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John S. Garth

A REVIEW OF THE CRUSTACEAN GENUS *STILBOGNATHUS* VON MARTENS (DECAPODA, MAIIDAE) WITH DESCRIPTION OF A NEW SPECIES FROM THE EAST COAST OF FLORIDA

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A REVIEW OF THE CRUSTACEAN GENUS *STILBOGNATHUS* VON MARTENS (DECAPODA, MAIIDAE) WITH DESCRIPTION OF A NEW SPECIES FROM THE EAST COAST OF FLORIDA¹

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ABSTRACT

The occurrence of the genus *Stilbognathus* is reported for the first time in American waters with the description of a new species, *S. burryi*, from the unique female holotype taken off Hillsboro Light, Florida, in 125 feet of water, by L. A. Burry. A key to the known species of *Stilbognathus* is given and the relationships of the five genera representing the subfamily Ophthalmiinae in the western Atlantic are considered.

INTRODUCTION

A *Tyche*-like spider crab found among dredgings obtained off the east coast of Florida in 1946 has proved to be generically as well as specifically distinct from *T. emarginata* White (1847) of the tropical western Atlantic, and is herein assigned to *Stilbognathus* von Martens. Since the genus is new to the Western Hemisphere, its description is given below for the benefit of American workers, together with a description of the new species and a key to the existing ones.

The discovery of *Stilbognathus* in the western North Atlantic brings to five the number of maiid genera having certain remarkable characters in common which call for their recognition as a distinct element in the American crustacean fauna. For this purpose the system of classification proposed for the Maiidae by Balss (1929) has definite advantages over the more familiar system adopted by Rathbun (1925) and will be followed in this paper.

Illustrations are from the pen of Anker Petersen, staff artist, Allan Hancock Foundation.

Subfamily OPHTHALMIINAE Balss

Stenocionopiinae Miers, 1879, p. 652.

Stenocionopoida Alcock, 1895, p. 161, p. 166.

Ophthalmiinae Balss, 1929, p. 6. (Name substituted for *Stenocionopiinae* Miers to conform with the substitution of *Ophthalmias* for *Stenocionops* [Rathbun, 1897, p. 157]).

¹ Contribution No. 88 from the Allan Hancock Foundation.

The orbit consists, if complete, of a supraocular eave and a postocular spine, while the intercalated spine is lacking; on this account the subfamily has no relation to the Maiinae [as restricted by Balss], in which the intercalated spine is present. Longer spinuous outgrowths on the supraocular eave and on the postocular spine are for the most part present. The shape of the body is elongate, somewhat truncate in front, often provided behind with a median spine or outgrowth. (Balss)

The American genera belonging to this subfamily, as recognized by Balss (*op. cit.*), are *Picroceroides* Miers (1886), *Pitho* Bell (1835), *Tyche* Bell (1835), and *Thersandrus* Rathbun (1897: name substituted for *Sisyphus* Desbonne). The remaining genera, including *Stilbognathus* von Martens (1866), are, or until now have been, restricted to the Old World. *Picroceroides* (one species: *P. tubularis* Miers, from Fernando Noronha and Bahia, Brazil) is related to *Picrocerus* A. Milne Edwards, New Caledonia, and together with *Ophthalmias* Rathbun (1897) (= *Stenocionops* Latreille partim), West Africa, India, and Hawaii, forms group one of Balss. *Pitho* (10 species: three Pacific, seven Atlantic) and *Thersandrus* (one species: *T. compressus* [Desbonne], from Guadeloupe) are joined with *Cyclocoeloma* Miers (1880), Amboina, in a second group. To quote directly: "The two genera *Tyche* Bell (1835) and *Stilbognathus* v. Martens (1886) form a third group which show their especially close relationship through the remarkable structure of their third maxillipeds. Of them *Tyche* (two species: *T. lamellifrons* Bell, California², and *T. emarginata* White, Antilles) is the more primitive, since it yet possesses seven free abdominal segments; supraocular eave and postocular spine are broadened lamella-like and lie against one another, but remain separated through a narrow slit. A strong preocular spine is present. From this genus *Stilbognathus* (three species: *S. tycheformis* Bouvier [1915], Mauritius; *S. erythraeus* v. Martens [1866], Red Sea; and *S. martensii* Miers [1844], Providence Island) may be derived. Here the fusion of the postocular spine with the supraocular eave, initiated in *Tyche*, is culminated; in the case of [*S.*] *tycheformis* the former may still be differentiated clearly, while in the other two species it no more stands out separately. The abdomen shows fusion of segments 4 to 6 in the female." Balss also recognizes a fourth group consisting of the single genus *Criocarcinus* Milne Edwards, Andamans and New Caledonia. All four he holds to have arisen from the primitive genus

² *Lapsus calami*. The type locality of *T. lamellifrons* is clearly Panama.

