Revision of the Sigalionid Species (Polychaeta) Referred to *Psammolyce* Kinberg, 1856, *Pelogenia* Schmarda, 1861, and Belonging to the Subfamily Pelogeniinae Chamberlin, 1919

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ABSTRACT

Pettibone, Marian H. Revision of the Sigalionid Species (Polychaeta) Referred to *Psammolyce* Kinberg, 1856, *Pelogenia* Schmarda, 1861, and Belonging to the Subfamily Pelogeniinae Chamberlin, 1919. *Smithsonian Contributions to Zoology,* number 581, 89 pages, 60 figures, 1997. Sigalionid species of polychaetes included in Pelogeniinae Chamberlin, 1919, are reviewed and revised, based on reexamination of type material and published records, as well as examination of new material. The species are characterized by the dorsum and elytra being more or less covered with sand and foreign material tightly held by adhesive papillae. In this revision, the subfamily is represented by eight genera, separated into two groups, based on the presence or absence of dorsal cirri on segment III. The *Pelogenia* group (with dorsal cirri), includes *Pelogenia* Schmarda, 1861 (with synonym *Eupholoe* McIntosh, 1885), *Claparedepelogenia* (new name for *Lepidopleurus* Claparède, 1868, preoccupied), and new genera *Pottsipelogenia* and *Heteropelogenia.* The *Psammolyce* group (without dorsal cirri) includes *Psammolyce* Kinberg, 1856, and new genera *Neopsammolyce, Hartmanipsammolyce,* and *Dayipsammolyce.* The report includes remarks on general characteristics of the Pelogeniinae and the study of 30 species, including 21 new combinations, seven new species, and eight synonyms.

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Contents

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Marian H. Pettibone

Introduction

Scaled polychaetes of the family Sigalionidae, the species that have been commonly referred to *Psammolyce* Kinberg, 1856, which are characterized by the dorsum and elytra being more or less covered by sand grains and foreign material tightly held by adhesive papillae, are reviewed and revised, based on re-examination of type specimens where possible, and additional published records, as well as new material. The genus *Pelogenia* Schmarda, 1861, is reinstated and referred to the subfamily Pelogeniinae Chamberlin, 1919, based on *Pelogenia antipoda* Schmarda, 1861, from the east coast of New Zealand. *Psammolyce* Kinberg, 1856, with type species *P. flava* Kinberg, designated by Hartman (1959) from Rio de Janeiro, Brazil, is added to this subfamily. *Pelogenia antipoda* was referred to *Psammolyce* by Ehlers (1905) and maintained in that genus by Fauvel (1917), Augener (1927a,b), Hartman (1959), and others. Here, *Pelogenia* is reinstated, and some of the species described under *Psammolyce* are referred to *Pelogenia,* as well as to new genera. It should be noted that the names *Pelogenia* ("pelos," Greek, clay, mud) and *Psammolyce* ("psammos," Greek, sand) reflect the distinguishing character of the Pelogeniinae.

Also included in the subfamily is *Lepidopleurus* Claparède, 1868, with type species *L. inclusus* Claparède, 1868, from Naples. However, *Lepidopleurus* is preoccupied by Risso (1826), in Mollusca. The species was included under *Psammolyce inclusa* (Claparède) by Fauvel (1923), Hartman (1959), and others. Here, *Claparedepelogenia,* new name, is proposed for *Lepidopleurus,* and the species is referred to *C. inclusa* (Claparède), new combination.

McIntosh (1885) erected the genus *Eupholoe* for *E. philippensis* from the Philippine Islands. Here, *Eupholoe* McIntosh is referred to *Pelogenia* Schmarda, and the type species is referred to *P. philippensis* (McIntosh), new combination.

A distinguishing character among species of the Pelogeniinae is the presence or absence of dorsal cirri on segment III, a character sometimes overlooked in descriptions. Dorsal cirri are present on segment III on the type species of *Pelogenia* and absent on *Psammolyce*. The names of the five new and one renamed genera added herein reflect this separation into two groups. The *Pelogenia* group includes *Pelogenia; Claparedepelogenia,* mentioned above; *Pottsipelogenia,* new genus, with type species *Psammolyce gracilis* Potts, 1910; and *Heteropelogenia,* new genus, with type species *Psammolyce articulata* Day, 1960. The *Psammolyce* group includes *Psammolyce; Neopsammolyce,* new genus, with type species *Psammolyce petersi* Kinberg, 1856; *Hartmanipsammolyce,* new genus, with type species *Psammolyce pendula* Hartman, 1942b; and *Dayipsammolyce,* new genus, with type species *Psammolyce ctenidophora* Day, 1973.

ABBREVIATIONS USED IN THE FIGURES

br	branchia
buC	buccal cirrus
ct	ctenidium
dBr	dorso-anterior bract
dC	dorsal cirrus
dTc	dorsal tentacular cirrus
dTu	dorsal tubercle

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elph	elytrophore
fTu	facial tubercle
IpaS	inner palpal sheath
ItS	inner tentacular sheath
lAn	lateral antenna
lL	lower lip
mAn	median antenna
neAp	neuropodial appendage
noF	notopodial flange
nuO	nuchal organ
pa	palp
pBr	postacicular bract
uL	upper lip
vTc	ventral tentacular cirrus
vBr	ventro-anterior bract

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Family SIGALIONIDAE Kinberg, 1856

Subfamily PELOGENIINAE Chamberlin, 1919

GENERAL CHARACTERISTICS OF THE PELOGENIINAE

BODY.—The body is elongate, with numerous segments, widest anteriorly and tapering posteriorly. The ventral surface is usually papillated, with globular or long filiform papillae. The middorsal surface, not covered by elytra, may be thickly or sparsely covered with sand grains and foreign material, with or without adhesive papillae.

ELYTRA, ELYTROPHORES, DORSAL TUBERCLES, AND BRANCHIAE.—The paired elytra are attached on large elytrophores on segments 2, 4, 5, 7, and alternate segments to 27, then on every segment; dorsal tubercles, occupying similar positions as the elytrophores, are found on segments 3, 6, and alternate segments to 26 and are lacking posterior to segment 26. Small lateral branchiae are attached on the lateral sides of the elytrophores or dorsal tubercles, beginning usually on segment II or III. Except for the anterior few pairs, the elytra occupy the lateral sides of the body, leaving the middorsum uncovered. The first pair of elytra are usually larger, covering the anterior end of the body, and may be variously modified, such as deeply notched anteriorly, as in *Psammolyce flava* (Figure 3A), *Neopsammolyce occidentalis* (Figure 8D), and *Claparedepelogenia inclusa* (Figure 50D). The elytra have fringes of papillae, and surfaces with short and long filiform papillae and adhesive papillae with flattened tops; some have additional papillate medial and posterior processes, such as on *Neopsammolyce spinosa* (Figure 11L) and *Pelogenia farquharensis* (Figure 28G). Anton-Erxleben (1977:42, fig. 6) investigated the ultrastructure of the cylindrical adhesive papillae with distal plates on the elytra of *Claparedepelogenia inclusa* (as *Psammolyce*). Rarely the elytral filiform papillae are distinctly articulated, as in *Neopsammolyce catenulata* (Figure 13E,F) and *Heteropelogenia articulata* (Figure 60J-L).

PROSTOMIUM, TENTACULOPHORES (Segment I), AND UPPER LIP.—The prostomium and tentaculophores are fused basally and mostly withdrawn in the anterior segments (II–IV). The oval prostomium has two pairs of eyes (rarely absent), a dorsal pair and usually a larger ventral pair. The median antenna has a stout bulbous ceratophore, with or without small ctenidia on the lateral sides, and a distal style (Figures 15A, 18A); rarely the small ctenidia are attached directly on the prostomium (on *Heteropelogenia,* Figure 60A). The tentaculophores are lateral and ventral to the prostomium and directed anteriorly, each with a single aciculum, dorsal and ventral tentacular cirri on the outer side, and two bundles of capillary notosetae and inner tentacular sheath on the inner side (Figure 27A,B). Moderately long, paired palps emerge ventral and lateral to the tentaculophores, with short inner palpal sheaths, continuous with the inner tentacular sheaths. Short lateral antennae are fused to the dorsal sides of the tentaculophores and may be hidden from view by the ceratophore of the median antenna (Figures 27A, 31B). The upper lip of the ventral mouth may have a facial tubercle (Figures 9B, 18B).

ANTERIOR SEGMENTS II AND III, PHARYNX, AND LOWER LIP.—The middorsum of segment II, between the first pair of large elytrophores, is sometimes furnished with a papillate hump, as in *Psammolyce flava* (Figure 1A), *Neopsammolyce petersi* (Figure 6A), and *Hartmanipsammolyce pendula* (Figure 15A). Segment II bears the first pair of elytrophores, biramous parapodia, and long ventral buccal cirri. The lower lip of the

ventral mouth may be furnished with long or short papillae. The eversible pharynx has 11 pairs of border papillae and two pairs of hooked jaws. The neuropodia of segment II may have long filiform appendages, as in *Psammolyce flava* (Figure 1B) and *Claparedepelogenia inclusa* (Figure 49C). The compound neurosetae of segment II are slender, the stems have long spinous regions, and the blades are long, with slender curved tips (Figure 1C).

Dorsal tubercles of segment III continue with long dorsal cirri in the *Pelogenia* group *(Pelogenia, Pottsipelogenia, Heteropelogenia, Claparedepelogenia),* but dorsal cirri are lacking in the *Psammolyce* group *(Psammolyce, Neopsammolyce, Hartmanipsammolyce, Dayipsammolyce).* When present, the cirrophores of the dorsal cirri may be short, with very long styles, as in *Pottsipelogenia gracilis* (Figure 51F) and *P. fijiensis* (Figure 53D); the cirrophores may be subequal in length to the styles, as in *Pelogenia antipoda* (Figure 21F) and *Heteropelogenia articulata* (Figure 60D); or the cirrophores may be longer than the styles, as in *Pelogenia semiglabra* (Figure 29D). Rarely the neuropodia of segment III may have digitiform presetal extensions on the acicular lobes, as in *Heteropelogenia articulata* (Figure 58D); or large balloon-like lobes on the distal tips, as in *Hartmanipsammolyce pendula* (Figure 15E). The lower compound neurosetae of segment III are similar to those of segment II.

BIRAMOUS PARAPODIA, PARAPODIAL CTENIDIA, VENTRAL CIRRI, AND PYGIDIUM.—The notopodia of the biramous parapodia are usually smaller and shorter than the neuropodia, with subconical acicular lobes and well-developed subdistal flanges enclosing the numerous notosetae; on the curved areas dorsal to the notopodia, the more or less developed ctenidia connect with the branchiae, elytrophores, or dorsal tubercles (Figures 14C, 28A, 34B). The notosetae are slender, spinous capillaries and extend anteriorly, dorsally, and posteroventrally, sometimes beyond the ventral cirri. Rarely, additional smooth, hair-like notosetae are added, extending far ventrally (Figures 34C, 35G). The larger neuropodia have subconical acicular lobes, usually papillated distally, and three subdistal bracts furnished with numerous long papillae and enclosing the neurosetae: curved J-shaped dorso-anterior bracts enclosing the upper group of neurosetae; larger C-shaped postacicular bracts leaving gaps on the anterior sides and enclosing the middle group of neurosetae; and curved J-shaped ventro-anterior bracts enclosing the lower group of neurosetae (Figure 2A,C,E). The neuropodia have globular papillae and sometimes additional filiform papillae on the anterior and posterior sides (Figure 26A,C). In *Psammolyce* the neurosetae are compound spinigers, the blades having tapered, split tips (Figure 2B). In the other genera the neurosetae are compound falcigers, with stems that are smooth or with spinous rows on the distal parts and with blades that are variable in length, with entire or bifid hooked tips (Figures 6F, 10C). The ventral cirri have small cirrophores, with or without short or long papillae; the tapering styles usually have small knobs on the upper basal sides (Figure 2A,C). The neuropodial filiform papillae are articulated in *Neosammolyce catenulata* (Figure 14A) and *Heteropelogenia articulata* (Figure 60F,G), similar to the elytral papillae of these species. The posterior body segments are usually missing. Where observed, the posterior segments are smaller, the body is tapered, and the pygidum has a pair of anal cirri.

Key to the Genera of Pelogeniinae

1. With dorsal cirri on segment III [Figures 21F, 49E, 51F, 60D]. Neurosetae compound falcigers [Figures 22D, 50C, 52B, 60H] 2
   Without dorsal cirri on segment III 5
2. Neuropodia of segment II with long filiform appendages [Figure 49C] . . . . . ***Claparedepelogenia,*** new name
   Neuropodia of segment II without long appendages 3
3. Neuropodia of segment III with digitiform presetal extensions on acicular lobes [Figure 60D]. Elytra and parapodial papillae clearly articulated [Figure 60F,G,I–N]. Bulbous ctenidia on prostomium (not on ceratophore of median antenna) [Figure 60A] . . . . . ***Heteropelogenia,*** new genus
   Neuropodia of segment III without digitiform extensions. Elytra and parapodial papillae not articulated. Without bulbous ctenidia on prostomium 4
4. Upper lip with large bulbous facial tubercle with short stalk [Figure 51B]. Prostomium with small lateral ctenidia on ceratophore of median antenna [Figure 51A,B] . . . . . ***Pottsipelogenia,*** new genus
   Upper lip without facial tubercle. Prostomium without lateral ctenidia on ceratophore of median antenna . . . . . ***Pelogenia*** Schmarda
5. Neuropodia of segment II with long appendages [Figure 1B]. Neurosetae compound spinigers, blades tapered, with furcate tips [Figure 2B] . . . . . ***Psammolyce*** Kinberg
   Neuropodia of segment II without long appendages. Neurosetae compound falcigers [Figures 6F, 16B, 19C] 6

6. Parapodia of segment III with balloon-like lobes on distal tips of neuropodia [Figure 15E]. Prostomium without eyes . . . . . ***Hartmanipsammolyce,*** new genus
   Parapodia of segment III without balloon-like lobes on neuropodia. Prostomium with eyes [Figure 18A] 7
7. Prostomium with small lateral ctenidia on ceratophore of median antenna [Figure 18A]. Stalked, bulbous facial tubercle attached to upper lip [Figure 18B] . . . . . ***Dayipsammolyce,*** new genus
   Prostomium without ctenidia on ceratophore of median antenna [Figure 6A]. Without facial tubercle on upper lip . . . . . ***Neopsammolyce,*** new genus

Genus *Psammolyce* Kinberg, 1856

TYPE SPECIES.—*Psammolyce flava* Kinberg, 1856, selected by Hartman (1959:117). Gender: feminine.

REMARKS.—Kinberg (1856) included three species under *Psammolyce* without designating a type species: *P. flava* n., from Rio de Janeiro; *P. petersi* n., from Mozambique; and *P. hermininiae* (Aug. et M. Edw. as *Sigalion*). Hartman (1959:117) selected *P. flava* as the type species. *Psammolyce petersi* is selected herein as the type species of the new genus *Neopsammolyce. Psammolyce hermininiae* had been included under *Psammolyce arenosa* (Delle Chiaje) by Fauvel (1923:106) and Hartman (1959:119) and is herein moved to *Pelogenia arenosa* (Delle Chiaje), new combination.

DIAGNOSIS.—Pelogeniinae without dorsal cirri on segment III. Neuropodia of segment II with long terminal appendages. Compound neurosetae spinigers, with blades tapered, at least some with furcate tips. First pair of elytra elongated, deeply incised anteriorly; posterior elytra with medial processes, without posterior processes. Prostomium without lateral ctenidia on ceratophore of median antenna. Upper lip without facial tubercle. Elytral and neuropodial filiform papillae not articulated.

Psammolyce flava Kinberg, 1856

FIGURES 1–3

Psammolyce flava Kinberg, 1856:388; 1858:31, pl. 9: fig. 44; pl. 10: fig. 65.—Hartman, 1942a:108, fig. 8h; 1942b:90, pl. 9: figs. 21–23.—Nonato and Luna, 1970:71, pl. 5: figs. 65–67.—Amaral and Nonato, 1984:22.—Wolf, 1984:25–21, fig. 25-17, 18.—Lana, 1991:125 [not Horst, 1913:189; 1917:125 (= *P. horsti,* n. sp.)].

Eupholoe acuminata Treadwell, 1934:3, pl. 1: figs. 7, 8 [part]; 1939, fig. 27.

MATERIAL EXAMINED.—SOUTH ATLANTIC OCEAN: *Brazil:* Off Rio de Janeiro, 22°30′S, 40°55′W, 37–55 m, holotype of *P. flava* (NRS 436, 226). Off Brazil, 23°08′S, 41°34′W, 108 m, blue mud, R/V *Albatross* sta 2762, 30 Dec 1887, 3 specimens (USNM 56875).

NORTH ATLANTIC OCEAN: Off Puerto Rico, 18°40′15″N, 64°50′15″W, 274 m, Johnson-Smithsonian Deep Sea Exped. sta 100, 1933, holotype of *E. acuminata* (USNM 20032).

NORTHEAST GULF OF MEXICO: 29°25′N, 86°21′W, 190 m, *Alaminos* sta 67 A5-11C, 21 Jul 1967, 1 specimen (USNM 70084). Off Florida, 27°57′N, 84°48′W, 175 m, MAFLA sta 2212, Feb 1978, 1 specimen (USNM 86006).

TYPE MATERIAL.—The holotype of *Psammolyce flava* consists of 4 anterior, middle, and posterior fragments, totaling 124 segments, 77 mm long and 6 mm wide, with setae; the pharynx, figured by Kinberg, had been cut out and is loose in the vial; some elytra remain. The holotype of *Eupholoe acuminata* consists of an anterior fragment of 48 segments, 18 mm long and 7 mm wide, with setae. It was previously examined by Hartman (1942a,b) and Wolf (1984) and referred to *Psammolyce flava.*

DESCRIPTION.—Dorsum smooth anteriorly, with relatively few sand particles; dorsum from about segment 24 covered with sand grains and silt particles, with clumps of sand grains attached to 3 groups of clavate papillae arranged in transverse rows on each segment (Kinberg, 1858, pl. 9: fig. 44A; Wolf, 1984, fig. 25-18a,c). Ventrum densely papillate with short papillae. Elytra leaving middorsum uncovered (Kinberg, 1858, pl. 9: fig. 44A; Wolf, 1984, fig. 25-18a). Elytra delicate, whitish, with most of surface covered with sand grains and foreign material. First pair of elytra deeply notched anteriorly, with long papillae on borders, and long and short adhesive papillae on surfaces (Figure 3A); following elytra oval, with long papillae confined to medial, posterior, and lateral borders and on surfaces (Figure 3B); more posterior elytra with medial projections, with additional adhesive papillae with flattened tops (Figure 3C; Kinberg, 1858, pl. 9: fig. 44H; Wolf, 1984, fig. 25-18b).

Prostomium and tentaculophores fused basally. Prostomium rounded, median antenna with large ceratophore about as long as prostomium, bulbous basally and curved distally, with long tapering style; 2 pairs of inconspicuous eyes, small dorsal and larger ventral; long tentaculophores lateral and anterior to prostomium, each with single aciculum, dorsal tentacular cirrus extending about as far as median antenna, and ventral tentacular cirrus about half as long as dorsal one, with numerous long notosetae extending anteriorly; lateral antennae small, inconspicuous, on inner basal sides of tentaculophores (hidden by ceratophore of median antenna); palps long, stout, emerging ventral and lateral to tentaculophores, with small inner palpal sheaths (Figure 1A; Kinberg, 1858, pl. 9: fig. 44B).

Segment II with middorsal papillate hump extending over prostomium between first pair of elytrophores (Figure 1A; Treadwell, 1934, pl. 1: fig. 7); notopodium of biramous parapodium with semicircular notopodial flange enclosing spreading bundle of finely spinous capillary notosetae; larger

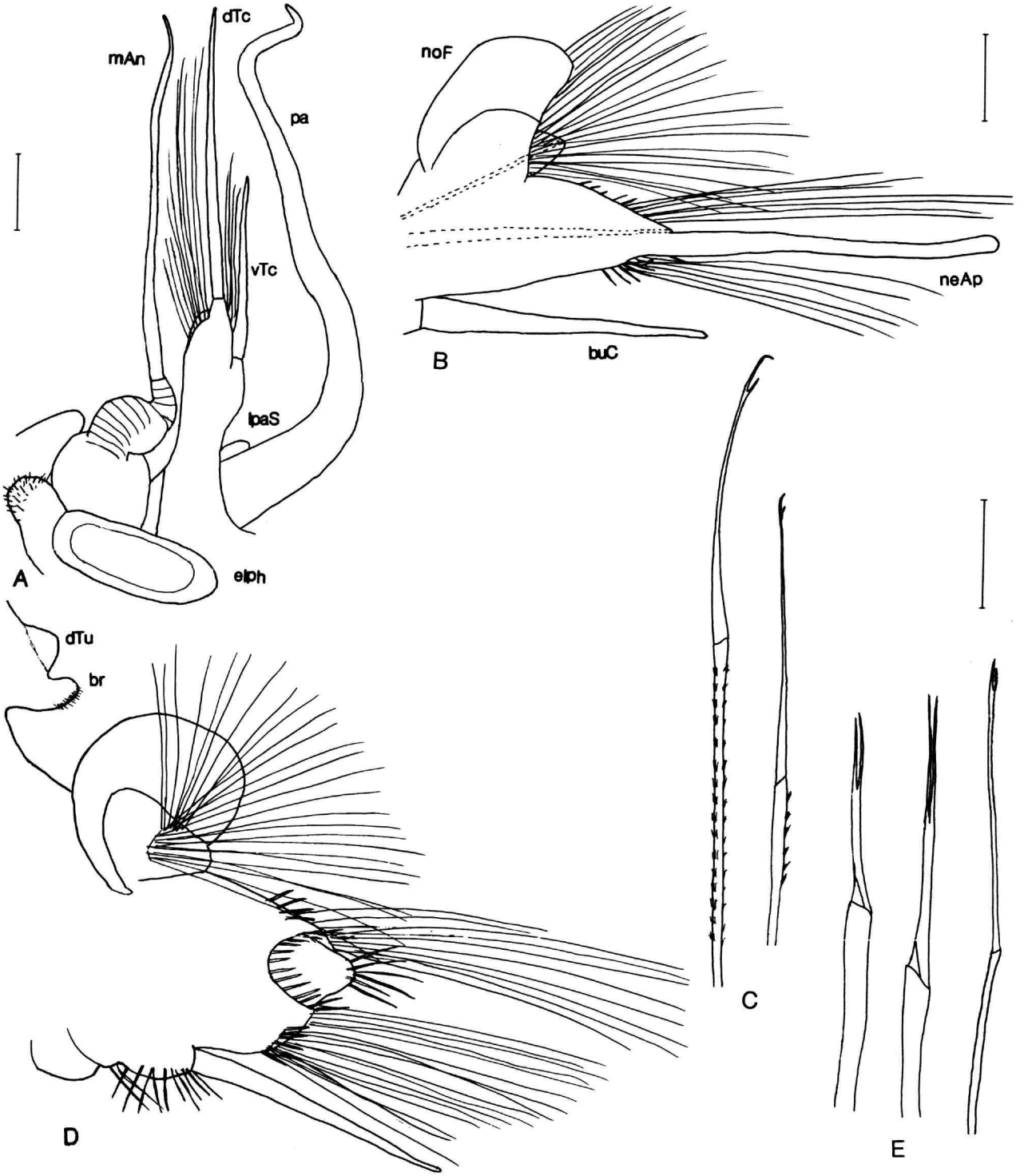


FIGURE 1.—*Psammolyce flava* (A,C-E, holotype of *Eupholoe acuminata*, B, specimen from off Brazil, USNM 56875): A, dorsolateral view of anterior end, eyes and lateral antenna not visible, segment II incompletely shown; B, left parapodium of segment II, anterior view, acicula dotted; C, upper and lower neurosetae from same; D, right parapodium of segment III, posterior view; E, upper, middle, and lower neurosetae from same. (Scales: A = 0.5 mm; B,D = 0.2 mm; C,E = 0.1 mm.)

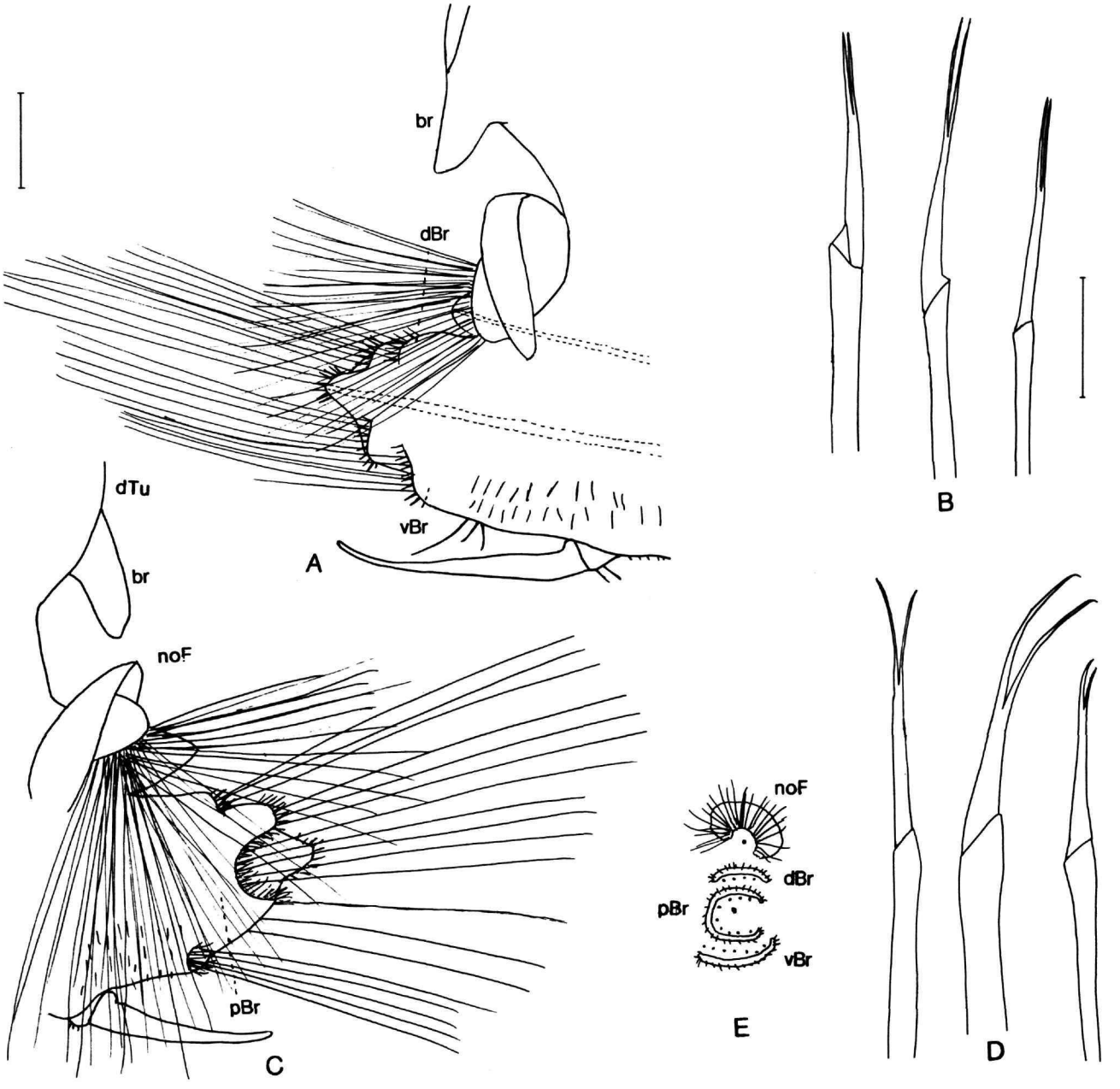


FIGURE 2.—*Psammolyce flava* (holotype of *Eupholoe acuminata*): A, right elytrigerous parapodium from segment 19, anterior view, acicula dotted; B, upper, middle, and lower neurosetae from same; C, right parapodium from segment 20 (with dorsal tubercle), posterior view; D, upper, middle, and lower neurosetae from segment 40; E, diagramatic end view of middle parapodium showing arrangement of acicula, notosetae, neurosetae, and bracts. (Scales: A,C = 0.2 mm; B,D = 0.1 mm.)

neuropodium with long, digitiform, terminal appendage extending to tips of neurosetae; ventral buccal cirrus extending to tip of neuropodium (Figure 1B; Wolf, 1984, fig. 25-18d). Neurosetae slender, compound, stems of upper ones with about 15 spinous rows, blades long, slender, tips curved, with slender secondary tooth; lower neurosetae similar, with fewer spinous rows and more slender blades (Figure 1C; Treadwell, 1934, pl. 1: fig. 8). Pharynx with 11 pairs of border papillae and 2 pairs of hooked jaws (Kinberg, 1858, pl. 10: fig. 65E,E'). Segment III with small rounded dorsal tubercles and small digitiform

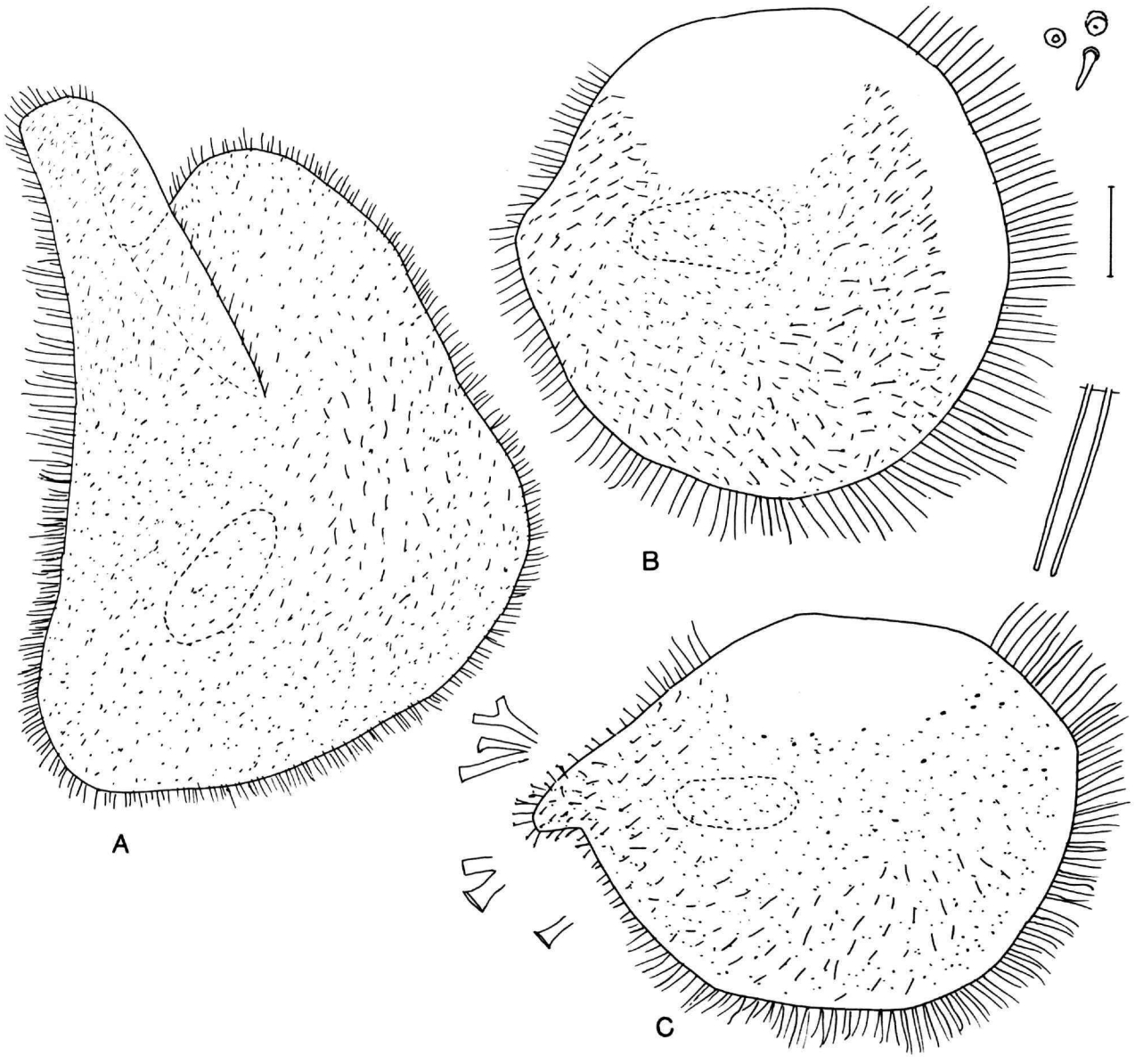


FIGURE 3.—*Psammolyce flava* (holotype of *Eupholoe acuminata*): A, right 1st elytron from Segment II; B, right elytron from segment 19, with detail of surface and border papillae; C, right elytron from segment 40, with detail of adhesive papillae. (Scale: 0.5 mm.)

branchiae, without dorsal cirri; parapodia and setae similar to those on following segments (Figure 1D,E).

Biramous parapodia with rather thick, digitiform branchiae on elytrophores or dorsal tubercles (Figure 2A,C). Notopodia shorter than neuropodia, subconical, with large cup-shaped flanges nearly encircling bases of notosetae; neuropodia subconical, papillate distally, with 3 fimbriated bracts: J-shaped dorso-anterior bracts, C-shaped postacicular bracts, leaving gaps on anterior sides, and J-shaped ventro-anterior bracts; long papillae also on anterior and posterior sides of lower parts of neuropodia (Figure 2A,C,E). Ventral cirri with cirrophores with few short papillae; styles with basal knobs on upper sides and tips extending to near tips of neuropodia (Figure 2A,C). Notosetae numerous, finely spinous, capillary, extending anteriorly, dorsally, and posteroventrally beyond ventral cirri (Figure 2A,C). Compound neurosetae with stems smooth; blades rather short, spinigerous, with furcate slender tips; split tips sometime very close and appearing entire, except

for faint longitudinal lines (Figure 2B,D; Kinberg, 1858, pl. 9: fig. 44G; Hartman, 1942b, pl. 9: figs. 22, 23; Wolf, 1984, fig. 25-18k–n). Upper neurosetae (4 or so) within dorso-anterior bract; middle group (9 or so) within postacicular bract; lower group (7 or so) within ventro-anterior bract (Figure 2A,C,E).

DISTRIBUTION.—South Atlantic Ocean: Brazil; North Atlantic Ocean: Puerto Rico; Gulf of Mexico: Cuba; in 37 to 475 meters.

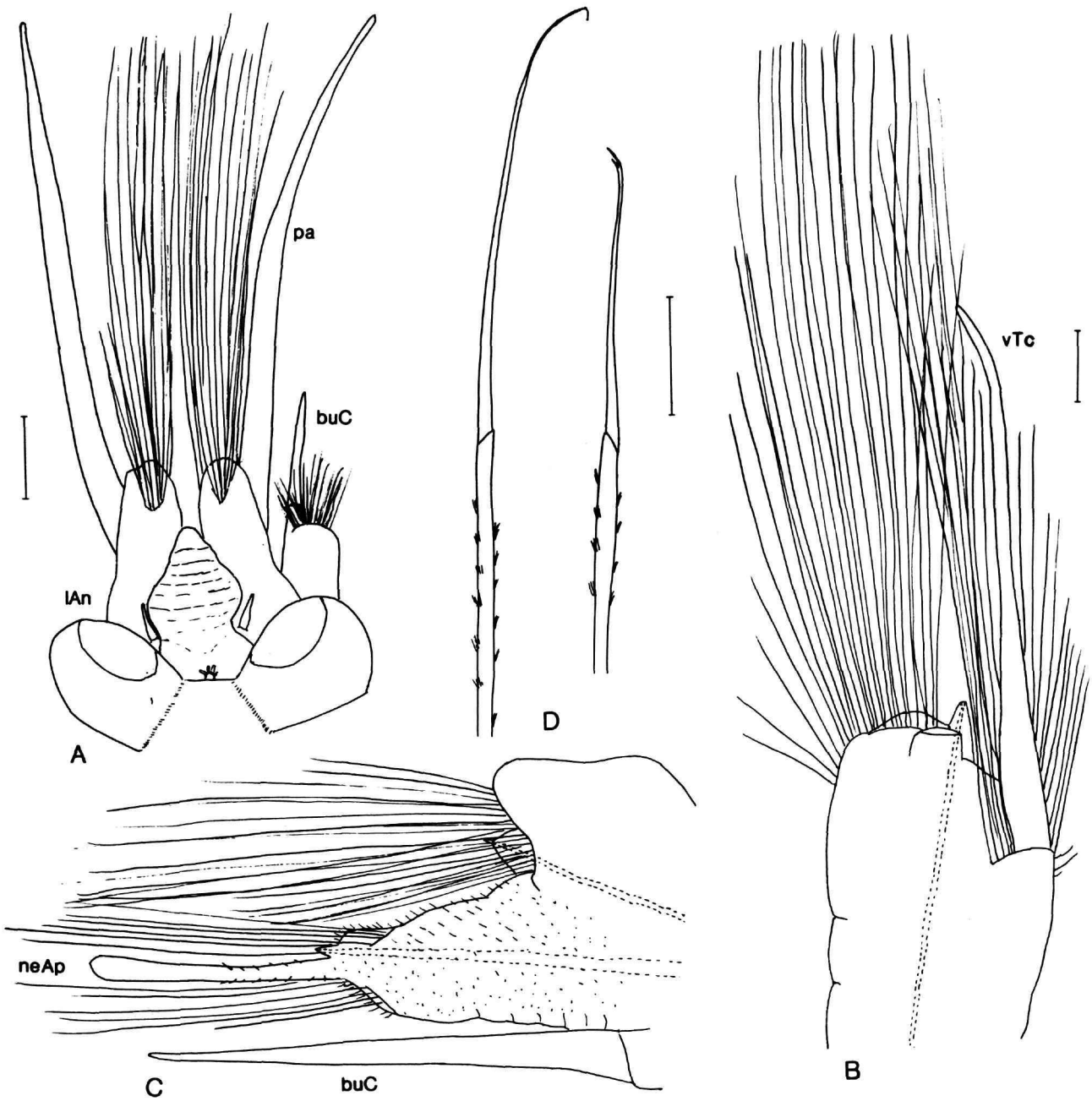


FIGURE 4.—*Psammolyce horsti*, new species (holotype): A, dorsal view of anterior end, style of median antenna and dorsal tentacular cirri missing, ventral tentacular cirri not visible, left parapodium of segment II had been cut off, base of prostomium hidden from view; B, right tentaculophore of segment I, outer view, dorsal tentacular cirrus missing, aciculum dotted; C, right parapodium of segment II, anterior view, acicula dotted; D, upper and lower neurosetae from same. (Scales: A = 0.5 mm; B,C = 0.2 mm; D = 0.1 mm.)

