the actual process, so that there is ample opportunity for a farmer to dispose of the affected cow during that period.

The Tuberculosis Order came into operation on the 1st September, 1925. This Order requires notification by the farmer to his own Local Authority of certain types of Tuberculosis, including Tuberculosis of the Udder.

In practice, it was found that during the short time in which the Order has been in operation, there was no diminution of Tuberculosis in the milk supply.

All cases discovered after the Order came into force were reported to the Local Authority of the district concerned and the animals were slaughtered by them under the powers granted by the Tuberculosis Order.

SECTION VI.

Borough Analyst's Report.

1. Samples taken under the Sale of Food and Drugs Act.

The total number of Foods and Drugs examined during the year was 1,396. The following table gives complete details concerning the various articles examined :—

TABLE 1.

SAMPLES.	Total Number Examined.	Number Adulterated.		Percentage of Adulteration.
		Preservatives Only.	Other ways.	
Milk	921	1	42	4·7
Skimmed Milk	2	..	..	..
Condensed Milk	5	..	..	..
Butter	20	..	..	..
Margarine	48	..	..	..
Margarine blended with Butter	3	..	3	100·0
Cream Cheese	11	..	9	81·8
Cheshire Cheese	34	..	3	8·8
Bondon Cheese	2	..	2	100·0
Cheese	19	..	..	..
Tinned Cream	7	..	..	..
Cream Ice	11	..	9	81·8
Lard	6	..	..	..
Lemon Cheese	6	..	1	16·7
Jam	7	..	3	42·9
Preserved Cherries	6	..	..	..
Ground Almonds	20	..	..	..
Almonds	4	..	..	..
Apples	8	..	..	..
Toffee and Sweets	57	13	..	22·8
Tonic Food Beverage	1	..	..	..
Tea	13	..	..	..
Coffee	4	..	..	..
Coffee and Chicory	1	..	..	..
Cocoa	7	..	..	..
Rice	7	..	..	..
Ground Rice	5	..	..	..

TABLE 1—*Continued.*

SAMPLES.	Total Number Examined.	Number Adulterated.		Percentage of Adulteration.
		Preservatives Only.	Other ways.	
Egg Powder	3	..	..	..
Custard Powder	7	..	1	14·3
Baking Powder	6	..	..	..
Fish and Meat Pastes	7	..	1	14·3
Cod Liver Oil and Malt	2	..	2	100·0
Lysol	14	..	..	..
Tartaric Acid	5	..	..	..
Cream of Tartar	5	..	..	..
Glauber Salts	5	..	..	..
Rochelle Salts	4	..	..	..
Epsom Salts	5	..	..	..
Seidlitz Powder Double strength	14	..	8	57·1
Seidlitz Powder Extra strong	4	..	1	25·0
Turpentine	7	..	4	57·1
Turpentine Substitute	2	..	..	..
Borax	8	..	..	..
Ammoniated Tincture of Quinine	6	..	..	..
Pepper	6	..	..	..
Invalid Wine	2	..	2	100·0
Beer	4	..	..	..
Whisky	26	..	3	11·5
Prescriptions	19	..	..	..
	1396	14	94	7·7

The total number of samples, 1,396, is smaller than that for last year. This is due to the fact that a greater amount of work has had to be done on each sample. In spite of this, however, the number still represents a greater number per thousand of the population than most other Local Authorities. Of the total samples, 108, or 7·7 per cent were returned as adulterated. Comparative figures for adulteration in previous years are given in Table 2.

TABLE 2.

COMPARATIVE PERCENTAGE OF ADULTERATION.

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Percentage of Adulteration	5·8	1·2	4·0	8·8	6·3	8·7	5·6	6·9	4·3	7·7
Total Samples .	1,202	1,385	1,237	1,234	1,410	1,364	1,452	1,388	1,544	1,396
Formal Samples	352	433	858	657	807	623	653	644	775	752
Informal —,	850	952	379	577	603	741	799	744	769	644
No. of Samples per 100,000 persons	561	648	591	546	599	570	607	577	641	572

The samples may be divided into two sections, "Formal" and "Informal" samples. "Formal" samples are those which are taken in accordance with Section 14 of the Sale of Food and Drugs Act, 1875, which reads as follows :—

"The person purchasing any article with the intention of submitting the same for analysis shall . . . . forthwith notify to the seller . . . . his intention to have the same analysed by the Public Analyst, and shall divide the article into three parts . . . . and shall deliver one of the parts to the seller."

"Informal" samples are those in connection with which the formalities of the Act are not complied with, and in general, the seller has no knowledge that the taking of the sample is for official purposes. No legal action under the Sale of Food and Drugs Act can follow the taking of an "Informal" sample.

The taking of "Informal" samples is a valuable method of enquiry into the food supply of the Borough, and for finding out at what shops it would be profitable

to take "Formal" samples with a view to legal proceedings. The time and trouble required for the taking of an "Informal" sample are much less than those required for the taking of a "Formal" sample, and no annoyance is caused to honest shopkeepers, whose chief objections to the taking of samples are that the Inspector takes up their time and counter space for the division of samples, while his action excites curiosity on the part of the customers.

A memorandum sent out by the Local Government Board (now the Ministry of Health) in December, 1914, contained the following words: "The Board understand that, with a view to preliminary investigation, 'Informal' samples have been collected in some districts for examination, by rough sorting methods only, by the Public Analyst or by some other person." This and similar statements have given rise in some quarters to the idea that "Informal" samples need less care and trouble bestowed upon them than "Formal" samples. The phrase "by rough sorting methods" may, of course, be variously interpreted, but it is now a generally acknowledged fact that the days of empirical sorting tests are over, and that the advent of the scientific food faker has made it necessary for analysts to study carefully all samples submitted by them. The results obtained "by rough sorting methods . . . . by some other person" may actually do harm by indicating purity where it does not exist.

In this laboratory, and, in fact, in all public laboratories of which the writer has any knowledge, as much time and care are bestowed upon "Informal" as upon

"Formal" samples; indeed, it may happen that, where some particularly ingenious adulteration has been practised, practically all the investigation is done on the "Informal" sample when, with the knowledge so gained, the analysis of a subsequent "Formal" sample will be a comparatively simple matter.

Milk.

Nine hundred and twenty-one samples of milk have been examined during the year, of which 43, or 4·7 per cent have been returned as adulterated.

The average composition of milks taken during the year will be found in Tables 4, 5 and 6. The average composition of the whole of the milk is given in Table 4. Table 5 gives the composition of station milk, *i.e.*, the milk delivered by farmers, whilst Table 6 gives the composition of milk delivered in the Borough by retailers. This number included 22 samples taken at Ladywell Sanatorium, 55 taken at Hope Hospital, three taken at the Open-Air School, and two taken at Broughton House. Towards the end of the year a change took place in the type of milk purchased for the Corporation Hospitals. At the present time these are receiving a Grade A milk, which is supplied in bulk in sealed cans. Such milk offers far greater security against bacteriological contamination and, in addition, the particular samples examined have been found to be good, rich milk.

TABLE 3.—ADULTERATION OF MILK.

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Number of Samples	435	386	539	865	829	981	899	923	779	833	921
Percentage of Adulteration .	4·8	10·1	2·4	3·1	7·1	7·2	8·9	5·3	5·4	2·6	4·7

TABLE 4.

AVERAGE COMPOSITION OF ALL MILKS, 1925.

Month.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
January	95	12·49	3·61	8·88
February	66	12·42 — 12·42	3·56 — 3·55	8·86 — 8·87
March	97	12·35	3·53	8·82
April	72	12·43	3·53	8·90
May	59	12·41 — 12·44	3·48 — 3·59	8·93 — 8·85
June	75	12·37	3·35	9·02
July	36	12·41	3·67	8·74
August	69	12·45 — 12·22	3·65 — 3·61	8·80 — 8·61
September	82	12·66	3·68	8·98
October	94	12·68	3·68	9·00
November	83	12·49 — 12·41	3·61 — 3·51	8·88 — 8·90
December	93	12·39	3·62	8·77
TOTAL	921	12·45	3·58	8·87

TABLE 5.

AVERAGE COMPOSITION OF STATION MILKS, 1925.

Month.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
January	20	12·57	3·67	8·90
February	3	12·24 — 11·77	3·53 — 3·50	8·71 — 8·27
March	35	12·08	3·44	8·64
April	8	12·25	3·35	8·90
May	17	12·42 — 12·59	3·49 — 3·70	8·93 — 8·89
June	25	12·35	3·39	8·96
July	12	12·54	3·78	8·76
August	21	12·03 — 11·56	3·55 — 3·40	8·48 — 8·16
September	5	12·78	3·64	9.14
October	6	13·16	3·93	9·23
November	33	12·24 — 12·02	3·47 — 3·21	8·77 — 8·81
December	62	12·26	3·56	8·70
TOTAL	247	12·24	3·49	8·75

TABLE 6.

AVERAGE COMPOSITION OF MILKS OTHER THAN STATION MILKS, 1925.

Month.	Number of Samples.	Total Solids per cent.		Fat per cent.		Solids-not-fat per cent.	
January	75	12·47	12·47	3·57	3·59	8·90	8·88
February	63		12·45		3·55		8·90
March	62		12·49		3·57		8·92
April	64	12·40	12·45	3·48	3·57	8·93	8·89
May	42		12·37		3·54		8·83
June	50		12·37		3·32		9·05
July	24	12·56	12·35	3·68	3·62	8·88	8·73
August	48		12·51		3·71		8·80
September	77		12·65		3·67		8·98
October	88	12·65	12·64	3·69	3·67	8·96	8·97
November.....	50		12·67		3·71		8·96
December	31		12·63		3·72		8·91
TOTAL	674	12·52		3·60		8·92	

Table 7 contains figures for the composition of milks sold in Salford for the past twelve years. For purposes of comparison a few other figures have been taken from the annual reports of the authorities named, together with the figures obtained by the analysis of thousands of samples by Richmond.

TABLE 7.

Place.	Number of Samples.	Total Solids per cent.	Fat per cent.	Solids-not-fat per cent.
Salford 1914	196	12·58	3·77	8·81
1915	435	12·62	3·78	8·84
1916	386	12·41	3·61	8·80
1917	539	12·69	3·81	8·88
1918	863	12·40	3·63	8·77
1919	837	12·44	3·66	8·78
1920	1000	12·39	3·53	8·86
1921	899	12·53	3·59	8·94
1922	932	12·41	3·61	8·86
1923	779	12·54	3·61	8·92
1924	833	12·41	3·61	8·80
1925	921	12·45	3·58	8·87
Kent.....1924	1360	12·73	3·88	8·85
Bristol 1924	677	12·46	3·62	8·84
Kingston-upon-Hull.....1924	417	12·56	3·77	8·79
Hammersmith ..1923	435	12·55	3·67	8·88
Richmond's Figures (1910	19807	12·62	3·73	8·89
(1916	14286	12·67	3·82	8·85

These figures show that the milk sold in Salford has, generally speaking, a satisfactory chemical composition, and that it compares not unfavourably with that sold in other districts.

It should be pointed out that the averages, at least as far as Salford is concerned, are not quite fair and that the average quality of the milk entering the Borough is appreciably better. This is brought about by the fact that samples of milk taken are, to a certain extent, picked samples, as frequently several samples will be taken from one vendor whose milk is of suspiciously low quality. Each of these samples will then affect the final average, which latter will not

then be, on account of the high percentage of poor milks present, a true indication of the whole of the milk.

Table 8 contains a list of the samples of milk found to be adulterated, together with the action taken in regard to each sample :—

TABLE 8.

ADULTERATED SAMPLES OF MILK.

No. of Sample.	Nature of Adulteration.	Action taken.	Remarks.
4671	Deficient 13% fat.	Fined £1.	
4766	Deficient 7·1% solids-not-fat.		
4782	Deficient 3·5% solids-not-fat.	Referred to County Authorities.	Samples 4782 and 4783 taken from farmer supplying 4766.
4783	Deficient 5·9% solids-not-fat.		
4913	Deficient 3·5% solids-not-fat.		
4928	Deficient 5·9% solids-not-fat.		
4930	Deficient 5·9% solids-not-fat.		
4931	Deficient 5·9% solids-not-fat.	Fined £2.	Farmer supplying vendor of 4913.
4939	Deficient 5·9% solids-not-fat.		
4941	Deficient 8·2% solids-not-fat.		
4942	Deficient 3·5% solids-not-fat.		
4947	Deficient 3·5% solids-not-fat.		
4948	Deficient 2·4% solids-not-fat.		
4949	Deficient 2·4% solids-not-fat.		
4977	Deficient 13% fat.	Fined £2 in each case—£4 in all.	
4978	Deficient 13% fat.		
5108	Deficient 36·7% fat.	Referred to Manchester.	Milk supplied by Manchester dealer.
5212	Deficient 10% fat.	No action.	Subsequent samples genuine.
5217	Deficient 20% fat.	Farmer fined £3.	
5225	Deficient 23% fat.		
5238	Deficient 30% fat.		
5337	Deficient 13·3% fat.	Cautioned.	Deficiency appeared to be due to careless mixing.
5350	Deficient 6·7% fat.		
5422	Deficient 16·7% fat and 14·1% solids-not-fat.	Fined £2 on each of eight summonses—	
5423	Deficient 3·3% fat and 18·8% solids-not-fat.		
5424	Deficient 9·4% solids-not-fat		
5425	Deficient 10% fat and 10·6 per cent solids-not-fat.		
5426	Deficient 20% fat and 14·1% solids-not-fat.		
5428	Deficient 16·5% solids-not-fat.		

TABLE 8—(Continued).

No. of Sample.	Nature of Adulteration.	Action taken.	Remarks.
5429	Deficient 3·3% fat and 17·7% solids-not-fat.	Fined £2 on each of eight summonses—£16 in all.	
5430	Deficient 10% fat and 11·8% solids-not-fat.		
5576	Contained one part per 10,000 potassium nitrate (saltpetre	Source of supply could not be traced.	This milk will be kept under observation.
5774	Deficient 13·3% fat.	See 5798/5814 for farmer.	Small shopkeeper.
5798	Deficient 6% fat.	Caution.	
5812	Deficient 10% fat.		
5814	Deficient 6% fat.		
5953	Deficient 8·8% solids-not-fat.	Fined £1 on each of six summonses—£6 in all.	
5955	Deficient 4·7% solids-not-fat.		
5956	Deficient 11·7% fat and 10·6% solids-not-fat.		
5958	Deficient 5·9% solids-not-fat.		
5959	Deficient 15% fat and 12·3% solids-not-fat.		
5965	Deficient 9·4% solids-not-fat.		

Milk Sample No. 4671 was obtained from a farmer on delivery at Pendleton Station to a milk dealer in the Borough. Samples taken on the following morning were of good average quality and the adulterated sample showed a deficiency of about 20 per cent when compared with these. The farm was visited by the Inspector in the usual way. It was found that the owner of the farm was a well-known cotton manufacturer who made a hobby of dairy farming, the actual conduct of the farm being left entirely in the hands of an agent. Legal proceedings were instituted against the proprietor as the person legally responsible and a fine of £1 was inflicted, the Stipendiary remarking that it would have been considerably higher if it had not been for the unfortunate circumstances in which the proprietor had been placed.

Sample No. 4766, which contained 7 per cent of added water was obtained from the dealer supplying milk to

Broughton House. Samples Nos. 4782 and 4783 were taken at Heaton Park Station from the farmer supplying this dealer. As the wholesale dealer has no place of delivery in Salford, it follows that, although the place of delivery was not more than 1¼ miles from the Borough boundary, your Inspector has no power to take proceedings, so that the matter was reported to the Lancashire County Authorities for their consideration. In due course legal proceedings were instituted by the County Authorities and the vendor was fined £5 and £2 15s. costs, it transpiring that the defendant had been previously convicted.

Milk No. 4913 was taken from a shop; Samples 4928 to 4949 were taken from the farmer supplying this shop. In due course the farm was visited and "Appeal to Cow" samples were taken in the presence of the Inspector. During the visit to the farm an attempt was made to introduce water into the milk. This was observed by one of the Inspectors, and from a careful investigation of the results obtained from these samples on analysis it was quite obvious that the cows were producing an excellent milk. Legal proceedings were instituted and as a result the farmer was fined £2.

Samples 4977 and 4978 were taken from the same vendor. The milk from the farmer supplying this vendor was of fair quality and there was no obvious explanation for the deficiency. Legal proceedings were instituted and the dealer was fined £2 in each case.

Sample No. 5108 was deficient of 36·7 per cent of fat. This sample was obtained from a vendor who purchases his milk in Manchester. This milk was found to be

adulterated on arrival at the station in Manchester, and under these circumstances the facts were submitted to the Manchester Authorities. The farmer was prosecuted by the Manchester Authorities and a fine of 40s. and £4 3s. 8d. costs was imposed.

Milk No. 5212 was obtained from a farmer and was found to be deficient of 10 per cent of fat. This was an informal sample. Subsequent formal samples were found to be genuine and no further action has been taken.

Milk No. 5217 was deficient of 20 per cent of fat and was supplied by a small shopkeeper. Milk No. 5225 was taken from the wholesaler supplying this shop and was found to be deficient of 23 per cent of fat. Milk No. 5238 was taken from the farmer supplying this wholesaler and was found to be deficient of 30 per cent of fat. Legal proceedings were instituted against the farmer, who was fined £3.

Samples 5337 and 5350 were obtained from the same dealer. They were purchased in bottles exactly as they had been supplied to the retailer by the wholesaler. A further sample taken at about the same time was found to contain an excessive quantity of fat and on investigation it appeared most probable that the deficiency in the two cases was caused by careless mixing of the fat during the process of bottling. The wholesale firm were cautioned and they have undertaken to use every endeavour to prevent a like occurrence in the future and under these circumstances no further action was taken.

Samples 5422 to 5430 were taken from the same vendor, a farmer, as a result of a complaint submitted by a local dealer. This was a particularly bad batch of

samples and one of the worst that have been submitted to this laboratory for some time. In due course the farm was visited by the Inspector and an assistant, the cows being milked in their presence. Several matters at the farm were not quite satisfactory and needed a certain amount of explanation. For example, the milk churns which were found standing in the dairy to receive the milk contained a quantity of water which would approximately account for the amounts found in the above samples, although the farmer stated that the water was always emptied out before the milk was added. Further, the overflow pipe from the cooler was very badly adjusted and it was quite possible so to turn this pipe that a portion of the overflow water ran into the milk. The farmer stated that he was not aware of this leak, although it was immediately discovered by the Inspector during an examination of the apparatus. When the "Appeal to Cow" samples were examined they were found to be excellent milk. Legal proceedings were instituted against the farmer as a result of which he was fined £2 in each of eight cases, £16 in all.

Milk Sample No. 5576 was found to contain one part in 10,000 potassium nitrate (saltpetre). It has not been possible to trace the source of this adulteration. Several further samples have been obtained from the farmer and the wholesale dealer supplying this milk, but no further adulterated samples have been found. No further action was taken in regard to this sample, but the supply will naturally be kept under observation.

