

On the Validity of the Mugiloidid Fish *Parapercis robinsoni* Fowler

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Fowler (1932) described the mugiloidid fish *Parapercis robinsoni* from a single specimen 286 mm in total length collected off the coast of Natal, South Africa. Smith (1949) recognized this species in "Sea Fishes of Southern Africa", but added that it is probably identical to *Parapercis nebulosa*, for which he also provided a species account. *P. nebulosa* was described (as *Percis nebulosa*) by Quoy and Gaimard (1825) from Shark Bay, Western Australia.

In his revision of the genus *Parapercis*, Cantwell (1964) placed *P. robinsoni* in the synonymy of *P. nebulosa*. He recognized *P. emeryana* (Richardson), which was named from Depuch Island, northwestern Australia. Schultz (1968) followed Cantwell in the classification of these taxa and extended the range of *P. nebulosa* to the coast of Somalia. Allen (1976) listed both *P. nebulosa* and *P. emeryana* from Western Australia.

In the present paper we will show that *P. robinsoni* is valid and *P. emeryana* is a junior synonym of *P. nebulosa*.

The holotype of *Percis nebulosa* was examined by the senior author at the Museum National d'Histoire Naturelle in Paris.

Böhlke (1984) noted that the holotype of *Parapercis robinsoni* could not be found at the Academy of Natural Sciences of Philadelphia, nor could two other types of the four new species from Natal described by Fowler in his 1932 paper. The Natal Museum had no types of fishes. The small collection of marine fishes that it had (mainly obtained by H. W. Bell-Marley) was transferred to the J. L. B. Smith Institute of Ichthyology (P. C. Heemstra, pers. comm.). The type of *P. robinsoni* is therefore presumed lost. Mrs. Böhlke stated that another specimen of the same species from Natal, though smaller than the holotype, is available at the Academy as a possible future neotype. We have obtained this specimen on loan for this purpose.

We have examined specimens of these two species at the Academy of Natural Sciences of

Philadelphia (ANSP); Australian Museum, Sydney (AMS); Bernice P. Bishop Museum, Honolulu (BPBM); British Museum (Natural History), London (BM[NH]); Museum National d'Histoire Naturelle, Paris (MNHN); Queensland Museum, Brisbane (QM); Western Australian Museum, Perth (WAM); and the U.S. National Museum of Natural History, Washington, D.C. (USNM).

We present below accounts of *Parapercis nebulosa* and *P. robinsoni*, and in Table 2 we document the differences of these two species.

Parapercis nebulosa

(Quoy et Gaimard)

(Figs. 1, 2)

Percis nebulosa Quoy and Gaimard, 1825: 349 (type-locality, Baie des Chiens-Marins=Shark Bay, Western Australia).

Percis Emeryana Richardson, 1842: 130 (type-locality, Depuch Island, Western Australia).

Percis Coxii Ramsay, 1884: 179 (type-locality, Port Jackson, New South Wales).

Percis concinna De Vis, 1885: 546 (type-locality, Moreton Bay, Queensland).

Material examined. WESTERN AUSTRALIA: Shark Bay, holotype of *Percis nebulosa*, MNHN 3105, 176 mm SL; BM(NH) 1884.5.1.3, 183 mm SL; BM(NH) 1887.5.16.5, 109 mm SL. Pt. Walcott, BM(NH) 1889.5.13.9, 147 mm SL. Exmouth Gulf, AMS IB.3022, 113 mm SL; QM I.10310, 93.9 mm SL; WAM P.25095-021, 5: 120–177 mm SL. Carnarvon (24°53'S, 113°40'E), BPBM 28198, 5: 143–157 mm SL. Hampton Harbor, USNM 179801, 108 mm SL. EASTERN AUSTRALIA: Sydney Harbour, N.S.W., holotype of *Percis coxii*, AMS A.14361, 143.8 mm SL; AMS I.18199-001, 66.5 mm SL. Seal Rocks, N.S.W., AMS I.17279-002, 151.6 mm SL. Mouth of Clarence River, N.S.W., AMS I.16486-001, 4: 150.1–197 mm SL. Moreton Bay, AMS I.16945-002, 2: 68.5–75.0 mm SL; MNHN 1981-57, 3: 133–144 mm SL. Mouth of Wide Bay, S Queensland, AMS I.11025, 144.8 mm SL. Great Sandy Strait, S Queensland, QM I.742, 180.6 mm SL. NW of Nymph Island (14°33'S, 145°06'E), AMS I.24604-001, 3: 83.5–101.8 mm SL. Princess Charlotte Bay, AMS I.20958-032, 119.9 mm SL. E of Capt. Billy's Creek (11°37'S, 142°56'E), AMS 24605-001, 7: 129.9–175.5 mm SL. E of Turtle Head Island, Cape York, AMS 24603-001, 106.9 mm SL. Palm Island, QM I.13444, 164.4 mm SL. Warrior Reefs, Torres Strait (9°40'S, 142°56'E), QM I.16357, 172.7 mm SL. NORTHERN AUSTRALIA: North West Shelf,