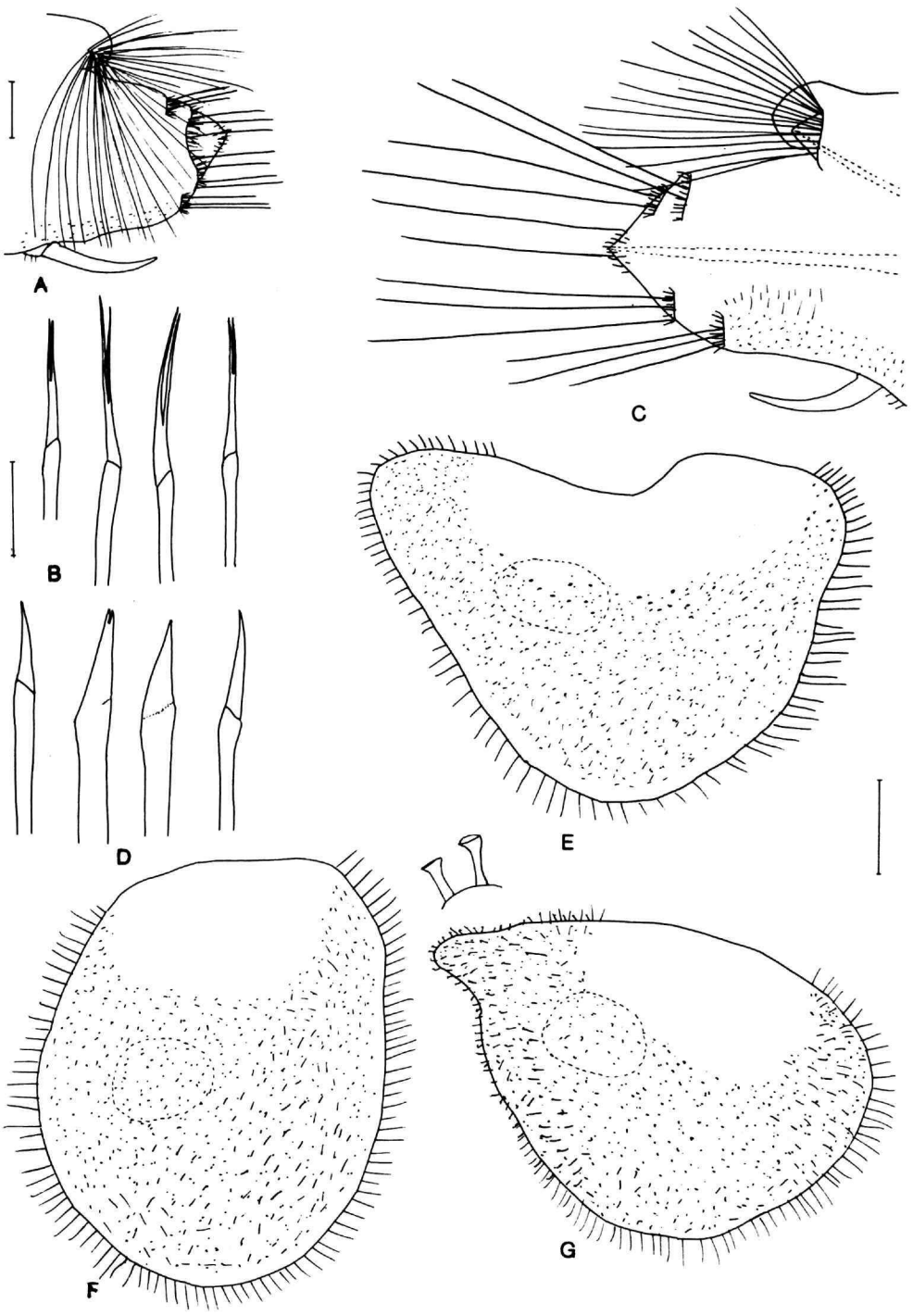


FIGURE 5.—*Psammolyce horsti,* new species (holotype): A, right parapodium from segment 14, posterior view; B, upper, 2 middle, and lower neurosetae from same; C, right middle parapodium, anterior view, acicula dotted; D, upper, 2 middle, and lower neurosetae from same; E, right 3rd elytron from segment V; F, right 8th elytron from segment 15; G, right middle elytron, with detail of flattened adhesive papillae. (Scales: A,C = 0.2 mm; B,D = 0.1 mm; E–G = 0.5 mm.)

Psammolyce horsti, new species

FIGURES 4, 5

Psammolyce flava.—Horst, 1913:189; 1917:125, pl. 27: figs. 9, 10 [not Kinberg, 1856].

MATERIAL EXAMINED.—INDO-PACIFIC OCEAN: *Indonesia:* Anchorage off Djangkar, Java, 07°46'S, 114°30.5'E, 330 m, mud, R/V *Siboga* sta 4, 10 Mar 1899, holotype (ZMA 1206, as *P. flava* by Horst).

TYPE MATERIAL.—The holotype, and only available specimen, is an anterior fragment of about 90 segments, 62 mm long and 6 mm wide, with setae. It is a very relaxed specimen and in rather poor condition.

DESCRIPTION.—Middorsum in anterior part of body sparsely papillated, thickly papillated more posteriorly, including 3 groups of papillae arranged in transverse row on each segment. Ventrum densely papillated with short papillae. First pair of elytra missing; anterior elytra subreniform to oval, with long papillae on borders, except on anterior borders, long papillae and low adhesive papillae on surfaces (Figure 5E,F); middle elytra with medial projections with numerous flat-topped adhesive papillae, some with large particles attached; foreign material more concentrated in central transverse areas on elytra (Figure 5G).

Prostomium and tentaculophores fused basally. Prostomium rounded, mostly hidden by segment II; eyes not visible; large ceratophore of median antenna bulbous basally, style missing; long tentaculophores each with single aciculum, dorsal tentacular cirrus (missing), long ventral tentacular cirrus, and 2 bundles of numerous, very long, finely spinous, capillary notosetae; palps emerging ventral and lateral to tentaculophores, long, tapering, and extending to tips of notosetae, with shell-like inner palpal sheaths; small subulate lateral antennae on inner bases of tentaculophores (Figure 4A,B).

Middorsum of segment II truncate anteriorly, with group of papillae between large elytrophores (Figure 4A). Biramous parapodium with short, conical notopodium with large notopodial flange enclosing long notosetae; larger subconical neuropodium with long, cirriform clavate appendage, papillate on basal half; ventral buccal cirrus very long, extending far beyond tip of neuropodium (Figure 4C; Horst, 1917, pl. 27: fig. 9). Neurosetae compound, slender, upper ones with stems with spinous rows and blades long, slender, tapering to entire curved tips; lower neurosetae with stems with fewer spinous rows and blades tapering to furcate tips (Figure 4D; Horst, 1917, pl. 27: fig. 10). Parapodia of segment III without dorsal cirri; branchiae thick, digitiform; neurosetae similar to those on following segments, except lower ones with more slender long blades.

Biramous parapodia with short, subconical notopodia, with large subdistal flanges encircling numerous notosetae (exact shape of flanges questionable, due to flaccid specimen); larger neuropodia subconical, papillate distally, enclosed in 3 papillate bracts (as in *P. flava*); long papillae also on anterior and posterior lower sides of neuropodia; ventral cirri with short cirrophores with few short papillae, styles with basal knobs on upper sides, and tips extending to level of ventro-anterior bracts (Figure 5A,C). Compound neurosetae with stems smooth; blades rather short, with long, furcate tips, with articulations more or less distinct (Figure 5B). Neurosetae of middle parapodia stouter and blades mostly with entire tips, few with short split tips, and few with long furcate tips; articulations distinct, faint, or absent (Figure 5D).

ETYMOLOGY.—The species is named for R. Horst, who first reported and provided a description of the specimen under the name of the closely related *Psammolyce flava*.

COMPARISONS.—In *P. horsti* the compound neurosetae in the middle region have the blades mostly with entire tips and the articulations to the stems are distinct, faint, or absent, whereas in *P. flava* the blades of the compound neurosetae all have furcate tips and the articulations are distinct. In *P. horsti* the tips of the long terminal appendages on the neuropodia of segment II are clavate, whereas in *P. flava* the tips are cylindrical.

DISTRIBUTION.—Indo-Pacific Ocean: Java, Indonesia; in 330 meters.

Neopsammolyce, new genus

TYPE SPECIES.—*Psammolyce petersi* Kinberg, 1856. Gender: feminine.

DIAGNOSIS.—Pelogeniinae without dorsal cirri on segment III. Neuropodia of segment II without long terminal appendages. Compound neurosetae falcigerous, with blades short, with bifid tips (some entire). First pair of elytra not deeply incised anteriorly (except in *N. occidentalis*); posterior elytra with medial processes, without posterior processes (except in *N. spinosa*). Prostomium without lateral ctenidia on ceratophore of median antenna. Upper lip with or without facial tubercle. Elytral and neuropodial filiform papillae not articulated (except in *N. catenulata*).

ETYMOLOGY.—*Neo* (new) plus *psammolyce*, indicating some differences from *Psammolyce*.

Key to the Species of *Neopsammolyce*

1. Elytral and neuropodial filiform papillae articulated [Figures 13E,G, 14A] . . . . *N. catenulata* (Amaral and Nonato)

Elytral and neuropodial filiform papillae not articulated 2
2. First elytra deeply notched [Figure 8D] . . . . . *N. occidentalis* (McIntosh)
First elytra not deeply notched 3
3. Compound neurosetae with stems smooth, without spinous rows [Figure 6F]; without facial tubercle; middorsal hump between elytrophores of segment II with papillae [Figure 6A]; branchiae beginning on segment III [Figure 6D] . . . . . *N. petersi* (Kinberg)
Compound neurosetae with some stems with spinous rows [Figures 10C, 12C]; with facial tubercle; middorsum between elytrophores of segment II without papillae [Figures 9A, 11A]; branchiae beginning on segment II [Figures 9A,C, 11A,E] 4
4. Facial tubercle bulbous [Figure 11B]; posterior elytra with posterior processes in addition to medial processes [Figure 11L]; ventral cirri not papillated, with basal knobs [Figure 12A,B] . . . . . *N. spinosa* (Hartman)
Facial tubercle digitiform [Figure 9B]; posterior elytra without posterior processes [Figure 10G]; ventral cirri papillated, without basal knobs [Figure 10A,B] . . . . . *N. floccifera* (Augener)

Neopsammolyce petersi (Kinberg, 1856), new combination

FIGURE 6

Psammolyce petersi Kinberg, 1856:388; 1858:31, pl. 9: fig. 43.—Day, 1967:105 [same record].

MATERIAL EXAMINED.—INDIAN OCEAN: *Mozambique:* G.V. Dueben, collector, 2 syntypes (NRS 427).

TYPE MATERIAL.—The two syntypes are anterior fragments, the smaller syntype with 52 segments, 41 mm long and 8 mm wide, with setae; the larger syntype with 68 segments, 69 mm long and 11 mm wide; the pharynx (had been cut, free in vial), has 11 pairs of papillae and 2 pairs of dark amber-colored jaws; the syntypes are very flabby, the integument soft and transparent.

DESCRIPTION.—Dorsum and elytra thickly covered with sand grains and reddish mud, giving speckled appearance to body (Kinberg, 1858, pl. 9: fig. 43A). Ventral surface thickly papillated with globular papillae; long cylindrical papillae on posterior lip region and anterior segments, along midventral groove and bases of neuropodia. First pair of elytra elongate, oval, not deeply notched anteriorly (Kinberg, 1858, pl. 9: fig. 43H'). Elytra oval, thin, transparent, tough, with exposed parts covered with sand, with long cylindrical papillae along lateral, posterior, and medial borders; surfaces with short, rounded papillae and some long cylindrical adhesive papillae with flattened tops; more posterior elytra with medial processes (Figure 6G).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, large ceratophore of median antenna tapering distally, with style about 2 times longer than ceratophore; eyes not visible (2 pairs shown by Kinberg); long tentaculophores each with single aciculum, long dorsal tentacular cirrus, shorter than median antenna, and shorter ventral tentacular cirrus, 2 bundles of notosetae extending anteriorly to tip of dorsal tentacular cirrus; lateral antennae short, bilobed, on dorsal sides of tentaculophores; palps, emerging ventral and lateral to tentaculophores, stout, tapering, about twice length of style of median antenna, with short inner palpal sheaths (Figure 6A; Kinberg, 1858, pl. 9: fig. 43B).

Segment II with middorsal papillate hump between bases of large elytrophores (Figure 6A); notopodia with large flanges encircling numerous notosetae; neuropodia with long papillae on ventro-anterior bracts; long ventral buccal cirri extending to tips of neurosetae (Figure 6B); compound neurosetae slender, stems long with spinous rows on exposed parts and blades long, slender, with entire tips (Figure 6C). Parapodia of segment III with small branchiae on dorsal tubercles, without dorsal cirri; extra long papillae on neuropodial postacicular bracts and on cirrophores of ventral cirri (Figure 6D); upper neurosetae similar to those on following segments, with rather long blades; stems of lower neurosetae without spinous rows and blades long, with bifid, hooked tips.

Notopodia of biramous parapodia small, subconical, with rounded subdistal flanges encircling numerous notosetae; neuropodia subconical, papillate distally; usual subdistal bracts with numerous long papillae, nearly hiding neurosetae; ventral cirri extending beyond basal tips of neuropodia; long papillae on anterior, posterior, and ventral sides of neuropodia (Figure 6E). Compound neurosetae stout, stems smooth, blades rather short, tips curved, with large secondary tooth; upper group of neurosetae (about 3) within dorso-anterior bracts; middle group (about 11) within postacicular bracts; and lower group (about 7) within ventro-anterior bracts (Figure 6E,F).

DISTRIBUTION.—Indian Ocean: Mozambique.

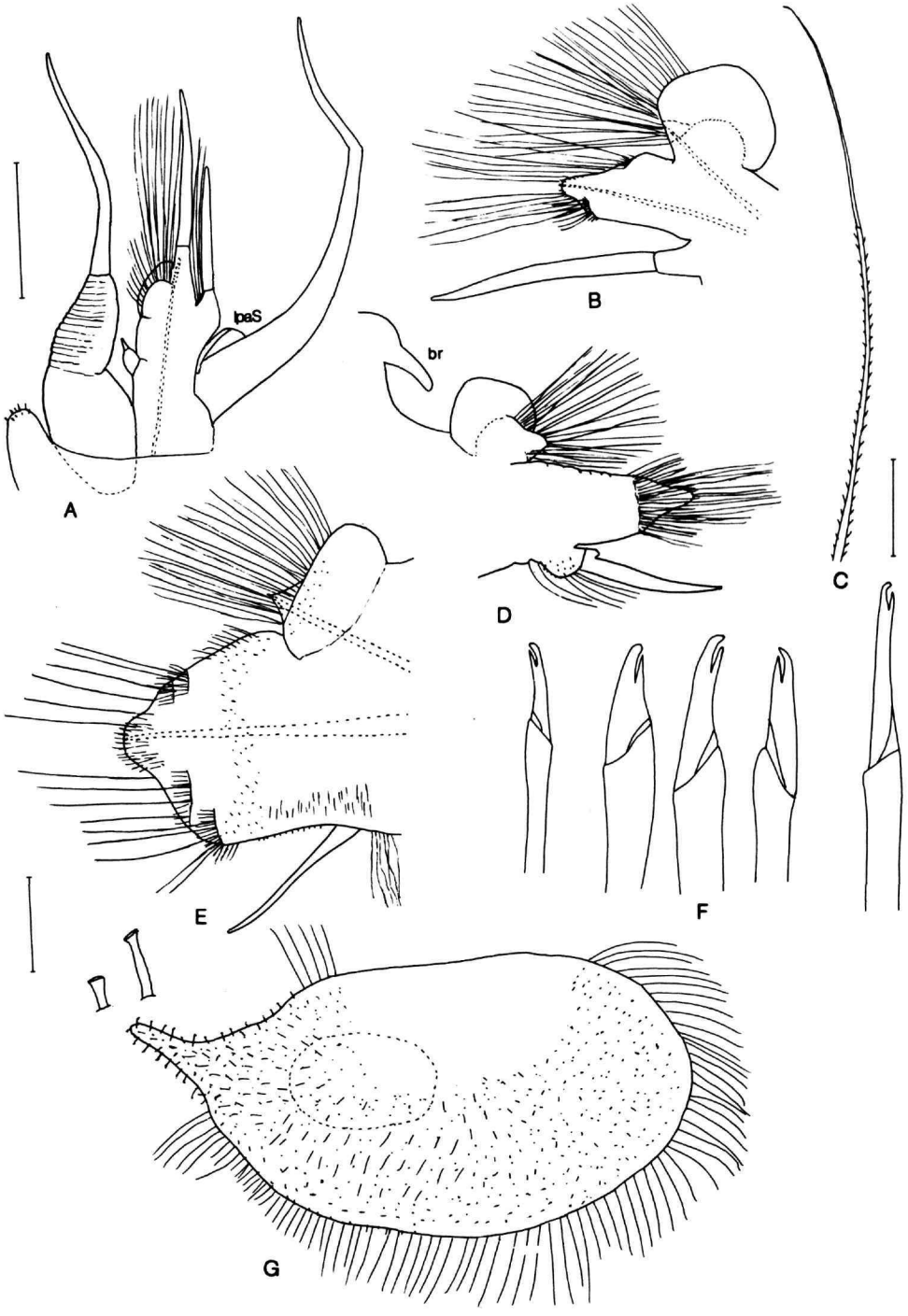


FIGURE 6.—*Neopsammolyce petersi* (smaller syntype of *Psammolyce petersi*): A, lateral view of anterior end, elytrophore cut back, aciculum dotted; B, right parapodium of segment II, anterior view, acicula dotted; C, neuroseta from same; D, left parapodium of segment III, posterior view; E, right parapodium of middle segment, anterior view, acicula dotted; F, upper, 3 middle, and lower neurosetae from same; G, right middle elytron, with detail of adhesive papillae. (Scales: A = 1.0 mm; B,D,E,G = 0.5 mm; C,F = 0.1 mm.)

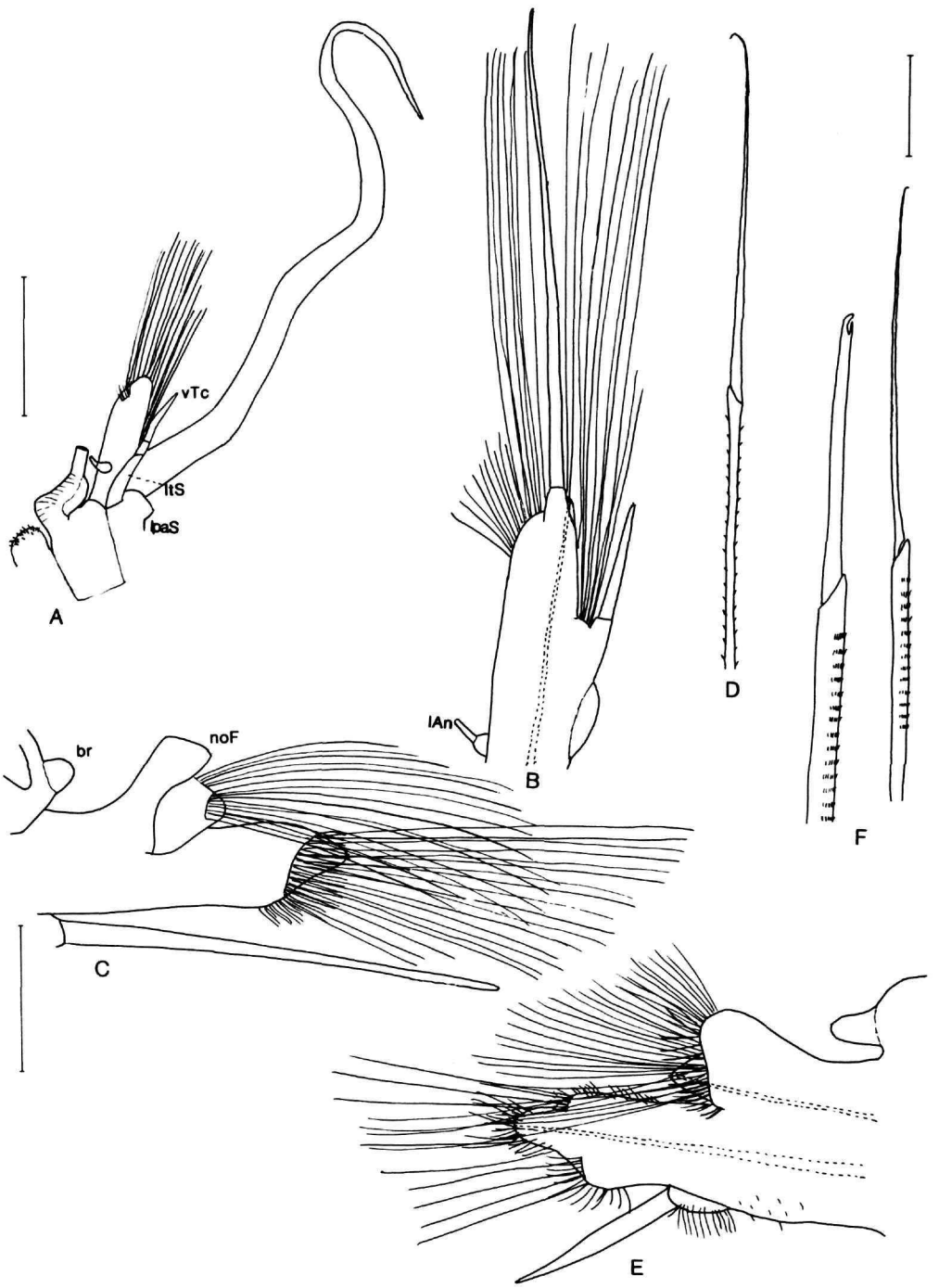


FIGURE 7.—*Neopsammolyce occidentalis* (specimen from *Albatross* sta 2150, USNM 3419): A, lateral view of anterior end, showing inner view of left tentaculophore of segment I, right tentaculophore and palp removed; prostomium withdrawn in segment II; style of median antenna missing, dorsal tentacular cirrus hidden by notosetae; B, right tentaculophore, outer view, aciculum dotted; C, right parapodium of segment II, posterior view; D, neuroseta from same; E, right parapodium of segment III, anterior view, acicula dotted; F, upper and lower neurosetae from same. (Scales: A = 1.0 mm; B,C,E = 0.5 mm; D,F = 0.1 mm.)

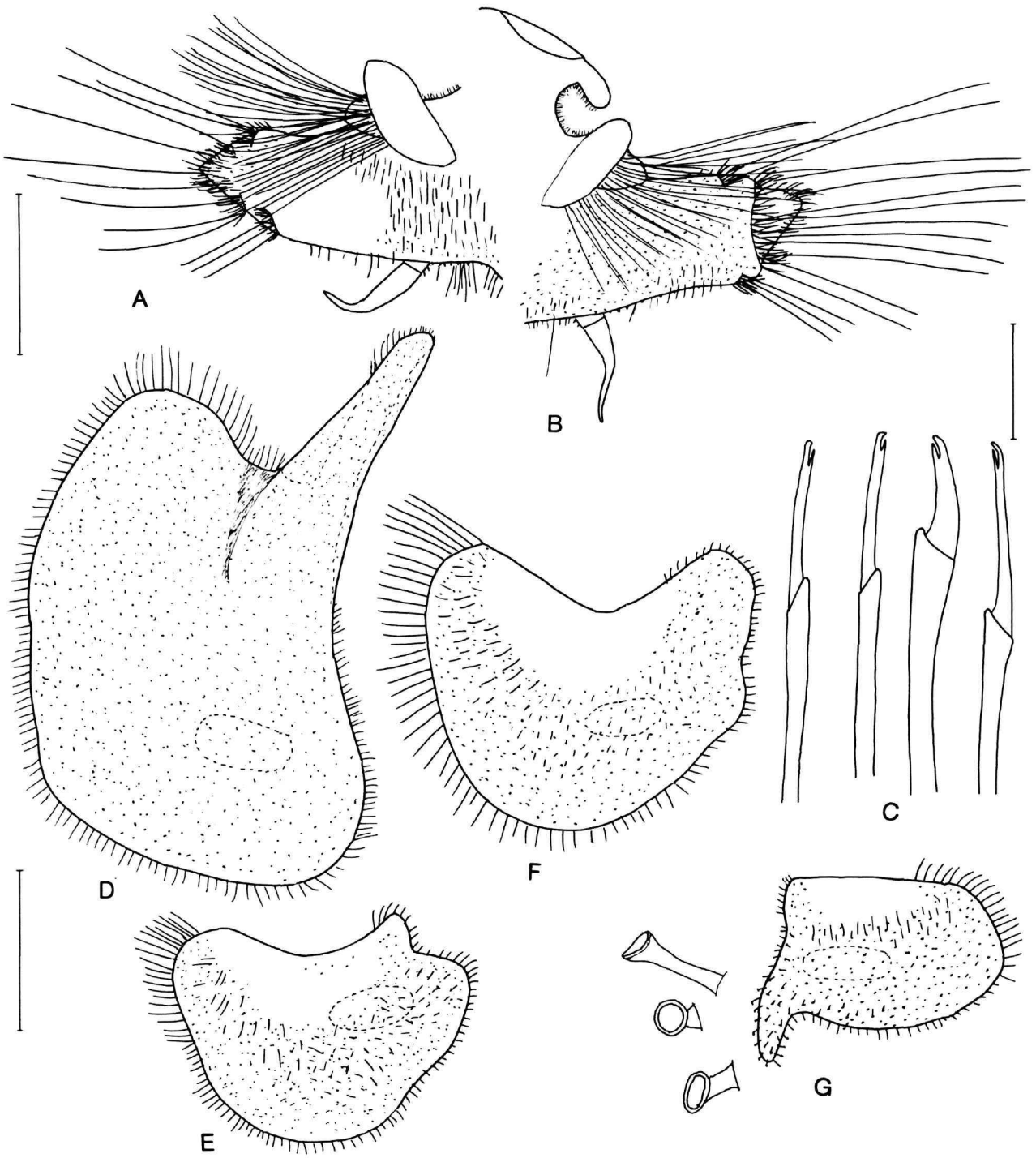


FIGURE 8.—*Neopsammolyce occidentalis* (specimen from *Albatross* sta 2150, USNM 3419): A, right parapodium of middle segment, anterior view; B, same, posterior view; C, upper, 2 middle, and lower neurosetae from same; D, left 1st elytron from segment II; E, left 2nd elytron from segment IV; F, left 3rd elytron from segment V; G, right posterior elytron, with detail of adhesive papillae. (Scales: A,B = 0.5 mm; C = 0.1 mm; D-G = 1.0 mm.)

Neopsammolyce occidentalis (McIntosh, 1885), new combination

FIGURES 7, 8

Psammolyce occidentalis McIntosh, 1885:146, pl. 22: fig. 5; pl. 23: figs. 2, 3; pl. 27: fig. 6; pl. 13A: figs. 14, 15.
Psammolyce sombreriana McIntosh, 1885:149 [MS name under *P. fijiensis*].

MATERIAL EXAMINED.—CARIBBEAN SEA: *West Indies:* Off Sombrero Island, 823 m, globigerina ooze, R/V *Challenger* sta 23, 15 Mar 1873, 2 syntypes (BMNH 1885.12.1.427). 13°34'N, 81°21'W, 699 m, white coarse sand, R/V *Albatross* sta 2150, 9 Apr 1884, 1 specimen (USNM 3419).

TYPE MATERIAL.—Both syntypes anterior fragments, larger syntype with 21 segments, 14 mm long and 5 mm wide, with setae, with some elytra still attached and others loose in vial; smaller syntype in poor shape, 20 segments, 7 mm long and 4 mm wide, no elytra remain.

DESCRIPTION.—Incomplete specimen from R/V *Albatross* sta (USNM 3419) with 36 segments, 19 mm long and 5 mm wide. Dorsum and elytra covered with white coarse sand and many foraminifera; dorsal surface with scattered projecting processes with adhesive papillae and short papillae; ventrum with long papillae on lower lip, along midventral groove, and medial to ventral cirri (McIntosh, 1885, pl. 22: fig. 5; pl. 23: fig. 2). First pair of elytra very large, deeply notched anteriorly, inner parts elongate, humped up, with borders curled under, and with long papillae on borders; surfaces with short papillae (Figure 8D; McIntosh, 1885, pl. 22: fig. 5); 2nd and 3rd elytra subreniform, slightly notched on medial sides, with long border papillae; surfaces with long filiform papillae and short adhesive papillae (Figure 8E,F); more posterior elytra with elongate, papillate medial processes projecting posteriorly, with long adhesive papillae with flattened tops (Figure 8G).

Prostomium and tentaculophores partially withdrawn in segment II; ceratophore of median antenna large, inflated basally, with lateral ridges; style missing (short, on large syntype); no eyes visible; elongate tentaculophores extended anteriorly, each with aciculum, short ventral tentacular cirrus extending to tip of tentaculophore and long dorsal tentacular cirrus more than 3 times length of ventral tentacular cirrus, 2 bundles of long notosetae reaching tip of dorsal tentacular cirrus; lateral antennae short, bilobed, attached on inner dorsal sides of tentaculophores; palps very long, extending far beyond notosetae, basally with inner palpal sheaths continuous with inner tentacular sheaths (Figure 7A,B; McIntosh, 1885, pl. 23: figs. 2, 3). Segment II with papillate hump between large elytrophores, with small branchiae on lateral sides (Figure 7A,C); notopodia of biramous parapodia with prominent subdistal flanges enclosing long notosetae; neuropodia with subdistal papillate bracts; long buccal cirri extending to near tips of lower neurosetae (Figure 7C); compound neurosetae slender, stems with long spinous regions, blades long, tapering to slender, hooked tips (Figure 7D). Segment III with small branchiae on lateral sides of dorsal tubercles, without dorsal cirri; both notopodia and neuropodia with long papillae; ventral cirri with papillate cirrophores, styles extending to tips of neuropodia (Figure 7E); upper neurosetae stouter than lower ones, stems with long spinous regions (20 or so rows), blades moderately long, with bifid, hooked tips; stems of lower neurosetae with fewer spinous rows, blades long, tapering to slender hooked tips (Figure 7F).

Biramous parapodia with ciliated ridges between bases of notopodia and branchiae, elytrophores, and dorsal tubercles, without distinct ctenidia (Figure 8B). Notopodia subconical, with conspicuous subterminal flanges enclosing numerous notosetae; neuropodia subconical, distally papillate; subdistal bracts with long cylindrical papillae enclosing neurosetae; anterior and posterior sides of neuropodia papillate; ventral cirri with cirrophores with short papillae, styles short, subulate (Figure 8A,B). Notosetae finely spinous capillaries. Neurosetae compound falcigers with smooth stems; blades all with bifid tips, lower ones with blades slightly longer than others; some middle ones stouter than others (Figure 8C; McIntosh, 1885, pl. 13A: figs. 14, 15).

DISTRIBUTION.—Caribbean Sea; in 699 to 823 meters.

Neopsammolyce floccifera (Augener, 1906), new combination

FIGURES 9, 10

Psammolyce floccifera Augener, 1906:109, pl. 2: figs. 24–30.
Psammolyce arenosa.—Augener, 1933:193.—Hartman, 1944:14 [part; not *Sigalion arenosum* Delle Chiaje, 1830].

MATERIAL EXAMINED.—CARIBBEAN SEA: *Off Dominica:* 216 m, U.S. Coast Survey R/V *Blake* sta 117, syntype (MCZ).

Panama: Caledonia Bay, 15–25 m, Allan Hancock Atlantic Exp. sta A4-39, 1 specimen (LACM-AHF, as *P. arenosa* by Hartman, 1944, mixed with *Pelogenia fimbriata*). Galeta, 29 m, burrowing in sandy bottom, 26 Sep 1978, G. Hendler, collector, 1 specimen (USNM 146138).

GULF OF MEXICO: *United States:* FLORIDA: West coast, 25°02'N, 83°14'W, 59 m, broken shell, R/V Sch. *Grampus* sta 5055, 16 Feb 1889, 1 specimen (USNM 146137).

NORTH ATLANTIC OCEAN: *Off Barbados:* 188 m, *Blake* sta 273, syntype (ZMH 209A). Gairaca, Saint Martin, 0–15 m, Exp. *Chazalie,* 29 Feb 1896, 1 specimen (ZMA 1203, as *P. arenosa* by Augener, 1933).

TYPE MATERIAL.—Syntype (ZMH 209A) anterior fragment of 45 segments, 20 mm long and 5 mm wide, with setae; elytral all free in vial, thickly covered with sand grains and rusty red material. Syntype (MCZ) hardened; elytra missing.

DESCRIPTION.—Figured specimen from West coast of Florida (USNM 146137) anterior and middle fragments totalling 59 segments, 24 mm long and 4 mm wide. Complete specimen from Galeta, Panama (USNM 146138), with 136 segments, plus regenerating posterior end of 42 segments, 58

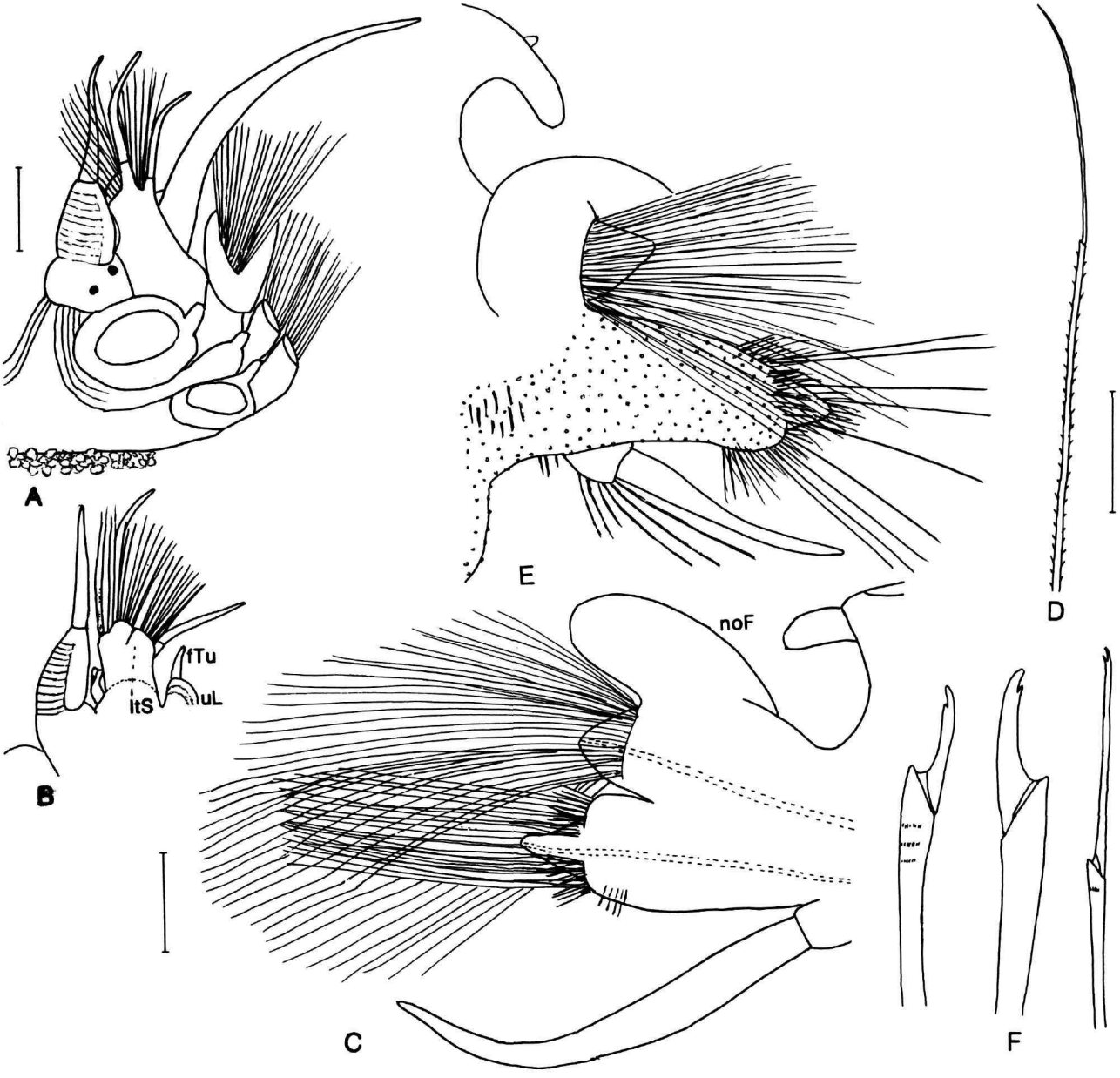


FIGURE 9.—*Neopsammolyce floccifera* (specimen from west coast of Florida, USNM 146137): A, dorsolateral view of anterior end; B, inner view of anterior end, right tentaculophore of segment I removed; C, right parapodium of segment II, anterior view, acicula dotted; D, neuroseta from same; E, right parapodium from segment II, anterior view, aciucla dotted; D, neuroseta from same; E, right parapodium from segment III, posterior view; F, upper, middle, and lower neurosetae from same. (Scales: A,B = 0.5 mm; C,E = 0.2 mm; D,F = 0.1 mm.)

mm long and 7 mm wide; pharynx partly extended, with 11 pairs of papillae and 2 pairs of jaws.

