Outline of Scheme.

This investigation was carried out on 1,268 New Zealand school-children from various schools selected so as to obtain a group of average children. These were given the Moro percutaneous tuberculin test. Those showing a positive reaction formed a smaller selected group for further investigation by means of X ray and examination by a chest specialist.

(*a*) *Selection of Schools.*

The schools were selected so as to provide a group representative of country children and all classes of town children of ages from four to fifteen years. A graph showing the average weight and height for age of these children in relation to the standard for New Zealand, 1925, demonstrates that this is a group of average New Zealand children.

(*b*) *Test Employed and Reaction.*

The Moro test was selected as being the most convenient for use. It raised no objection from parents, and gave a minimum of disturbance and psychic reaction. It is claimed to give a correct response to within 2 per cent. of error. A small amount of 25 per cent. tuberculin ointment, about the size of a pea, was rubbed with the gloved fingers into the subclavicular space over an area of 2 square inches for one and a half minutes. If this was found to be negative after three days, the test was repeated in another spot; and, similarly, a third test was performed in those remaining negative to the second one.

The reaction varied in intensity from a slight miliary rosy rash to an extensive outbreak of papules which lasted as long as four weeks. So called "questionable" reactions were subsequently found to have as much significance as obvious ones. In only two cases did the rash spread beyond the site of inunction, and in none was there a general rash.

Time of appearance: The interval between inunction and manifestation was found to vary, 87 per cent. of positive cases responding to the first test, 13 per cent. to the second, and none to the third. In the Wellington District the reaction was manifested mainly in the first twenty-four hours, 73 per cent. appearing early, and none later than forty-eight hours. The Canterbury tests, on the whole appeared later.

Constitutional reactions were rare. In two cases a slight general malaise, and in two others a slight general reaction, with elevation of temperature, were recorded. These appeared on the day of inunction.

Observations on Incidence.

(*a*) *Incidence.*

Of the whole group tested, 14·1 per cent. gave a positive reaction. In Wellington there were only 10 per cent., as against 17·4 per cent. in Canterbury. This difference will later be shown to be largely influenced by the age incidence. For purposes of comparison a group of sixty adults was tested, 16 per cent. reacting. This figure is lower than expected, owing largely to the fact that most if these were dental nurses, and these belong to a carefully selected group. Subdividing into smaller groups, an interesting comparison is found: only 8·3 per cent. of Eurpoean country children were positive, as against 15·8 per cent. in town—nearly double. The Maori figures were much higher, 25 per cent. of these, all of whom lived in the country, giving a positive reaction.

Age Incidence.—A graph showing the age incidence also gives interesting comparisons. The Wellington and Canterbury results differ so widely as to deserve separate mention.

Wellington: As one would expect, the town children and the Maoris show a percentage gradually increasing with age, rising in the case of the European to 26 per cent., and of the Maoris to 50 per cent. With the country child it is not so, the incidence varying only between 5 per cent. and 8 per cent. It is of note that of town cases under seven years 7·3 per cent. were positive, while in the country there were none. While the numbers tested are too small for one to dogmatize, they are still sufficient to make certain indications. It would seem that more crowded conditions of living in town, and, in the case of Maoris, close association with affected persons, constitutes a greater danger of infection. With the country child, while living-conditions are not necessarily better, there is more open space and less contact. Possibly the failure to increase is due to a larger proportion of cases of bovine infection, which naturally occur during early years.

Canterbury: There the incidence is very much higher in earlier years, while at the age of thirteen it is equal in the two districts. It is possible that the happier state of affairs in Wellington during early years is due to a healthier climate, while the relatively greater increase may be influenced by the poorer housing-conditions. The question of a pasteurized milk-supply in Wellington, on investigation, does not appear to have influence in these figures.

Conclusions as to Incidence.—A study of other data for New Zealand shows that the figures so obtained are trustworthy. In 1913–14, 383 hospital children under fifteen years were given the Von Pirquet test, 24 per cent. being positive. This figure is doubtless higher than in the case of healthy children.

New Zealand post-mortem records for the past ten years have been carefully studied with a view to ascertaining the amount of tuberculosis. For children between five and fifteen (that is, the age group used in the Moro test) the total incidence of tuberculosis was 28·2 per cent. Excluding deaths directly due to tuberculosis, the figure was 14·1 per cent. This figure represents tubercular lesions in children dying of other causes, and corresponds to the amount of tuberculosis one expects to find n the supposedly non-tubercular school-child. It is interesting to note that this figure (14·1 per cent.),