food was kept, from the manhole chambers which had probably been polluted with specific poison of typhoid; that the probable cause of the illness was foul air from unventilated manhole chambers in the sewer penetrating through the defective brickwork and fissures in the rock into the dairies in the houses where the food was stored, the sewage probably being contaminated by the specific poison of typhoid fever; but another likely source of the fever was the burial of typhoid stools about fifty-five yards to the south-west of the well during October, when the heavy rainfall, 4·5 inches, might carry the poison through fissures in the rock to the well.

ANALYSIS OF WELL-WATER AT THE SHIREOAKS COLLIERY COMPANY'S COLLIERY, CLOWN.

	Parts per 100,000
Total Solids	55·
Chlorine	3 4
Free N H_3	·00132
Albd. N H_3	·006
Total Hardness...	24·
Temporary Hardness	8·
Permanent Hardness	16·
Nit. as { Nitrates / Nitrites }	·3
Dissolved O	·95
Dissolved O after 7 days at 40° F.	·7
Dissolved O after 7 days at 80° F.	·51

The dissolved O is the same as Derby town supply under same conditions.

The water was clear and brilliant; contained no deposit. When kept at 80° F., for three days, there was a slight brown deposit, which, upon microscopical examination, proved to be the Mycelium of a Mould Fungus, and a Bacillus in the Zooegloea stage. Bacilli nearly half a blood corpuscle in length, rounded at their extremities, and some slightly bean-shaped, distinct contour, different sizes.

SIDNEY BARWISE, M.O.H. Derbyshire C.C.

The members afterwards dined together at the County Hotel.

MISTAKES IN DIAGNOSIS.—The newspapers have been largely quoting a statement, said to have been made by a metropolitan medical officer of health, that "in London last year there were 462 mistakes in the diagnosis of infectious diseases, and of these 102 died." Such a statement, without any explanatory context, is misleading in the extreme, and is calculated to increase the already difficult work of health officers in securing the removal of fever patients to an isolation hospital. If with the 462 cases had been mentioned the many thousands of undoubted fever cases which were removed to fever hospitals in London, it would have been evident that the doubtful cases form a very small percentage of the total number. The statement of the number of deaths among these doubtful cases is obviously an error.

PROCEEDINGS OF THE NORTH-WESTERN BRANCH OF THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH.

A MONTHLY meeting of this branch was held on Friday, December 16th, at 4 p.m., at 44, John Dalton Street, Manchester. There were present: Dr. Niven (president) in the chair, Drs. Jasper Anderson, Hirst, Graham, Paget, Robertson, Sergeant, and Vacher. Mr. Fred Scott was also present.

The Hon. Secretary read a letter from the Hon. Secretary of the Society, stating that it had been resolved to consider the memorandum of the branch, on Phthisis at an early date, and suggesting that a member of the branch introduce the subject.

It was moved by Dr. PAGET, seconded by Dr. ANDERSON, and resolved that Dr. Niven be requested to attend at an early convenient meeting of the Society and represent the branch, supporting the view of the branch in respect to phthisis prevention.

Dr. NIVEN intimated that he should have much pleasure in doing this.

Dr. ROBERTSON (St. Helens) then read a paper on

COMPULSORY ISOLATION IN CERTAIN INFECTIOUS DISEASES.

By Dr. ROBERTSON (St. Helens).

When one looks over the mortality statistics of Great Britain and of foreign countries one cannot help being struck with the enormous numbers of persons who die every year from diseases which we recognise as preventable. The sickness and permanent damage to health which these diseases occasion are not given by statistics.

It is with this group of the infectious diseases that we have, as medical officers of health, more to do than any other class of diseases.