Milk Sample No. 5774 was obtained from a small shop whilst samples 5798, 5812 and 5814 were obtained

from the farmer supplying this shop. "Appeal to Cow" samples had the following composition :—

Sample No.	Fat.	Solids-not-fat.
5286	3·2	9·0
5287	3·3	8·9

Although the "Appeal to Cow" samples were thus comparatively rich in fat, legal proceedings were not instituted, but a strong cautionary letter was addressed to the farmer.

Samples 5953 to 5965 inclusive were all obtained from the same farmer. Five samples were taken from this farmer on each of three successive days (omitting Sunday), 15 samples in all. The composition of these samples was as follows :—

Sample No.	Fat.	Solids-not-fat.
5951	4·1	9·2
5952	4·0	8·8
5953	3·4	7·7
5954	3·3	9·1
5955	3·1	8·2
5956	2·65	7·6
5957	4·0	8·9
5958	3·75	8·0
5959	2·6	7·5
5960	4·1	8·8
5961	3·3	9·2
5962	4·2	9·0
5963	3·9	8·7
5964	3·4	8·4
5965	3·3	7·7

"Appeal to Cow" samples were obtained in the usual way and they had the following composition :—

Fat.	Solids-not-fat.
3·7	8·8
4·1	8·7
4·1	8·9
4·2	8·8

It was thus obvious that not only had there been a considerable addition of water, but that fat had also been abstracted. Legal proceedings were therefore instituted, as a result of which the farmer was fined £1 on each summons—£6 in all. In the course of the hearing the farmer explained that he himself had no knowledge as to the source or cause of the adulteration and the Magistrate accepted this view, inflicting a smaller penalty for this reason.

Table 9 contains a list of samples, other than milk, found to be adulterated, together with the action taken in regard to each sample.

TABLE 9.

No. of Sample.	Description.	Nature of Adulteration.	Remarks.
4663	Cheshire Cheese.	Deficient 34% fat.	Formal sample could not be obtained.
4719	Cheshire Cheese.	Deficient 27% fat.	Informal sample of 4751.
4751	Cheshire Cheese.	Deficient 20% fat.	Fined £5.
4775	Boiled Sweets.	Contained 3·2 grains Sulphur Dioxide per lb.	The Manufacturers have been communicated with.
4777	Boiled Sweets.	Contained 3·3 grains Sulphur Dioxide per lb.	
4793	Boiled Sweets.	Contained 3·4 grains Sulphur Dioxide per lb.	
4794	Boiled Sweets.	Contained 5·1 grains Sulphur Dioxide per lb.	
4795	Boiled Sweets.	Contained 4·2 grains Sulphur Dioxide per lb.	
4885	Cod Liver Oil and Malt.	Cod Liver Oil changed probably by hydrogenation.	This matter is still under consideration
4925	Cream Cheshire Cheese.	This sample was not a Cream Cheese, but merely a whole milk Cheshire Cheese.	Informal sample. See 4980 and 5024.
4950	Margarine.	Contained only 1% Butter fat.	Manufacturers cautioned by letter.
4980	Cream Cheshire Cheese.	This sample was not a Cream Cheese, but merely a whole milk Cheshire Cheese.	See 5024.
4981	Cream Cheddar Cheese.	This sample was not a Cream Cheese, but merely a whole milk cheese.	See 5025.
5024	Cream Cheshire Cheese.	This sample was not a Cream Cheese, but merely a whole milk cheese.	Fined £10 and £16 10*s*. costs.

TABLE 9—(Continued.)

No. of Sample.	Description.	Nature of Adulteration.	Remarks.
5025	Cream Cheese	This sample was not a Cream Cheese, but merely a whole milk cheese.	Case withdrawn.
5049	Custard Powder.	Contained less than 5% of egg.	Manufacturers have agreed to remove objectionable words from their label.
5106	Invalid Wine.	This sample is a solution of invert sugar in water with 0·003% of B.P. quinine sulphate. Contained 0·05 per cent salicylic acid.	Informal sample. See 5107.
5107	Invalid Wine.	This sample is a solution of invert sugar in water with 0·003% of B.P. quinine sulphate. Contained 0·05% salicylic acid.	Fined £20 and 50 guineas costs.
5121	Toffee.	Contained 4·9 grains Sulphur Dioxide per lb.	The Manufacturers have been approached.
5222	Toffee.	Contained 8·5 grains Sulphur Dioxide per lb.	
5242	Strawberry Jam.	Contained 15% glucose syrup.	Caution.
5243	Cream Ice.	Deficient 71·4% fat.	The Vendors were warned and a letter has been sent to the Milk Dealers Association.
5244	Cream Ice.	Deficient 78·6% fat.	
5245	Cream Ice.	Deficient 92·9% fat.	
5246	Cream Ice.	Deficient 35·7% fat.	
5258	Cream Ice.	Deficient 85·7% fat.	
5259	Cream Ice.	Deficient 92·9% fat.	
5260	Cream Ice.	Deficient 85·7% fat.	
5261	Cream Ice.	Deficient 71·4% fat.	
5262	Cream Ice.	Deficient 92·9% fat.	
5252	Bondon Cheese.	Deficient 75% fat.	Caution.
5253	Bondon Cheese.	Deficient 95% fat.	Caution.
5270	Lemon Cheese.	Deficient in eggs and butter.	The Manufacturers have been approached.
5274	Margarine.	Contained less than 1% butter.	
5285	Boiled Sweets.	Contained 3·3 grains Sulphur Dioxide per lb.	
5287	Boiled Sweets.	Contained 10 grains Sulphur Dioxide per lb.	
5288	Boiled Sweets.	Contained 12·5 grains Sulphur Dioxide per lb.	
5289	Boiled Sweets.	Contained 6·9 grains Sulphur Dioxide per lb.	
5290	Boiled Sweets.	Contained 3·7 grains Sulphur Dioxide per lb.	
5298	Boiled Sweets.	Contained 7·3 grains Sulphur Dioxide per lb.	
5354	Cream Cheese.	Deficient 48% fat.	Cautionary letter sent Vendor.

TABLE 9—(Continued.)

No. of Sample.	Description.	Nature of Adulteration.	Remarks.
5368	Double Strength Seidlitz Powder.	Deficient 24% of correct contents of blue paper.	The whole of the vendors have been cautioned and letters have been addressed to the local Association and Pharmaceutical Press.
5370	Double Strength Seidlitz Powder.	Deficient 16% of correct contents of blue paper.	
5374	Double Strength Seidlitz Powder.	Deficient 37% of correct contents of blue paper.	
5377	Double Strength Seidlitz Powder.	Deficient 41% of correct contents of blue paper.	
5378	Double Strength Seidlitz Powder.	Deficient 42% of correct contents of blue paper.	
5379	Double Strength Seidlitz Powder.	Deficient 43% of correct contents of blue paper.	
5380	Double Strength Seidlitz Powder.	Deficient 33% of correct contents of blue paper.	
5401	Double Strength Seidlitz Powder.	Deficient 42% of correct contents of blue paper.	
5419	Cream Cheese.	Consisted of a skimmed milk Cheese.	Vendors cautioned by letter.
5420	Cream Cheese.	Consisted of a skimmed milk cheese.	
5421	Cream Cheese.	Consisted of a whole milk cheese.	
5477	Margarine.	Contained not more than ½% of butter.	
5533	Turpentine.	Contained 95% Turpentine Substitute.	The Packers have been informed that unless this misdescription ceases legal proceedings will be instituted.
5540	Turpentine.	Contained 95% Turpentine Substitute.	
5546	Turpentine.	Contained 95% Turpentine Substitute.	
5547	Turpentine.	Contained 95% Turpentine Substitute.	
5552	Extra Strong Seidlitz Powder.	The blue paper was of B.P. strength, the white paper was 14% deficient in weight.	
5606	Whisky.	Contained 8% excess of water.	Informal Sample. See 5619.
5619	Whisky.	Contained 8% excess of water.	The Manager and the Brewery Co. have been cautioned.
5622	Whisky.	Contained 9% excess of water.	Formal Sample genuine. Caution.
5741	Strawberry Jam.	Contained 15% glucose syrup.	
5749	Strawberry Jam.	Contained 5% glucose syrup.	
5804	Anchovy Paste.	Contained 14% Ferric Oxide.	This matter is receiving further attention.
5966	Cod Liver Oil and Malt.	Contained hardened Cod Liver Oil.	This question is still under consideration.

Butter and Margarine.

Twenty samples of butter have been examined during the year all of which have been found to be genuine. Four samples were preserved with boron preservative which amounted to about 0·2 per cent. expressed as boric acid, in each case. The percentage of water has varied from 8·5 per cent to 15·0 per cent. The Reichert-Wollny number of the fat has varied from 24·6 to 33·2.

Butter is required to be made entirely from the milk of the cow, and to contain not more than 16 per cent of water. The Departmental Committee on Preservatives in food recommend that the only preservative allowed to be used should be borax or boric acid, in amount not exceeding 0·5 per cent calculated as boric acid.

Forty-eight samples of margarine have been examined, none of which was adulterated. Ten samples were examined for boron preservative; this was detected in five cases. In one sample it amounted to 0·5 per cent., in two samples to 0·3 per cent., in one sample to 0·2 per cent., and in one sample to 0·1 per cent. expressed as boric acid.

The main legal requirements in connection with the sale of margarine are:—"That it shall be sold in a wrapper on which the word "Margarine" is printed in capital block letters not less than half-an-inch long and distinctly legible, that it shall not be described by any name other than either "Margarine" or a name containing the word "Margarine" with a fancy or

descriptive name approved by the Board of Agriculture (the Board of Agriculture are not empowered to approve of any name if it refers to or is suggestive of butter or anything connected with the dairy interest), and that the fat shall not contain more than 10 per cent of butter fat. From these facts it would appear that it was not the intention of the legislature that butter substitutes should be described as mixtures of butter and margarine, particularly as margarine is defined by Section 13 of the Act of 1907 as "any article of food whether mixed with butter or not, which resembles butter and is not milk blended butter." It would seem likely that purchasers might be prejudiced by the sale of an edible fat described as "mixed with butter" when it cannot legally contain more than 10 per cent of butter and very frequently contains only a fraction of this amount.

During the year, three samples of margarine described as mixtures or blends of butter and margarine have been examined, all of which have been returned as adulterated. Section 8 of the Food and Drugs Act, 1899, requires that the fat of margarine shall not contain more than 10 per cent of butter fat, whilst Section 13 of the Butter and Margarine Act, 1907, states that such a mixture is margarine, and Section 8 of the same Act states that it shall not be described by any other name but margarine (with or without a fancy name approved by the Board of Agriculture).

Sample No. 4950, margarine, was advertised as being "Churned with Rich Cream." The fat of the sample contained as an outside figure 1 per cent of butter fat showing that although a minute amount of cream might

have been used during the churning the sample could not in any possible way be rightly described as being churned with rich cream. The manufacturers of this article were approached and after a certain amount of correspondence they agreed to withdraw the description rather than subject the matter to consideration in the Courts.

Sample of Margarine No. 5274 was described as "'————' Margarine. Freshly Churned at a Hygienically-equipped Creamery. Compounded of the Purest Materials of High Food Value and Contains a small quantity of Best Butter. '————' Margarine will always be found Fresh and Delicious." The amount of butter contained in this sample was less than 1 per cent, and in the writer's considered opinion, such descriptions and labels can only have one intention. It may possibly be argued that taking the strict meaning of the words the addition of 1 oz. of butter to 100 tons of margarine would satisfy the requirements of such a statement, but it is very doubtful whether any firm would go to the trouble of adding minute quantities of any material if there were not some compensating advantage to them. Convictions have been obtained in this Borough for very similar if somewhat more definite statements. In this case also, on pressure being brought to bear, the manufacturers agreed to withdraw the description.

Sample No. 5477 was described as containing butter. The amount of butter present was certainly considerably less than 1 per cent, and as a matter of fact, if the manufacturers had been forced to attempt to prove its presence by chemical tests on the finished product they would,

in all probability, have failed to do so. In this case also the manufacturers finally agreed to discontinue the use of misleading descriptions and at an interview they made no attempt to prove the presence of material quantities of butter fat in their finished product.

Some time ago a large number of samples of margarine were so described and, as the proportion of butter contained therein was quite minute, prosecutions were instituted and in many cases substantial fines inflicted. As a result of these prosecutions the practice ceased and it was very instructive to observe that when these margarines were no longer described as containing butter the butter was no longer added, showing that the amount of butter present would not have any effect on the flavour of the article (otherwise the change would have been noticed by the public and the sales would have been affected) and was obviously added solely with the idea that the word "butter" might be used. In the opinion of the writer the original legislation intended that margarine should be sold as margarine and that it should be unlawful to attempt to suggest to the purchaser that the substance sold is anything different from what it really is. The writer has been assured by more than one manager of margarine works that this is indeed the case and that the majority of manufacturers would welcome the strict application of what was undoubtedly the intention of the legislature at the time of the passing of the Margarine Acts. Such descriptions as "As Good as Butter," "Contains Butter," "Churned like Butter" are obviously intended to give the impression to the purchaser that he is getting something which is different

from the ordinary margarine whereas he is getting nothing of the sort. It would seem most desirable that in subsequent legislation a clause should be inserted defining still more clearly the position with regard to the sale of butter and margarine.

Lard.

The six samples of lard have been returned as genuine. They were free from water, rancidity and paraffin, and no foreign fat was detected in any case.

Cheese.

Nineteen samples of cheese have been examined, all of which have been passed as genuine. The fat has, in each case, proved to be pure milk fat which has been present to any extent varying from 2·5 per cent to 42 per cent. It is obviously most unsatisfactory that anything from separated milk cheese to a whole milk cheese should be sold as "cheese," but there would appear to be great difficulties in the way of taking legal proceedings under the present conditions. The grading of cheese is a matter which is of the greatest importance as at the present time large quantities of inferior cheese are foisted on to the public as a full-cream variety.

It is interesting to note that this country is one of the few in which the grading of cheese has not been attempted. In Holland all cheese manufactured must be graded according to its fat content and partially skimmed milk cheese can only be sold under a correct description. Such cheese imported into this country may apparently be sold without any qualifying statements at all, obviously a most unsatisfactory state of affairs.

Cheshire Cheese.

Thirty-four samples of Cheshire cheese have been examined during the year of which three, equivalent to 9·1 per cent, have been returned as adulterated. Cheshire cheese should be a whole milk cheese produced by the well-known method in Cheshire and neighbouring counties. Presumably, therefore, neither a cheese made from partially skimmed milk nor an imported cheese should be sold under this description. The offence would appear still greater when an imported cheese made from partially skimmed milk is sold as Cheshire cheese.

Samples Nos. 4663 and 4719 were informal samples and were deficient in fat. These samples were not Cheshire cheese, being imported from Holland. The Dutch Government do not support in any way this misdescription of the produce of their country, and the latest regulations have laid down the principle that cheese made from partially skimmed milk must be sold for what it is and must be branded indelibly before it leaves the country. It follows, therefore, that when these cheeses are imported into England there can be no question of ignorance on the part of any one who handles them, although at one time there is no doubt that they were prepared with the object of imitating the genuine Cheshire cheese as closely as possible.

The difficulties which are encountered by those whose duty it is to see that the public are supplied with the articles they require is well-illustrated by this question of Cheshire cheese. It is extremely doubtful whether even so zealous an Inspector as is possessed by your

Committee can always be sure that he is being treated by the shopkeeper as an ordinary customer, and there would appear to be reason for believing that "regular customers," especially of a certain type, are not always treated in the same way as the casual customer.

If the food supply of this country is ever to be placed in a position where it is even relatively above suspicion, it is of the utmost importance that the public be educated, in the first place, to know what they want, in the second place, to see that they get what they want, and, thirdly, and most important of all, to realise that the article that looks the best is by no means necessarily the best from the dietetic point of view.

It was impossible to obtain, even through an agent, a formal sample from the vendor of 4663, as she was apparently suspicious when Cheshire cheese was asked for and stated that her cheese was "Dutch Cheshire," although she did not say this in the case of the informal sample, and there is no doubt that the deception had been going on for some time. Further endeavours will be made to obtain samples from this vendor. It is, of course, by no means admitted that a sample of "half meat" (cheese prepared from milk which has been deprived of about half of its fat) Dutch cheese should be sold as "Dutch Cheshire," but it is thought advisable in the first instance to caution in cases of this kind.

A formal sample (No. 4751) was obtained from the vendor of 4719. Legal proceedings were instituted in this case and a fine of £5, including costs, was imposed.

Cream Cheese.

Eleven samples of cream cheese have been examined during the year, of which nine, or 81·8 per cent, have been returned as adulterated.

Sample No. 5024 was described as a "cream Cheshire cheese." On examination this was found to contain 32 per cent of fat, 22 per cent of proteins and 42 per cent of water, showing that the sample could not by any means be described as a cream cheese, but was purely a whole milk cheese of good average quality. This sample was taken on delivery from the manufacturers so that it was possible to institute proceedings directly against them rather than against the local vendors, who were, of course, innocent agents in the prosecution. In the course of the hearing, your Analyst was supported by Professor W. H. Roberts, the Liverpool City Analyst, and we were able to prove to the satisfaction of the Court that a cheese sold as "cream cheese" should be prepared from cream. As a result of the action the manufacturers were fined £10 and £10 10s. costs.

Sample No. 5025 was obtained under similar conditions to No. 5024 above, but this sample was described as "cream cheese." On examination it was found to contain 27 per cent of fat, 24 per cent proteins and 44 per cent of water, showing that this sample, again, was merely a whole milk cheese, and could not be described as a "cream cheese." This cheese was an imported cheese, the English agents for which were the manufacturers of sample 5024. Proceedings were instituted against these agents, but were withdrawn

on account of the fact that there had been no contract for sale.

Sample No. 5454 was found to be deficient of 40 per cent of fat. In this case the vendor was not of English nationality and only spoke the language with difficulty. The type of soft cheese, which he was selling is well-known among his customers, who probably have a very clear idea as to what they are buying. On being questioned the vendor was perfectly open about the subject and gave a detailed account as to how it was made, so that there was no question of intended fraud. It has been pointed out to this vendor that such articles as this which are made from whole, partially skimmed or even separated milk ought not to be sold as "cream cheese," and he appears to understand now the situation.

Samples 5419 to 5421 were also obtained from vendors who are not of English nationality. There would appear to have been no intention of attempting to defraud and under the circumstances the vendors have been warned.

It is hoped that the successful issue or the prosecution mentioned above may render it easier in future to protect the public who require a cream cheese. There is no doubt that the description "cream cheese" was applied originally to a cheese made from cream and that it is not merely a description for soft cheese in general. The evidence on this point is quite conclusive. Of late years the practice has sprung up among retailers of describing any soft cheese as a cream cheese, and the writer has known of samples so described which contained only 1 per cent of fat. It must be admitted at once that the articles are not so described officially by manufacturers.

but they seem to have very little control over the verbal statements of their representatives and the question arises as to whether the retailer is always fully aware of the nature of the substance he is selling.

Bondon Cheese.

