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The Indo-Pacific Audulla chelifera Reported from the Caribbean Sea (Crustacea: Amphipoda)

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THE INDO-PACIFIC *AUDULLA CHELIFERA* REPORTED FROM THE CARIBBEAN SEA (CRUSTACEA: AMPHIPODA)

J. D. Thomas and J. L. Barnard

Abstract.—*Audulla chelifera* Chevreux is reported for the first time outside of the Indian Ocean and Red Sea. It has now been found in the western Caribbean inhabiting the alga *Turbinaria turbinata* (Linneaus) Kuntze in back-reef regions of the Belize barrier reef.

Audulla Chevreux (1901) was merged with *Gammaropsis* Liljeborg by J. L. Barnard (1973), who treated *Audulla* and several other genera as subgenera of *Gammaropsis*. *Audulla chelifera* was described from La Digue, Seychelles Islands (Indian Ocean) from marine algae but has never been reported since. A similar morph has now been found in great abundance from the alga *Turbinaria turbinata* L. at Curlew Cay, Belize, in the Caribbean Sea. Any distinctions between Belize specimens and the fine description of Chevreux (1901) are so miniscule that Caribbean specimens are identifiable as *A. chelifera*.

Legends

Capital letters denote main parts in the following list; lower case letters to right of capital letters or in body of figure indicate modifications as follows; lower case letters to left of capital letters indicate specimens described in captions: A, antenna; B, body; D, dactyl; G, gnathopod; I, inner plate or ramus; L, labium; M, mandible; P, pereopod; R, uropod; S, maxilliped; T, telson; V, palp; W, pleon; X, maxilla.

Family Isaeidae

Audulla Chevreux

Audulla Chevreux, 1901:431 (*Audulla chelifera* Chevreux, 1901, type species by monotypy).

Diagnosis.—Article 3 of antenna 1 as long as article 1; accessory flagellum multiarticulate; flagellum of male antenna 2 flattened, expanded, almost paddle-shaped; head deeply recessed behind eye for reception of antenna 2; mandibular palp stout, article 3 clavate; inner plate of maxilla 1 setose medially; inner plate of maxilla 2 with oblique mediofacial row of setae; dactyl of maxilliped stubby, multispino-setose; coxae ordinary to short, contiguous, coxa 2 largest, followed in order by coxae 3, 4, 5, 1, 6, 7; gnathopod 1 small in both sexes, ordinary; gnathopod 2 of both sexes slightly (female) to greatly (male) enlarged, in male carpus short and lobate, propodus immense, rectangular, chelate, thumb short and blunt, dactyl overlapping palm, with inner hump fitting slight palmer excavation; uropod 3 small but relative to its size peduncle weakly elongate, rami subequal, scarcely longer than peduncle, multispino-setose apically; telson fleshy, entire.

Relationship.—*Audulla* differs from the various genera placed in the supergenus *Gammaropsis* by J. L. Barnard (1973) in the expanded flagellum of male antenna 2, and the chelate male gnathopod 2. The diversity in size of anterior coxae is found in many other taxa of the *Gammaropsis* group and therefore has little taxonomic value.

Audulla chelifera Chevreux

Figs. 1–4

Audulla chelifera Chevreux, 1901:432–436, figs. 56–65.—Ledoyer, 1982:222, fig. 80.
Eurystheus lina Kunkel, 1910:81, fig. 31.
Eurystheus semichelatus K. H. Barnard, 1957:809, fig. 5.