Pseudomicippe Heller, Red Sea, Ceylon, and Salam Sea, which he relates to *Naxia* Latreille of the Inachinae.

GENUS *Stilbognathus* VON MARTENS

Stilbognathus von Martens, 1866, p. 379. (Type species: *S. erythraeus* von Martens.) Bouvier, 1915, p. 248.

The second segment [of the maxilliped] shows on its outer half a deep, strongly elliptical groove, which is intermittently set with setae; its inner margin carries a row of horizontal setae and behind these stronger teeth . . . The insertion of the third into the second segment describes a great curve, in that the third segment itself is inserted wide and deep and the second invades with a capitate projection, so that the whole can be compared to a cross section of a human hip joint . . . Finally, *the third segment is strongly arched, brilliantly glistening and white, as if overlaid with enamel.* [Italics author's] However, its upper outer corner is flat and appears as a special, alate piece. (von Martens)

The postorbital lobes are totally lacking; one part of the joints of the basal antennal article is visible; the buccal cavity is enlarged behind and before, less, however, than in the case of *Stenocionops* [= *Ophthalmias* Rathbun], especially at its anteroexternal angle where nevertheless its margin is elevated in a strong rim; into this angle penetrates the corresponding expansion of the merus [of the external maxilliped], which is of moderate size; on the other hand the merus is very much developed on its inner border, where it presents anteriorly a slight notch; it is articulated rather distantly posteriorly on the external border of the ischium so that the latter article makes a great rounded advance on the merus; the inferior surface of the two articles is not as rugose as in [*Stenocionops* and *Tyche*], but smooth and porcellanic (from which the name that has been given to the genus); the longitudinal depression of the ischium is large and deep, but shorter, however, than that of *Stenocionops*. The three anterior abdominal segments and the telson present distinct and mobile articulations. (Bouvier)

To the genus thus characterized, Bouvier (1915, p. 252) added a species with a postorbital horn, which he designated *S. tycheformis* to indicate that it possessed the glistening maxillipeds of *Stilbognathus* and the postorbital lobe of *Tyche*. It is in a like sense that the following species is linked to those of von Martens and of Miers, although, as in the case of Bouvier's species, the erection of a new genus might be justified.

A KEY TO THE SPECIES OF *Stilbognathus*

- 1a. Postorbital horn absent, posterior projection of carapace a single median lobe
 - 2a. Merus of external maxilliped strongly arched, its outer corner alone flat and alate; notch on inner margin opposite articulation of palpus without a tooth or lobe
erythraeus v. Martens (1866)
 - 2b. Merus of external maxilliped flattened, its anteroexternal angle produced and acute; notch on inner margin opposite articulation of palpus provided with a tooth or lobe
martensii Miers (1884)
- 1b. Postorbital horn present, posterior projection of carapace bi- or trilobate
 - 3a. Postorbital excrescence lobiform, well separated from preorbital horn and only half the length of eyestalk. Posterior projection of carapace trilobate, median lobe most protuberant. Merus of external maxilliped depressed and transversely sulcate
tycheformis Bouvier (1915)
 - 3b. Postorbital excrescence lamelliform, touching preorbital horn along a closed fissure, and equaling length of eyestalk. Posterior projection of carapace weakly bilobate. Merus of external maxilliped smooth and rounded
burryi, n. sp., p. 252

Stilbognathus burryi, NEW SPECIES

Plate 1, Figures 1-6

Type: Ovigerous female, holotype, from 1¾ miles East Northeast of Hillsboro Light, Florida East Coast, June 5, 1945, 125 feet, hard rock, broken shell, collected by L. A. Burry at Hancock Foundation station A73-45 (=Burry station 41). Type deposited in the collections of the Allan Hancock Foundation, Los Angeles, California, No. 451.

Measurements: Holotype female, length 20.8 mm., length posterior to gastric summit 12.5 mm., width opposite postbranchial tubercles 13.8 mm., exorbital width 11.6 mm., rostrum 2.3 mm., width 3.3 mm., cheliped 13.6 mm., chela 5.5 mm., dactyl 2.3 mm., height of palm 1.5 mm., legs 22.6, 17.7, 14.9, and 12.2 mm., respectively.

