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Checklist of the Odonata (Insecta) of Sundaland and Wallacea (Malaysia, Singapore, Brunei, Indonesia and Timor Leste)

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Abstract

A checklist, based on a database containing published data, of the Odonata (dragonflies and damselflies) occurring in Sundaland and Wallacea is presented. The presence of (sub)species is indicated for eight main regions (Singapore & Peninsular Malaysia, South China Sea (islands in the South China Sea that are not sensibly treated as satellites of larger landmasses), Borneo, Sumatra, Java & Bali, Lesser Sunda, Sulawesi, Moluccas), 22 subregions and 80 smaller islands and island groups. In total 743 full species are recorded from the entire area with 549 species known from Sundaland and 270 from Wallacea. Of these 482 are not found outside Sundaland and Wallacea, 385 (ca. 52% of the fauna) of which are single region endemics; the majority of these are actually single island endemics. Notes are provided on taxonomic problems or indicating problematic distribution records. *Prodasineura lansbergei* is considered to be a nomen nudum (stat nov.). For each of the eight main regions the history of the study of odonates is briefly discussed, information is provided on the coverage of the available data and the faunal composition is described. An overview is given of genera for which no larvae have been described. A brief comparison is made between the faunas of Sundaland and Wallacea showing that they only share 10% of the species between them (76 of 743).

Key words: damselfly, dragonfly, diversity, taxonomy, biogeography, freshwater diversity

Introduction

In 1954 a Handlist of the Malaysian Odonata was published by Lieftinck (1954). This document (over 200 pages in length) contains a concise overview of all the dragonflies and damselflies recorded from Sundaland at the time and for each species provides information on the distribution, a bibliography and, when available, some details on habitat and behaviour. Lieftinck (1954) is nearly 70 years old and although it is still an important source of information it has become outdated in many respects due to changes in taxonomy, the description of new species, new information on habitat and behaviour and the publication of new records. For Wallacea, the area to the east of Sundaland, no complete overview of the odonate fauna has ever been published although checklists are available for parts of this area (Lieftinck 1949b: Moluccas; Lieftinck 1936c, 1953a: Lesser Sunda islands; Monk *et al.* 1997: Moluccas and Lesser Sunda islands). All of these checklists are, like the checklist of Sundaland, outdated and do not reflect our current knowledge of odonate distributions and taxonomy in the area. Over a decade ago RD and VJK initiated work on a database containing, as far as is practical, all reliable published records of dragonflies and damselflies from the area stretching from Malaysia in the west to the Solomons in the east. The current paper provides an updated checklist for both Sundaland and Wallacea using the above-mentioned database as its main source. The occurrence of each species found in the area in eight main regions (Singapore & Peninsular Malaysia, South China Sea, Borneo, Sumatra, Java & Bali, Lesser Sunda, Sulawesi, Moluccas), 22 subregions and 80 smaller islands and island groups is indicated.

Methods

The checklist presented in this paper covers the areas known as Sundaland and Wallacea (Figure 1). Sundaland encompasses Peninsula Malaysia (including Singapore), Sumatra, Java and Borneo. It is basically the area which, during glacial periods in which the sea level was low, was broadly connected by land. Although each of these landmasses have their own endemics there is a strong resemblance between the general composition of their faunas and many animal groups widely occurring in Sundaland are not found in Wallacea to the east. The northern limit of Sundaland is considered to be the Isthmus of Kra in southern Thailand where the 'neck' of the Malay Peninsula is at its narrowest. Because of this a small southern section of Thailand, which from a biogeographical point of view is part of Sundaland, is not included in this checklist. The border between Sundaland and Wallacea lies between Borneo and Sulawesi and between Bali and Lombok. Politically Bali is a separate province of Indonesia and for biological reasons we include it in Sundaland. Wallacea as defined here includes all islands between the Sunda and the Sahul shelf excluding the Philippines in the north. These islands are unified by all never having been connected with mainland Asia or with mainland Australia/New Guinea. Therefore, the species or their predecessors occurring on these islands have either arrived airborne or rafted with fragments of continental shelf to their current position. In biogeographical terms the western border separating Wallacea from Sundaland is called the Wallace line while the