Sample No. 5252 was described as "'———' Bondon Cheese." It was found to contain 5 per cent of fat on the original cheese and 68 per cent of water. This means that the solid matter of the cheese contained 10 per cent of fat whereas the solid matter of a whole milk cheese never contains less than 45 per cent of fat. This cheese is considered by the writer to be adulterated for two reasons, firstly, on account of the high percentage of water and, secondly, on account of the low percentage of fat. A short time ago (March, 1924) the writer gave a considerable amount of attention to the question of the composition of Bondon cheese, and in a paper in the *Analyst* for June, 1924, he stated that "'Bondon' Cheese should be a whole milk cheese and should certainly not contain less than 20 per cent of fat." On this statement this sample of cheese is deficient of 75 per cent of the minimum quantity of fat and it has, therefore, been classed as adulterated. In the writer's opinion the sale of such an article if not a deliberate fraud, is certainly very undesirable and steps might usefully be taken to prevent its sale.

Sample No. 5253 was described as "'———' Bondon Curd Cheese." The amount of fat in this sample was one-half of 1 per cent, and the amount of water was 73 per cent, so that the dry matter would contain less

than 2 per cent of fat or a deficiency of 95 per cent of the proper quantity of fat contained in a whole milk cheese.

These two samples were informal samples and it has not been possible to purchase formal samples of the same make. The matter, however, is being kept under observation.

Cereal Foods.

The samples of cereal foods examined during the year have included seven of rice and five of ground rice; they have been returned as genuine.

Four of the seven samples of rice were free from mineral facing and contained from 0·30 per cent to 0·64 per cent of mineral matter. The three samples of faced rice contained about 0·1 per cent of talc. From the point of view of dietetics unpolished rice is undoubtedly better, and it is satisfactory to find that a large proportion of the rice now sold is unpolished.

The five samples of ground rice were free from added mineral matter, containing from 0·18 per cent to 0·66 per cent of ash, showing that they had been prepared from unpolished rice.

Lemon Cheese.

Of the six samples of lemon cheese examined during the year one has been definitely unsatisfactory. It was labelled "Home Made" in such a way that the purchaser observing it casually might think that it had been prepared by the shopkeeper supplying and that it had the composition of the genuine "Home Made" article.

This substance contained no butter, the fat consisting of margarine only, a small quantity of eggs and a considerable quantity of glucose syrup, the consistency being obtained by the addition of starch. The manufacturer of this article has been approached, and after lengthy negotiations he has agreed that the practice is objectionable and that it shall not be continued.

A lengthy statement on the subject of lemon cheese was contained in the report for 1924, and it is therefore quite unnecessary to deal with the matter at length. It may be desirable, however, to point out the progress that has been made since this report was read. There is an undoubted tendency in the trade, particularly among retailers, to improve methods of labelling and give more information to the purchaser in regard to the composition of the article than has been done. The following extracts from the Press are typical of the ideas of the better-class manufacturer and the unbiassed observer :—

Mr. Edward Revell, writing in the *Grocer* of September 5th, says :—

> " A standard for the genuine article should be established " and that itself would be sufficient to prevent the cut-throat " competition which is the cause of all this substitution and " adulteration now being practised in connection with the manu " facture of lemon cheese."

In the issue of September 20th he says :—

> " Lemon Cheese has become such an important article of " food that . . . . interest in its composition is very timely, and " . . . . efforts to improve matters should be helped by all means " possible."

"Another Grocer" in the issue of September 20th says :—

> "We make our own using the finest Danish butter, Lincolnshire "new-laid eggs, Castor sugar and lemons—no substitutes what- "ever. We sell a 1 lb. jar for 1s. 6d."

An article in the *Daily Dispatch* of August 13th, after discussing "lemon cheese" at length, states that :—

> "The same dubiety haunts the composition of other foodstuffs. "There should certainly be a law obliging the manufacturer to give "on the label the exact proportions of the ingredients."

A leading article in the *Evening Chronicle* of August 11th, closes with the words :—

> "The practice of giving misleading descriptions has been "brought to a fine art, and the public and the honest trader can only "be protected by stringent legislation."

In the *Grocer*, of October 24th, 1925, a report appears of a meeting of the Manchester, Salford and District Grocers' Association, at which, after considerable discussion, "it was decided to send the salient points of the Analyst's report to the manufacturers of lemon cheese inviting their attention thereto."

In addition to these extracts from the Press, the following extracts from letters, which have been received show that many manufacturers are also in agreement:

> "We are in receipt of yours of the 9th inst., and have duly "noted your remarks concerning '———' and beg to advise that "we are withdrawing this label at the earliest practicable "moment."

> "We have pleasure in advising you that we have now added "to our stock a 'Genuine Lemon Cheese,' and also that all our "branches have accordingly been advised."

Two other manufacturers also have entirely altered their labels.

> " I notice in the Press of late there has been much controversy " regarding lemon cheese. As I manufacture lemon cheese I " decided to write to you and state how I make it. I use the " following ingredients :—Danish butter, new laid eggs, fresh " lemons and pure sugar."

> " As a maker of the article for 20 years and a member of ——— " I have fought for a standard on every occasion and am astounded " at the poor results achieved—this article, which is a disgrace " to any man who puts it on the market."

> " ——— one which contains only pure butter, English refined " sugar, fresh eggs and best lemons. We feel that you will agree " that this is what the customer requires when asking for lemon " cheese."

> " I can and will supply the genuine article containing only " that which lemon cheese should do, viz., eggs, sugar, butter and " lemons."

> " We have been manufacturing lemon cheese now since 1879, " and the only ingredients have been eggs, butter, sugar and lemons " and we can emphatically state that we have never found it " necessary to use any additions thereto for the purpose of mixing " the ingredients intimately or as preservatives."

It is thus quite definite that whatever may be the merits of the case, quite sufficient publicity has now been given to the subject and that future vendors of grossly inferior articles should be prosecuted. It is true that a prosecution taken recently at Birkenhead was unsuccessful, but as this case was lost merely on a technical point, it does not, in any way, affect the general argument. Your Committee have already passed resolutions giving their opinion as to what lemon cheese should be and also giving instructions that prosecutions should be instituted.

Cream Ice.

Eleven samples of cream ice have been examined during the year. Of these samples one contained 15 per cent of butter fat, one contained 9 per cent of butter fat, whilst the other nine samples contained quantities of butter fat varying from 1 per cent to 6·7 per cent. There is, of course, no official standard for cream ice in this country. In the United States, ice cream is required by some states to contain not less than 14 per cent of butter fat, except when mixed with fruit or nuts, when the standard is 12 per cent, and this standard for ice cream is not an unreasonable one for a substance which is sold as "cream ice." Taking this figure as the standard it will be seen that only one out of the ten samples could be classified as genuine, whilst only one more contained a quantity of fat which would in any way justify the description of cream ice and in this case the sample was guaranteed by the vendor as containing 14 per cent of butter fat. As far as the writer is aware, no prosecutions have been instituted in this country for the sale of cream ice, but it seems to him a very unsatisfactory state of affairs that the majority of samples of a material sold as cream ice should contain considerably less fat than occurs in normal milk, showing that they have been made with a mixture of milk and water. The vendor of each of the unsatisfactory sample was cautioned and as a result of this it is hoped that a distinct improvement will take place.

Jam.

The samples of strawberry jam, Nos. 5741 and 5749, returned as adulterated were labelled respectively "Contents Guaranteed made from Finest-selected Fruit

and Pure Sugar" and "Made from Fresh Fruit and Refined Sugar Only." The former sample contained 15 per cent of glucose syrup and the latter 5 per cent.

In Smith *v.* Wisden it was held that in a sample of marmalade which contained 13 per cent of glucose, there was no evidence to show that the substance was not marmalade (this would appear to suggest that if such evidence had been brought by the prosecution, which certainly could have been done, the case would have been differently decided) and the conviction by the magistrates was quashed. This ruling would probably be followed in the case of jam, but only in cases where no suggestions of the nature of the jam were made, until such time as this decision is reversed.

In the present cases claims are made or suggested that glucose is not added and it would be necessary, therefore, for the Court to decide on the new facts. The best jams are free from glucose.

Both these manufacturers gave, at the end of the year 1923, an undertaking that they would alter their labels and refrain from what they acknowledged to be, misleading statements.

The manufacturer of Sample No. 5741, the sample which contained the larger amount of glucose syrup, was asked for an explanation. He admitted the presence of the adulterant and expressed his deepest regret that owing to a mistake in labelling the matter had arisen. He explained that the stock of labels had now been destroyed and that no more would be used. Under these circumstances no further action has been taken.

In the case of Sample No. 5749 the amount of glucose syrup was small and as it was possible that some mistake

had been made during manufacture no action has yet been taken in this case and further samples will be taken in due course.

Strawberry jam No. 5242 was described by the retailers in their advertisement in such a way that the public would consider that it was made from pure crystal sugar only, whereas it contained 15 per cent of glucose syrup. The manufacturers of this jam have, at the suggestion of this Department, removed all objectionable statements from their labels and it is therefore particularly undesirable that this should be continued by the retail vendors. The retailers have been approached and on the position being pointed out to them, agreed to refrain from misleading descriptions in the future.

Toffee and Sweets.

All those samples which have been returned as adulterated during the year have contained excessive quantities of sulphur dioxide. This substance may be used in the preparation of the raw materials for confectionery, or it may be added as a compound during the process of preparation of the confectionery itself. Although it is classified in the new Preservative Regulations as a preservative, which indeed it is, it is not added to confectionery for this purpose. The substance is added as a bleaching agent. In the case of boiled sweets it gives to the finished product a clear, white appearance when using second-rate materials, which can only be obtained, without the use of a bleaching agent, with first-class materials. In the case of toffee it is used to produce the light brown colour of the type with which the public is familiar as being that of substances prepared with highly-

refined sugar and butter or cream. In either case, therefore, the substance is used to give to articles an appearance which they would not otherwise have, or, in other words, to give them an artificial appearance of richness and purity. Some of the samples examined have contained really excessive quantities of bleaching agent, quantities which are quite likely to be actively injurious, but, in the opinion of the writer, the use of any such substances (even if they no longer remain in the finished article) should be entirely prohibited, except possibly where complete notification is given to the purchaser. A large number of manufacturers consider such a practice undesirable and state that they themselves do not use any such process. At least two manufacturers whose products are mentioned above have definitely given an undertaking that the practice shall be discontinued. The matter has been discussed with the secretaries of various trade organisations and it is hoped that the practice may very largely cease.

Invalid Wine.

Samples 5106 and 5107 were informal and formal samples respectively of a substance described as " Liebig's Invalid Wine." The label on the bottle described this substance as " Liebig's Invalid Wine. Health, Strength, Vigour. Recommended by the Medical Profession. Strengthening and Nutritious. Take a wineglassful three times a day. Non-exciseable," and a small label placed round the neck of the bottle stated that " This beverage is prepared in accordance with the requirements of the Food and Drugs Act, and contains a small quantity of salicylic acid as a preservative." On examination this substance was found to consist largely of a solution of

invert sugar in water and a certificate was issued to the following effect:—

"I am of the opinion that the said sample contained the parts "as under:—

"The 'other solid matter' "included ·005 per cent of com- "bined nitrogen, 0·004 per cent of "combined phosphorus, 0·003 "per cent of quinine sulphate and "0·05 per cent of salicylic acid "calculated on the original "sample.

	Per cent.
Water	80·0
Total sugars (chiefly invert sugar	18·0
Alcohol	1·5
Other solid matter	0·5
	100·0

"OBSERVATIONS.

"This is not an invalid wine, its composition is similar to that "of a flavoured artificial cordial, except for the presence of the "trace of quinine which only amounts to about one-quarter of "a grain per pint. The presence of so much salicylic acid might be "harmful to invalids. The use of the word 'Liebig' would "probably suggest the presence of Liebig's extract of meat; this is "certainly not present to a greater extent than one part in two "thousand, if at all."

Legal proceedings were instituted against the shopkeeper and also against the supplier of this concoction for aiding and abetting. At the hearing of the prosecution it was shown that the chief director of the firm who supplied this wine was the defendant in the case which was heard during April, 1923, when he was fined £20 in each of three cases and 20 guineas costs, for supplying what was practically a solution of sugar and water as "Liebig's Beef and Malt Wine." In this present case, of course, the action was taken against the company, so that legally it was a first offence. They were fined the maximum of £20 with 50 guineas costs.

Cod Liver Oil and Malt.

The two samples of cod liver oil and malt were from the same source and they were sold under a proprietary name. This material is described as containing all the virtues of the original liquid preparation (in fact, these are stated to be enhanced), whilst the taste and stickiness have been overcome.

On examination it was found that the substance did not contain unchanged cod liver oil, but that the oil had been hardened and deodorised, probably by some process of hydrogenation. It seems most likely that the virtues of cod liver oil would be very largely destroyed by any such treatment. This subject is at present under investigation and it is desirable, therefore, to postpone any further remarks until a later date.

Meat and Fish Pastes.

During the year seven samples of meat and fish pastes were examined with not particularly satisfactory results. There is, of course, no standard for either of these substances and there is a fairly widespread custom among the trade of adding a certain amount of starch to act as a filling. I have been informed by the chief chemist of a very large firm of manufacturers that, in his opinion, such addition constitutes adulteration, but even supposing that a small amount may be allowed there would obviously come a time when the addition of bread or other starch material would merely be for the purpose of fraudulently increasing the bulk, as the addition of such substances allows the addition of a considerable amount of water. Some of these samples were unsatisfactory, but for the

moment they have been passed as genuine, with the exception of an anchovy paste which contained 14 per cent of ash consisting for the most part of iron oxide. This iron oxide is added as colouring matter, possibly in the form of Armenian bole. Although such addition is not unknown it is, in the opinion of the writer, an adulteration and therefore this sample, an informal sample, has been classified as adulterated. No further action will be taken in regard to this sample, but the matter is receiving further attention and it is hoped that a further report may be made on this subject in the near future.

Drugs.

Sixty-five samples of drugs have been examined during the year, of which 13, or 20 per cent, have been returned as adulterated. This figure is considerably higher than that usually found which is about 10 per cent. The unsatisfactory articles were turpentine and seidlitz powders.

It must not be assumed from this high figure, which by itself would be somewhat startling, that of all the drugs sold in the Borough one in every five is adulterated. There is obviously no object in taking large numbers of samples of any substance which will almost certainly be genuine and, therefore, the activities of this Department are confined, to a considerable extent, to directions in which unsatisfactory results are likely to be found. In this way the percentage of adulteration will, of necessity, be artificially high and will not always be a true indication of the purity of the bulk of the substances

sold, although, on the other hand, it will lead to the discovery of unsatisfactory conditions.

Seidlitz Powder.

Eight of the nine samples of seidlitz powder returned as adulterated were described as "double strength." There is a slight difficulty in deciding exactly what is meant by "double strength seidlitz powder." The more clearly accepted idea and one which is supported by the recipe in the British Pharmaceutical Codex is that the amount of acid and sodium bicarbonate should be the same in the "double strength" as in the "B.P. strength," but that the amount of Rochelle salt (the larger constituent of the blue paper) should be increased from $7\frac{1}{2}$ grams to 15 grams. An alternative suggestion is that a double strength seidlitz powder is simply two seidlitz powders contained in one. Of these two suggestions the former, in the opinion of the writer, is by far the more satisfactory as increasing the ingredients which cause the actual effervescence might easily make impracticable the mixing of the powder in an ordinary tumbler. This, therefore, has been taken as the more suitable formula although powders based on the other have also been classified as genuine. In several cases, particularly those of proprietary seidlitz powders packed by wholesale firms and sold in small shops, the B.P. article has been sold as "double strength." This is obviously very undesirable.

Sample No. 5553 was described as "extra strong." Again it is not easy to decide exactly the type of powder that can be described as "extra strong." From the actual meaning of the word it might be argued that any

powder that was *perceptibly* heavier than the B.P. article is "extra strong," but it should be fairly obvious that this is not a reasonable stand to take. It would appear that before a powder can be described as "extra strong" that it should be *appreciably* stronger and such an interpretation is supported by the fact that the British Pharmaceutical Codex contains a formula for "extra strong seidlitz powder," the amount of Rochelle salt in which is increased by one-half over that of the B.P. powder.

The whole of the vendors have been cautioned in accordance with your instructions, and replies have been received that they will endeavour in the future to refrain from such misdescriptions. The local Pharmaceutical Association have been informed and a letter has also been written to the Pharmaceutical Press explaining the situation, so that there should be no excuse for any future misdescriptions.

Turpentine.

The samples of "Turpentine" (Nos. 5533 to 5547), which were sold in answer to a demand for "Turpentine," were labelled in such a way that the purchaser would think that pure turpentine was being supplied. In accordance with the instructions of your Committee, given in similar cases some little time ago, letters have been sent to the packers of these samples stating that unless such misdescription is immediately discontinued, legal proceedings will be instituted without further notice.

A detailed account of previous action taken is given in the Annual Report for 1924.

Whisky.

Samples of whisky 5606 and 5619 were an informal and formal sample respectively obtained from the same vendor. When the circumstances of this case were investigated it was found that only a small quantity of this type of whisky was being sold and that the cause of the excess water was a misunderstanding between the brewery company and the manager of the house in regard to the method of breaking down the spirit from one strength to another. The company and the manager have both been cautioned and letters have been received stating that they will use every endeavour to prevent the occurrence of such errors in the future.

The sample of whisky, No. 5622, was an informal sample. A subsequent formal sample was found to be genuine. The vendor of this sample has been cautioned.

Prescriptions.

The 19 samples of prescriptions were all taken in the first quarter of the year and were all classified as genuine, a very satisfactory state of affairs. At the end of this quarter the arrangement between the Health Committee and the Insurance Committee came to an end on account of the establishment of a National Scheme by the Ministry of Health. That there are many objections to this National Scheme, both in principle and in detail, everyone who has had any experience of this subject readily agrees, but, as many of these have recently been expressed by the writer (*Pharmaceutical Journal*, August 1st, 1925), there is no object in going into the matter further at this time.

The testing of Insurance Act dispensing was commenced in Salford in the year 1919 and a scheme was involved which gave as complete satisfaction to everyone concerned as any such scheme could. It has been found to work well over a period of five years and a tremendous improvement is shown in the table below. The high figure for 1923 was due to special circumstances and is not of a serious nature.

Year.	Number of Samples.	Adulterated.	Percentage of Adulteration.
1914	19	8	42·1
1915	10	1	10·0
1916	14	6	42·8
1917	24	1	4·2
1918	21	4	19·0
1919	21	3	14·3
1920	31	3	9·7
1921	51	2	3·9
1922	55	3	5·4
1923	56	6	10·7
1924	76	2	2·6
1925	19*	0	0·0

*Quarter.

Miscellaneous Samples.

The following miscellaneous samples have been examined for various Corporation Departments :—

Human Milks	600
Milk	9
Tinned Milk	58
Dried Milk	4
Tinned Cream	10
Foods	34
Cod Liver Oil	19

Toffee and Toffee Constituents	19
Fruit Pulp	6
Soap	90
Rock Asphalte and Bitumen	3
Water and Effluent	5
Drugs	3
Naphtha	2
Paint	1
Urine	1
White Solid from Sputum	1
Lime	1
Coke	2
	868

The human milks have been examined in the course of a special investigation undertaken by the Child Welfare Department. They have been taken from a number of patients in various stages of lactation, and it is hoped that, as a result of these samples and of other samples now being examined, some interesting observations may be made.

