

Out of hundreds of persons who were revaccinated either by myself, the public vaccinators, or private medical practitioners during the outbreak, only two cases, Nos. 3 and 28, contracted the disease, and in them it assumed a mild form.

Five patients had been revaccinated, Nos. 1, 15, 29, 62, 90, at varying periods before admission (see table), before contracting the disease. Among the number of unvaccinated persons are included persons in whom no trace whatever of the operation can be found. In such cases it will be seen, with hardly any exception, the disease assumed a severe form.

Of the eight fatal cases due to this disease all occurred among unvaccinated persons.

It is further interesting to note that all persons employed at the hospital were revaccinated before commencing duty, and in no instance did a member of the staff contract small-pox, in spite of their daily contact with the disease.

### THE NECESSITY OF EARLY ISOLATION IN SMALL-POX.\*

By JAS. WHEATLEY, M.D.Lond., M.O.H. for Blackburn.

THE necessity for early removal of patients is shown in the following table. It states how long the cases of small-pox had existed before removal to the hospital, and the number of persons infected from these cases.

Date of Removal. (The day of appearance of the rash is called first day.)	Number of Cases.	Persons infected from these cases.
1st .....	25	—
2nd .....	24	—
3rd .....	10	3
4th .....	10	8
5th .....	6	8
6th .....	2	2
14th .....	1	6
21st .....	1	11

This table shows clearly, what one would expect, that the danger of infection increases very greatly the longer isolation is delayed. It also appears to point to the fact that the danger of infection during the first day or two is not very great. The three cases that were supposed to be infected from one removed on the third day are not quite conclusive. They occurred in Larkhill common lodging-house, where there had been several previous cases, and the infection might have been lingering about the house itself. The history of the epidemic in this house is very instructive, as it demonstrates most clearly the advantages of early removal.

On January 23rd an imported case was removed on the second day of the rash. No case followed. On March 9th a man was removed with a rash four or five days old. On the 23rd, 24th, and 25th seven more cases were taken away that could be traced clearly to this man. The inmates of the lodging-house refused to be re-vaccinated. Quarantine

was out of the question on account of the large number of lodgers, about 150. Under these circumstances we had to rely upon the early removal of cases and isolation of any suspicious case of illness. To this end an inspector was told off to keep the lodgers constantly under his observation, so as to report the slightest illness or skin eruption. The result was eminently satisfactory. Four more cases occurred, one on each of the following days: March 30th, April 4th, 7th, and 11th. Two of these were isolated before the appearance of the rash, and the other two immediately the rash broke out. No further cases occurred, and what threatened to be a troublesome local epidemic was stamped out.

Early removal of the cases depends upon:—

1. Early notification by medical men.

2. Early discovery by officials of the Health Department.

There are a considerable number of cases of small-pox which are unattended by medical men. A fact no doubt due to the modifying effect of vaccination, which converts in many cases a very fatal disease into a very mild one. It is, therefore, all the more necessary that additional means should be taken for discovering cases as early as possible. Besides the nightly visitation of the lodging-houses, the most efficient means have been the visitation of all those who have been the least degree in contact with a small-pox case.

### THE DIFFUSION OF INFECTION BY SMALL-POX HOSPITALS IN TOWNS.

By H. SCURFIELD, M.D.Edin., D.P.H.Camb.

ALTHOUGH the nature of small-pox infection is unknown, it is perhaps justifiable to assume that it is not gaseous, and does not obey the law of the diffusion of gases, and that it does consist of micro-organisms, which depend for their locomotion on clinging to different moving objects, including the particles of dust, etc., of which the air is full, and which are blown about by currents of wind.

There seem to be several reasons why the aerial diffusion of infection should be greater in summer than in winter.

1. In the summer there would be more dust, pollen, etc., in the air, and insects would be more numerous.

2. The temperature would be more suitable for maintaining the life of micro-organisms.

3. In the summer, perfation through opposite windows is largely used for the ventilation of hospital wards, the air charged with infected dust thus being able to escape freely, while in winter the windows act chiefly as fresh air inlets, and the chief outlet is the flue of the stove or fireplace, the infected air losing a part of its infectivity by exposure to the heat of the fire and hot flue.

