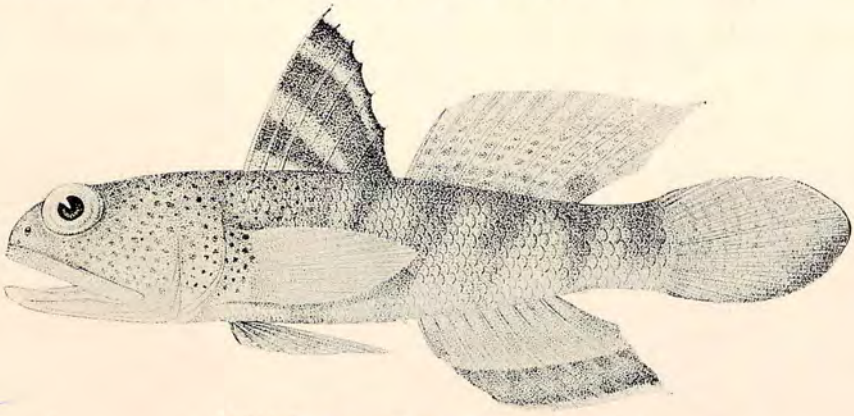
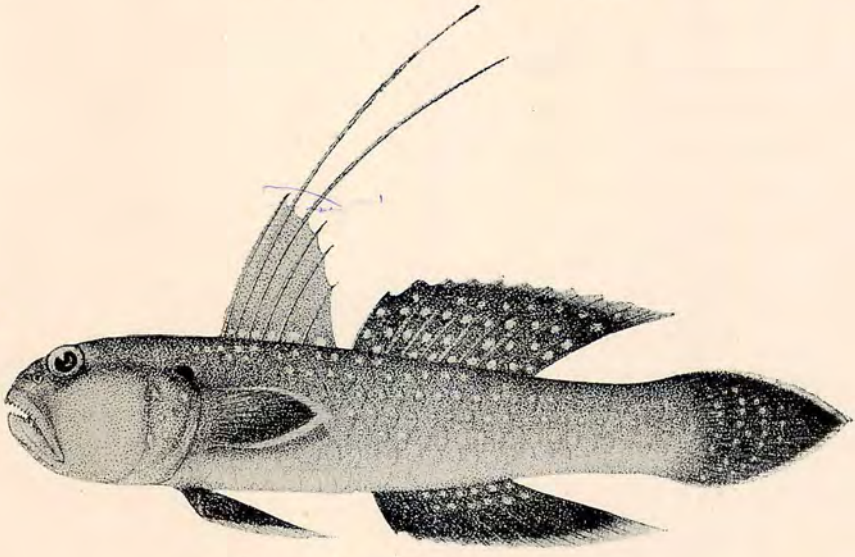
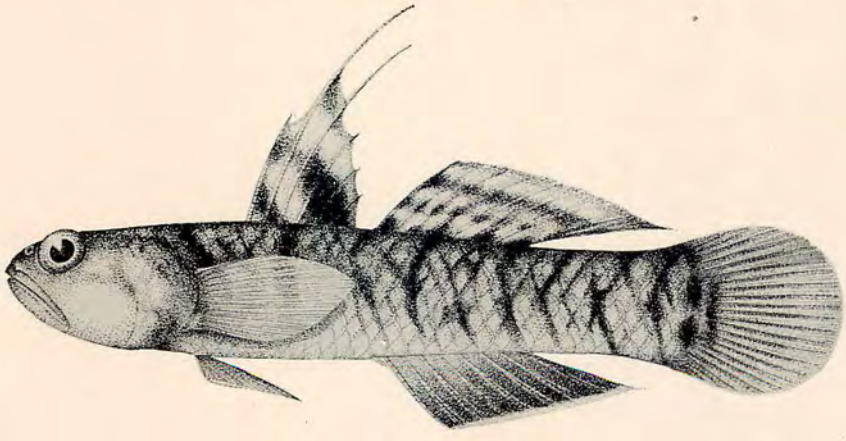


Mahidolia normani, new genus and species



Acentrogobius spilopterus, new species



Vaimosa chulae, new species

NEW SIAMESE GOBIES

From drawings by Luang Masya Chitrakarn

CONTRIBUTIONS TO THE ICHTHYOLOGY OF SIAM.

By Hugh M. Smith.

I. Descriptions of a New Genus and Three New Species of Siamese Gobies.

Mahidolia, new genus.

