# Assessment of taxonomic characters of *Scorpaenopsis obtusa* and *S. gibbosa* (Scorpaenidae), with first records of *S. obtusa* from Japan and Australia and comments on the synonymy of *S. gibbosa*

by

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**ABSTRACT**. - Three specimens of the scorpionfish *Scorpaenopsis obtusa* Randall & Eschmeyer, collected from Okinawa, Ryukyu Islands, Japan (URM-P 21256, 40.4 mm SL), Lizard Island, Queensland (AMS I. 19482-190, 37.8 mm SL) and Bedwell Island, Clerke Reef, Rowley Shoals, Western Australia (WAM-P 28037-001, 34.8 mm SL), represent the first reliable records from Japan and Australia (and the Indian Ocean) and northernmost and southernmost records of the species. The specimens are described herein and detailed comparisons made with a related species, *S. gibbosa* (Bloch & Schneider). The colour pattern of the inner surface of the pectoral fin of *S. obtusa* and a colour photograph of a fresh specimen are also figured for the first time. In addition, a nominal species, *Scorpaena axillaris* Bliss, 1883, is regarded as a junior synonym of *Scorpaenopsis gibbosa*. Validity of the previously recognized taxonomic characters of both species is assessed and new diagnostic characters are proposed.

**RÉSUMÉ**. - Évaluation des caractères taxinomiques de *Scorpaenopsis obtusa* et de *S. gibbosa* (Scorpaenidae), premières captures de *S. obtusa* du Japon et d'Australie, et commentaires sur la synonymie de *S. gibbosa*.

Trois spécimens de rascasse *Scorpaenopsis obtusa* Randall & Eschmeyer, collectés à Okinawa, aux îles Ryukyu, Japon (URM-P 21256, 40,4 mm LS), à Lizard Island, Queensland (AMS I. 19482-190, 37,8 mm LS) et à Bedwell Island, Clerke Reef, Rowley Shoals, Australie occidentale (WAM-P 28037-001, 34,8 mm LS), représentent les premiers signalements fiables du Japon et d'Australie (et de l'océan Indien) et les signalements les plus septentrionaux et les plus méridionaux de l'espèce. Ces spécimens sont décrits et des comparaisons détaillées sont faites avec une espèce proche, *S. gibbosa* (Bloch & Schneider). La coloration de la surface interne de la nageoire pectorale de *S. obtusa* et une photographie en couleur d'un spécimen frais sont également présentées pour la première fois. De plus, l'espèce nominale, *Scorpaena axillaris* Bliss, 1883, est considérée comme synonyme junior de *Scorpaenopsis gibbosa*. La validité des caractères taxinomiques précédemment identifiés pour ces deux espèces est évaluée et de nouveaux caractères diagnostiques sont proposés.

Key words. - Scorpaenidae - *Scorpaenopsis obtusa* - *Scorpaenopsis gibbosa* - INW - Japan - ISEW - Australia - Redescriptions - Synonymy - First records.

The scorpionfish (Scorpaeniformes: Scorpaenidae), *Scorpaenopsis obtusa* Randall & Eschmeyer, 2002, originally described on the basis of three specimens (36.5-79.0 mm standard length), is the smallest humpback species of *Scorpaenopsis*, characterized by a highly arched back below the spinous part of the dorsal fin, broad interorbit and divided upper opercular spine (Randall and Eschmeyer, 2002). Although Randall and Eschmeyer (2002) collected and examined a large number of *Scorpaenopsis* specimens from a wide geographical range in the Indo-Pacific region, *S. obtusa* was reported only from two specimens from the Philippines and one from Papua New Guinea.

Four small specimens of humpback *Scorpaenopsis*, collected from Japan (Okinawa Island), Papua New Guinea (Madang), Australia (Lizard Island, Queensland and Bedwell Island, Western Australia), were found in museum collections and subsequently identified as *S. obtusa* on the basis of several morphological characters, including head spine structure, meristics, proportional measurements and colour pattern on the inner surface of the pectoral fin. The specimens represent the first reliable records from Japanese and Australian waters, the Western Australian specimen also representing the first record from the Indian Ocean. The specimens are described herein and detailed comparisons made with a related species, *S. gibbosa* (Bloch & Schneider, 1801). The striking colour pattern of the pectoral fin of *S. obtusa* and a colour photograph of a fresh specimen are also figured for the first time. Validity of the previously recognized taxonomic characters of both species are assessed and new diagnostic characters are proposed. In addition, a poorly-known nominal species, *Scorpaena axillaris*, is confirmed as a junior synonym of *Scorpaenopsis gibbosa*.

Counts, measurements and head spine terminology follow Randall and Eschmeyer (2002). Standard and head lengths are expressed as SL and HL, respectively. Comparative materials examined are listed in Motomura (2002,

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2004a, 2004b) and Motomura *et al*. (2004). Institutional codes follow Leviton *et al*. (1985).

