

## Validity of the Scorpionfish Genus *Hipposcorpaena* Fowler and a Redescription of *H. filamentosa* Fowler (Scorpaeniformes: Scorpaenidae)

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**Hiroiyuki Motomura and Hiroshi Senou (2005)** Validity of the scorpionfish genus *Hipposcorpaena* Fowler and a redescription of *H. filamentosa* Fowler (Scorpaeniformes: Scorpaenidae). *Zoological Studies* 44(2): 210-218. The validity of the poorly known monotypic scorpionfish genus *Hipposcorpaena* Fowler is confirmed, and *H. filamentosa* Fowler is redescribed. The genus is characterized by the following characters: dorsal fin with 12 spines and 9 soft rays; anal fin with 2 spines and 6 soft rays; pectoral fin with 14 rays; lower pectoral fin rays slender, filamentous; longest ray extending well beyond vertical from posterior end of anal fin base; all dorsal and anal fin soft rays (except last ray of each fin divided into 2 at base), and all pectoral and caudal fin rays unbranched; head and body strongly compressed; body deep, depth 39.5%~41.2% of standard length; body covered with small cycloid scales; no palatine teeth; interorbital ridges present; tympanic spine present; post-temporal spine simple, lacking upper posttemporal spine; lower caudal fin with 1~4 distinct black spots, greater in width than orbit diameter; mature adult size at least 35.2 mm SL.  
<http://www.sinica.edu.tw/zool/zoolstud/44.2/210.pdf>

**Key words:** Scorpaenidae, Genus, *Hipposcorpaena*, Redescription, *Hipposcorpaena filamentosa*.

Fowler (1938) described *Hipposcorpaena filamentosa* as a new genus and species on the basis of a single specimen (USNM 98819, 29.4 mm standard length) from the Philippines. Subsequently, Eschmeyer et al. (1973) reexamined the holotype and reported the existence of a 2nd example of the species (USNM 168183, 31.1 mm). Although they regarded *Hipposcorpaena* as a probable valid genus, Poss (1999) later included the species in *Rhinopias* Gill, without explanation. Only Eschmeyer et al. (1973) and Poss (1999) have reported on specimens of this species since its original description by Fowler (1938). Both of the 2 known specimens are in very poor condition. Thus, the generic (and specific) status and taxonomic characters of the species have remained obscure.

A single example of an unusual scorpionfish,

collected by a local fisherman from Tayabas Bay between Luzon I. and Boak I., Philippines, on 22 Feb. 2004, was subsequently registered at the Kanagawa Prefectural Museum of Natural History, Kanagawa, Japan, and identified as *H. filamentosa*. The specimen was in excellent condition, and several important characters, which had previously been overlooked, were identified, leading to our conclusion that *Hipposcorpaena* is a valid genus.

Previous accounts of *H. filamentosa* lacked accurate information on the coloration when fresh. A color photograph of the newly collected specimen, taken by the 2nd author before formalin fixation, is included here.

This paper includes confirmation of the validity of the monotypic genus *Hipposcorpaena*, a redescription of *H. filamentosa*, descriptions of

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newly recognized diagnostic characters, and comments on sexual maturity and the shedding of the cuticle in the species.

## MATERIALS AND METHODS

Measurements follow Motomura (2004b, c). Standard and head lengths are expressed as SL and HL, respectively. The last 2 soft rays of the dorsal and anal fins are counted as single rays, as each pair are associated with a single pterygiophore. Pectoral fin ray counts begin with the uppermost element. Longitudinal scale rows include the vertical scale rows above the lateral line, taken from above the 1st pored lateral scale to the caudal fin base (scale rows are irregular and difficult to count). Pored lateral line scales that have an external median tube are counted from the 1st pored scale near the upper end of the gill opening to the pored scale on the posterior margin of the hypural plate. Gill raker counts are made on the 1st arch, with the upper count given 1st (lower counts include raker at angle).

Terminology of the head spines follows Randall and Eschmeyer (2002). Sex of the newly collected specimen (KPM-NI 13005, 35.2 mm SL) was established by dissection of the abdomen on the right side. Osteological characters were confirmed from radiographs. A redescription of the species is based on KPM-NI 13005, and the diagnostic characters proposed were confirmed in USNM 168183. The holotype (USNM 98819) was not available for examination. Institutional codes follow Eschmeyer (1998).