Body and head compressed; body covered with ctenoid scales, largest posteriorly, becoming cycloid anteriorly, small and embedded on predorsal region and part of nape, but not extending to eyes; breast scaly; cheeks, opercles, and base of pectorals naked; head large; interorbital space very narrow; mouth large, nearly horizontal, gape wide and extending far beyond eye; jaws produced backward nearly to angle of preopercle and united internally by a thick prenum which extends well forward; teeth in upper jaw in a single, rather wide-spaced, inwardly-curving row, teeth in lower jaw pluriserial, with some teeth in outer and inner rows enlarged but not canine; tongue rounded; gill openings extending well forward, gill membranes narrowly joined to isthmus; eye large, in anterior half of head, and reaching dorsal profile; all fins except caudal large; first dorsal with 6 spines, second dorsal with 10 branched rays, the two fins separated by a narrow space; caudal rounded; anal similar to second dorsal, with 9 branched rays; ventrals long; pectorals large, their base fleshy and partly covered by branchial membranes.

This genus may at once by recognized by the large head, large mouth partly closed at the sides by a frenum extending between the upper and lower jaws, small teeth, backwardly-produced jaws, and very large dorsal and anal fins.

The genus is named in honor of His Royal Highness Prince Mahidol of Songkla, deceased, in appreciation of his substantial interest in the fishes and fisheries of Siam. This interest was manifested in various ways, notably by the setting aside of a large fund for sending young Siamese abroad for special training in fishery work

Mahidolia normani Smith & Koumans, new species.

Description.—Body moderately elongate and compressed; depth 4.3 in standard length, least depth of caudal peduncle about .5 depth of body and 1.5 times in its own length; head large, about 3 times in standard length; profile in front of eye rather abruptly decurved; snout blunt, shorter than eye; eye large, prominent, reaching dorsal profile, 3.5 in head; space between eyes very narrow, less than .5 diameter of eye; mouth terminal, very large, nearly horizontal, posterior angle extending under pupil, jaws produced far backward, their length .66 head; teeth small, those in upper jaw uniserial and slightly curved backward, those in lower jaw pluriserial, with some teeth in outer and inner rows slightly larger but not canine; a thick frenum extending internally between the jaws at the angle reduces the width of gape; tongue rounded; branchial aperture extending forward to a point in advance of the produced tip of the jaws, the membranes narrowly joined to the isthmus; body covered with weak ctenoid scales, largest posteriorly, becoming cycloid anteriorly and crowded and irregular under first dorsal, a few minute and imbedded scales in front of dorsal but none as far forward as eyes; belly scaly; cheeks, opercles, and base of pectorals unscaled; scales in lateral series about 44 or 45, in transverse series between origin of second dorsal and origin of anal about 15, around narrowest part of caudal peduncle 12.

Fins: Dorsal formula VI–I,10; origin of first dorsal over base of pectorals; first dorsal high, first spine as long as head less snout, length of spines decreasing gradually to last which equals diameter of eye; base of first dorsal 1.5 in head; space between dorsals less than .5 eye; second dorsal lower than first, longest ray (excepting penultimate) about .8 first dorsal spine, ninth branched ray produced and when flexed reaching to about one-third length of caudal; caudal rounded, .75 length of head; anal origin behind that of second dorsal; anal rays I,9; anal similar to second dorsal but its base only .8 that of second dorsal, the rays slightly shorter, and the produced penultimate ray when flexed reaching only to midbase of caudal; ventrals long, reaching anal papilla, frenum occupying about one-third their length and forming a deep cup; pectorals long, extending beyond origin of anal, the base rather fleshy.

Coloration (in life): General color of body and top of head yellowish-green; 5 broad, dull purplish bands on the posterior part of body, broader than the interspaces, extending obliquely downward and forward from back to ventral surface; several less distinct and narrower purplish bands extending either vertically or slightly obliquely downward amd backward under first dorsal; belly white; under side of head yellowish-green; top and sides of head as far forward as eyes, back and sides under first dorsal, and base of pectorals thickly covered with small, round, sharply-defined greenish-black spots; first dorsal marked with black and orange, a black band near base, a wider one near margin, the margin black; second dorsal pale green, all membranes with blackish spots which form 6 to 8 lines across fin, an obscure blackish ocellus on last two membranes and last rays, tips of all rays yellow; caudal pale greenish-yellow with narrow brown cross-lines, upper edge yellow, lower edge purple; anal pale greenish-yellow, with a broad, pale purple, dark-edged submarginal cross-band; ventrals pale greenish-yellow, with purple margin; pectorals bright yellowish-green.

Type.—A specimen 6.2 cm. long taken in a bag-net (rua saiman) in the estuary of the Chantabun River at Lem Sing, Southeastern Siam, June 27, 1931.

Other specimens.—Taken in the same locality and on the same date as the type were 7 specimens ranging in length from 4.2 to 6.4 cm. Other specimens in the collection of the Siamese Department of Fisheries were obtained in the same locality as follows: one 6.5 cm. long, June 14, 1926; one 6.4 cm. long, June 28, 1931; and one 5.5 cm. long August 31, 1931, all caught in rua saiman operating at ebb tide.