## *SCORPAENOPSIS OBTUSA*

(Figs 1-5, 6A, 7)

*Scorpaenopsis obtusa* Randall & Eschmeyer, 2002: 37, fig. 10 (type locality: Observation Island, Tawitawi Group, Sulu Archipelago, Philippines).

New standard Japanese name: Shirayuki-kasago.

### Material examined

Japan. - URM-P 21256, 40.4 mm SL, Diamond Beach, Onnason, Okinawa Island, Ryukyu Islands, 1 m depth, coral and sandy bottom, coll. by N. Takamura, 11 Jun. 1989.

Philippines. - CAS 54231 (paratype of *S. obtusa*), 49.7 mm SL, Bararin Island (10°52'42"N, 120°56'44"E), Palawan Province, 0-17.4 m depth, rotenone, coll. by V.G. Springer *et al*., 24 May 1978.

Papua New Guinea. - CAS 213340 (paratype of *S. obtusa*), 36.5 mm SL, north coast of Towai Point, Kiriwina, Trobriand Islands, 0-0.5 m depth, rotenone, coll. by B.B. Collette, 8 Jun. 1970; WAM-P 30340-007, 25.6 mm SL, coral and cave area on outer reef (5°11'S, 145°50'E), Madang, 18 m depth, rotenone, coll. by G.R. Allen and M. Allen, 5 Oct. 1991.

Australia. - AMS I. 19482-190, 37.8 mm SL, Sand Cay, Lizard Island (14°40'S, 145°27'E), Queensland, 3-25 m depth, coral and sandy bottom, rotenone, coll. by Australian Museum party, 27 Nov. 1975; WAM-P 28037-001, 34.8 mm SL, 1 km off south tip of Bedwell Island (17°16'S, 119°22'E), Clerke Reef, Rowley Shoals, Western Australia, 45-50 m depth, rotenone, coll. by G.R. Allen, 14 Aug. 1983.

### Description

The following description is based on four non-type specimens collected from Japan, Papua New Guinea and Australia. Three type specimens from the Philippines and Papua New Guinea were described by Randall and Eschmeyer (2002).

Dorsal fin rays XII, 9; anal fin rays III, 5; pectoral fin rays 17 or 18; longitudinal scale rows 37-41; pored lateral line scales 21; scales above lateral line 6 or 7, below 22; gill rakers 4 or 5 (upper limb) + 8 or 9 (lower limb, including a raker at angle); 3 pores on underside of mandible on each side. Body depth 2.2-2.4 (mean 2.3) in SL; body width 3.3-3.7 (3.5); head length 2.0-2.2 (2.1); predorsal length 2.2-2.6 (2.4); preanal length 1.3-1.4 (1.4); prepelvic length 2.4; first dorsal spine length 13.0-16.8 (15.0); second dorsal spine length 7.9-8.3 (8.1); longest dorsal spine (third or fourth) length 6.0-7.3 (6.7); eleventh dorsal spine length 9.7-11.6 (10.6); twelfth dorsal spine length 7.3-8.4 (7.8); longest dorsal soft ray (second or third) length 4.8-5.5 (5.2); first anal spine length 9.8-10.9 (10.2); second anal spine length 5.1-5.6 (5.4); third anal spine length 5.6-6.5 (6.0); longest anal soft ray (second) length 4.1-5.0 (4.6); pectoral fin length 2.7-3.0 (2.8); pelvic spine length 4.7-5.6 (5.2); longest pelvic soft ray (second or third) length 3.4-4.2 (3.8); caudal fin length 3.3-3.6 (3.4); caudal peduncle length 5.5-6.6 (6.0); caudal peduncle depth 8.3-8.6 (8.4). Snout length 3.8-4.2 (mean 4.0) in HL; orbit diameter 4.3-4.8 (4.6); interorbital width 3.6-3.9 (3.8); upper jaw length 1.8-1.9 (1.8); distance between ventral margin of orbit and suborbital ridge 14.3-21.5 (18.5); postorbital length 1.7-1.8 (1.8); longest dorsal spine length 2.7-3.6 (3.2).

Body not compressed anteriorly, but progressively more compressed posteriorly; mouth large, oblique, forming an angle of about 60° to horizontal axis of head and body; posterior margin of maxilla reaching a straight line linking posterior margin of orbit with edge of retroarticular; lower jaw projecting; vomerine tooth plate distinct, forming a V-shaped patch, but with few teeth; no palatine teeth; nasal spine simple, directed upward, its length slightly greater than anterior nostril diameter; anterior nostril with a tentacle, its length greater than anterior nostril diameter; ascending process of premaxilla intruding into interorbital space, posterior margin of ascending process reaching level of anterior margin of pupil; no median interorbital ridge; interorbital ridges present, but indistinct; interorbital space shallow and broad, its width greater than orbit diameter; preocular and supraocular spines small, canted laterally; postocular spine simple, larger than supraocular spine, broadly joined to tympanic spine at base; no coronal or extra spines; occipital pit deep, anterior edge distinct and curved posteriorly; parietal and nuchal spines approximately equal size, joined at base; sphenotic with 2 small spines; postorbital with 1 or 2 small spines; pterotic spine simple, approximately equal size to supraocular spine; upper posttemporal spine larger than lower spine; supracleithral spine bearing a second spine on medial surface, length of former greater than any spines on dorsal surface of head.

