PUBLIC HEALTH AND INFECTIOUS DISEASES.

The Case-incidence in Nine Epidemics of Measles at a Public School, with notes on the Pre-eruptive Symptoms. By H. S. Armstrong (Transactions of the Royal Society of Medicine, Epidemiological Section, 26th November, 1909).—In this paper the author gives some of the results gained from his experience of the various outbreaks of measles occurring in the public school of which he had medical charge. During the twenty-five years under review, 3,260 boys entered the school, the average age on entry being 13 1/2 years. Of these, 2,380 (or 73 per cent) were protected from measles by virtue of a former attack, and 880 (or 27 per cent) were unprotected. Of the latter, 617 were attacked at school, leaving 263 (or 8 per cent of the whole number) who escaped. Measles was epidemic in the school on nine occasions, seven being in the spring terms and two in the summer. Each outbreak was complete, that is to say, practically all the susceptibles were attacked.

A chart is given showing the case-incidence in each of these nine epidemics, and from a study of this the author formulates an almost definite rule that the larger the epidemic the quicker it is over. Moreover, the ratio between the date on which the 10 line was reached and that on which the epidemic was completed was almost in proportion. This table may be of value chiefly as a means of indicating to the authorities of similar institutions the amount of hospital accommodation that is likely to be required. The author is of the opinion that infection is almost always due to direct personal contact, and he has found no evidence that it is ever conveyed by fomites or by an intermediate carrier. Many of the masters and servants employed in the school lived in their own homes, but no instance occurred in which these conveyed the disease to their families, nor, on the other hand, in which it was conveyed from the family to the school. The poison was found to be air-borne to a limited extent, a 9-feet radius prevailing in summer and a 6-feet radius in winter. The incubation period was found to range between ten and seventeen days; in 74 per cent of the cases, between ten and fourteen days. Of the 617 cases, only 2 per cent were reported to have had previous attacks.

Prodromal symptoms.—The author agrees with Meunier that there is marked lowering of the body weight during the latter part of the incubation stage of measles. Four selected charts are shown as typical, and in each the same phenomenon exists, i.e., a preliminary rise up to the fifth or sixth day from contagion, followed by a fall, which lasts up till the day of invasion.

| Initial Weight | Rise of | Fall of |
|---------------|---------|--------|
| 10 st. 5 1/2 lb. | 2 1/2 lb. | 6 1/2 lb. |
| 8 ,, 3 1/2 ,, | 1 1/4 ,, | 5 ,, |
| 8 ,, 10 1/2 ,, | 1 1/4 ,, | 3 1/2 ,, |
| 8 ,, 4 1/2 ,, | 2 ,, | 3 ,, |

Lymphatic system.—From the sixth to the eighth day from contagion the superficial glands, especially those in the cervical and axillary regions, were found to become enlarged, not at first tender, but generally becoming so a day or two later. This is to be contrasted with rubella, in which the implicated glands are more numerous, harder, and more shot-like, those in the mastoid and sub-occipital regions, which seem to escape in measles, being always affected.

Prodromal rashes were frequently observed, nearly always urticarial in type, and occurring at any time during the initial stage.

Koplik's spots, which were constantly looked for in the last four epidemics, were almost invariably found present. The day of their appearance, however,
was variable; sometimes they were seen several days, and sometimes only a few hours before the general exanthem. The author regards their presence as a positive diagnostic sign of measles, but their absence is not to be taken as a negative one. From eight to eleven days after contagion the well-known symptoms of the catarrhal stage commenced—drowsiness, coryza, sneezing, malaise, and some fever of an indefinite and variable intensity. There is frequently a remission of all the symptoms, especially the temperature, for a short time immediately preceding the eruption.

The author believes that by observation of suspects on these principles it is possible to arrest an epidemic in its very earliest stages. At the same time, he concludes that no real value results from the attempt to limit the progress of an epidemic. In spite of the closure of elementary schools and other quarantine regulations, practically every individual is attacked sooner or later, and no result commensurate with the expense and trouble given has followed. Should success attend such efforts to limit the progress of any particular outbreak in a community, it only results in swelling the number of susceptibles to be attacked in the next.

Believing as he does that the principal danger of measles lies in the size of the epidemics, and that there is a greater proportional case-mortality in large than in small ones, the author is in favour of letting each epidemic work itself out, and not by artificial means increasing the size of those that are to follow.

—Matthew J. Stewart.

Scarlet Fever: Its Home Treatment and Prevention. By Robert Milne, M.D. (Transactions of the Royal Society of Medicine, Epidemiological Section, 26th November, 1909).—The details of the treatment advocated by Dr. Milne are as follows:—During the first four days in a scarlet fever case, commencing at the earliest possible moment, pure eucalyptus oil is gently rubbed in, morning and evening, all over the body, from the crown of the head to the soles of the feet. Afterwards this is repeated once a day till the tenth day of the disease. The tonsils are swabbed with 1 in 10 carbolic oil every two hours for the first twenty-four hours, very rarely longer.

The advantages claimed for this mode of treatment are these:—1. When the treatment is commenced early, secondary infection never occurs, and complications are unknown. 2. The infection of others is absolutely prevented. 3. It is estimated that if this treatment were adopted, millions of pounds would be saved annually in England alone. 4. The mother is free to attend to both the patient and her duties, while the father is free to continue at work and the children to go to school. 5. No after disinfection is necessary.

The remainder of the paper is devoted to the substantiation of the method of treatment, and deals with Dr. Milne’s personal experience of cases of scarlet fever occurring in Dr. Barnardo’s Homes during the past twenty-nine years. When a case of scarlet fever occurs in one of the homes, the patient is either left where he is, or transferred to general hospital wards, where he is treated alongside other patients, including those who have just undergone surgical operations. After ten days the patients are allowed to get up, and to mingle freely with the other patients. Several epidemics are instanced in which the treatment by inunction is said to have prevented almost entirely the spread of infection, and also to have prevented the occurrence of complications. Dr. Milne explains any exception to these rules on one of two grounds—either the treatment was not commenced in time, or it was inefficiently carried out.

In the discussion which followed the reading of this paper a majority of the speakers seemed to regard with disfavour the views propounded.

—Matthew J. Stewart.