

APPENDIX.

Maori Susceptibility to certain Infectious Diseases.—Results in Brief of a 1930 Rural Investigation.

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During 1930 the susceptibility of Maori school-children to tuberculosis, hydatid disease, diphtheria, and scarlet fever was determined over the East Cape Health District. As about one-quarter of the Maoris in New Zealand are domiciled in this area, it is claimed that this study of their children's susceptibility may be regarded as a reliable cross-section of the Maori children of New Zealand. In all, 2,054 children were tested by Von Pirquet, Casoni, Schick, and Dick tests, the first by cutaneous scarification and the last three intradermally. The results are given firstly by racial purity and secondly by age. For the sake of brevity, discussion of sex differences, of corroboration from hospital and private practice, and other points of interest, are omitted from this report. Standard technique was followed in all tests, using Schick and Dick toxin from the Commonwealth Laboratory, and tuberculin and hydatid fluid obtained through the Otago Medical School. The Schick toxin was appropriately diluted in each case just before use, the Dick toxin at approximately fortnightly intervals. Controls were used for each test. Aseptic care was taken throughout, and neither sepsis, nor untoward reactions, nor after-effects occurred.

The results are of interest. As in other investigations, the tuberculin reactors increase with age. The figures according to racial purity show less reactors as the white blood increases. The Maori was originally an unprotected race as regards tuberculosis. It seems as though the pakeha is now making amends for introducing this disease to the Maori by passing on with the admixture of blood increased resistance to the disease.

The East Cape district staple industry is sheep-farming. That Maoris show definite evidence of infection is brought out by the tests, and supported by hospital findings.

The diphtheria-susceptibility findings again bring out age variations, the positive reactors decreasing with age. Figures by racial purity show the opposite result from the Von Pirquet test. The admixture of pakeha blood is increasing the Maori susceptibility to the disease. Definite susceptibility is established, though relatively less than in the pakeha. During this investigation the potency of the testing-materials was tried out on white children from time to time. In this way of thirty-eight white children tested twenty-four, or 63·15 per cent., were positive. Compare this with the 2,054 Maoris giving 255 positives, or 12·41 per cent. susceptibles.

The Dick results are comparable with those of the Schick test. Susceptibility decreases with age, and increases as the Maori blood lessens. The results are also comparable with the South African ones quoted below. There is undoubted relative insusceptibility to scarlet fever manifested in the Maori children. This finding is adequately confirmed from the rarity of scarlet fever in Maoris in hospital and private practice in the district.

MAORI SCHOOL-CHILDREN'S SUSCEPTIBILITY TO TUBERCULOSIS.

The general use of tuberculin as a diagnostic agent in childhood is most desirable. The procedure is painless and harmless. The Von Pirquet test (cutaneous scarification method) was employed to determine the tuberculinization of Maori school-children.

About 90 per cent. of children up to eighteen years in the large towns of Europe and America react to the tuberculin test, the percentage in rural districts, however, being much lower. Tuberculin tests of school-children in Philadelphia showed that 37·7 per cent. were infected with tuberculosis at the age of five years, and 81 per cent. at the age of fifteen years. X-ray examination revealed the presence of latent tuberculous foci in the lungs and tracheo-bronchial lymphatic glands of more than 10 per cent. of school-children. In a rural district in Minnesota the infection was low, being not greater than 12 per cent. at any period between five and fifteen years of age.

We commence life with a negative reaction, but most have become positive when adult life is reached. The consensus of modern opinion was stated thus recently in *Lancet*: "A negative test up to about the age of eight is strong evidence against active infection, while a positive reaction equally strongly indicates it. At the age of seven a positive reaction indicates a five-to-one chance that the child has an active infection, while at fourteen the chance is about even. After childhood the light becomes less clear."

In a rural district of New Zealand the Maori susceptibility was revealed by the cutaneous Von Pirquet test, as follows:—

(a) According to Racial Purity, Ages mixed Five Years to Sixteen Years, inclusive.

	Full Maori.	Three-quarter Maori Blood.	Half Maori Blood.	Quarter Maori Blood.
Von Pirquet positives	170	41	33	5
Number tested	1,277	413	283	81
Positives given as percentage	13·31	9·92	11·66	6·17