### Genus *Hipposcorpaena* Fowler, 1938

(Figs. 1-4)

*Hipposcorpaena* Fowler 1938: 71, fig. 31 (type species: *Hipposcorpaena filamentosa* Fowler 1938; type by original designation, also monotypic; gender: feminine).

**Diagnosis:** Dorsal fin with 12 spines and 9 soft rays; anal fin with 2 spines and 6 soft rays; pectoral fin with 14 rays; lower pectoral fin rays slender (not thickened), filamentous; longest ray of pectoral fin extending well beyond vertical from posterior end of anal fin base; all dorsal and anal fin soft rays (except last ray of each fin divided into 2 at base), and all pectoral and caudal fin rays unbranched; head and body strongly compressed; body deep, depth 39.5%–41.2% of SL; body covered with small cycloid scales; no palatine teeth;

interorbital ridges present; tympanic spine present; posttemporal spine simple, lacking upper posttemporal spine; lower caudal fin with 1–4 distinct black spots, greater in width than orbit diameter; mature adult size at least 35.2 mm SL.

**Remarks:** Fowler (1938: 71) proposed *Hipposcorpaena* as a new monotypic genus for his new species, *H. filamentosa* Fowler (1938: 72). He stated that *Hipposcorpaena* “resembles *Taenianotus* Lacepède, but with much deeper body, very different physiognomy, well-separated dorsals, and advanced ventrals”. In addition to these differences, *Hipposcorpaena* differs from the latter in having its body being covered with cycloid scales (vs. scales reduced to small, widely scattered points in the latter; Poss 1999).

Although Eschmeyer et al. (1973) presumed that *Hipposcorpaena* was probably valid and closely related to *Rhinopias* Gill, Poss (1999) included *H. filamentosa* in the latter genus. As Eschmeyer et al. (1973) pointed out, *H. filamentosa* and species of *Rhinopias* are very similar to each other in overall body appearance, and share several characters: e.g., dorsal fin with 12 spines and 9 soft rays, head and body strongly compressed, body depth 38%–54% of SL (range from Poss 1999), body covered with cycloid scales, and no palatine teeth. *Hipposcorpaena filamentosa* and species of *Rhinopias* are easily distinguished from all other known genera of the Scorpaenidae, by the above characters, except for the uncertain monotypic genus *Pogonoscorpius* Regan (see details in Eschmeyer et al. 1973: 303–304, fig. 9). It is likely that Poss (1999) treated them as a single genus (*Rhinopias*) on the basis of these characters.

*Hipposcorpaena filamentosa* was previously known only from 2 specimens (USNM 98819, holotype, 29.4 mm SL and USNM 168183, non-type, 31.1 mm SL). Because both specimens were in poor condition (Eschmeyer et al. 1973, this study), the latter appearing to have been dried out at some time, some important specific characters were overlooked. The recently collected specimen (KPM-NI 13005, 35.2 mm SL) was in excellent condition, enabling the following comparisons.

The anal fin of *Hipposcorpaena* clearly includes 2 spines and 6 soft rays, although Fowler (1938) gave the complement as “9” in the original description and Eschmeyer et al. (1973) described it as “total  $8\frac{1}{2}$  and seem to be III +  $5\frac{1}{2}$ ”, on the basis of their reexamination of the holotype of *H. filamentosa*. It is apparent that Fowler (1938) counted the last 2 elements as separate rays and did not distinguish spines from soft rays.

Eschmeyer et al. (1973) correctly recognized the last 2 elements as  $1\frac{1}{2}$  (equivalent to 1 in this study, see "Materials and Methods"), but misdetermined the ratio of spines to rays, probably owing to the poor condition of the specimen. Incidentally, Eschmeyer et al. (1973) commented on problems regarding fin ray counts in genera related to *Rhinopias*. Contrary to the condition in *Hipposcorpaena*, all known species of *Rhinopias* have 3 spines and 5 soft rays in the anal fin (Eschmeyer et al. 1973, Condé 1977, Randall and DiSalvo 1997).