Lacrymal ridge serrate; anterior lacrymal spine simple, directed forward, its tip reaching dorsal margin of upper lip; posterior lacrymal spine simple, directed backward, its tip not reaching dorsal margin of upper lip; posterior lacrymal spine associated with a short fimbriate flap (rarely absent), linked posteriorly to head by fringed skin; posterior lacrymal spine larger than anterior spine; suborbital ridge with 4 spines; suborbital pit present; preopercle with 5 spines, uppermost spine largest and bearing a second spine on its base, lower 4 spines simple, blunt; upper opercular spine with 2 points, no median ridge; lower opercular spine simple with a median ridge; no prominent tentacles on chin, underside of mandible or head spines, except for posterior lacrymal spine; 0-5 lateral line scales associated with round flaps; head with a large number of small papillae.

Origin of first dorsal spine just above origin of supracleithral spine; posterior margin of opercular membrane extend-

ing slightly beyond level of origin of fourth dorsal spine; posterior tip of pectoral fin reaching or extending beyond level of origin of first anal fin soft ray; posterior tip of pelvic fin not reaching or extending slightly beyond anus when depressed; origin of last dorsal spine just above origin of first anal spine.

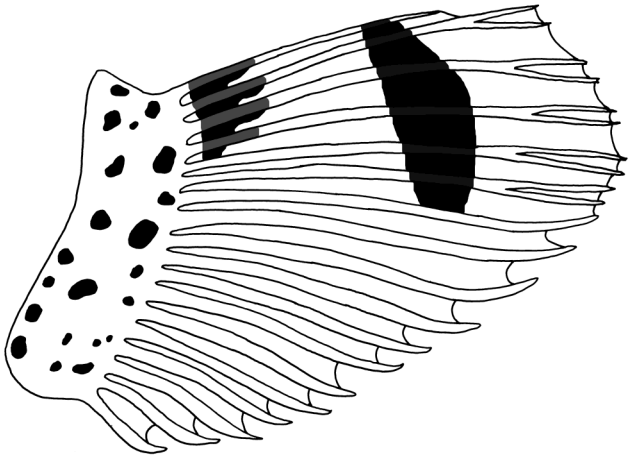

Figure 1. - Inner surface of the right pectoral fin of *Scorpaenopsis obtusa* (AMS I. 19482-190, 37.8 mm SL, Queensland, Australia). *[Surface interne de la nageoire pectorale droite de* Scorpaenopsis obtusa*.]*

*Colour in preservative*. - Head and body brown dorsally, whitish ventrally; dorsal fin membrane with scattered melanophores; pectoral fin whitish with a broad black band near base and a semicircular black submarginal spot; axil of pectoral fin white with 20-25 small black spots (Fig. 1); inner surface of pectoral fin white with a semicircular black spot near base of first 4-6 rays and associated membranes, and a broad submarginal black band extending over first 6 rays and associated membranes (Fig. 1); pelvic fin black, except white distal margin; anal fin whitish with a broad black band; caudal fin white (with a broad grey band near base in Lizard Island specimen). Colour when fresh shown in figure 7A.

**Distribution**

The species is currently known only from Japan (Okinawa Island), the Philippines (Observation Island and Bararin Island), Papua New Guinea (Trobriand Islands and Madang), and Australia (Lizard Island, Queensland and Bedwell Island, Western Australia) (Fig. 2). Specimens collected from Japan and Australia represent the first records of the species from those areas, the Western Australian and Okinawa specimens also representing the first record from the Indian Ocean and northernmost record of the species, respectively. Collection data for the species indicated capture depths from 0-50 m.

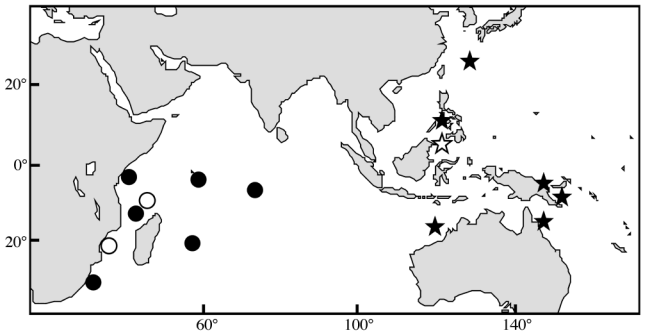


Figure 2. - Distribution of *Scorpaenopsis obtusa* (★) and *S. gibbosa* (●). Closed and open symbols indicate specimens examined in this study and other specimens reported by Randall and Eschmeyer (2002), respectively. *[Distribution de* Scorpaenopsis obtusa *(★) et* S. gibbosa *(●). Les symboles pleins et vides indiquent les spécimens examinés dans cette étude et les spécimens signalés par Randall et Eschmeyer (2002).]*