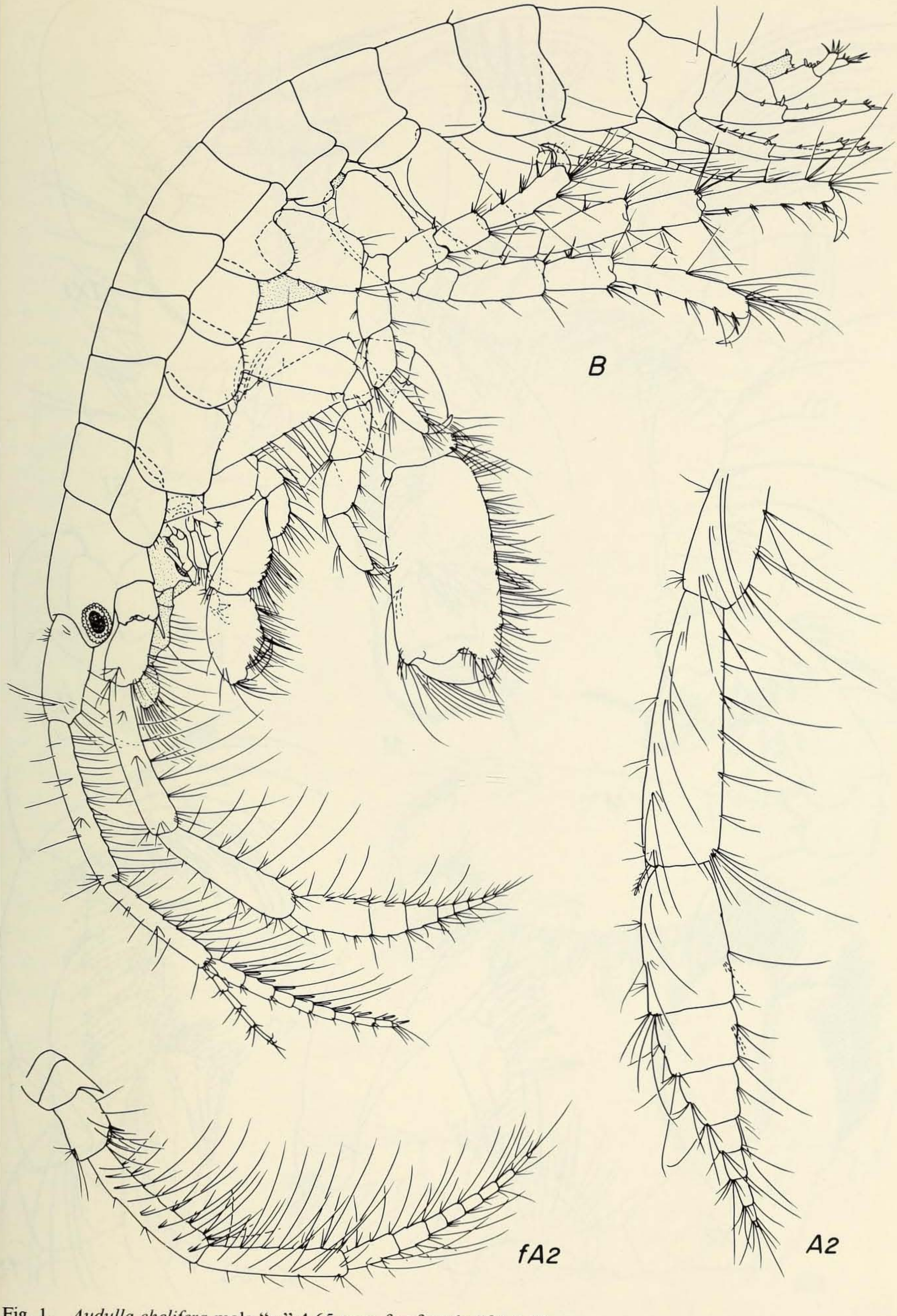
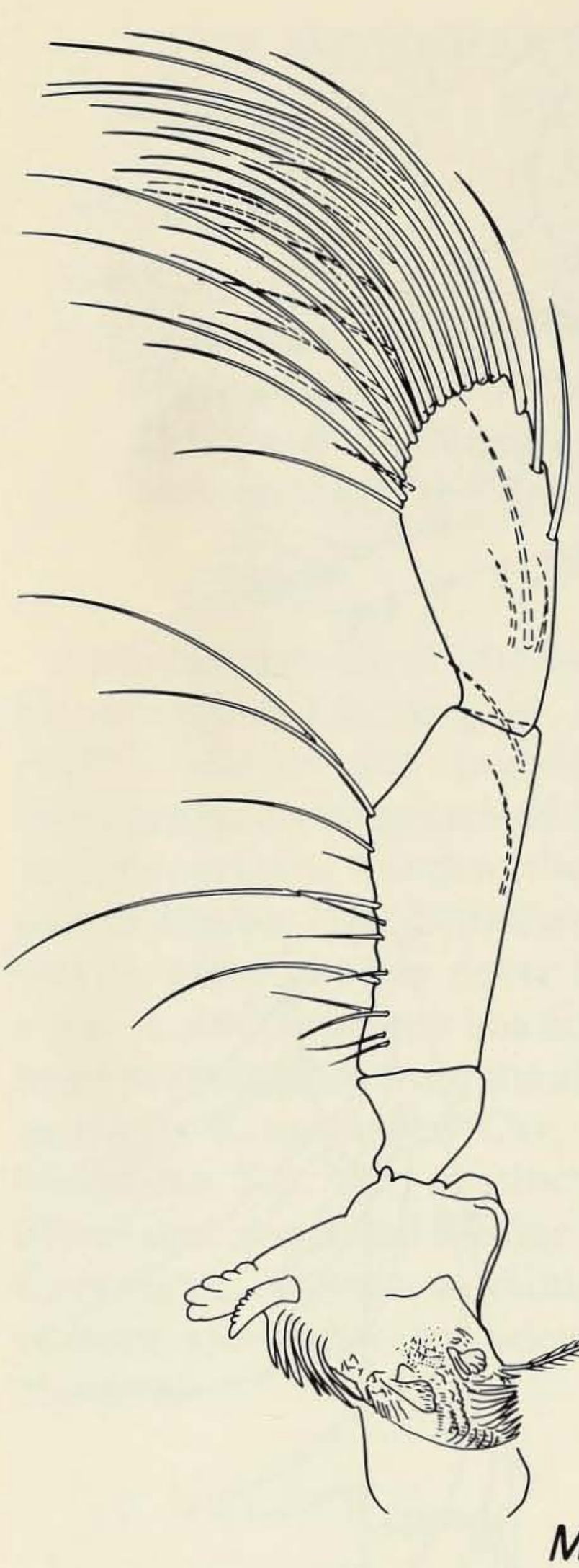
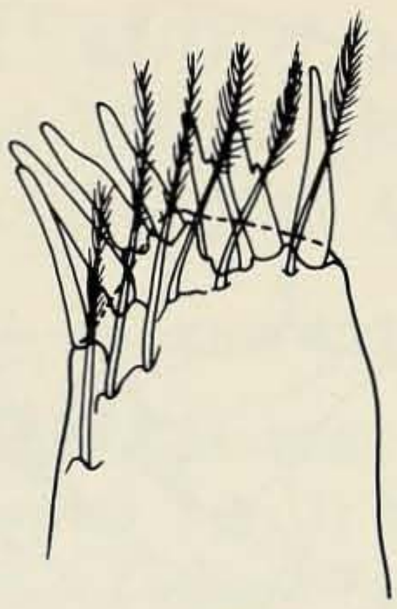
