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Cladocera (Crustacea: Branchiopoda) of Sabah state in Borneo Island, Malaysia

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Abstract

Fauna of Cladocera (Crustacea: Branchiopoda) of Sabah state of Malaysia, Borneo Island, was evaluated for the first time. Samples from 40 locations were studied, and 31 species of Cladocera were revealed, including three species of Sididae, one species of Daphnidae, one species of Moinidae, four species of Macrothricidae, two species of Ilyocryptidae, and 20 species of Chydoridae. One species of Ilyocryptidae, *Ilyocryptus yooni* Jeong, Kotov and Lee, 2012, is recorded for Malaysia for the first time, and one more, *Anthalona* sp., is probably new for science. Of 31 species recorded for Sabah, only three are true planktonic species and 28 are substrate-associated species. Absence of large natural lakes, habitats with most rich cladoceran fauna, can be an important factor limiting diversity of Cladocera in Sabah.

Key words: Sabah; Borneo; Cladocera; biodiversity; taxonomy

Introduction

Cladocera of South-East Asia has been actively investigated during the last few decades. Cladoceran fauna was reevaluated for Thailand by Maiphae *et al.* (2008). Local faunas were recently investigated in some regions of Thailand, Cambodia, Laos and Vietnam (Tanaka & Ohtaka 2009; Van Damme *et al.* 2013; Kotov *et al.* 2013; Sinev & Korovchinsky 2013). All available information on SE Asia was summarized by Korovchinsky (2013). In contrast, cladoceran faunas of numerous islands and archipelagos of South-East Asia remain poorly studied, and modern data were recently obtained only for Philippines (Pascual *et al.* 2014).

There is no reliable species list for the whole Indonesian archipelago, according to Korovchinsky (2013, p. 117), “the last considerable investigation of the Cladocera of Indonesian islands” was the work of Johnson (1956). Malaysian fauna, including fauna of Malaysian Borneo, was investigated by Idris (1983), this monograph contained good illustrations, sound descriptions and reliable keys, which as a result quickly became the main, universally used identification guide for cladoceran fauna of South-East Asia. While Idris listed 62 species for Malaysia, Idris's (1983) book had a significant drawback as a source of information on Borneo fauna since areas of species distribution within the country were not listed for most species. Most of Idris's (1983) materials were collected in the Peninsular Malaysia, and it is impossible to be certain what is the representative of most species in Malaysian Borneo. Idris (1983) listed specific localities for 23 rare species, all of them were found in peninsular region of Malaysia. No rare species were found on the island region.

The aim of the present study was to investigate the cladoceran fauna of Sabah state of Malaysia, a North-East extremity of Borneo Island. Sabah water bodies include river systems, small lakes, ponds, ditches and channels, swamps and paddy fields in some areas. There are only about 8 lakes in Sabah with an area 7.18 km² (Zati & Salmah 2008). This figure (Zati & Salmah 2008) does not include some ox-bow lakes along major rivers such as Kinabatangan.