The samples of tinned milk, tinned cream, dried milk have been examined in the course of an investigation into the composition of the fat of tinned milk and cream. Some very interesting results have been obtained, but it is considered advisable at this stage that the results should not be published.

The remaining samples have been examined in connection with the various investigations mentioned in the report.

Samples under the Milk and Cream Regulations, 1912 and 1917.

1. Milk and Cream not Sold as Preserved Cream.

	No. of samples examined for the presence of a preservative.	No. in which preservative was reported to be present.
Milk	921	0
Cream.....	2	2

2. Cream Sold as "Preserved Cream."

(*a*) (i.) Correct statements made..... 8

(ii.) Statements incorrect..... 0

8

(iii.) Percentage of preservative found in each sample: 0·27; 0·28; 0·32; 0·31; 0·23; 0·37; 0·25; 0·38.

(*b*) Determinations made of milk fat in cream sold as "Preserved Cream":—

(i.) Above 35 per cent..... 8

(ii.) Below 35 per cent..... 0

8

(*c*) Instances where (apart from analysis) the requirements as to labelling or declaration of Preserved Cream in Article V. (1) and in the proviso in Article V. (2) of the regulations have not been observed:—

None.

(*d*) Particulars of each case in which the regulations have not been complied with and action taken:—

Sample No. 5059. Sold as "cream." Contained 0·27 per cent boric acid.—Caution.

Sample No. 5759. Sold as "fresh cream." Contained 0·05 per cent boric acid.—Caution.

Atmospheric Pollution.

The work of examining deposits, obtained in special gauges placed at various points in the Borough, which has been described in the reports for the last two years, has been continued. At the present time, the standard gauge is situate in Peel Park, and simpler types of gauges are situated in the grounds of Ladywell Sanatorium, in the centre of the recreation ground in Regent Square and in the grounds of the Corporation Sanatorium at Marple, Cheshire.

In uniformity with the results expressed by other stations, of which there are a number scattered throughout Great Britain, the results are expressed in metric tons per square kilometre. The metric ton is equivalent to slightly more than the British ton, whilst there are 2·59 square kilometres in a square mile, so that to convert metric tons per square kilometres to tons per square mile it is necessary to multiply by 2·55 or, roughly, $2\frac{1}{2}$.

The following are the average results that have been obtained during the year: The higher ground of Peel Park is somewhat less contaminated than the lower portions of the Borough, whilst, as was to be expected, the atmosphere at Marple is, comparatively speaking, "pure."

In order that comparison may be made with other districts the average figure has been included in the table for the gauge giving the least deposit, that is the one at Leeds—Headingley, and also that giving the greatest deposit, the one at Rochdale. These figures are, however, not yet available for the year 1925, and average figures of the results obtained from April, 1924 to March, 1925 are given in place.

AVERAGE MONTHLY FIGURES.

	Salford : Peel Park.	Salford : Ladywell Sanatorium.	Salford : Regent Square.	Marple : Salford Sanatorium.	Rochdale.	Leeds : Headingley.
Rainfall in Millimetres	84·62	81·21	87·52	73·25	114	62
Tar.	0·27	0·15	0·23	0·06		0·03
Carbonaceous other than tar. (Insoluble Matter.)	3·63 — 8·13	2·25 — 6·03	4·37 — 7·97	0·61 — 1·06	16·05	0·36 — 0·81
Ash.	4·23	3·66	3·37	0·39		0·42
Loss on ignition. (Soluble Matter.)	1·93 — 5·00	1·25 — 2·77	1·57 — 3·91	1·11 — 2·14	5·94	0·90 — 2·14
Ash. (Soluble Matter.)	3·07	1·52	2·34	1·03		1·24
Total Solids	13·13	8·83	11·88	3·20	21·99	2·95
Sulphates. (Included in Soluble Matter.)	2·18	1·75	2·01	0·95		0·39
Chlorine. (Included in Soluble Matter.)	1·29	1·01	1·03	0·73		0·49
Ammonia. (Included in Soluble Matter.)	0·09	0·12	0·15	0·06		0·05

Appendix.

In this appendix to the report, a resumé is given of the work which has been carried out in your laboratories during the 11 years 1915-25 inclusive. During this time 16,628 samples have been examined, and of these 14,786 have been taken under the Food and Drugs Acts. Of the samples taken under the Food and Drugs Acts, 839 have been returned as adulterated, giving a percentage of adulteration of 5·7. The following table gives particulars of the samples taken and the adulteration found during each of these years :—

TABLE 1.

No. of Samples and Percentage of Adulteration.

Year.	Food and Drugs Acts Samples.					Milk and Cream Regulations.	Miscellaneous.
	Formal.	Informal.	Total.	No. Adult.	Per cent Adulteration.		
1915.....	397	777	1174	33	2·3	9	73
1916.....	352	850	1202	70	5·8	2	69
1917.....	433	952	1385	17	1·2	—	49
1918.....	858	379	1237	51	4·1	—	84
1919.....	657	577	1234	108	8·8	—	36
1920.....	807	603	1410	89	6·3	—	51
1921.....	623	741	1364	119	8·7	1	112
1922.....	653	799	1452	82	5·6	19	82
1923.....	644	744	1388	96	6·9	15	203
1924.....	775	769	1544	66	4·3	4	156
1925.....	752	644	1396	108	7·7	10	868
Total ...	6951	7835	14786	839	5·7	59	1783

It will be noticed that somewhat wide variations are obtained for the percentage of adulterated samples from year to year, 1·2 per cent to 8·8 per cent. This does not mean that the proportion of adulterated food to the total food sold varies in this way. It is only possible to examine a small proportion of the total food sold in any one year and the percentage found will depend largely upon the type of food which has been examined. As far as possible when particular classes of food have been found generally to be free from adulteration fewer samples have been taken, the attention of the Inspectors being given to other substances more likely to yield interesting results.

More detailed figures and remarks upon subjects of particular interest, together with any improvement that has taken place as a result of action taken, are given below under the appropriate headings.

Milk.

During the period 8390 samples of milk have been examined, of which 466, or 5·6 per cent, have been returned as adulterated. The average results obtained by the analysis of these samples and a few others is given in Table 2.

TABLE 2.

AVERAGE COMPOSITION OF ALL MILKS, 1915-1925.

Year.	No. of Samples.	Total Solids.	Fat.	Solids-not-fat.
		Per cent.	Per cent.	Per cent.
1915	435	12·61	3·78	8·83
1916	387	12·37	3·60	8·77
1917	548	12·69	3·81	8·88
1918	863	12·43	3·64	8·79
1919	837	12·43	3·66	8·77
1920	1000	12·39	3·52	8·87
1921	901	12·52	3·58	8·94
1922	932	12·46	3·61	8·85
1923	780	12·54	3·61	8·93
1924	833	12·41	3·62	8·79
1925	921	12·44	3·57	8·87
	8437	12·47	3·62	8·85

The averages for each month are as follows:—

AVERAGE COMPOSITION OF MILKS, 1915-1925.

Month.	No. of Samples.	Total Solids.	Fat.	Solids-not-fat.
		Per cent.	Per cent.	Per cent.
January	883	12·47	3·58	8·89
February	663	12·32	3·52	8·80
March	793	12·41	3·54	8·87
April	704	12·40	3·58	8·82
May	748	12·33	3·45	8·79
June	709	12·25	3·40	8·85
July	594	12·33	3·53	8·80
August	527	12·40	3·65	8·75
September	731	12·58	3·70	8·88
October	891	12·80	3·86	8·94
November	676	12·79	3·88	8·91
December	518	12·52	3·68	8·84
	8437	12·47	3.62	8·85

TABLE 4.

MILK ADULTERATION, 1915-1925.

Year.	Total.	No. Adulterated.	Per cent Adulterated.
1915	435	21	4·8
1916	386	39	10·1
1917	539	13	2·4
1918	865	27	3·1
1919	829	59	7·1
1920	981	71	7·2
1921	899	80	8·9
1922	923	49	5·3
1923	779	42	5·4
1924	833	22	2·6
1925	921	43	4·7
	8390	466	5·6

In the years 1914 and 1915 a large proportion of the milks were artificially coloured with the idea of giving an artificial appearance of richness. The colouring of milk has now been made an offence and the practice has practically ceased.

An interesting case occurred in 1919 when your Inspector discovered, on a visit to a farm, that it appeared to be the custom in one portion of the County of Cheshire to rinse out the cooler and the various dairy utensils with water and to add the washings to the milk. In one case where positive evidence of the actual addition of water was obtained the farmer supplying the milk

was prosecuted and fined £1 and costs. This practice, which is, of course, quite illegal, has now apparently ceased.

During 1920 the Salford Corporation Act became law. Clause 92 of this Act reads as follows :—

> " Any Officer of the Corporation authorised by the Corporation " in that behalf may, in addition to any powers exerciseable within " the Borough, take at any station outside the Borough, within one " mile and a quarter from any part of the Boundary thereof, samples " of any milk consigned to a purchaser in the Borough. Such " officer shall have all the powers of procuring samples conferred " by the Sale of Food and Drugs Acts and those Acts shall apply as " if such officer were an officer authorised to procure samples " under ' The Sale of Food and Drugs Act, 1875.' "

This clause has been of the greatest value in following up to the farmer milk found to be adulterated when sold in the Borough. It appears possible, however, that this power may be lost under the provisions of the Milk and Dairies Act which has recently come into force ; if this be so every effort should be made to retain it.

In 1920 a new departure was made in regard to visit to farms. Samples 741, etc., of 1920 were a typical case.

> " On finding these samples adulterated ' Appeal to Cow ' samples " were taken by the Inspectors in the usual way. On examination " these were found to be very poor in fat, although the solids-not- " fat figures were well up to the average. The farm was visited " by the Veterinary Surgeon and the Borough Analyst. There " were 30 cows all in fair condition giving about 26 gallons of milk. " The feed consisted largely of brewers' grains and turnips, with " a proportion of maize meal and oats. It was considered that " the albumenoid ratio was far too low and certain suggestions " for improvement were made to the farmer. After allowing about " five weeks for the change in diet to make its full effect, ' Appeal " to Cow ' samples were again taken. On examination the four

"samples were found to contain 3·6 per cent, 3·0 per cent, 3·4 per "cent and 3·4 per cent of fat respectively, whilst samples taken "subsequently on delivery at Pendleton Station have been better "than these. After allowing for more or less normal fluctuations "these figures show a very big improvement on the first batch of "'Appeal to Cow' samples."

This type of result has been obtained on many occasions and the writer is of opinion that in nearly every case where cows are giving milk deficient in fat the cause is deficiency of proteins in their diet.

On two or three occasions adulteration of milk with potassium nitrate or saltpetre has been detected. The practice is adopted in order to remove objectionable odour or taste from milk and during interviews with one or two farmers on the subject, the impression was obtained that farmers generally do not consider the addition of this substance to be objectionable, whilst they were under the misapprehension that it could not be detected in the quantities likely to be used. All the farmers involved agreed to discontinue the practice.

The following case taken from the report for 1923 is a good example of the difficulty sometimes met with in taking "Appeal to Cow" samples:—

"Samples 1688–1760 were supplied by the same farmer. The "farm was visited and 'Appeal to Cow' samples were taken. "The 'Appeal to Cow' samples were deficient in fat and the "milking appeared to the Inspector to be done so unsatisfactorily "and the quantity of milk produced was so low (only about 26 "gallons in comparison with the 40 gallons that were being sent to "Pendleton Station), that the Inspector paid a second visit to the "farm three days later, taking with him an experienced milker "to see that the cows were thoroughly stripped. On the second "visit it unfortunately occurred that the milker and the farmer "were acquainted and there appeared to be collusion between

"them. The quantity of milk produced was again low, being in "this case 24½ gallons, and the samples obtained were very low in "fat, one of them containing in addition 10 per cent of extraneous "water. As a result of these observations the farm was again "visited a week after the first visit by the Inspector, Veterinary "Surgeon and Borough Analyst, who took with them three "experienced milkers who were personally known to the Inspector. "When the party arrived at the farm, milking had already com-"menced, but the rest of the cows were milked by the visiting "milkers. The result of the milking, the whole of the cows in "the shippons being stripped was, 39 gallons of milk. This "had a composition which was distinctly poor, containing less than "the official minimum of 3·0 per cent. There was in this case no "trace of extraneous water. In the case of the last visit the bulk "of the milk was not touched at any time by the farmer or his "assistants, and samples of milk brought away were undoubtedly "a true index of the milk given by the cows. It was, therefore, "impossible to take proceedings against the farmer for the "deficiency in fat of his previous samples, neither could proceedings "be taken against him for addition of water to his farm samples, "as these were not and could not be taken officially. A further "visit was paid to the farm by the Inspector and the Borough "Analyst, and the farmer admitted that he was worried by the "visits of the Inspector and that he had attempted to produce "milk of low quality during the Inspector's first visit by partially "milking his cows. The addition of water, he said, was done "by one of his farm hands without his knowledge in an attempt "to shield the farmer. The cause of the poor milk which the cows "were undoubtedly yielding was in all probability due to the "deficiency of nitrogen in the rations. This consisted of poor "quality hay, maize meal, bran and silage, the latter of very poor "quality. The farmer undertook to improve the rations and to "do all he could to keep up the standard of his milk."

During recent years some of the larger retail distributors have been bringing their milk into Manchester and Salford by their own motor lorries direct from the farms.

"The place of delivery is, therefore, a long way from the "boundary of the Borough and your Inspector has no powers to

"take the said samples on delivery. On account of the use of this "method for the conveyance of milk it would be a great convenience "if a clause could be inserted in any future Act giving powers for "an Authority to take samples of milk, which is consigned to a "dealer within its boundary, at the place of delivery, no matter "where that place may be. This would lead to the more efficient "working of the Acts, as the whole of the Administrative work "could then be carried through by the one Authority primarily "interested."

Dirt in Milk.

The method used has been that described by Lowe *Chemical News*, 1912, *106*, 61). A quantity of milk, which should not be usually less than 500cc. is allowed to stand for a number of hours in a cylinder, the lower portion of which is drawn out and to which is attached a tube graduated in 0·01 cc. The volume of sediment can then be read off directly and when multiplied by two (per 500 cc.) will give the parts per 100,000 by volume of sediment in the milk.

On the subject of this sediment the following was contained in the report for 1916 —

"The sediment found is, in many cases, cow dung, and of the "danger of this to infant life it is scarcely possible to speak too "strongly. It is frequently stated that it is quite easy to get over "this difficulty by passing the milk through a fine sieve. This is, "however, entirely erroneous, and it is a most dangerous doctrine "—in fact, the use of the sieve might do harm in removing the "index of pollution."

"The harm likely to be caused by the cow dung is due to the "infection of the milk by the bacteria of various diseases such as "diarrhœa, which multiply rapidly in the milk. Subsequent "removal of the cow dung by mechanical means will not, of course, "remove the disease-producing bacteria."

In the report for 1922 the following remarks may be found :--

"The subject, however, is one of peculiar difficulty, as it is "quite easy for the retailer to remove the bulk of the visible dirt "by filtration or decantation immediately before selling the milk. "The purchaser may think, therefore, that he is getting a clean, "pure article, whereas a serious bacterial contamination, which is "the usual concomitant of visible dirt, entirely escapes notice."

"During the year, standards for various milks of special grades "have been issued officially, but it seems most desirable that the "ordinary milk sold to the public, which, after all, will always "constitute the bulk of the milk sold in this country, should be "required to come up to some standard of cleanliness, both physical "and bacteriological, even if this standard is, of necessity, lower "than those for the special milks mentioned above."

"It seems to the writer that this subject is one of the utmost "urgency and importance, and that the condition of the general "milk supply should not be neglected, so that milks of special "quality can be sold at enhanced prices to those who are willing "and able to pay. It cannot be expected that Grade 'A' milk "can be supplied at the price that is charged for ordinary milk, "but if the supply of milk of Grade 'A' quality is so important "that it is worth while have special legislation to ensure it, it would "seem equally important to prevent the sale of grossly-"contaminated milk as ordinary milk."

Whilst commenting upon the fact that dirty samples had not been classified as adulterated in 1923, the writer said :—

"It will be observed that although a number of samples of milk "during the year have been very dirty, none of them has been "classified as adulterated after the early months of the year. In "previous years, those samples which gave a sediment of more "than five parts per 100,000 were classified as adulterated. This "standard is a lenient one. It is not based in any way upon "'ideal' conditions or on conditions which cannot be obtained on "ordinary farms working with a very moderate amount of care,

"but is based upon the results of the examination of samples "actually sold by retail. Since the year 1915, 2,765 samples of "milk (which have not been specially selected in any way, but which "are perfectly average samples of milk coming into the Borough) "have been examined. Of this number, 946 have been entirely "free from sediment, 1,308 contained between 0 and 1 part of "sediment per 100,000, whilst 212 have contained between 1 and "2 parts per 100,000. From these figures it will be seen that "81 per cent of the samples of milk which have been examined for "dirt over a period of seven years (samples were not tested for "dirt during the years 1918 and 1919) have contained not more "than one part of sediment per 100,000 parts of milk. It would "appear, therefore, that a standard of not more than one part "of sediment per 100,000 parts of milk would be a perfectly fair "one to set up and that milk containing two or more parts per "100,000 should be classified as distinctly unsatisfactory."

"It must not be considered that because many of the samples "during 1923 have not been classified as adulterated, that the "matter is not important. On the contrary, it appears to the writer "that the subject is one of such urgency and importance that "some special steps should be taken to deal with it. Such steps "as may be found necessary might very well be taken in con-"junction with producers and distributers, the importance to "whom a clean milk supply is second only to the consumer."

"At the present time a Committee has been appointed by the "Society of Public Analysts to go into this matter thoroughly "from the chemical standpoint."

"The detailed results which have been obtained for the seven "years during which observations have been taken are contained "in the following tables; the former giving results for individual "years, the latter for the whole of the samples taken."

TABLE 0. DIRT IN MILK, 1915-17 AND 1920-23.

Parts per 100,000.	1915.		1916.		1917.		1920.		1921.		1922.		1923.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0·0	56	14·4	58	19·5	7	2·4	396	64·5	180	36·2	167	39·2	82	34·6
0·5	167	42·8	103	34·6	92	30·4	98	15·9	78	15·7	59	13·9	24	10·1
1·0	62	15·9	82	27·5	106	34·8	62	10·1	110	22·2	117	27·4	48	20·3
1·5	29	7·4	20	6·7	21	7·0	3	0·5	3	0·6	4	0·9	6	2·5
2·0	32	8·2	25	8·4	32	10·5	29	4·7	8	1·6	—	—	—	—
3·0	20	5·1	6	2·0	35	11·5	6	1·0	76	15·3	50	11·7	49	20·6
4·0	14	3·6	—	—	4	1·3	1	0·2	3	0·6	1	0·2	9	3·8
5·0	6	1·5	1	0·3	—	—	6	1·0	4	0·8	5	1·2	4	1·7
6·0	3	0·8	2	0·7	—	—	3	0·5	18	3·6	14	3·3	9	3·8
7·0	1	0·3	—	—	—	—	7	0·3	2	0·4	—	—	1	0·4
8·0	—	—	—	—	1	0·3	—	—	—	—	—	—	—	—
9·0	—	—	—	—	1	0·3	3	0·5	3	0·6	5	1·2	1	0·4
10·0	—	—	1	0·3	2	0·6	1	0·2	5	1·0	—	—	—	—
12·0	—	—	—	—	1	0·3	1	0·2	2	0·4	2	0·5	2	0·9
15·0	—	—	—	—	1	0·3	1	0·2	4	0·8	2	0·5	2	0·9
20·0	—	—	—	—	1	0·3	1	0·2	—	—	—	—	—	—
90·0	—	—	—	—	—	—	—	—	1	0·2	—	—	—	—
Total	390	100·0	298	100·0	304	100·0	618	100·0	497	100·0	426	100·0	237	100·0

DIRT IN MILK. TOTAL SAMPLES 1915-17 AND 1920-23.

