

Redescription of the Holotype of *Proscyllium habereri* (Lamniformes, Triakidae)

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Proscyllium habereri was originally described as *Scyllium (Proscyllium) habereri* by Hilgendorf (1904), on the basis of an adult male specimen from Formosa. Later, Tanaka (1912) described a similar shark under the name *Calliscyllium venustum* from Japan, but he didn't compare his species with the Formosan *P. habereri*. Since then, the taxonomic status of these sharks has been confused (for further details, see Compagno, 1970). For example, Fowler (1941) placed them in separate families, but Compagno (1970) considered them to be possibly specific synonyms. One of the reasons of the confusion is the poor original description of *P. habereri*. Hilgendorf (1904) described the type rather briefly without figures. Later, Schmidt (1930) gave some measurements of the type specimen, but the description of *P. habereri* remains poor.

Recently, through the courtesy of Dr. H.-J. Paepke of Zoologisches Museum der Humboldt Universität zu Berlin, I had a chance to study the holotype (ZMB 16201) of *Proscyllium habereri* and to compare it with *C. venustum*. Though

the type specimen of *C. venustum* appears to have been lost, Tanaka (1912) made a good description with fine figures. My comparison of the holotype of *P. habereri* with the original description and figures of *C. venustum* indicates that these two types are very similar in external morphology, and the most distinct difference is the coloration. However, the coloration of the type of *P. habereri* seems to be about to fade away and a sooner description is needed. In addition, *P. habereri* is the older name and would have a priority in the nomenclature, if they are conspecific.

It is, therefore, necessary and a purpose of this paper to give a more detailed description and figures of the holotype of *P. habereri*. Measurements are after Bigelow and Schroeder (1948), and the terminology around eye and of teeth follows Compagno (1970).

Proscyllium habereri (Hilgendorf, 1904)

(Figs. 1, 2)

Holotype: *Scyllium (Proscyllium) habereri* Hilgendorf, 1904: 39, Catalogue no. ZMB 16201 (Zoologisches Museum für Naturkunde der Humboldt Universität zu Berlin), an adult male, TL 51 cm in the original description, type locality: Takao, Formosa.

Body slender, highest at 1st dorsal origin. Head depressed; height equal to preoral snout.

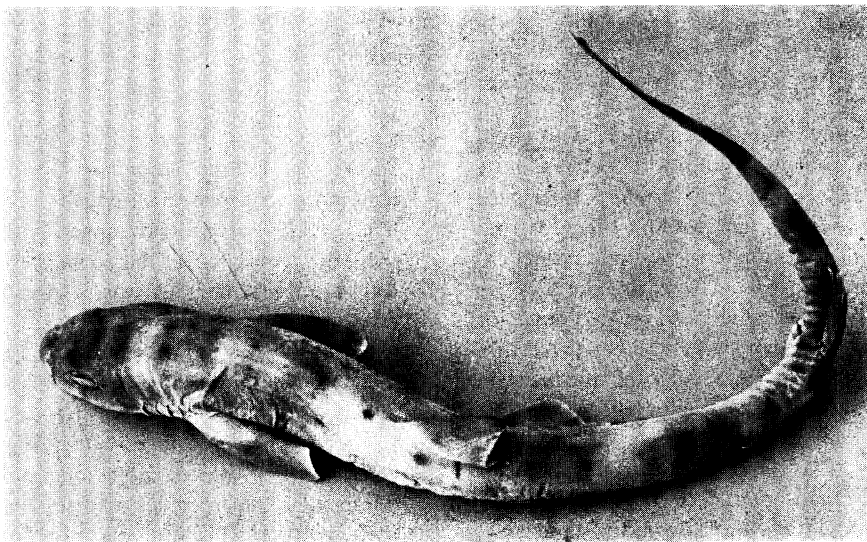


Fig. 1. Holotype of *Proscyllium habereri* (ZMB 16201).

Table 1. Measurements and counts of the holotype of *Proscyllium habereri* (ZMB 16201, adult male).