Dorsum and elytra thickly covered with white calcareous sand grains, shell fragments, spicules, and foraminifera, thicker on inner parts of elytra. Dorsum with adhesive papillae, single and some longer and branched, with flattened tops (Augener, 1906, pl. 2: fig. 28). Ventrum thickly covered with globular papillae, with long cylindrical papillae on lower lip of mouth region, along midventral groove, and in transverse rows, 1 per segment. First pair of elytra elongate-oval, sometimes slightly

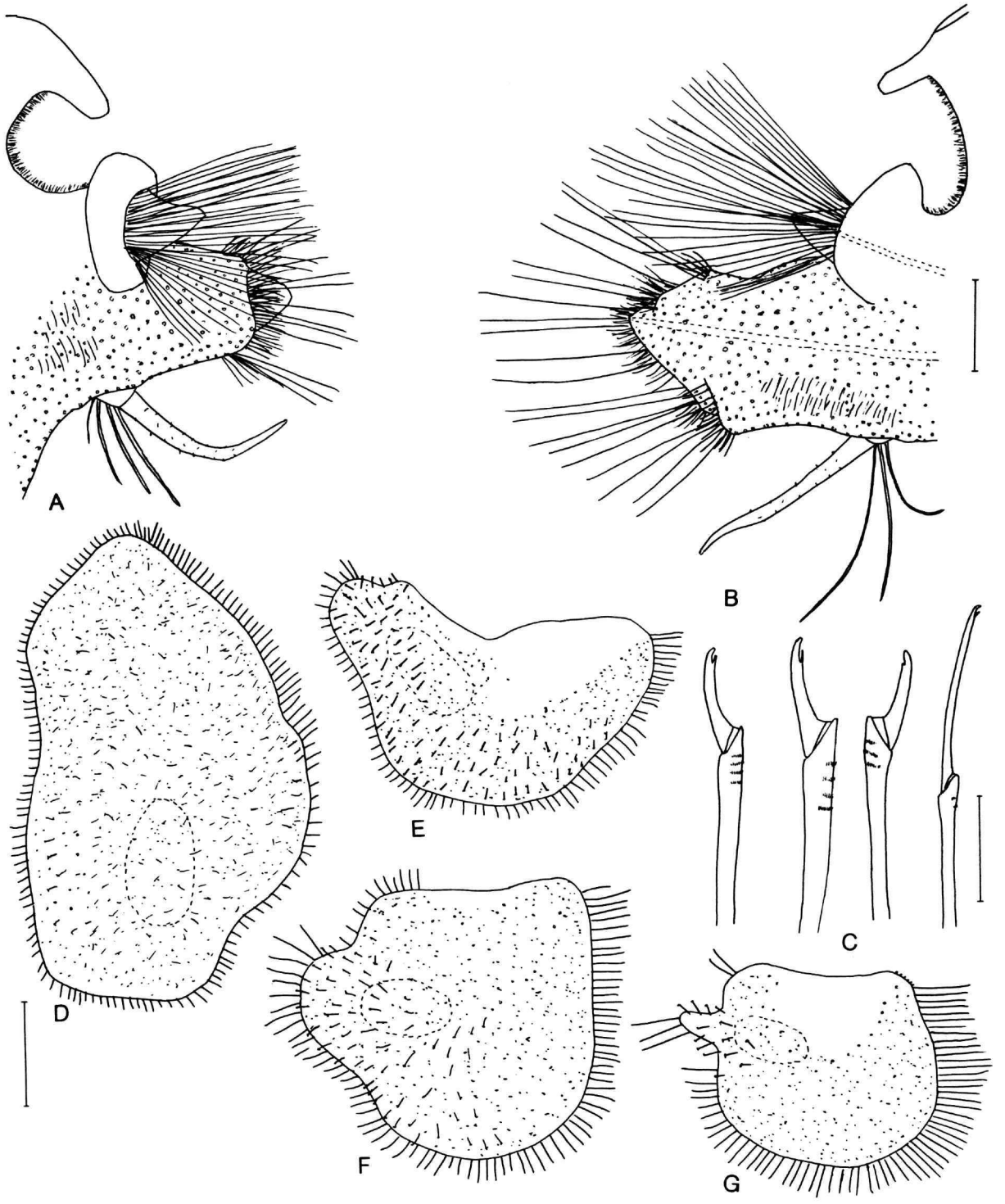


FIGURE 10.—*Neopsammolyce floccifera* (specimen from west coast of Florida, USNM 146137): A, right anterior parapodium, posterior view; B, right middle parapodium, anterior view, acicula dotted; C, upper, 2 middle, and lower neurosetae from same; D, right 1st elytron from segment II; E, right 2nd elytron from segment IV; F, right anterior elytron; G, right middle elytron. (Scales: A,B = 0.2 mm; C = 0.1 mm; D–G = 0.5 mm.)

bilobed anteriorly, with cylindrical papillae on borders, and short and long adhesive papillae on surfaces (Figure 10D); following anterior elytra subreniform, indistinctly bilobed medially, with border papillae on 3 sides and numerous adhesive papillae on surfaces, more numerous on inner halves, plus low globular papillae (Figure 10E,F; Augener, 1906, pl. 2: fig. 27); middle elytra with digitiform medial processes (Figure 10G).

Prostomium and tentaculophores partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, smaller dorsally and larger ventrally; ceratophore of median antenna large, bulbous basally, with lateral ridges; style slightly longer than ceratophore; tentaculophores each with dorsal tentacular cirrus as long as median antenna, and slightly shorter ventral tentacular cirrus on outer side, and 2 bundles of notosetae and inner tentacular sheath on inner side; ventral palps stout, tapering and extending beyond tentacular cirri, with low inner palpal sheaths; lateral antennae small, bilobed, attached side by side on dorsal bases of tentaculophores where fused to prostomium (much lower and closer than usual); digitiform facial tubercle on upper lip (Figure 9A,B; Augener, 1906, pl. 2: fig. 24).

Segment II truncate anteriorly between large elytrophores, with lateral branchiae; biramous parapodia with notopodia almost as large as neuropodia, with large subdistal flanges enclosing very numerous notosetae, extending laterally beyond tips of neurosetae; ventral buccal cirri extending to tips of neurosetae (Figure 9C; Augener, 1906, pl. 2: fig. 24); compound neurosetae very numerous, slender, stems with long spinous regions, blades long, slender, tapering to fine tips (Figure 9D). Segment III with branchiae on lateral sides of dorsal tubercles; neuropodia covered with globular papillae and long papillae on subdistal bracts; cirrophores of ventral cirri with long papillae, styles extending to tips of neuropodia (Figure 9E); upper and middle neurosetae stout, stems with 0–3 spinous rows, blades short, falcate, with bifid tips; lower neurosetae more slender, stems with single spinous rows, blades long, with slender secondary tooth (Figure 9F).

Biramous parapodia with ciliated ridges between notopodia and branchiae and elytrophores or dorsal tubercles, without distinct ctenidia; notopodia shorter than neuropodia, subconical, with prominent subdistal flanges enclosing numerous, finely spinous, capillary notosetae; neuropodia subconical, papillate distally with usual subdistal bracts, with long papillae; neuropodia thickly covered with globular papillae and some cylindrical papillae, styles without basal knobs, with minute papillae, tapering to tips of neuropodia (Figure 10A,B; Augener, 1906, pl. 2: figs. 25, 26). Upper neurosetae (about 3) within dorso-anterior bracts, stems with 5–7 spinous rows, blades with distinct or slight indication of secondary tooth; middle neurosetae (about 11) within postacicular bracts, stems with 2–4 spinous rows, blades similar to upper ones; lower neurosetae (about 6) within ventro-anterior bracts, stems more slender, with 1–2 spinous rows, blades long, with small secondary tooth or entire (Figure 10C; Augener, 1906, pl. 2: fig. 30).

DISTRIBUTION.—North Atlantic Ocean: Caribbean Sea: Panama; Gulf of Mexico: Florida; in 0 to 216 meters.

Neopsammolyce spinosa (Hartman, 1939), new combination

FIGURES 11, 12

Psammolyce spinosa Hartman, 1939:72, pl. 19: figs. 232–243; 1968:159, figs. 1–6.—Rioja, 1963:155, figs. 59–63.—Not Fauchald, 1977:9 [= *Pelogenia anoculata* (Hartman)].

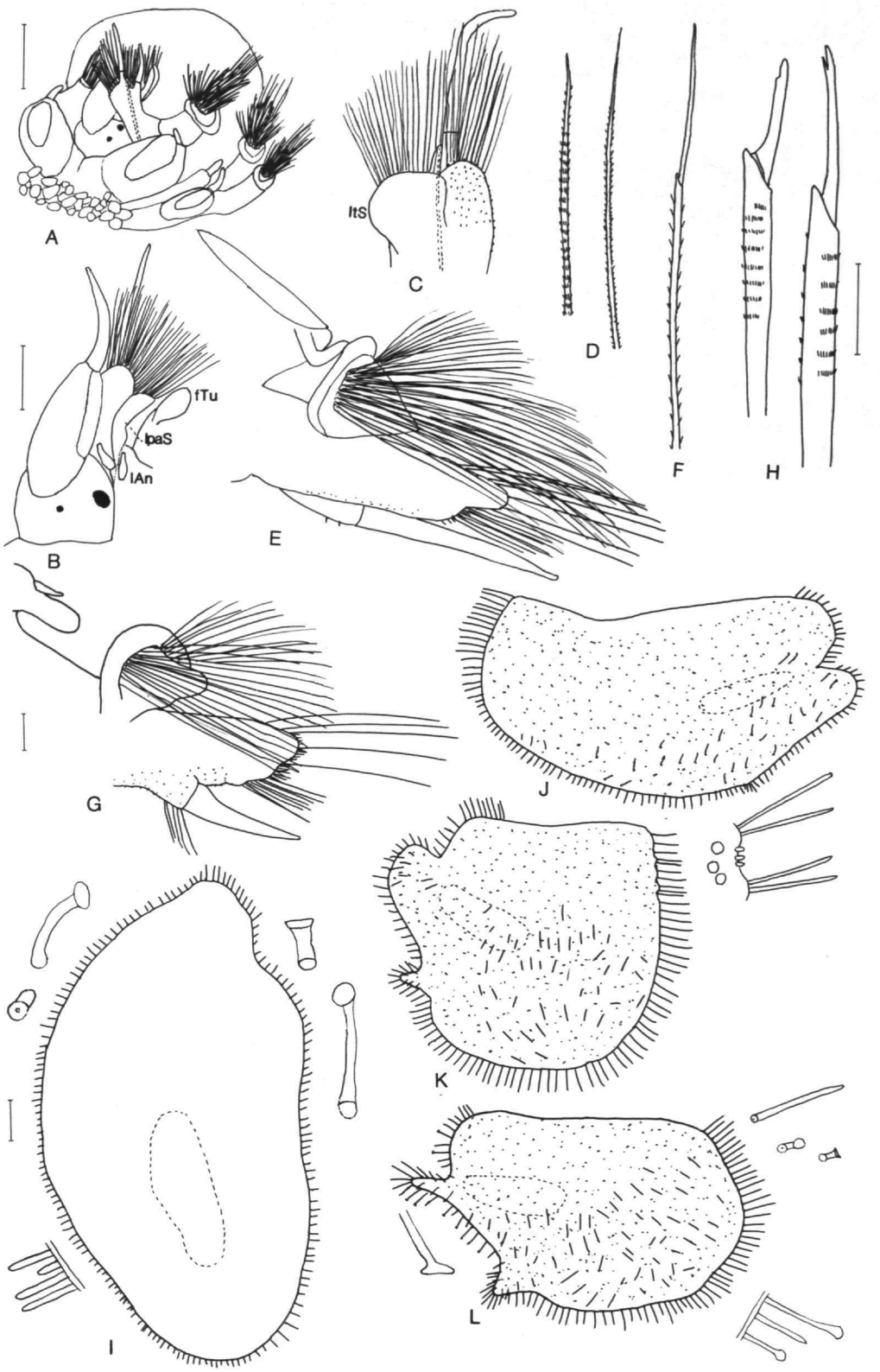
MATERIAL EXAMINED.—NORTH PACIFIC OCEAN: *Costa Rica:* Chatham Bay, Cocos Island, 05°35'N, 86°59'W, 73–84 m, coarse white sand, R/V *Velero* sta 780-38, 14 Jan 1938, holotype (LACM-AHF 74), 2 paratypes (LACM-AHF 75).

TYPE MATERIAL.—Holotype with 73+ segments, 50 mm long and 5 mm wide, with setae; larger paratype with 77+ segments, 48 mm long and 7 mm wide; smaller paratype (male with sperm in body) with 106+ segments, 34 mm long and 6 mm wide.

DESCRIPTION.—Dorsum encrusted with sand grains and foraminifera, including inner portions of elytra; ventrum with filiform papillae. First pair of elytra elongate-oval, with papillate borders and surfaces with long, flat-topped adhesive papillae (Figure 11I); 2nd elytra subreniform, bilobed medially, with fringes of papillae on 3 sides; surfaces with short and long adhesive papillae (Figure 11J); more posterior elytra squarish, with digitiform or knob-like, single medial and single posterior processes; surfaces with globular and long adhesive papillae; lateral parts of elytra, not covered with sand grains, with long cylindrical papillae (Figure 11K,L; Hartman, 1939, pl. 19: fig. 240; not fig. 243, which has too many posterior processes, not observed on types examined).

Prostomium and tentaculophores partially withdrawn in segment II; ceratophore of median antenna large, bulbous, style almost as long as ceratophore; 2 pairs of black eyes, dorsal pair smaller than ventral pair; dorsal tentacular cirri as long as style of median antenna, ventral tentacular cirri shorter; 2 bundles of spinous capillary notosetae, dorsal ones slightly stouter, ending in slightly curved tips, ventral ones more slender, ending in long capillary tips; rounded inner tentacular sheaths continuous

FIGURE 11 (right).—*Neopsammolyce spinosa* (paratype of *Psammolyce spinosa*): A, dorsolateral view of anterior end, including right parapodia I–IV; pharynx partly extended, palps missing, style of median antenna hidden from view; B, lateral view of anterior end, right tentaculophore of segment I removed; ventral tentacular cirrus hidden by notosetae; C, tentaculophore of segment I, inner view, ventral tentacular cirrus hidden by notosetae; D, dorsal and ventral notosetae from same; E, left parapodium from segment II, anterior view; F, neuroseta from same; G, left parapodium from segment III, anterior view; H, upper and middle neurosetae from same; I, left 1st elytron of segment II, with detail of border and surface adhesive papillae; J, left 2nd elytron of segment IV; K, right anterior elytron, with detail of border papillae; L, right middle eytron, with detail of border and surface papillae. (Scales: A = 1.0 mm; B = 0.5 mm; C,E,G = 0.2 mm; D,F,H = 0.1 mm; I-L = 0.3 mm.)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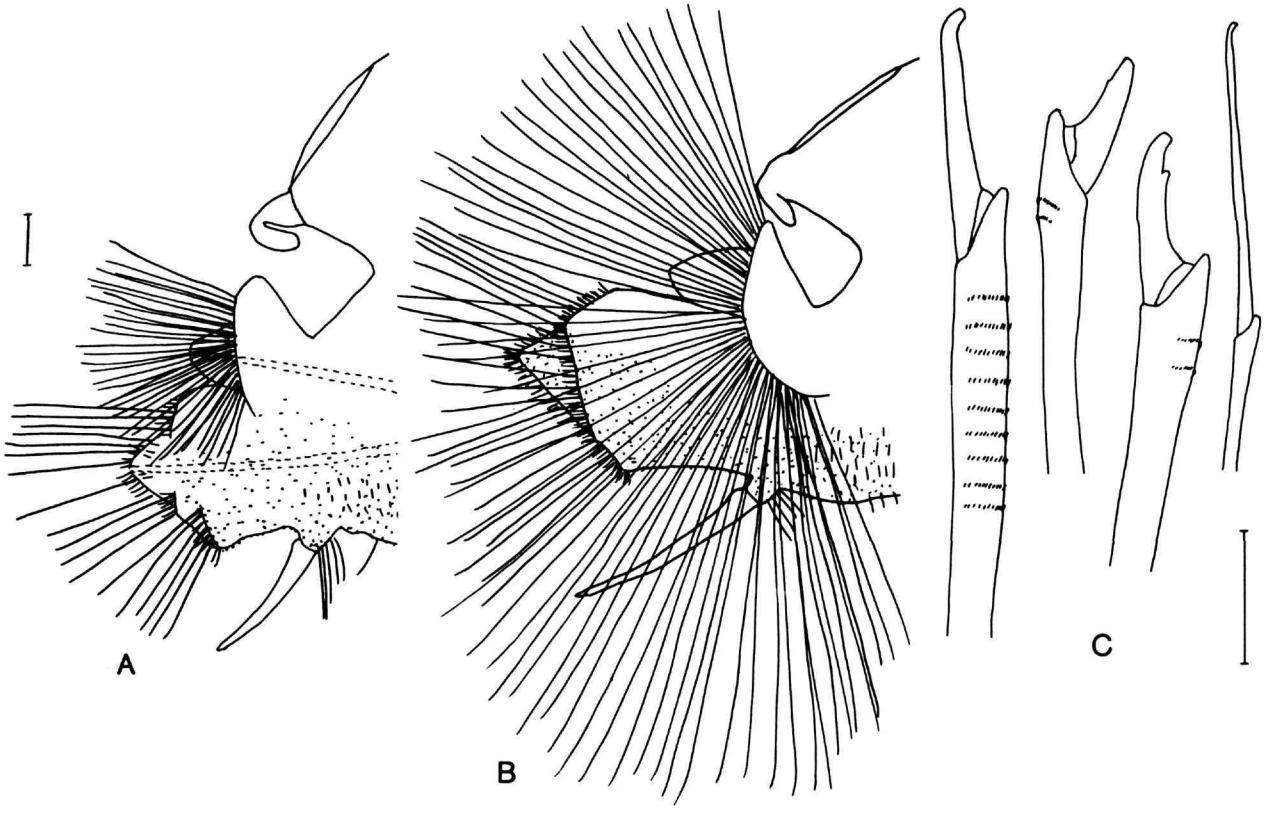

FIGURE 12.—*Neopsammolyce spinosa* (paratype of *Psammolyce spinosa*): A, right anterior parapodium, anterior view, acicula dotted; B, left middle parapodium, posterior view; C, upper, 2 middle, and lower neurosetae from same. (Scales: A,B = 0.2 mm; C = 0.1 mm.)

with inner palpal sheaths; palps extending beyond dorsal tentacular cirri; lateral antennae small, bilobed, attached to dorsal bases of tentaculophores close to place of fusion with prostomium; bulbous facial tubercle on upper lip (Figure 11A-D; Hartman, 1939, pl. 19: fig. 238). Segment II truncate anteriorly between large elytrophores with lateral branchiae, with middorsal notch, without papillae (Figure 11A); biramous parapodia with short notopodia with subdistal flanges enclosing very numerous notosetae; ventral buccal cirri extending beyond tips of large neuropodia (Figure 11A,E); neurosetae slender, long stems with spinous rows; long slender blades tapering to sharp tips (Figure 11F; Hartman, 1939, pl. 19: fig. 242). Segment III with branchiae on lateral sides of dorsal tubercles, with additional small appendage; cirrophores of ventral cirri with long papillae, styles extending to tips of neuropodia; middle and upper neurosetae stout, stems with 8–9 spinous rows, blades short, with tips entire or with secondary tooth; lower neurosetae similar to those of segment II, long stems with spinous rows and long blades with tips slightly hooked, mostly with bifid tips (Figure 11G,H).

Biramous parapodia with short subconical notopodia with subdistal flanges enclosing very numerous notosetae, extending dorsally, laterally, and ventrally beyond neuropodia and ventral cirri; neuropodia thick, subconical, papillate distally, with usual papillate bracts; globular papillae and long cylindrical papillae on anterior and posterior sides of neuropodia; cirrophores of ventral cirri with 4–5 long papillae, styles with upper basal knobs, tapering and extending to tips of neuropodia (Figure 12A,B; Hartman, 1939, pl. 19: fig. 239). Lower neurosetae (9–11) within ventro-anterior bracts, with stems slender, smooth and blades rather long, with slightly hooked, entire or bifid tips; middle neurosetae (11) within postacicular bracts, with stems stouter, with 0–3 spinous rows and blades short, with hooked tips entire or bifid; upper neurosetae (7–9) within dorso-anterior bracts, stems with 5–9 spinous rows and blades with entire tips or small secondary tooth (Figure 12C; Hartman, 1939, pl. 19: figs. 232–237, 241).

DISTRIBUTION.—North Pacific Ocean: Off Costa Rica and Mexico; in shallow water to 84 meters.

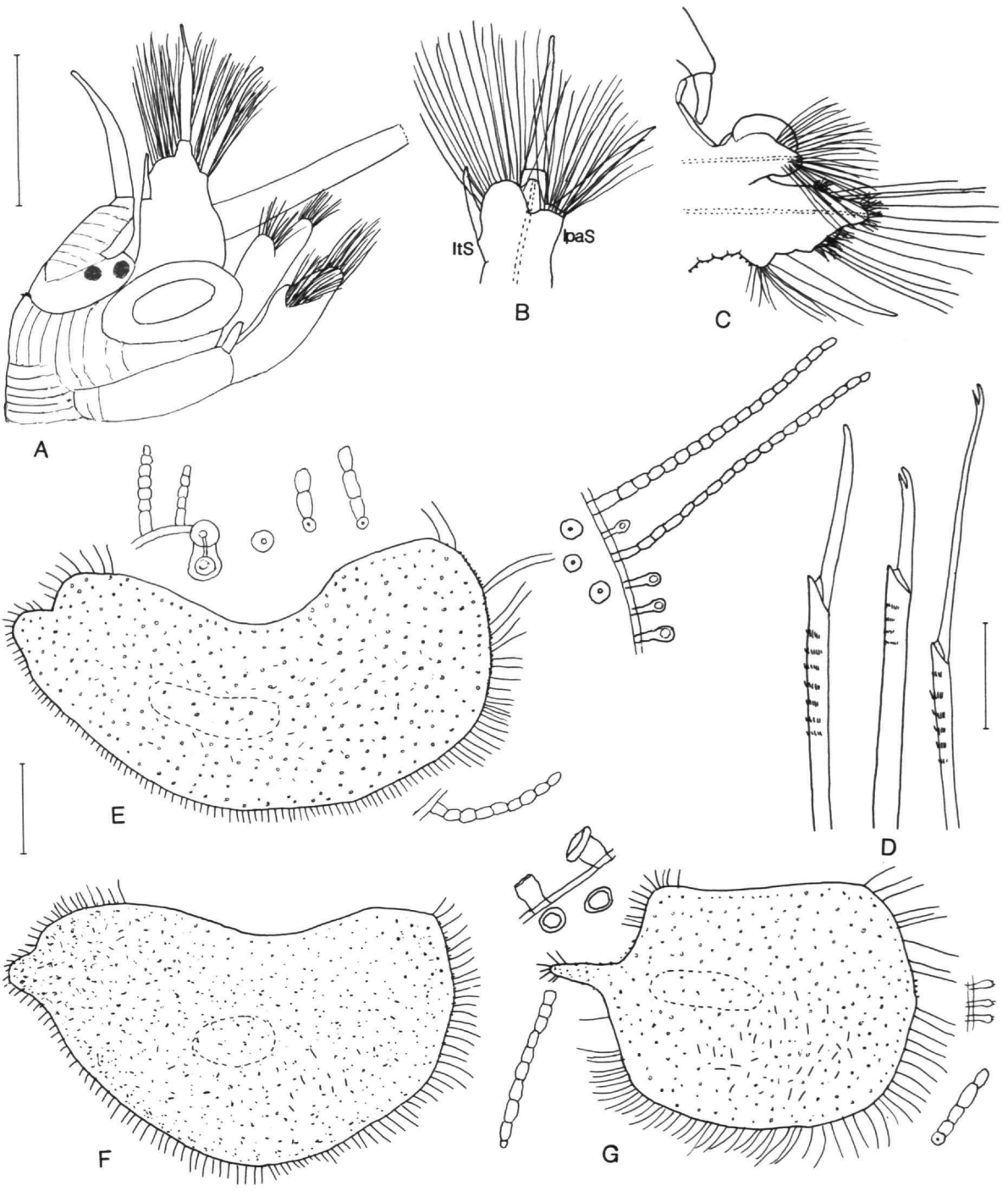

FIGURE 13.—*Neopsammolyce catenulata* (specimen from SE Brazil): A, lateral view of anterior end, tip of palp not shown; B, tentaculophore of segment I, inner view, aciculum dotted; C, left parapodium of segment III, anterior view, acicula dotted; D, upper, middle, and lower neurosetae from same; E, right 2nd elytron from segment IV, with detail of border and surface papillae; F, right 4th elytron from segment VII; G, right elytron from segment 38, with detail of border and surface papillae. (Scales: A = 1.0 mm; B,C, E–G = 0.5 mm; D = 0.1 mm.)

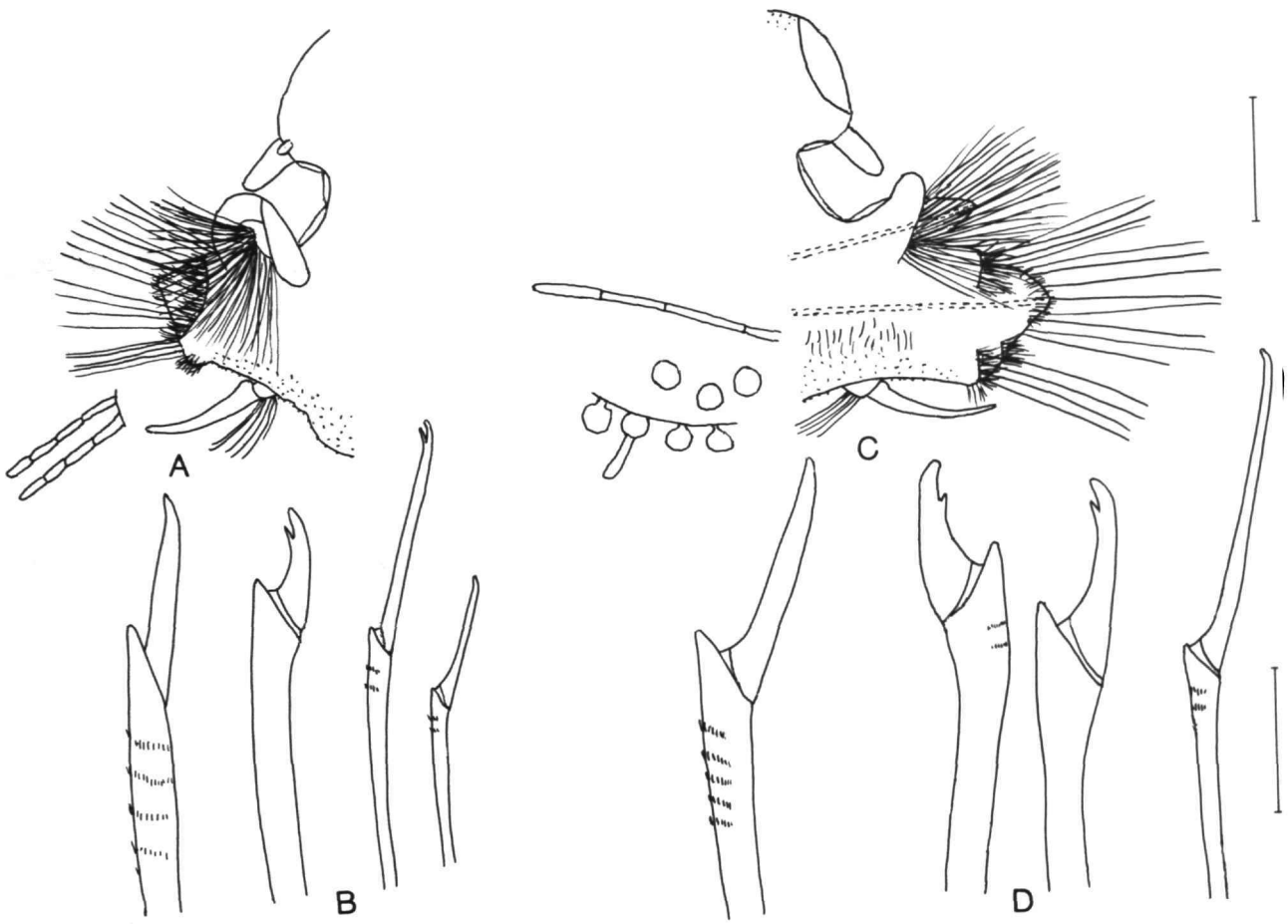

FIGURE 14.—*Neopsammolyce catenulata* (specimen from SE Brazil): A, left parapodium from segment 12, posterior view, with detail of papillae on ventro-anterior bract; B, upper, middle, and 2 lower neurosetae from same; C, left parapodium of segment 38, anterior view, acicula dotted, with detail of papillae on neuropodium; D, upper, 2 middle, and lower neurosetae from same. (Scales: A,C = 0.5 mm; B,D = 0.1 mm.)

Neopsammolyce catenulata (Amaral and Nonato, 1984), new combination

FIGURES 13, 14

Psammolyce catenulata Amaral and Nonato, 1984:20, figs. 33–43.—Lana, 1987:1061; 1991:124.

MATERIAL EXAMINED.—SOUTHWEST ATLANTIC OCEAN: *Brazil:* Pontal do Sul, Paranâ, 25°48'S, 47°10'W, Operation Sueste II, R/V *Almirante Saldanha* sta 6254, 71 m, mud, P.C. Lana, collector and identifier, 1 specimen (MCBM-BPO-131).

DESCRIPTION.—Specimen examined with 39+ segments, 24+ mm long and 6 mm wide, with setae. Middorsum with adhesive papillae and sand grains, except anteriorly; ventrum and neuropodia with low rounded papillae. First elytra elongate, pyriform, with apex directed anteriorly (Amaral and Nonato, 1984); 2nd and 4th elytra subreniform, bilobed medially, surfaces nearly covered with oval papillae and some adhesive papillae; short and long articulated papillae on surfaces and on medial, posterior, and lateral borders; sand grains concentrated on medial oval areas (Figure 13E,F); more posterior elytra squarish, with digitiform medial processes with adhesive papillae; long articulated papillae on borders and some short articulated papillae on surfaces (Figure 13G; Amaral and Nonato, 1984, figs. 35, 36).

Prostomium and tentaculophores partially withdrawn in segment II; prostomium rounded, with 2 pairs of large eyes, ventral pair slightly larger than dorsal pair; median antenna with large bulbous ceratophore, style slightly longer than ceratophore; tentaculophores each with single aciculum, dorsal and ventral tentacular cirri subequal in length on outer side, and 2 bundles of capillary notosetae and rounded inner tentacular

sheath on inner side; palps long, tapering, emerging ventral and lateral to tentaculophores, with low inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae short, tapering, on dorsal sides of tentaculophores without facial tubercle (Figure 13A,B; Amaral and Nonato, 1984, figs. 33, 34). Segment II with middorsal hump with few papillae between large elytrophores, without lateral branchiae; biramous parapodia with long ventral buccal cirri; compound neurosetae slender, stems long, with numerous spinous rows, blades long, slender, with bifid tips (Figure 13A; Amaral and Nonato, 1984, figs. 33, 34, 41). Segment III with dorsal tubercles with lateral branchiae; compound neurosetae with stems with spinous rows: 6–8 rows on upper and lower neurosetae, 4 on middle ones; blades moderately long, mostly with entire tips on upper neurosetae, blades shorter with bifid tips on middle ones, and blades very long with bifid tips on lower ones; cirrophores of ventral cirri with 10 long, articulated papillae, styles extending beyond tips of neuropodia (Figure 13C,D; Amaral and Nonato, 1984, figs. 39, 40).

Biramous parapodia with branchiae on lateral sides of dorsal tubercles or elytrophores (called rudimentary dorsal cirri by Amaral and Nonato); ctenidia in form of 3 low ridges between notopodia and dorsal tubercles or elytrophores (Figure 14A,C). Notopodia with subconical acicular lobes with well-developed subdistal flanges encircling large, open, fan-shaped bundles of spinous capillary notosetae; neuropodia with subconical, acicular lobes, papillate distally, with usual 3 papillate bracts enclosing neurosetae; long articulated papillae on anterior sides of neuropodia; oval papillae on ventral sides; cirrophores of ventral cirri with 4–6 long, articulated papillae, styles with basal knobs on upper sides, extending beyond basal tips of neuropodia (Figure 14A,C; Amaral and Nonato, 1984, figs. 37, 38). Upper compound neurosetae within dorso-anterior bracts, stems with 5 spinous rows, upper blades moderately long, with slightly hooked entire or bifid tips; middle ones within postacicular bracts, with stems smooth or with 1–2 spinous rows, blades short with bifid tips; lower ones within ventro-anterior bracts, stems more slender, with 2 spinous rows, blades long to shorter and tips bifid or entire (Figure 14B,D; Amaral and Nonato, 1984, figs. 42, 43).

DISTRIBUTION.—Southwest Atlantic Ocean: Brazil; low water to 71 meters.

Hartmanipsammolyce, new genus

TYPE SPECIES.—*Psammolyce pendula* Hartman, 1942b. Gender: feminine.

DIAGNOSIS.—Pelogeniinae without dorsal cirri on segment III. Neuropodia of segment II without long appendages. Neuropodia of segment III with large, balloon-like or drop-like lobes on distal tips. Compound neurosetae falcigerous, with blades short, with bifid tips; stems smooth. First pair of elytra not deeply incised anteriorly. Prostomium with lateral ctenidia on ceratophore of median antenna. Upper lip without facial tubercle. Elytral and neuropodial filiform papillae not articulated.

ETYMOLOGY.—The genus is named for Olga Hartman, plus *Psammolyce*.

Hartmanipsammolyce pendula (Hartman, 1942), new combination

FIGURES 15–17

Psammolyce pendula Hartman, 1942b:91, pl. 8: figs. 6–8; pl. 9: figs. 18–20.
Psammolyce globula Hartman, 1965:53, pl. 3a–d.

MATERIAL EXAMINED.—NORTHWEST ATLANTIC OCEAN: *Off northern Cuba:* 22°52′N, 79°22′W, 439 m, R/V *Atlantis* sta 3428, 1 May 1939, holotype of *P. pendula* (MCZ 3503).

Bermuda slope: 32°17′N, 64°35′W, 1700 m, R/V *Atlantis* sta 4, 2 May 1960, holotype of *P. globula* (LACM-AHF 10970).