Dirt, Parts per 100,000.	Number of Samples.	Per cent of whole.
0	946	34·2
1	1208	43·7
2	212	7·6
3	242	8·7
4	32	1·2
5	26	0·9
6	49	1·7
7	6	0·2
8	1	0·1
9	13	0·5
10	9	0·3
12	8	0·3
15	10	0·4
20	2	0·1
90	1	0·1
	2765	100·0

Margarine mixed with Butter.

During the year 1922 many samples of margarine were placed upon the market described in some such way as "contains butter," "mixed with butter," etc. In all cases in order to comply with the provisions of the Margarine Act, these samples contained less than 10 per cent of butter, whilst in the majority of cases the amount of butter was of the order of 1 per cent. To describe a sample which contains less than a quarter of an ounce of butter to the pound as "mixed with butter" is obviously grossly misleading. Several prosecutions were instituted in such cases with, on the whole, successful issues. At the present time such undesirable practices have almost entirely died out as a result of these and similar prosecutions elsewhere.

Lemon Cheese.

A considerable amount of attention has been given to this article. In the report for 1924 the evidence for its proper composition was given at length, whilst in that for 1925 some of the results already achieved are outlined. Already some improvement is obvious and the time would appear to be ripe for a test case to be tried to decide at which point, if any, substitution is to cease.

Arsenic in Chemicals.

During the years 1916-1921 certain chemicals used as drugs such as baking powder materials, boric acid, Epsom salts and borax contained appreciable quantities of arsenic up to as much as 500 parts per million. In most cases this is due to the use of impure sulphuric acid during manufacture, thus producing a finished article

which, though pure enough for many commercial purposes, is quite unsuitable for medicinal or internal use. Several prosecutions were heard for the presence of arsenic in such substances and substantial fines were inflicted. As a result of these cases and of a large amount of administrative work in various directions it is pleasing to be able to report that the presence of objectionable quantities of arsenic is now rarely, if ever, found.

Insurance Dispensing.

The testing of dispensed medicines has been carried out in the Borough for a number of years. In 1919 a scheme was prepared whereby samples of medicine dispensed under the Insurance Acts, as distinguished from private dispensing, could be examined. This was the first time that such a scheme had been tried and the results for a number of years working show what valuable results were obtained. This was due in no small measure to the active and willing co-operation of the Salford Pharmaceutical Association, who made it quite plain from the outset that they stood for the highest standard of professional work. That they have been successful is shown by the fact that out of the last 100 tests only two have been reported against, and of these deficiencies only one was of any importance.

The arrangement between the Salford Health and Insurance Committees has now been cancelled, but much of their pioneering work lives in the National Scheme which has now been substituted by the Ministry of Health. It is no exaggeration to say that this present scheme is directly due to the original work done in Salford.

Soda Water.

Three samples of soda water examined in 1919 were found to be free from sodium bicarbonate, the essential alkaline constituent of "soda water." This matter was reported to the Local Association of Mineral Water Manufacturers, and as the final result of a correspondence extending over six months and an interview with the Secretary of the Association and one manufacturer, the Council of the Association has given it as their opinion that soda water should contain five grains of sodium bicarbonate per 10 oz. bottle, and have instructed their members to this effect.

Whisky.

For many years previous to 1921 few, if any, samples of whisky or other spirit had been taken. During this year as a result of a complaint by the police a sample was obtained which contained 3·0 per cent of added water the vendor being fined £2. On account of this case 18 informal samples of whisky were taken, of which six were found to be adulterated, containing from $3\frac{1}{2}$ per cent to 9 per cent of added water respectively. Formal samples were taken from each of the vendors selling the adulterated samples, and all six were again found to be adulterated, the percentages of water varying from 3·8 per cent to 12 per cent. The vendors of these samples were prosecuted; three of them were fined £10 each, the other three £15 each.

As an example of the better state of affairs brought about by special attention to any one article, it may be pointed out that in 1924, two out of 14 samples were

adulterated, whilst in 1925 only two out of twenty-six were reported against these two not being serious cases.

Toffee and Sweets.

At the present time a large quantity of cheap toffee and sweets is on the market. It is quite possible to manufacture a wholesome article at a low price, but the colour of such articles when finished is much darker than that of the higher-priced articles. In order to overcome this difficulty and to make the cheaper article look as attractive as the more expensive, manufacturers add bleaching agents. These usually consist of sulphur dioxide (the substance produced by burning sulphur in air) either free or in combination with other substances. A number of samples have been condemned for this reason. Under the new preservative regulations excessive quantities of sulphur dioxide are not permitted, but even when these are removed the question arises as to whether any substance should be allowed to be treated in order that the public may be deceived into believing that the article is better than it is ; in the opinion of the writer, an opinion gradually formed and now held with some conviction, this should not be.

The manufacturers of the condemned samples have been approached, as well as other manufacturers, individually and through their trade associations. In several cases manufacturers have undertaken to discontinue the practice whilst others have stated their strong objection to it. It appears that the better-class manufacturers do not use any such process, whilst the others are more or less inclined to come into line if pressure is brought to bear.

Seidlitz Powders.

Some manufacturers have been placing upon the market seidlitz powders described as "extra strong" or "double strength" which were in fact powders of the ordinary B.P. strength. A short time ago each of these manufacturers were warned, as were the trade organisations. As a result, these misleading labels have now been discontinued and those powders described as being stronger than the B.P. powders may be taken as conforming to this description.

Paregoric.

Paregoric, or Tinct. Camph. Co., is a compounded article contained in the B.P. It contains, among other ingredients, opium, a scheduled poison, so that it may only be sold by registered pharmacists. Several unregistered (unqualified) drug stores proprietors have supplied, in answer to a demand for paregoric, a substance which contains no opium and which is, therefore, comparatively useless. Successful prosecutions have been instituted. The various trade organisations and the manufacturers of these so-called "Paregoric substitutes" (a most undesirable description, as they cannot be considered as in any way substitutes for paregoric) have been cautioned and as a result much greater attention is being given to these points by unqualified vendors.

Turpentine.

Of the samples of turpentine examined during the years 1924 and 1925 about one-half consisted for the most part of paraffin. These were labelled "Household Turpentine" or with some such description which cannot

be said to be in any way a notification to the purchaser. As a result of the activities of the Department many labels have been altered in such a way that the purchaser will realise that he is not getting a genuine article. One of the manufacturers associations has passed a resolution which ostensibly deprecates the use of such misleading descriptions.

Cream Ice.

Most of the samples sold as "cream ice" in 1925 were prepared either with milk or with skimmed milk. Representations have been made to the vendors of these substances who, with one notable exception, agreed both to improve their articles and to describe them in future as "ice cream." One vendor decided to increase the amount of butter fat in his product up to 15 per cent.

Arsenic in Food Wrappers.

During the year 1923 it was discovered that some of the brightly-coloured papers frequently used as wrappers of food contained material quantities of arsenic derived from the ink used in their manufacture—one sample contained as much as one-third of a grain in a square foot. This fact was unknown to the food manufacturers and also, in most cases at least, to the paper manufacturers. As a result of the representations then made alterations have taken place in the methods of manufacture and such wrappers are now quite free from material quantities of arsenic.

Cream Cheese.

Samples of "soft cheese" made from whole or partially-skimmed milk have not infrequently been sold

as "cream cheese." "Cream cheese" should be prepared from cream and should contain very much more fat than is contained in an ordinary "soft cheese." Successful prosecutions have been instituted for the sale as "cream cheese" of substances not produced from cream.

Cheshire Cheese.

Cheshire cheese should be a whole-milk cheese produced by the well-known method in Cheshire and neighbouring counties. Presumably, therefore, neither a cheese made from partially-skimmed milk nor an imported cheese should be sold under this description. The offence would appear still greater when an imported cheese made from partially-skimmed milk is sold as Cheshire cheese. For some little time now large quantities of cheese have been imported from Holland which have been made from half-cream and three-quarter cream milk and it would appear quite likely that such cheese is specially prepared to counterfeit the genuine variety as it is exactly similar to Cheshire cheese in texture, shape and rind. Several successful prosecutions have been instituted with the result that the number of offences during 1925 was very appreciably less.

Beef and Malt Wine.

A prosecution was instituted against the vendor of a "beef and malt wine" which consisted almost entirely of a coloured solution of sugar. The defendant was fined £60 with £21 costs. The same vendor was subsequently fined £20 with £52 10s. costs for the sale of an "invalid wine" of substantially the same composition. The results of these cases are particularly gratifying.

as a number of local authorities throughout the country had considered that the legal difficulties were too great, whilst in another district a prosecution for a similar article was dismissed.

Jam.

During 1923 many samples of jam were classified as adulterated on account of the fact that they were labelled in such a way that the vendor would imagine that they were entirely free from glucose syrup, whereas they contained quantities of this ingredient varying from 8 per cent to 35 per cent.

Each of the manufacturers of the above jams was communicated with, in most cases a personal interview was arranged and the matter was thoroughly thrashed out. Nearly all the manufacturers agreed that such labels were misleading. All the manufacturers who are continuing the use of glucose syrup in their jams, without exception, agreed in writing to remove the offending words from their labels. Two manufacturers not wishing to alter their labels have given a definite undertaking that they will not use any more glucose syrup in the manufacture of their jams and marmalade.

From the above extracts and summary of the annual reports of the period 1915-1925 it will be observed that some progress has been made, but sufficient has been given to show that much more remains to be done. It is the earnest wish of the writer that such matters should be taken up by those having the interests of pure food at heart and carried forward to a successful conclusion.

Notes on the Present Position of the Adulteration of Food.

The series of Acts at present in force dealing with the purity of foods and drugs was started by the Sale of Food and Drugs Act in 1875, which is described in the preamble as "An Act . . . . to make better provision for the sale of food and drugs in a pure state."

Before that time several Acts had been passed, the general tendency being to legislate for each individual article by a special statute. It was in the year 1860 that the first Adulteration Act became law and this was the first attempt on the part of the legislature to deal with the problem of adulteration in a general way.

Dr. Arthur Hill Hassall, Physician to the Royal Free Hospital, London, was the great pioneer in this work of calling attention to the urgent necessity of dealing with food adulteration and no praise can be too great for the thoroughness and ability with which, through good or evil report, he pursued his task.

Associated with Dr. Hassall were Dr. Letheby and a microscopist who, perhaps, has never been excelled in his power of delineating what he saw under the microscope. Mr. Wakeley, the courageous editor of the *Lancet*, appointed these workers as the "*Lancet* Sanitary Commission" to prosecute an investigation "based upon actual enquiry and experiment." In 1851 they began to publish their results. After an interval the streets were published in which were the shopkeepers supplying adulterated foods and later the defaulters

themselves were named. This report influenced public opinion to such an extent that a Select Committee was appointed and on their findings was based the Act of 1860.

Offenders could not only be punished by fines but by publishing their names and addresses. A serious defect was that the authorities were not compelled to appoint analysts. In 1872 was passed the second Adulteration Act, but it was still not compulsory to appoint public analysts and so any safeguard against adulteration could easily be rendered inoperative unless the Local Government Board required an appointment to be made.

These Acts worked badly in practice and another Select Committee sat in 1874 and reported adversely on them. Consequently a Bill was brought in and became law as the Sale of Food and Drugs Act, 1875. This, modified and supplemented by later Acts, is the main provision at the present time for dealing with the question of the sophistication of food.

So, largely as a result of the pioneering work of Hassall, and also because of a general desire for an improvement in the condition of the food supply of the country, the Act of 1860 and later the Foods and Drugs Act of 1875 was placed on the statute book. Although since that time many amendments and additions to this Act have been made, as stated above, this still remains the basis of almost all prosecutions concerned with the adulteration of food in this country.

That this Act was really necessary and that it has had most excellent results is well shown by the following table which shows the percentage of adulteration found

among samples of food taken in the County Borough of Salford for each 10th year since the passing of the Act :—

Year.	Per cent of Adulteration.
1875	66·6
1884	7·1
1894	1·2
1904	3·6
1914	3·1
1924	4·3

In considering the value of the 1875 Act and subsequent Acts it must be remembered that they were originally designed to protect the consumer from gross and deliberate adulteration. The 1875 Act is described as an Act to make better provision for the sale of food and drugs in a pure state. At the time that the Act was passed, manufactured and compounded articles of food still formed only a small fraction of the food of the people, although such articles were gradually coming into use even at this time. Those that did exist were usually prepared by firms of long standing and high repute and were frequently unobjectionable.

The bulk of the food sold by retail consisted of "raw materials" from which the housewife made her own confections, mixtures and compositions. The Act was designed to provide that such "raw materials" should be sold according to the requirements of the purchaser and although Section 7 deals with "compounded food . . . . in accordance with the demand of the purchaser," no provisions are made for what the Food Manufacturers'

Federation euphemistically calls "legitimate modifications of formulæ" and it would appear most desirable that some suggestions should be laid down as to what do or do not constitute "*legitimate* modifications."

True it is that Section 27 states that "Every person who shall wilfully give a label with any article sold by him which shall falsely describe the article sold, shall be guilty of an offence," but the word "wilfully" hinders very largely the operation of this section. Manufactured articles, on account of the gradual change in the habits of the people, are now rarely sold retail by the actual manufacturers and it is not usually difficult for the seller to prove that (as is usually true) he was not aware of the real nature of the article being sold and that he was himself deceived by the label.

Of the many difficulties which are at present encountered by Local Authorities in taking proceedings under the Food and Drugs Acts that of obtaining evidence is probably the greatest.

In ordinary circumstances evidence is tendered by the Food and Drugs Inspector, who uses as his main argument the certificate of the Public Analyst; in addition, the Public Analyst is called in many cases to corroborate his certificate and to offer such further remarks as may be necessary; in difficult cases it sometimes happens that the Public Analyst in whose district the proceedings are being taken is supported by one or more Analysts from other districts. Such evidence is usually sufficient, on questions of fact, which are more or less generally admitted by the defence, but questions of trade uses and public requirements are frequently brought

forward by the defence and it is always alleged (no matter how improperly or incorrectly) that the Public Analyst, having no knowledge of trade conditions and requirements, is not in a position to speak on trade subjects, whilst on public requirements he may be able, apart from scientific questions, only to give his own individual opinion.

The defence, which in these days is frequently well organised, and always so where matters of fundamental importance to the trade are concerned, has often large sums of money placed at its disposal through various trade organisations and is prepared (for reasons which will be fairly obvious to the careful reader) to risk amounts which are outside the capability of any but the very largest local authorities; even these are not always keen on risking the equivalent, say, of a penny rate for a result which, if favourable, will benefit other authorities equally with themselves. It is not equitable that those authorities which are sufficiently alive to take action should be saddled with the whole of the expense of what is, after all, a national question. In the early days of the Acts these were mostly local questions, but the number and amount of commodities distributed on the National Scale is continuously increasing—new conditions need new methods to meet them.

Witnesses for the defence are not limited to two or three whose evidence is largely technical. It is quite competent (and it is, in fact, largely practised) for the defence to call large numbers of witnesses who speak as to "trade custom." From the results of certain cases it would appear that in those cases where adulteration has gone on sufficiently long, unchecked, it may become a "trade custom" and so the offender is able to escape.

In this connection it is well to recall the provisions of the Merchandise Marks Act which states that goods must not be sold with a false trade description and this has been interpreted in the case of Lamy *v.* Watson in a very definite way. In this case the Court ruled that "trade custom" to succeed in such a defence must show not only that such action was a common practice and a usual practice among the vendors, but that it was well known to the purchaser and that it did, in fact, form one of the bases of contract between purchaser and vendor. If this means anything it would surely lead us to suppose that in any Food and Drugs Act prosecution the trade can only reasonably defend on the ground that the "trade custom" in question is well known to the retail purchaser and that the sale has not been made to his prejudice. The defence make their plea of "trade custom" and state either directly or inferentially that it is recognised by purchasers in general. Unfortunately, the prosecution is hardly ever able to put from the witness box the opinion of the purchasing public, since even in cases where one or two purchasers can be found to give evidence, the defence can suggest that they are not representative and they would obviously not carry anything like the weight in the mind of an impartial Magistrate that the opinion of the whole of the public would, could they only be brought into Court.

Thus the prosecution is rarely able to present even a little of the available evidence in cases where the result turns on what is usually understood by the public. The Court hears fully what the manufacturer wants to prove, but when this differs from the opinion of the public it

is almost always impossible adequately to present the latter.

This question of " trade custom " is one of the greatest urgency and importance. The writer holds the opinion most strongly, an opinion which is only strengthened the more he listens to the arguments of manufacturers and the protests of purchasers, that under no circumstances should the manufacturer be allowed to alter the composition of his wares on the plea of progress until and unless the purchaser is made fully aware of the changes which it is proposed to make, together with the reasons for such alterations.

It has been suggested that such stipulations would render it impossible to produce foodstuffs at a price which the purchaser is willing and able to pay and that such interference was never contemplated by the Acts and cannot be tolerated.

Such claims can be answered in many ways. In the first place the manufacturer is not an unbiased interpreter of the wishes of the public and it is not unlikely that his desire to produce a cheap article may so affect his mind that he may entirely lose sight of other points of view.

In the second place, as long as the public do not have the opportunity of deciding for themselves, it is impossible to state their that views will, of necessity, agree with those of the manufacturers. Thirdly, it would not seem right that the sales of any altered or substituted article should be based upon the reputation obtained by the original article. No one would desire to prohibit in any way the sale of any cheap wholesome article so long as it is sold for

and described as the article which it actually is. Substitutes are rarely as nutritious as the article which they are prepared to counterfeit and, if alteration is once allowed, unless the degree of such alteration is definitely fixed, there will be no limit to which it will not proceed until the article has entirely lost its original composition. It is further claimed that, so long as a substitute is sold at a fair price, that is to say, usually much lower than that of the original article, this fact alone is sufficient notification. This cannot be so. If it once be admitted that a substitute may be sold (at any price) described as an original and presumably better (at least dearer) article, all control of such commodities would be lost, as there is no provision in any of the Acts governing the prices at which commodities can be sold, nor can there be, owing to their variations.