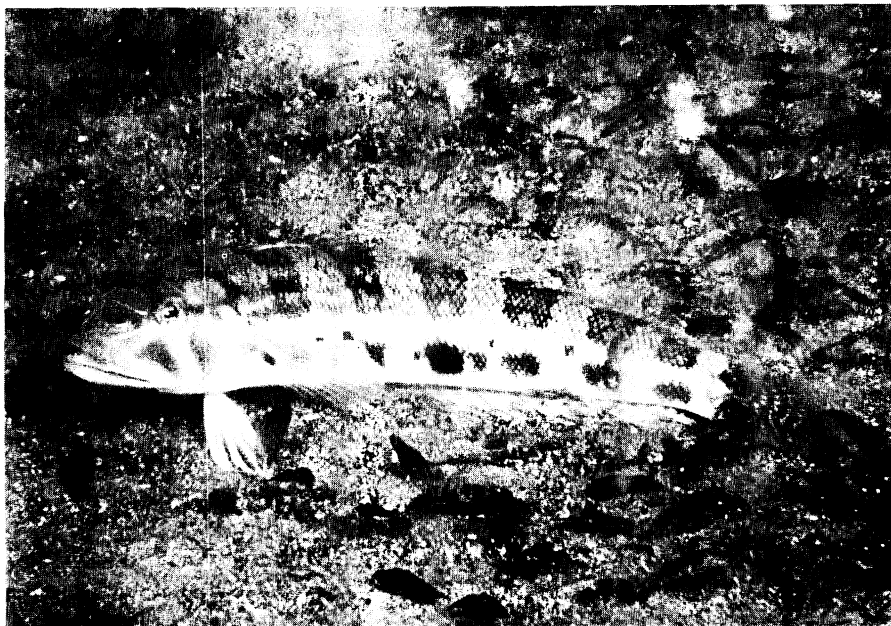


Fig. 1. *Parapercis nebulosa*, estimated 160 mm SL, Camp Cove, Sydney Harbour, New South Wales (under-water photo by Rudie H. Kuiter).

AMS I.22834-001, 200 mm SL; Arafura Sea, AMS I.21850-007, 128.2 mm SL. No locality: Voyage of "Herald", BM(NH) 1958.12.27.41, 142 mm SL.

Diagnosis. Dorsal rays V, 22; anal rays I, 18; pectoral rays 17 (rarely 16); lateral-line scales 68–76 (to base of caudal fin); gill rakers 6–8+10–13 (totals 16–21); three pairs of enlarged recurved canine teeth in outer row anteriorly in lower jaw (the lateroposterior pair largest); 2–8 short stout conical teeth on vomer; no palatine teeth; third dorsal spine longest; last membrane of spinous portion of dorsal fin attached to first soft ray at a height about one-fourth to one-third length of last dorsal spine; fleshy interorbital width nearly equal to orbit diameter (1.1–1.3 in orbit of adults); caudal fin varying from slightly emarginate in young to deeply emarginate with filamentous lobes in adults (caudal concavity of adults 2.3–5.3 in head).

Color in alcohol: six quadrangular dark brown spots containing small paler areas along back, separated by a mottled pale midlateral stripe from six large roundish dark spots along lower side aligned with the bars; a dusky spot between each of the large dark spots on lower side; a narrow irregular dark bar on nape; a dark bar from eye to corner of preopercle and

another on side of snout; most individuals with three dark lines (blue in life) across interorbital space, and two passing anteriorly from orbit; a narrow dark band on posterior two-thirds of lower lip; spinous portion of dorsal fin jet black between first and fifth spines; soft portion of fin and anal fin with alternating small dark and pale spots on each membrane from base to margin (spots often not evident on preserved specimens); caudal fin with two large dark brown spots at base, one above the other, and irregular vertical pale lines along fin membranes; pectoral fins pale with a large dark spot or short bar at base; pelvic fins pale.