TYPE MATERIAL.—The holotype of *Psammolyce pendula* has 85 segments with the posterior end missing, and is 50 mm long and 6 mm wide, with setae. The holotype of *Psammolyce globula* is in poor shape, with the elytra mostly missing.

DESCRIPTION.—Dorsum covered with fine white particles, sand, shells, and foraminifera, with long compound papillae with flattened tops, 3–5 groups per segment, with foreign particles attached (Figure 16E). Ventrum with long papillae, forming "beard," on anterior 6 segments, including lower lip on segment II (Figure 15A). First pair of elytra large, oval, covering anterior end to segment V, with slight anterior notch; borders and surfaces thickly covered with short, cylindrical, clavate and flat-topped papillae (Figure 17A). Third elytra smaller, bilobed medially (Figure 17C); elytra from 3rd pair on confined to lateral 1/4 of body, leaving middorsum uncovered, with medial digitiform processes with flat-topped papillae, short papillae on surfaces and long border papillae (Figure 17D,E; Hartman, 1942b, pl. 9: figs. 18, 19).

Prostomium and tentaculophores withdrawn in segment II and hidden from view basally; ceratophore of median antenna large, bulbous basally, with pair of small oval ctenidia on dorsal basal sides; style missing; no eyes visible; tentaculophores each with single aciculum, dorsal tentacular cirrus and shorter ventral tentacular cirrus on outer side, and 2 bundles of spinous capillary notosetae and inner tentacular sheath on inner side; palps ventral to tentaculophores, long, tapering, and extending beyond notosetae; inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae small, subulate, attached on inner dorsal basal sides of tentaculophores (Figure 15A,B). Parapodia of segments II–IV directed anteriorly; hairy lower lip of ventral mouth enclosed in segments II–V (Figure 15A; Hartman, 1965, pl. 3b). Segment II forming triangular middorsal nuchal flap, with flat-topped papillae, overhanging prostomium between first pair of large elytrophores; elytrophores with small lateral branchiae; long ventral buccal cirri extending to tips of neurosetae (Figure 15A,C); compound

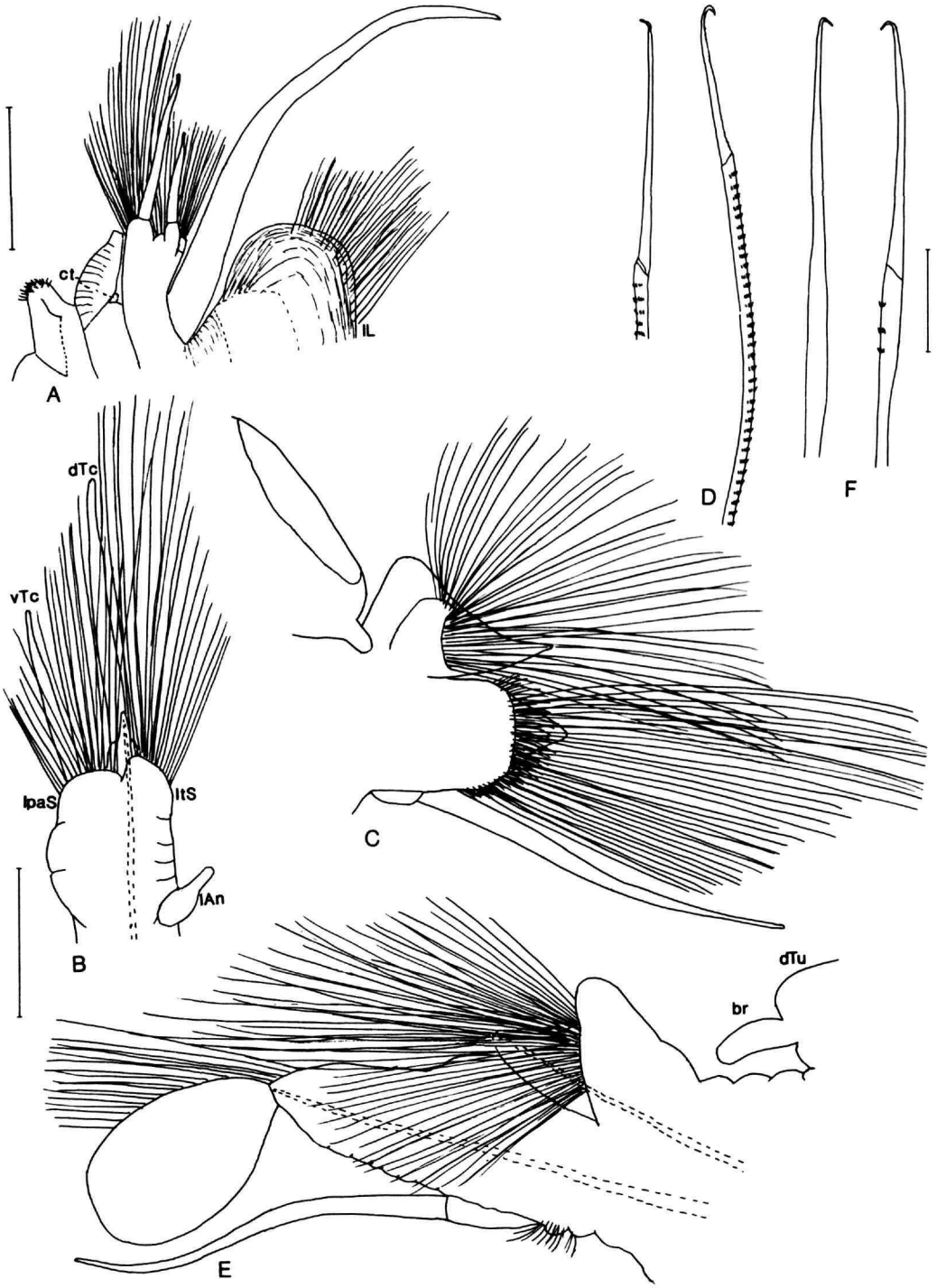

FIGURE 15.—*Hartmanipsammolyce pendula* (holotype of *Psammolyce pendula*): A, lateral view of anterior end, right parapodium of segment II cut off, style of median antenna missing; B, right tentaculophore of segment I, inner view, aciculum dotted; C, right parapodium of segment II, posterior view; D, upper and lower neurosetae from same; E, right parapodium of segment III, anterior view, acicula dotted; F, upper and lower neurosetae from same. (Scales: A = 1.0 mm; B,C,E = 0.5 mm; D,F = 0.1 mm.)

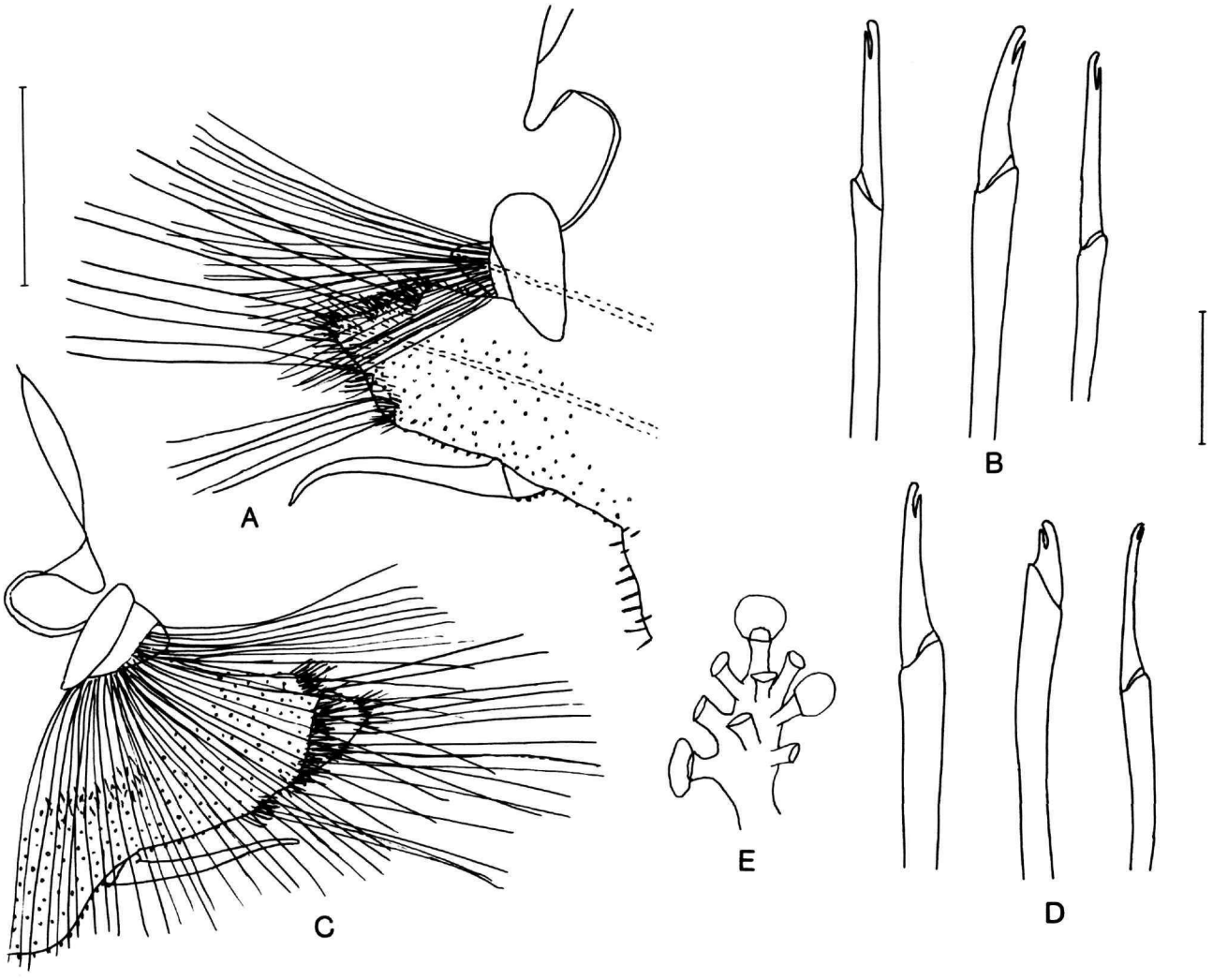

FIGURE 16.—*Hartmanipsammolyce pendula* (holotype of *Psammolyce pendula*): A, right elytrigerous parapodium from segment 19, anterior view, acicula dotted; B, upper, middle, and lower neurosetae from same; C, right elytrigerous parapodium from middle segment, posterior view; D, upper, middle, and lower neurosetae from same; E, compound papillae from middorsal surface. (Scales: A,C,D = 0.5 mm; B,E = 0.1 mm.)

neurosetae with slender stems with long spinous regions, blades long to shorter (lower ones), with tips slightly to strongly hooked (Figure 15D; Hartman, 1942b, pl. 8: fig. 6). Parapodia of segment III with dorsal tubercles with small branchiae, without dorsal cirri; ventral cirri long, similar to buccal cirri of segment II; neuropodia with large balloon-like distal lobes (Figure 15E; Hartman, 1942b, pl. 9: fig. 20; 1965, pl. 3a); upper neurosetae simple, smooth, without articulations, with hooked tips, some lower neurosetae with indistinct articulations and few spinous rows (Figure 15F). Neurosetae of segment IV similar to those of segment III.

Biramous parapodia with smaller notopodia on dorsal sides of larger neuropodia, with subdistal semicircular flanges enclosing subconical acicular lobes; low ridges between notopodia and elytrophores or dorsal tubercles not forming distinct ctenidia; neuropodia subconical, papillate distally, with usual papillate bracts; short rounded papillae on lower parts of neuropodia and longer papillae on posterior sides; ventral cirri with basal knobs, tapering distally and extending to tips of neuropodia (Figure 16A,C). Notosetae numerous, spinous capillary, extending dorsally, anteriorly, and posteroventrally (Figure 16A,C). Neurosetae compound, with stems smooth; blades bidentate, main tooth rounded, slightly hooked, smaller tooth long, slender; 3 groups of neurosetae; upper (2) within

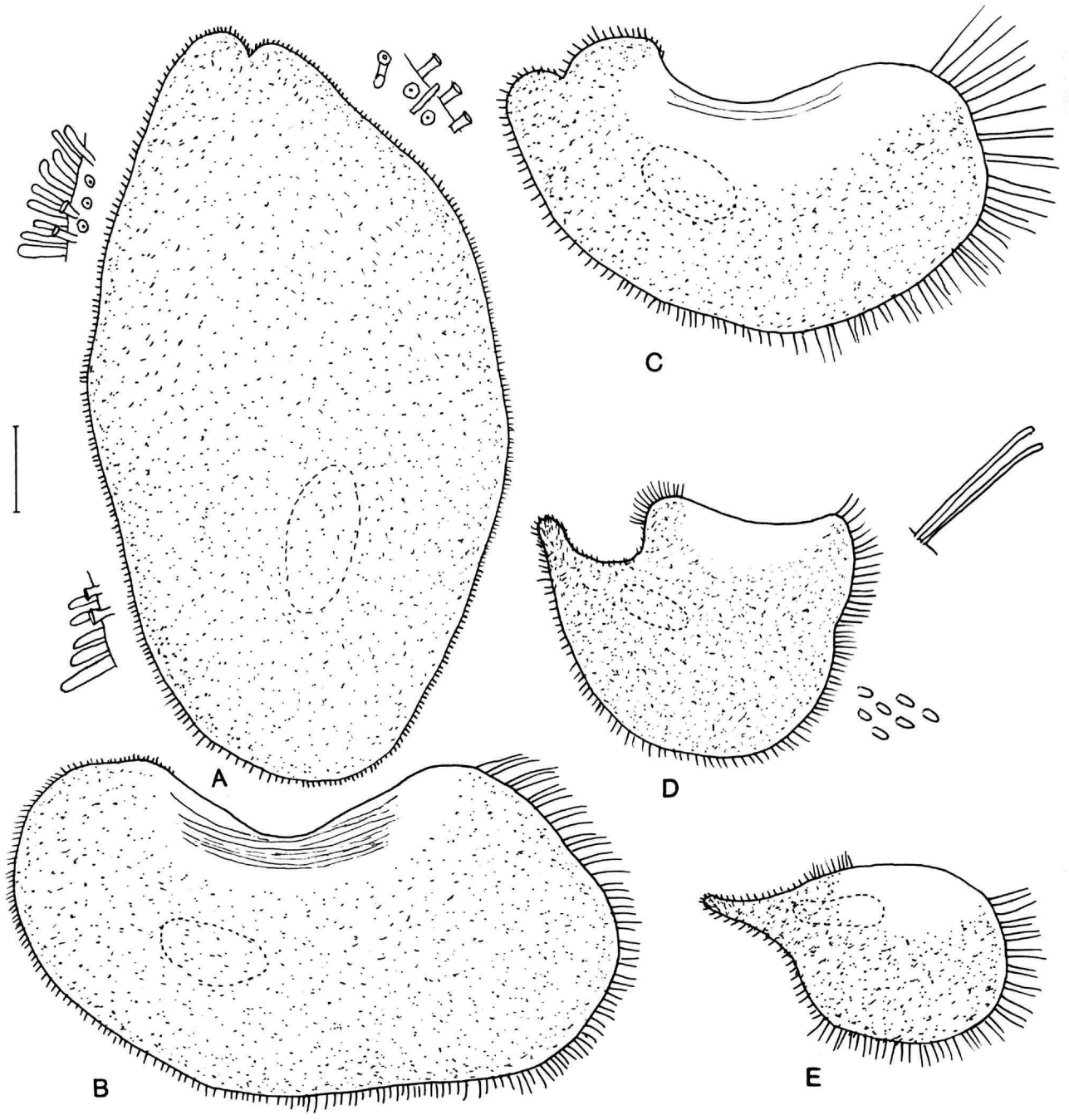

FIGURE 17.—*Hartmanipsammolyce pendula* (holotype of *Psammolyce pendula*): A, right lst elytron from segment II, with detail of surface and border papillae; B, right 2nd elytron from segment IV; C, right 3rd elytron from segment V; D, right elytron from segment 19, with detail of border and surface papillae; E, right elytron from middle segment. (Scale = 0.5 mm.)

dorso-anterior bracts, middle (8–10) within postacicular bracts, with blades variable in length, and lower group (5–6) within ventro-anterior bracts, with stems more slender (Figure 16B,D; Hartman, 1942b, pl. 8: figs. 7, 8; 1965, pl. 3c,d).

DISTRIBUTION.—Northwest Atlantic Ocean: Off Cuba and the Bermuda slope; in 439 to 1700 meters.

Dayipsammolyce, new genus

TYPE SPECIES.—*Psammolyce ctenidophora* Day, 1973. Gender: feminine.

DIAGNOSIS.—Pelogeniinae without dorsal cirri on segment III and without balloon-like lobes on distal tips of neuropodia. Neuropodia of segment II without long appendages. Compound neurosetae falcigerous, with blades short and long, stems with spinous rows. First pair of elytra not deeply incised anteriorly. Posterior elytra with medial and posterior processes. Prostomium with lateral ctenidia on ceratophore of median antenna. Upper lip with stalked bulbous facial tubercle. Elytral and neuropodial filiform papillae not articulated.

ETYMOLOGY.—The genus is named for John H. Day, plus *psammolyce*.

Dayipsammolyce ctenidophora (Day, 1973), new combination

FIGURES 18–20

Psammolyce ctenidophora Day, 1973:11, fig. 1m–t.—Gardiner, 1976:94, fig. 4a–i.—Not Wolf, 1984:25–19, figs. 25–15, 16a–q.

MATERIAL EXAMINED.—NORTHWEST ATLANTIC OCEAN: *United States:* NORTH CAROLINA: Off Beaufort, 20 m, rock and sand, J.H. Day, collector, holotype (USNM 43117).

TYPE MATERIAL.—Holotype incomplete posteriorly, with 28 segments, 20 mm long and 8 mm wide, with setae; examined by Gardiner (1976) and Wolf (1984).

DESCRIPTION.—Dorsum with foreign particles attached to adhesive papillae, arranged singly or in groups of 2 to numerous; ventrum with thick transverse bands of long cylindrical papillae, alternating with short globular papillae, with long papillae on lower lip (Figure 18B). First pair of elytra large, oval, covering head end, completely covered with sand grains, foraminifera, and shell fragments; long adhesive papillae with flattened tops concentrated on central parts, along with short globular papillae, and cylindrical papillae on borders (Figure 20A; Day, 1973, fig. 1n). Second elytra oval, with medial notches and posteromedial papillate extensions; thick fringes of long and short papillae on medial and posterior borders, lateral borders with 5 papillate scallops, and transverse bands of long papillae on surfaces (Figure 20B). Third and 4th elytra similar to 2nd (Figure 20C). More posterior elytra with prominent medial processes with long adhesive papillae and more posterior papillate processes; foreign material concentrated on medial parts of elytra and not attached to long cylindrical surface and border papillae (Figure 20D).

Prostomium and tentaculophores withdrawn in segment II (Day, 1973, fig. 1m). Prostomium oval, ceratophore of median antenna large, bulbous, with lateral ridges and small rounded ctenidia on basal sides; style missing; 2 pairs of eyes, small dorsal pair visible dorsally, and larger ventral pair (Figure 18A; Gardiner, 1976, fig. 4a); tentaculophores each with single aciculum, rather short subequal dorsal and ventral tentacular cirri on outer side, and 2 groups of spinous capillary notosetae and inner tentacular sheath continuous with inner palpal sheath on inner side; palps missing, but position indicated by inner palpal sheaths; stalked bulbous facial tubercle attached to upper lip of mouth between palpal sheaths; lateral antennae short, subulate, attached to dorsal basal sides of tentaculophores (Figure 18A,B; Day, 1973, fig. 1m). Segment II inflated medially between large elytrophores, with small lateral branchiae; ventral buccal cirri extending to tips of neuropodia (Figure 18C; Gardiner, 1976, fig. 4c,d). Segment III with dorsal tubercles with lateral branchiae, without dorsal cirri; notosetae very numerous, extending to tips of neurosetae; upper and middle neurosetae few in number, stout, stems with 6–12 spinous rows, blades rather short, with tips hooked, bifid or with indication of secondary tooth; lower neurosetae very numerous, slender, stems with long spinous regions (11–14 rows), blades very long, with bifid hooked tips (Figure 18E,F).

Biramous parapodia with notopodia smaller than neuropodia, subconical, with large subdistal flanges enclosing numerous notosetae; ciliated ridges between notopodia and elytrophores or dorsal tubercles, but without distinct ctenidia; larger neuropodia subconical, papillate distally, with usual papillated bracts (extra long papillae on postacicular bracts, some extending to tips of neurosetae); cirrophores of ventral cirri with long papillae, styles with upper basal knobs, and extending to tips of neuropodia; ventral sides of neuropodia with globular papillae and additional long papillae on anterior sides (Figure 19A,B; Day, 1973, fig. 1t; Gardiner, 1976, fig. 4e). Notosetae numerous, extending anteriorly, laterally, and postero-ventrally beyond ventral cirri (Figure 19A,B). Neurosetae compound, falcigerous, upper and middle ones much stouter than lower ones, with rather short blades, with secondary tooth or indication of one; stems of upper ones (4) within dorso-anterior bracts, with 5–7 spinous rows; lower ones (9) within ventro-anterior bracts, more slender, stems with 3–4 spinous rows, blades long, mostly with secondary tooth, some entire (Figure 19C; Day, 1973, fig. 1q–s; Gardiner, 1976, fig. 4f–i).

DISTRIBUTION.—Northwest Atlantic Ocean: Off North Carolina; 20 meters.

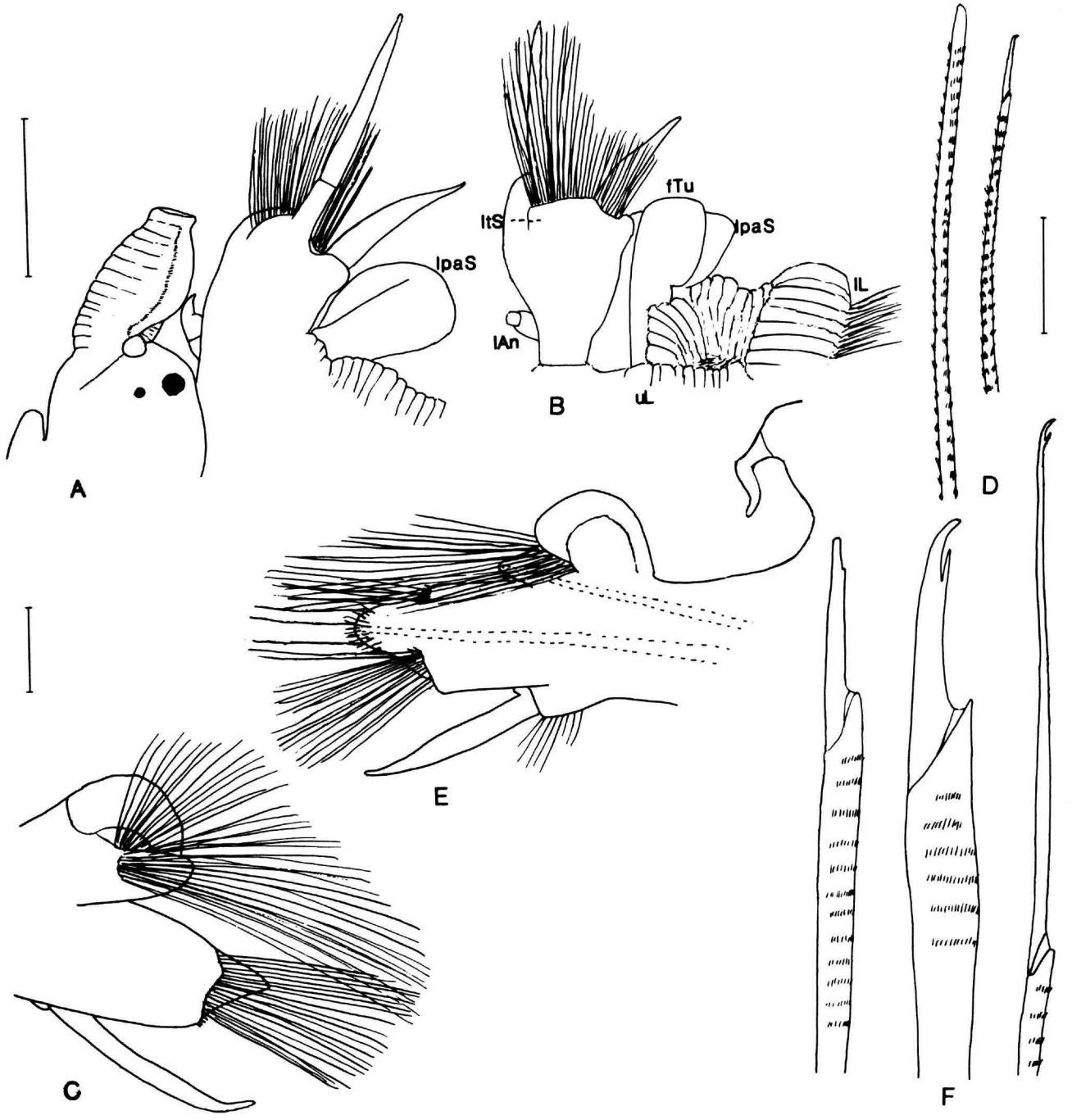

FIGURE 18.—*Dayipsammolyce ctenidophora* (holotype of *Psammolyce ctenidophora*): A, anterior end, lateral view, style of median antenna and right palp missing; B, left tentaculophore of segment I and mouth area, inner view, right tentaculophore cut off; C, right elytrigerous parapodium of segment II, posterior view, elytrophore and small branchia not shown; D, upper (blade broken off) and lower neurosetae from same; E, right parapodium of segment III, with dorsal tubercle and branchia, anterior view; F, upper, middle, and lower neurosetae from same. (Scales: A,B = 1.0 mm; C,E = 0.5 mm; D,F = 0.1 mm.)

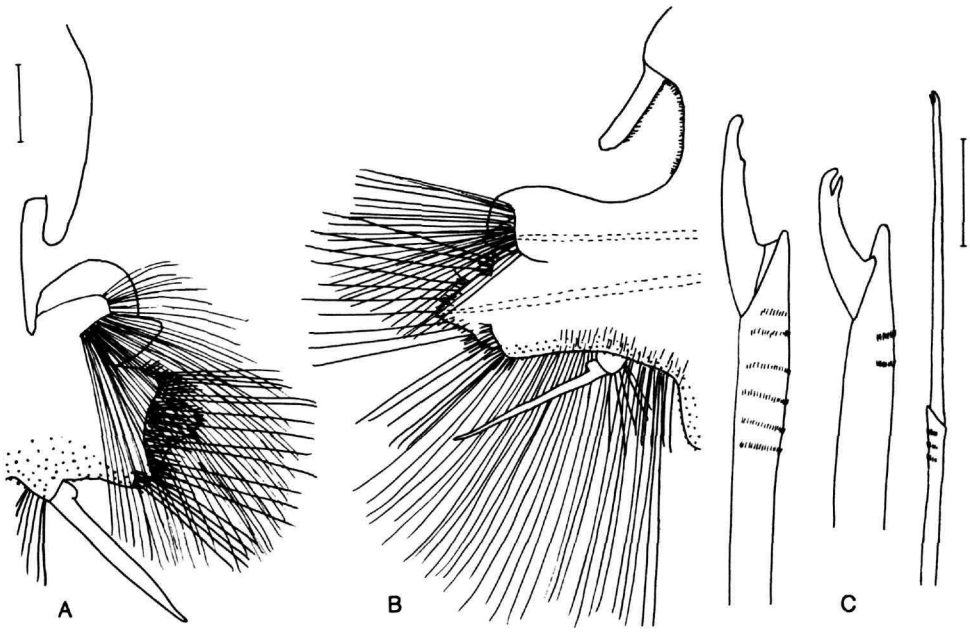

FIGURE 19.—*Dayipsammolyce ctenidophora* (holotype of *Psammolyce ctenidophora*): A, right parapodium with dorsal tubercle from segment VI, posterior view; B, right elytrigerous parapodium from segment 23, anterior view, acicula dotted; C, upper, middle, and lower neurosetae from same. (Scales: A,B = 0.5 mm; C = 0.1 mm.)

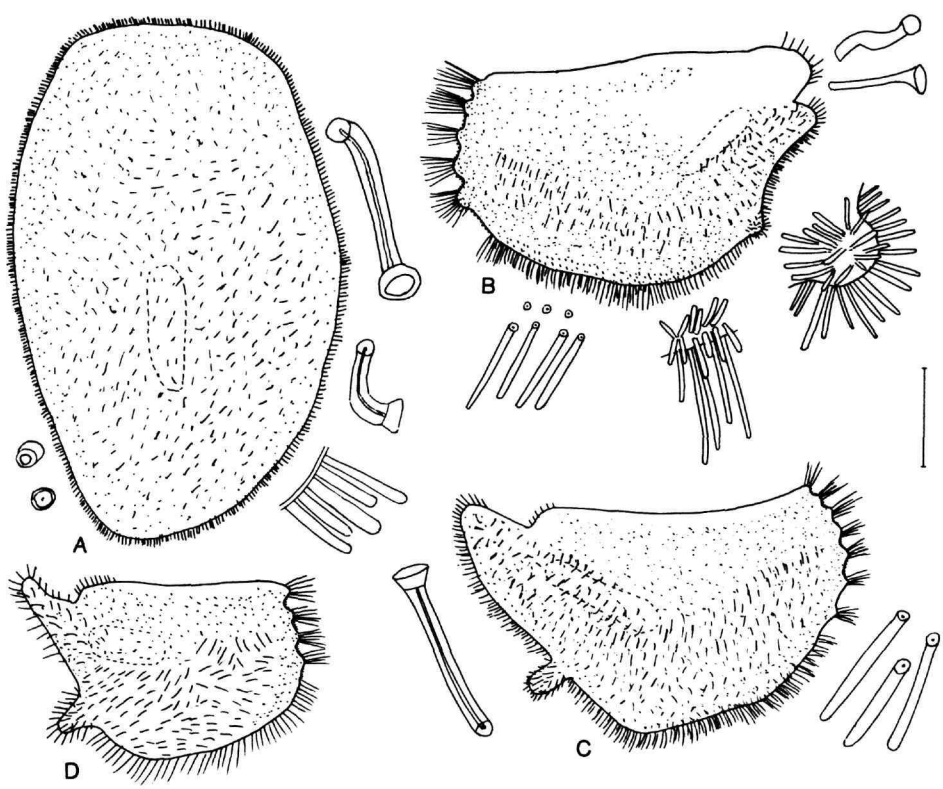

FIGURE 20.—*Dayipsammolyce ctenidophora* (holotype of *Psammolyce ctenidophora*): A, right lst elytron from segment II, with detail of papillae; B, left 2nd elytron from segment IV, with detail of papillae; C, right 4th elytron from segment VII, with detail of papillae; D, right 12th elytron from segment 25. (Scale: 1.0 mm.)

Genus *Pelogenia* Schmarda, 1861

TYPE SPECIES.—*Pelogenia antipoda* Schmarda, 1861, by monotypy. Gender feminine.

DIAGNOSIS.—Pelogeniinae with long dorsal cirri on segment III, with cirrophores shorter than, as long as, or longer than styles. Neurosetae of segment II without long terminal appendages. Neurosetae compound falcigers. Prostomium without lateral ctenidia. Upper lip without facial tubercle. Elytral and neuropodial filiform papillae not articulated. First pair of elytra not greatly elongated and not deeply incised anteriorly.

Key to the Species of *Pelogenia*

1. Dorsal cirri on segment III with cirrophores shorter than styles [Figures 45E, 47E] 2
   Dorsal cirri of segment III with cirrophores about equal in length to styles [Figures 21F, 31D, 33E, 35D, 36D, 41D, 43C] 4
   Dorsal cirri of segment III with cirrophores longer than styles [Figures 25E, 27G, 29D, 39F] 10
2. Elytra with papillate medial and posterior processes balloon-like, without numerous long papillae on surfaces [Figure 48E,F] . . . . . ***P. hartmanae,*** new species
   Elytra with club-like papillate medial processes, with numerous long papillae on surfaces [Figures 24A, 46E,F] 3
3. Middorsum of segment II with papillae and adherent sand grains [Figure 45A]. Compound neurosetae with stems with 2–5 spinous rows [Figure 46B] . . . . . ***P. anoculata*** (Hartman)
   Middorsum of segment II without papillae. Compound neurosetae with stems with 2 spinous rows [Figure 24B] . . . . . ***P. philippinensis*** (McIntosh)
4. Elytra with papillate medial processes, without posterior processes [Figures 23C,D, 32D, 33I, 35L] 5
   Elytra with papillate medial processes and additional 1–5 posterior processes [Figures 38C,D, 42C, 44D,E] 8
5. Middorsum of segment II with papillae and adherent sand grains [Figure 31A] . . . . . ***P. popeae,*** new species
   Middorsum of segment II without papillae and adherent sand grains 6
6. Ventral cirrostyles without basal knobs, cirrophores with 2 long papillae [Figure 34B] . . . . . ***P. paxtonae,*** new species
   Ventral cirrostyles with basal knobs, cirrophores with long papillae [Figures 22C, 35G] 7
7. Dorsal and ventral surfaces thickly papillate with long papillae on lower lip between segments II–VI and along midventral grooves [Figure 21B]. Notosetae all spinous capillaries . . . . . ***P. antipoda*** Schmarda
   Dorsal and ventral surfaces very finely papillate. Notosetae of 2 types: spinous capillaries and fine, hair-like setae, extending far posteroventrally [Figure 35G] . . . . . ***P. inhacaensis,*** new species
8. Compound neurosetae with stems with 0–3 spinous rows, blades with tips entire and bifid [Figure 43F,H] . . . . . ***P. fimbriata*** (Hartman)
   Compound neurosetae with stems with 25 spinous rows, blades with tips mostly entire [Figures 37B,D, 41H] 9
9. Middorsum of segment II with notch with few papillae and adherent sand grains [Figure 36A] . . . . . ***P. arenosa*** (Delle Chiaje), new combination
   Middorsum of segment II with projecting cone with numerous capitate papillae and adherent sand grains [Figure 41A] . . . . . ***P. kinbergi*** (Hansen)
10. Elytra with papillate medial processes, without posterior processes [Figure 30C]. Compound neurosetae with stems with 5–9 spinous rows, blades mostly with bifid tips [Figure 29F–H] . . . . . ***P. semiglabra*** (Monro)

Elytra with papillate medial processes and 1–3 posterior processes [Figures 26F, 28G, 40I]. Compound neurosetae with stems with 0–2 spinous rows 11

11. Blades of compound neurosetae with tips entire [Figure 40B,D] . . . . . *P. rigida* (Grube)

Blades of compound neurosetae with tips both entire and bifid [Figures 26D, 28D] 12

12. More posterior elytra with extra long papillae on central regions, lateral borders scalloped, with long papillae [Figure 26F] . . . . . *P. zeylanica* (Willey)

More posterior elytra without extra long papillae on central regions, lateral borders not scalloped [Figure 28G] . . . . . *P. farquharensis* (Potts)

Pelogenia antipoda Schmarda, 1861

FIGURES 21–23

Pelogenia antipoda Schmarda, 1861:160, pl. 37: figs. 320–322, text-figs. a,b.
Psammolyce antipoda.—Ehlers, 1905:13.—Augener, 1927b:340; Not 1927a:124 [= *Pelogenia malayana*].—Not Fauvel, 1917:186, pl. 4: figs. 12, 13 [= *Pelogenia popeae*, n. sp.].—Not Pope, 1943:248 [= *P. popeae*, n. sp.].—Not Amoureau, Rullier, and Fishelson, 1978:71 [= *Pelogenia* sp.].

MATERIAL EXAMINED.—SOUTH PACIFIC OCEAN: *New Zealand:* East coast, in deep mud, Schmarda, collector, syntype (NMV 2182). Tauranga, Thilenius, collector, 2 specimens (ZMHUB 6645; ZMH 10393, identified by Augener, 1927b). East Kau Point, Wellington Harbor, coarse sand and silt, anchor dredge, 23 Feb 1971, G.P. Read, collector, 2 specimens (USNM 60188).

TYPE MATERIAL.—Syntype (NMV 2182) complete specimen, about 85 mm long and 9 mm wide, with setae, more than 180 segments.

DESCRIPTION.—Specimen from Tauranga (ZMH 10393) 150 mm long and 12 mm wide, with setae, 293 segments. Figured specimen from Wellington Harbor (USNM 60188) incomplete, 49 mm long and 12 mm wide, 55 segments. Dorsum thickly papillate (furry) and thickly covered with sand grains on posterior 1/2 to 1/3 (Schmarda, 1861, pl. 37: fig. 320); ventrum thickly covered with long cylindrical papillae, especially along midventral groove and on lower lip between segments II–VI (Figure 21B). First 3 pairs of elytra covering prostomium and dorsum, following elytra confined to lateral sides of body. Elytra thick, tough, opaque, 1st pair oval, with short oval and clavate papillae on borders and surfaces, with scattered sand grains (Figure 23A); 2nd pair subreniform, with longer papillae on lateral borders (Figure 23B); elytra beginning with 5th pair with prominent medial processes covered with numerous clavate papillae, some flattened distally, with concentration of adherent sand grains; with long filiform papillae along lateral and posterior borders (Figure 23C,D).