Characters	mm	%	Characters	mm	%
Total length	513.0	100.0	Interspace between:		
Trunk: breadth	36.0	7.0	1st and 2nd dorsal fins	135.3	26.3
height	36.0	7.0	2nd dorsal and caudal fins	53.0	10.3
Snout tip to:			pectoral and pelvic fins	91.4	17.8
anterior nostril	15.8	3.1	pelvic and anal fins	92.8	18.1
posterior nostril	23.3	4.5	anal and caudal fins	52.0	10.1
mouth	25.0	4.9	Distance from:		
eye	26.2	5.1	eye to spiracle	3.1	0.6
spiracle	51.3	10.0	eye to 1st gill opening	24.7	4.8
1st gill opening	67.1	13.1	nostril to mouth	2.1	0.4
5th gill opening	87.0	17.0	First dorsal fin:		
1st dorsal origin	160.0	31.2	vertical height	29.8	5.8
2nd dorsal origin	321.0	62.6	base length	34.6	6.7
upper caudal origin	410.0	80.0	free rear margin	15.4	3.0
lower caudal origin	406.0	79.0	Second dorsal fin:		
pelvic origin	192.0	37.4	vertical height	25.0	4.9
pectoral origin	83.6	16.3	base length	33.0	6.4
anal origin	317.0	61.8	free rear margin	14.3	2.8
cloaca	207.0	40.4	Anal fin:		
Head: breadth	45.0	8.8	vertical height	10.4	2.0
height	24.6	4.8	base length	30.2	5.9
Horizontal eye diameter	19.2	3.7	free rear margin	40.7	7.9
Mouth: breadth	26.0	5.1	Pectoral fin:		
height	15.0	2.9	outer margin	52.0	10.1
Internostril width	5.5	1.1	inner margin	27.8	5.4
Interorbital width	26.7	5.2	distal margin	29.0	5.7
Labial folds: upper	3.1	0.6	base length	19.2	3.7
lower	2.9	0.6	Clasper length (from axil to tip)	53.6	10.4
Gill opening lengths:			Number of vertebrae:		
1st	7.7	1.5	monospondylous centra		38
2nd	7.4	1.4	precaudal diplospondylous centra		66
3rd	7.3	1.4	caudal diplospondylous centra		ca. 52
4th	7.2	1.4			<u>31+26</u>
5th	4.4	0.9	Teeth:		<u>23+28</u>

Snout tip evenly rounded; length of snout equal to interorbital width. Anterior nostril a little behind middle of preoral snout. Interspace between anterior nostrils equal to length from snout tip to posterior nostril. Interspace between posterior nostrils narrow, about 1/3 of eye diameter. Nasal valve close to mouth; posterior margin almost straight with a slight projection at outer angle. Labial furrows distinct on both jaws; upper one developing; lower one minute. About 20 dermal papillae inside of lower teeth. Eye elliptical; horizontal diameter a little less than interspace between anterior nostrils. Nictitating lower eye lid rudimentary, but present along all lower margin of orbit;

secondary eye lid present below orbit. Spiracle small, just behind secondary eye lid, almost continuing from subocular pouch. Gill openings five, evenly spaced; 1st longest, 5th shortest; the latter a little longer than a half of the former; fourth gill opening just above pectoral origin; 5th on pectoral base. Interorbital space flat; width same with mouth width.

Pectoral origin a little behind midpoint of the distance from snout tip to 1st dorsal origin. Corners of pectoral fin rounded; angle of inner corner formed by lines along inner and posterior margins of the fin much obtuse; that of outer corner acute. Pectoral fin not reaching 1st dorsal origin by a distance of eye diameter, when