## DISCUSSION

Characters of the present four specimens collected from Japan (Okinawa Island), Papua New Guinea (Madang) and Australia (Queensland and Western Australia) were well consistent with those of the holotype and two paratypes of *S. obtusa*, described by Randall and Eschmeyer (2002), with the exception of some counts and measurements, e.g., pectoral fin rays (17-18 *vs* 18-19 in the latter), longitudinal scale rows (37-41 *vs* 37-39) and head length (2.1-2.2 in SL *vs* 2.0-2.1). The small differences in counts and measurements may simply reflect the limited number of specimens available. According to Randall and Eschmeyer (2002), the nasal spine of two individuals (49.7-79.0 mm SL) was divided, forming 2 blunt points, although the smallest paratype (36.5 mm SL) has only a single point. The present specimens (25.6-40.4 mm SL) also have a single-pointed nasal spine, indicating that the nasal spine may divide with growth in this species.

Five humpback species of *Scorpaenopsis* have been recognized as valid: *S. diabolus* (Cuvier) (Indo-Pacific), *S. gibbosa* (western Indian Ocean), *S. macrochir* Ogilby (Indo-Pacific), *S. neglecta* Heckel (Indo-West Pacific) and *S. obtusa*. With the exception of *S. gibbosa*, *S. obtusa* is easily distinguished from the other humpback species by the presence of a simple upper posttemporal spine (double in *S. diabolus*), smooth supraorbital ridge (serrate in *S. neglecta*), a black spot on the inner surface of the pectoral fin near the base of the first 4 rays (absent in *S. macrochir* and *S. neglecta*), and lower counts of longitudinal scale series (37-41 *vs* 41-47 in *S. diabolus*, 42-45 in *S. macrochir* and *S. neglecta*).

As Randall and Eschmeyer (2002) mentioned, *S. obtusa* appears to be the closest relative to *S. gibbosa* in having a semicircular black spot near the base of the upper rays and associated membranes, a broad submarginal black band extending over the upper rays and associated membranes of

the inner surface of the pectoral fin, and several small black spots on the pectoral fin axil, a unique condition among the Scorpaenidae. The striking colour pattern of the pectoral fin of *S. obtusa* is illustrated in figure 1, that of *S. gibbosa* having been given in Eschmeyer and Randall (1975: 307, fig. 17c). Because both species were very similar to each other in overall body appearance and head spine structure, in addition to the colour pattern of the pectoral fin, *S. obtusa* had previously been identified as *S. gibbosa*. Randall and Eschmeyer (2002), however, distinguished *S. obtusa* (based on 3 specimens) and *S. gibbosa* (based on 10 specimens) on the basis of four morphological characters: 1) snout length (3.7-4.25 in HL in the former *vs* 3.3-3.55 in HL in the latter), 2) location of the ascending process of the premaxilla (extending into interorbital space *vs* not extending), 3) number of longitudinal scale rows (37-39 *vs* 40-44) and 4) number of pectoral fin rays (18-19 *vs* 16-18). Examination during this study of *S. obtusa* (6 specimens, including 4 newly-obtained) and *S. gibbosa* (9 specimens) showed the first character (snout length) given by Randall and Eschmeyer (2002) to be reliable for species' discrimination. The second (ascending process of premaxilla) was also a good character for separation of the two species, but is redefined here as follows: ascending process of premaxilla in *S. obtusa* reaching level with anterior margins of pupils in dorsal view (*vs* not reaching in *S. gibbosa*). Ranges of the meristic characters, longitudinal scale series (37-39) and pectoral fin rays (18 or 19) of *S. obtusa* (based on three specimens) given by Randall and Eschmeyer (2002) became broader after our more extensive examination (37-41 and 17-19, respectively). Although both characters now overlap between *S. obtusa* and *S. gibbosa*, the mean differences of longitudinal scale series (38.6 in *S. obtusa vs* 42.0 in *S. gibbosa*) and pectoral fin ray numbers (17.9 *vs* 17.0, respectively) are significant.

In addition to the above characters, the following additional diagnostic characters were found for *S. obtusa* and *S. gibbosa*. To assess the characters accurately, we excluded data for the holotype of *S. obtusa*, because the latter had an unusual body shape (highly arched back below the anterior spinous part of the dorsal fin; see Randall and Eschmeyer, 2002). Because of the size gap between the holotype (largest known specimen, 79.0 mm SL) and second largest known specimen (paratype, 47.9 mm SL), we could not determine if the unusual body shape of the holotype is simply a deformity or represents growth-related changes or a secondary sexual characteristic (Randall and Eschmeyer, 2002 reported the holotype to be a mature female). The problem should be solved when larger specimens over ca. 50 mm SL of the species are collected in the future. A series of life stages of *S. obtusa* from 25.6 to 47.9 mm SL (Fig. 3) shows none of the specimens to have a remarkable hump (as seen in the holotype).

