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## A revised generic arrangement for the eagle ray family Myliobatidae, with definitions for the valid genera

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### Abstract

The generic arrangement of the eagle rays (Family Myliobatidae) is revised and the genus *Pteromylaeus* Garman, 1913 is placed into the synonymy of *Aetomylaeus* Garman, 1908. Definitions are provided for the three valid genera, *Aetobatus*, *Aetomylaeus* and *Myliobatis*, and nomenclatural issues are discussed. *Aetobatus* differs from the latter two genera in having: a deeply notched nasal curtain, both jaws with a single row of chevron-shaped teeth, broadly rounded pectoral-fin free rear tips, pectoral fins separate from rostral lobe and joining head at level of eye. *Aetomylaeus* differs from the other two genera in having: pectoral fins separate from rostral lobe and joining head below level of eye, and stinging spine absent or present (usually not well developed when present). *Myliobatis* differs from the other two genera in having the pectoral fins joined to the rostral lobe by a subocular ridge. A list of valid species is provided, including a list of junior synonyms. *Myliobatis australis* Macleay, 1881 from southern Australia is placed into the synonymy of the previously considered endemic New Zealand species, *M. tenuicaudatus* Hector, 1877.

**Key words:** *Aetobatus*, *Aetomylaeus*, *Myliobatis*, *Pteromylaeus*, junior synonym, valid species

### Introduction

Bonaparte (1835) first proposed Myliobatini as a subfamily for the genus *Myliobatis* (*M. noctula* and *M. aquila*), but no definition of the subfamily was provided. Steyskal (1980) emended the family name of Myliobatidae to Myliobatididae. Although this was followed by a number of subsequent authors (e.g. Masuda *et al.*, 1984 and most recently Kottelat, 2013), Steyskal's changes do not follow the code and were discarded in those cases where the expanded spellings upset the primary usage, e.g. Myliobatidae (W. Eschmeyer and R. van der Laan, pers. comm.). Thus, Myliobatidae is the correct spelling of the family name. There is also conjecture over the arrangement of the family Myliobatidae. The cownose rays (Rhinopteridae) and manta and devilrays (Mobulidae) are considered by some to be subfamilies within the Myliobatidae, while others follow the traditional arrangement of Myliobatidae only containing the eagle rays. In this paper, we treat the Myliobatidae as only consisting of the eagle rays following Aschliman (2011). There are four currently recognised genera in the family Myliobatidae: *Aetobatus* Blainville, 1816; *Aetomylaeus* Garman, 1908; *Myliobatis* Cuvier, 1816; and *Pteromylaeus* Garman, 1913.

The family Myliobatidae has been relatively stable from a taxonomic point of view for many decades, but detailed examination of the species and genera in recent years has revealed a number of taxonomic issues requiring attention. Some of the progress in resolving the taxonomy of the eagle rays in recent years include: a molecular study by Richards *et al.* (2009) highlighted that the widespread *Aetobatus narinari* (Euphrasen, 1790) was likely to be a species complex; White *et al.* (2010) resurrected *Aetobatus ocellatus* (Kuhl, 1823) as the valid name for the Indo-West Pacific member of the *narinari* complex; a previously recognised undescribed species of *Myliobatis* from Argentina was formally named and described as *M. ridens* Ruocco, Lucifora, Díaz de Astarloa, Mabrugaña & Delpiani, 2012; White & Moore (2013) redescribed *Aetobatus flagellum* (Bloch & Schneider, 1801) and stated that the Northwest Pacific populations previously referred to as this species is in fact an undescribed species; the latter species was formally named and described as *Aetobatus narutobiei* White, Furumitsu & Yamaguchi, 2013.

Additional taxonomic work currently in preparation by the author includes: redescription of *Aetomylaeus*

Campbell, James Maclaine and Oliver Crimmen (British Museum of Natural History, London, UK); and Romain Causse, Bernard Séret, Guy Duhamel, Patrice Pruvost, Zora Gabsi and Claude Ferrara (Muséum national d'Histoire naturelle, Paris, France); Simon Weigmann, Ralf Thiel and Matthias Stehmann (ZMH, Hamburg, Germany); Ronald de Ruiter and Martien van Oijen (RMNH, Leiden, Netherlands); Gento Shinohara, Masanori Nakae, Fumihito Tashiro and Eri Katayama (NSMT, Tokyo, Japan); Hisashi Imamura, Mamoru Yabe, Kazuhiro Nakaya, Junro Kawuichi, Keisuke Ogimoto and other students (HUMZ, Hokkaido, Japan); Atsuko Yamaguchi and Keisuke Furumitsu (Nagasaki University, Japan); and Hsuan-Ching Ho (NMMBP, Taiwan). I would also like to thank Bob Ward (CSIRO), Gavin Naylor, Shannon Corrigan and Elisabeth Rochel (College of Charleston, South Carolina) for their invaluable molecular work which has been cited in this paper. I would also like to thank the following people for assisting with obtaining specimens in the field: Alec B.M. Moore (RSK, UK); Fahmi (LIPI, Indonesia); Dharmadi (RCFMC, Indonesia); John Stevens (CSIRO, Hobart). John Pogonoski (CSIRO, Hobart) captured meristic information and provided editorial feedback on the final manuscript. Specimens from Indonesia were collected during surveys funded by the Australian Centre for International Agricultural Research (ACIAR).

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