

EPIDEMIOLOGICAL STUDIES ON THE DISTRIBUTION OF INTESTINAL
PARASITES AMONG PEOPLE IN AMAMI ISLAND BY FECAL
EXAMINATIONS WITH THE POLYETHYLENE-TUBE
CULTURE AND THE THICK SMEAR METHODS

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1. Parasitological surveys were made on 3,159 people in 14 villages of Uken District in Amami Island south Japan, by applying fecal examination methods of "celophane thick smear" for detection of parasites' eggs and of "polyethylene-tube culture" for diagnosis of hookworms and related nematodes. The latter method newly devised for this survey was found to yield much higher positive rates than the direct smear method, and was also demonstrated to be as reliable as and much more economic and convenient than the test-tube culture method especially for the use in field laboratories.

2. The positive rates for all people examined were 40.6% in hookworms, 37.5% in *Necator*, 6.8% in *Ancylostoma*, 2.3% in *Strongyloides*, 15.6% in *Ascaris*, 50.7% in *Trichuris*, 3.4% in *Metagonimus yokogawai* and 0.72% in *Hymenolepis nana*. Attention was called for the high prevalence of *Necator* and *Trichuris*, for discovery of a new endemic area of *Metagonimus*, and for the drop of positive rate of *Ancylostoma* from above 50% at the surveys made in the same island 6 years before to the present level without making any special preventive measures.

3. Differences in positive rates of each parasite by the villages were discussed. *Metagonimus* were confined to villages along a river in which its intermediate host *Plecossus altives* breed abundantly. Correlation co-efficients between the positive rates were computed for all combinations of the other 5 species, and highly significant values were obtained for the cases such as *Ascaris*-*Trichuris* or *Ancylostoma*-*Strongyloides*.

4. Age distribution of the positive rates of each parasite was calculated, and was found to reflect peculiar patterns to each species as was discussed in our previous papers. *Necator*, *Ancylostoma* and *Strongyloides* represented a type to increase in the rates as the ages advanced from infant to adult classes while *Ascaris* and *Trichuris* showed a peak on 5-9 or 10-14 age-group and dropped towards the adult stages. In *Metagonimus* the highest rate was seen in 20-29 years, probably correlated with fishing and food habits of the people.

5. Distribution of the parasites among individuals were classified into the four groups by the combination of positive or negative to two species, and the positive rates against parasite "B" of the people positive and of the people negative for parasite "A" were computed for all the combinations of 5 species. Significantly high correlations of infections were seen for such combinations as *Ascaris*-*Trichuris*, *Strongyloides*-*Ancylostoma* and *Strongyloides*-*Necator*, in the way that the two species tended to infect same individuals in common rather than to be distributed independently among the population.