

SCIENTIFIC NOTE—PORCINE SPIRURIDS (SPIRUROIDAE : ASCAROPIDAE RECORDED FROM BEETLES (COLEOPTERA : SCARABAEIDAE) IN PAPUA NEW GUINEA

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ABSTRACT

The Scarabaeine beetles *Onthophagus iris* and *O. ? heurni*, collected in association with pig dung near Mount Hagen, and *Onthophagus sp.* from Madang, Papua New Guinea, show 0 per cent, 69 per cent and 76 per cent infection rates respectively, with first to third stage larvae of the Ascaropidae nematodes *Physocephalus sp.* and *Ascarops sp.*

INTRODUCTION

TWO spirurids, both requiring dung-beetles as intermediate hosts, commonly occur in pigs throughout the world. *Ascarops strongylina* and *Physocephalus sexalatus* are particularly evident in wild boars and pigs which are allowed to roam freely (Shmitova 1961, Jansen 1966).

In Papua New Guinea where open range grazing is generally practised and breeding and management of pigs is loosely controlled, spirurids are commonly present. Talbot (personal communication) lists the known spirurid parasites of pigs as *Ascarops dentata*, *A. strongylina*, *Physocephalus sexalatus*, *Gnathostoma doloresi* and *Simondsia paradoxa*.

MATERIALS

Dung beetles, identified as *O. iris* Sharp and *O. ? heurni* Gillet, were collected from under the dung of village pigs at Mount Hagen, Papua New Guinea in February, 1969. Specimens of another species of *Onthophagus*, which could not be identified, were collected at Madang in May, 1969. They were preserved in 70 per cent ethanol for later dissection.

Encapsulated and free first to third stage spirurid larvae were recovered, cleared in glycerol-alcohol and identified at generic level according to descriptions given by Alicata (1935).

RESULTS

Results of dissections are given in the Table.

Spirurid larvae occurred throughout the beetle in heavy infections; in light infections larvae were generally restricted to the abdomen, especially along the dorsal surface, and in the fat body.

DISCUSSION

O. ? heurni and the unidentified *Onthophagus* species from Madang represent the first demonstrated beetle hosts for porcine spirurids in Papua New Guinea; this is also the first host record for *O. ? heurni*. *Onthophagus* species previously recorded as intermediate hosts for *Physocephalus* are: *O. concinnus*, *O. depressus*, *O. hecate*, *O. pennsylvanicus* (Fincher *et al.* 1969), *O. bedeli*, *O. nebulosus* (Alicata 1935), and *O. praedatus* (Yutuc 1966). *Ascarops* has previously been recorded from *O. taurus*, *O. muchicornis*, *O. austriacus*, *O. vacca* and *O. vitulus* (Shmitova 1964).

Present data suggest that beetles from coastal areas show a higher rate of infection than those from the Highlands; it is also possible that *O. iris* is refractory to spirurid infection. However, no definite statements can be made in these respects until larger numbers of beetles are collected, and more is known about the habits of the different species of *Onthophagus*.

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Table.—Details of spirurid larvae obtained from beetles

| | MOUNT HAGEN | | MADANG | |
|---|---------------------|-------------------------|-----------------|--------|
| | Onthophagus Iris | Onthophagus ? heurni | Onthophagus sp. | |
| | | | Male | Female |
| No. examined | 10 | 26 | 10 | 19 |
| No. infected | 0 | 18 | 9 | 13 |
| Per cent beetles infected | 0 | 69 | 90 | 68 |
| | | | 76 | |
| <i>Physocephalus</i> sp.—3rd stage larvae | | 249 | 286 | 598 |
| <i>Ascarops</i> sp.—3rd stage larvae | | 2 | 9 | 97 |
| First stage larvae | | | 455 | 100 |
| Total No. of larvae | | 251 | 750 | 795 |
| Av. No. of larvae/beetle | | 14 | 83 | 61 |

ACKNOWLEDGEMENTS

We are indebted to Mr M. E. Bacchus of the British Museum (Nat. Hist.) London, who identified the New Guinea species of *Onthophagus* referred to in this paper, and to Mr N. T. Talbot of the Veterinary Laboratory, Department of Agriculture, Stock and Fisheries, Papua New Guinea, for advising on the porcine spirurids present in Papua New Guinea.

This paper is published with the permission of the Director-General of Health, Canberra, A.C.T., and the Director, Institute of Human Biology, Goroka, Papua New Guinea.

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(Accepted for publication January, 1973.)

Printed and published by E. C. Awo, Government Printer, Port Moresby.—6018.