From Dr. Priestley's report for Leicester, it

\* From Dr. Wheatley's Annual Report, 1893.

appears that the effect of the hospital in diffusing infection was greater in June than in February.

To get rid of air-borne infection, I would suggest:

1. That perfiation be abandoned as a means of ventilating small-pox wards.
2. That the stove flues be used as extractors of foul air all the year round, and that means be taken to expose a considerable length of the flues to extreme heat, so as to disinfect the air passing out. This might be done by bending the flue in the stove, so as to expose a considerable length of it to the heat of the stove when lit, and by exposing a suitable length of the flue to the furnace used for keeping up the hot water supply of the wards, or if steam were used for that purpose by enclosing a suitable length of the flue in steam coils.
3. That the windows be opened only at one side of a ward at a time, and that they and the other fresh air inlets be covered by gauze screens to prevent insects flying in and out.

#### THE WATER SUPPLY OF STOCKPORT.

At a special Council meeting on July 11th, the Corporation of Stockport considered the report on their water supply, recently issued by Dr. Charles Porter, their medical officer of health, and also the reply of the Stockport District Waterworks Company. The company's document consists mainly of references to a few quite immaterial verbal errata in the description of the gathering ground, to nearly all of which the medical officer of health had himself called attention on a slip issued a month before the date of the company's reply. The main issues of the report are carefully avoided, and the reply appears to be little more than an attempt to throw dust in the eyes of the public. The company adopt as their own a statement that if drinking water be filtered even through the ordinary sand filter used at waterworks before being supplied to towns, those using such supplies do not suffer from cholera. This fact, together with their assertion that their process of filtration is satisfactorily carried out (notwithstanding the fact that a special test revealed a rate of  $5\frac{1}{8}$ th gallons per square ft. per hour), would lead us, if only for the sake of the public health, to commend to the perusal of the directors of the Stockport Water Company Professor Koch's paper on "Sand Filtration and Cholera." They will find a study of the Hamburg-Altona cholera experience invaluable, and will perhaps be surprised to learn Professor Koch's conclusion, "that according to all we have learned about sand-filtration, it cannot even under favourable circumstances give absolute protection against the danger of infection."

The only other point to which we will refer is the Water Company's statement that a supply of thirty gallons per head is unnecessarily large for a manufacturing town such as Stockport. Having considered their remarks as to local circumstances,

we are unable to admit that a supply of thirty gallons per head can be regarded as in any way excessive. This is, however, a question upon which it is not at all surprising that sanitarians and water-vendors will differ acutely, the former having the public weal alone to consider, while the latter have to look to their dividends.

It is satisfactory to record that the Corporation of Stockport having fully considered Dr. Porter's report and the water company's reply, by an overwhelming majority adopted a vote of confidence in their medical officer, and specially thanked him for the report.

#### LONDON COUNTY COUNCIL.

##### CONFERENCE ON INFECTIOUS DISEASE AND VAGRANCY, JULY 19TH, 1894.

THIS conference was very largely attended by representatives from a large number of provincial and metropolitan local authorities. The following resolutions were agreed to after protracted discussion:

1. That common shelters which are not subject to the law relating to common lodging-houses should be made subject to such law.
2. That there should be power to the local authority to require medical examination of all persons entering common lodging-houses and casual wards, and that each inmate of a common lodging-house or casual ward should on admission have a bath of fresh water.
3. That the local authority should have power to order the keeper of a common lodging-house, in which there has been infectious disease, to refuse fresh admissions for such time as may be required by the authority.
4. That the local authority should be empowered to require the temporary closing of any common lodging-house in which infectious disease has occurred.
5. That the local sanitary authorities should have power to require the detention of any inmate of a common lodging-house or casual ward who may reasonably be suspected of being liable to convey infectious disease.
6. That means should be provided for the detention and isolation of any vagrant found wandering in a public place, if reasonably suspected of being liable to convey infectious disease.
7. That the local authority should have full power to require the disinfection of the person and clothes of any person in a common lodging-house or casual ward, whether infected or exposed to infection.
8. That arrangements should be made by which the occurrence of infectious disease in common lodging-houses or casual wards should be made known by the local authority of the district to the local authorities of other districts.
9. That local authorities should be empowered to require the vaccination or revaccination of persons in common lodging-houses or casual wards who are exposed to the infection of small-pox.