PREVALENCE OF HELMINTH PARASITES OF DOGS IN LUSAKA, ZAMBIA

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SUMMARY
Eighty-five dogs were examined and the numbers and types of helminth parasites found were recorded. Forty per cent of the dogs were infected with one or more helminth parasites. The most prevalent helminths were the cestodes Dipylidium caninum (24.7%) and Taenia hydatigena (17.64%). Infections were evenly distributed with sex of host. Juvenile dogs were more commonly infected with Toxocara canis than adults whereas all other helminths were found more in adult dogs.

INTRODUCTION
In Lusaka the capital of Zambia there are large numbers of stray dogs. They feed on refuse in the dust-bins, in the fish markets or by hunting mice, rats, etc. These stray dogs constitute a potential public health problem as several parasites of dogs also infect man. The aim of the present study was to determine the prevalence of helminths in dogs and so to provide some insight on the associated public health problem.

MATERIALS AND METHODS
Eighty-five dogs of different ages and sexes both stray and owned were collected during May 1980 to April 1982 after euthanasia at a local dogs' home. The entire alimentary tract was removed intact from the carcass and slit open. Following gross examination the mucosa was scraped and the contents collected in saline and sieved. The contents were poured into a Petri dish a little at a time and scanned under a stereoscope for worms. Cestodes were relaxed and killed in hot water, fixed in AFA and prepared for identification using standard procedures. Nematodes were killed and fixed in hot 70% ethyl alcohol and identified after clearing in 10% lactic acid. Cestodes were identified by the criteria of Abuladze (1964), Verster (1969) and Coman (1973) while the criteria used for nematodes were those of Soulsby (1968) and Yoshida (1971). The number of worms in each species was counted. Because some cestodes were broken, total counts were taken of the number of scolices, sections lacking a scolex or noticeable neck not being counted.

RESULTS
Forty per cent of the dogs were infected with one or more helminths. The prevalences and the mean burdens are presented in Table I. Many of the dogs had multiple infections although five dogs contained only Dipylidium caninum, three dogs only Taenia hydatigena and two Toxocara canis.

DISCUSSION
Although numerous studies have been conducted on helminth parasites of dogs in many other countries little information is available on the species of helminth

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HELMINTH PARASITES OF DOGS

TABLE I

Prevalence of helminth parasites in dogs

<table>
<thead>
<tr>
<th>Parasite</th>
<th>No. (%) of dogs infected</th>
<th>Mean no. (range) of parasite/dog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipylidium caninum</td>
<td>25 (25)</td>
<td>25 (1-246)</td>
</tr>
<tr>
<td>Taenia hydatigena</td>
<td>15 (18)</td>
<td>4 (1-119)</td>
</tr>
<tr>
<td>Toxocara canis</td>
<td>12 (14)</td>
<td>6 (1-36)</td>
</tr>
<tr>
<td>Ancylostoma caninum</td>
<td>7 (8)</td>
<td>18 (1-210)</td>
</tr>
<tr>
<td>Toxocri leonina</td>
<td>6 (7)</td>
<td>2 (2-16)</td>
</tr>
<tr>
<td>Diphyllobothrium sp.</td>
<td>4 (5)</td>
<td>3 (1-8)</td>
</tr>
<tr>
<td>Ancylostoma braziliense</td>
<td>2 (2)</td>
<td>15 (1-173)</td>
</tr>
<tr>
<td>Spirocerca lupi</td>
<td>2 (2)</td>
<td>2 (2-14)</td>
</tr>
<tr>
<td>Echinococcus granulosus</td>
<td>1 (1)</td>
<td></td>
</tr>
<tr>
<td>No parasites found</td>
<td>51</td>
<td>560</td>
</tr>
</tbody>
</table>

¹Total number of dogs exceeds 85 due to multiple parasitisms.

parasites in dogs from Zambia. The prevalence rates of helminth parasites of dogs in the present study are relatively low perhaps because many of the owned dogs in the study were better cared for and more restricted than those in other studies. It is particularly noteworthy that the most important zoonotic helminth present *Echinococcus granulosus* was only found in one dog.

*T. canis* occurred in 26% of juvenile dogs compared with 6% of the adults. This is in keeping with the life-cycle of the parasite which involves transmission of *T. canis* from the dams to the foetus or puppy while resistance develops to this parasite in older dogs (Soulsby, 1968). It is, however, probable that a much higher prevalence of this parasite will be present in young puppies.

In agreement with the findings of others (Visco, Crown and Selby, 1977) the prevalence of infection with *D. caninum, Ancylostoma caninum, T. hydatigena*, etc., were in general higher in adult dogs. As with most other authors we found no difference in the prevalence of helminth parasites in male or female dogs.

The species of *Diphyllobothrium* was not determined but they were probably either *D. pretoriensis* or *D. theileri*, both of which have been reported from dogs in Africa (Graber, 1981). The validity of the generic name *Spirometra* previously used for both these species is at present in doubt (Schmidt, 1974).

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REFERENCES