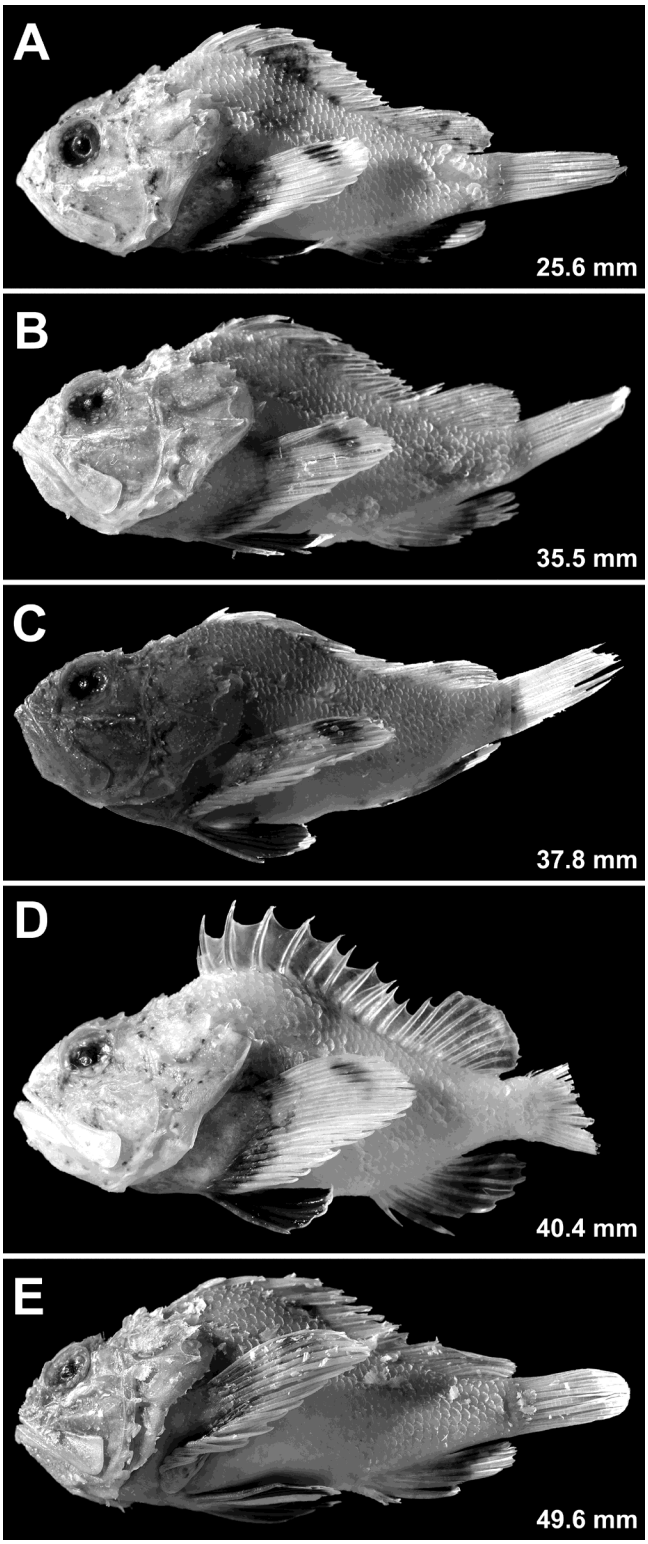


Figure 3. - Life stages of *Scorpaenopsis obtusa*. **A**: WAM-P 30340-007, 25.6 mm SL, Papua New Guinea; **B**: CAS 213340 (paratype of *S. obtusa*), 36.5 mm SL, Papua New Guinea; **C**: AMS I. 19482-190, 37.8 mm SL, Australia; **D**: URM-P 21256, 40.4 mm SL, Japan; **E**: CAS 54231 (paratype of *S. obtusa*), 49.7 mm SL, Philippines. *[Série de croissance de* Scorpaenopsis obtusa.*]*

The distance between the ventral margin of the orbit and suborbital ridge in *S. obtusa* [mean 39.2 (range 31.5-45.1) in SL] was significantly narrower than that in *S. gibbosa* [25.7 (19.4-30.1) in SL]. This morphometric character does not reflect growth-related changes (see Fig. 4), therefore being reliable for species' discrimination. This character was not mentioned in Randall and Eschmeyer (2002).