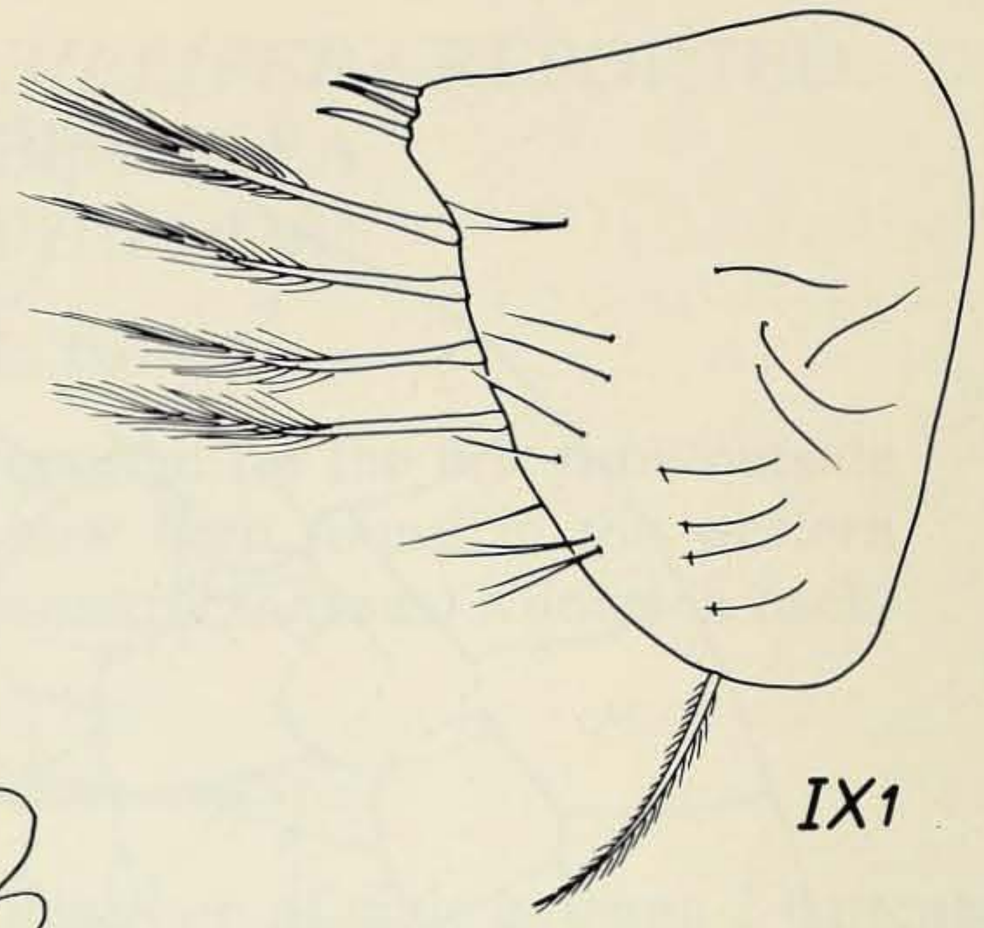


Fig. 1. *Audulla chelifera* male "e," 4.65 mm; f = female "f," 4.03 mm.