Finally, this suggestion that substitutes may be legally sold under the same name as the original article is entirely refuted by the case of butter and margarine, the only one in which special legislation is enacted. Not only is it laid down most definitely that margarine must not be sold on the reputation of butter, most elaborate precautions being taken to prevent the deception of the purchaser, but mixtures of margarine and butter are not allowed to be sold as such. Their manufacture, even, is not allowed with a greater proportion of butter than 10 per cent, and in this case the substance must be sold as "margarine." All the arguments that have been brought forward with the object of proving that manufactured concoctions of synthetic products may be sold under the same names as the natural or original articles

are equally applicable in the case of butter and margarine. In the latter case they have definitely been rejected; how, then, can they be accepted in these other cases?

It may very well be asked at this stage what substitutes and alterations are referred to above. Many readers will doubtless agree that margarine should not be sold as butter, but they will want to know in what way other articles are adulterated and misdescribed. An attempt has, therefore, been made in the following pages to give an account of some such cases that have come to the writer's notice together with his opinions on these and the reasons that have led him to hold these opinions.

Margarine.

Margarine is defined by the Butter and Margarine Act, 1907, as "Any article of food, whether mixed with butter or not, which resembles butter and is not milk-blended butter." By Section 8 of the Sale of Food and Drugs Act, 1899, the amount of butter is restricted to 10 per cent (it must still be sold as "margarine," *vide* definition above) and the amount of water is restricted to 16 per cent by Section 1 of the 1899 Act and Section 4 of the 1907 Act.

Margarine was first prepared during the Franco-Prussian War as the result of a prize offered by the French Government. In its early stages, prepared as it was with macerated cow's udders and other objectionable substances, it was not received with general favour, but modern methods of manufacture are in the main unobjectionable, and the product is a more or less satisfactory substitute for those who are not able to obtain butter.

Two kinds of margarine should be differentiated as they show considerable variation in price, flavour and nutritive value.

The better is oleo-margarine, which should be prepared in the main from animal fats and which should contain a preponderance of beef fat, probably the most valuable of all fats after milk fat. It would seem desirable that a standard for oleo-margarine should be set up as there is as much difference in nutritional value between a good oleo-margarine and an entirely vegetable margarine as there is between butter and oleo-margarine.

The cheaper quality is vegetable margarine which is largely prepared from coconut oil and other vegetable and nut oils. It is a cheap wholesome article which is valuable provided that its deficiency in vitamines is made up by other articles in the diet.

Of recent years an amount of deodorised fish oils has been used in various classes of margarine. It is claimed that such oils are valuable and that no objection to their use can be sustained. This may be true under certain circumstances, but it seems possible that the public might like some safeguard in regard to the amount of synthetic material which is contained in their food—they may even be sufficiently inquisitive to want to know what they really are eating. Whether such a desire for information, if existing, should be encouraged is a matter for national consideration.

No matter from what oils or fats margarine is made they must be clean and fresh or a very inferior, and in fact, unsaleable product will result. The oils are churned

with machine-skimmed milk which has been allowed to sour under the best conditions, coloured and then salted to taste. In the past preservatives have nearly always been used.

On several occasions there have been endeavours on the part of margarine manufacturers to sell what they describe as "margarine mixed with butter," and as a result convictions have been obtained. From the definition of margarine given above it will be seen that such descriptions are illegal. They become fraudulent when it is pointed out that these can never contain more than 10 per cent of butter and that several cases have been observed where the proportion has only been of the order of 1 per cent.

In taking cases of this kind the case of Anness *v.* Grivell is somewhat of a difficulty. In this case the appellant sold as a "very good mixture of butter and margarine," a substance containing 80 per cent of margarine, 15½ per cent of water, salt, etc., and only 4½ per cent of butter. As Section 8 of the Act of 1899 prohibits the sale of mixtures containing more than 10 per cent of butter, the Court felt compelled to hold that no offence had been committed, but intimated that, but for the Act of 1899, the decision would have been the other way. It was, however, not pointed out to the judges that even with 10 per cent of butter the substance must be sold as "margarine," or that, in other words, the limit of 10 per cent of butter does not refer to "mixtures of butter and margarine," but to "margarine." There has been no standard fixed for the sale of such mixtures because, by the definition of margarine such mixtures are legally

" margarine," and, moreover, as margarine cannot contain more than 10 per cent of butter, it follows that the sale of such mixtures is illegal. The writer is of the opinion that, had all the above points been brought to the attention of the judges, a different decision might have been reached.

That the admixture of small quantities of butter to margarine does not affect the flavour and that it is only resorted to in order that the public may be encouraged to buy some particular article is easily seen from a case which was observed some little time ago. In this case a firm advertised a proprietary brand of margarine as containing butter. When they found that they could not retain this description and that the product could only be sold as "———" Margarine, the butter was left out, although the same proprietary name was still retained. This proves conclusively that the public were not expected to detect any difference in taste which might result—in other words, that no such difference does, in fact, exist. This has been freely admitted to the writer by large margarine manufacturers.

The following points then are to be considered in relation to the possible adulteration of margarine:—

1. The addition of excess water.
2. The presence of preservative.
3. Vegetable margarines sold as oleo.
4. The use of hardened fats.
5. The use of too much butter.
6. Incorrect labelling and description.

Jams and Marmalade.

There is little doubt that to the average purchaser the word "jam" suggests a conserve made from fruit and that, further, the fruit shall be fresh whole fruit and the sugar reasonably pure cane or beet sugar. The practice of those housewives who prepare the home-made article gives complete support to such an idea, as also does that of the better class of manufacturer.

To-day a large proportion of the jam manufactured in quantity and sold by retail in this country does not conform to this standard—in fact, most of it falls far short of even an approximation to it. Some half dozen of the larger firms and a few of the smaller firms do produce a genuine article, but for the most part fruit pulp, fruit substitutes (cheaper fruits than those mentioned on the labels and also in some cases vegetables) glucose, pectin, gelatine, agar-agar and artificial dyes are the substances most in favour with the "preserve manufacturer" and which act as his raw material. It may be interesting to describe some of these articles in more detail, as some of them, at least, are widely used in various classes of foodstuffs.

Fruit Pulp is prepared during the fresh fruit season by placing the fruit in barrels and adding a preservative to prevent fermentation. This preservative is usually sulphur dioxide and, as even the best packers say that at least six grains per lb. of preservative are necessary, it is obvious that considerable quantities will frequently be present. True it is that much of the sulphur dioxide is driven off during conversion into "jam," yet we know little, if anything, of the changes that may take place

in fruit thus treated. Such material ought not to be sold as fresh fruit as it is not by any means unlikely that fruit so treated even if it be not actually detrimental to health loses a number of its beneficial properties.

FRUIT SUBSTITUTES.—Under fruit substitutes are not only included marrow (botanically a fruit though popularly a vegetable), turnips and other materials of the same kind, but also the addition of apple to strawberry, black-currant or other more expensive fruit without due notice being given and, further, the preparation of such compound preserves as "blackberry and apple," where notice of the presence of apple is certainly given, but where the amount of the more expensive fruit is almost negligible, its absence being covered to some extent by the use of artificial dyes and synthetic flavouring agents which, even if it be granted that they have no deleterious effect, have certainly no food value whatever. Quite a large proportion of the jams sold in this country are thus prepared.

GLUCOSE (glucose syrup, starch syrup) in the form used in jams and confectionery is a thick syrup of the consistency of cane syrup having (as usually now sold) no colour and being prepared by the action of mineral acids on starch. It contains about 20 per cent of water, the solid matter consisting of glucose (one of the sugars occurring in sweet fruits) maltose (the sugar contained in malt) and various other degradation products of the treatment of starch known as malto-dextrines.

As now prepared it is probably quite a useful article of food, but it is very distinctly inferior in flavour and sweetness to cane syrup and most certainly should not be

allowed to masquerade as the latter. In addition to this quantities of sulphur dioxide are used in order to prepare a colourless syrup, a proceeding which would be quite unnecessary if the public could be educated to the fact that unnatural clearness or whiteness in manufactured articles rather than being a guarantee of purity is more likely one of very thorough bleaching and may, therefore, be more or less objectionable.

Glucose, at the moment, is not used on account of its cheapness, as it is relatively more expensive than sugar. Its use in jam, however, is "to break the grain of the sugar" and to prevent the formation of moulds. There may possibly be little objection to its use for these purposes provided that notice is given to the purchaser. Such notice, however, is essential because it is obvious that those manufacturers who do not use it and who, in spite of this, are able to obtain a satisfactory product by the use of greater care and purer materials should not be penalised by the fact that others are allowed to use a substitute without declaration.

In Smith *v.* Wisden it was held that in a sample of marmalade which contained 13 per cent of glucose there was no evidence to show that the substance was not marmalade (this would appear to suggest that if such evidence had been brought by the prosecution, which certainly could have been done, the case would have been differently decided) and the conviction by the magistrates was quashed. This ruling would probably be followed in the case of jam, but only in cases where no suggestions of the nature of the jam are made, until such time as this decision is reversed.

Pectin, Agar-Agar, Gelatine.—These and other substances are added in order to make the resulting "jam" set. In all cases their use is entirely unnecessary and even if they are not actually prohibited it should at least be necessary to state on the label that they have been used. They are only necessary in cases where products inferior in some other respect are being prepared. The only jam where the addition of other fruit is at all excusable is strawberry. In this case the better-class manufacturer usually adds rather less than 10 per cent of gooseberry juice (which addition is duly notified on the label) and this is quite sufficient to give the necessary consistency. Where any other method is used a full declaration ought to be insisted upon.

Colouring Matter.—Many jams are coloured with synthetic dyestuffs—the so-called aniline dyes. These are sometimes used to improve the appearance of a genuine jam, but more often to give colour to those that have been prepared from fruit pulp or to mask the poorness of such deeply-coloured jams as black currant.

Flour.

It is no exaggeration to say that the present position of the flour-milling industry in England should not be tolerated in any civilised country, whilst at the same time it may be admitted that only in such a country would adulteration of this type be attempted.

When the patent milling methods first came into vogue a much whiter flour was prepared than had hitherto been possible, and the degree of whiteness of the flour was to some extent a measure of the efficiency of the process. In this way whiteness of flour came to be looked

upon as a measure of its purity, *i.e.*, quality of the wheat, absence of offal and so forth.

Now it is a fact that some varieties of wheat will give a much whiter flour than others under similar circumstances and therefore demand a higher price, or, at least, a readier sale. In consequence of this a demand grew up for a uniformly white flour which was satisfied (without any suitable notice being given to the purchaser as to the means to the end) by a variety of artificial methods.

Years ago alum was used, but it was soon generally recognised that this was objectionable and the practice is not now at all common. The use of alum was principally for the purpose of producing a white loaf.

When, as a result of a number of prosecutions under the Sale of Food and Drugs Act, the use of alum was discontinued, the practice sprang up of bleaching the flour; the most popular method in the earlier years being by means of oxides of nitrogen produced by an electrical arc discharge in air. This process was examined and reported upon by Dr. J. M. Hamill, of the Ministry of Health, as long ago as 1911, who states that :—

> "The practice of bleaching being open to these objections, it "remains to inquire whether the consumer, who at present is seldom "aware that his flour has been bleached, or that his bread is made "from bleached flour, can be said to obtain any compensating "benefit. To this a negative answer must be given."
>
> "Apart from any dietic considerations a large number of people "desire bread of exceptional whiteness, and it is reasonable to "suppose that what is demanded by those who prefer such bread "is an article made from flour, the whiteness of which is due to its "being prepared from specially-selected wheats by the elaborate "mechanical separation and 'purification' of modern milling

"methods. Few people would carry their approval of whiteness "to the extent of requiring naturally dark flour to be chemically "treated."

"The increasing activity which is now being displayed in the "use of different articles as additions to flour must be regarded with "considerable apprehension. It does not appear desirable that "such an indispensable foodstuff as flour, the purity and whole-"someness of which are of first importance to the community, "should be manipulated and treated with foreign substances, the "utility of which, from the point of view of the consumer, is more "than questionable."

No official notice has yet been taken of this report, and the public are still being misled by the apparent purity of the flour on sale.

At the present time ozone and chlorine are being used to some extent, but there is no reason to suppose that their use is much less objectionable than that of oxides of nitrogen. Even if bleaching be not injurious to health, it is obviously most improper that such practices should be allowed without due notice being given to the purchaser, as it enables a poorer quality flour to be sold as one of great purity.

The second form of adulteration which is now largely if not universally practised is that of the addition of so-called "improvers" to flour. An "improver" may be simply a substance to lighten the colour of the flour, or of the finished loaf, or its use may be designed to produce more loaves from the sack of flour. This latter result is brought about by the dough absorbing more water than could otherwise be the case. The baker is therefore able to sell water at the price of bread—this, surely, is as much adulteration as the addition of water to milk!

At first calcium phosphate was the substance used as an "improver." This is produced by the action of sulphuric acid (vitriol) on charred bones or other phosphate materials. When free from excessive quantities of arsenic or calcium sulphate (the suggested limit of this latter substance is far too generous, there is no reason whatever why it should not be as low as 2 per cent) there is nothing injurious in this material—its use, however, confers no benefit upon the purchaser and should be prohibited or its presence declared.

More objectionable still are the newer forms of adulterant. A very large percentage of flours now contain persulphates, peroxides and other compounds which are allied to the so-called "oxygen" compounds used in the modern laundry. Their use should be prohibited.

It can only be repeated that the bulk of the flour sold in this country to-day is seriously adulterated to the great detriment of the purchasing public.

Fruit Cordials, Etc.

Probably in no branch of food is there more adulteration than in that of the so-called temperance drinks, fruit cordials and similar preparations. A genuine fruit cordial should be prepared by the addition of fresh fruit juice to a thick cane sugar syrup and bottling under aseptic conditions.

The question of preservatives in this class of goods has been fixed for the time being, at any rate, by the recent preservative regulations, which allow of the addition of very considerable quantities of sodium benzoate or sulphur dioxide. It cannot be too strongly stated or too frequently

repeated, however, that such additions are really quite unnecessary. The best firms in this country have for years been making a preparation of this kind without the addition of any preservative of any kind, by the use of a heavy syrup, best quality ingredients, and clean and intelligent methods. It seems difficult to understand why preservatives, which allow for a lighter syrup, slip-shod methods, and inferior materials, should be permitted.

Apart from this vexed question of preservatives very serious adulteration or misdescription is very frequently discovered. Thus a label of the type :—

PORT

(Flavour)

WINE

(Non-Exciseable)

used to describe a solution of sugar coloured with an artificial dye and flavoured with a synthetic organic compound is obviously liable to be misunderstood. Prosecutions in such cases have been successfully instituted.

Fruit cordials are not infrequently prepared without the addition of any fruit juice whatever and in several cases phosphoric acid has been used in place of lemon juice whilst justification of the use of tartaric acid for lemon juice has been attempted by some. This latter attempt is a very good example of the way in which adulteration may develop. Lemon juice is a natural article—the first stage of its adulteration is in using a solution of citric acid which has been prepared from some

fruit, and flavouring it with distilled oil of lemon. Seeing that according to this, citric acid may be used, it is only a short step to substitute tartaric acid which, of course, does not exist in lemons and after this, the next stage, which is still more objectionable, is the use of phosporic acid. The final result of what has been described as a series of "justifiable modifications of formulæ" is a substance which bears no real relationship whatever to the substance it is intended to replace.

Medicated Wines.

The large majority of the medicated wines sold to-day consist of the so-called beef and malt wines. So much is this the case that remarks under this subject may be restricted to this latter class, as most of the general remarks which will be made concerning these will apply with equal force to others.

It may be said that in general even the best medicated wines are either valueless or of much less value than can be obtained by the expenditure of an equal amount of money on the more usual foods.

Even the best beef and malt wines are prepared from cheap Spanish wine of a port character with simple additions of extract of meat and extract of malt. The alcohol in the wine renders valueless a large proportion of any advantageous properties which these two substances possess so that more good is likely to result from taking the wine and the extract of meat and malt at separate times, apart from the great saving in cost which will thereby follow.

The following remarks are taken from the report of the Select Committee on patent medicines appointed in June, 1914:—

"Our attention has also been forcibly called to the advertisement and sale of medicated wines and weighty opinions have been quoted to us regarding their mischievous effects."

"An analysis (of a standard make) made by the Public Analyst of the City of Bradford says: 'It is so deficient in albuminoid nitrogen and phosporus, essential constituents of nerves and flesh, that in these respects it is very little superior to port wine itself.'"

The report goes on to say:—

"Alcohol, moreover, cannot contain meat extract in solution, and presumably any medical man desiring to administer meat extract would prefer to do so without mixing it with alcohol."

The further statement is made that:—

"Many persons acquire the 'drink habit' by taking these wines and preparations."

If these statements be true, as they undoubtedly are, in the case of the best wines of this class, what can be said of the worst? The writer has examined a sample described as "Liebig's Beef and Malt Wine," which consisted of a coloured solution of cane sugar in water containing a large amount of salicylic acid and only about one part in 1,000 each of beef and malt extract. Such substances are, of course, beyond discussion, yet a prosecution for such an article under the Sale of Food and Drugs Act has actually been dismissed by an English bench. In face of such an astounding fact who will deny that some drastic alteration is needed either in the law on this subject, or in the method of its administration?

With regard to these wines either of the former or the latter class, purchasers are advised in the strongest terms to leave them alone. They *may* be of some value, but, repeating for emphasis what has been said above, their cost might be very much better spent.

Syrup and Treacle.

The public regard treacle and syrup as products of the refining of ordinary sugar. Treacle is a more or less crude product of dark colour and somewhat bitter taste; syrup (or possibly golden syrup, *vide infra*) being a product of much lighter colour, produced by further refining processes.

Although there is no doubt that it is an offence under the sale of Food and Drugs Act to sell any substance as treacle or golden syrup which is not the product of the cane or beet, several Magistrates have held that on legal grounds a purchaser asking for syrup, table syrup, or in fact using any other words than treacle or golden syrup is not prejudiced if glucose syrup is supplied. Now the writer is most strongly of opinion that any purchaser given glucose syrup (or a mixture containing two-thirds glucose syrup coloured and flavoured with inferior cane syrup) in answer to a demand for "table syrup" would consider himself prejudiced. There is, of course, nothing particularly objectionable in glucose syrup, but its flavour is very distinctly inferior to that of the article it is used to substitute, and in any case if glucose syrup *is* good and if, as the manufacturers say, the public *do* want it, why not sell it under its own name? It can be very definitely stated that the public do not know that their "table syrup" consists largely of "glucose syrup."

The consequence of this state of affairs is that retail vendors frequently sell in all innocence a substance described as "golden syrup" which is really seriously adulterated.

Lemon Cheese.

So much has been written on this subject lately that it is not desirable to say much at this point. The reader might ask herself, however, what she considers "lemon cheese" to be. Should it be prepared from sugar, butter, eggs and lemons, or should it be any compound which can be spread (and which has a lemon flavour) such as the following :—

Sugar	152 lb.
Tartaric Acid	1¾ lb.
Glucose	20 lb.
Starches	36 lb.
Margarine	27 lb.
Gum Tragacanth Solution	7½ gallons.
Water	12 gallons.
Flavouring, etc.	1 lb.
Product ..... about	460 lb., *i.e.*, 536 lb. (less 45 per cent evaporation in each case) added water.