Remarks. Quoy and Gaimard (1825) described *Percis nebulosa* from a single specimen 176 mm in SL now in the Museum National d'Histoire Naturelle, Paris. The counts and measurements from this fish are given in Table 1. No color markings are apparent on the holotype except a large dark area on the spinous portion of dorsal fin to the fifth spine. Quoy and Gaimard reported a silvery spot at the base of the pectoral fin. This spot, however, appears to be only a site where the scales are lost, hence paler than adjacent scaled areas.

The type of *Percis emeryana* Richardson was

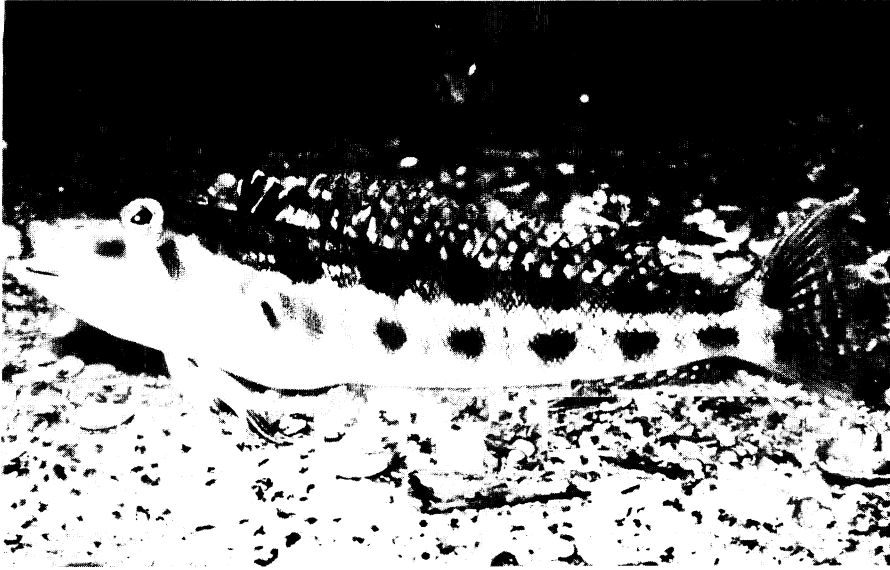


Fig. 2. *Parapercis nebulosa*, estimated 90 mm SL, Seal Rocks, New South Wales (underwater photo by Rudie H. Kuiter).

Table 1. Counts and proportional measurements (as percent of the standard length) of the holotype of *Parapercis nebulosa* and the neotype of *P. robinsoni*.

	<i>P. nebulosa</i>	<i>P. robinsoni</i>
Standard length	176 mm	175 mm
Dorsal rays	V, 22	V, 22
Anal rays	I, 18	I, 18
Pectoral rays	17	17
Lateral-line scales	70	80
Gill rakers	6+12	3+13
Body depth	16.5	18.6
Body width	14.2	17.4
Head length	27.5	28.3
Snout length	10.9	10.2
Orbit diameter	5.9	6.7
Fleshy interorbital width	5.7	4.6
Upper jaw length	11.3	11.4
Caudal peduncle depth	7.7	9.5
Length of longest dorsal spine	6.2	5.9
Length of longest dorsal ray	11.9	12.0
Length of longest anal ray	9.9	10.4
Caudal fin length	24.4	16.9
Caudal concavity	6.5	0
Pectoral fin length	15.9	17.0
Pelvic fin length	16.5	19.4

not located; A. C. Wheeler (pers. comm.) reported that it is not in the British Museum (Natural History). Richardson's description, however, leaves little doubt that it is the same as *P. nebulosa*, as was first noted by Günther (1860).