Remarks.—This species appears to be fairly common in the brackish water of the broad estuary of the Chantabun River and may be looked for in suitable situations at other localities on the southeast and other coasts.

One specimen 6.4 cm. long when taken from the net had an anchovy (*Stolephorus*) 3.2 cm. long with its head in the anterior part of the goby's mouth and the posterior part of its body projecting from the branchial aperture. The goby had apparently struggled

violently, for the backwardly-produced jaws on both sides had been taken inside the mouth.

There is some variation in the number and position of the dark cross-bands and in the color pattern of the spinous dorsal fin. The area covered by the round black spots on the sides varies somewhat in extent in different specimens; in some it extends as far back as the tip of the pectorals.

A manuscript description of this fish was prepared and generic and specific names were assigned in 1926, and a drawing was made in 1928, based on the specimen collected June 14, 1926, but publication was deferred in the hope that additional material would be obtained. This was not forthcoming until 1931. In April, 1932, a specimen was sent to Dr. Frederik P. Koumans, of the Rijks Museum of Natural History in Leiden, Holland, who in 1931 had published "A Preliminary Revision of the Genera of the Gobioid Fishes with United Ventral Fins", after an exhaustive study of the group and an examination of types in museums of Europe and America. Dr. Koumans was asked for an expression of opinion as to the generic relations of the fish, and in a letter dated May 10, 1932, stated that it belongs to a new genus to which he had already given the name *Rictugobius* and to a new species which he had called *normani*, after Mr. J. R. Norman, of the department of fishes of the British Museum. This action by Dr. Koumans was based on the finding among the undetermined gobies in the British Museum of a specimen, agreeing in every respect with the specimen from Siam, which was collected in Dar-es-Salaam, on the east coast of Africa, in latitude 6° 4′ S., longitude 39° 10′ E. On learning that this species had borne the manuscript name *Mahidolia* for over five years, Dr. Koumans courteously agreed to suppress his own name *Rictugobius*, which was to have been published on July 15, 1932. Under the circumstances, it is a pleasure to retain *normani* as the specific name for this very interesting goby and to associate Dr. Koumans with myself as co-author.

Acentrogobius spilopterus, new species.

Description.—Body elongate, compressed, depth less than head and contained 4.4 times in standard length; dorsal and ventral profiles similar; caudal peduncle rather broad, about .5 its length which equals head; head 3.5 in standard length, moderately compressed, its width about equal to its depth and to its length less snout; snout convex, rather markedly decurved, bluntly pointed when viewed from above, greater than diameter of eye and contained 3.5 times in head; eye dorso-lateral, on dorsal profile, 4.5 times in head; bony interorbital space narrow, concave, less than eye; mouth large, very oblique, terminal, jaws equal, posterior angle of maxillary extending to under middle of eye; teeth pluriserial, outer row in both jaws enlarged but not canine, a lateral pair of enlarged teeth in lower jaw recurved and canine; tongue bluntly rounded; entire body covered with large, deciduous, feebly ctenoid scales becoming cycloid on belly, breast, and pectoral base, and much smaller, crowded, and cycloid in predorsal region where they do not extend to eyes; no scales on cheeks or opercles; scales in lateral series 32 or 33, in transverse series (between second dorsal and anal) 8 or 9, in predorsal region 18 to 20, about narrowest part of caudal peduncle 12; mucous canals on head feebly developed.

Fins: Dorsal formula VI–I,10; first dorsal with first ray longer than depth of body and nearly as long as head, second and third rays greatly elongated and filamentous, the second more than twice length of head and when flexed nearly reaching caudal fin, the third slightly shorter; second dorsal comparatively high, the rays becoming successively longer, the last extending on caudal and equalling greatest depth of body, base of fin as long as head; caudal wedge-shaped, shorter than head and equal to depth of body; anal rays I,9, similar to but lower than second dorsal, the last ray longest and barely reaching caudal, base of fin .75 that of second dorsal; ventrals longer than pectorals, pointed, extending .8 distance to anal; pectorals small, obtusely pointed, not extending beyond base of first dorsal.

Coloration: Back, sides, and top of head light green; under

parts whitish; each scale on back and sides with a rounded spot of light pearly blue; opercles with a few spots of same color; a rounded bluish-black spot at upper angle of gill opening; first dorsal membranes dusky green, with a semicircular pale yellow spot at base of each membrane; second dorsal black, with from 2 to 5 rounded white spots on each membrane, the spots forming irregular transverse lines; caudal rays green, membranes black, several transverse rows of white spots, a very narrow margin of the upper edge red (white in alcohol); anal black, with 2 rows of whitish spots at base; ventrals black, with red tips; pectorals black distally with a narrow whitish margin, the broad base green.

