



## A checklist of nematode parasites from Indonesian murids

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### Abstract

A checklist of nematode parasites from Indonesian murids with their geographic distribution is presented. This checklist is compiled from three sources: the catalogue of nematode parasites of Museum Zoologicum Bogoriense (unpublished specimens in the collection), data from our previous research and articles on nematodes of Indonesian murids. This checklist is presented as a list of nematode parasites with host information, and a host list with information on their nematodes. This paper reports 38 nominal species of nematodes and 13 species identified to the generic level only. The nematodes reported comprise 32 genera and 17 families parasitizing 32 species of Indonesian murids.

**Key words:** nematode; Muridae; Indonesia; checklist

### Introduction

The nematodes that parasitize rats are of special interest due to the role of rats as reservoirs for many important parasites of humans. Rats also harbor many zoonotic agents that affect animal and human health (Kwo & Kwo 1968; Bhaibulaya & Indrangarm 1975; Baker 1998; Pisanu 2007).

The study of nematodes from Indonesian murids is also very interesting because some islands of Indonesia have fauna that are not particularly rich in species, but feature a very high level of endemism. During the Pleistocene, the islands westward of Borneo and Bali were connected to the Southeast Asian mainland as Sundaland while New Guinea and Australia were connected as Sahul. The remaining lands between these two regions were isolated (Groves *et al.* 2001). The separation of islands because of continental movements or the fall of sea levels have had consequences for the dispersal of mammals, especially for the small bodied rodents. It is possible that when these rodents and their nematode parasites became localized and adapted to particular islands and then speciated in their new environments, the nematodes parasitizing them may have been either lost, co-evolved with their hosts, or switched from one host species to another (Warner 1998). Such island isolation and adaptation to new environments may have resulted in diversification events leading to new evolutionary lineages and new species.

Besides the discovery of new species, a series of research projects on nematode parasites of Indonesian murids has been conducted. However, there is no checklist compiling all of the information. The only substantial catalogue is deposited in MZB. Many nematodes parasite of Indonesian murids have been described, collected, and reported. The oldest specimen deposited at MZB was *Nippostrongylus* sp., parasitizing *Rattus sabanus* collected from Jakarta in 1970.

The study on helminth parasites of rats in Indonesia began with Vogel and Vogelsang in 1930 (Wiroreno 1975), and the first publication on nematodes from Indonesian murids by an Indonesian scientist was by Sri. S. Margono, a lecturer of the University of Indonesia. She reported *Angiostrongylus cantonensis* in Jakarta. The paper was published in the Southeast Asia Journal Tropical Medical Public Health in 1970.

Major work on nematode parasites of Indonesian murids as well as the description of numerous new species and genera was conducted by Hideo Hasegawa, a Japanese scientist, and his colleagues in 1991-1993. While, the