We have examined specimens of *P. nebulosa* only from Australia, from Sydney on the east coast to Shark Bay on the west, with the exception of one (MNHN A.109, 140 mm SL) from "l'île de Bourbon" (=Réunion) which was reported as *Percis nebulosa* by Cuvier in Cuvier and Valenciennes (1829). This specimen is in poor condition with half the caudal fin missing. It has the same meristic data as *P. nebulosa*. The color pattern is very faint, but one can see seven broad dark bars on the dorsal half of the body and about 11 faint narrower bars on the ventral half; there is a black spot covering the first three and half of the fourth interspinous membranes of the dorsal fin. Although this specimen seems to be conspecific with *nebulosa*, we believe more material should be obtained from the Mascarene Islands or Madagascar to confirm the record. Günther (1860) listed "Ile de France" (=Mauritius) as a locality for *P. nebulosa*, but he did not mention Réunion, thus he may have written Ile de France by mistake. There is no specimen of this species from Mauritius in the British Museum (Natural

History). Bleeker and Pollen (1874) recorded *Parapercis nebulosa* from Madagascar and Réunion in their Appendix B, but by name only. Dr. M. Boeseman has informed us that no specimens of *Parapercis* from Madagascar from the collections of Pollen or Van Dam exist in the fish collection of the Rijksmuseum van Natuurlijke Historie at Leiden.

As will be discussed in the account of *P. robinsoni* below, the records of *P. nebulosa* from East Africa, Aldabra, Seychelles, Gulf of Oman, and the Persian Gulf represent misidentifications of *P. robinsoni*.

Hiyama and Yasuda (1972) published a color painting of *Parapercis nebulosa* by Kumada, giving the distribution as western Australia, eastern Australia, and southern Africa. Burgess and Axelrod (1974) reproduced the painting in their "Pacific Marine Fishes", Book 4, subtitled "Fishes of Taiwan and Adjacent Waters". This species, however, is not known from Taiwan or adjacent waters.

P. nebulosa inhabits sedimentary substrata, often near reefs. Off eastern Australia it is found adjacent to coastal reefs, fringing reefs of continental islands, and inner reefs of the Great Barrier Reef. Although occasionally encoun-

tered in water as shallow as 5 m (N. E. Milward, pers. comm.), it is essentially a deeper water species, appearing to be most abundant in the depth range of 15 to 58 m.

Grant (1982) wrote that this species grows to 340 mm total length, adding that it is an acceptable table fish. We have not examined any specimens approaching this size, however. Our largest measures 249 mm total length (200 mm SL).

Parapercis robinsoni Fowler
(Figs. 3–5)

Parapercis robinsoni Fowler, 1932: 261, fig. 5 (type-locality, Natal).

Material examined. SOUTH AFRICA: Durban, Natal, neotype of *Parapercis robinsoni*, ANSP 53451, 175 mm SL; BM(NH) 1900.5.9.37, 159 mm SL; USNM 200720, 183 mm SL. ALDABRA: MNHN 54-89, 102.5 mm SL. SOMALIA: 11°21'N, 51°9'E, USNM 200718, 177 mm SL. PERSIAN GULF: BM(NH) 1900.5.9.37, 159 mm SL; MNHN 1902-153, 164.5 mm SL; 26°38'N, 51°7'E, USNM 266972, 6: 104–159 mm SL; 18 miles ENE of Bahrain, BPBM 21276, 2: 105–138 mm SL; Qatar, channel to Doha Harbor, BPBM 21496, 65.9 mm SL; Bahrain, BPBM 29558, 9: 105.2–153.5 mm SL; Saudi Arabia, Tarut Bay, USNM 147985, 32: 60–133.5 mm SL; USNM