The following has been suggested as a modern definition of lemon cheese :—

> "That the term lemon cheese shall mean a product composed "of either butter, eggs, sugar and lemons, or sugar, glucose, "margarine or other butter substitute, citric acid and oil of "lemon, or lemon juice, eggs, or other wholesome thickening matter, "with a harmless colour, and not more than 30 per cent of water."

It is for the housewife to decide whether this or butter, sugar, eggs and lemons is what she understands by "lemon cheese."

Cheese.

"Cheese" should be prepared from whole milk. A cheese so prepared will seldom contain much less than 30 per cent of fat whilst the proportion of fat in the dried cheese will be about 50 per cent (never less than 45).

Skimmed-milk cheese always contains a lower percentage of fat than this and in some cases the amount present may be almost negligible.

A large amount of the "skimmed milk cheese" sold as "cheese" in this country is prepared in Holland, in which country there are regulations which decree that "cheese" must be described as therein stated so that the public may know exactly what is being purchased.

The following are some of the regulations made by the Dutch Government:—

1. Control on Whole-Milk Cheese.

This control is a control on the manufacture based on the control of:—

(*a*) The quantity and the composition of the milk used for the manufacture.

(*b*) The composition and the quantity of the cheese and the whey butter made from it.

(*c*) The fat percentage of the whey.

It guarantees that the cheese contains at least 20 per cent, 30 per cent or 40 per cent of fat in the dry substance, without any foreign addition.

5. They shall place on all cheeses made by them one of the established Government marks for not whole milk cheese, that is to say:—

On cheese with a minimum of 40 per cent of fat in the dry matter, the Government mark with the indication 40+.

On cheese with a minimum of 30 per cent of fat in the dry matter the Government mark with the indication 30+.

On cheese with a minimum of 20 per cent of fat in the dry matter, the Government mark with the indication 20+.

all this in accordance with the regulations to be laid down by the Director-General of Agriculture.

Several successful prosecutions have taken place in this country for the sale of these "skimmed-milk cheeses" as "Cheshire cheese," but when sold simply as "cheese," prosecutions have not, in general, been successful.

It is surely undesirable that the imported produce should be less subject to inspection here than it is in the country of origin. The classification of cheese into its varieties is urgently necessary and should be carried out immediately.

Cream Cheese.

Cream cheese should be prepared, in whatever manner, from cream. The sale of soft cheese without rind prepared from whole milk, which has a somewhat similar appearance to the untrained observer, has largely increased in recent years, and in a large number of cases this is supplied by retail vendors in answer to a demand for cream cheese.

Genuine cream cheese may contain up to 90 per cent of fat whilst a soft whole-milk cheese seldom contains much more than 25 per cent of fat, so that a purchaser is very seriously prejudiced by this substitution. The matter does not, however, stay at this point because there are at present on the market under various fancy names

samples of soft cheese prepared from machine-skimmed milk which contain as little as 1 per cent of fat and in some cases they have been described as cream cheese. These very inferior substances are not described as "cream cheese" by the manufacturers, but the local representatives are not always so particular and in some cases at least they have had to share responsibility with the retail vendor.

Custard Powder, Custard.

Quite recently several cases have been heard in the Courts of alleged misdescriptions of "custard" and "custard powder." In a recent report the County Analyst for Newport states:—

> "Much has been said of late about baking, custard, egg and "blanc mange powders, but whilst undoubtedly there are some "objectionable substances sold in certain localities, I am satisfied "of the quality of our samples. Baking powders have shown "great improvement in quality, and poor-grade inefficient powders "appear non-existent. The probability is they have automatically "worked out their own destruction by reason of failing to satisfy "the housewife, who once more proved that the best was the "cheapest. Custard and egg powders still appear to be a somewhat "popular form of articles of consumption, but are mainly dyed "starch, perfectly harmless, but of doubtful nutritive value; "the egg constituent is for the most part entirely lacking, although "I have found some few to contain traces of the active principle "of the egg, but generally they are devoid of it, although in one "case I have direct evidence that the label on the packet bore a "statement that eggs were a constituent, it proved that six eggs "were introduced into a ton of ingredients, mainly starch, and "thus conscience and the letter of the law was fully satisfied."

There is no doubt that custard should be prepared from eggs and that the name "custard powder" given to a substance which consists merely of coloured and

flavoured starch is a misdescription. It may be that the public are no longer deceived and that for this reason serious objection can no longer be taken. A statement to the effect that by its use a rich creamy "custard" can be prepared is, however, of quite a different character and this has recently been recognised by the Courts. Some restaurants have now two descriptions, "custard" for the product made from eggs, and "custard powder custard" for that made from starch, which is obviously very fair.

Egg Powder.

In general the substances sold as "egg powder" are merely coloured baking powder and cannot truthfully be described as in any way a substitute for eggs. Advertisements containing pictures of eggs, hens and other things likely to convey to the reader an impression that eggs are an important constituent of the mixture are obviously undesirable in cases where eggs are not present in any form.

In one case which came before the writer's notice a packet of this commodity was labelled quite prominently "contains eggs." On examination it was found that the proportion of eggs was little more than 1 per cent. On being approached the manufacturers agreed that the practice was not without objection and decided that the use of such a label should be discontinued.

Diabetic Foods.

It is often-times very necessary that persons suffering from diabetes should have a diet containing a very small

proportion of starch. For this reason, bread, flour and biscuits are manufactured by a special process containing almost negligible quantities of starch. The product is expensive and unfortunately not particularly palatable, even when the greatest care is exercised during manufacture. For this reason many spurious articles have been placed upon the market which contain almost the normal amount of starch occurring in ordinary wheat flour. As long ago as 1911 Mr. F. W. F. Arnaud, now the County Analyst for Kent, made a report on this subject giving in detail the composition of many very unsatisfactory articles. Some years ago the writer examined samples of so-called diabetic bread and flour sold at a high price which had the normal composition of wheat flour, and which had, in the opinion of the medical man in charge of the case, contributed materially to the death of his patient.

During the year 1914 the writer examined 11 samples of diabetic foods, several of which contained over 60 per cent of starch. Eight of these samples were obtained from one source. These were accompanied by a booklet which contained analyses of the various foods, which analyses were in reasonable agreement with those actually obtained. It would appear, therefore, quite hopeless to attempt to take proceedings under such conditions, although the question as to whether those who partake of these foods fully understand the meaning of these analysis remains open. The price charged for a diabetic flour of which the analysis corresponded almost entirely with an ordinary wheat flour was 7s. 6d. for a bag which was stated to contain about 6 lb.

Other Foods and Drugs.

Similar remarks could be made on other foods such as sausages, meat and fish pastes, etc., where the amount of meat is in many cases reduced to a minimum whilst bread crumbs and other starch materials which will absorb large quantities of water are used in their place. Standards for this class of goods are urgently necessary.

In general, drugs bought under their own names from qualified pharmacists are of satisfactory quality, but the same cannot be said for some substances obtained from drug stores and other places where in certain instances the operations of the Poisons and Pharmacy Act prevent their sale. In these cases unqualified vendors not infrequently attempt to pass off comparatively worthless substitutes. Cases concerning "lysol" and "paregoric" have recently been heard and such drugs should be obtained from those who are legally entitled to sell the genuine article.

Conclusions and Suggestions.

The examples given above will give a good general idea of the type of adulteration which is in vogue at the present time. Very few articles are on the market (preservatives are not included in this statement) which are certainly injurious to health, but misdescription of the type mentioned above is rampant. In some cases successful prosecutions have been instituted, but in many others no action has been taken on account of the difficulties mentioned in the introduction to these notes. These difficulties may be briefly summed up as being of two main classes :—

(1) Difficulty of getting witnesses to testify as to standard from the public standpoint.

(2) The cost of appeals to the Higher Courts.

(1) The first could be overcome by fixing a minimum standard for all food or by requiring a label to be placed upon every article describing its ingredients, and their approximate proportions.

Standards would be fixed by a Standing Committee appointed for the purpose. This Committee should be one representing purchasers and no member should be financially interested, either directly or indirectly with the supply of food, and it would seem desirable that there should be no scientific members, although these might be called in as assessors if and when the Committee thought it desirable. Evidence would be received either from individual manufacturers or from the various trade organisations on the one hand and from Local Authorities, the Society of Public Analysts and individual Public Analysts on the other. They would be given power to call for any evidence which they might think necessary and would be required to listen to any evidence which others might desire to bring to their notice.

(2) The second point could be overcome by means of an agreement between Local Authorities ; an agreement, which might, for example, be brought about through the Association of Municipal Corporations and the Association of County Councils. If all, or a large proportion of Local Authorities agreed to pay a sum in proportion to their rateable value as a defence fund to be used in the case of any authority saddled with an appeal against

them, or in support of any approved appeal which such authority might themselves take, the burden would be shared in a much more equitable manner than it is at present, whilst the moral support of some such arrangement would be of the greatest value in combating the fear of appeals engendered in the minds of some Local Authorities by the knowledge that large sums have been promised by combinations of manufacturers as defence funds in case of need.

Whatever method be used, it is most urgently necessary that some very drastic steps be taken to combat what is admitted by unprejudiced observers on every hand to be a very grave position. In several parts of the country various enlightened authorities have taken risks and done all in their power to improve the present state of affairs and good has undoubtedly been done, but much more still remains. With a " Food Standards Committee " and a fund to fight appeals, the food supply of this country could be enormously improved in a short time.

SECTION VII.

Maternity and Child Welfare and Supervision of Midwives.

The Staff consists of three Lady Medical Officers, an Assistant Inspector of Midwives, 16 Health Visitors, a Masseuse, and five clerks. It is the duty of the Medical Officers to conduct all examinations of mothers and children attending at the Clinics and at the Centres. The Senior Medical Officer supervises the visiting and assists in the administrative work of the Department. Each Health Visitor is allotted a district, to the visiting of which most of her time is devoted, and a record is kept of all details connected with the sanitary state of the house and the health of its occupants. In addition, the Health Visitors carry on the work at the various Mothers' Centres in the Borough.

The Work of the Health Visitors.

During the year 1925, the whole of the Wards in the Borough were visited by the Health Visitors.

The following table gives the number of visits paid by the Health Visitors in the various Wards, and the number of babies and expectant mothers visited during the year 1925 :—

TABLE C.W. 1.

Wards.	Total No. of Visits to Homes in 1925.	First Visits to Homes of Babies.	No. of Visits to Expectant Mothers.
Kersal	1108	184	47
Mandley Park	1914	276	59
Albert Park	1530	240	36
Trinity	2889	263	103
St. Matthias'	2586	389	174
Crescent	2634	446	108
St. Thomas	2772	259	82
Charlestown	3394	363	131
Claremont and Weaste.....	2409	217	67
Seedley	1293	257	17
Langworthy	1103	176	25
Regent	2738	438	4
Docks	1812	154	27
St. Paul's	2384	292	84
Ordsall Park.....	3057	321	80
	33623	4275	1044

The following is a summary of the work done in Salford by the Visitor employed by the Manchester Jewish Ladies' Visiting Association :—

January to December, 1925.

House to House	1089
Special	69

Municipal Maternity Home and Babies' Hospital.

This Institution admitted its first case on the maternity side on March 21st, 1925. As this has been somewhat in the nature of an experiment, it is gratifying to the Committee to find that it has fully justified all expectations. Both the maternity section and the babies' section have been practically full since the Opening, and there is a large and constant demand for beds on both sides.

The first baby cases were admitted on the 16th April, 1925.

Maternity Side.

The following cases have been admitted since the Opening to December 31st, 1925 :—

For special ante-natal treatment	9
For confinement	97
Cases referred to Hope Hospital for confinement	3
Cases treated and not returned for confinement	6
Cases requiring medical assistance	10

Maternity = 9
Babies = 1

Number of babies born in the Home—

Males	49
Females	46
Stillbirths	2
Mothers and babies admitted to Home after confinements at own homes	3
Maternal death	1

Babies' Side.

Number of cases admitted since Opening to 31st December, 1925 = 68

Rickets = 37
Wasting = 31

Cases discharged	=	57
Very much improved	=	36
Improved		12
Transferred to other Hospitals	=	1
Deaths		4
Taken out at parents' request		4

All cases for the Maternity Home attend a special Ante-natal Clinic which is held at Regent Road Clinic on Friday afternoon, in order to reduce any possible complications at the confinement to a minimum.

Maternity and Child Welfare Clinics and Centres.

The practical side of the Maternity and Child Welfare work is carried on at the Clinics and Centres scattered throughout the Borough. At these, children up to five years of age are weighed, and mothers can obtain medical advice for themselves and the children.

The two Clinics, which are open daily, provide special facilities for the examination and treatment of ailing children requiring more frequent medical supervision than can be obtained at the Child Welfare Centres.

At the nine Centres, the children are weighed and the mothers can seek advice from the doctor *re* the feeding and general care of the infants.

When the children attending the Clinics improve in health, many of them are passed on to the Centre nearest to their homes. Also, any children attending one or other of the Centres, who require treatment, are referred to the nearest Clinic.

Maternity and Child Welfare Clinics.

There are two Clinics in the Borough, namely, Regent Road, Salford, and Teneriffe Street, Broughton.

Regent Road Clinic is open five mornings per week, and Teneriffe Street Clinic is open five afternoons per week.

Thursday in each week is set apart at both Clinics for expectant and nursing mothers who require medical advice for themselves. Thus, skilled attention is available for the child from the time of its conception to the time at which it is passed on to the care of the School Medical Officer.

Maternity and Child Welfare Centres.

There are nine Child Welfare Centres scattered over the Borough, namely:—

Ordsall Centre, Ordsall Hall, Salford.

Chapel Street Centre (Rosamund Street extension), Coombes Chapel, Chapel Street, Salford.

John Street Centre, John Street Hall, Pendleton.

Seedley Centre, St. John's Wesleyan School, Langworthy Road, Pendleton.

Enys Street Centre, Enys Street School, Whit Lane, Pendleton.

Woodbine Street, Woodbine Street School, Cross Lane, Salford.

Regent Road Centre, 139, Regent Road, Salford.

Teneriffe Street Centre, Teneriffe Street, Broughton.

Irlams-o'th'-Height Centre, Congregational Church, Irlams-o'th'-Height.

At each Centre an afternoon is set apart for the weighing of the children, and at Chapel Street, Langworthy Road, Enys Street, and Ordsall, an additional

morning session has been found necessary. All children are medically examined at their first attendance, and periodically afterwards, and, in addition, any children who are not gaining satisfactorily, or are ailing, are examined. Expectant and nursing mothers who are in need of advice are also seen, but are referred for detailed examination to one of the Ante-natal Clinics.

At Ordsall, Rosamund Street and John Street Centres, expectant and nursing mothers are able to obtain dinners on every full working day at a nominal price, of which every advantage is taken. It is due to the generous help of private persons that this work is able to be conducted satisfactorily without undue call being made upon the time of the professional staff.

On other days at Ordsall, Rosamond Street, John Street, Enys Street, and Teneriffe Street practical classes and demonstrations are held in sewing, and at John Street and Rosamond Street classes are also held in cookery and the general hygiene of pregnancy and of the infant.

The Health Visitor for the district in which the Centre is situated helps with certain of these classes, and other workers assist in caring for the babies, so that the mothers may enjoy the benefit of the lessons undisturbed. Much interest has been taken in these classes during the past year.

All cases attending at the Clinics and Centres are "followed up" in the homes by the Health Visitors, who help the patients to carry out the instructions given.

The following figures show the number of attendances at the Clinics and various Centres during the year 1925:—

TABLE C.W. 2.

CLINICS & CENTRES.	No. of New Cases. Children.		No. of New Cases. Mothers.		Total Attendances. Mothers.		Total Attendances. Children.		Grand Total Attendances.	Consultations. Children.		Consultations. Mothers.	
	Under 1.	Over 1.	Expectant.	Nursing.	Expectant.	Nursing.	Under 1.	Over 1.		Under 1.	Over 1.	Expectant.	Nursing.
C.W. Clinic	572	555	393	221	1456	984	2840	3296	8576	1854	2207	1456	984
Ordsall Hall.....	208	52	8	116	14	995	2154	547	3710	279	156	14	41
Chapel Street	259	93	23	127	100	1439	2888	1763	6190	497	276	100	132
John Street, Pendleton..	184	58	8	96	22	767	2263	1124	4176	453	238	22	70
Seedley	307	79	5	126	9	948	3366	1170	5493	535	212	9	50
Enys Street	254	60	19	137	41	916	2591	1587	5135	492	455	41	70
Regent Road	275	191	3	120	7	701	1996	1535	4239	655	543	8	23
Woodbine Street	138	24	5	71	9	515	1447	298	2269	247	101	8	21
Teneriffe Street	147	39	..	62	..	301	933	509	1743	261	79	..	19
Teneriffe Street Clinic....	559	224	83	212	267	712	5014	3175	9168	1990	1288	260	683
Irlams-o'-th'-Height	113	35	4	56	11	383	1322	477	2193	318	150	11	42
	3016	1410	551	1344	1936	8661	26814	15481	52892	7581	5705	1929	2135

Milk Scheme.

A number of very deserving cases have been assisted under the above scheme, and the admirable results are increasingly evident, the individual improvement of the babies being observed as they are brought to the various centres to be weighed each week.

Up to the end of December, 1925, assistance has been given to 741 applicants, free milk being granted to 725 and milk at part-pay to 16.

Massage.

During the current year massage treatment has been given at the Clinics and at John Street, Rosamond Street, Ordsall and Enys Street. Due to the large number of cases needing treatment in this Department, in addition to the work of the whole-time masseuse, assistance has been given by two of the Health Visitors with massage experience, and it is proposed to substitute another full-time masseuse in the near future and to liberate the Health Visitors for their own duties.

The results of the treatment in all cases where mothers will continue to bring the children regularly and for a sufficient length of time are very satisfactory, and complete cures have been effected in a large number of cases, as will be seen by the figures in the statement below. Quite a number still retained on our books are practically ready for discharge. No case is officially discharged without being first thoroughly examined by the doctor; some cases, however, which are really fit for discharge, cease attending and thus miss the official discharge.

Most of the mothers take a keen interest in this work, and are very willing to carry out the advice given to them with regard to the children who are receiving treatment.

During the year 1925 the following cases have been dealt with :—

Clinics and Centres.	No. of Regular Cases.	No. of Casual Cases.	Cases Discharged Cured.
Regent Road	198	28	35
John Street	26	12	6
Rosamond Street	17	10	3
Teneriffe Street	55	86	19
Enys Street	15	22	10
Ordsall	15	11	9
TOTAL	326	189	82

6 of the above cases were transferred to other Institutions.

Midwives Act.

There are 90 midwives on the register in Salford; 4 are connected with a public institution, 7 are not practising, 1 is maternity nursing—leaving 78 practising midwives, of whom 69 reside within the Borough.

PARTICULARS OF QUALIFICATIONS.