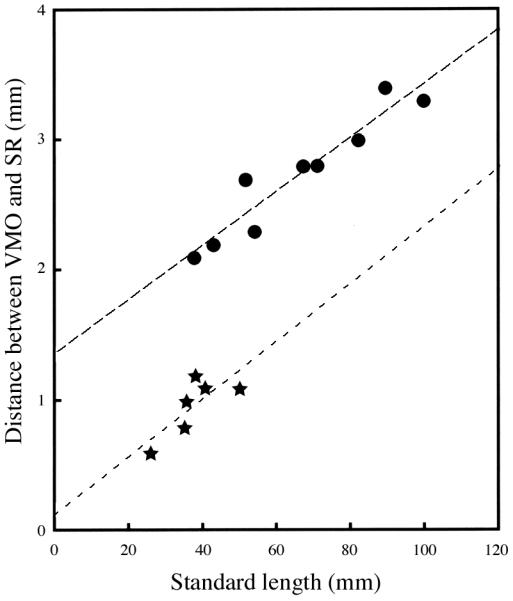


Figure 4. - Relationships of distance between ventral margin of orbit (VMO) and suborbital ridge (SR) to standard length in *Scorpaenopsis obtusa* (★) and *S. gibbosa* (●). *[Relation entre la longueur standard et la distance entre le bord ventral de l'orbite (VMO) et la crête suborbitale (SR) chez* Scorpaenopsis obtusa *(★) et* S. gibbosa *(●).]*

Because the interorbital width of *S. obtusa* overlapped that of *S. gibbosa*, Randall and Eschmeyer (2002) did not give special attention to the character (interorbital width 3.9-4.5 in HL in both species, according to Randall and Eschmeyer, 2002). However, re-examination of that character (measured between the posterior end of the preocular spine bases) showed that the interorbital space of *S. obtusa* tended to become narrower with growth, whereas in *S. gibbosa* it became wider with growth (Fig. 5). Accordingly, similarly-sized individuals of the two species can be distinguished from each other by interorbital width. In addition, the interorbital space of *S. obtusa* tends to be shallower than that of *S. gibbosa*.

Furthermore, *S. obtusa* differs from *S. gibbosa* in having the posterior margin of the maxilla reaching to or extending beyond a straight line between the posterior margin of the orbit and posteroventral tip of the retroarticular (*vs* usually not reaching in the latter; Fig. 6).

Although Randall and Eschmeyer (2002) provided a detailed morphological description of the species, such was based on preserved specimens only and therefore lacked any

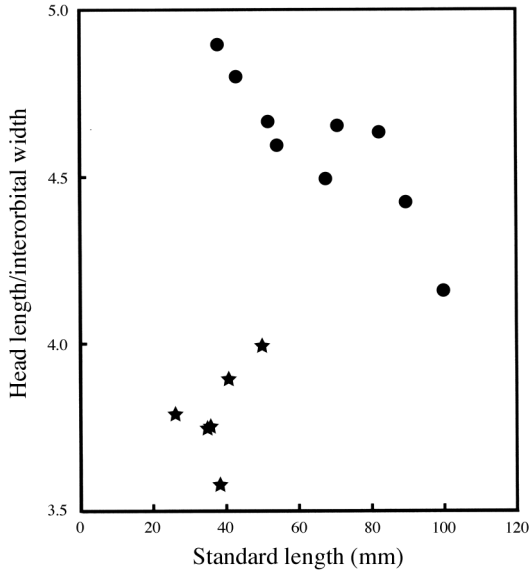


Figure 5. - Relationships of head length / interorbital width to standard length in *Scorpaenopsis obtusa* (★) and *S. gibbosa* (●). *[Relation entre la longueur de la tête /la largeur interorbitale et la longueur standard chez* Scorpaenopsis obtusa *(★) et* S. gibbosa *(●).]*

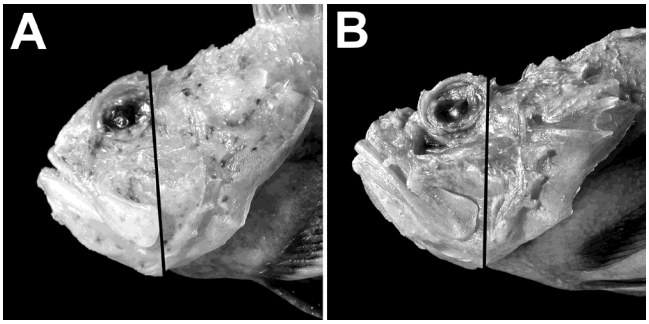


Figure 6. - Heads of *Scorpaenopsis obtusa* (**A**), URM-P 21256, 40.4 mm SL and *S. gibbosa* (**B**), CAS 54104, 81.8 mm SL, showing the posterior margin of the maxilla reaching (**A**) or not reaching (**B**) a straight line between the posterior margin of the orbit and posteroventral tip of the retroarticular. *[Têtes de* Scorpaenopsis obtusa *(**A**) et de* S. gibbosa *(**B**). Le bord postérieur du maxillaire atteint (**A**) ou n'atteint pas (**B**) la ligne droite passant par le bord postérieur de l'orbite et le sommet postéroventral du rétroarticulaire.]*

information on fresh coloration. A colour photograph of a Western Australian specimen of *S. obtusa*, taken by G.R. Allen before formalin fixation, is therefore provided here (Fig. 7A), along with a photograph of the same specimen after preservation (Fig. 7B) for comparative purposes. A broad vertical reddish band, width approximately 1.5 times orbit diameter, on the caudal fin when fresh (Fig. 7A) faded completely on preservation (Fig. 7B). With the exception of a single specimen which lacked the caudal fin (URM-P 21256, 40.4 mm SL; Fig. 3D), all of the known preserved specimens of *S. obtusa* also lacked the band on the caudal fin, which appeared white (see Fig. 3), whereas the caudal

