

## Revision of the Australian Seahorses of the Genus *Hippocampus* (Syngnathiformes: Syngnathidae) with Descriptions of Nine New Species

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**ABSTRACT.** Australian species of seahorses (genus *Hippocampus*) are reviewed and descriptions of nine new species from Australian and adjacent waters are presented: *H. jugumus* n.sp. (Lord Howe Island), *H. biocellatus* n.sp. (Shark Bay, Western Australia), *H. alatus* n.sp. (northern Australia), *H. semispinosus* n.sp. (Timor Sea, southern Indonesia), *H. montebelloensis* n.sp. (Monte Bello Islands, Western Australia), *H. procerus* n.sp. (tropical eastern Australia), *H. multispinus* n.sp. (northern Australia), *H. hendriki* n.sp. (northeastern Queensland), and *H. grandiceps* n.sp. (Gulf of Carpentaria). A total of twenty-four species have been collected in Australian waters, and additional species may be found as these are known to occur in neighbouring waters. Diagnosis and a key for the Australian species are provided.

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In compiling information for a book on the syngnathid fishes of the world (Kuiter, 2000), it became clear that despite recent studies and the publication of a book on the taxonomy of seahorses (Lourie *et al.*, 1999), confusion remains. Eschmeyer (1998) lists 112 nominal species worldwide, many representing the same taxon and others wrongly synonymised since their initial original publication. An identification guide to the world's syngnathid fishes (Kuiter, 2000) suggests over 60 valid seahorses species worldwide. Applying the correct scientific name to seahorse species has always been problematic. In Australia, Whitley & Allan (1958) recognised eight species and suggested that there are about 100 valid species worldwide. Paxton *et al.* (1989) recognised 9 Australian species; and, Gomon, 1997, added a new species. An identification guide to the world's species (Lourie *et al.*, 1999) recognised only 32 species worldwide, but did not deal with species-complexes. The difficulty in working with seahorses stems primarily from their peculiar

morphology, with the absence of many of the characters that fish taxonomists traditionally rely on to distinguish species. In examining material from Australian collections for this revision, specimens of the same taxon were frequently found to be identified as a variety of species, often in relation to their relative presence or absence of spines. This work revealed that some species with little spine development in adults have spiny juveniles. The names *H. kuda* long applied to many smooth species and *H. histrix* frequently used for spiny species in tropical regions has given rise to the perception of wide-spread distributions, but it is clear that most species are highly localised and that there are a number of species-complexes whose members are variously distributed in different faunal regions.

Australia supports a number of different bioregions that range from temperate to tropical, and have Pacific or Indian Ocean origins. The pelagic regions are generally divided into four zones: north, south, east and west, whilst demersal