Prostomium and tentaculophores withdrawn in anterior segments (II–IV); prostomium elongate-oval, widest basally; ceratophore of median antenna long, thick, bulbous basally, style longer than ceratophore, with tapered tip; without lateral ctenidia; 2 pairs of rather large eyes, ventral pair slightly larger than dorsal pair; tentaculophores each with single aciculum, long dorsal and shorter ventral tentacular cirri on outer side, and 3 bundles of capillary notosetae and tentacular sheath on inner side; palps stout, tapered, about 3 times longer than ceratophore of median antenna, emerging ventral and lateral to tentaculophores, with short inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae small, tapered, on dorsal sides of tentaculophores (Figure 21A–C).

Segment II with first pair of large elytrophores, without lateral branchiae; ventral buccal cirri extending beyond tips of neuropodia; lower lip of ventral mouth with long papillae (Figure 21B,D); compound neurosetae slender, stems with long spinous regions, blades long, tapering to slightly curved to strongly curled tips (Figure 21E). Pharynx (cut open) with 11 pairs of border papillae and 2 pairs of dark brown, hooked jaws. Segment III with long dorsal cirri, cirrophores continuous with bulbous dorsal tubercles and extending to about tips of notopodia with small branchiae on lower sides, styles about equal in length to cirrophores; cirrophores of ventral cirri with 4 long papillae on lower sides, styles extending to tips of neurosetae (Figure 21F); neurosetae similar to those of segment II, stems with shorter spinous regions, and blades with or without slender secondary tooth (Figure 21G). Segment IV with neurosetae stouter than those on anterior segments, similar to those on following segments; stems of upper neurosetae with 7–14 spinous rows, blades short, with small secondary tooth; stems of middle ones with 0–3 spinous rows and blades with entire or bifid tips; stems of lower ones more slender, with 3–5 spinous rows and blades all with bifid tips (Figure 22A).

Biramous parapodia with notopodia short, subconical, with thick, fleshy subdistal flanges encircling notosetae; without distinct ctenidia between notopodia and branchiae and dorsal tubercles or elytrophores; dorsal tubercles with conical glandular lobes on anterior and posterior sides near attachments of branchiae; neuropodia long, subconical, papillate distally, with usual 3 subdistal bracts with long papillae; cirrophores of ventral cirri with 3–5 papillae on lower sides, styles extending to tips of lower sides of neuropodia, with basal knobs; additional papillae on ventral sides of neuropodia medial to ventral cirri and on dorsal surfaces above dorsal tubercles and

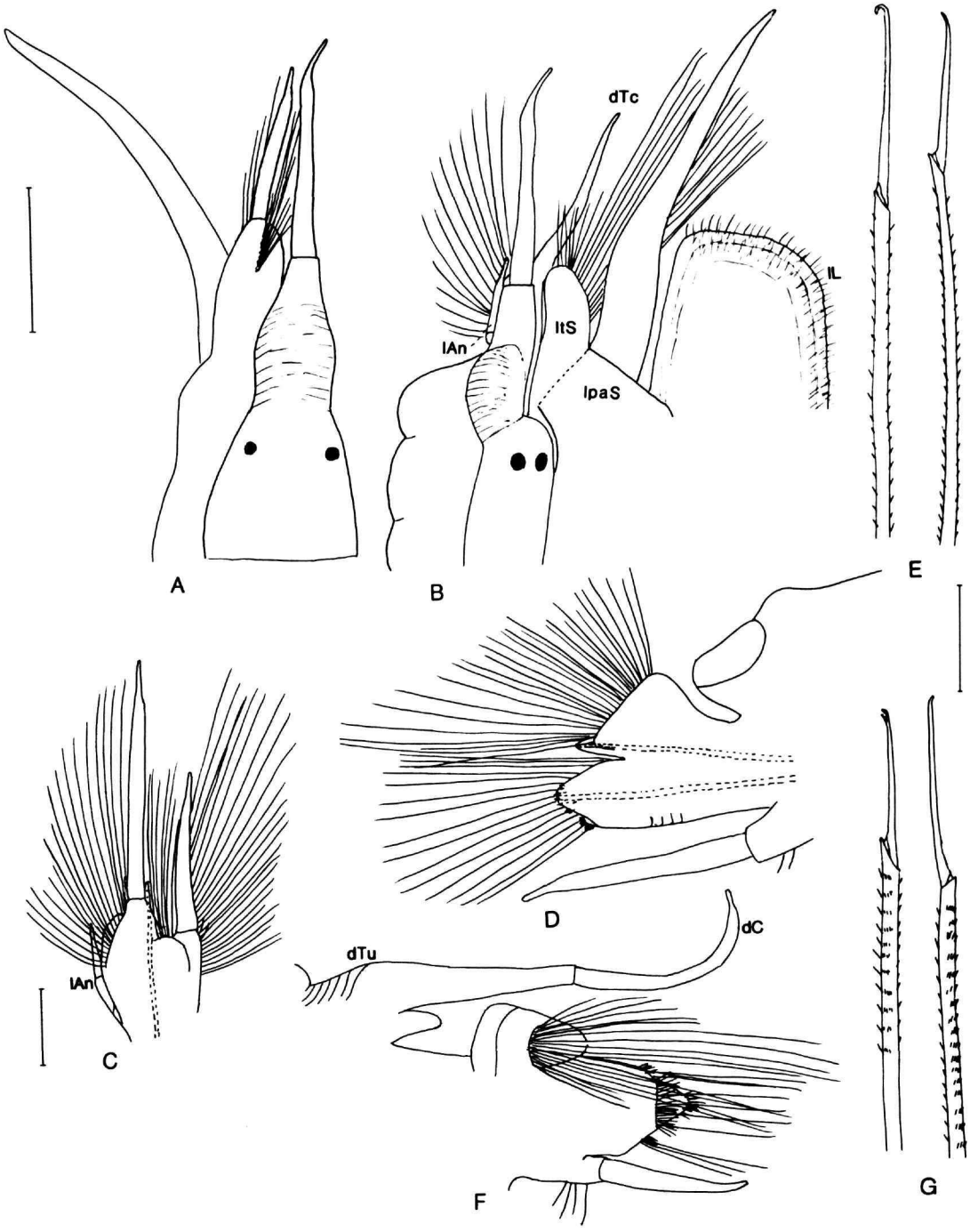

FIGURE 21.—*Pelogenia antipoda* (specimen from Wellington Harbor, USNM 60188): A, dorsal view of prostomium, left tentaculophore, and palp, segments II–IV cut back, ventral eyes, left ventral tentacular cirrus, and lateral antenna hidden from view; B, lateral view of anterior end, prostomium and left tentaculophore of segment I withdrawn in segments II–IV, right tentaculophore cut off along dotted line, left ventral tentacular cirrus hidden from view by setae; C, right tentaculophore, outer view, aciculum dotted; D, right elytrigeous parapodium of segment II, anterior view, acicula dotted; E, upper and lower neurosetae from same; F, right parapodium of segment III, posterior view; G, middle and lower neurosetae from same. (Scales: A,B = 1.0 mm; C,D,F = 0.5 mm; E,G = 0.1 mm.)

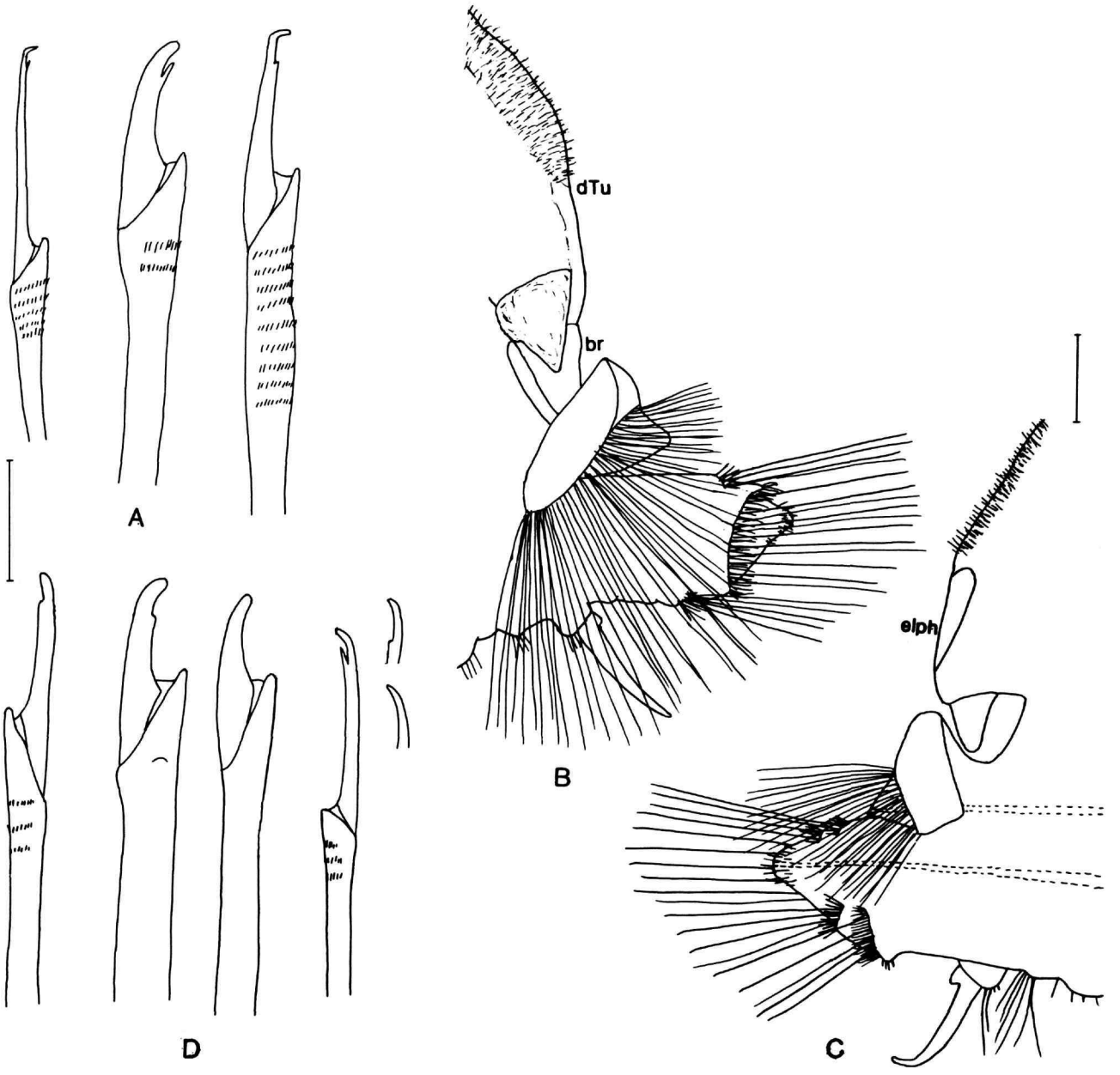

FIGURE 22.—*Pelogenia antipoda* (specimen from Wellington Harbor, USNM 60188): A, lower, middle, and upper neurosetae from segment IV; B, right parapodium of segment 24, with dorsal tubercle, posterior view; C, right elytrigerous parapodium of segment 27, anterior view, acicula dotted; D, upper, 2 middle, and lower neurosetae from same, with tips of additional lower neurosetae. (Scales: A,D = 0.1 mm; B,C =0.5 mm.)

elytrophores (Figure 22B,C). Notosetae numerous, spinous, capillary, extending dorsally, anteriorly, and posteroventrally beyond tips of ventral cirri (Figure 22B,C). Neurosetae dark amber-colored compound falcigers; upper group (4) within dorso-anterior bracts, stems with 2–3 spinous rows, blades rather long, tips slightly hooked, with slight indication of secondary tooth; middle ones (11) within postacicular bracts, stouter, with 0–1 spinous rows, blades short, slightly hooked, with tips entire or bifid; lower ones (7), within ventro-anterior bracts, more slender, stems with 1–3 spinous rows, blades rather long, with tips hooked, entire or bifid (Figure 22D; Schmarda, 1861, text-figs. a,b).

DISTRIBUTION.—South Pacific Ocean: New Zealand; low intertidal.

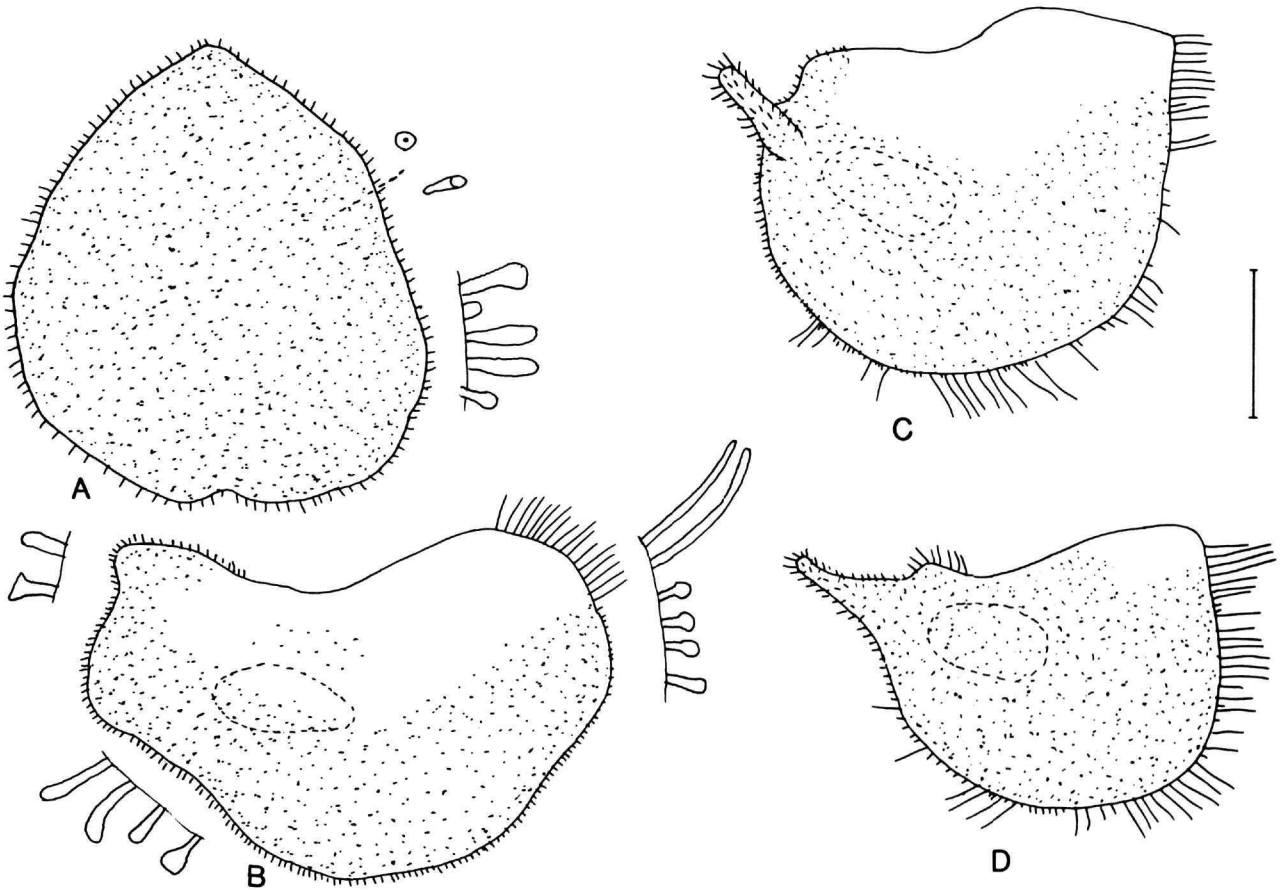

FIGURE 23.—*Pelogenia antipoda* (specimen from Wellington Harbor, USNM 60188): A, right 1st elytron from segment II, with detail of papillae; B, right 2nd elytron from segment IV, with detail of papillae; C, right 5th elytron from segment IX; D, right 13th elytron from segment 25. (Scale = 1.0 mm.)

Pelogenia philippinensis (McIntosh, 1885), new combination

FIGURE 24

Eupholoe philippinensis McIntosh, 1885:157, pl. 22: figs. 6, 7; pl. 24: fig. 7l; pl. 25: fig. 10; pl. 13A: figs. 16, 17.—Not Berkeley and Berkeley, 1939:332 [= *Pelogenia fimbriata*].

MATERIAL EXAMINED.—WESTERN PACIFIC OCEAN: *Philippine Islands:* Basilan Strait, off Mindanao, 07°03′N, 121°48′E, 150–187 m, stones and gravel, R/V *Challenger* sta 201, 26 Oct 1874, holotype (BMNH 1885.12.1.120).

TYPE MATERIAL.—Only anterior fragment in poor shape remains, 2 elytra remaining on body, 4 mm long and 3 mm wide, with setae, 21 segments (in original description about 19 mm long and 2.6 mm wide, about 72 segments).

DESCRIPTION.—Anterior and posterior regions thickly covered with coarse sand grains and few foraminifera, middle region with more scattered fine sand (McIntosh, 1885, pl. 22: fig. 6). Dorsum thickly papillated, ventrum minutely papillated, with long papillae in anterior region. Elytra confined to lateral sides of body. Elytra squarish, with long club-like medial processes covered with adhesive papillae and long filiform and clavate papillae on borders and surfaces (Figure 24A; McIntosh, 1885, pl. 24: fig. 7; pl. 25, fig. 10).

Prostomium and tentaculophores retracted in anterior segments and hidden basally by nuchal fold. Prostomium oval, median antenna with large bulbous ceratophore, style long, filiform, as long as palps; 2 pairs of eyes, smaller dorsal pair lateral to ceratophore of median antenna and larger ventral pair; tentaculophores with dorsal tentacular cirri longer than ventral tentacular cirri; palps short, tapering (McIntosh, 1885, pl. 22: fig. 7); lateral antennae not observed; without facial tubercle.

Segment III with dorsal cirri on dorsal tubercles, with cirrophores shorter than styles. Branchiae small, rudimentary, beginning on segment VI. Parapodia of usual type, with numerous long papillae. Notosetae very fine, spinous, capillaries (McIntosh, 1885, pl. 13A: fig. 16). Neurosetae compound falcigers; stems with few spinous rows, blades with entire tips,

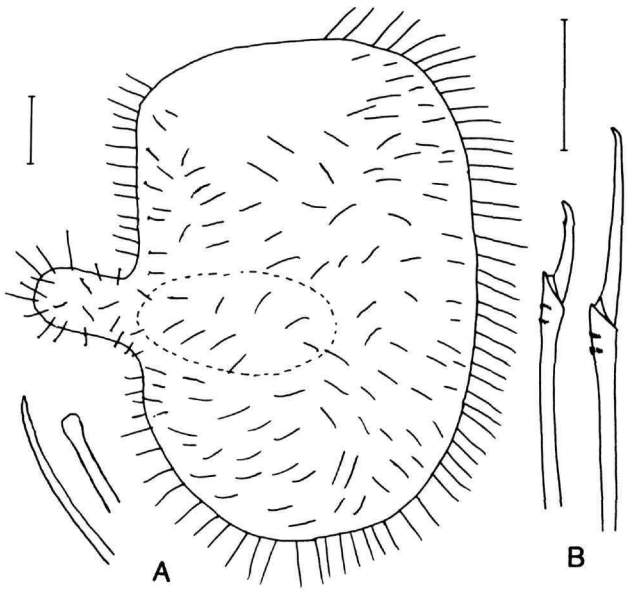

FIGURE 24.—*Pelogenia philippinensis* (holotype of *Eupholoe philippinensis*): A, right elytron from anterior fragment, with detail of papillae; B, middle and lower neurosetae. (Scales: A = 1.0 mm; B = 0.1 mm.)

upper and lower neurosetae with blades longer than on middle ones (Figure 24B; McIntosh, 1885, pl. 13A: fig. 17). Ventral cirri with cirrophores with several long papillae; styles with basal knobs on upper sides.

DISTRIBUTION.—Western Pacific Ocean: Philippine Islands; in 150 to 187 meters.

Pelogenia zeylanica (Willey, 1905), new combination

FIGURES 25, 26

Psammolyce zeylanica Willey, 1905:255, pl. 1: figs. 33, 34; pl. 2: figs. 35–43.—Horst, 1913:187; 1917:123, pl. 27: figs. 6–8.—Fauvel, 1953:68, fig. 31i.—Gibbs, 1971:128.

MATERIAL EXAMINED.—INDO-PACIFIC OCEAN: *Indonesia:* JAVA SEA: R/V *Siboga* stations, identified by Horst (1913, 1917): Sailus Ketjil, Peternoster Is., 27 m, sta 37, 1 specimen (ZMA 1208.3). Anchorage off Pulu Sarassa, Postillion Is., up to 36 m, sta 43, 1 specimen (ZMA 1208.4). FLORES SEA: Sapeh Strait, 08°23.5′S, 119°04.6′E, 69 m, sta 49A, 1 specimen (ZMA 1208.5). Kwandang Bay entrance, North Celebes, 0°58.5′N, 122°55′E, 75 m, sta 114, 2 specimens (ZMA 1208.6). MOLUCCA SEA: Anchorage off Lirung, Salibabu Is., up to 36 m, sta 133, 1 specimen (ZMA 1208.7). BANDA SEA: Ambon anchorage, reef, sta 231, 1 specimen (ZMA 1208.8). Banda anchorage, 9–45 m, sta 240, 2 specimens (ZMA 1208.1; USNM 60187). BALI SEA: Anchorage east of Dangar besar, Saleh Bay, up to 36 m, 1 specimen (ZMA 1208.2).

Papua New Guinea: New Britain, 27–37 m, 15 Jun 1895, A. Willey, collector, 1 specimen (BMNH 1923.3.26.5, as *Psammolyce arenosa novaebritanniae* Willey, unpublished name).

Gilbert Islands: Onotoa, SE end of reef area, sta GOC-36, 20 Aug 1951, P.E. Cloud, collector, 1 specimen (USNM 26076). *Mariana Islands:* Saipan, sta GOC-30, 2 Aug 1951, P.E. Cloud, collector, 1 specimen (USNM 146127). *Solomon Islands:* Graham Point, Guadalcanal, low water, silty sand with gravel on *Thalassia* flat, sta 128, 25 Sep 1965, P.E. Gibbs, collector, 2 specimens (BMNH 1970.165, identified by Gibbs, 1971).

TYPE MATERIAL.—The type specimen from Ceylon is not known to exist. The original type was recorded as 17 mm long and 8 mm wide, with setae, with 30+ segments.

DESCRIPTION.—Figured specimen from Gilbert Islands (USNM 26076) complete, 150 mm long and 10 mm wide, with setae, 176 segments. Dorsum and elytra covered with white calcareous sand, foraminifera, spicules of sponges, and gorgonians. Dorsum with papillae, singly or in groups of 2 to numerous, with flattened cup-shaped tops for attachment of foreign material, plus globular papillae (Figure 25G; Willey, 1905, pl. 1: fig. 33). Ventrum, including lower lip, with numerous long papillae. Elytra thin, transparent, first pair elongate-oval, covered with adhesive papillae and sand grains; following elytra deeply notched medially, forming 2 lobes, posterior lobes longer, both with greater concentrations of adhesive papillae; long papillae on lateral and posterior borders, also with small clavate papillae on borders and surfaces (Figure 26E; Willey, 1905, pl. 2: fig. 42). More posterior elytra with 1–2 additional posterior processes with adhesive papillae and groups of long cylindrical papillae in central parts of elytra (Figure 26F).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II. Prostomium elongate-oval; ceratophore of median antenna large, bulbous basally, with pair of small ctenidia on posterior, basal sides; style as long as or longer than ceratophore; 2 pairs of eyes, smaller dorsal pair lateral to base of ceratophore of median antenna and larger ventral pair; tentaculophores lateral and ventral to prostomium, each with single aciculum, pair of subequal dorsal and ventral tentacular cirri on outer side, and 2 fan-shaped bundles of notosetae and inner tentacular sheath on inner side; lateral antennae short, tapered, attached to dorsal basal sides of tentaculophores; palps emerging lateral and ventral to tentaculophores, long, tapering, with inner palpal sheaths (Figure 25A,B; Willey, 1905, pl. 1: fig. 34; Horst, 1917, pl. 27: figs. 6, 7).

Segment II slightly notched middorsally, with group of papillae with flattened tops and attached sand grains; large elytrophores with small lateral branchiae; ventral buccal cirri extending far beyond tips of neuropodia; notosetae very long, extending beyond tips of neurosetae (Figure 25A,C); neurosetae slender, stems with long spinous regions (up to 25 rows), blades long, with entire hooked tips (Figure 25D; Willey, 1905, pl. 2: fig. 35; Horst, 1917, pl. 27: fig. 8). Pharynx (fully

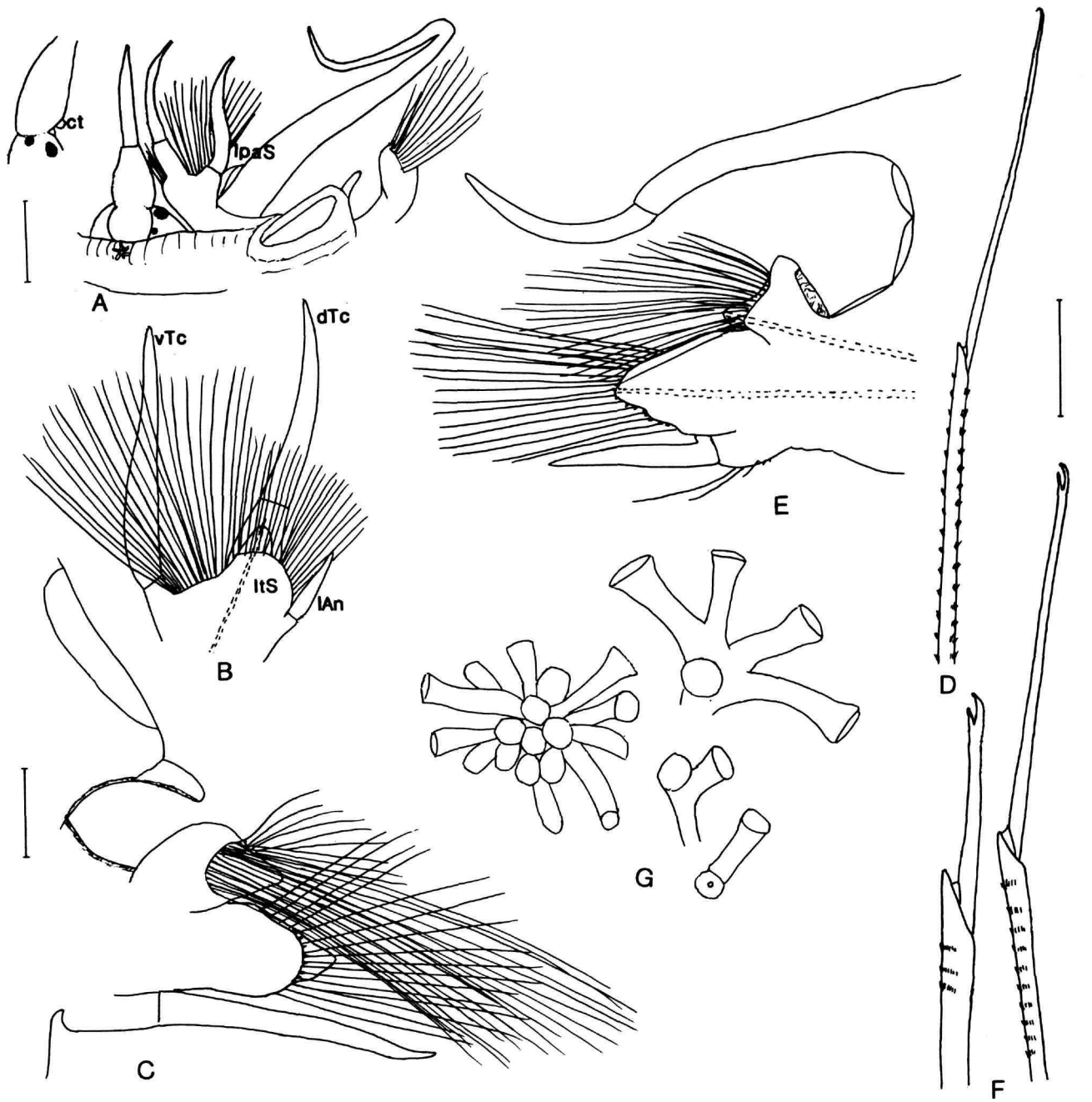

FIGURE 25.—*Pelogenia zeylanica* (specimen from Gilbert Islands, USNM 26076): A, dorsolateral view of anterior end, pharynx completely extended (not shown), with lateral view of basal part of antennal ceratophore showing oval ctenidium; B, right tentaculophore of segment I, inner view, aciculum dotted; C, right elytrigerous parapodium from segment II, posterior view; D, neuroseta from same; E, right parapodium from segment III, anterior view, acicula dotted; F, upper and lower neurosetae from same; G, dermal capitate papillae from dorsum (not to scale). (Scales: A = 1.0 mm; B,C,E = 0.5 mm; D,F = 0.1 mm.)

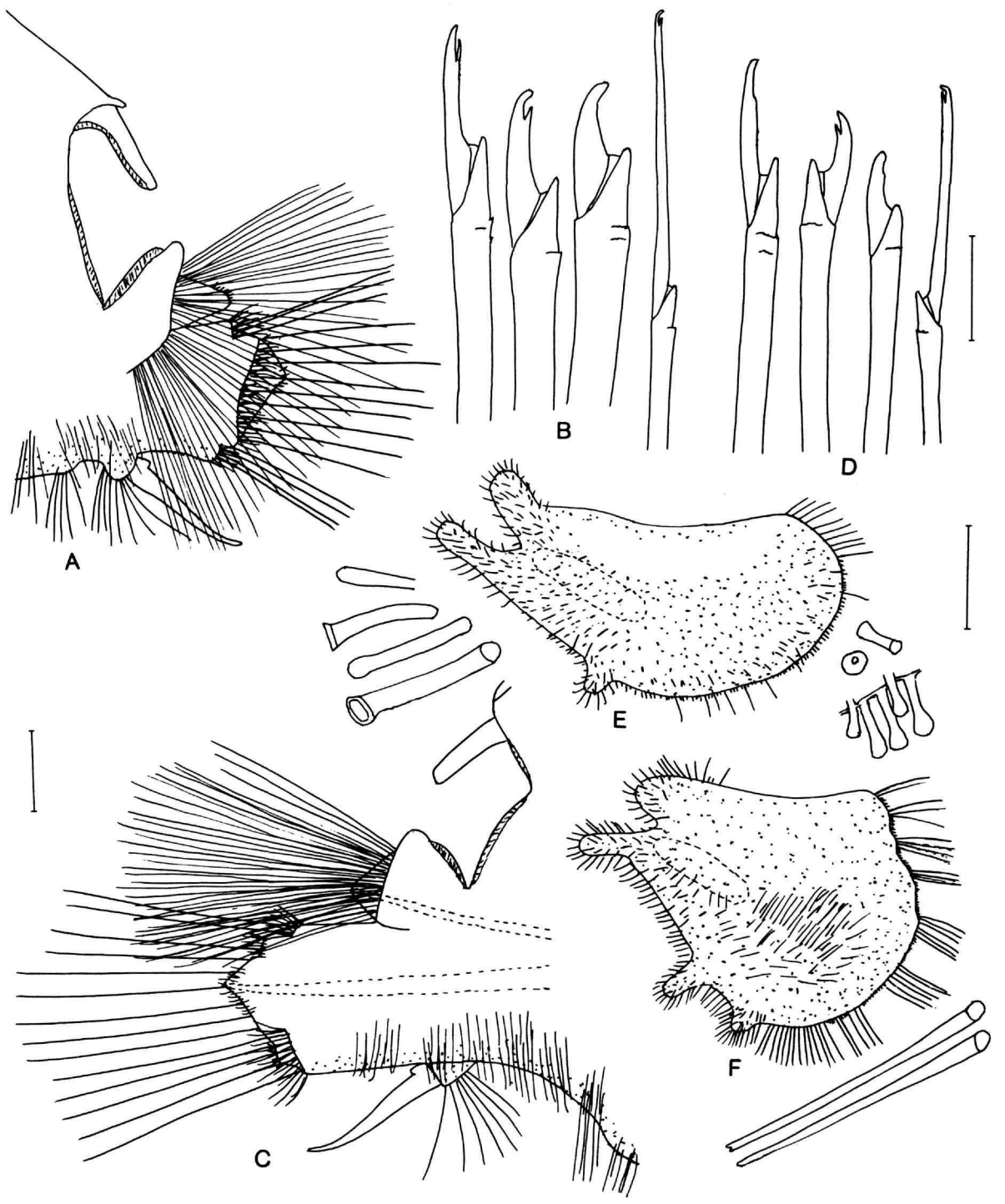

FIGURE 26.—*Pelogenia zeylanica* (specimen from Gilbert Islands, USNM 26076): A, right parapodium from segment 18, with dorsal tubercle, posterior view; B, upper, 2 middle, and lower neurosetae from same; C, right elytrigerous parapodium from segment 40, anterior view, acicula dotted; D, upper, 2 middle, and lower neurosetae from same; E, right 3rd elytron from segment V, with detail of papillae; F, right elytron from segment 17, with detail of long surface papillae. (Scales: A,C = 0.5 mm; B,D = 0.1 mm; E,F = 1.0 mm.)

extended) with 11 pairs of border papillae and 2 pairs of dark colored jaws. Segment III with long dorsal cirri attached to dorsal tubercles; cirrophores long, extending to tips of neuropodia, styles shorter, extending to tips of neurosetae (Figure 25E; Willey, 1905, pl. 1: fig. 34; pl. 2: fig. 35); lower neurosetae slender, stems with 6–10 spinous rows, blades long, with bifid, hooked tips; upper neurosetae stouter, stems with 3–4 spinous rows, blades shorter, with bifid, hooked tips (Figure 25F).

Biramous parapodia with notopodia subconical, papillate distally, with larger subdistal flanges enclosing notosetae; low ciliated ctenidia between notopodia and elytrophores or between dorsal tubercles and digitiform branchiae; neuropodia large, subconical, papillate distally, with usual 3 papillate bracts; long papillae on anterior and posterior sides of neuropodia; ventral cirri with long papillae on cirrophores, styles short, tapering, with basal knobs on upper sides (Figure 26A,C; Willey, 1905, pl. 2: fig. 41). Notosetae numerous, as long as neurosetae, extending anteriorly, laterally, and posteroventrally to tips of ventral cirri. Neurosetae compound falcigers, upper and middle ones stouter, upper (3) within dorso-anterior bracts, stems with 1–2 spinous rows, blades slightly hooked, with or without secondary tooth; middle ones (9) within postacicular bracts, similar to upper ones; lower ones (7) within ventro-anterior bracts, stems slender, with single spinous rows, blades long, with bifid, hooked tips (Figure 26B,D; Willey, 1905, pl. 2: figs. 38–40, 43).

DISTRIBUTION.—Indo-Pacific Ocean: Ceylon, Indonesia, Papua New Guinea, Gilbert Islands, Mariana Islands, Solomon Islands; low water to 75 meters.

Pelogenia farquharensis (Potts, 1910), new combination

FIGURES 27, 28

Psammolyce farquharensis Potts, 1910:347, pl. 19: fig. 21; pl. 21: figs. 58, 59.

MATERIAL EXAMINED.—INDIAN OCEAN: *NE of Madagascar:* Lagoon in Farquhar Atoll, 29 Oct 1905, J.S. Gardiner, collector, holotype (BMNH 1924.3.1.108-9).

TYPE MATERIAL.—Holotype complete, now in 2 pieces, female with eggs in body cavity, 80 mm long and 9 mm wide, with setae, with 128 segments.

DESCRIPTION.—Dorsum and elytra covered with white calcareous sand grains. Middorsum with branched papillae with adhesive discs, plus globular papillae. Ventrum thickly covered with globular papillae and long papillae along midventral groove and on anterior segments posterior to mouth. First elytra large, subtriangular, thickly covered with capitate papillae; 2nd elytra subreniform, notched medially, forming bilobed processes with numerous capitate papillae; short papillae on borders (except anterior) and surface (Figure 28E). More posterior elytra with posterior medial processes more elongated than anterior processes and additional processes on middle of posterior borders, with long cylindrical, capitate, and globular papillae on borders and exposed surfaces (Figure 28F,G).