All dorsal and anal fin soft rays (except the last ray of each fin which is divided into 2 at the base) and all pectoral and caudal fin rays in *Hipposcorpaena* are unbranched, whereas in *Rhinopias* all dorsal and anal fin soft rays, lower pectoral fin rays, and most caudal fin rays are branched. The above-mentioned differences in anal fin spine numbers and soft ray condition (branched or unbranched) have been widely regarded as diagnostic characters separating several genera within the Scorpaenidae, e.g., between *Neomerinthe* Fowler and *Pontinus* Poey, *Dendrochirus* Swainson and *Pterois* Oken, and *Parapterois* Bleeker and *Pterois* (e.g., Eschmeyer 1969, Eschmeyer and Randall 1975, Motomura 2004a).

Osteological characters (head spines) in *Hipposcorpaena* differ from those in *Rhinopias* in

having the interorbital ridges (vs. absent or poorly developed in the latter), a tympanic spine (vs. absent), and a simple posttemporal spine, the upper posttemporal spine being absent (vs. both upper and lower posttemporal spines present) (see Fig. 2).

Furthermore, the pectoral fin characteristics of *Hipposcorpaena* are distinctive among the Scorpaeninae, with membranes between the lower pectoral fin rays being strongly notched, extending to  $1/3\sim 1/2$  of the length of each upper adjacent ray, the lower 7 rays thereby appearing filamentous (Fig. 3). The pectoral fin membranes in related genera are not strongly notched, reaching near the tip of each ray. In addition, the lower pectoral fin rays in *Rhinopias* are fleshy and thickened, whereas those in *Hipposcorpaena* are not (Fig. 3).

*Hipposcorpaena* can be further distinguished from *Rhinopias* by 14 pectoral fin rays (in all known specimens vs. 15~18 rays in the latter; Eschmeyer et al. 1973, Randall and DiSalvo 1997), the longest pectoral fin ray extending well beyond a vertical from the posterior end of the anal fin base (vs. not reaching the middle of the anal fin base), and the lower caudal fin with distinct black marking(s) (see Fig. 1 and Fowler 1938: fig. 31 vs. absent). These characters appear to be species-applicable, however, judging from characters accorded to other genera of the Scorpaenidae.

As discussed above and presumed by



**Fig. 1.** *Hipposcorpaena filamentosa*. KPM-NI 13005, mature female, 35.2 mm SL, Tayabas Bay, between Luzon I. and Boak I., the Philippines.

Eschmeyer et al. (1973), *Hipposcorpaena* is apparently closely related to *Rhinopias*. However, the former shares some characters, not found in *Rhinopias*, with another poorly known genus, *Pteroidichthys* Bleeker (including 2 species; sensu Poss 1999), such as the presence of unbranched soft rays in most fins (see Eschmeyer et al. 1973) and the absence of the upper posttemporal spine (this study). In addition to the unique characters (see above) in *Hipposcorpaena*, that genus shares several characters only with either *Rhinopias* or *Pteroidichthys*, suggesting that *Rhinopias* and *Pteroidichthys* also have a close relationship with each other (see Eschmeyer et al. 1973).

**Comparative material examined:** *Pteroidichthys amboinensis* Bleeker: BPBM 36765, 42.5 mm SL, east end of Maumere Bay, Flores, Indonesia, 7–9 m depth, rotenone, coll. by B. C. Russell on 7 Nov. 1991. *Pteroidichthys noronhai* (Fowler): USNM 98892, holotype of *Pteropelor noronhai*, 32.3 mm SL, vicinity of Hong Kong (21° 33'N, 116° 13'E), China, 183 m depth, coll. by RV *Albatross* on 4 Nov. 1908, station no. 5310, Albatross Philippine Expedition. *Rhinopias aphanes* Eschmeyer: AMS IB. 7078, holotype, 177.7 mm SL, off Nouméa, New Caledonia, 30 m depth, coll. by Y. Merlet and M. R. Catala-Stucki. *Rhinopias cea* Randall and DiSalvo: BPBM 31701, 148.0 mm SL, Rapa I., Austral Is., French Polynesia, coll. by F. Reveil in May 1990. *Rhinopias eschmeyeri* Condé: MZUVN 10475,

holotype, 148.1 mm SL, Mahébourg, Mauritius, 3 m depth, coll. by L. P. Jauffret on 24 Sept. 1976. *Rhinopias frondosa* (Günther): BMNH 1891.4.30.3, holotype of *Scorpaena frondosa*, 146.2 mm SL, Mauritius, coll. by M. Robillard (collection date unknown, but before Aug. 1891). *Rhinopias xenops* (Gilbert): BPBM 33504, 147.8 mm SL, off Waikiki, Oahu, Hawaiian Is., 73 m depth, otter trawl, coll. by P. S. Lobel on board RV *Machias* on 9 Feb. 1974.