Diagnosis: Rostral horns short, lobate, well separated from preorbital, which are acute and incurving. Gastric region high, swollen; cardiac region similarly prominent. Anterior and posterior branchial

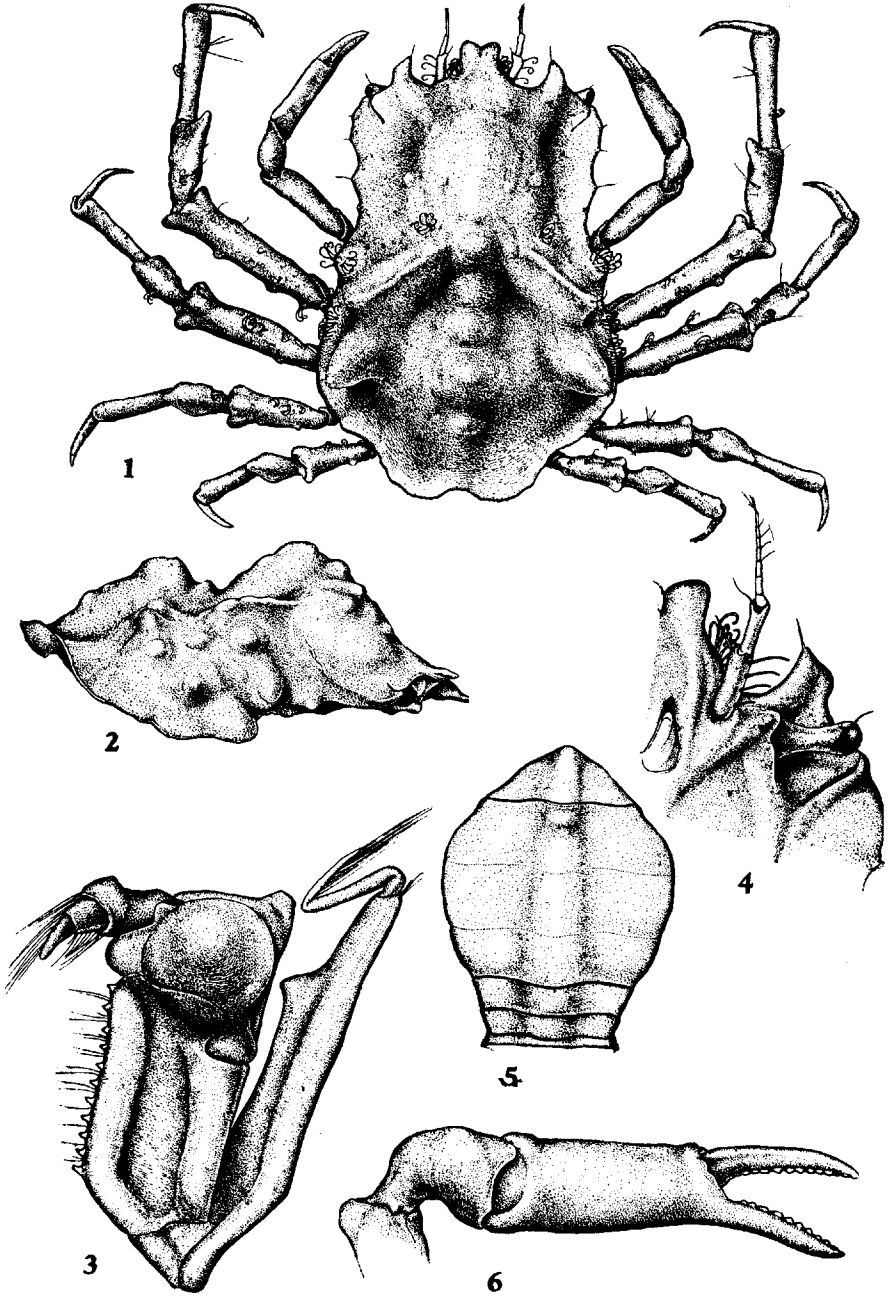
EXPLANATION OF PLATE

PLATE I

Stilbognathus burryi, new species (p. 252)

Female holotype

- FIGURE 1. Dorsal view, x 2.6
- FIGURE 2. Right lateral view, x 2.6
- FIGURE 3. Left outer maxilliped, x 12.7
- FIGURE 4. Ventral view of orbit, x 5.3
- FIGURE 5. Abdomen, x 3.2
- FIGURE 6. Right chela, x 7.4



prominences discontinuous. Orbit commencing beneath, the exorbital tooth forming a shallow cup into which the eye is partially retractible. Merus of external maxilliped hemispherical, glistening; ischium longitudinally sulcate, exognath with basal projection directed posteriorly.

