

GATHORNE CRANBROOK'S CONTRIBUTIONS TO PARASITOLOGY IN MALAYSIA IN THE 1960s: A HISTORICAL PERSPECTIVE

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ABSTRACT. — During the 1960s at the University of Malaya, Gathorne, 5th Earl of Cranbrook (then Lord Medway) provided host mammal specimens and identified many others, as a basis for the author's taxonomic work on endoparasites of mammals. This has had continuing impact on studies of small mammals and their parasites in Malaysia.

KEY WORDS. — Cranbrook, Medway, Malaysia, parasitology, mammalogy

INTRODUCTION

Gathorne, 5th Earl of Cranbrook, has made important contributions to our knowledge of birds and mammals in Malaysia, but few if any, including perhaps he himself, know that he also contributed significantly to our understanding of parasites in that region, particularly during the period at the University of Malaya when he was known as Lord Medway. This brief outline aims to correct this gap in knowledge.

Parasitological work in Malaysia until the early 1960s had concentrated almost exclusively on medical parasites, such as malaria and filarial parasites. My predecessors as President of the Malaysian Society of Parasitology and Tropical Medicine, A. A. Sandosham (then Director of the Institute for Medical Research) and Robert S. Desowitz (then Chair of Medical Parasitology, University of Singapore School of Medicine), for example, were eminent medical parasitologists who made important contributions to human parasitology. Non-medical parasites were considered at best sporadically, as a sideline to medical research. Thus, Sandosham (1951) described a new genus of trematode, *Leipertrema*, from an orang-utan *Pongo pygmaeus* that had died in the London Zoo soon after its arrival from Borneo, in a paper that also deals with a medically important nematode, *Dirofilaria*.

HOST MATERIAL AND DESCRIPTIONS

Medway was at the Zoology Department of the University of Malaya in Kuala Lumpur from 1961 to 1970, and I was at the same Department from 1960 to 1967. There I conducted taxonomic, life cycle and cytological studies of parasites of

various vertebrates. My work concentrated largely on the helminths of turtles, but I also looked at trematodes of some birds, amphibians and particularly mammals. The work in Malaya, jointly with later work on the Great Barrier Reef, formed the basis for my ideas on how ecological communities function and is prominently discussed in my recent books *Nonequilibrium Ecology* (Rohde, 2005) and *The Balance of Nature and Human Impact* (Rohde, 2013). Medway's cooperation was crucial for my work on trematodes of bats, slow loris *Nycticebus coucang*, and other small mammals. He made some host specimens available and identified many hosts. From these I described nine new species, a new subgenus, three new genera and a new subfamily of parasites, indicating how little earlier work had been done on these groups. For one of the new genera, *Renschetrema*, a new family (Renschetrematidae) was later established by the renowned Japanese helminthologist S. Yamaguti (1971). Details of my findings follow.

- Rohde (1962a) described two new species within two new genera from *Nycticebus coucang*, i.e., *Odeningotrema bivesicularis* and *Novetrema nycticebi*, both less than 1 mm long. *Odeningotrema* was placed in a new subfamily, Odeningotrematinae.
- Rohde (1962b) described a second new species of *Odeningotrema*, *O. hypergenitalis*, from the lesser gymnore *Hylomys suillus*.
- Rohde (1963a) described a new species of *Leipertrema*, *L. vitellariolateralis*, from a plantain squirrel *Callosciurus notatus*.

- Rohde (1963b) recorded *Paragonimus westermani* (?) from a tiger *Panthera tigris* shot in Pahang, and *Leiperrema vitellariolateralis* from the grey-bellied squirrel *Callosciurus caniceps*.
- Rohde (1963c) described a number of small trematodes from Malayan bats, i.e., *Cephalotrema* sp. (later transferred to *Maxbraunium*, see Rohde, 1964b) from the lesser brown horseshoe bat *Rhinolophus steno*; *Postorchigenes duboisi* n.sp. from the hairless bat *Cheiromeles torquatus*; and some non-identified trematodes of the family Lecithodendriidae from the lesser woolly horseshoe bat *Rhinolophus sedulus*; as well as *Prosthodendrium longiforme* (Bhalerao) from *Cheiromeles torquatus*; *Lecithodendrium linstowi* Dollfus from *Rhinocephalus sedulus*; *Prosthodendrium parvouterus* (Bhalerao) from *Cheiromeles torquatus* and the bicolor roundleaf horseshoe bat *Hipposideros bicolor*; and *Odeningotrema bivesicularis* Rohde, 1962 from *Cheiromeles torquatus*.
- Rohde (1963d) gave a brief outline of parasites recorded from bats in Malaya. In his paper published in 1964, Rohde described three new species of tiny (less than 0.5 mm long) trematodes from bats put in a new genus, *Renschetrema*, family Microphallidae, i.e., *R. malayi* from *Rhinolophus* sp.; *R. sandoshami* from a flat-headed bat *Tylonycteris* sp. and a woolly bat *Kerivoula* sp.; and *Renschetrema* sp. from the thick-thumbed pipistrelle *Glischropus tylopus*. Yamaguti (1971) considered the differences between *Renschetrema* and other microphallids as sufficient to establish a new family, Renschetrematidae, for them. Subsequently, two further species of the genus were described, i.e., *R. indicum* Kifune, 1984, from various whiskered bats *Myotis nepalensis* and *M. muricola* in India, and *R. rohdei* Matskasi, 1973 from the intermediate horseshoe bat *Rhinolophus affinis* in North Vietnam. Deblock (2008) established a new genus, *Rohdetrema* for *R. sandoshami* Rohde, 1964.
- Rohde (1964) described a new species of *Maxbraunium*, *M. baeri* from various species of lowland forest bats including *Rhinolophus steno*, *Tylonycteris malayana*, *Tylonycteris* sp., *Myotis mystacinus*, *Kerivoula hardwickei* and *K. pusilla*.
- Rohde (1966a) gave a brief overview of bat trematodes in Malaya, and Rohde (1966b) described *Lutztrema* (*Lutziella*) *microacetabulare* from *Myotis mystacinus*, and *Anchitrema sanguineum* (Sonsino, 1894) from *Glischropus tylopus*, *Rhinolophus sedulus*, the woolly horseshoe bat *R. luctus*, black-bearded tomb bat *Taphozous melanopogon*, pouch-bearing bat *T. saccolaimus* and roundleaf horseshoe bat *Hipposideros pomona* from various localities in Malaya. *Lutziella* was a new subgenus.
- Rohde et al. (1968) recorded *Zonorchis* sp. from *Callosciurus notatus* and *C. caniceps*.

These findings show that most species of trematodes recovered from various Malayan mammals were new. Five of the recorded species had been previously described, nine were new, among them four new genera (including the one later established for *Renschetrema sandoshami* by Deblock, 2008), and at least three species could not be identified to species level. One new family, one new subfamily, and one new subgenus were also established.

In summary, the trematode fauna of Malayan mammals in the early 1960s was largely unknown. Thanks to the cooperation of Lord Medway a basis could be laid for an understanding of that fauna. The work was only possible due to Medway providing hosts and/or identifying hosts. The work was seminal in the sense that it led to similar surveys of trematodes from small mammals in Southeast and South Asia. It was important because it led to important insights into ecological mechanisms, including the role of interspecific competition and the large-scale non-saturation of niche space, discussed (with reference to my studies in Malaya) in Rohde (2005, 2013).

ACKNOWLEDGEMENTS

This paper is a contribution to Supplement No. 29 of the Raffles Bulletin of Zoology, marking the eightieth birthday of the Earl of Cranbrook (V).

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