

The first, about the class of family affected, was undoubtedly correct. Part V of this paper, showing an inverse relationship between density and incidence, confirms it.

The second appears to be wrong. An analysis was made of the composition of families in which positive cases had occurred, and of families including children of the same age group in the general population. (The latter were the families visited in the house-to-house inquiry during the previous investigation.) No significant difference could be demonstrated. Amongst pre-school children affected by poliomyelitis the percentage of only children was rather low (9.3 per cent., as against 16.8 per cent. in the general population) and 69.8 per cent. were in families which included school-children, as against 64.3 per cent. in the general population. In neither case was the difference statistically significant. The families of poliomyelitis cases aged 5–10 years appeared to be quite typical of those including children of this age in the population generally. It was not even possible to show that boys aged 10–15 years were any more likely to figure in the background of positive cases than in the average family including children.

This failure to demonstrate any peculiarity in the composition of the families of positive cases was rather surprising. It is another indication of the extraordinarily widespread nature of the subliminal epidemic, whose ramifications we are, of course, unable to follow directly. In the early stages of the outbreak the pre-school child's comparative isolation may, perhaps, afford some protection; but as time goes on it seems as though he is just as likely to pick up infection from his parents, or from the children outside the home, as to have it brought to him from school by an older brother or sister. It is interesting to recall that the earliest evidence of the epidemic found during the previous investigation was an outbreak of suggestive illnesses in *adults*, especially adults in families without children. This finding was so unexpected that it was felt to be of doubtful significance, and reasons were mentioned why too much reliance should not be placed on it. I am inclined to a rather different view now.

## XI. INCIDENCE IN SCHOOLS

In September, 1948, all schools in the Auckland area were visited by Health Inspectors, who called attention to sanitary defects, and prepared reports giving details of numbers on the roll and of the closet and ablution facilities provided. These schools can therefore be classified according to the proportion of water-closets or hand-basins available. In addition, lists can be given of schools which, judging by the Inspectors' remarks, made a particularly good impression generally, and those in which serious sanitary defects were specially noted.

It is obvious, however, that one school may have a smaller number of hand-basins, for example, than another school of equal size, and still be less hazardous from the sanitary point of view. A moment's thought will show that ratios of sanitary accommodation to pupils are more reliable as a general index of overcrowding than of anything else. If there is any truth in the theory put forward in my previous report that the virus of poliomyelitis may be dust spread, especially through contaminated particles in the dust of school closets, then the school with the smallest proportion of closets per hundred pupils should provide the heaviest concentration of virus, other things being equal. But "other things" never are equal; the school with the best accommodation is sometimes the worst maintained. Similarly, the number of hand-basins in a school is no indication of the amount of hand-washing done by the pupils.