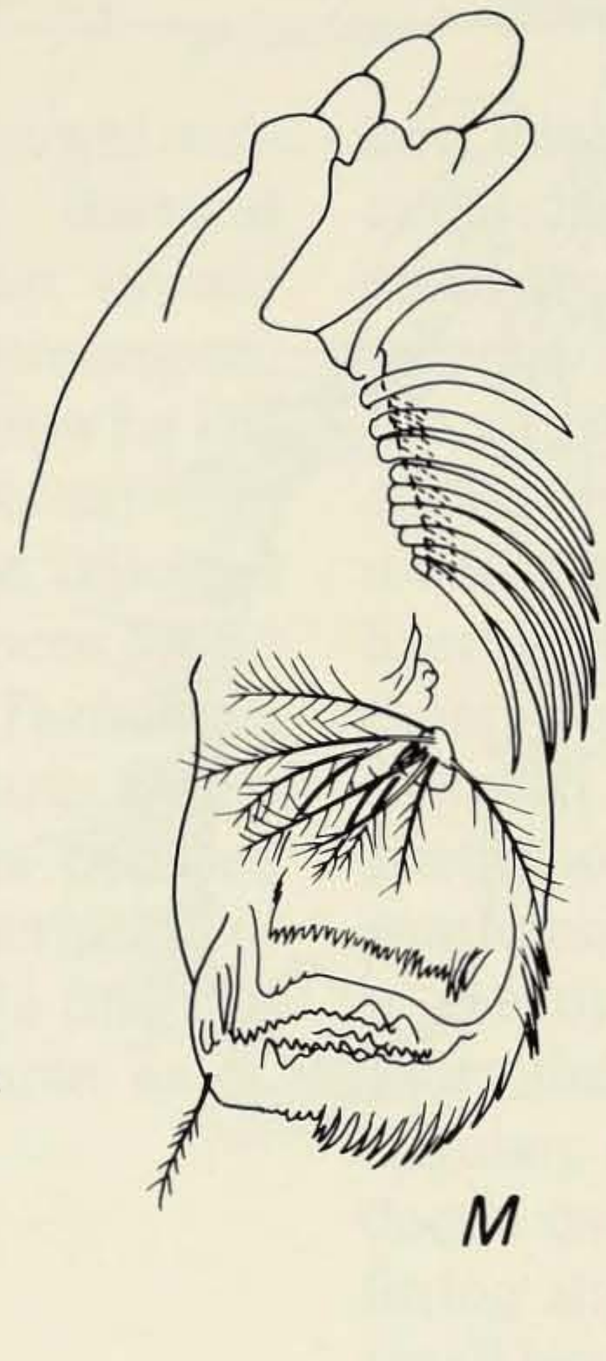




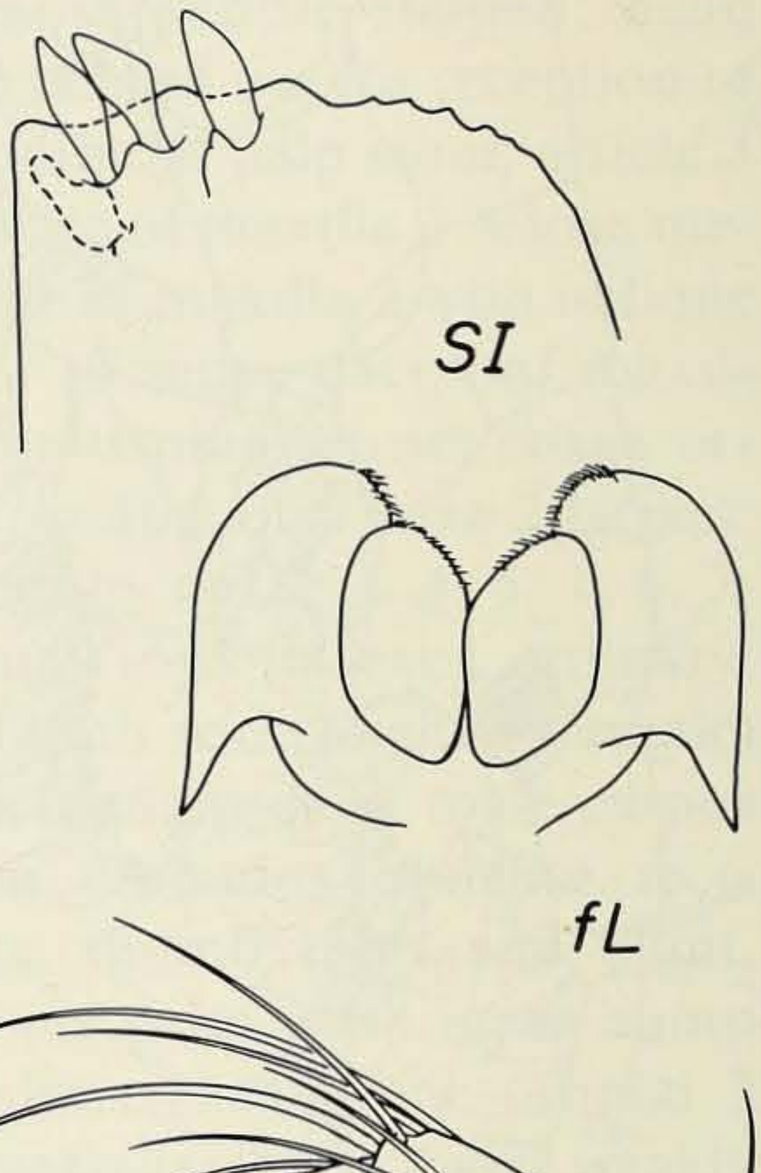
VX1



IX1



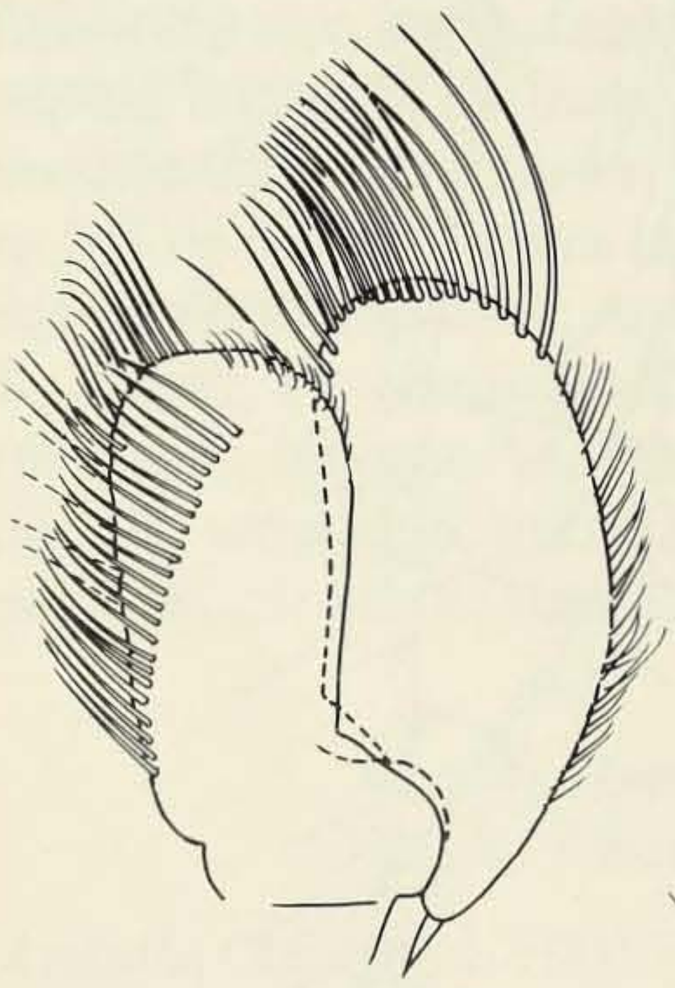
M



