

# Report of *Apogonichthyoides sialis* (Perciformes: Apogonidae) from the west coast of India

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*The cardinal fish, Apogonichthyoides sialis, previously known from the eastern Indian Ocean and western Pacific, is reported from the south-west coast of India (Kerala coast). The specimens are described and figured.*

**Keywords:** *Apogonichthyoides sialis*, distribution extension, Arabian Sea, south-western India

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Cardinalfish (Apogonidae) is a speciose family of marine teleosts with about 23 genera and 347 valid species, of which most occur in shallow water in tropical and subtropical marine environments and a few species occur in brackish and fresh water environments (Nelson, 2006; Fraser & Allen, 2010). Apogonid fish are usually small in size (<100 mm total length) but a few species in the genera *Apogon*, *Holapogon*, *Apogonichthyoides*, *Cheilodipterus*, *Glossamia* and *Pseudamia* grow to larger sizes (Fraser, 1973; Froese & Pauly, 2011).

The genus *Apogonichthyoides*, which was resurrected from *Apogon*, contains 19 valid species (Fraser & Allen, 2010). The characteristics of the genus are: body colour brown to brownish-black; head and body usually with dark (brown or black) spots which are sometimes stripe-like; a dark cheek line and usually two body bars. An ocellus may be present below the lateral line on the body; one or more bars on the caudal peduncle or a spot on the base of the caudal fin are often present (Fraser & Allen, 2010).

Species of the '*Apogonichthyoides nigripinnis*' complex have a similar colour pattern with a dark colour and a spot on the caudal peduncle. The species known from the western Indian Ocean '*A. nigripinnis*' group are *A. enigmaticus*, *A. heptastygma*, *A. pharaonis*, *A. pseudotaeniatus*, *A. taeniatus* and *A. nigripinnis* from the Indo-West Pacific (Fraser & Allen, 2010; Froese & Pauly, 2011).

*Apogonichthyoides sialis* (Jordan & Thompson, 1914), originally described as *Amia sialis* from Suruga Bay (Japan) is distributed from the western Pacific (including Japan, Taiwan and China) to the east coast of India (Gon, 2000). On 3 August 2011 five specimens of *A. sialis* were collected from demersal fish trawl landings at Munambam Fisheries Harbour, south-western India. The main part of the catch comprised *Nemipterus randalli* and *N. japonicus*. The morphometric and meristic characters of the specimens collected agree well with the description of Gon (2000), but a few characteristics overlapped with the present specimens which

were: colour variants, probably due to habitat; dark colour of the dorsal, anal and caudal fins versus paler in the living photographs of *A. sialis*. The present work extends the distribution of *A. sialis* to the west coast of India.

## SYSTEMATICS

### APOGONIDAE

*Apogonichthyoides sialis* (Jordan & Thompson, 1914)

### MATERIALS EXAMINED

*Apogonichthyoides sialis* (DNR CMFRI. GB. 31. 9. 2. 1), (5 specimens, 89.4–102.8 mm standard length), trawls, off Cochin, Kerala, India, 20–70 m depth.

### DIAGNOSIS

Dorsal fin rays VII + I, 9; anal fin rays II, 8; pectoral fin rays 15–16; lateral-line scales 23–24 + 2–4; predorsal scales 4, dorsal origin to LL 3 scales. Rudiments and gill-rakers 3 + 2 – 8–9 + 4–6, 10–11 rakers, total 5 + 12–15; two dark body bars from base of each dorsal fin; small basicaudal spot.

### DESCRIPTION

Proportional measurements in percentage of standard length (SL) are given (Tables 1 & 2). A medium sized *Apogon*, with dark colour and very small spots and a black spot on caudal (Figure 1). Body depth 2.3–2.4 in SL; head length (HL) 41.9–45% SL, 2.2–2.4 in SL; snout length 4.1–4.5 in HL; upper jaw length 19.2–19.7% SL; third dorsal-fin spine 22.3–23.6% SL; second dorsal spine 18.7–20.4% SL; pelvic-fin spine 15.6–18.0% SL; caudal peduncle depth (CPD) 16.1–17.5% SL; caudal peduncle length (CPL) 19.5–24.8% SL, 4–5.6 in SL; caudal spot diameter 4.8–5.6% SL. Eye diameter 3.5–3.9; interorbital 4.2–4.7; upper jaw 2.1–2.4; third dorsal spine 1.8–2.0; second anal spine 4.6–6.1; pelvic spine 2.4–2.9, all in HL (Tables 1 & 2). Preoperculum finely serrated. Pelvic bases connected by a membrane (interpelvic space

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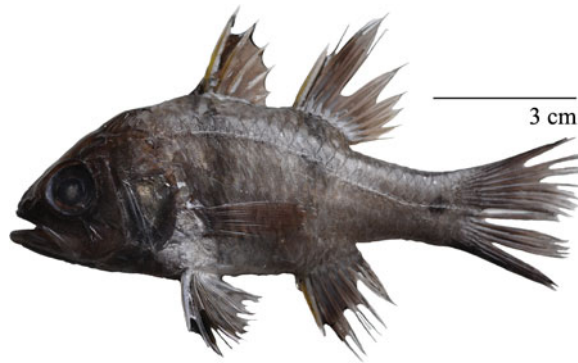


Fig. 1. *Apogonichthyoides sialis*, Arabian Sea, collected off Cochin, India.

covered). Large mouth, villiform teeth. Pectoral fin nearly reaches to anal fin origin in vertical. Caudal fin emarginate.