Description: Carapace roughly rectangular in outline, high and irregular in profile; six prominent elevations, two anterobranchial (paired), two post-branchial (paired), one cardiac, and one gastric; greatest width of carapace at postbranchial level. Rostrum small, composed of two lobate horns fused in midline, anterior margins broadly arcuate, outer margins subparallel or slightly diverging, a tuberculate ridge surmounted by a cluster of hooked hairs at base of each. Preorbital horns separated from rostral by a broad saddle, inner margins recurving, tips acute, hair-tipped, falling considerably short of rostrum, outer margins broadly arching. Postorbital lobe meeting preorbital along a closed fissure but projecting slightly beyond and beneath it to form a commencing orbit which completely conceals the retracted cornea from dorsal view. Gastric region elevated, swollen, topped by a large, blister-like tubercle preceded by a smaller tubercle, in advance of which are four low tubercles in horizontal line. Gastric region declivitous anteriorly, rounding off laterally into the narrowed and concave hepatic areas. Cardiac region completely separated from gastric, to which it is similar but less elevated, and consisting of a large, rounded tubercle in advance of which is a single small granule, similar granules or low tubercles laterally and posteriorly outlining a diamond of which the cardiac tubercle is the center. Anterior branchial ridge short and acute, continuous with sides of gastric elevation, and bearing a hair-set tubercle on its outer slope. Posterior branchial prominence triangular in outline, bluntly pointed, and separated from the anterior branchial by a low depression, external to which occurs a sharp tubercle on the side of the carapace, which is widest at this level. Posterior border extended as two thin, rounded lobes with crenulate, upturned margins.

Basal antennal article very broad, a short projection internally, a more extensive ridge externally consisting of three swellings in line, the most advanced being the anteroexternal projection. Eyestalks short and thick, exposed in a broad V made by the outer margin of the basal antennal article and the exorbital tooth, which forms a shallow cup into which the cornea is partially retractible. Antennules small and deeply recessed behind a strong, posteriorly directed inter-antennular spine. External maxilliped with two deep, parallel grooves,

the internal one entirely within the ischium, the external one formed by the outer border of the ischium and the excavate inner border of the exognath, the basal projection of which does not recurve to enter the groove of the ischium, as in *Tyche*, but continues posteriorly and medially to the triangular median sternite. Merus of maxilliped inserting deeply into outer border of ischium, central portion a glistening white hemisphere onto the lower slope of which the ischium advances boldly, anteroexternal portion a thin, triangular blade, anterointernal portion doubly notched to receive the flattened palp, the first segment of which has a bilobate margin. A tubercle on either side of buccal area, the external angles of which are broadly rounded and strongly rimmed.

Cheliped of female more slender than first walking leg and considerably shorter; merus roughened, a median tubercle externally and a proximal and median tubercle in a diagonal line beneath; carpus roughened but non-tuberculate; manus becoming smoother distally, upper and lower margins subparallel; fingers slender, attenuated, meeting without gape, edges denticulate. First ambulatory leg much the longest, remaining members decreasing rapidly in length; merus of leg one with a row of four or five small tubercles above and two or three larger tubercles on outer border, a blunt upper distal spine, meri of remaining legs with reduction in number and size of tubercles proportional to their respective lengths; carpus of leg one with a median tubercle above and a distal spine more prominent than that of the merus, carpi of remaining legs with terminal spine reduced or wanting; propodi cylindrical, unarmed, widening distally; dactyli long, slender, falciform, a hair-tipped denticle basal to nail of each.

Female abdomen almost circular in outline, segments 4-6 fused.

The male of the species is unknown.

Remarks: In addition to the remarkable maxilliped and the five-segmented abdomen, which immediately set it apart from *Tyche*, the new *Stilbognathus* possesses a high profile with prominent gastric and cardiac tubercles and a divided branchial ridge suggestive of *Lissa*, rather than the *Tyche*-form carapace, which is flattened and leaf-like.

The finding of a new species of *Stilbognathus* off the Florida East Coast brings still another Old World genus to American shores and indicates a more general circumtropical distribution of the Ophthalmiinae than heretofore recognized.

I take great pleasure in naming this distinctive species for my good

friend and former neighbor, Mr. L. A. Burry, conchologist, of Pompano Beach, Florida.

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