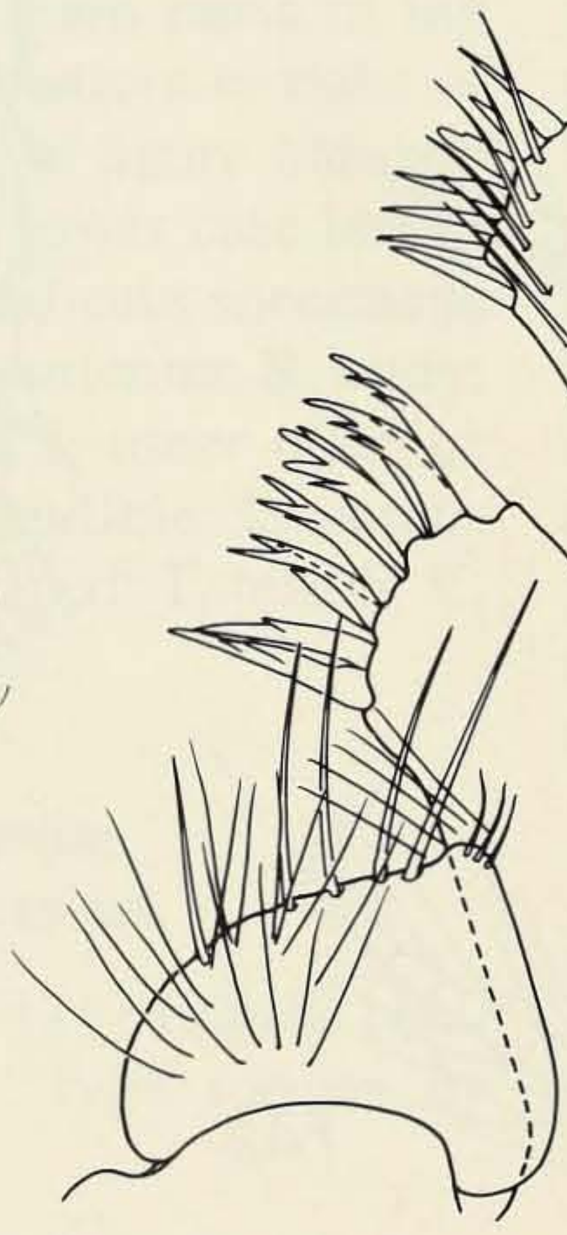
SI

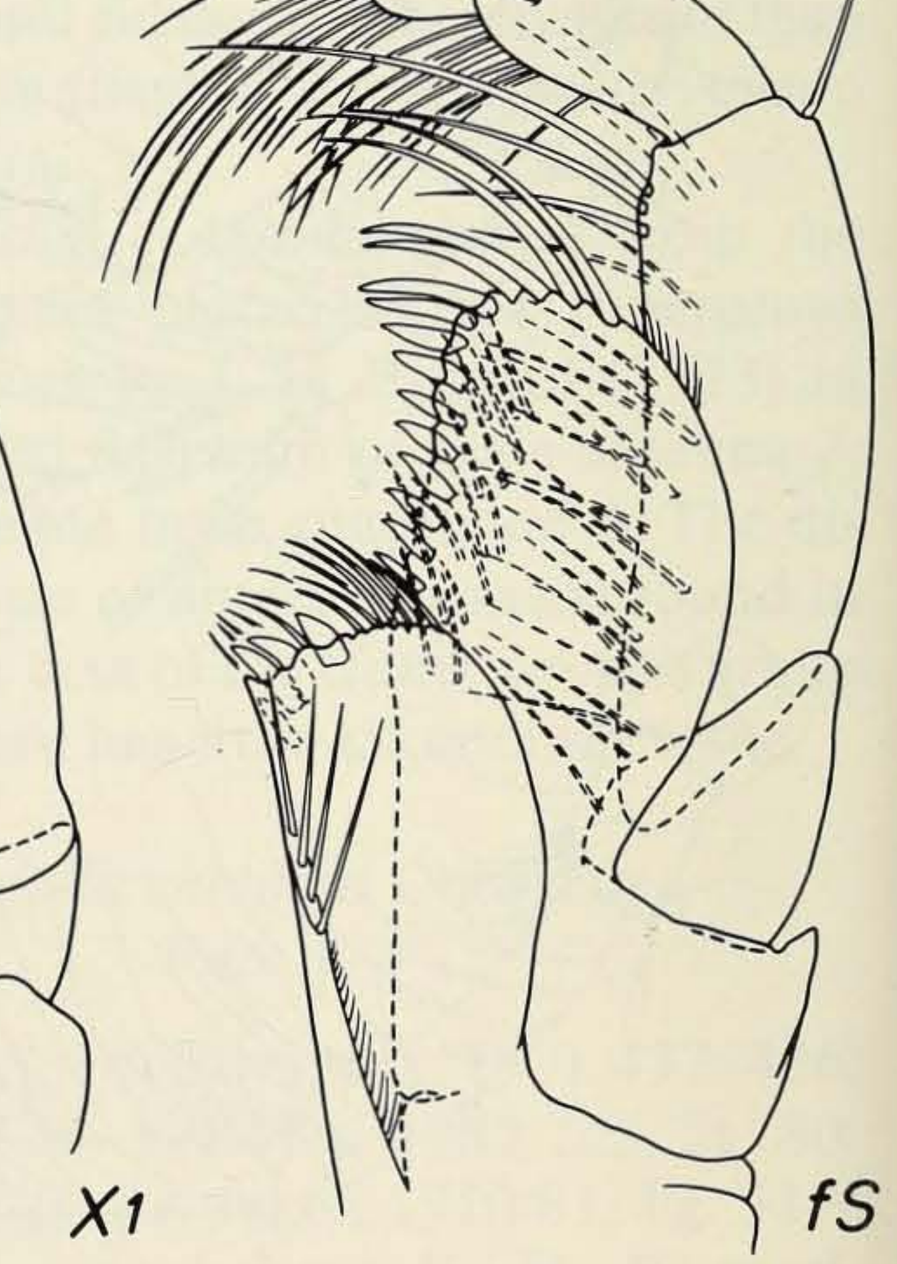
fL

M



X2

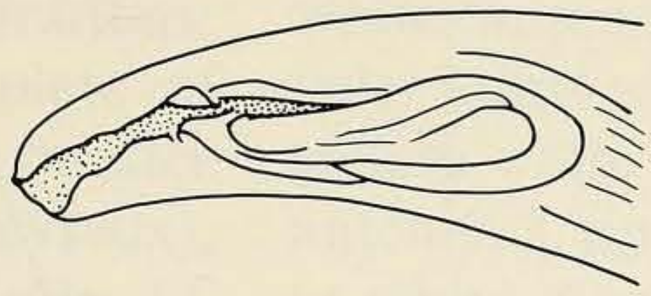




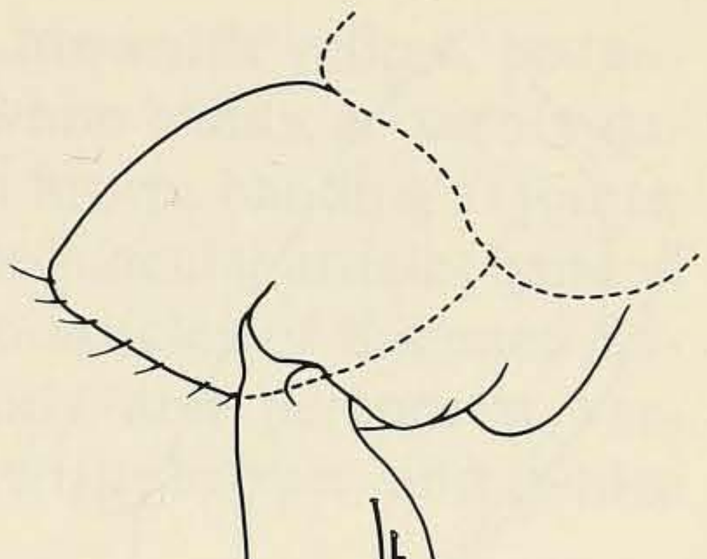