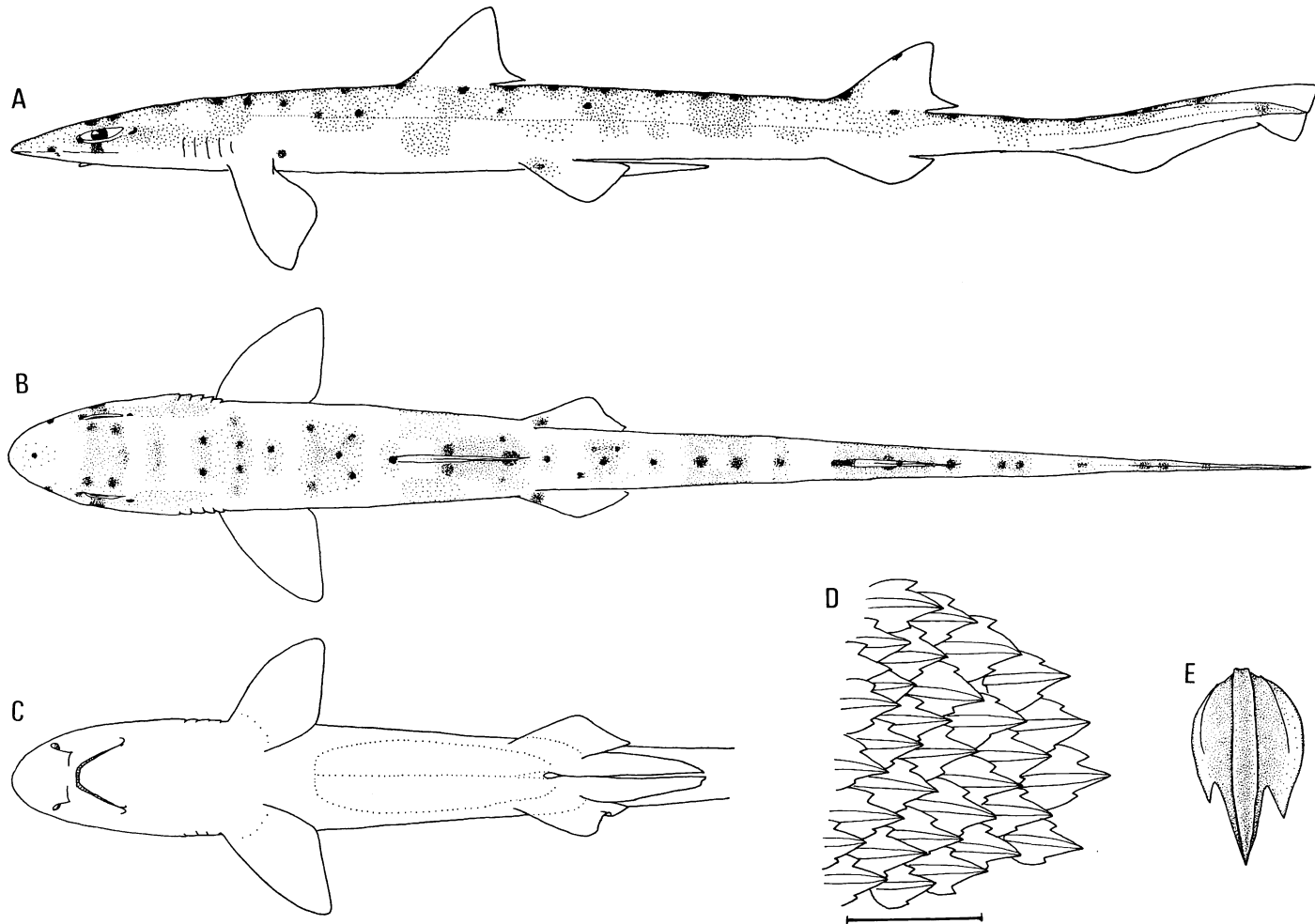


Fig. 2. Holotype of *Proscyllium habereri*. A: Lateral side. B: Dorsal side. C: Ventral side, showing clasper siphon. D: Dermal denticles from dorsolateral side of trunk. Scale indicates 1 mm. E: Enlargement of a typical dermal denticle from trunk.