### ***Hipposcorpaena filamentosa* Fowler, 1938**

(Figs. 1–4)

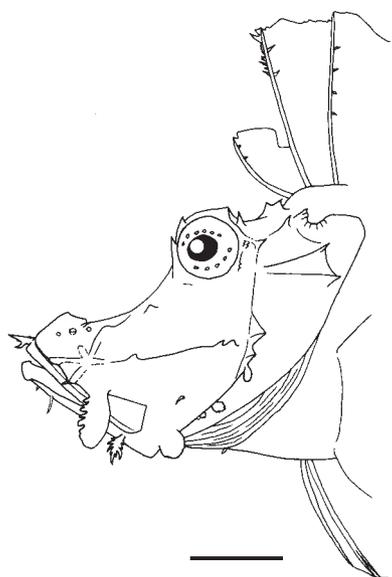
*Hipposcorpaena filamentosa* Fowler 1938: 72, fig. 31 (type locality: 1.5 miles off Linao Point, Davao Gulf, Philippines, 7° 04'48"N, 125° 39'38"E, *Albatross* station D. 5253); Eschmeyer 1973: 304 (comments on the holotype data of *H. filamentosa*).

*Rhinopias filamentosa*; Poss 1999: 2301 (listed in key only).

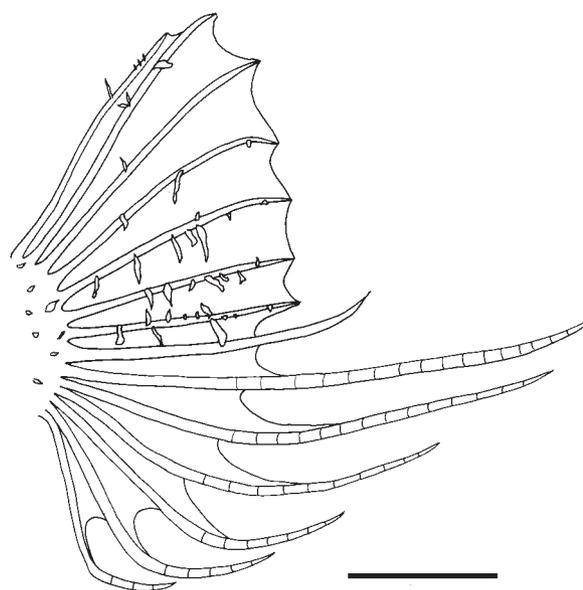
**Material examined:** KPM-NI 13005, mature female, 35.2 mm SL, Tayabas Bay between Luzon I. and Boak I. (ca. 13° 30'N, 121° 30'E), Philippines, 20 m depth, coll. by a local fisherman on 22 Feb. 2004, and then purchased by K. Ishigaki for H. Senou; USNM 168183, 31.1 mm SL, off Jolo I. (06° 03'45"N, 120° 57'00"E), Philippines, 37 m depth, 5 Mar. 1908, *Albatross* station D. 5174.

**Diagnosis:** As for genus.

**Description:** Proportional measurements as percentages of SL and HL of the specimens of



**Fig. 2.** Head of *Hipposcorpaena filamentosa* in lateral view. KPM-NI 13005, 35.2 mm SL. Numerous small papillae on the head are not illustrated. Scale bar = 5 mm.



