



Cladocera of Hainan Island, China

ARTEM Y. SINEV¹, YANGLIANG GU² & BO-PING HAN²

¹Biological Faculty, M.V. Lomonosov Moscow State University, Leninskie gory, Moscow 119991, Russia.

E-mail: artem.sinev@gmail.com

²Department of Ecology and Institute of Hydrobiology, Jinan University, Guangzhou 510632, China

E-mails: hyun911@126.com, tbphan@126.com

Abstract

The cladoceran fauna of Hainan Island (China) was investigated. Samples were collected in January 2013 and in April 2014 from over hundred water bodies, including large and small reservoirs, ponds and pools, rivers, streams, and paddy fields. There are no large natural lakes on the island. We found 53 species of Cladocera: 9 species of Sididae; 5 Daphniidae; 2 Moinidae; 2 Macrothricidae; 2 Ilyocryptidae; 3 Bosminidae; and 30 Chydoridae. Planktonic communities were dominated by *Diaphanosoma dubium* Manuilova, 1964, *D. excisum* Sars, 1885, *D. sarsi* Richard, 1894, *Moina micrura* Kurz, 1874 and *Bosminopsis deitersi* (Richard, 1895). Six Chydoridae species are first records for China. The fauna consists mostly of Oriental and Pantropical species, but, also includes non-tropical Palaearctic species and East Asian endemics. For these species, Hainan Island is the southernmost record. The number of species is rather small, compared to adjacent areas. This may reflect a low intensity of sampling, but more likely a lack of natural lakes. Communities in reservoirs suffer from water level fluctuations, and the absence of permanent macrophyte stands, a preferred habitat of littoral cladocera.

Key words: Hainan, Cladocera, biodiversity, taxonomy

Introduction

During the last decades, Cladocera of East and South East Asia have been intensely investigated. The faunistic composition of the group was evaluated for Thailand (Maiphae *et al.*, 2008) and local faunas were investigated in Thailand, Cambodia, Laos, Vietnam and The Philippines (Tanaka & Ohtaka 2010; Van Damme *et al.* 2013; Kotov *et al.* 2013; Sinev & Korovchinsky 2013; Pasqual *et al.* 2014). The fauna of South-East Asia was reevaluated by Korovchinsky (2013). New data was obtained for South Korea (Kotov *et al.* 2012; Jeong *et al.* 2014) and the Far East of Russia as well (Kotov *et al.* 2011). A checklist was completed for part of the Chinese cladoceran fauna (Xiang *et al.* 2015). Combined efforts of several taxonomists lead to a continued revision of most groups of South-East Asian cladocera, and a number of new species was described (Korovchinsky & Sanoamuang 2008; Kotov & Sanoamuang, 2004; Sinev 2011, 2012, 2014b; Sinev & Sanoamuang 2007; Sinev & Kotov 2012; Van Damme & Sinev 2013; Van Damme & Maiphae 2013; Van Damme *et al.* 2013).

Still, our knowledge of East and South-East Asia Cladocera is far from complete; many regions, including islands, remain unstudied. One such area is Hainan Island, China. Hainan's natural water bodies include rivers and streams, but no large natural lakes. The area is influenced by human activities, and dams have been built on most rivers. The plains of the island are full of irrigation channels, paddy fields and artificial ponds for fish cultivation.

Available data on Hainan Cladocera have been obtained during plankton studies on reservoirs and amount to nine cladoceran species: *Diaphanosoma orghidani* Negrea, 1982, *D. dubium* Manuilova, 1964, *Ceriodaphnia cornuta* Sars, 1888, *Daphnia galeata* Sars, 1863, *Moina micrura* Kurz, 1874, *Bosmina fatalis* Burckhardt, 1924, *Bosminopsis deitersi* (Richard, 1895), *Alona milleri* Kiser, 1953 were recorded by Li *et al.* (2011), and *Moinodaphnia macleayi* (King, 1853) by Xiang *et al.* (2015).

The aim of the present study was to inventorize the cladoceran fauna of Hainan Island. We did not attempt to quantify the obtained information.