

## HELMINTHS OF PUBLIC HEALTH SIGNIFICANCE IN DOMESTIC ANIMALS OF MEGHALAYA

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A screening of domestic animals of Meghalaya for helminth parasites revealed presence of eleven helminth species, which could be of public health significance. Prevalence of *Ascaris suum* in pigs and of *Gnathostoma spinigerum*, *Toxocara canis* and *Ancylostoma caninum* in dogs was significantly high. Preliminary findings suggest that pig and dog could serve as principal reservoir hosts for many helminths of zoophilic importance in the area.

Popularity of domestic animals and their role as definitive hosts for several helminth parasites identifies these animals as potential reservoirs of parasitic infections of public health significance (Gualazzi, 1986). An examination of literature reveals that sufficient importance has not been ascribed to these parasites both from epidemiological and zoonotic points of view in India. Recent surveys of human helminthiasis in several regions of the country indicate a fairly good involvement of helminths of zoonotic importance in these areas (Das *et al.*, 1981; Paul *et al.*, 1982; Raina *et al.*, 1984). On the reasonable assumption that zoonotic helminthiasis occurs in these areas, and domestic animals are more commonly kept in the society, a search for zoonotic helminths and their reservoir hosts was carried out in Meghalaya, a north-eastern state of India.

The study was carried out from March, 1986 to June, 1988 in the vicinities of Shillong and Nongstoin towns of Meghalaya.

The investigation was made on domestic animals, namely poultry, cow, goat, pig and dog. Whereas for dogs and poultry the alimentary tract with associated organs was removed from the body and examined in the laboratory for recovery of parasites, an autopsy of other animals was done at various slaughter houses. The recovered parasites were processed by standard laboratory techniques and identified according to Soulsby (1982). Faecal samples of dogs, obtained through Veterinary Hospital, Shillong were prepared in 3% formalin and examined using saturated salt flotation method. The eggs were identified using morphological criteria (Soulsby, 1982).

The names of the host and parasites of zoonotic importance recorded with their prevalence rate are given in Table—1.

All the parasites discussed in this paper are known to cause mild to serious clinical harms when infecting man (Faust *et al.*, 1976; Rao, 1979). However, a significantly high prevalence of nematode species like *Ascaris*, *Toxocara* and *Ancylostoma* in domestic

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Table—1. Prevalence of helminths of public health significance in domestic animals of Meghalaya.

| Host | Parasite recorded                      | Percentage prevalence* |
|------|--|------------------------|
| Pig  | <i>Ascaris suum</i>                    | 51.6                   |
|      | <i>Gnathostoma hispidum</i>            | 0.26                   |
|      | <i>Macracanthorhynchus hirudinaeus</i> | 6.5                    |
|      | <i>Cysticercus cellulosae</i>          | **                     |
| Dog  | <i>Toxocara canis</i>                  | 69.0                   |
|      | <i>Ancylostoma caninum</i>             | 47.2                   |
|      | <i>Gnathostoma spinigerum</i>          | 50.9                   |
|      | <i>Ascaris</i> sp.                     | 5.4                    |
|      | <i>Dipylidium caninum</i>              | 20.0                   |
| Cow  | Hydatid cyst                           | **                     |
| Fowl | <i>Strongyloides</i> sp.               | 0.2                    |

\* Percentage prevalence of infection in pigs and poultry based on 1946 and 364 autopsies, respectively and that of dogs based on 89 necropsies and 46 faecal samples.

\*\* Percentage prevalence could not be recorded.

animals is of special interest because of their established anthrozoönotic importance (Hoeden, 1964). Further, their mode of infection being contaminative, may make their transmission rather easy to human population. Similarly, the presence of *Cysticercus cellulosae* in pigs highlights the potential danger and fair chances of *Taenia* infection to man in pork-eating society. In the light of the above observations pigs and dogs appear to be potential reservoir hosts for helminthic zoonoses and because of their close association with human population, could pose a serious health hazard to the people of the area.

The important question is whether people are being infected to the extent as reported in these animals. Though no report is available from which to assess the specific helminth infections in human population of the area, yet information collected from various medical agencies revealed helminths to be common parasitic infections; data obtained from State Civil Hospital, Nongstoin showed a hundred percent prevalence of *Ascaris* infection in the subjects.

This report presents the evidence of existence of parasites of public health significance in domestic animals of Meghalaya; the occurrence of parasite species here is one aspect defining a helminth-associated health problem in the area. The full implications of this study can only be acknowledged if evidence of resultant infection in human population is provided precisely.

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