**Fig. 3.** Pectoral fin of *Hipposcorpaena filamentosa* in lateral view. KPM-NI 13005, 35.2 mm SL. Scale bar = 5 mm.

*Hipposcorpaena filamentosa* are given in Table 1. Dorsal fin with 12 spines and 9 soft rays; all rays, except last soft ray divided into 2 at base, unbranched; 1st spine length 1/2 that of 2nd spine; 2nd spine longest, length greater than upper jaw length; 2nd to 11th spines progressively shorter; length of 11th spine 2.7 in last spine; interspinous membranes of adjacent dorsal fin spines reaching tips of posterior spines, except 2nd, 11th and 12th spines; 4th and 5th soft rays equally longest; 5th~9th soft rays progressively shortening; inter-soft-rayed membrane reaching tips of posterior rays; posterior branch of last soft ray joined by membrane to caudal peduncle for less than 1/3 its length. Anal fin with 2 spines and 6 soft rays; all

rays, except last soft ray divided into 2 branches at base, unbranched; 1st spine 2.4 in 2nd spine; 1st~4th soft rays progressively lengthening, 4th longer than longest dorsal fin soft ray; 4th~6th soft rays progressively shortening; posterior branch of last soft ray joined by membrane to caudal peduncle for less than 1/6 its length; membranes between rays weakly notched. Pectoral fin with 14 rays on each side of body, all rays unbranched; 2nd~7th rays progressively shortening, 9th ray longest, length greater than head length; 9th to lowermost rays progressively shortening; membranes between 2nd and 7th rays reaching tip of each ray; membranes between 7th and lowermost rays strongly notched, membranes between 9th

**Table 1.** Morphometric characters of *Hipposcorpaena filamentosa*, expressed as percentages of standard and head lengths

	KPM-NI 13005	USNM 168183		KPM-NI 13005	USNM 168183
Standard length (mm)	35.2	31.1	7th dorsal fin soft ray length	15.1	-
Percent of standard length			8th dorsal fin soft ray length	12.8	-
Body depth	39.5	41.2	9th dorsal fin soft ray length <sup>3</sup>	10.2	-
Body width	16.8	13.5	9th dorsal fin soft ray length <sup>4</sup>	8.0	-
Head length	48.0	46.9	1st anal fin spine length	4.3	-
Snout length	24.1	21.2	2nd anal fin spine length	10.2	-
Orbit diameter	9.9	10.9	1st anal fin soft ray length	16.2	-
Interorbital width <sup>1</sup>	6.3	6.4	2nd anal fin soft ray length	20.2	-
Interorbital width <sup>2</sup>	9.1	8.7	3rd anal fin soft ray length	23.6	-
Upper jaw length	19.0	18.0	4th anal fin soft ray length	24.1	-
Postorbital length	17.0	17.4	5th anal fin soft ray length	23.0	-
Predorsal fin length	41.5	39.9	6th anal fin soft ray length <sup>3</sup>	19.3	-
Preanal fin length	71.6	68.8	6th anal fin soft ray length <sup>4</sup>	15.3	-
Prepelvic fin length	40.3	38.6	Pectoral fin length	49.4	47.9
1st dorsal fin spine length	11.4	-	Pelvic fin spine length	14.5	-
2nd dorsal fin spine length	22.7	-	1st pelvic fin soft ray length	19.3	-
3rd dorsal fin spine length	21.9	-	2nd pelvic fin soft ray length	21.9	-
4th dorsal fin spine length	18.5	22.5	3rd pelvic fin soft ray length	21.6	-
5th dorsal fin spine length	15.1	19.6	4th pelvic fin soft ray length	18.5	-
6th dorsal fin spine length	13.6	-	5th pelvic fin soft ray length	14.2	-
7th dorsal fin spine length	12.8	-	Caudal fin length	40.9	-
8th dorsal fin spine length	11.1	12.9	Caudal peduncle length	14.5	14.1
9th dorsal fin spine length	8.5	9.3	Caudal peduncle depth	9.7	10.3
10th dorsal fin spine length	5.4	6.1			
11th dorsal fin spine length	5.1	5.5	Percent of head length		
12th dorsal fin spine length	13.9	14.1	Snout length	50.3	45.2
1st dorsal fin soft ray length	16.2	-	Orbit diameter	20.7	23.3
2nd dorsal fin soft ray length	17.6	-	Interorbital width <sup>1</sup>	13.0	13.7
3rd dorsal fin soft ray length	17.9	-	Interorbital width <sup>2</sup>	18.9	18.5
4th dorsal fin soft ray length	19.3	-	Upper jaw length	39.6	38.4
5th dorsal fin soft ray length	19.3	-	Postorbital length	35.5	37.0
6th dorsal fin soft ray length	19.0	-	3rd dorsal fin spine length	45.6	-

<sup>1</sup>Between the posterior ends of the preocular spine bases; <sup>2</sup>between the vertical midline of the eyes; <sup>3</sup>anterior element; <sup>4</sup>posterior element; -, broken.

and lowermost rays extending to 1/3~1/2 length of each upper adjacent ray; lower 7 rays filamentous. Pelvic fin with 1 spine and 5 soft rays, 1st~3rd soft rays branched, remaining rays unbranched; 2nd soft ray longest, slightly longer than upper jaw length. Caudal fin with 14 rays, all unbranched; 8th ray longest, slightly greater than body depth.