Type.—The type is a male specimen 10.8 cm. long, from the mouth of the Tachin River, Central Siam, November 22, 1931, collected by Nai Pongse Phintuyothin, of the Siamese Department of Fisheries.

A second specimen, apparently also a male, taken at the same place and time, is 11.1 cm. long and similar to the type with the exception that the produced rays of the first dorsal fin are shorter, the second ray extending only to the seventh branched ray of the second dorsal.

Remarks.—This goby is as yet known only from the two specimens mentioned. It may at once be recognized by the greatly elongated rays of the first dorsal fin and by the peculiar coloration, more particularly the white-spotted dorsal, caudal, and ventral fins. The pearly blue spots on the scales tend to disappear completely in alcohol.

Vaimosa chulae, new species.

Description.—Moderately elongate, dorsal and ventral profiles similar; body compressed, its depth 5 in standard length, caudal peduncle rather deep, its least depth .6 its length and .75 depth of body; head broad, depressed, 3.6 in standard length, its breadth equal to its length less snout and 1.5 times its depth; snout rather abruptly decurved, broadly rounded, shorter than eyes; eye on upper profile, 3.75 in head and somewhat less than the broad, flat interorbital space; mouth large, oblique, lips rather thick, lower jaw slight-

ly included, maxillary extending to a point under posterior third of eye; teeth minute, in several rows in each jaw, none enlarged, tongue rounded; anterior nostril tubular, on edge of postlabia; groove; cheeks tumid; scales weakly ctenoid, largest posteriorlyl extending on top of head to eyes, opercle covered with large, thin scales; scales in longitudinal series 31, in transverse series 12 (between second dorsal and anal), in predorsal series 12, around narrowest part of caudal peduncle 12; rather conspicuous rows of papillae on cheeks and lower jaw, and a right-angled line from snout into interorbital space and thence behind eye; gill membranes broadly united to isthmus, the branchial openings not extending as far forward as preopercle.

Fins: Dorsal rays VI–I,7, the second and third spines longest and with filamentous tips which extend nearly to posterior end of base of second dorsal; last rays of second dorsal produced and extending to upper caudal rays; dorsal fins separated by a space equal to half diameter of eye; caudal broad, evenly rounded, its length equal to depth of body; anal similar to second dorsal but smaller, the rays I,7; ventrals rounded, with a rather deep cup, extending two-thirds distance to anal papilla; pectorals broadly pointed, extending far beyond ventrals to a point under interdorsal space, their length about equal to head less snout.

Coloration (in life): Body light yellowish-green; back and sides marked by numerous blackish-brown lines some of which form about 6 irregular cross-stripes which meet on back; an oblique blackish-brown bar extending forward and upward above each pectoral, the bars connected across the back by a narrow line; top of head marked like back; muzzle, opercles, and lower jaw dull plumbeous; belly dull orange; spinous dorsal with a broad black median band widest posteriorly, and with a black area at base of first two membranes and at margin of second membrane; second dorsal with black spots at base, a line of small black spots across basal half of fin, a diffuse black stripe across distal half, the outer part of the fin hyaline with a dusky edge; caudal membranes dark throughout, a pair of rounded blue-black spots at base and immediately posterior a dark vertical bar; anal dusky, with a narrow hyaline margin;

ventrals and pectorals with minute dark dots.

Type.—The type, a male 3.8 cm. long, was taken in a brackish pool on Koh Samui, Gulf of Siam, on July 21, 1931, by Luang Masya Chitrakarn and Nai Boon Chuay, assistants in the Department of Fisheries.

Additional specimens.—Collected at the same time and place were 4 females 2.7, 3.4, 3.5, and 4.1 cm. long. On June 28, 1931, 2 male specimens 3.1 and 3.4 cm. long were obtained by Luang Masya Chitrakarn in the estuary of the Chantabun River in rocky pools on the shore of Lem Sing, Southeastern Siam. These fish are full sized, as shown by the presence of well-developed ova.

Remarks.—This is a strikingly colored species, the blackish-brown marks which cover the body with a peculiar pattern showing very distinctly against the pale yellow-green background. The same general color pattern in exhibited by all the specimens, with slight individual variations. The head is much depressed; the snout, viewed from above, is broadly rounded; and the flat interorbital space is wider than the eye. The scales are so weakly ctenoid that a compound microscope is required to bring out this feature.

The females are similar to the males but the vertical fins are less developed, and the anal papilla, which in the male is long and pointed, is short, broad, and bifid.

This species is named for Luang Chula Vachanagupta, Director of the Department of Fisheries of Siam.