

Larvae, Adults and Relationships of the Monotypic Perciform Fish Family Lactariidae

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ABSTRACT. The development of *Lactarius lactarius* larvae is described based on three relatively poorly preserved specimens, 6 to 23 mm SL. Aspects of adult external morphology and osteology relevant to assessing the relationships of this taxon are also described. Larvae are notable for their limited head spination, large swim bladder and unusual pigmentation. They otherwise resemble carangids. *Lactarius* possess numerous adult autapomorphies. Previous suggestions that *Lactarius* is a member of the Sciaenidae, Scombridae or Serranidae are rejected. The conventional placement of *Lactarius* near the carangoid fishes cannot be rejected. A number of larval and adult characters indicate that *Lactarius* and *Mene* are the second and first sister groups, respectively, of the carangoid fishes *sensu* Smith-Vaniz and Johnson. However, none of these characters are unequivocal, and the relationships of *Lactarius* remain uncertain pending availability of larvae of the carangoid *Nematistius* and more larvae of *Lactarius*.

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The false trevally or milk trevally, *Lactarius lactarius* (Bloch & Schneider, 1801) is a pelagic, nearshore, marine fish (Fig. 1) that occurs over soft bottoms on the continental shelf from the Persian Gulf eastward to Taiwan and the Admiralty Islands, and south to Australia and Fiji (Springer, 1982). Kumaran's (1984) report of its occurrence along the east African coast and islands in the western Indian Ocean needs confirmation. The species is common and of commercial importance throughout much of its range (however, Day, 1878, considered the flesh 'insipid'), and is frequently taken in trawls and seines in shallow water.

The relationships of this species have been a matter of dispute since the original description. Bloch & Schneider (1801) described the species as a member of

Scomber; however, in that genus they also included many pelagic marine species today distributed among several families, including the Scombridae, Carangidae, and Pomatomidae. Cuvier (1829) placed the species in the carangid genus *Seriola*. Valenciennes (*in* Cuvier & Valenciennes, 1833) described the genus *Lactarius* with *Scomber lactarius* as the type species, and placed it in his "tribe Scomberoides" among such genera as *Lichia* and *Seriola* (now in the carangoid family Carangidae), *Pomatomus* (now in the scombroid family Pomatomidae), and *Nomeus*, *Naucrates* and *Psenes* (now in the stromateoid family Nomeidae). Günther (1860) placed *Lactarius* in the Carangidae, but noted it "approaches Sciaenidae", and Day (1878) did not disagree. Seale (1910) agreed with Bloch & Schneider that *Lactarius* was