X1

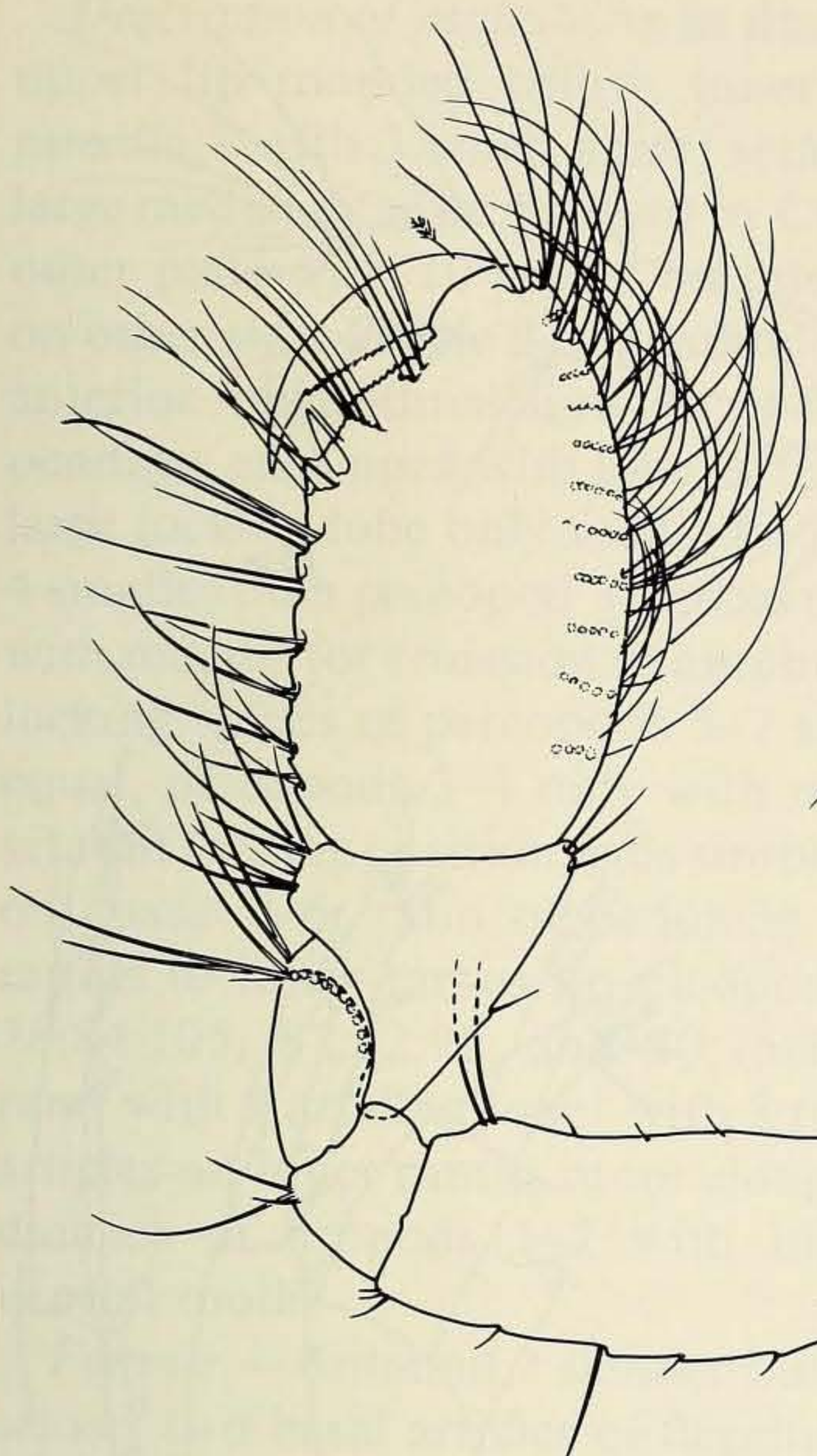
fS

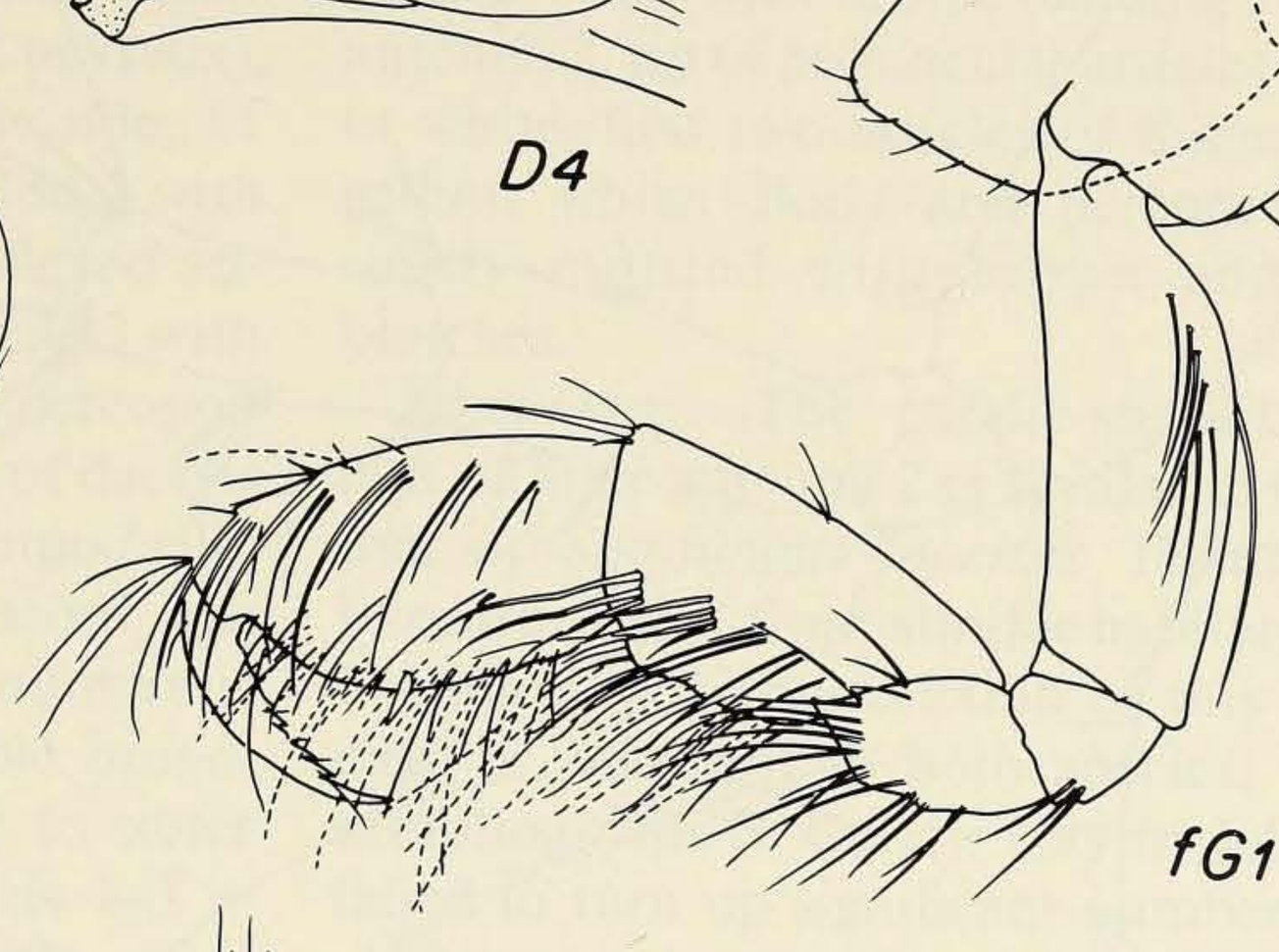
Fig. 2. *Audulla chelifera* male "e," 4.65 mm; f = female "f," 4.03 mm.