Prostomium and tentaculophores partially withdrawn in segment II; prostomium oval, median antenna with large bulbous ceratophore, style about as long as ceratophore; 2 pairs of eyes, small dorsal pair and larger ventral pair; tentaculophores lateral and ventral to prostomium, each with single aciculum, pair of tentacular cirri on outer side, ventral one stouter and longer than dorsal one, and fan-shaped bundle of upper notosetae with coarse spinous rows and short pointed tips and more slender lower notosetae, and thick inner tentacular sheath on inner side; palps emerging lateral and ventral to tentaculophores, rather long, tapering, with short inner palpal sheaths, continuous with inner tentacular sheaths; lateral antennae small, subulate, on dorsal basal sides of tentaculophores near prostomium (Figure 27A–C).

Segment II with middorsal group of capitate papillae, with attached sand grains, between first pair of large elytrophores, without branchiae; ventral buccal cirri extending far beyond tips of neuropodia (Figure 27A,D). Setae of segments II and III similar; notosetae of 2 types: shorter, slender, finely spinous capillaries, directed dorsally, and longer, coarser capillaries with prominent spinous rows and short slender tips, directed laterally (Figure 27D,E); middle neurosetae with stems extra stout, with prominent spinous rows, and blades with bifid, hooked tips (Figure 27F); lower neurosetae with stems more slender, with long spinous regions, and blades longer, with bifid, hooked tips (Figure 27H). Segment III with long dorsal cirri attached to dorsal tubercles, with branchiae; cirrophores extending to near tips of neuropodia, styles shorter than cirrophores (Figure 27A,G).

Biramous parapodia with subconical notopodia with subdistal flanges enclosing notosetae; ctenidia in form of 3 elongate ciliated ridges between notopodia and elytrophores or between dorsal tubercles and branchiae; larger neuropodia subconical, papillate distally, with usual 3 papillated bracts; ventral cirri with cirrophores with long papillae, styles tapered, with small knobs on upper basal sides; ventral sides of neuropodia with globular papillae, and long papillae on anterior and posterior sides (Figure 28A,C). Notosetae numerous, slender capillaries, extending dorsally, laterally, and posteroventrally. Neurosetae stout, compound falcigers: upper ones within dorso-anterior bracts, stems with 2 spinous rows, blades rather short, with entire tips; middle ones within postacicular bracts, stems with 0–1 spinous rows, blades short, hooked, with entire tips; lower ones within ventro-anterior bracts, stems more slender, with 1–2 spinous rows, blades long, with entire, hooked tips (Figure 28B,D).

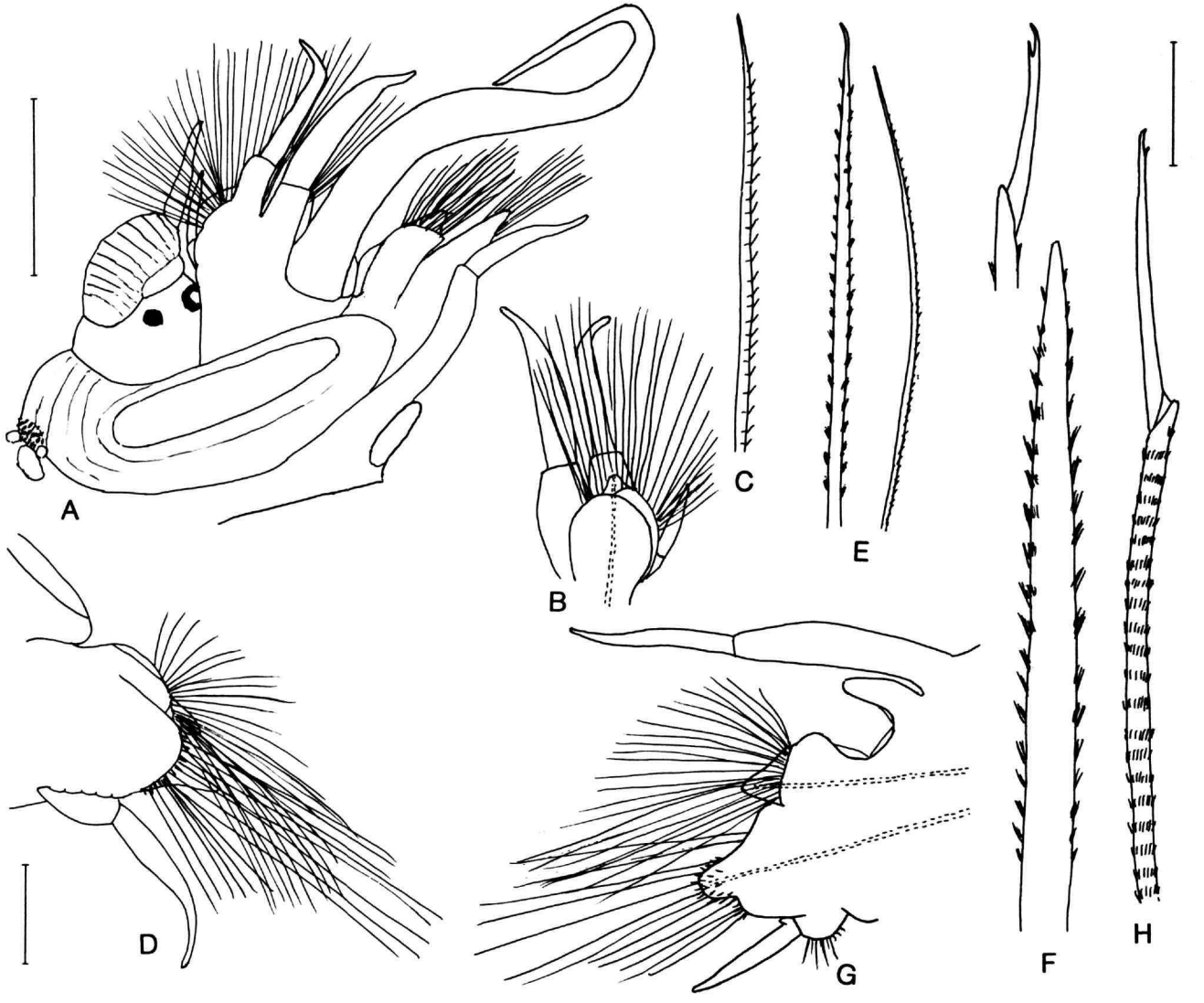

FIGURE 27.—*Pelogenia farquharensis* (holotype of *Psammolyce farquarensis*): A, dorsolateral view of anterior end; B, right tentaculophore of segment I, inner view, aciculum dotted; C, notoseta from same; D, right elytrigerous parapodium from segment II, posterior view; E, notosetae from same; F, neuroseta from same, stem and blade separated; G, right parapodium from segment III, anterior view, acicula dotted; H, lower neuroseta from same. (Scales: A = 1.0 mm; B,D,G = 0.5 mm; C,E,F,H = 0.1 mm.)

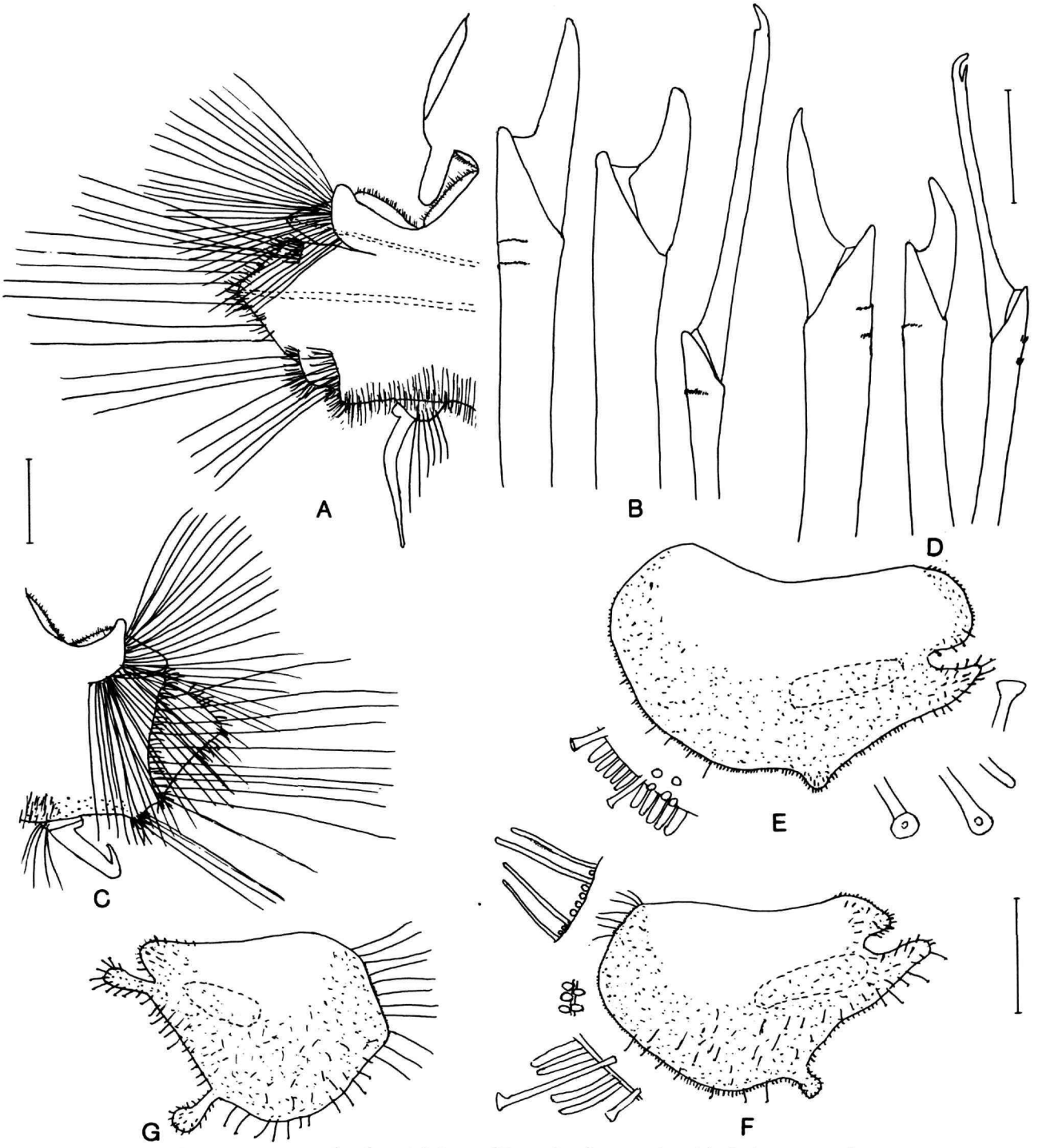

FIGURE 28.—*Pelogenia farquharensis* (holotype of *Psammolyce farquarensis*): A, right elytrigerous parapodium from segment 30, anterior view, acicula dotted; B, upper, middle, and lower neurosetae from same; C, right parapodium from segment 75, posterior view; D, upper, middle, and lower neurosetae from same; E, left 2nd elytron from segment IV, with detail of papillae; F, left 3rd elytron from segment V, with detail of papillae; G, right elytron from segment 30. (Scales: A,C = 0.5 mm; B,D = 0.1 mm; E-G = 1.0 mm.)

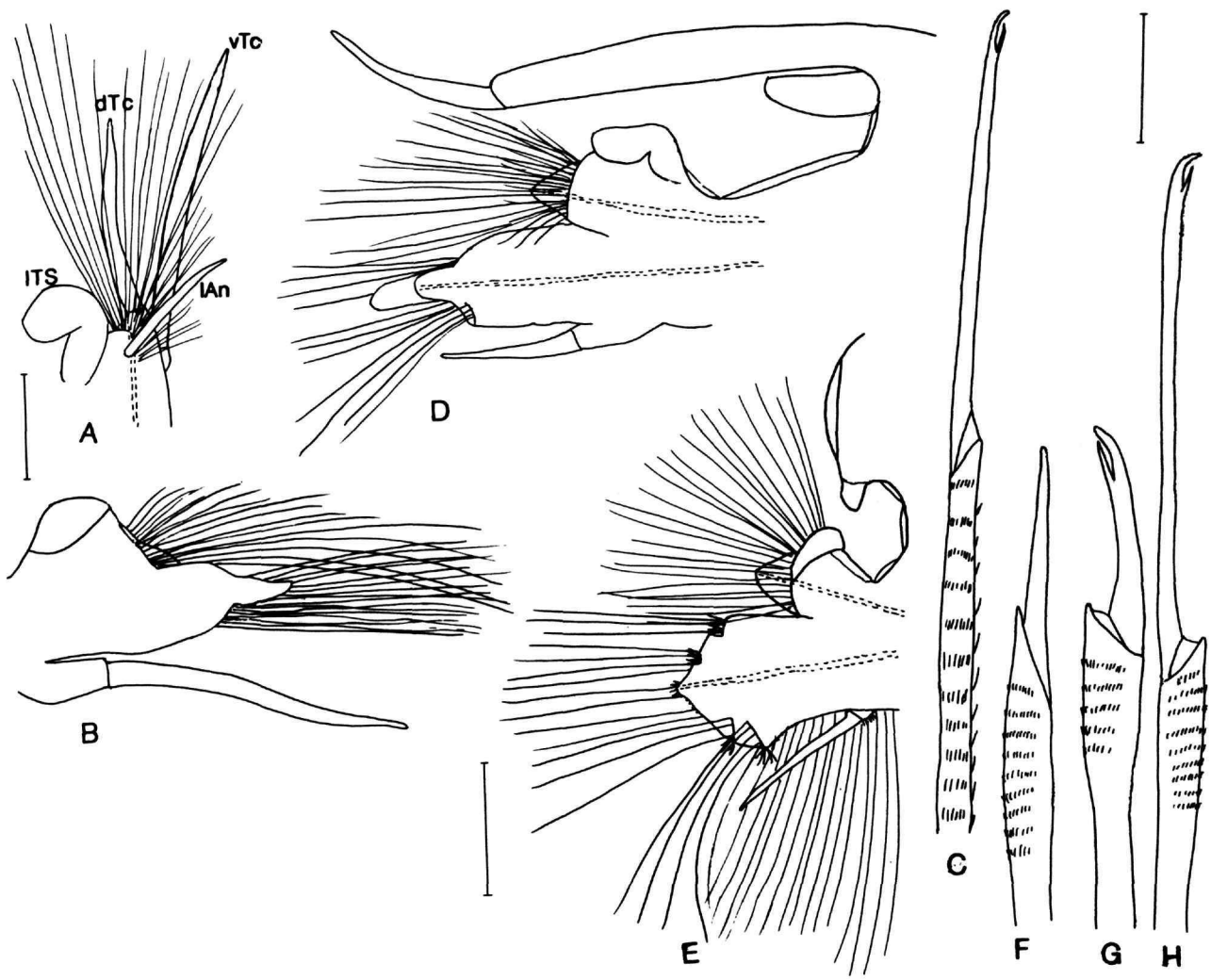

FIGURE 29.—*Pelogenia semiglabra* (holotype of *Psammolyce semiglabra*): A, right tentaculophore of segment I, inner view, aciculum dotted; B, right elytrigerous parapodium from segment II, posterior view, lateral branchia not shown; C, neuroseta from same; D, right parapodium from segment III, anterior view, acicula dotted; E, right elytrigerous parapodium from segment 35, anterior view, acicula dotted; F, upper neuroseta from same; G, middle neuroseta from same; H, lower neuroseta from same. (Scales: A,B,D = 0.5 mm; C,F-H = 0.1 mm; E = 1.0 mm.)

Pelogenia semiglabra (Monro, 1936), new combination

FIGURES 29, 30

Psammolyce semiglabra Monro, 1936:106, fig. 14a-g.—Knox, 1960:95.

MATERIAL EXAMINED.—SOUTH PACIFIC OCEAN: *New Zealand:* 35°03′S, 172°58′E, 50 m, *Discovery* sta 936, 18 Aug 1932, holotype (BMNH 1936.2.8.765).

TYPE MATERIAL.—Holotype anterior fragment, 34 mm long and 8 mm wide, with setae, 65 segments.

DESCRIPTION.—Dorsum with transverse ridges and globular papillae, without adherent foreign material anteriorly, but with scattered adherent sand grains more posteriorly; ventrum with globular papillae, without long papillae on lower lip. First pair of elytra missing (elongate, pointed anteriorly, concealing head end, according to Knox, 1960); 2nd and 3rd elytra large, subreniform, overlapping medially, with very little foreign material; 2nd elytra with scattered globular papillae on surfaces and along borders, except anterior border, and additional cylindrical border papillae (Figure 30A); 3rd elytra with lateral borders scalloped, with long papillae alternating with short globular papillae (Figure 30B); more posterior elytra with more pronounced scallops and more numerous long papillae on lateral borders, with additional projecting inner processes with

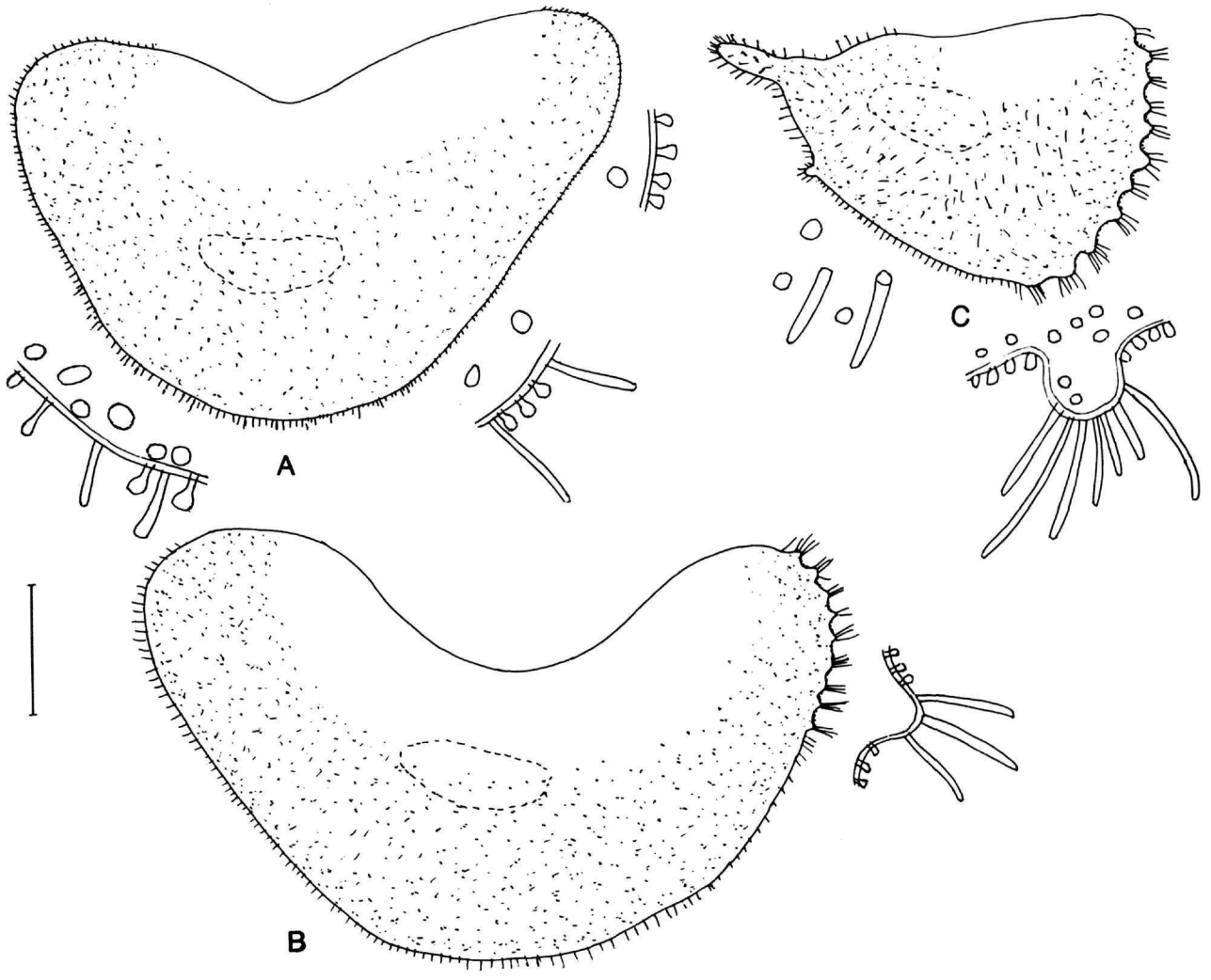

FIGURE 30.—*Pelogenia semiglabra* (holotype of *Psammolyce semiglabra*): A, right 2nd elytron from segment IV, with detail of papillae; B, right 3rd elytron from segment V, with detail of border papillae; C, right elytron from segment 35, with detail of papillae. (Scale: 1.0 mm.)

flat-topped adhesive papillae, and long cylindrical papillae on surfaces (Figure 30C; Monro, 1936, fig. 14b).

Prostomium and tentaculophores withdrawn in segment II; oval prostomium with 2 pairs of deeply buried, small eyes; median antenna with stout ceratophore, style short, bent ventrally (longer than shown by Monro); tentaculophores lateral and ventral to prostomium, each with single aciculum, dorsal tentacular cirrus and longer ventral tentacular cirrus on outer side, and 2 bundles of spinous capillary notosetae and thick, fleshy inner tentacular sheath on inner side; palps long, tapering, emerging ventral and lateral to tentaculophores; lateral antennae slender, tapering, on inner dorsal sides of tentaculophores (Figure 29A; Monro, 1936, fig. 14a). Segment II with 1st pair of large elytrophores with small lateral branchiae; biramous parapodia with long ventral buccal cirri (Figure 29B; Monro, 1936, fig. 14a); compound neurosetae with stems with long spinous regions (about 24 rows), blades long, with hooked, bifid tips (Figure 29C). Segment III with long dorsal cirri on dorsal tubercles, with branchiae; cirrophores long, extending beyond tips of notopodia, styles shorter than cirrophores; ventral cirri short (Figure 29D; Monro, 1936, fig. 14a); neurosetae similar to those on segment II, stems with fewer spinous rows (7–12).

Biramous parapodia with notopodia large, subconical, with prominent subdistal flanges enclosing numerous notosetae; 3 low bands or ctenidia on curved areas between bases of

notopodia and branchiae and elytrophores; larger neuropodia subconical, with short papillae distally and usual 3 subdistal papillated bracts; cirrophores of ventral cirri with few short papillae, styles tapering distally, with basal knobs (Figure 29E; Monro, 1936, fig. 14c,d). Notosetae numerous, spinous capillaries, forming radiating bundles, extending dorsally, laterally, and posteroventrally beyond ventral cirri (Figure 29E; Monro, 1936, fig. 14c,d). Neurosetae compound, stout, stems all with subdistal spinous rows (5–9); upper neurosetae within dorso-anterior bracts, blades short, nearly straight, with entire tips (Figure 29F; Monro, 1936, fig. 14e); middle neurosetae within postacicular bracts, blades short, with bidentate curved tips (Figure 29G; Monro, 1936, fig. 14f); lower neurosetae within ventro-anterior bracts, blades long, with bidentate, curved tips (Figure 29H; Monro, 1936, fig. 14g).

DISTRIBUTION.—South Pacific Ocean: New Zealand; in 50 to 79 meters.

Pelogenia popeae, new species

FIGURES 31, 32

Psammolyce antipoda.—Fauvel, 1917:186, pl. 4: figs. 12, 13, text-fig. 10a–g.—Pope, 1943:248.—Not Schmarda, 1861.

MATERIAL EXAMINED.—SOUTH PACIFIC OCEAN: *Australia:* NEW SOUTH WALES: Long Bay, Sydney, under stones in sand, low tide level, 5 Feb 1939, E.C. Pope, collector, paratype (BMNH 1941.2.28.4, as *P. antipoda* by Pope, 1943). 0.5 km E of Long Bay, Sydney, 33°58′S, 150°16′E, Shelf Benthic Survey, Apr 1973, 3 specimens (AMS 6369; USNM 60186). Cronulla, off the C.S.I.R.O. Lab., Jul 1973, L. Hedges, collector, 1 specimen (AMS 5868). Broughton Island, New South Wales Fisheries, 1 Sep 1976, 1 specimen (AMS 13060). North Kurnell, Botany Bay, sand, 13 m, State Pollution Control Commission, 10 Mar 1977, 1 specimen (AMS 13837). VICTORIA: Waratah Bay, Nov 1952, Joan Williams, collector, 1 specimen (AMS 3592). SOUTH AUSTRALIA: Aldinga Reef, St. Vincent Gulf, under rocks and roots of marine angiosperms, 19 Sep 1977, S.J. Edmonds, collector, holotype (AMS 14015) and paratype (USNM 60185). Aldinga Reef, dug from roots of *Posidonia,* 2 May 1977, S.J. Edmonds, collector, paratype (AMS 14046).

TYPE MATERIAL.—Holotype complete specimen, 100 mm long and 9 mm wide, with setae, about 140 segments. Paratype (BMNH 1941.2.28.4) 114 mm long and 10 mm wide, about 115 segments.

DESCRIPTION.—Dorsum and parts of elytra covered with sand grains and adhesive papillae (not long, velvety papillae, as in *P. antipoda*); ventrum with globular papillae and long cylindrical papillae along midventral groove. First pair of elytra large, oval, covering anterior end, with short papillae along borders; surfaces thickly covered with short, flat-topped adhesive papillae with adherent sand grains (Figure 32A); 2nd and 3rd elytra subreniform, with rounded medial extensions covered with numerous adhesive papillae and longer border papillae on 3 sides (Figure 32B,C); more posterior elytra squarish, with medial processes more prominent, digitiform, with clavate and flat-topped adhesive papillae, prominent fringes of long papillae on 3 sides, plus some long papillae on surfaces near medial sides; sand grains mostly confined to medial processes and along borders (Figure 32D; Fauvel, 1917, pl. 4: figs. 12, 13).

Prostomium and tentaculophores withdrawn in segment II, only distal parts visible unless cut back; prostomium elongate-oval, with 2 pairs of large eyes, ventral pair larger than dorsal pair, with bulbous lobes anterior to ventral pair; median antenna with ceratophore long, bulbous basally, style about as long as ceratophore; tentaculophores fused medially, ventral and lateral to prostomium, each with single aciculum, ventral tentacular cirrus and longer dorsal tentacular cirrus on outer side, and 2 fan-shaped bundles of capillary, spinous notosetae and inner tentacular sheath on inner side; palps long, tapered, emerging ventral and lateral to tentaculophores; lateral antennae short, tapering, attached to dorsal sides of tentaculophores (Figure 31A,B). Segment II with middorsum overhanging prostomium, with adhesive papillae and adherent sand grains, with first pair of large elytrophores, without branchiae; ventral buccal cirri extending beyond tips of neuropodia; lower lip of ventral mouth with scattered short papillae (Figure 31A,C); neurosetae compound, slender, stems with long spinous regions, blades long, tapering to slightly curved tips (Fauvel, 1917, fig. 10a). Segment III with long dorsal cirri on bulbous dorsal tubercles, with branchiae on lower sides; cirrophores extending to tips of notopodia; styles similar in length to cirrophores and extending to tips of notosetae; ventral cirri short, extending almost to tips of neurosetae (Figure 31D); neurosetae similar to those of segment II, stems with long spinous regions, blades with or without delicate secondary tooth.

Biramous parapodia with notopodia short, subconical, with thick, fleshy subdistal flanges encircling notosetae; indistinct ctenidia in form of low ridges between notopodia and dorsal tubercles or elytrophores and branchiae; neuropodia large, subconical, papillate distally, with usual 3 subdistal papillate bracts; cirrophores of ventral cirri with long papillae, styles extending to tips of lower sides of neuropodia, with bulbous knobs on upper basal sides; additional papillae on ventral sides of neuropodia and on dorsal surfaces above dorsal tubercles and elytrophores (not long and "fury," as in *P. antipoda,* Figure 31E). Notosetae numerous, slender, spinous capillaries (Fauvel, 1917, fig. 10b,c), extending anteriorly, dorsally, and posteroventrally beyond tips of ventral cirri. Neurosetae dark amber-color; stout, compound falcigers; upper ones within dorso-anterior bracts, stems with 1–3 indistinct spinous rows, blades entire, slightly hooked; middle ones within postacicular bracts, stouter, stems smooth, blades slightly hooked, entire or bifid; lower ones within ventro-anterior bracts, more slender, stems with 0–1 spinous rows, blades rather long, with tips

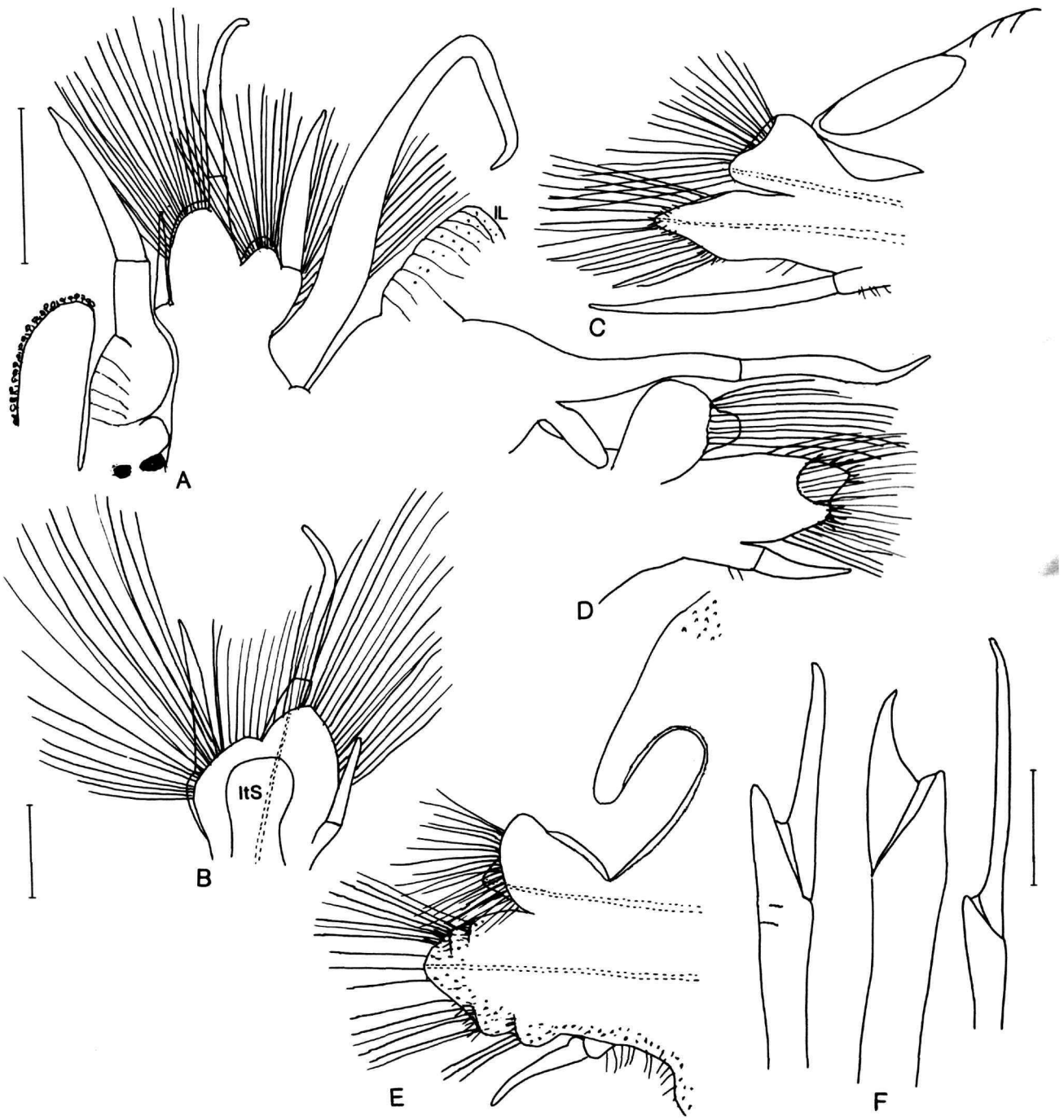

FIGURE 31.—*Pelogenia popeae,* new species (holotype): A, lateral view of anterior end, prostomium and tentaculophore pulled back in segment II; B, right tentaculophore of segment I, inner view, aciculum dotted; C, right elytrigerous parapodium from segment II, anterior view, acicula dotted; D, right parapodium from segment III, posterior view; E, right parapodium from segment 20, anterior view, acicula dotted; F, upper, middle, and lower neurosetae from segment 40. (Scales: A = 1.0 mm; B–E = 0.5 mm; F = 0.1 mm.)

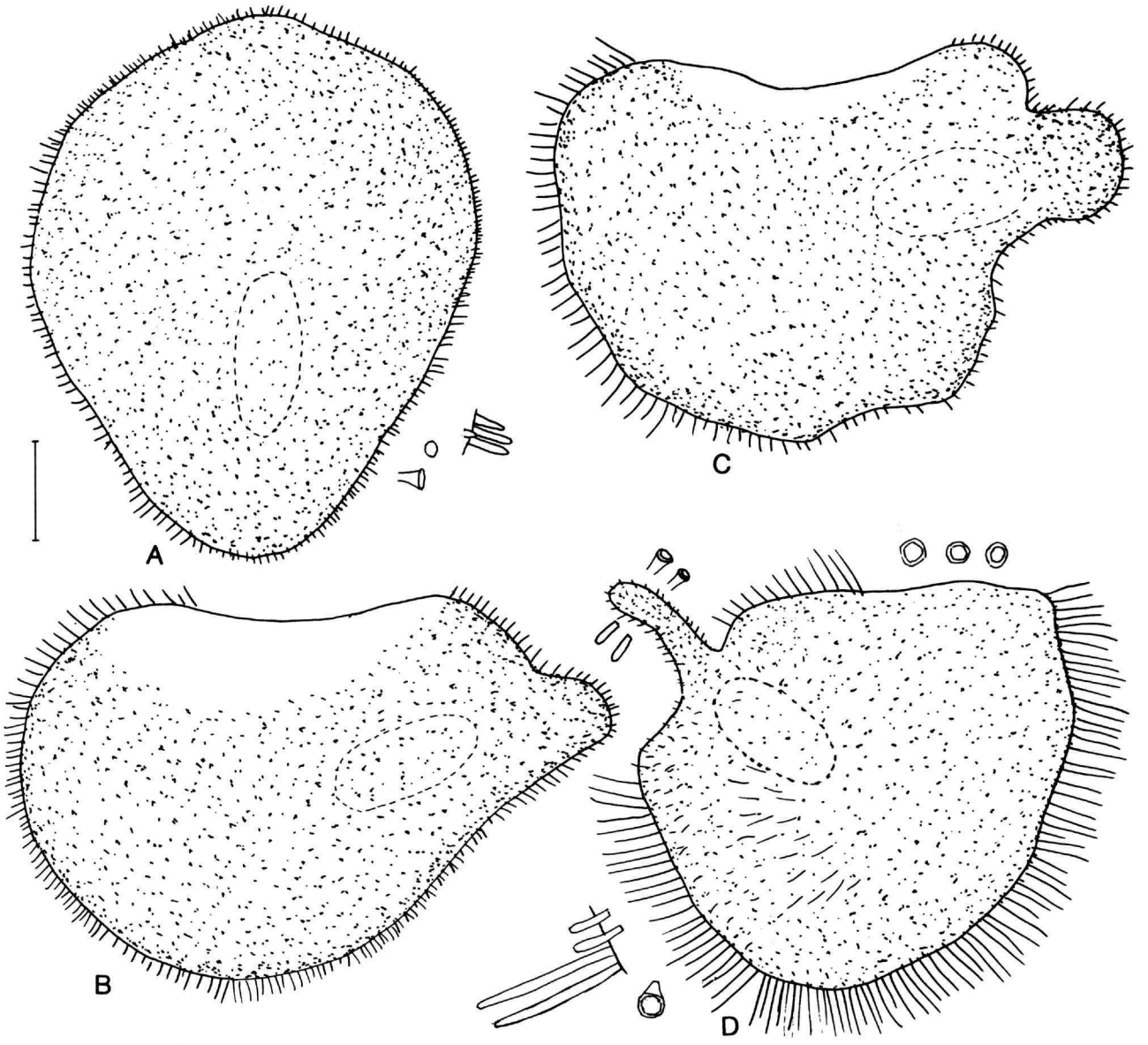

FIGURE 32.—*Pelogenia popeae,* new species (holotype): A, right 1st elytron from segment II, with detail of papillae; B, left 2nd elytron from segment IV; C, left 3rd elytron from segment V; D, right elytron from segment 21, with detail of papillae. (Scale: 0.5 mm.)

hooked, entire or bifid (Figure 31F; Fauvel, 1917, fig. 10d–g).

ETYMOLOGY.—The species is named for Elizabeth C. Pope, the collector of some of the Australian specimens.

COMPARISONS.—*Pelogenia popeae,* from Australia, differs from *P. antipoda,* from New Zealand, with which it was identified by Fauvel (1917) and Pope (1943). The dorsum and parts of the elytra are covered with sand grains and adherent papillae and not long, velvety papillae, as in *P. antipoda.* The ventral pair of eyes are much larger than the dorsal pair in *P. popeae,* whereas they are subequal in size in *P. antipoda.*

DISTRIBUTION.—South Pacific Ocean: Australia; low intertidal to 13 meters.