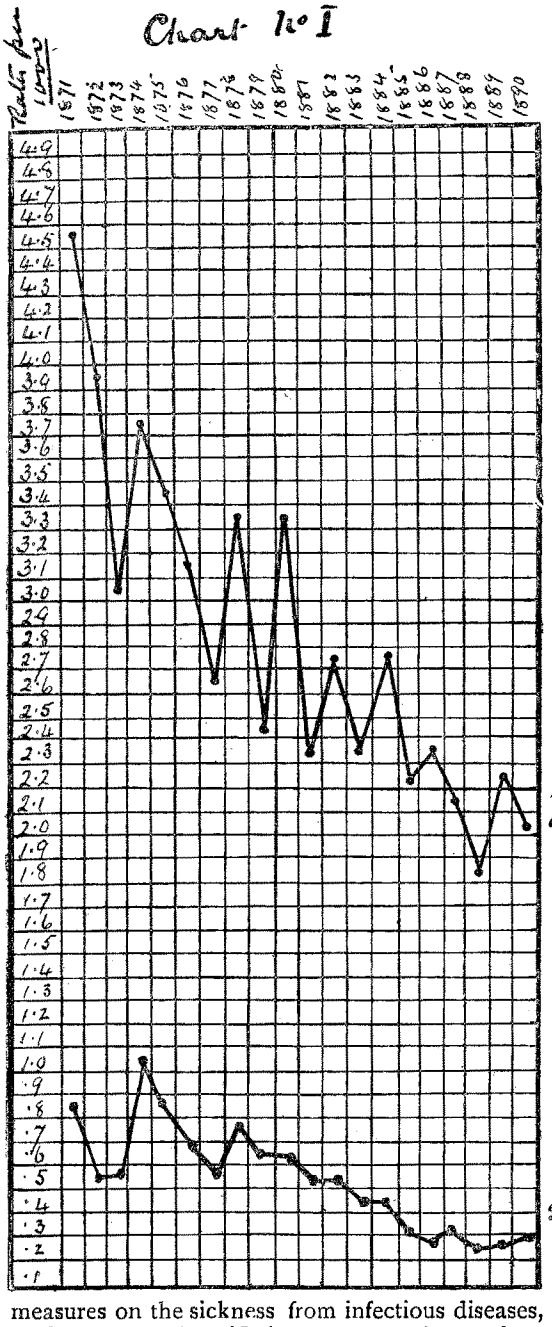
Every year the responsibility of dealing with these diseases is being placed more and more on the health officer and less on the general practitioner, with a result that the work of each is becoming differentiated. Much has been done of late by the general practitioner in the nature and treatment of the various infectious diseases, while the health officer has added so much to our once scanty knowledge of the causes which produce these diseases, and the means of preventing them, that many legislative measures have been adopted within recent years for their prevention.

The result of this combined action has been most marked. The total number of cases of sickness from infectious diseases has decreased, while the mortality from the same diseases has very greatly decreased.

The accompanying chart shows graphically the decline which has taken place in the death-rates from the seven principal zymotics (upper curve)

and of scarlet fever (lower curve). These rates have been calculated from the Registrar-General's yearly returns, and show rates per thousand per annum.

Unfortunately, it is impossible to show clearly by means of a chart the influence of our preventive



measures on the sickness from infectious diseases, as the returns of notified cases are yet incomplete. A second chart (shown at the meeting) gives the number of cases of scarlet fever occurring in Edinburgh and in Huddersfield during ten years. In each of these towns an actual diminution has taken place in the rate per 1,000; but it is quite evident that there are yet a very serious number of cases occurring despite the working of our systems.

Many of us who were at the Congress of Hygiene last year were surprised at the admiration shown by foreign experts at the results obtained in this country in lessening preventable diseases. But none of us, however, could ignore the very terse and incisive remark which was made by his Royal Highness the Prince of Wales in his opening address to that Congress; when talking of preventable diseases, he said, "If preventable, why not prevented?"

Isolation is the only means we know of in checking certain of the infectious diseases from spreading. Reasonable isolation precautions can not at present be enforced, and I would wish in this paper to draw your attention specially to the necessity of compulsory powers for isolation in certain diseases.

First of all I would emphasise the importance of not dealing with all our infectious diseases by the same legislative measures. I believe this has been a real hindrance in the past. The expressions, "Infectious diseases" or "Dangerous infectious diseases," which are used in the statutes, include forms of disease varying widely in their nature, and as widely in the means taken for preventing them. For instance, scarlet fever and typhoid fever patients are both subject to the same legislative measures. Again, small-pox and influenza are both highly infectious diseases; we know of the most effective measures in preventing small-pox, but in the case of influenza we know of but few measures which are of much use. Diarrhœa is one of the seven principal zymotics, and one which causes an enormous loss of life. It is classed by the Registrar-General along with such diseases as cholera or typhus fever.

Seven Principal Zymotics

The necessity for dealing specially with those diseases of which we know the preventive measures is, I think, very great. The Board of Agriculture have been able by adopting the necessary means for individual infectious diseases among cattle to most effectually keep them in check. For our present purpose I would give scarlet fever as the type of a sub-group which requires isolation for every case as by far the most important preventive measure. This group might include small-pox, diphtheria, and typhus fever.