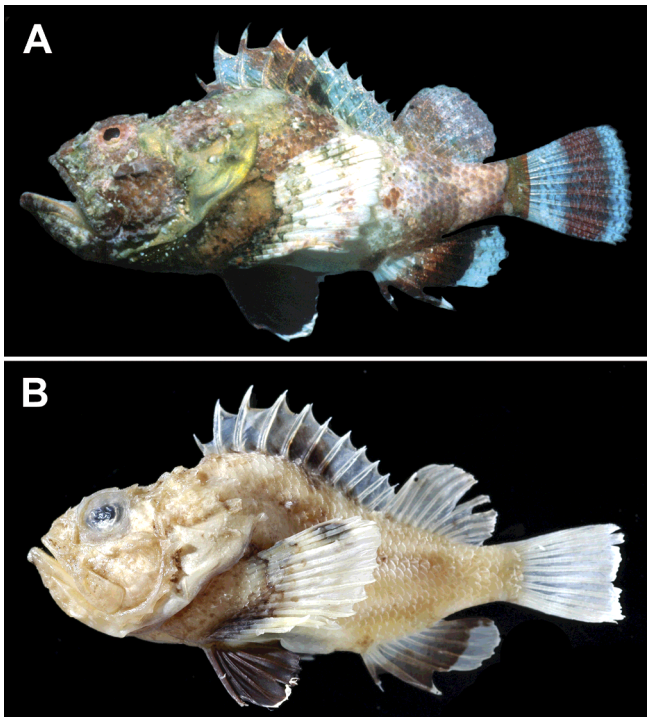


Figure 7. - Colour changes in *Scorpaenopsis obtusa* caused by fixation. **A**: Fresh specimen (photograph by G.R. Allen); **B**: Same specimen after preservation (WAM-P 28037-001, 34.8 mm SL, Rowley Shoals, Western Australia). *[Changements de couleur chez* Scorpaenopsis obtusa *provoqués par la fixation. **A** : Spécimen frais (photographie de G.R. Allen) ; **B** : Même spécimen après fixation.]*

fins of all *S. gibbosa* examined during this study still retained distinct melanophores (see Fig. 8), even the oldest specimen (MCZ 6028, 70.4 mm SL; Fig. 8B, preserved for over 120 years). In some near-shore scorpaenid species (e.g., *Scorpaena brasiliensis* Cuvier), specimens collected from shallow waters have brown or black spots and bars on the fins, whereas the spots and bars in specimens from deeper waters are reddish, the reddish colour fading completely on preservation (W.N. Eschmeyer, pers. comm., 2004). Thus, the fin colour condition in some scorpaenid species may vary intraspecifically so as to reflect habitats (including water depth), indicating that colour is not always reliable as a diagnostic character. However, because the preserved specimens of *S. obtusa*, which were collected from variable water depths (0-50 m), invariably had a white caudal fin compared with those of *S. gibbosa*, which had the caudal fin with a distinct band, we believe that this character provides a useful distinction between *S. obtusa* and *S. gibbosa*.

Imamura (2004) indicated that *Scorpaenopsis* is a relatively primitive group among his Scorpaenidae, the genus being a sister group of remaining genera except *Scorpaena*. He defined *Scorpaenopsis* by two derived characters, viz. the sixth infraorbital fused with the sphenotic, and the interarcual cartilage absent. Although the interrelationship among *Scorpaenopsis* species is unclear, the humpback species (*S. obtusa* plus above four species) may be monophyletic, since they share at least the following derived characters: deep occipital and suborbital pits, broad interorbital space (3.6-4.5 in HL) and upper ocular spines divided into two or more.

*Scorpaenopsis obtusa* is currently known from the eastern Indian and western Pacific Oceans, whereas *S. gibbosa* is distributed in the western Indian Ocean (Fig. 2), suggesting that a vicariance event may be related to speciation within *Scorpaenopsis*.