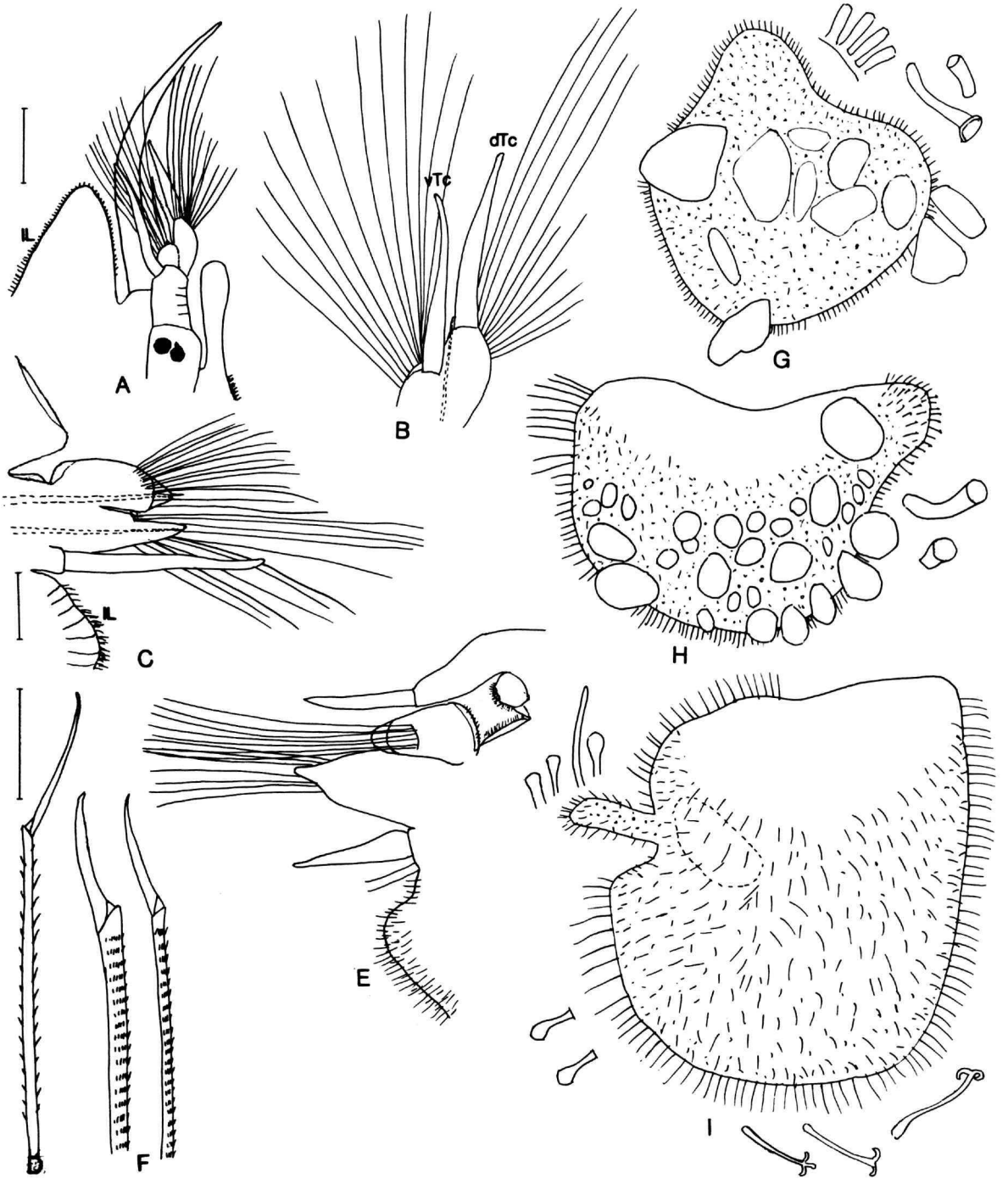

FIGURE 33.—*Pelogenia paxtonae,* new species (holotype): A, lateral view of prostomium, inner view of right tentaculophore of segment I and palp, pulled back in segment II, left I–II cut off, lateral antenna not visible; B, left tentaculophore, outer view, aciculum dotted; C, right parapodium from segment II, anterior view, acicula dotted; D, neuroseta from same; E, left cirrigerous parapodium from segment III, posterior view; F, middle and lower neurosetae from same; G, left lst elytron from segment II, with detail of papillae; H, left 2nd elytron from segment IV; I, right 10th elytron from segment 19, with detail of papillae. (Scales: A = 0.5 mm; B,C,E,G–I = 0.2 mm; D,F = 0.1 mm.)

Pelogenia paxtonae, new species

FIGURES 33, 34

MATERIAL EXAMINED.—INDIAN OCEAN: *Australia:* WESTERN AUSTRALIA: Cottesloe Beach, 6 mi [9.6 km] W of Perth, in calcareous algae and sabellariid *Idanthyrsus* tube, 14 Feb 1970, H. Paxton, collector, holotype (USNM 146128).

DESCRIPTION.—Holotype complete, with 90 segments, 34 mm long and 5 mm wide, with setae. Body flattened ventrally, arched dorsally, and tapering posteriorly with anus enclosed in bulbous ring of very small posterior segments. Dorsum with adherent sand grains confined to only anterior and far posterior regions. Dorsum and ventrum very finely papillated. Elytra confined to lateral parts of body, leaving middle one-third uncovered. First pair of elytra oval, with short papillae on borders and adhesive papillae on surfaces (Figure 33G); following few elytra subreniform, with papillae lacking on anterior borders, long papillae on lateral borders, and adhesive papillae confined mostly to more posterior and medial areas (Figure 33H); more posterior elytra squarish, with digitiform medial processes with adhesive papillae, borders with long papillae, and surfaces with long cylindrical papillae ending in split, curled tips, 2–4 branches (Figure 33I).

Prostomium and tentaculophores fused basally and withdrawn in segment II; prostomium oval, with 2 pairs of large subequal eyes; median antenna with stout ceratophore, style curved ventrally, longer than ceratophore; tentaculophores close together medially, lateral and ventral to prostomium, each with single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 bundles of spinous capillary notosetae on inner side; ventral palps stout, tapering, and extending beyond tips of notosetae; lateral antennae not observed (Figure 33A,B). Segment II with first pair of large elytrophores, without lateral branchiae, with biramous parapodia and long ventral buccal cirri; lower lip of mouth papillate (Figure 33A,C);

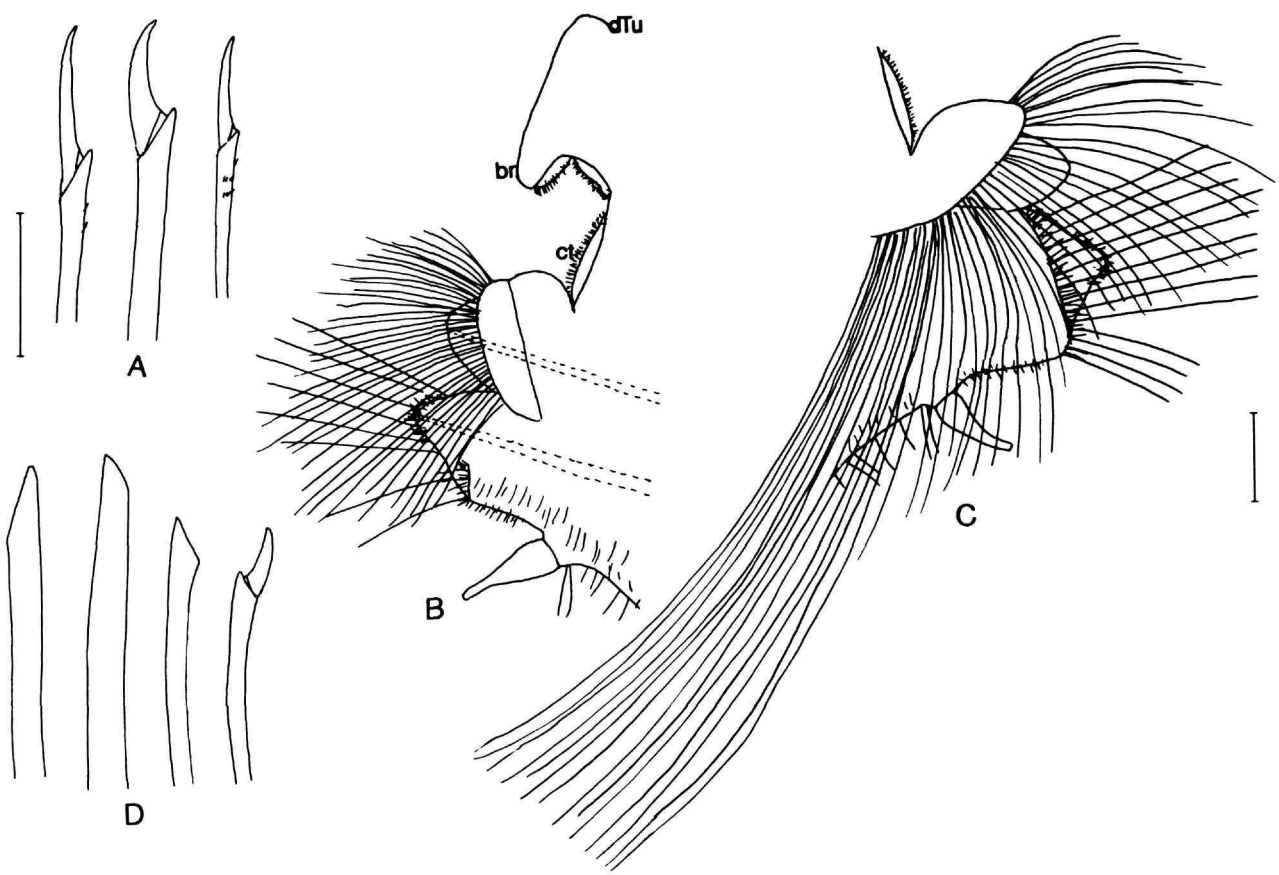

FIGURE 34.—*Pelogenia paxtonae,* new species (holotype): A, upper, middle, and lower neurosetae from segment V; B, right parapodium from segment 20, anterior view, acicula dotted; C, right parapodium from segment 21, posterior view; D, upper, middle, and 2 lower neurosetae from same, blades mostly broken off. (Scales: A,D = 0.1 mm; B,C = 0.2 mm.)

neurosetae compound, slender, stems with long spinous regions, blades long, with slightly hooked, entire tips (Figure 33D). Segment III with long dorsal cirri on dorsal tubercles, with small branchiae; cirrophores and styles subequal in length; ventral cirri short, subulate, extending to tips of neuropodia (Figure 33E); neurosetae similar to those on segment II, upper and middle ones stouter, all with slightly hooked, entire tips (Figure 33F). Neurosetae of segment V with blades with slightly hooked, entire tips, stems of upper and lower ones with few spinous rows, middle ones smooth (Figure 34A).

Biramous parapodia with notopodia almost as long as neuropodia; ciliated ctenidia in curved areas between notopodia and small branchiae or between dorsal tubercles and elytrophores; notopodia subconical, with large subdistal flanges enclosing numerous notosetae; large neuropodia with subconical acicular lobes, papillate distally, with usual 3 subdistal papillate bracts; cirrophores of ventral cirri with 2 long papillae, styles short, subulate, with bulbous tips; long papillae on anterior and posterior sides of neuropodia (Figure 34B,C). Numerous notosetae of 2 kinds, forming radiating bundles: usual type, shorter, capillary, with prominent spinous rows; other type, very long, fine, smooth, hair-like, hanging far ventrally on posterior sides of neuropodia (Figure 34B,C). Compound neurosetae stout, stems smooth, without spinous rows, blades mostly missing, short when present, with slightly hooked, entire tips (Figure 34D).

ETYMOLOGY.—The species is named for Hannelore Paxton, the collector of the holotype.

COMPARISONS.—*Pelogenia paxtoni* is close to *P. inhacaensis*. Both species differ from the other species of *Pelogenia* in having notosetae of two types: the usual type, shorter, capillary, with spinous rows, and the other type, very long, capillary, smooth, hair-like, and extending far ventrally on the posterior sides of the neuropodia. In *P. paxtoni* the two pairs of eyes are subequal in size, whereas in *P. inhacaensis* the ventral pair are twice as large as the dorsal pair.

DISTRIBUTION.—Indian Ocean: Western Australia; intertidal.

Pelogenia inhacaensis, new species

FIGURE 35

MATERIAL EXAMINED.—INDIAN OCEAN: *Mozambique:* Inhaca Island, R/V *Anton Bruun* cruise 7, sta 382P, 22 Aug 1964, shore, holotype (LACM-AHF 1594, as *Psammolyce* nr. *antipoda* by O. Hartman, in MS).

DESCRIPTION.—Holotype complete specimen, male with sperm, 22 mm long and 1 mm wide, with setae, 80 segments. Body flattened ventrally, arched dorsally; middorsum and ventrum very finely papillate; numerous adherent sand grains on anterior and posterior ends of dorsum, remainder of dorsum with few sand grains. Elytra firmly attached, covering lateral parts of body, leaving middle one-third uncovered. First elytra oval, with fringes of clavate and cylindrical papillae on borders and some low adhesive papillae on surfaces (Figure 35J); 2nd and 3rd elytra with medial-anterior extensions, with flat-topped papillae on surfaces and longer border papillae on 3 sides (Figure 35K); more posterior elytra rectangular, with digitiform medial processes, surfaces and borders with short and long, clavate and cylindrical papillae, some with bifid tips (Figure 35L).

Prostomium and tentaculophores fused basally and withdrawn in segments II and III; prostomium elongate-oval, with 2 pairs of eyes, ventral pair twice as large as dorsal pair; median antenna with stout ceratophore, inflated basally, style slightly longer than ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, shorter dorsal and longer ventral tentacular cirri on outer side, and 2 bundles of spinous capillary notosetae on inner side; palps emerging ventral and lateral to tentaculophores, stout, tapering, extending beyond notosetae; lateral antennae not observed (Figure 35A). Segment II with first pair of large elytrophores, without branchiae, and with biramous parapodia; ventral buccal cirri extending to tips of neuropodia; notopodia similar in size to neuropodia, with numerous capillary spinous notosetae (Figure 35B); neurosetae compound, slender, stems with numerous spinous rows, blades tapering to slightly hooked, entire tips (Figure 35C). Segment III with dorsal cirri on dorsal tubercles, with small branchiae on lower sides; cirrophores extending to tips of notopodia, styles about length of cirrophores (Figure 35D); neurosetae similar to those of segment II (Figure 35E).

Biramous parapodia with notopodia large, subconical with prominent subdistal flanges enclosing numerous notosetae; ciliated bands or ctenidia in curved areas between notopodia and branchiae or between elytrophores and dorsal tubercles; neuropodia large, subconical, papillate distally, with usual subdistal papillate bracts; ventral cirri with cirrophores with 2 long papillae, styles short, tapering, with basal knobs (Figure 35G,I). Notosetae of 2 types: usual type, short, capillary, spinous; other type very long, smooth, hair-like, hanging far ventrally on posterior sides of neuropodia (Figure 35G,I). Neurosetae stout compound falcigers; stems smooth, without spinous rows; blades short, falcate, with entire tips; some middle neurosetae with blades missing and stems appearing worn (Figure 35F,H).

ETYMOLOGY.—The species is named for the collecting site, Inhaca Island.

DISTRIBUTION.—Indian Ocean: Mozambique; littoral.

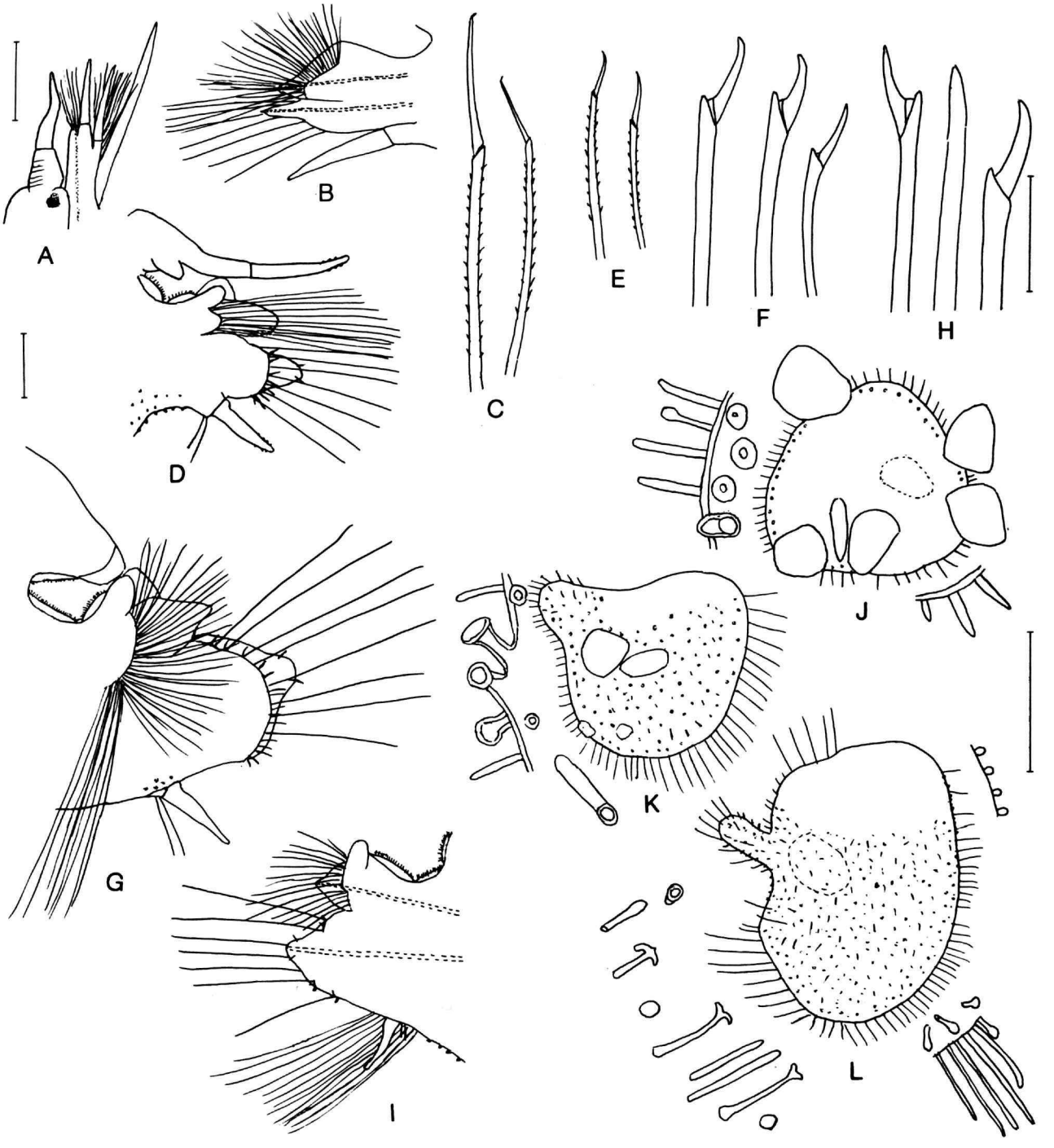

FIGURE 35.—*Pelogenia inhacaensis*, new species (holotype): A, prostomium, right tentaculophore of segment I and palp, lateral view, ventral eye and aciculum dotted, lateral antenna not visible; B, right parapodium from segment II, anterior view, acicula dotted; C, upper and lower neurosetae from same; D, right parapodium from segment III, posterior view; E, upper and lower neurosetae from segment V; F, upper, middle, and lower neurosetae from segment 8; G, right parapodium from segment 20, posterior view; H, upper, middle (blade missing), and lower neurosetae from same; I, right middle parapodium, anterior view, acicula dotted; J, right 1st elytron from segment II, with detail of papillae; K, right 2nd elytron from segment IV, with detail of papillae; L, right 10th elytron from segment 19, with detail of papillae. (Scales: A = 0.5 mm; B,D,G,I = 0.2 mm; C,E,F,H = 0.1 mm; J–L = 0.5 mm.)

Pelogenia arenosa (Delle Chiaje, 1830), new combination

FIGURES 36–38

Sigalion arenosum Delle Chiaje, 1830, pl. 80: figs. 4, 5, 16, 18, 22; 1841:58, 107, pl. 98: figs. 4, 5, 16, 18, 22.

Sigalion herminiae Audouin and Milne-Edwards, 1832:443, pl. 8: figs. 1–6; 1834:107, pl. 1: figs. 1–6.

Psammolyce herminiae.—Quatrefages, 1866:283.

Psammolyce arenosa.—Claparède, 1868:412, pl. 5: fig. 3A–M.—Saint-Joseph, 1906:150, pl. 1: figs. 7–23; pl. 2: figs. 24–31.—Rioja, 1918:21.—Fauvel, 1923:106, fig. 40a–m.—Campoy, 1982:87.—Kirkegaard, 1983:198.—Not Augener, 1933:193 [= *Neopsammolyce floccifera*].—Not Hartman, 1944:14 [= *Pelogenia fimbriata* and *Neopsammolyce floccifera*].

Psammolyce sp. Muir, 1989:342 [for *Sigalion herminiae*].

REMARKS.—The type locality of *Sigalion arenosum* Delle Chiaje, 1830, is the Gulf of Naples, Italy. No types are known to exist. The description of the species was supplemented by Claparède (1868), as *Psammolyce arenosa*. Two specimens from the type locality, by purchase from the Zoological Station in 1893 (USNM 5120), were available for study.

MATERIAL EXAMINED.—MEDITERRANEAN SEA: *Italy:* Bay of Naples, by purchase from Zool. Sta, 1893, 2 specimens (USNM 5120). Naples, W.C. McIntosh collection, 1 specimen (BMNH 1921.5.1.650). Naples, H. Augener, ident., 4 specimens (ZMH 604, 1980). Bay of Carini, Sicily, west side, sand and rock, 12 m, C. Froglia and R.B. Manning, collectors, 15 Jun 1974, 1 specimen (USNM 60180).

Tunisia: Salamnbo, from beach north of Punic Port, *Posidonia* root mass washed up on beach in storm, R.B. Manning, collector, 26 Oct 1973, 1 specimen (USNM 67486).

ENGLISH CHANNEL: *Channel Islands:* Off Jersey, purchased from M. Sinel and dredged by A.M. Norman, 2 specimens (BMNH 1887.4.27.1, 1898.5.6.152).

DESCRIPTION.—Two large specimens from Naples (USNM 5120) 104 and 145 mm long, 12 and 11 mm wide, with setae, with 155 and 170 segments, respectively. Body flattened, widest anteriorly, tapering gradually posteriorly. Dorsum and elytra completely covered with sand grains (Claparède, 1868, pl. 5: fig. 3); middorsum with branched papillae with adhesive discs (Saint-Joseph, 1906, pl. 2: fig. 26); ventrum with long cylindrical papillae on lower lip between segments II–VI, along deep midventral groove, and with globular papillae. First elytra elongate-oval, with small lateral processes, short papillae along borders and surfaces, plus more elongated, flat-topped papillae with attached sand grains (Figure 38A); 2nd and 3rd elytra subreniform, bilobed medially, more posterior processes more elongated, digitiform, with numerous adhesive papillae, with additional small processes on posterior sides with clavate papillae on borders and globular papillae on surfaces (Figure 38B; Saint-Joseph, 1906, pl. 1: fig. 23); more posterior elytra squarish, with digitiform medial processes, plus 2–3 additional processes along posterior borders; lateral and posterior borders with long cylindrical papillae interspersed with minute clavate papillae; surfaces with flat-topped adhesive and globular papillae (Figure 38C,D; Claparède, 1868, pl. 5: fig. 3G,H; Saint-Joseph, 1906, pl. 2: figs. 24, 25).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, smaller dorsal pair and much larger ventral pair; median antenna with large ceratophore, bulbous basally, style about as long as ceratophore; tentaculophores ventral and lateral to prostomium, each with single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 fan-shaped bundles of notosetae, upper ones ending in short pointed tips, lower ones with long capillary tips and inner tentacular sheath on inner side; palps emerging lateral and ventral to tentaculophores, long, tapering, with low inner palpal sheaths, continuous with inner tentacular sheaths; lateral antennae small, subulate, on dorsal basal sides of tentaculophores, near prostomium (Figure 36A; Claparède, 1868, pl. 5: fig. 3F; Saint-Joseph, 1906, pl. 1: figs. 7–10). Segment II with middorsum overhanging prostomium, with small notch and few papillae with adherent sand grains wedged between 1st pair of very large elytrophores, with small branchiae on lateral sides; biramous parapodia with ventral buccal cirri extending to tips of lower neurosetae; compound neurosetae slender, stems with long spinous regions, lower neurosetae with long blades tapering to slender, hooked tips, upper ones with blades with delicate secondary tooth (Figure 36A–C; Saint-Joseph, 1906, pl. 1: figs. 12, 13). Pharynx with 11 pairs of bilobed papillae and 2 pairs of dark amber-colored jaws. Segment III with long dorsal cirri on dorsal tubercles; cirrophores elongate, extending about to tips of neuropodia, with branchiae attached near their bases; styles about as long as cirrophores, extending to tips of neurosetae; notopodia with papillate subdistal flanges enclosing numerous notosetae; neuropodia with long papillae on subdistal bracts; ventral cirri similar in length to ventral buccal cirri of segment II (Figure 36A,D; Saint-Joseph, 1906, pl. 1: fig. 14); lower neurosetae slender, similar to those of segment II, blades with or without delicate secondary tooth; middle and upper neurosetae stouter, stems with long spinous regions, blades with or without secondary tooth (Figure 36E).

Biramous parapodia with notopodia subconical, with subdistal flanges with dorsal ciliated ridges, encircling numerous notosetae; ctenidia indistinct, in form of elongate ciliated bands between notopodia and elytrophores or between dorsal tubercles and branchiae; neuropodia large, subconical, papillate distally, with usual 3 papillate bracts; cirrophores of ventral cirri with long papillae, styles with basal knobs on upper sides, with tips extending to tips of neuropodia; long papillae on anterior and posterior sides of neuropodia (Figure 37A,C; Claparède, 1868, pl. 5: fig. 3E; Saint-Joseph, 1906, pl. 1: fig. 19). Notosetae spinous capillaries, forming semicircular bundles, extending dorsally, laterally, and posteroventrally beyond ventral cirri (Figure 37A,C); neurosetae stout, compound, upper neurosetae (3–4) within dorso-anterior bracts, stems with 4–5 spinous rows, blades with slightly hooked entire tips or slight

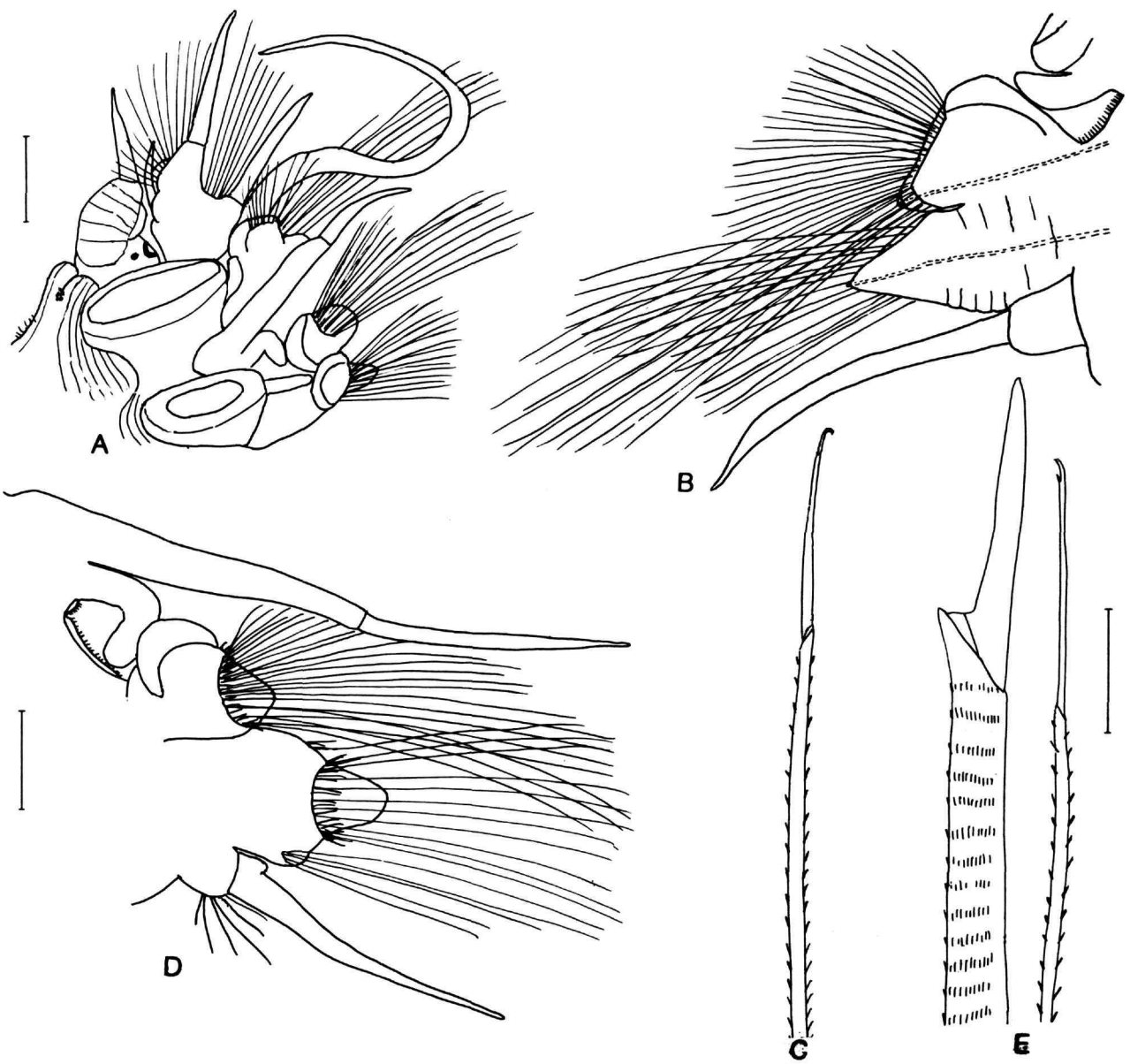

FIGURE 36.—*Pelogenia arenosa* (specimen from Naples, USNM 5120): A, dorsolateral view of anterior end, including segments I–IV; B, right elytrigerous parapodium from segment II, anterior view, acicula dotted; C, lower neuroseta from same; D, right cirrigerous parapodium from segment III, posterior view; E, middle and lower neurosetae from same. (Scales: A = 1.0 mm; B,D = 0.5 mm; C,E = 0.1 mm.)

indication of secondary tooth; middle neurosetae (9–10) within postacicular bracts, stems with 0–2 spinous rows, blades short, with entire hooked tips; lower neurosetae (7) within ventro-anterior bracts, more slender, stems with 3 spinous rows, blades rather long, with slightly hooked, entire tips or with small secondary tooth (Figure 37B,D; Claparède, 1868, pl. 5: fig. 3A–D; Saint-Joseph, 1906, pl. 1: figs. 16–18, 20). Pygidium small, with pair of anal cirri; anus dorsal, between few posterior small segments.

DISTRIBUTION.—Mediterranean Sea: Italy, Tunisia; English Channel: Channel Islands; North Atlantic Ocean: France, Canary Islands; intertidal to 12 meters.

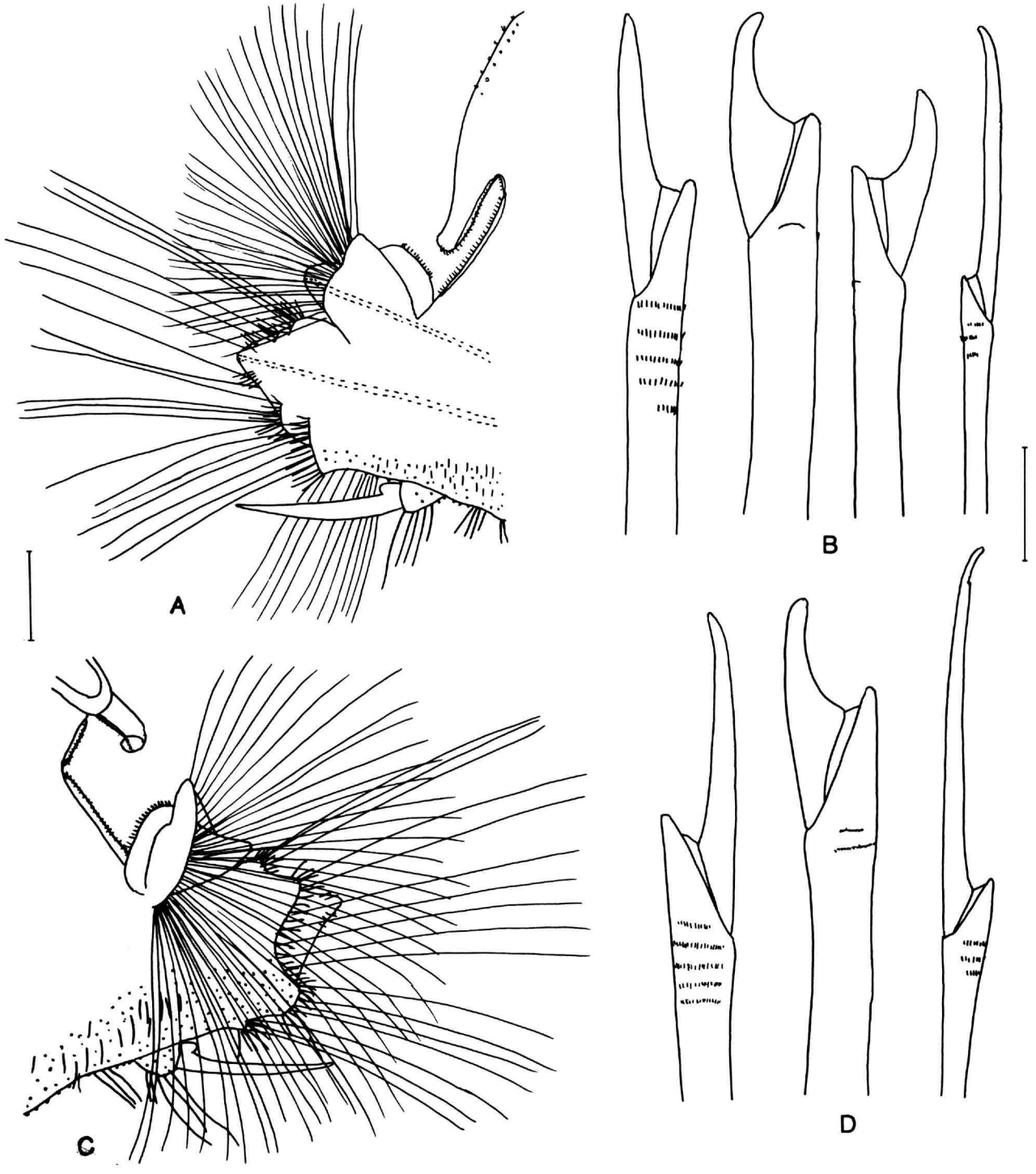

FIGURE 37.—*Pelogenia arenosa* (specimen from Naples, USNM 5120): A, right parapodium from segment 22, with dorsal tubercle, anterior view, acicula dotted; B, upper, 2 middle, and lower neurosetae from same; C, right elytrigerous parapodium from segment 63, posterior view; D, upper, middle, and lower neurosetae from same. (Scales: A,C = 0.5 mm; B,D = 0.1 mm.)