Scarlet Fever

With regard to scarlet fever, the number of deaths reported by the Registrar-General as having occurred in England alone from this disease during the past ten years is as follows:—

1881	14,275	1886	5,986
1882	13,732	1887	7,859
1883	12,649	1888	6,378
1884	10,863	1889	6,698
1885	6,355	1890	6,974

This means that probably 100,000 persons are attacked every year by scarlet fever. Everybody is agreed that isolation is the best and only way of checking the spread of this disease, yet we are at present powerless to enforce it. A clause* certainly exists in the 1875 Public Health Act which gives the medical officer of health power to enforce isolation under certain conditions, but the weakness of this clause is so great that but little use has been made of it. Then there are the other clauses in the 1875 Public Health Act, in the Infectious Diseases Prevention Act, and in the Public Health Amendment Act regarding the exposure of infectious things, etc.

All of these are of value in checking this disease, but that they affect the vital question I do not admit.

One sees huge epidemics of scarlet fever on all sides, even in the most carefully guarded districts.

In a further chart (shown at the meeting) the monthly number of cases of scarlet fever occurring in Edinburgh for ten years are diagramatically indicated. From this the continuous presence of scarlet fever is shown, and the dimensions of the epidemic periods are seen not to have grown appreciably less. Now in Edinburgh the Notification of Infectious Diseases Act has been most carefully attended to, and there was ample hospital accommodation. I could instance similar results from several other towns, but will content myself with the Edinburgh statistics, for which I am indebted to Dr. Harvey Littlejohn, now of Sheffield.

The method which we adopt at present in St. Helens for checking scarlet fever as far as possible is, to a large extent, borrowed from that instituted by my friend Dr. Paget, of Salford, and is as follows:—

On receiving a notification an inspector visits the house (*a*) to investigate the origin of the case, (*b*) to ask if removal to hospital is required, and to give instructions as to the proper course to pursue. The inspector fills in the results of his investigations on a printed sheet, and leaves at the house a printed list of instructions after having gone over them and explained them. Disinfectants are supplied free of charge every second or third day at the house, and fumigation and disinfection is done at the termination of the case.

Amongst a comparatively small proportion of the working classes these instructions are carefully attended to, but I am sorry to say that with the great majority of them they are disregarded, and no isolation whatever adopted. The patient is allowed to play with other children in the house or in the yard. Kind and sympathetic mothers and neighbours visit daily, and having become saturated with the infection they return to their own families. The workers in the house go to their various trades and associate with their fellows. In short, there are so many ways in which infection of scarlet fever is spread, and which are not dealt with by present legislation, that they are too numerous to mention. Most of the great danger of spreading the disease from the individual to the masses would, I believe, be done away with were isolation and disinfection made compulsory. I believe this is a question of caring for the life and health of the masses, even at the inconvenience and perhaps expense of the individual.

A similar procedure is in operation at the present time in our lunacy laws, where the safety of the public is guarded against by the isolation of the lunatic. By isolation I do not mean compulsory removal to hospital. Compulsory removal will always give rise to much friction, and be quite unnecessary in many cases.

Were the medical officer of health given powers to insist that reasonable isolation precautions be carried out in accordance with bye-laws, and that if all such precautions were not taken that the patient should be removed, subject to the case being laid before a Justice of the Peace, I think that much scarlet fever could yet be prevented. One always has to admit that the unrecognised cases, or cases arising from cows, will be a source of danger which cannot be provided against, but in all my experience the real danger is from the careless and reckless cottager.

I believe it to be wrong to compel all cases to go to hospital when the proper precautions can be taken at home. I have known cottagers who preferred to hire a second cottage temporarily rather than send to hospital the child they loved. Again, it is important that isolation hospitals should be made as comfortable inside as possible, and that the site and appearance should be as inviting as possible. Too often the isolation hospital is an ugly building erected on waste land that no builder would erect houses on, on account of its bareness.

The effect of such compulsory powers on the general public would be to impress them still more with the necessity of avoiding infection, and also of being more careful when cases do occur in their own families lest infection should spread. The extra expense occasioned by isolating a case at home would also have a healthy effect.

I have not indicated what I mean by reasonable isolation, for this, perhaps, is not necessary for my paper, but I anticipate no great difficulty in putting the essentials in the shape of a set of bye-laws in but few clauses.

* Since writing this paper I had occasion to apply for an order under section 124 of the Public Health Act, 1875, for the compulsory removal to hospital of a man suffering from small-pox who lived in a four-roomed cottage in a densely-populated neighbourhood. The magistrates' clerk, an astute and careful lawyer, advised the magistrates not to grant the order, as a four-roomed cottage was obviously proper housing and accommodation for the man and his wife. The magistrates, however, granted the order against the advice of their clerk.

DISCUSSION.