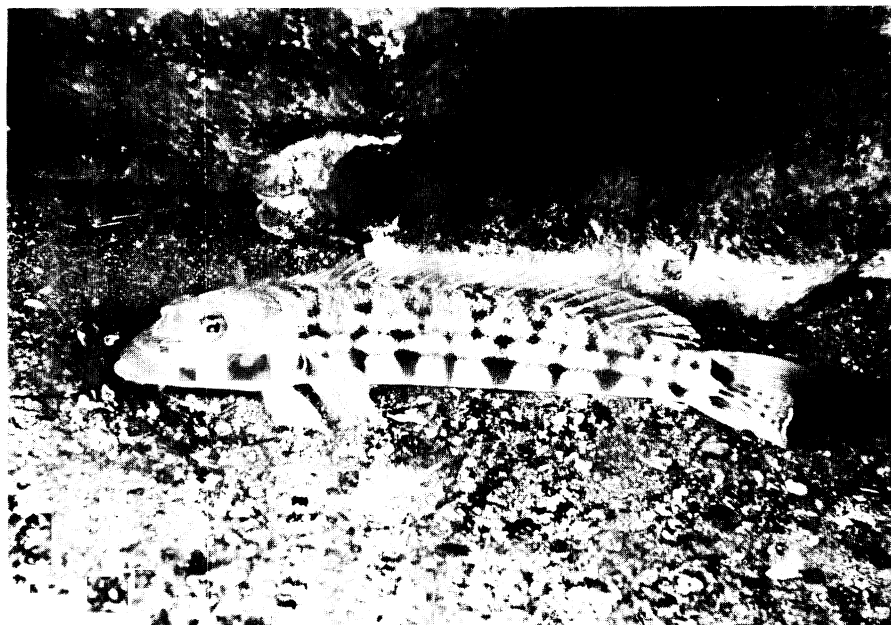


Fig. 3. *Parapercis robinsoni*, estimated 230 mm SL, Durban, South Africa (underwater photo by John E. Randall).

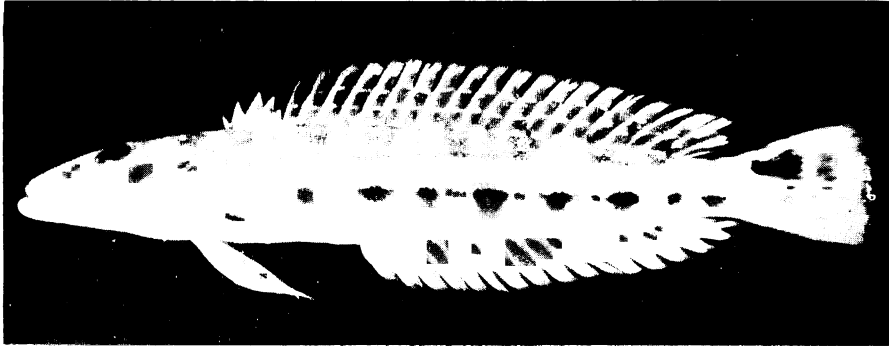


Fig. 4. *Parapercis robinsoni*, BPBM 29558, 131.5 mm SL, Bahrain (photo by John E. Randall).

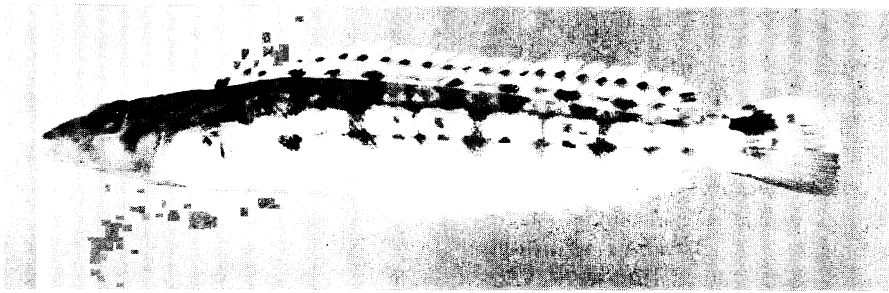


Fig. 5. *Parapercis robinsoni*, BPBM 21496, 65.9 mm SL, Qatar, (photo by John E. Randall).

195844, 151.5 mm SL; USNM 196492, 2: 76–77 mm SL; 10°W of Dubai, BM (NH) 1900.1.31.22, 109 mm SL; Mikran Coast, BM(NH) uncataloged, 173 mm SL. GULF OF OMAN: Muscat, BM(NH) 1887.11.11.223, 198 mm SL. PAKISTAN: Karachi, BM(NH) 1898.6.29.70.1 and 1898.12.24, 15–16, 4: 93–194 mm SL.

Diagnosis. Dorsal rays V, 21–23 (usually 22); anal rays I, 18 or 19 (rarely 19); pectoral rays 16 or 17 (rarely 16); lateral-line scales 77–84 (to base of caudal fin); gill rakers 2–4+9–13 (totals 12–16); three pairs of enlarged recurved canine teeth in outer row anteriorly in lower jaw (the lateroposterior pair largest); 3–5 short, stout teeth on vomer; no palatine teeth; third and fourth dorsal spines longest, subequal; last membrane of spinous portion of dorsal fin attached to first soft ray at a height about one-fourth to one-third length of last dorsal spine; fleshy interorbital width of adults 1.45–1.65 in orbit diameter; caudal fin truncate to slightly emarginate.

