

Phylogeny and Biogeography of the Eleotrid Genus *Hypseleotris* (Teleostei: Gobioidi: Eleotridae), With Redescription of *H. cyprinoides*

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ABSTRACT. *Hypseleotris* includes eight described and four undescribed species of small, laterally compressed gobioid fishes, unusual among them in that they superficially resemble cyprinids. One species is widespread throughout the fresh and brackish waters of the old world southern hemisphere; the remaining eleven species form a radiation in Australia and southern New Guinea. In this study, morphological and molecular characters are combined in a total evidence phylogenetic analysis in order to investigate the patterns of diversification in Australian and other *Hypseleotris*, including a consideration of biogeography. The species *H. dayi*, *H. tohizonae*, *H. leuciscus*, and *H. guentheri* are synonymized with *H. cyprinoides*. Within Australian *Hypseleotris*, *H. klunzingeri* is the most basal taxon, and the remainder of the species fall into two groups: a radiation in Western Australia and the Northern Territory, and a second radiation in the eastern, central, and southeastern river drainages.

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Hypseleotris Gill, 1863 (carp gudgeons) is a small genus of eleotrid fishes, consisting of approximately twelve species, although confusion surrounds the status of some taxa. The genus is diagnosed by several morphological characters, including a strongly laterally compressed head and body, a small mouth not reaching the anterior border of the orbit, an elongate body cavity with several anal pterygiophores preceding the first vertebral hemal spine, and an ovoid blotch at the dorsal base of the pectoral fin. *Hypseleotris* species have a broad range, occurring from South Africa to Japan, through southeast Asia to Australia. The majority of species

are freshwater, although widespread taxa have some salt-water tolerance (Allen *et al.*, 2002). The most widespread species is *H. cyprinoides* (Cuvier & Valenciennes, 1837), recorded from southeast Asia to Japan and west to the Reunion Islands. Additional related taxa occur in South Africa and Madagascar, (*H. dayi* Smith, 1950 and *H. tohizonae* Steindachner, 1880, respectively), although Hoesé (1986) has suggested these may be conspecific with *H. cyprinoides*. Four species were described from the Philippines (Herre, 1927: *H. agilis*, *H. bipartita*, *H. modestus* and *H. pangel*); these are also considered by some (D.

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