The PRESIDENT said all persons must be grateful to Dr. Robertson for his excellent paper, though some might not agree with him in thinking additional powers were required. There was no objection in his (the President's) opinion to the term "dangerous infectious diseases." Authorities could interpret it as advised by their health officers. It was convenient for authorities to be able to add to the diseases coming within this description from time to time, *e.g.*, influenza, rubeola, etc.

Dr. PAGET said that while they all recognised the difficulty there was in getting patients to go into hospital, he was not satisfied that it was wise to seek for compulsory powers.

Dr. SERGEANT said he had no difficulty in getting patients removed to hospital, if he considered such removal necessary, by using judicious pressure in various ways. He thought the powers they at present possessed were sufficient, and that it would be injudicious at the present time to ask for compulsory powers for the removal of patients to hospital. Isolation was most important, and the great necessity was that hospitals should be bullt of an inviting character, that they should have all home comforts possible, and that they should be so constituted that parents and friends could feel satisfied that the patients were well cared for.

Dr. JASPER ANDERSON considered that it was advisable that further powers should be obtained.

At the close of the debate an expression of opinion was taken, and the majority of the meeting agreed that the powers at present possessed for dealing with infectious cases in the matter of isolation were sufficient.

A vote of thanks was accorded to Dr. Robertson for his aper.

(End of Proceedings of the Incorporated Society of Medical Officers of Health.)

ALCOHOL IN WORKHOUSES.—According to a parliamentary return recently issued, the average annual expenditure for inmates on spirits, wine, and malt liquors in the several poor-law establishments in each union county varies from 12s. 10d. in Rutland, 8s. 2d. in Hertford, and 7s. 11d. in Bedford, to 1od. in South Wales, 5d. in Cornwall, and 4d. in Northumberland. In 20 large extra-metropolitan unions it similarly varies from 7s. 8d. in West Ham, 7s. in Wolverhampton, and 6s. 11d. in Bristol, to 2d. in Aston, 1d. in Newcastle-on-Tyne, and ¼d. in Leeds.

THE DAIRY PRODUCE DEFENCE ASSOCIATION, of which Dr. Bond of Gloucester is the hon. secretary, has been formed with the object of urging local authorities to use the powers given them by the law for repressing the sale of fraudulent dairy products, to assist them by information in so doing, and when necessary to take action on their own account for the prosecution of offenders. Such an association, including the honest vendors of dairy products in each district, would be able to give valuable private information to the local authority, and bring pressure to bear on fraudulent tradesmen. In connection with this, we note that Dr. Craven, M.O.H. for Kendal, has done public service by sending to the press the list of manufacturers of margarine recently officially issued.

Public Health.

CHOLERA AND SMALL-POX OUTLOOKS.

THE sanitary outlook in Great Britain at the present time is not altogether free from anxiety to medical officers, who are responsible for advising local authorities as to the best means to be taken in order to avoid impending dangers to the public health.

In so successfully preventing cholera from obtaining a footing in this country during last year, it is generally admitted that the splendid efforts of the Local Government Board and of Port medical officers and Port authorities were greatly aided by the fact that the danger did not become imminent until the summer was well advanced. The well-founded statements in the press as to the prevalence of cholera at the present time in parts of the continent within a few hours of this country render it probable that, with the coming spring, cases are almost certain to be imported, and if suitable insanitary conditions exist, to be followed by serious outbreaks. Hence it is no wonder that there is at the present time an amount of sanitary activity, which is highly commendable; and that a majority of local authorities, aided and impelled as they will be by the Local Government Board inspectors in their "cholera survey," are setting to work to remove the evil local conditions which alone render the importation of solitary cases of cholera a source of real danger.

The rapid spread of small-pox during the last few months in Lancashire and Yorkshire, as well as in some midland towns, not to mention Glasgow, and a few cases in London, show that even before the danger of fresh importation of cholera arises, medical officers of health throughout the country may not improbably have to combat outbreaks of small-pox which have not been equalled in severity for the last twenty years.

Both cholera and small-pox imply the urgent necessity of sufficient accommodation in isolation hospitals; and it is therefore a matter of immediate necessity that all medical officers of health should urge the prompt provision of such accommodation to an extent commensurate with possible requirements in their respective districts.

In many towns and rural districts at the present moment the absence of isolation accommodation for small-pox is keenly felt, and attempts are being made to furnish it by means of "temporary" buildings. In the midst of an outbreak, it is evident that this is the only practicable means of meeting the requirements of the case; but all who have had experience of such buildings are only too well aware how unsatisfactory they are for immediate use, and how difficult they are to maintain for permanent use.