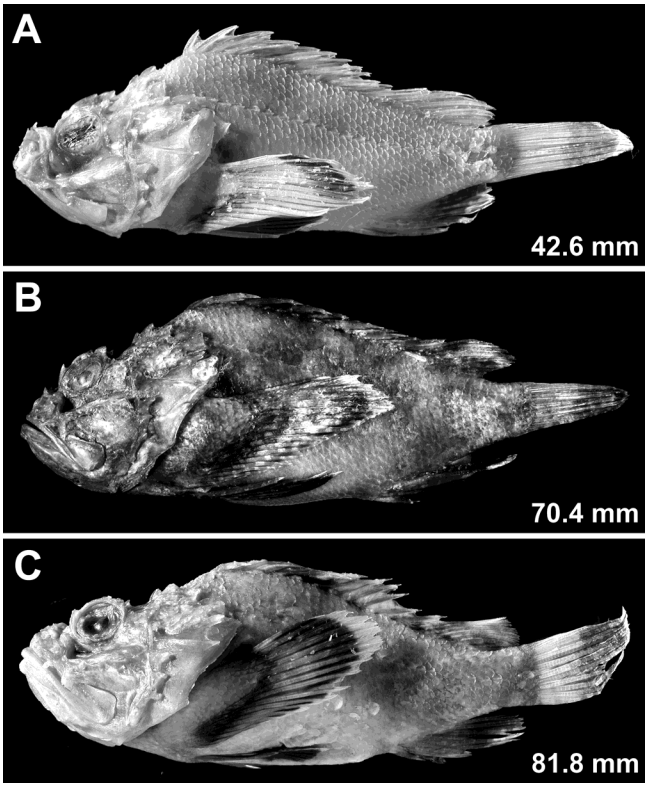


Figure 8. - *Scorpaenopsis gibbosa*. **A**: CAS 54105, 42.6 mm SL, Kenya; **B**: MCZ 6028, holotype of *Scorpaena axillaris*, 70.4 mm SL, Mauritius (photograph by R. Passion, © Museum of Comparative Zoology, Harvard University); **C**: CAS 54104, 81.8 mm SL, Seychelles.

**Synonymy of *Scorpaenopsis gibbosa***

Randall and Eschmeyer (2002) redescribed *Scorpaenopsis gibbosa*, regarding *Scorpaena nesogallica* Cuvier in Cuvier & Valenciennes, 1829 as a junior synonym of the former on the basis of the holotype of *S. gibbosa* (ZMB 768, 110.9 mm SL), two syntypes of *S. nesogallica* (MNHN 774, 85.5 mm SL and MNHN 6671, 77 mm SL) and a number of non-type specimens.

A nominal species, *Scorpaena axillaris*, originally described by Bliss (1883) from a single specimen from Mauritius, has not been reported since its original description, the taxonomic status of the nominal species being unknown

(Eschmeyer, 1998). Recently, Fricke (1999) synonymised it under *Sebastapistes mauritiana* (Cuvier in Cuvier & Valenciennes, 1829), which is widely distributed in the Indo-Pacific Ocean (Poss, 1999). However, the online version of the "Catalog of Fishes", edited by W.N. Eschmeyer and other staff of the California Academy of Sciences Department of Ichthyology, has listed *S. axillaris* as a junior synonym of *S. gibbosa*, along with the comment "W. Eschmeyer, pers. observation of holotype". Randall and Eschmeyer (2002) overlooked *S. axillaris*. Our examination of the holotype of *S. axillaris* (MCZ 6028, 70.4 mm SL; Fig. 8B) and specimens of *S. gibbosa* showed that they represented a single species, distinguished by the above-mentioned characters (data for *S. axillaris* included in Figs 4-5). Accordingly, *S. axillaris* is herein confirmed as a junior synonym of *S. gibbosa*.

### Material of *Scorpaenopsis gibbosa* examined

BMNH 1916.9.23.46, 66.8 mm SL, Durban, South Africa, coll. by R. Robinson and H. Marley; BMNH 1920.7.23.44, 37.4 mm SL, same data as BMNH 1916.9.23.46; BMNH 2002.6.30.2191, 53.8 mm SL, west coast of Baie de la Petite River, Albion, Mauritius, coll. by A. Gill *et al*., 22 Apr. 1995; BPBM 20083, 51.2 mm SL, east coast of Palmar, Mauritius, 0-0.5 m, coll. by M.M. Smith and J.E. Randall, 27 Oct. 1973; CAS 54104, 81.8 mm SL, Aldabra Atoll, Seychelles, coll. by H.A. Fehlmann, 3 Dec. 1964; CAS 54105, 42.6 mm SL, Andromache Reef, Kenya, coll. by H.A. Fehlmann, 16 Nov. 1964; CAS 17526, 89.0 mm SL, Diego Garcia Atoll, Chagos Archipelago, coll. by J.W. McIntyre, Mar. 1972; CAS 34522, 99.4 mm SL, Mitsamouli Lagoon, Grande Comore Island, Comoro Islands, coll. by J.E. McCosker and M.D. Lagios, 23 Feb. 1975; MCZ 6028 (holotype of *Scorpaena axillaris*), 70.4 mm SL, Mauritius, coll. by N. Pike.

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