Longitudinal scale rows ca. 54; pored lateral line scales 21; scale rows between origin of last dorsal spine and lateral line 8; scale rows between origin of 1st anal fin spine and lateral line ca. 20. Gill rakers on upper limb 4, on lower limb 14, including 6 rakers on hypobranchial; gill rakers short and spinous, longest raker on 1st gill arch less than 1/4 length of longest gill filament; 4th gill slit closed by membrane. Vertebrae 24. Swimbladder absent.

Body and head strongly compressed, head width narrower than greatest body width. Body moderately deep, deepest at origin of 2nd dorsal fin spine. Head large, length greater than body depth. Posterior lacrimal spine with a large, rounded tentacle, its anterior margin corrugated, length of tentacle approximately equal to orbit diameter. No tentacle on supraocular spine. A pair of tentacles projecting from anterior surface of lip at symphysis of upper jaw, each tentacle divided into 2 major branches. No tentacle on anterior nostril. A small tentacle on cheek. Five circular tentacles along preopercular margin; lowermost largest, elliptical, length slightly less than pupil diameter; uppermost on lowermost preopercular spine. Three tentacles on each side of ventral surface of mandible; anteriormost tentacle simple, tiny, located anterior to 1st dentary pore; 2nd tentacle simple, long, slender, located between 1st and 2nd dentary pores; 3rd tentacle largest, length slightly less than depth of posterior margin of maxilla, with several appendages. Small elliptical or triangular fleshy tentacles on outer part of eye membrane. Very few obvious tentacles on body, except on lateral line scales; 4 large tentacles, somewhat shorter than orbit diameter, associated with lateral line scales. Tiny tentacles along all dorsal fin spines and soft rays, some caudal fin rays, and 7 uppermost rays of pectoral fin, but absent from pelvic and anal fin rays.

Numerous small papillae covering head and body. Anterior nostril with low fleshy rim. Posterior nostril opening upward behind low lacrimal ridge, not visible laterally. Two distinct sensory pores; 1st anterior to anterior nostril, 2nd between anterior and posterior nostrils. Underside of dentary with 3 small sensory pores on each side

and a small pore behind nodular portion of lower jaw on each side. No scales on surface of head, including opercle, interorbital space and occipital pit. Body covered with small cycloid scales, not extending onto fins. No scales on ventral surface of body or pectoral fin base.

Mouth oblique, forming an angle of about 40° to horizontal axis of head and body. Posterior margin of maxilla not reaching vertical level of anterior margin of orbit. Lateral surface of maxilla smooth with no ridges. Lower jaw with thickened symphyseal portion fitting into shallow median depression of upper jaw when mouth fully closed. Width of symphyseal gap separating premaxillary teeth bands approximately equal to width of each band. Upper and lower jaws with a band of villiform teeth, bands narrowing posteriorly; width of tooth band of upper jaw approximately equal to that of lower jaw; most teeth of upper jaw approximately same length as teeth of lower jaw. Patch of villiform teeth on each side of vomer. No teeth on palatine.

Dorsal profile of snout curved sinuously, initially convex, then deeply concave. Nasal spine simple, directed dorsoposteriorly, its length approx-