	Bona-fides.	St. Mary's Hospital.	London Obstetrical Society	Central Midwives Board.	Total.
Practising Midwives	3	7	7	61	78
Non-practising Midwives.....	—	—	2	5	7
Maternity Nursing	—	—	—	1	1
Institution Nurses	—	—	—	4	4
Totals	3	7	9	71	90

The midwives are regularly visited, and their books, instruments, &c., inspected by the Assistant Inspector, under the supervision of the Medical Officer, and the midwives are encouraged to consult with the Medical Officer when cases of difficulty arise. During the year 13 midwives removed from the district, 5 of these from the Royal District Nurses' Home, The Crescent; 6 changed their address; 14 midwives were newly registered; 1 recommenced to practise, 1 returned to the Borough. During the year 1925, 3,445 births were attended by midwives alone, and 347 cases were attended by doctors and midwives acting as Maternity Nurses. 17 cases of puerperal fever were notified during the year; 2 occurred in connection with miscarriages (both being attended by doctors). Of the remaining 15 cases, 12 midwives had 1 case each; 2 cases were attended by St. Mary's Hospital Nurses. They were thoroughly enquired into, and every care taken to prevent the spread of the disease.

On notification, each case is inspected. The house is visited by the Assistant Inspector of Midwives and the patient removed by Doctor's orders (except in one

or two special cases), to Ladywell Sanatorium or Hope Hospital. Full details are taken from someone in the house in authority, *re* onset, etc., and questions asked as to the Midwife's regular visiting, cleanliness, etc. The patient's bedding is taken away for disinfection, and the room is disinfected. The house is visited later to see that disinfection is satisfactory. The Midwife is interviewed and particulars taken of the case, also a resumé of any work done since last seeing the infected person. She is temporarily suspended in order that she may go to the Disinfecting Station to have a disinfecting bath, and have her clothes, instruments and bag disinfected. Should she have visited other patients, not being aware of infection at the time, these are seen by the Assistant Supervisor, temperature and pulse taken, and their condition generally noted. The Midwife is warned to take special precautions regarding them, to watch carefully, and send for the doctor without delay if at all anxious about them. In a case of suspected Sepsis, the Midwife sends for the Doctor, reports to the Health Office, and is temporarily suspended until she hears the Doctor's decision, or as an alternative she may devote herself to the one patient, and pass on her other duties to another Midwife.

18 midwives were disinfected at Mode Wheel on account of having been in contact with a notifiable infectious disease other than puerperal fever; and 5 midwives were instructed to take disinfecting baths at home. 38 Midwives were disinfected at Mode Wheel on account of being in contact with Pemphigus

Neonatorum, and 14 Midwives had disinfecting baths at home when the rash was discovered after they had ceased to visit.

1,428 notifications of calling in medical practitioners have been received, the causes being the following :—

Abnormal Presentations	73
Deformed Pelvis	17
Antepartum Hæmorrhage	41
Placenta Prævia	3
Postpartum Hæmorrhage	18
Uterine Inertia	27
Obstructed labour, or requiring instrumental assistance	286
Retained Placenta or Membranes	65
Ruptured Perineum	287
Rise of Temperature	29
Eclampsia	2
Premature Birth	54
Miscarriage and Abortion	31
Inflammation of Eyes	208
Other causes relating to Mother	125
,, ,, ,, Child	162
Total	1,428

23 notifications of contact with infectious disease were received.

43 notifications of artificial feeding, 77 stillbirths and 39 deaths of infants were notified by midwives during the year according to the new rule of the Central Midwives Board. In previous years, infants' deaths have been notified only when no Registered Practitioner has been in attendance.

Investigation of Stillbirths and Infant Deaths.

Each case occurring in Midwives' practices is thoroughly investigated by the Assistant Inspector of Midwives.

As practically every mother now receives Antenatal care where there is a history of previous stillbirth, the mother is advised to seek medical advice from her own Doctor, the Welfare Clinics, St. Mary's Hospital, or other kindred institutions, and in most cases this advice is followed out.

Out of the 77 stillbirths occurring in Midwives' practices there were :—

5 Abnormal presentation.
35 Premature.
2 Anencephalus, Hydrocephalus.
2 Spina Bifida.
19 With history of previous Stillbirth.
14 Born before arrival of help (6 of these were macerated).
5 cases of one twin.
35 Macerated.
3 cases of Antepartum hæmorrhage.
1 Strangulation by cord.
10 cases of illness of mother.
3 cases when mother had had a bad fall.

Infant Deaths (no Registered Practitioner being in attendance).

3 Infant Deaths occurred in the practice of Midwives, Inquests being held in each case. Of these :—

1 died of accidental overlaying.
1 from convulsions.

1 was born before arrival of Midwife, and died from inattention at birth.

When necessary, the Assistant Inspector attends the inquests.

In view of the new rule of the Central Midwives Board all infants' deaths are now notified whether a doctor has been called in or not. 33 notifications of infants' deaths were received, as follows, viz. :—

Prematurity	15
Convulsions	7
Congenital Heart	1
Congenital Debility	10

Ophthalmia Neonatorum.

During the year 1925, 60 cases of Ophthalmia Neonatorum were notified, 22 of these being notified or re-notified by the Medical Staff of the Royal Eye Hospital.

Of the 60 cases notified—

49 occurred in the practice of midwives.
2 were attended by doctor.
2 were notified from Hope Hospital.
5 were attended by St. Mary's Hospital Nurses.
2 were notified from St. Mary's Hospital.

These cases are visited, on notification, by the Assistant Inspector of Midwives, and where necessary a District Nurse is sent to give treatment under doctor's orders.

In 30 cases both eyes were affected, and in 30 cases one was affected. There were 5 very bad cases, 5 bad cases, and 50 slight cases. 12 cases were referred to

the District Nurses, who paid 467 visits. 191 visits were paid by the Assistant Inspector of Midwives, who also visited all cases of inflammation of the eyes notified under the Midwives Act, to which she paid 491 visits.

Of the 60 cases—

59 recovered, no injury to sight.

1 case blind in right eye and impaired vision of left eye, but not notified as Ophthalmia Neonatorum, due to Congenital Keratitis.

As the midwives are all very anxious to avoid any trouble with regard to eyes, they are prompt in sending for medical help at the least sign of discharge or inflammation, so that the majority of cases are quite slight.

Pemphigus Neonatorum.

During the past year or two there seems to have been a recurrence in many parts of the country of outbreaks of Pemphigus Neonatorum.

In the Borough of Salford several outbreaks have occurred since June, 1924, but none of them serious. In each case, the outbreak has been confined to a certain area, and at the various times the areas have been in different parts of the Borough and in several midwives' practices. In spite of careful enquiries, it has been impossible to trace any cause for the outbreaks. In only four instances was there a case of Impetigo in the same house, and the midwives involved have shown a clean sheet of health. It is difficult to obtain detailed information, as frequently the cases are not notified immedi-

ately on the very first sign of trouble. There seems to be still some confusion as to the difference between true Pemphigus Neonatorum and Pemphigus Vulgaris and Syphilitic Pemphigus. Arrangements have been made for the compulsory notification of the disease within the Borough of Salford as from March, 1926.

The number of cases from June, 1924, to the end of the year total 79. Of these, the number of deaths was 11, seven of which occurred in Hope Hospital (the Union Infirmary). This gives a lower percentage of deaths (13·9) than the mortality figure in the Ministry of Health's leaflet, which gives a Mortality Rate of 15 to 40 per cent. Of the 11 deaths, it would seem that there is a strong possibility that one or two of these were Syphilitic Pemphigus, but as they were not notified by their own medical officers as such, they have been included in the figures of Pemphigus Neonatorum. A careful observation was kept of the parts of the body affected by the disease, and it would not seem that any particular area is more susceptible. Of our 79 cases,

35 were affected on the face, head and neck,
25 ,, ,, ,, body and limbs,
19 ,, ,, ,, limbs alone.

In each outbreak there did not seem any special tendency for the abdomen to become affected more than other parts, and as a rule the cord was not septic.

The age at which the disease started varied from 1 to 21 days, the period of greatest infection being from the 8th to the 11th day. Most of the cases occurred in the midwives' practices. Five notifications were received from doctors, three from St. Mary's Hospital, two from

the District Nurses' Association, and the rest from midwives. The midwives (18 in all were involved at some period) were particularly anxious to avoid the spread of the disease, and took all possible care. All were disinfected at the Corporation Disinfecting Station, and one of them in whose area the outbreak was most severe voluntarily suspended herself and went away for a holiday. In spite of this, however, the nurse engaged from another area to act as locum for her had several cases of Pemphigus Neonatorum.

In five cases cultures were taken by the Pathologist, and the result in each case was a pure culture of Staphylococcus Pyogenes Aureus.

It would seem from observation that the children who were treated internally by their doctors improved more quickly than those receiving external applications only.

There seems no doubt that keen observation on the part of the midwife for the first sign of trouble, prompt notification, and co-operation with the Public Authority is the only way to prevent serious spread of this easily conveyed disease.

TABLE C.W. 8. NOTIFICATION OF BIRTHS.

WARD.	Still Births Notified.	Total Live Births Notified.	Births Notified by Midwives.	Births Notified by Medical Practitioners.	Births Notified by Parents and other persons.	Births in St. Mary's Hospital and Salford Union	Births in Municipal Maternity Home.	Live Births not Notified.
Kersal	9	190	112	47	19	9	3	7
Mandley Park	11	239	169	40	3	22	5	2
Albert Park	15	305	191	83	7	20	4	5
Charlestown	14	337	290	19	2	22	4	3
St. Matthias'	12	411	278	94	7	29	3	5
Trinity	19	427	267	113	4	41	2	1
St. Thomas'	11	282	238	20	2	15	7	3
Claremont	5	88	41	34	7	1	5	6
St. Paul's	12	319	278	9	3	23	6	2
Seedley	5	130	61	44	7	8	10	3
Langworthy	6	182	137	23	—	13	9	1
Weaste	14	209	144	22	6	28	9	4
Regent	20	394	288	65	5	31	5	3
Docks	10	209	143	32	6	17	11	2
Crescent	22	482	363	65	2	45	7	1
Ordsall Park	21	369	319	13	12	20	5	3
	206	4573	3319	723	92	344	95	51

TABLE C.W. 4.

SUMMARY.

BIRTHS.

Registered: Legitimate, 4,398; Illegitimate, 199; Total, 4,597.
Notified: Live births, 4,573; Stillbirths, 206; Total, 4,779.
By Midwives, 3,319; by Parents, Doctors and Institutions, 1,254.

INFANT DEATHS (UNDER 1 YEAR).

Number: Legitimate, 452; Illegitimate, 30; Total, 482.
Rate per 1,000 births: Legitimate, 103; Illegitimate, 151; Total, 105.

MIDWIVES.

Number practising in district: Trained, 75; Untrained, 3.
Number of visits paid: Routine and special, 472.

HEALTH VISITORS.

Visits paid by Health Visitors during year:—
To Expectant Mothers: First visits, 1,013; Total visits, 1,044.
To Children: First visits, 4,275; Total visits, 32,579.
To Mothers and Children: Total visits, 33,623.

	No. of cases notified.	No. of visits.	No. of cases nursed.	No. of cases removed to hospital.
Ophthalmia Neonatorum	60	191	12	—
Puerperal Fever	17	39	—	15
Measles (all ages)	—	—	—	—

Report on Child Welfare Clinics and Centres

Submitted to the Maternity and Child Welfare Sub-Committee.

In view of the Report from the Ministry of Health to the effect that the premises of the Salford Child Welfare Centres visited by their Officers are far from satisfactory, I have, in consultation with the Child Welfare Officer (Dr. H. K. Brade-Birks), given some consideration to the whole question of Centres, and have set forth below a scheme which it is believed would satisfactorily fulfil the requirements of the Borough of Salford in this direction. It is realised that the developments here suggested, even if approved by the Child Welfare Committee, could not wholly be taken in hand immediately, but it was felt desirable to submit the complete scheme, so that in carrying out piecemeal improvements regard might be had to the broad requirements and perspective thus maintained.

In the first place, it is necessary to emphasise the fact that the Ministry of Health's criticism of premises is general, and embraces practically the whole of the Centres, including the headquarters at Regent Road.

As you are aware, our system of Child Welfare Centres comprises two classes, as follows :—

(*a*) Combined Clinics and Centres (primary centres) in daily use.

(*b*) Weighing Centres (subsidiary centres) used once or twice weekly.

(*a*) Primary Centres.

Included in the first class, which we may term the *primary centres*, are those at Regent Road and at Teneriffe Street. The functions of these primary centres include the following :—

1.—Baby Clinics (open daily) where ailing children are brought for medical advice.

2.—Weighing Centres, where normal children are periodically weighed and kept under observation.

3.—Massage Centres for the treatment of Rickets, Malnutrition, &c.

4.—Ante-natal Clinics where expectant mothers are medically examined and advised as to possible complications during confinement.

5.—Maternal Clinics where nursing mothers are kept under observation and receive advice with respect to breast complications, suckling difficulties, &c.

6.—Depots for the sale of Dried Milk.

(*b*) Subsidiary Centres.

The subsidiary Centres are those remaining—seven in number—and mostly situated in the more remote parts of the Borough, as follows :—

Ordsall (embracing (*a*) Branch of Salford Mothers' Guild) and (*b*) Mothers' Dinner Centre.

Rosamond Street with Chapel Street. do.

John Street. do.

Langworthy Road.

Enys Street.

Woodbine Street.

Irlams-o'th'-Height.

The functions of these seven subsidiary centres are chiefly the weighing and keeping under observation of normal children. In addition, a certain amount of Massage is carried out, and a limited number of medical consultations take place. Dried Milk is sold at all these centres, and sewing and hygiene classes are held in connection with some of them. Also, as indicated in the above list, the first three are used as Dinner Centres for expectant and nursing mothers.

SHORTCOMINGS OF PRESENT PREMISES.

(*a*) Primary Centres.

At neither Regent Road nor Teneriffe Street is the accommodation anything like adequate for the work it is desired to undertake. At Regent Road, only one Waiting Room and one Consulting Room are available. The Consulting Room is very cramped, and is hardly suitable for ante-natal examinations. Accommodation for perambulators is deficient, Massage has to be carried out in a small room on the first floor, and applicants for Free Milk are interviewed on the second floor. Owing to the increased activities of all branches of Public Health work

located at Regent Road, the available rooms are now all in use, even up to the third floor; there is no elbow room, and the Child Welfare Department is becoming crowded out.

Again, at Teneriffe Street the accommodation is quite inadequate, and in several ways unsuitable for the purpose of a primary centre. The Consulting Room is absurdly small, and without fireplace or adequate ventilation. The Weighing Room and Hall are used at nights and week-ends by members of the Broughton Union Chapel, from whom the premises are hired. Owing to the rooms being constantly in use, they cannot be kept sufficiently clean; also, the long distance between Weighing Room and Consulting Room exposes the children to the risk of catching cold when conveyed undressed from one room to the other.

(*b*) Subsidiary Centres.

As it is only desired to hold one or two Child Welfare sessions per week at these centres, the premises are hired for the purpose, generally from religious bodies, and as a rule consist of schoolroom and vestry. Some of these are very old buildings with poor lighting and ventilation, and are very difficult to keep clean.

A SATISFACTORY SCHEME.

Primary Centres.

A satisfactory scheme would include three primary centres instead of two—one in the Regent Road District, one in the Lower Broughton District, and one in the

Pendleton District—all, if possible, on tram routes. As these are Centres in *daily* use, it is desirable, from the point of view of convenience, of administration and economy, that where possible both Child Welfare Clinics and School Clinics should be housed in the same building.

The *Regent Road Centre* should be located as near as possible to the present Health Office, and should be the headquarters of the Child Welfare Department; it should, therefore, be provided with the necessary office accommodation, as well as adequate waiting room, weighing room, consulting rooms, and massage room. It would not be necessary in this particular case to combine this Centre with a School Clinic.

The *Lower Broughton Centre* would be conveniently situated in or about Great Clowes Street, and might with advantage be combined with a School Clinic.

The *Pendleton Centre* might be in the neighbourhood of Pendleton Town Hall, as is the new School Clinic at Police Street. It might even be possible to acquire for the purpose the ground floor of the premises upon which this School Clinic is situated, but this possibility has not yet been explored. The acquisition of a primary centre in Pendleton might do away with the necessity for retaining the present subsidiary centre at John Street.

Subsidiary Centres.

With three primary centres in being, then six subsidiary centres would probably suffice. Owing to these centres being only required for use once or twice a week, the general policy should, on the grounds of economy,

be to try and *hire* suitable premises rather than to erect special buildings for the purpose. This general recommendation does not preclude the erection of one or two model centres in areas where satisfactory premises cannot be hired, provided the cost of maintenance of such new centres would not be unduly high. At all subsidiary centres accommodation should include waiting room, weighing room, and consulting room. Provided the waiting room is sufficiently large, weighing may be carried out there instead of in a separate room. There should in all cases be accommodation for perambulators. Arrangements should be such as to ensure thorough cleanliness and sufficient ventilation of premises. There should also be lavatory accommodation for patients, and lavatory and washing accommodation for staff. The Consulting Room should be adequately lighted and should be provided with an open fire.

As indicated at the outset of this report, it is not expected that the Committee could at once undertake a complete scheme such as outlined above. Alternative provision for the most unsatisfactory of the subsidiary centres should be early sought, but at the same time it is respectfully submitted that the provision of new primary centres in place of existing ones is a matter of some urgency meriting earnest consideration.

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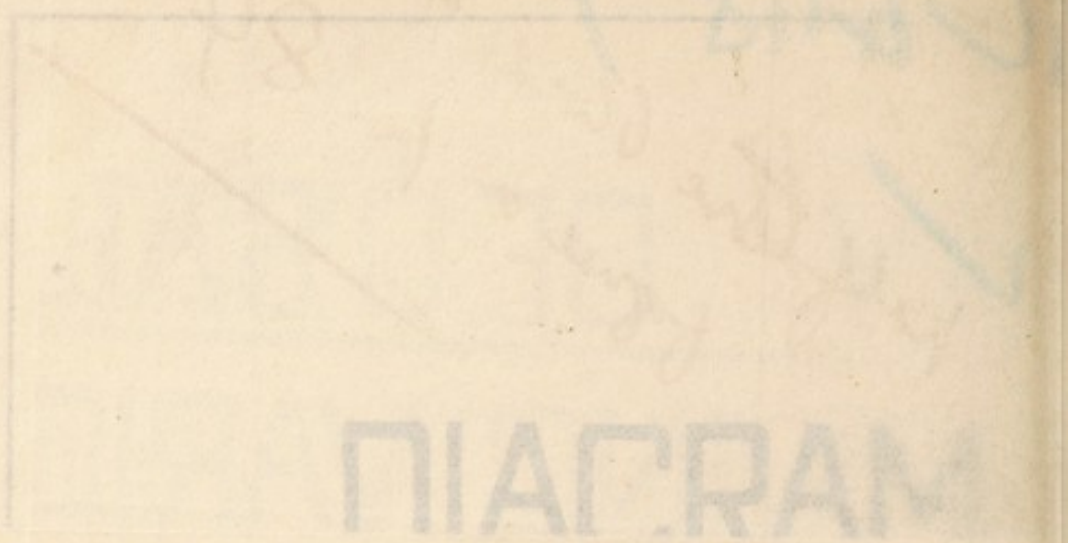
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