Revision of the Indo-Pacific cardinalfish genus *Siphamia* (Perciformes: Apogonidae)

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Abstract

The Indo-Pacific apogonid genus Siphamia Weber 1909 is unique among cardinalfishes in having a bacterial bioluminescent system and spinoid scales. Light is produced by luminous bacteria found in a small pocket connected to the gut in the abdominal cavity and in a sac on each side of the tip of the tongue. Siphamia consists of 23 small species many of which are associated with invertebrates such as sea urchins, crown-of-thorns starfish and coral. Species of this genus fall into two main groups with different dark pigment pattern of the longitudinal translucent muscle acting as a light organ that diffuses light along the ventral edge of the body. The S. tubifer group, with a striated light organ, includes S. arabica, new species, from the Gulf of Oman; S. argentea from the Philippines and northern Western Australia; S. fraseri, new species, from New Caledonia, Tonga and Fiji; S. fuscolineata from the Marshall and Line islands; S. gorenii, new species, from the southern Red Sea; S. guttulata from Darnley Island, Queensland; S. jebei from the western Pacific; ranging from the Philippines to Western Australia and east to the Caroline Islands, Fiji, and Tonga; S. majimai from the Ryukyu and Ogasawara islands to northwestern Australia, ranging eastward to New Caledonia and Tonga; S. mossambica from the western Indian Ocean; S. randalli, new species, from the Society and Cook islands; S. spinicola, new species, from Biak in eastern Indonesia, Papua New Guinea, Woleai Atoll, Vanuatu, New Caledonia and the Chesterfield Islands; S. stenotes, new species, from the Triton Bay area of Irian Jaya Barat Province of Indonesia; and S. tubifer ranging widely in the Indo-West Pacific from the Red Sea to Madagascar and east to Vanuatu. The S. tubulata group, with a dark-dotted light organ, includes S. brevilux, new species, from Papua New Guinea; S. cephalotes from southern Australia; S. corallicola from Indonesia, Sabah, and Timor Sea; S. cuneiceps from Western Australia and the east coast of Queensland; S. cyanophthalma, new species, from the Philippines, Palau, Indonesia, and Papua New Guinea; S. elongata from the Philippines and Brunei; S. fistulosa from Java, Sumbawa and Komodo, Indonesia, and Brunei; S. roseigaster from Western Australia, ranging along the northern and eastern coast of Australia south to Sydney Harbour, New South Wales; S. senoui, new species, from the Ryukyu Islands, Japan; and S. tubulata from the Papua Barat Province, Indonesia, south coast of Papua New Guinea, northern Western Australia and Queensland.

Key words: bioluminescence, distribution, new species, phylogenetic relationship, spinoid scales, taxonomy

REVISION OF SIPHAMIA