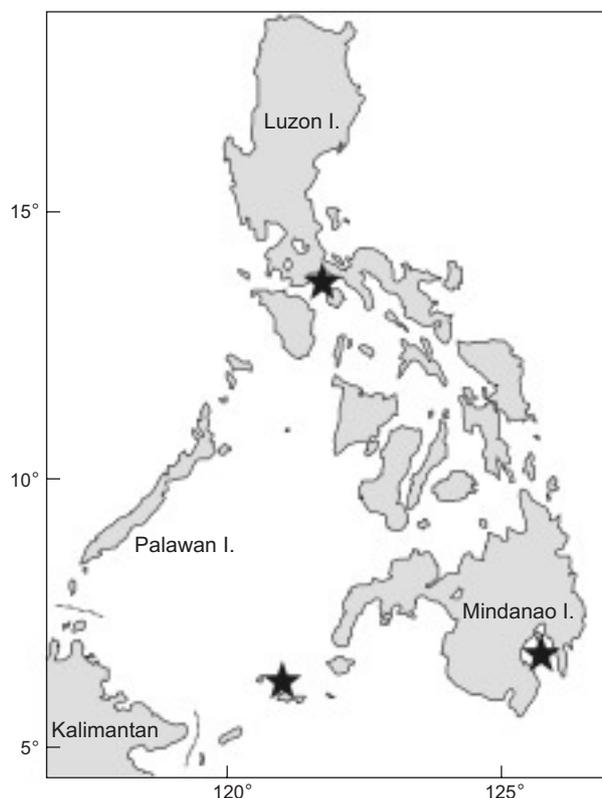


Fig. 4. Currently known capture localities of *Hipposcorpaena filamentosa*.

imately equal to anterior nostril diameter. Posterior margin of ascending process of premaxilla not reaching vertical level of posterior nostril. A distinct ridge projecting from lateral surface of frontal located about midway between nasal spine and preocular spine base. Interorbital ridges present, beginning level with supraocular spine and ending at base of postocular spine. Interorbital space deep, forming V-shape in anterior view; about 1/2 of orbit extending above dorsal profile of head. Preocular spine simple, directed upward, tip extending slightly beyond a horizontal line through upper margin of pupil in lateral view. Supraocular spine simple, located considerably anterior to vertical midline of eye. Postocular spines simple, triangular in lateral view. Tympanic spine simple, sharp, directed upward. No coronal or extra spines. Occipital pit shallow with a distinct transverse ridge in front of occipital pit, curved posteriorly in dorsal view. Parietal and nuchal spines well developed, both spines joined at base. Sphenotic with 4 small spines. Postorbital with 2 small spines, smaller than sphenotic spines. Pterotic spine simple, small, pointed with narrow base, located just above uppermost end of preopercular ridge. Posttemporal spine simple, pointed, small, directed dorsoposteriorly; no upper posttemporal spine. Supracleithral spines simple, pointed.

Lateral surface of lacrimal with 5 low ridges radiating from center, but lacking spines; uppermost end of upwardly directed ridge with a bump directly below anterior nostril; anterior end of forward ridge and lower end of downward ridge not projecting over upper lip. Suborbital ridge very low, with 3 spines; 1st spine located about midway between front of upper lip and anterior margin of orbit; 2nd and 3rd spines adjoining, located below posterior part of orbit. Very broad space between ventral margin of orbit and suborbital ridge. Suborbital pit shallow, front rimmed by an oblique low lacrimal ridge. Preopercle with 3 blunt spines; uppermost spine largest, with a low median ridge; 2nd spine with a low median ridge; 3rd spine without median ridge. No supplemental preopercular spine. Upper and lower opercular spines simple with a median ridge; lower spine almost horizontal.

Origin of 1st dorsal fin spine above posttemporal spine base. Posterior margin of opercular membrane and upper end of pectoral fin base extending beyond vertical from base of 3rd dorsal fin spine. Posterior tip of longest pectoral fin ray extending well beyond vertical from posterior end of anal fin base. Origin of pelvic fin anterior to base of pectoral fin; posterior tip of depressed

pelvic fin just reaching anus. Origin of 1st anal fin spine below origin of last dorsal fin spine.

*Color when fresh:* See Fig. 1.