Color in alcohol: Eight V-shaped dark brown bars along back (the last on caudal peduncle small), the lighter interspaces with a

few small brown blotches; a dark-edged, mid-lateral pale stripe nearly as broad as orbit diameter crossed by about eight or nine dusky bars of varying width, these confluent with a series of subtriangular dark brown spots on lower part of body; an irregular transverse brown bar on nape; two dark spots behind eye, the more anterior with a broad diffuse dusky bar below it; a series of faint dark bands across interorbital space and dorsal part of snout; spinous portion of dorsal fin with a dusky band basally, darkest on first two membranes; soft portion of dorsal fin pale with a dusky spot basally on rays 2, 4, 6, 9, 11, 13, 16, 18, and 20; anal fin pale; caudal fin pale dorsally, dusky ventrally, with a large horizontally elongate black spot on upper basal half of fin, a smaller less distinct dark spot on lower basal half of fin and several very small blackish spots centrally in fin; pectoral fins pale with a dark spot at base bisected by a pale vertical line; pelvic fins pale laterally, blackish medially.

Remarks. As mentioned above, the holotype of *Parapercis robinsoni* is not extant. We have designated a specimen from Durban (ANSP

Table 2. Characters which separate *Parapercis nebulosa* and *P. robinsoni*

	<i>P. nebulosa</i>	<i>P. robinsoni</i>
Lateral-line scales	68–76	77–84
Gill rakers	16–21	12–16
Fleshy interorbital width	Nearly equal to orbit diameter	About 1.4 in orbit diameter
Caudal fin of adults	Deeply emarginate with filamentous lobes	Slightly rounded to slightly emarginate
Pigmentation of back	6 quadrangular dark bars	8 V-shaped dark bars
Pale midlateral band	Without dark edges	With blackish dorsal and ventral edge
Pigmentation of lower lip	A narrow dark margin on posterior two-thirds of lip	No dark margin on lip
Pigmentation of spinous portion of dorsal fin	Black between first and fifth spines	No black on fin (only a dusky band basally)

53451, 175 mm SL) as the neotype. Counts and measurements are given for this specimen in Table 1.

Before *P. robinsoni* was named, this species was identified as *P. nebulosa*. Boulenger (1887) listed it from the Gulf of Oman, and Gilchrist and Thompson (1908) and Barnard (1925) from Natal, South Africa. When Fowler (1932) described the species, he did not note the similarity to *P. nebulosa* but compared it to two other species of *Parapercis*. Since Fowler's description, no author has fully recognized his species.

As may be seen in the species accounts above, the illustrations, and Tables 1 and 2, *P. robinsoni* is a valid species readily differentiated from *P. nebulosa*.

P. robinsoni is known in South Africa from Natal to Algoa Bay (Smith, 1949), Aldabra (Smith, 1955), Somalia (Schultz, 1968), Gulf of Oman (Boulenger, 1887), and the Persian Gulf (Schultz, 1968). Smith and Smith (1963) reported the species (as *Parapercis nebulosa*) from Seychelles from the literature record of Jouan (1870). Jouan, however, merely included *Percis nebulosa* in a list of 26 fishes from the Comoro Islands and Seychelles by name only, erroneously attributing the authorship of *nebulosa* to Bleeker. This record should be regarded as doubtful until a specimen can be obtained.

P. robinsoni is usually taken in trawls. It is known from the depth range of 6 m (the juvenile of BPBM 21496 speared by the senior author at this depth) to 55 m (Smith, 1949).

Barnard (1925) reported the species to a total

length of 260 mm.

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- (JER: Bishop Museum, Box 19000-A, Honolulu, Hawaii 96817; GJS: Australian Museum, Box A285, Sydney South, Sydney, N.S.W. 2000 Australia)

トラギス科の *Parapercis robinsoni* Fowler は有効

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Parapercis robinsoni Fowler, 1932 は南アフリカの Natal 沖でとれた全長 286 mm の標本にもとづき記載されたが、近年 *P. nebulosa* (Quoy et Gaimard, 1825) の新参同種異名とされてきた。本種の模式標本は失われているので模式地でとれた標本と、オーストラリア西部を模式地とする *P. nebulosa* の模式標本を比較検討した結果、*P. robinsoni* は有効で、*P. emeryana* が *P. nebulosa* の新参同種異名とされるべきだと判断した。