D4

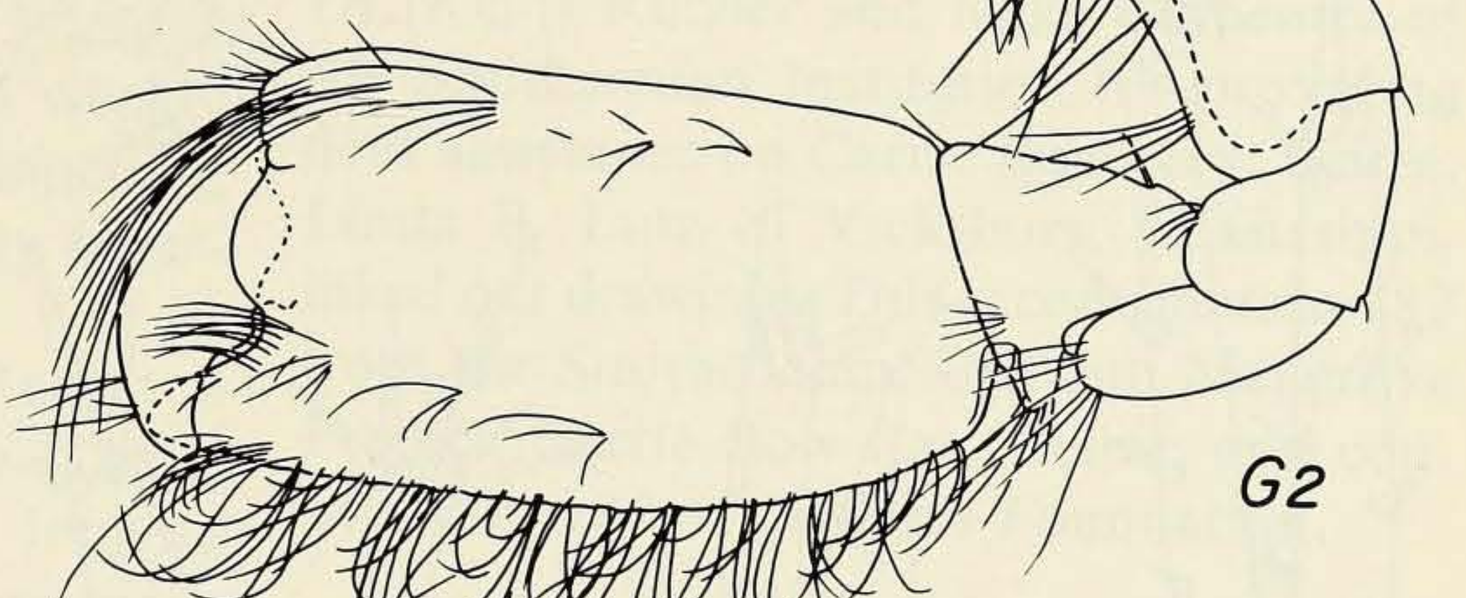




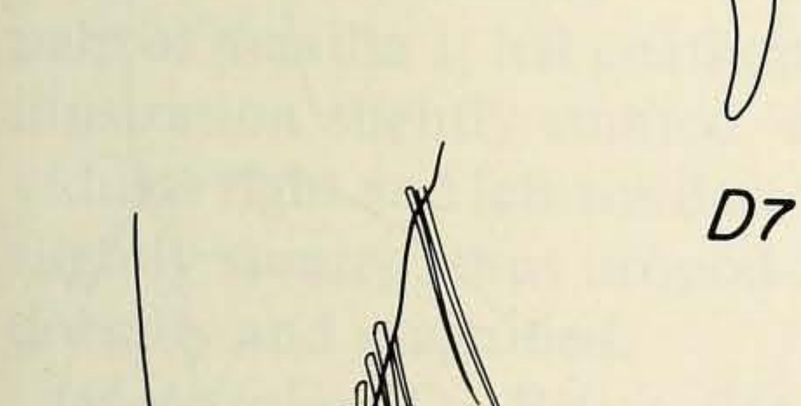


fG1

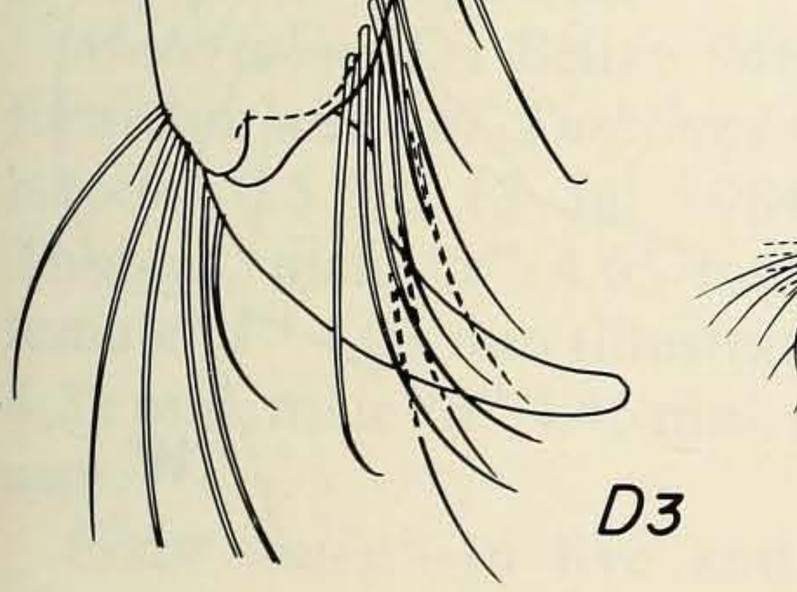
fG2



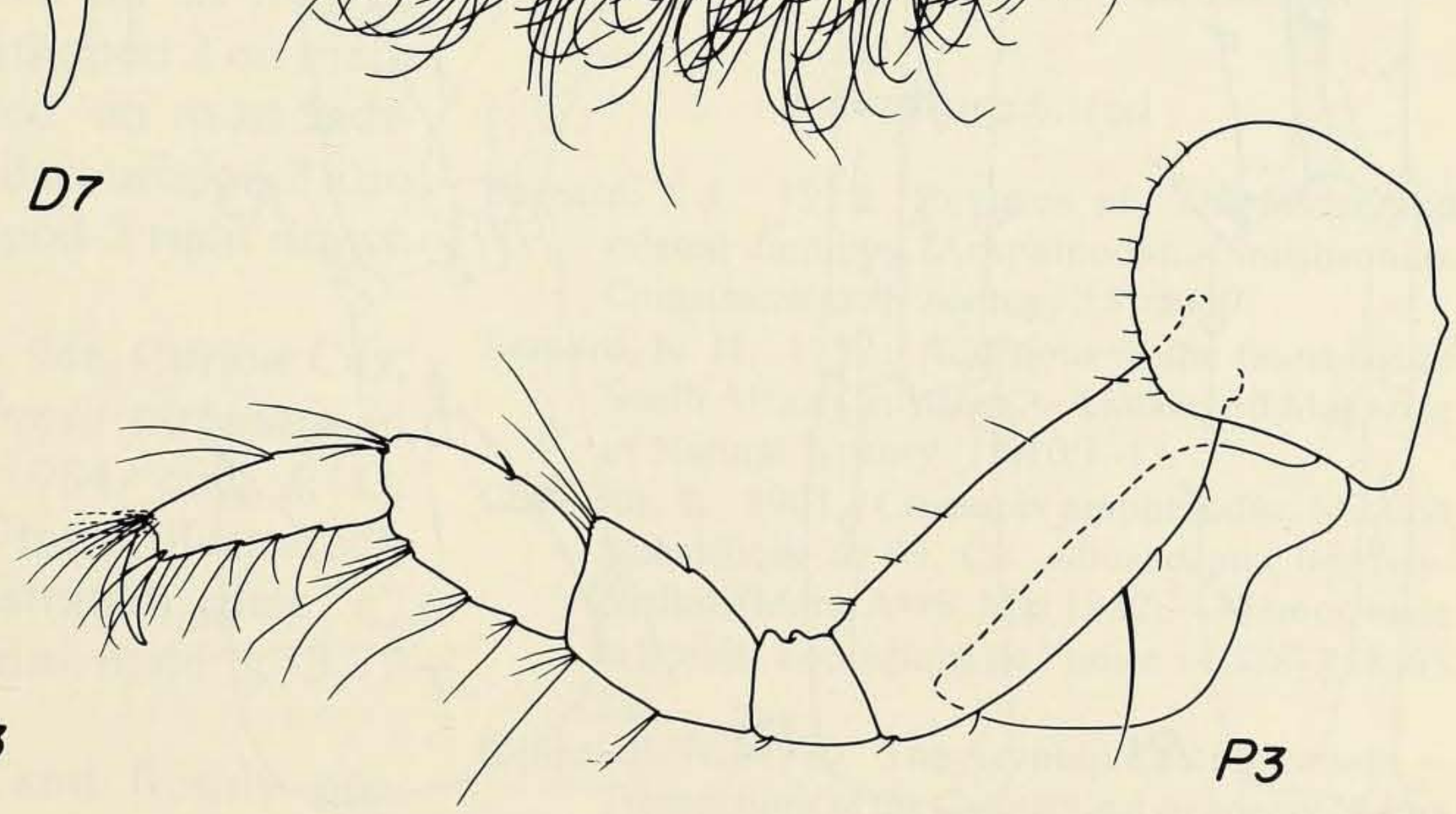
G2



D7



D3



P3

Fig. 3. *Audulla chelifera* male "e," 4.65 mm; f = female "f," 4.03 mm.