*Color of preserved specimens:* Based on KPM-NI 13005, 35.2 mm SL. Snout between front of upper lip and an oblique line from just below orbit to lacrimal, and tentacles on lacrimal and lower preopercle white; underside of mandible and lower preopercle and opercle with melanophores; remainder of head translucent white. Lateral surface of body yellowish with 2 almost vertical faint-brown bands (reddish in fresh specimen, see Fig. 1). Anteroventral surface of body, including area between pelvic fin bases, blackish. Spinous portion of dorsal fin transparent (formerly white on membrane between 1st and 2nd spines; red band shown in Fig. 1 lost) with an oblique white marginal band and a poorly defined small black spot basally between 5th and 6th spines. Soft-rayed portion of dorsal fin translucent. Pectoral fin base blackish with a white blotch, larger than orbit diameter. Pectoral fin membranes transparent with scattered melanophores in upper part. Pelvic and anal fin membranes black. Caudal fin transparent with black posterior and ventral margins, and a large back spot, approximately 1.5 times orbit diameter, basally between 9th and 12th rays. Color of USNM 168183 specimen (31.1 mm SL) had faded to an entirely brown body, but 3 large spots on the lower basal caudal fin remained obvious.

*Distribution:* Currently known only from the Philippines (Fig. 4).

*Remarks:* *Hipposcorpaena filamentosa* was originally described by Fowler (1938) from a single specimen (USNM 98819) from the Philippines. Eschmeyer et al. (1973) corrected some of the details given in the Fowler's original description and figure, after examining the holotype, as follows: "Fowler (1938, p. 73) gives a dorsal fin count of XI + 10, but this should have been XII + 9<sup>1</sup>/<sub>2</sub>; he lists anal rays as 9, but they total 8<sup>1</sup>/<sub>2</sub> and seem to be III + 5<sup>1</sup>/<sub>2</sub>...The rays near the lower end of the pectoral fin are the longest, and the 5th from the bottom extends past the posterior base of the anal fin (not as in Fowler's figure 31). The vertical scale rows were given by Fowler as 30; although many scales are missing, the scale rows probably number about 35-40."

Our examination of the newly collected specimen (KPM-NI 13005, 35.2 mm SL; Fig. 1) showed it to be consistent with Fowler's original description and figure (and the corrections by Eschmeyer et al. 1973), with the exception of the anal fin ray (see "Remarks" of the genus account) and longitu-

dinal scale row (= vertical scale row) numbers, a tentacle on the upper margin of the orbit, and black markings on the lower caudal fin. Although counting the longitudinal scale rows was difficult owing to their irregularity and the indistinct scale contours, the KPM-NI 13005 specimen had ca. 54 scale rows, a much higher number than previously reported: 30 given by Fowler (1938), about 35–40 by Eschmeyer et al. (1973), and 30–45 by Poss (1999). The holotype (according to Fowler's original figure) had a large tentacle on the upper margin of the orbit, whose length was greater than the orbit diameter. The other historical specimen (USNM 168183, 31.1 mm SL, examined in this study) had a similar, but smaller tentacle, shorter than the orbit diameter. Such a tentacle was absent from the KPM-NI 13005 specimen (see Figs. 1, 2), indicating that the presence or absence of a tentacle on the orbit may vary individually. Figure 1 shows a distinct black spot on the lower part of the caudal fin. However, the holotype apparently had 4 spots on the lower part of the caudal fin (from Fowler 1938: fig. 31), and the USNM 168183 specimen had at least 3 black spots (the posterior 1/2 of the caudal fin was broken). A related species, *Rhinopias frondosa*, variably has 1 or 2 black spots on the soft-rayed portion of the dorsal fin. Thus, we concluded that a variable number of black spots on the caudal fin in *H. filamentosa* also represents individual variation.

Eschmeyer et al. (1973) believed that *H. filamentosa* was known only from 2 “juvenile” specimens (29.4 and 31.1 mm SL). Dissection of the abdomen on the right side of the KPM-NI 13005 specimen (35.2 mm SL) of *H. filamentosa* showed it to have an expanded gonad, full of relatively large-sized ova, indicating that *H. filamentosa* is a small species, and the other known specimens are presumably also subadults or adults.

Eschmeyer et al. (1973) discussed the shedding of the “skin” in the genus *Rhinopias*, including *R. aphanes*, *R. argoliba* Eschmeyer, Hirosaki and Abe, *R. frondosa*, and *R. xenops*. They reported that the “skin” was best termed a cuticle, being an epidermal product on the basis of a histological analysis of the shed layer by R. Krejsa. We also found a cuticle in the process of shedding on the under surface of the body in the KPM-NI 13005 specimen of *H. filamentosa*.

*Hipposcorpaena* is a monotypic genus; comparisons with other related genera are given in remarks under the genus account.

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