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## ***Kyphosus gladius*, a new species of sea chub from Western Australia (Teleostei: Kyphosidae), with comments on *Segutilum klunzingeri* Whitley**

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### **Abstract**

Two morphologically distinct forms of the nominal species *Kyphosus sydneyanus* (Günther, 1886) (Kyphosidae) were discerned while collecting off Western Australia near Perth in 2009. A morphological comparison with recognized species of *Kyphosus* and an analysis of mtDNA (Cytochrome *b*, control region, 12S and 16S) and three nDNA markers (RAG1, RAG2 and Tmo-4C4) demonstrated that the more elongate of these forms was an undescribed species of *Kyphosus*. It differs from congeners in the Pacific and Indian Oceans in the combination of the following characters: green bar on the operculum, 11–12 dorsal soft fin rays, depth of caudal peduncle 9.9–11.8 % SL, body depth 33.3–41.6 % SL, 55–63 scales in lateral line, 12–16 interorbital scales, 44–55 pored scales in the lateral line, 3–5 gill rakers on upper limb of first gill arch internally, 11–15 gill rakers on lower limb of first gill arch internally, 15–19 total gill rakers on first gill arch, and by having 10 precaudal vertebrae and 16 caudal vertebrae. Examination of museum specimens and available underwater photographs suggests that the new species is restricted to Western Australia, and to date it has been recorded between the Houtman Abrolhos Islands and Albany. Discrepancies between the type specimen and original description of *Segutilum klunzingeri* Whitley made it impossible to determine the relationship between this taxon and the new species from Western Australia, and thus we consider *S. klunzingeri* a *nomen dubium*.

**Key words:** Indian Ocean, chub, reef fish, marine herbivore, drummer

### **Introduction**

The circum-global genus *Kyphosus* Dorsuarius Lacepède (ex Commerson 1803) currently contains 12 valid species (Eschmeyer 2012), and is the most speciose genus in the subfamily Kyphosinae (Nelson 2006). These fishes generally occur in relatively shallow depths (0–20 m depth) on tropical and temperate reefs, where they feed on macroalgae (Clements & Choat 1997). Australian waters appear to boast the highest diversity, with six species: *Kyphosus bigibbus* (Lacepède 1801), *K. cinerascens* (Forsskål 1775), *K. cornelii* (Whitley 1944), *K. pacificus* Sakai & Nakabo 2004, *K. sydneyanus* (Günther 1886), and *K. vaigiensis* (Quoy & Gaimard 1825) (Allen & Swainston 1988, Kuitert 1996, Hoese & Bray 2006). *Kyphosus* species can contribute a substantial component of reef fish biomass in Australasian waters, and a study from Western Australia concluded that >50% of the fish biomass could be made up by *Kyphosus* species (Howard 1989).

*Kyphosus* species have been the subject of considerable taxonomic confusion, to the extent that some species are said to be indistinguishable in the field (e.g. Humann 1994). Most species display a relatively uniform brownish-grey coloration, and meristic characters often overlap between species. Such colour characters as exist in the field are often lost with preservation, making it difficult to determine the identity of specimens in collections, and thus relate type material to field characters. Species from the Pacific and Indian Oceans were revised in a series of publications by Sakai and Nakabo (1995, 2004, 2006, 2008) and Nakabo (2002), but no generic revision has been conducted.

Twenty-three specimens (205–457 mm SL) collected in Western Australia at Rockingham Point near Perth, at Cape Naturaliste, and at the Houtman Abrolhos Islands in 2009 and 2010 appeared distinct from silver drummer (*Kyphosus sydneyanus*) in several characters, including a more bluish body coloration, a more elongate body and a more slender caudal peduncle. *Kyphosus sydneyanus* specimens were collected at the same time at each of these