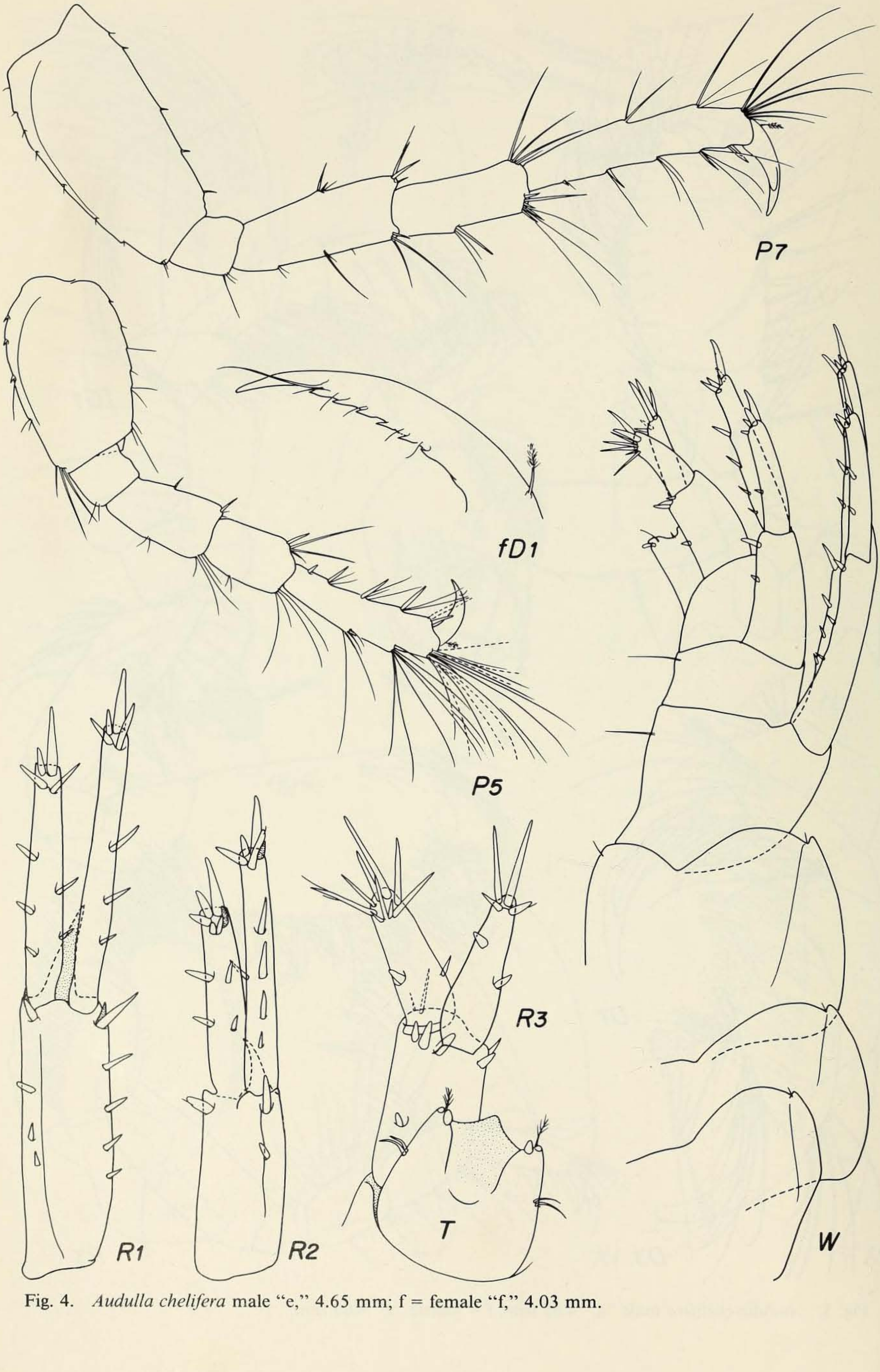


Fig. 4. *Audulla chelifera* male "e," 4.65 mm; f = female "f," 4.03 mm.

Description of male.—As in illustrations; upper lip rounded below; inner plate of maxilla 1 with 3 small apical setae besides large medial setae (not shown by Chevreux), outer plate with 10 spines on one side, 11 on other side; article 2 of gnathopod 2 with anterior longitudinal sinus to fit flexed appendage, each apex with lobe, article 3 with large locking lobe only medially; pereopod 4 smaller than pereopod 3, apices of dactyls with meatus for emission of amphipod silk; locking spines of pereopods 5–7 stout, unequal, pereopods 3–4 only with numerous setae at locking position; gills simple, broad, on coxae 2–6; ratio of peduncle to outer ramus to inner ramus on pleopods 1–3 = 78:84:105, 87:82:95, and 80:75:85, outer rami with 9 articles, inner with 8 (therefore articles on inner ramus more elongate); peduncles of uropods 1–2 with interramal ventral tooth.

Female.—Antenna 2 slender but densely setose, two basal articles of flagellum elongate as in male; gnathopod 2 slightly enlarged, carpus short, lobate, propodus rectangular, palm oblique, slightly protuberant, defined by weak cusp and strong spine, dactyl overlapping palm. Oostegites 3 and 4 well expanded, oostegites 2 and 5 weakly expanded, 2 weakly pyriform and tapering, 5 sausage-shaped, pyriform, weakly tapering, strongly setose.

Illustrations and anomalies.—Maxilla 2 drawn much reduced over maxilla 1, thus outer plate of maxilla 2 in life as long as palp of maxilla 1; left gnathopod 2 on main illustration slightly stunted, on most individuals right and left similar; uropod 2 also slightly stunted, thus uropod 2 right drawn dorsally and magnified.

Material.—JDT Belize, 94a, Curlew Cay, formalin wash of *Turbinaria turbinata* in lagoon, 0.5 m, 13 Jul 1984, coll. J. D. Thomas, male "e" 4.65 mm (illustrated), female "f" 4.03 mm (illustrated), male "c" 4.32 mm, male "d" 4.46 mm, male "g" 3.77 mm.

Color notes.—In live and freshly preserved material: body generally translucent white; antenna 1 brownish yellow, peduncular joints with white bands; accessory flagellum white with brown banding at joints; antenna 2, tip of peduncular articles banded in white, first two articles of flattened flagellum white. Body and pereopods variously mottled with brown and white blotches.

Discussion.—The paddle-shaped flagellum of male antenna 2 is similar in form to that of *Spathiopus looensis* Thomas and Barnard, 1985, from similar habitats in the Florida Keys. The function of this appendage is unknown in both species. Recent sampling trips to Curlew Cay in July 1985 failed to turn up significant numbers of *A. chelifera*. It is postulated that *A. chelifera* rafts in and "seeds" the dense *Turbinaria* beds found in the back-reef habitats of the Belize barrier reef. Studies of live *A. chelifera* are planned to determine its ecology and distribution.

Acknowledgments

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