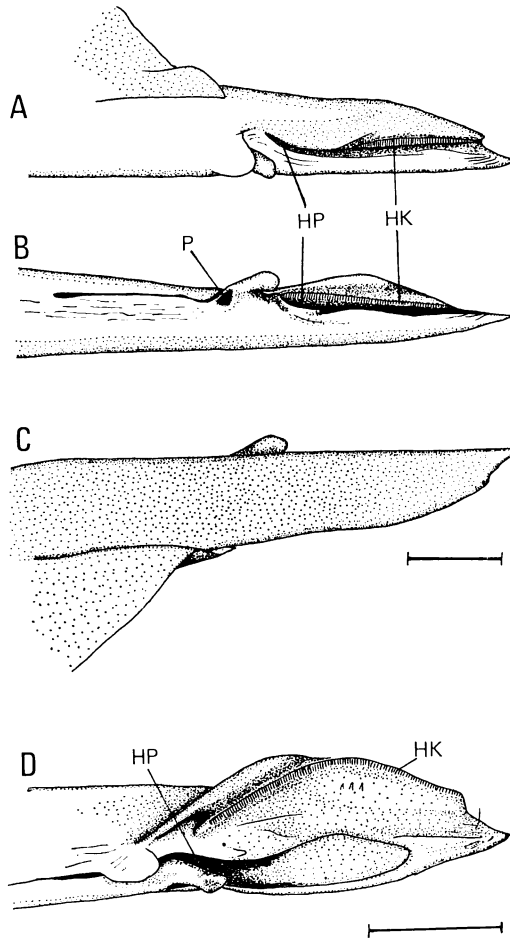


Fig. 3. Right clasper of the holotype. A: Dorsal side. B: Medial side. C: Ventral side. D: Inside of clasper groove. Scales indicate 1 cm. HK, Hooks; HP, Hypopyle; P, Pseudosiphon.

the fin is pressed to body. First dorsal origin at middle between pectoral axil and pelvic origin; apex rather acute, free rear part elongate, posterior margin straight. Second dorsal origin slightly anterior to midpoint between 1st dorsal origin and tip of caudal fin; height of the fin lower than that of 1st dorsal fin; apex more broadly rounded than the 1st one; posterior margin curved; free rear part elongate. Pelvic origin just below free rear part of 1st dorsal fin. Anal origin opposite or a little anterior to 2nd dorsal origin; end of anal base anterior to end of dorsal base; height of the fin less than half of 2nd dorsal fin height. Caudal fin slender,

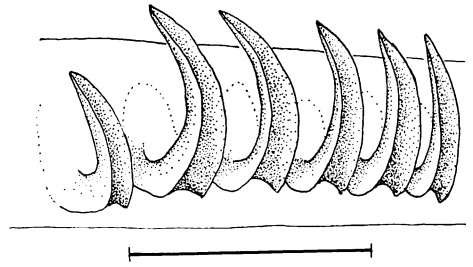


Fig. 4. Hooks of clasper of the holotype. Scale indicates 1 mm.

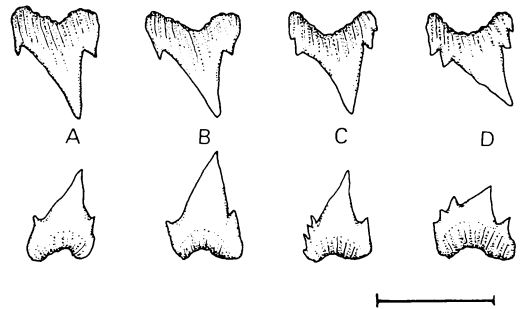


Fig. 5. Left teeth of the holotype. A: 4th teeth from symphysis. B: 7th. C: 14th. D: 20th. Scale indicates 1 mm.

without prominent expansion on anterior ventral lobe. Anus slightly behind midpoint from tip of snout to upper caudal origin. Clasper (Fig. 3) fully developed, extending beyond midpoint of interspace between pelvic and anal fins; pseudosiphon at middle on the medial side; a series of small hooks (70~75 in number, Fig. 4) along dorsal edge of rhipidion. Clasper siphon (Fig. 2C) large, reaching anteriorly hind margin of pectoral fin.

Teeth 31+26/23+28. Upper teeth (Fig. 5) more slender and larger than the lower ones; the former about same in length to corner of mouth; transverse ridges well developed; each tooth with 1~2 premedial and 1~2 postlateral cusplets. Lower teeth (Fig. 5) wider and shorter than the upper ones; the former getting lower in height to mouth corner; transverse ridges confined only to basal portions and most parts of the teeth smooth; each tooth with 1~4 premedial and 1~2 postlateral cusplets.