#### COLOUR

Colour in alcohol: body grey-brown with minute small dark spots and with two distinct dark bars, one under anterior base of each dorsal fin; intestine pale.

Colour of fresh specimens: body dark; dark bars from dorsal to ventral side, reaching to level of lower pectoral-fin base or slightly lower; a distinct dark caudal spot.

#### REMARKS

A similar species from western Indian Ocean, *A. pseudotaeniatus* (Gon, 1986) described from the Red Sea can be

Table 1. Morphometric measurements of *Apogonichthyoides sialis* (Jordan & Thompson, 1914) from south-west coast of India (in % standard length).

Characters	Range
Total length (mm)	115.2–133.6
Standard length (mm)	89.4–102.8
Head length	41.9–45.3
Body depth	41.4–44.4
Width of the body	17–17.9
Snout length	10–10.7
Eye diameter	11–12.5
Inter orbital width	9.4–10.3
Length of upper jaw	19.2–19.7
First dorsal fin base length	17.4–20.1
First dorsal spine length	2.1–4.4
Second dorsal spine length	7.1–9.3
Longest dorsal spine length (3)	22.3–22.6
Second dorsal fin base length	15.5–17
Second dorsal fin spine length	18.7–20.4
Longest dorsal ray	21.9–31.3
Anal fin base length	14.8–16
Anal fin length	26.4–28.3
First anal spine length	3.4–5.1
Second anal spine length	15.6–16.7
Longest anal ray length	24.2–29.8
Pectoral fin length	25.8–28.3
Pelvic fin length	25–31.5
Pelvic spine length	15.6–18
Caudal peduncle length	19.5–24.8
Depth of caudal peduncle	16.1–17.5
Snout to first dorsal-length	44.6–48.3
Snout to second dorsal-length	65.1–68.2
Snout to pelvic origin-length	39.2–42.3
Caudal spot diameter	4.8–5.6

Table 2. Ranges of measurements (in % standard length) of five *Apogonichthyoides sialis* 89.4–102.8 mm (present study) and *Apogonichthyoides sialis*, 61.4–96.7 mm and four *Apogonichthyoides pseudotaeniatus*, 56.9–110 mm from Gon, 2000.

	<i>A. sialis</i>	<i>A. pseudotaeniatus</i>	<i>A. sialis</i> (present study)
Head length	40–43	42–46	41.9–45.3
Upper jaw	18–20	20–22	19.2–19.7
Third dorsal-fin spine	21–27	18–22	22.3–23.6
Second dorsal spine	19–23	15–19	18.7–20.4
Pelvic-fin spine	18–19	16–17	15.6–18.0
Caudal peduncle depth	16–19	14–17	16.1–17.5
Caudal peduncle length	24–24	21–23	19.5–24.8
Caudal spot diameter	3.5–6.7	2.6–3.6	4.8–5.6

confused with *A. sialis* in colour pattern and morphometry, except for a few characters such as: third dorsal spine 1.9–2 in HL (2.0–2.45 in *A. pseudotaeniatus*) and smaller dark basicaudal spot, spot diameter 3.5–5.2 in CPD (4.6–6.1 in *A. pseudotaeniatus*). Moreover *A. pseudotaeniatus* has a blackish intestine and usually 14–15 pectoral fin rays, whereas *A. sialis* has a pale intestine and usually 15 pectoral fin rays.

Day's (1875) *Fishes of India*, plate 16 figure 9 misidentified as *A. bifasciatus* is *A. sialis*. There are no specimens of *A. pseudotaeniatus* reported from the eastern Indian coastline, but Gon (1986) suggested Day's (1875) report of *A. taeniatus* was *A. pseudotaeniatus* with abnormality which could be *A. sialis*. *Apogonichthyoides pseudotaeniatus* is probably restricted to the Red Sea, Arabian coast and the Persian Gulf and prefers reefs found at 5–30 m depth (Gon & Randall, 2003), whereas present *A. sialis* specimens were collected from the south-western coast of India, 20–70 m depth. Suresh & Thomas (2006) reported *A. pseudotaeniatus* from the west coast of India which also could be *A. sialis*. This report of *A. sialis* from the south-western coast of India indicates an extension of distribution from its known localities.

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