Dermal denticles (Fig. 2D, E) closely spaced and small, with a large central cusp and small lateral cusps; median ridge strong, with higher

margins, forming a groove from basal part to the tip of the central cusp; weak lateral ridges sometimes present.

Intestine with about 10 spiral valves. Vertebrae consisting of 38 monospondylous, 66 precaudal diplospondylous and about 52 caudal diplospondylous centra.

Coloration: Ground color of body on dorsal and lateral sides pale yellowish brown. Ventral side whitish. Brownish bands and brown spots on dorsal and lateral sides of the body. Broad brownish bands present transversely at eyes, pectoral origin, middle between pectoral base and 1st dorsal origin, posterior end of 1st dorsal base, just behind pelvic base, middle between posterior end of pelvic and 2nd dorsal bases, 2nd dorsal base, middle between posterior end of 2nd dorsal base and upper caudal origin, anterior fourth of caudal fin. Faint and narrower transverse brownish bands present between these broad bands. Brown spots present on middorsal part of trunk and tail, but those on head and lateral sides of body being about to fade away. No spots on pectoral fins. Pelvic fins with a spot at just behind its origin on base. First dorsal fin with a spot just above its base line. Second dorsal fin with a spot on anterior margin near apex. Caudal fin with spots on dorsal margin and a spot just above caudal subterminal notch. Anal fin plain colored.

Measurements shown in Table 1.

Literature cited

- Bigelow, H. B. and W. C. Schroeder. 1948. Sharks. In: Tee-Van, J. et al., eds.: Fishes of the western North Atlantic, Part 1. pp. 56~576, figs. 6~106. Mem. Sears Found. Mar. Res., Yale Univ., New Haven. xvii+576 pp., 106 figs.
- Compagno, L. J. V. 1970. Systematics of the genus *Hemistriakis* (Selachii: Carcharhinidae), and related genera. Proc. Calif. Acad. Sci., 4th ser., 37 (4): 63~98, figs. 1~8.
- Fowler, H. W. 1941. Contributions to the biology of the Philippine Archipelago and adjacent regions. The fishes of the groups Elasmobranchii, Holocephali, Isospondyli, and Ostarophysii obtained by the United States Bureau of Fisheries steamer "Albatross" in 1907 to 1910, chiefly in the Philippine Islands and adjacent seas. U.S. Nat. Mus., Bull. 100, 13: 1~879, figs. 1~30.
- Hilgendorf, F. 1904. Ein neuer *Scyllium*-antiger Haifisch, *Proscyllium habereri* nov. subgen., n. spec. von Formosa. Sonder-Abdruck Sitzungs-Berichten Gesellschaft natur., 1904 (2): 39~41.
- Schmidt, P. 1930. On two rare Japanese sharks *Proscyllium habereri* Hilgendorf and *Apristurus macrorhynchus* Tanaka. Compt. Rend. Acad. Sci. URSS. 1930, 627~631, figs. 1~2.
- Tanaka, S. 1912. Figures and descriptions of the fishes of Japan, including Riukiu Islands, Bonin Islands, Formosa, Kurile Islands, Korea and Southern Sakhalin. Vol. 10. Kazama Shobo, Tokyo. (pp. 165~186, figs. 172~190).

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タイワンザメの完模式標本の再記載

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タイワンザメ *Proscyllium habereri* は台湾・高雄から得られた成体雄1尾の標本に基づいて Hilgendorf (1904) により記載された。その後、Tanaka (1912) は日本からヒョウザメ *Calliscyllium venustum* を記載したが、この両種の取り扱いには研究者により様々である。今回、タイワンザメの完模式標本 (ZMB 16201) を調査し、ヒョウザメの原記載と直接比較する機会を得たが、現在のところ、両者のもっとも大きな差異は斑紋であった。しかし、タイワンザメの模式標本の体色、斑紋は消失しつつあり、さらに原記載が簡単で図もないため、ここに詳細な完模式標本の再記載を行った。

なお、タイワンザメとヒョウザメの分類学的関係については将来の研究が必要である。

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