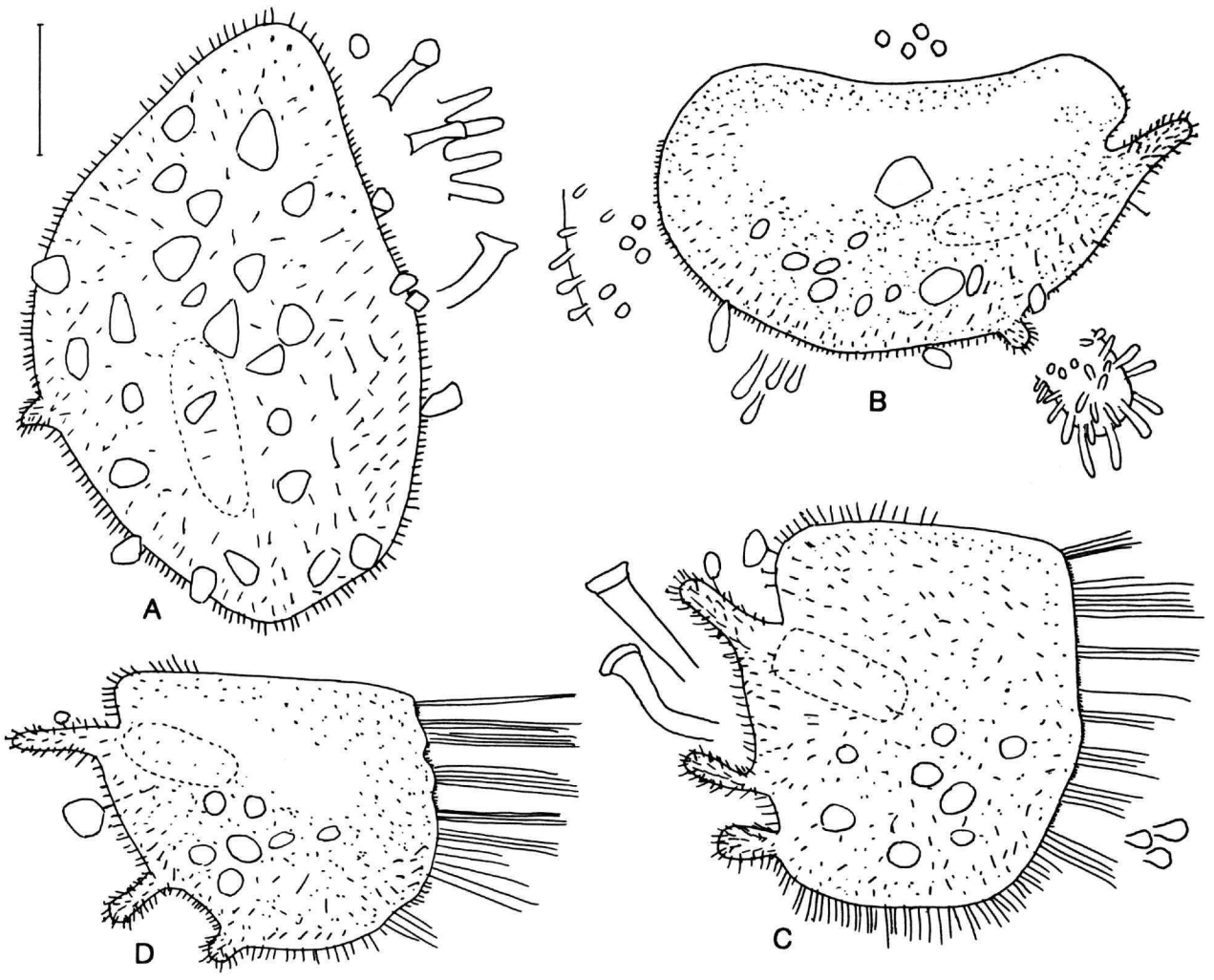

FIGURE 38.—*Pelogenia arenosa* (specimen from Naples, USNM 5120): A, left 1st elytron from segment II, with detail of papillae; B, left 2nd elytron from segment IV, with detail of papillae; C, right elytron from segment 25, with detail of papillae; D, right elytron from segment 65. (Scale: 1.0 mm.)

Pelogenia rigida (Grube, 1868), new combination

FIGURES 39, 40

Sigalion (Psammolyce) rigida Grube, 1868a:50.

Psammolyce rigida.—Grube, 1868b:631, pl. 7: fig. 1.—Wiktor, 1980:270.—Not Grube, 1878:55.—Not Treadwell, 1901:188; 1939:195 [= *Pelogenia hartmanae*].—?Not Willey, 1905:256.

Psammolyce antipoda.—Fauvel, 1957:4.—Amoureux et al., 1978:71.—Not Schmarda, 1861.

MATERIAL EXAMINED.—*Red Sea:* Frauenfeld, collector, holotype (MPW 362; ZMHUB 3270, parapodia and elytra only).

Gulf of Aqaba: 1 Apr 1936, K. Reich, collector, 1 specimen (BMNH 1937.6.6.2); Elat, low water, on dead coral, 1 specimen (TAU 5793, as *P. antipoda* by Amoureaux et al., 1978).

TYPE MATERIAL.—Holotype thickly covered with white sand grains, about 60 mm long and 7 mm wide, with setae, with 133 segments; eyes no longer visible; parapodia and 4 elytra free in vial.

DESCRIPTION.—Figured specimen from Red Sea (BMNH 1937.6.6.2) about 70 mm long and 8 mm wide, with setae, 112+ segments. Dorsum, beginning on segment V, thickly covered with sand grains attached to numerous branched adhesive papillae; sand grains covering exposed parts of elytra, attaching rather loosely to medial and posterior borders; ventrum thickly covered with low, rounded, and long papillae. First elytra large, elongate oval, slightly bilobed anteriorly,

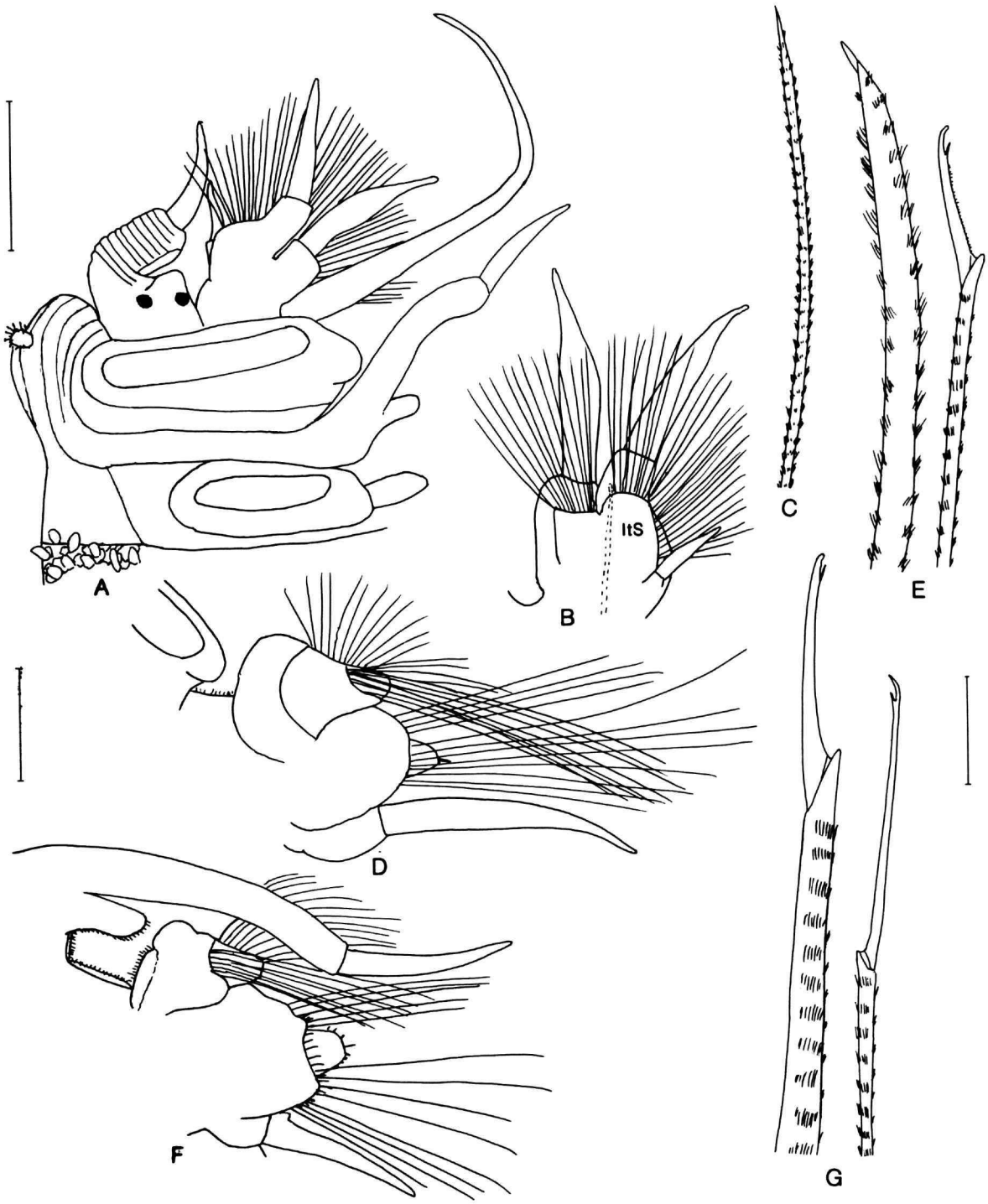

FIGURE 39.—*Pelogenia rigida* (specimen from Red Sea, BMNH 1937.6.6.2): A, lateral view of anterior end, including segments I–IV, parapodia only partially shown; B, right tentaculophore of segment I, inner view, aciculum dotted; C, notoseta from same; D, right elytrigerous parapodium from segment II, posterior view; E, upper (blade broken) and lower neurosetae from same; F, right cirrigerous parapodium from segment III, posterior view; G, upper and lower neurosetae from same. (Scales: A = 1.0 mm; B,D,F = 0.5 mm; C,E,G = 0.1 mm.)

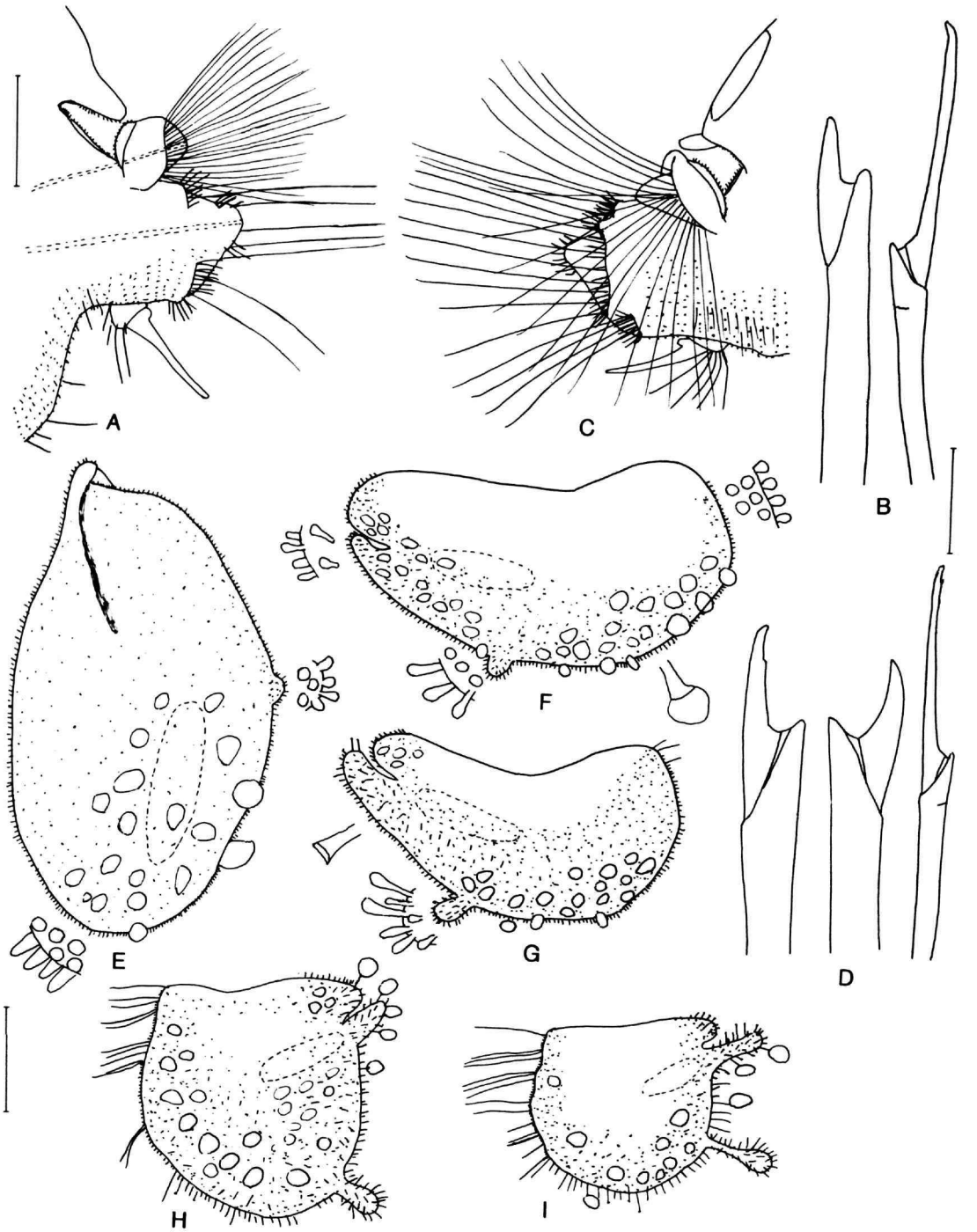

FIGURE 40.—*Pelogenia rigida* (specimen from Red Sea, BMNH 1937.6.6.2): A, left parapodium from segment 20, with dorsal tubercle, anterior view, acicula dotted; B, middle and lower neurosetae from same; C, left elytrigerous parapodium from segment 50, posterior view; D, upper, middle, and lower neurosetae from same; E, right 1st elytron from segment II, with detail of papillae; F, right 2nd elytron from segment IV, with detail of papillae; G, right 3rd elytron from segment V, with detail of papillae; H, left elytron from segment 19; I, left elytron from segment 50. (Scales: A,C = 0.5 mm; B,D = 0.1 mm; E-I = 1.0 mm.)

with depressed groove; small rounded lateral processes thickly covered with globular papillae; short clavate papillae on borders; sand grains confined mostly to small posterior areas (Figure 40E); 2nd and 3rd elytra subreniform, bilobed medially, with long adhesive papillae; small posterior processes with clavate papillae, central parts extra thick, not covered with sand grains (Figure 40F,G); more posterior elytra squarish, bilobed medially, longer more posterior processes in line with scars of elytrophores and additional clavate posterior-medial processes, all with adhesive papillae and long and short papillae on borders (Figure 40H,I; Grube, 1868b, pl. 7: fig. 1).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of rather large subequal eyes; median antenna with large bulbous ceratophore, with lateral ridges; style about length of ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 fan-shaped bundles of spinous notosetae, tapering to slender sharp tips (not capillary), and fleshy inner tentacular sheath on inner side; palps emerging lateral and ventral to tentaculophores, long, tapering, with low inner palpal sheaths, continuous with inner tentacular sheaths; lateral antennae short, subulate, attached to middle of dorsal sides of tentaculophores (Figure 39A-C). Segment II overlapping prostomium middorsally, with small oval lobe with papillae; large elytrophores with small lateral branchiae; biramous parapodia with ventral buccal cirri extending to near tips of lower neurosetae; upper notosetae similar to those of segment I, lower notosetae longer, slender capillaries, extending to tips of neurosetae; neurosetae compound, stems with long spinous regions, upper neurosetae much stouter than lower ones, blades broken; blades of lower neurosetae tapering to bifid, hooked tips (Figure 39A,D,E). Segment III with long dorsal cirri on dorsal tubercles, with branchiae on basal sides; cirrophores long, extending to tips of neuropodia, styles shorter than cirrophores, extending to tips of neurosetae; upper neurosetae stouter than lower ones, both with stems with long spinous regions and blades long, with bifid, hooked tips (Figure 39A,F,G).

Biramous parapodia with notopodia subconical, with subdistal flanges with basal ciliated ridges enclosing numerous notosetae; ctenidia in form of ciliated bands in curved areas between notopodia and dorsal tubercles or between elytrophores and branchiae; larger neuropodia subconical, papillate distally, with usual 3 papillated bracts; cirrophores of ventral cirri with long papillae, styles short, tapered, with upper basal knobs; ventral sides of neuropodia with bulbous papillae and longer filiform papillae on anterior and posterior sides (Figure 40A,C). Notosetae numerous, slender, spinous capillaries, extending dorsally, laterally, and posteroventrally beyond ventral cirri. Upper neurosetae, within dorso-anterior bracts, and middle ones, within postacicular bracts, stouter than lower neurosetae, stems without spinous rows and blades short, with slightly hooked entire tips; lower neurosetae within ventro-anterior bracts, more slender, stems with single spinous rows, blades long, with slightly hooked, entire or bifid tips (Figure 40B,D).

DISTRIBUTION.—Red Sea; intertidal.

Pelogenia kinbergi (Hansen, 1882), new combination

FIGURES 41, 42

Psammolyce kinbergi Hansen, 1882:5, pl. 1: figs. 10–13.—Augener, 1934:123, fig. 21.

Eupholoe nuda Treadwell, 1936:53, figs. 10–14.—Not Treadwell, 1941:20. [New synonymy].

Psammolyce arenosa.—Hartman, 1956:274 [includes *Eupholoe nuda*].—Nonato and Luna, 1970:70, pl. 5: figs. 60–64.—Rullier and Amoureux, 1979:154.—Amaral and Nonato, 1984:20, figs. 31, 32 [includes *P. kinbergi*].—Not Delle Chiaje, 1830.

MATERIAL EXAMINED.—SOUTH ATLANTIC OCEAN: *Brazil:* East coast, 06°59′S, 34°37′W, 37 m, broken shell, R/V *Albatross* sta 2758, 16 Dec 1887, 4 specimens (USNM 60189).

NORTH ATLANTIC OCEAN: *Straits of Florida:* Looe Key National Marine Sanctuary, 24°33′N, 81°24′W, 1 m, May 1983, sites 1 and 3, J. Booker, collector, 2 specimens (USNM 98198, 98199). *Bermuda:* Gurnet's Rock, in coral, 11 m, 29 Sep 1930, holotype of *Eupholoe nuda* (AMNH 2394).

TYPE MATERIAL.—Hansen's type of *Psammolyce kinbergi* from Brazil is not known to exist. The brief description and figures given by Hansen (1882) are sufficient to place the species in *Pelogenia*, and this hypothesis is supplemented by specimens from off Brazil. The holotype of *Eupholoe nuda* from Bermuda is a complete specimen, 30 mm long and 4.5 mm wide, with setae; adherent sand grains are not now present (the dorsum was sprinkled with fine sand grains, according to Treadwell). Except for the lack of elytra, as indicated in the original description, the holotype of *E. nuda* agrees with *P. kinbergi*, as described herein. Hartman (1956) examined Treadwell's holotype and incorrectly referred the species to *Psammolyce arenosa*.

DESCRIPTION.—Figured specimen from Brazil complete, 20 mm long and 4 mm wide, with setae, about 75 segments. Dorsum and elytra covered with white coral sand; ventrum with numerous globular papillae and long cylindrical papillae on lower lip and along lateral sides of body. First elytra oval, with oval extensions on lateral sides, short papillae on borders, and surfaces with oval and flat-topped adhesive papillae (Figure 42A); 2nd and 3rd elytra subreniform, bilobed medially, with additional papillate lobes on posterior borders (Figure 42B); more posterior elytra squarish, notched medially, with longer digitiform papillate lobes on level of scars of attachment to elytrophores, and 2–3 additional papillate lobes on posterior borders; lateral borders with fringes of long papilae interspersed with short papillae; surfaces with rounded and elongate, flat-topped adhesive papillae (Figure 42C; Hansen, 1882, pl. 1: fig. 11; Augener, 1934, fig. 21; Nonato and Luna, 1970, pl. 5: fig. 62).

Prostomium and tentaculophores fused basally, partially withdrawn in segment II; prostomium oval, with 2 pairs of rather large eyes, ventral pair about twice as large as dorsal pair;

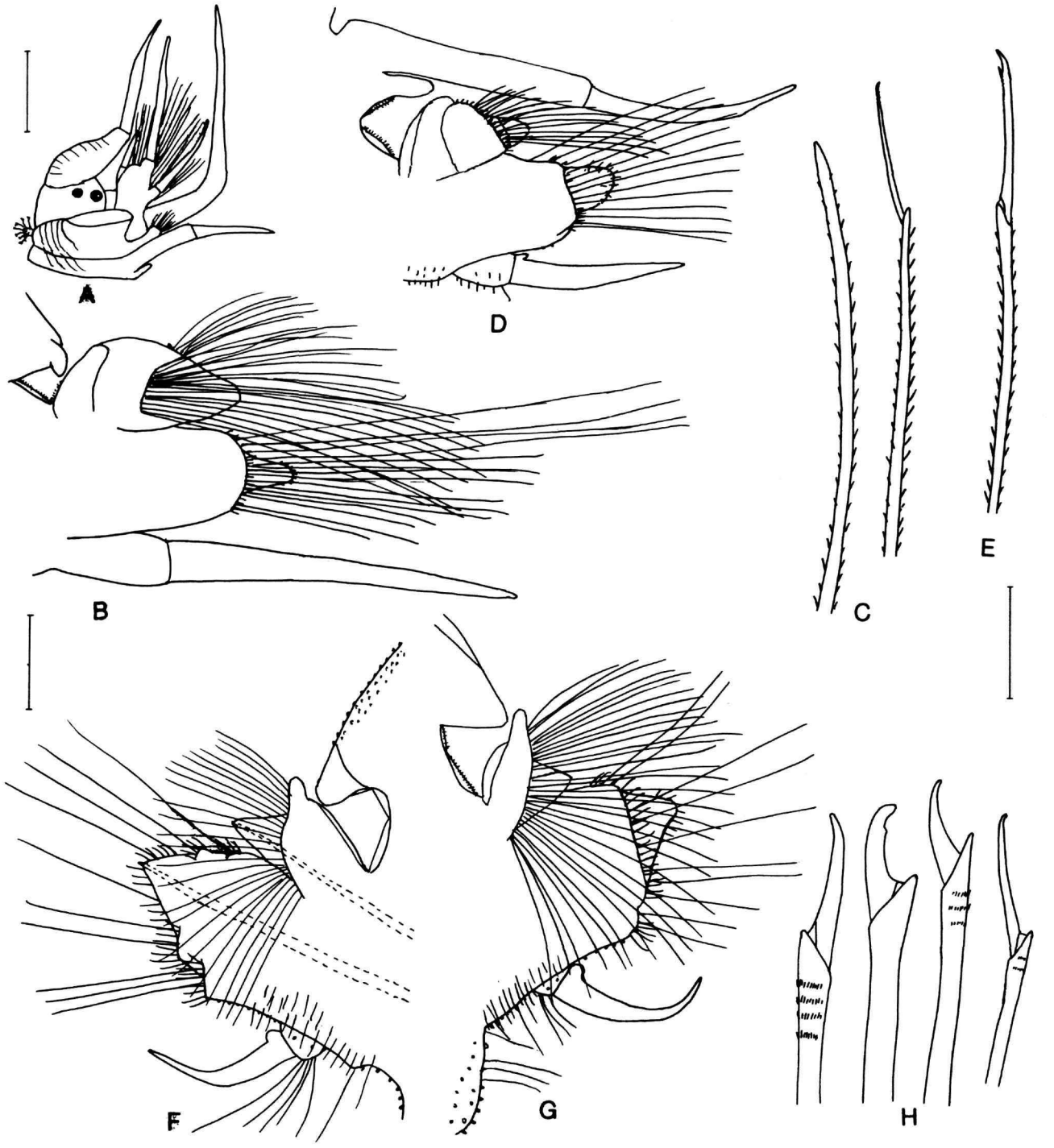

FIGURE 41.—*Pelogenia kinbergi* (specimens from off Brazil, USNM 60189): A, lateral view of anterior end, including segments I–III, parapodia incompletely shown; B, right elytrigerous parapodium from segment II, posterior view; C, upper (blade missing) and lower neurosetae from same; D, right cirrigerous parapodium from segment III, posterior view; E, lower neuroseta from same; F, right parapodium from segment 20, with dorsal tubercle, anterior view, acicula dotted; G, right elytrigerous parapodium from segment 21, posterior view; H, upper, 2 middle, and lower neurosetae from same. (Scales: A = 0.5 mm; B,D,F,G = 0.2 mm; C,E,H = 0.1 mm.)

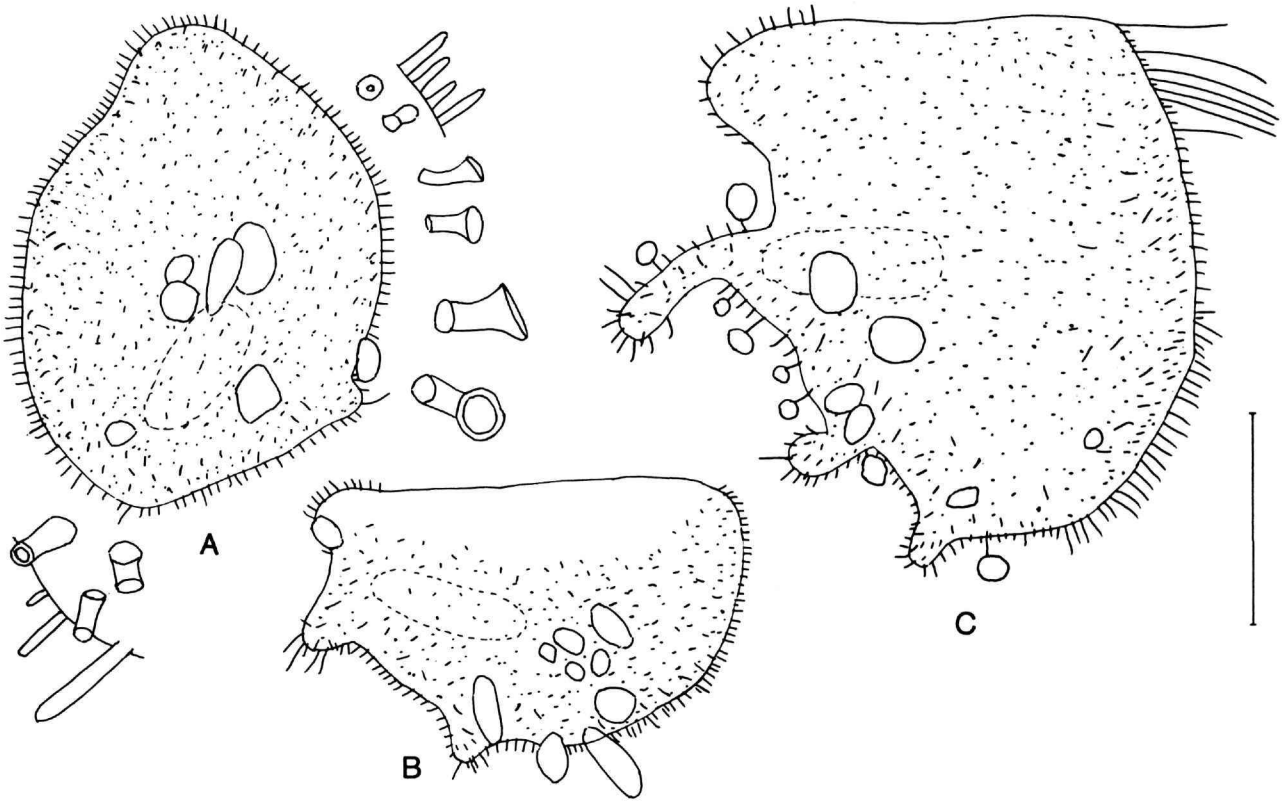

FIGURE 42.—*Pelogenia kinbergi* (specimen from off Brazil, USNM 60189): A, right 1st elytron from segment II, with detail of papillae; B, right 2nd elytron from segment IV; C, right posterior elytron. (Scale: 0.5 mm.)

median antenna with ceratophore large, bulbous basally, style about as long as ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, dorsal tentacular cirrus, about as long as median antenna, and shorter ventral tentacular cirrus on outer side, and 2 groups of notosetae and inner tentacular sheath on inner side; palps emerging lateral and ventral to tentaculophores (Figure 41A; Hansen, 1882, pl. 1: fig. 10; Amaral and Nonato, 1984, figs. 31, 32). Segment II notched middorsally, with small lobe with flat-topped adhesive papillae and sand grains; large elytrophores with small lateral branchiae; biramous parapodia and long ventral buccal cirri (Figure 41A,B; Amaral and Nonato, 1984, figs. 31, 32); compound neurosetae slender, stems with long spinous regions; blades long (mostly broken off), tapering to slender, slightly hooked tips (Figure 41C). Segment III with long dorsal cirri on dorsal tubercles, with branchiae on lower sides; long cirrophores extending to tips of neuropodia, styles as long as cirrophores, extending beyond tips of neurosetae (Figure 41A,D; Hansen, 1882, pl. 1: fig. 10; Amaral and Nonato, 1984, fig. 31); neurosetae similar to those of segment II, long blades mostly broken off, with or without delicate secondary tooth (Figure 41E).

Biramous parapodia, with notopodia subconical, large subdistal flanges with dorsal ridges enclosing numerous notosetae; dorsal ctenidia in form of low ridges between notopodia and dorsal tubercles or between elytrophores and branchiae; neuropodia large, subconical, papillate distally, with 3 papillated bracts; ventral cirri with long papillae on cirrophores, styles with bulbous knobs on upper basal sides, tapering and extending beyond lower sides of neuropodia (Figure 41F,G; Nonato and Luna, 1970, pl. 5: fig. 61). Notosetae numerous, slender, spinous capillaries (Hansen, 1882, pl. 1: fig. 12), forming spreading bundles, extending laterally, anteriorly, and posteroventrally to bases of ventral cirri. Neurosetae stout, compound falcigers, upper ones (2–3) within dorso-anterior bracts, stems with 3–4 spinous rows, blades with slightly hooked, entire tips; middle ones (8) within postacicular bracts, stems with 0–3 spinous rows, blades with tips rather strongly hooked, entire or slight indication of secondary tooth; lower neurosetae (4) within ventro-anterior bracts, more slender, stems with 1–2 spinous rows, blades rather long, with slightly hooked, entire tips or with secondary tooth (Figure 41H; Hansen, 1882, pl. 1: fig. 13a,b; Nonato and Luna, 1970, pl. 5: figs. 63, 64).

DISTRIBUTION.—North Atlantic Ocean: Straits of Florida and Bermuda; South Atlantic Ocean: Brazil; in 1 to 37 meters.

Pelogenia fimbriata (Hartman, 1939), new combination

FIGURES 43, 44

Psammolyce fimbriata Hartman, 1939:74, pl. 20: figs. 244, 245.
Psammolyce myops Hartman, 1939:76, pl. 21: figs. 255–264.
Eupholoe philippinensis.—Berkeley and Berkeley, 1939:332, fig. 8.—Not McIntosh, 1885.
Psammolyce spinosa.—Berkeley and Berkeley, 1941:25.—Fauchald, 1977:9.—Not Hartman, 1939.
Psammolyce arenosa.—Hartman, 1944:14 [part].—Not *Sigalion arenosum* Delle Chiaje, 1830.

MATERIAL EXAMINED.—NORTH PACIFIC OCEAN: *Mexico:* Nayarit, Isabel Island, 21°54′N, 105°53′W, 18–33 m, corallines, R/V *Velero* III sta 745-37, 2 Apr 1937, holotype of *Psammolyce fimbriata* (LACM-AHF 72). San Lorenzo Channel, off Espiritu Santo Island, 24°22′N, 110°19′W, 5–9 m, sand, algae, corallines, R/V *Velero* III sta 639-37, 7 Mar 1937, holotype of *P. myops* (LACM-AHF 73). Espiritu Santo Island, 18–27 m, Yacht *Stranger*, 30 Mar 1934, 1 specimen (USNM 35021, as *E. philippensis* by E. and C. Berkeley, 1939).

United States: CALIFORNIA: Santa Cruz Island, 37 m, W.G. Hewatt, collector, 1939, 2 specimens (USNM 35022, as *P. spinosa* by E. and C. Berkeley, 1941). 32°25′N, 119°03′W, 48 m, R/V *Albatross* sta 2913, 16 Jan 1889, 1 specimen (USNM 60181).

Panama: Secas Islands, 07°58′N, 82°00′W, 46 m, mud, dead shells, R/V *Velero* sta 250-34, 22 Feb 1934, 2 paratypes of *P. fimbriata* (LACM-AHF 1576).

CARIBBEAN SEA: *Panama:* Caledonia Bay, 15–25 m, *Allan Hancock* Atlantic Expedition sta A4-39, 2 specimens (LACM-AHF; USNM 146135, as *P. arenosa* by Hartman, 1944, mixed with *Neopsammolyce floccifera*). Pico Feo, San Blas, M.L. Jones et al., collectors, 1972, *Thalassia* substrate, sta 93-1, 19 Apr, 1 specimen (USNM 60184); Miria Island, San Blas, M.L. Jones et al., collectors, 1972, infauna of *Thalassia*, sta 94-2, 20 Apr, 1 specimen (USNM 60182); Reef flat, 1/4 mi [0.4 km] S of Galeta Reef, 24 Jul 1972, A.A. Reimer, collector, 1 specimen (USNM 61628, as *P. spinosa* by Fauchald, 1977).

GULF OF MEXICO: *United States:* FLORIDA: Off Panama City, 29°45′N, 85°15′W, 67 m, R/V *Columbus Iselin* sta 2533, Jan 1975, 1 specimen (USNM 56146). SOFLA sta 52, 25°17′N, 81°39′W, 10 Dec 1982, 1 specimen (USNM 129806). Key West, R/V *Albatross* sta 1884, 1 specimen (USNM 1914); H. Hemphill, collector, 1885, 3 specimens (USNM 146132); south of Airport, 24°33′N, 81°45′W, sand, *Thallasia*, 31 May 1965, M.L. Jones, collector, 1 specimen (USNM 146134). Dry Tortugas, C.R. Shoemaker, collector, 1 specimen (USNM 146136). Hawk Channel, 4 mi [6.4 km] W of Elbow Reef beacon, 5 m, R/V *Fish Hawk* sta 7467, 19 Feb 1903, 1 specimen (USNM 146133).

NORTH ATLANTIC OCEAN: *United States:* FLORIDA: 29°31′N, 80°40′W, R/V *Pierce* sta 7C, 4 Sep 1977, 16 m, 1 specimen (USNM 59672). Hutchinson Island, St. Lucie Co., 27°20′N, 80°13′W, 10–12 m, 14 Nov 1971 and 7 Sep 1972, very coarse carbonate sand, from Florida Marine Research Institute, 2 specimens (USNM 54187, 54188). Off Palm Beach, 37 and 55–73 m, sand and rocky reef, Mar 1950 and Jan 1951, R/V *Triton*, Thompson and McGinty, collectors, 2 specimens (USNM 146130).

GEORGIA: Sapelo Island, M.B. Gray, collector, 14 mi [22.4 km] E of Sea buoy, 13 m, 28 Jan 1961, 1 specimen (USNM 32355); 22 mi [35.2 km] SE of Doboy Sound sea buoy, 31°13′N, 80°50′W, 24 m, hard sand, 16 Feb 1961, 1 specimen (ZMUC); off Sapelo Whistle, 20 m, 7 Feb 1967, 1 specimen (USNM 32356); 5.5 mi [8.8 km] E of Doboy Sound sea buoy, 13 m, 7 Feb 1963, 1 specimen (ZMUC). Sapelo Island, about 35 mi [56 km] off shore, 18 m, 12 Mar 1964, D. Frankenberg, collector, 1 specimen (USNM 146131).

SOUTH CAROLINA: 32°54′N, 79°12′W, R/V *Pierce* sta 2B, 19 Aug 1977, 11 m, 1 specimen (USNM 59671).

TYPE MATERIAL.—Holotype of *Psammolyce fimbriata* (LACM-AHF 72) incomplete posteriorly, 40 mm long and 6 mm wide, with setae, 88 segments. Holotype of *P. myops* (LACM-AHF 73) in 2 pieces, somewhat macerated, about 45 mm long and 5 mm wide, 100+ segments.

DESCRIPTION.—Exposed dorsum and elytra heavily covered with sand grains; ventrum with short papillae, lower lip of ventral mouth with long filiform papillae (Figure 44A). First pair of elytra elongate-oval, with papillate processes on lateral sides, borders with short clavate papillae, surfaces with globular and long adhesive papillae (Figure 44B); few following elytra subreniform, bilobed medially and with 1–2 posterior papillate processes, borders with long and short papillae (Figure 44C); more posterior elytra subrectangular, deeply notched medially, anterior lobes shorter, rounded, posterior lobes elongate, club-shaped, with short clavate papillae; lateral borders with long filiform and short clavate papillae; posterior borders with 2–6 club-shaped processes, projecting dorsally above sand grains; surfaces with globular and flat-topped adhesive papillae (Figures 43I, 44D,E; Hartman, 1939, pl. 20: fig. 252; pl. 21: fig. 255).

Prostomium and tentaculophores fused basally and withdrawn in segment II; prostomium oval, with 2 pairs of eyes, smaller dorsal and much larger ventral pairs; median antenna with large bulbous ceratophore, style about length of ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 bundles of spinous capillary notosetae and inner tentacular sheath on inner side; palps long, tapering, emerging lateral and ventral to tentaculophores, with short inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae short, subulate, attached to dorsal inner sides of tentaculophores (Figure 44A; Hartman, 1939, pl. 20: figs. 244, 245; pl. 21: figs. 260, 261). Segment II notched middorsally, with few papillae and adherent sand grains, medial to first pair of large elytrophores, with lateral branchiae; biramous parapodia and long ventral buccal cirri; lower lip with long papillae (Figures 43A, 44A; Hartman, 1939, pl. 20: fig. 245); neurosetae slender, stems with long spinous regions, blades long, with

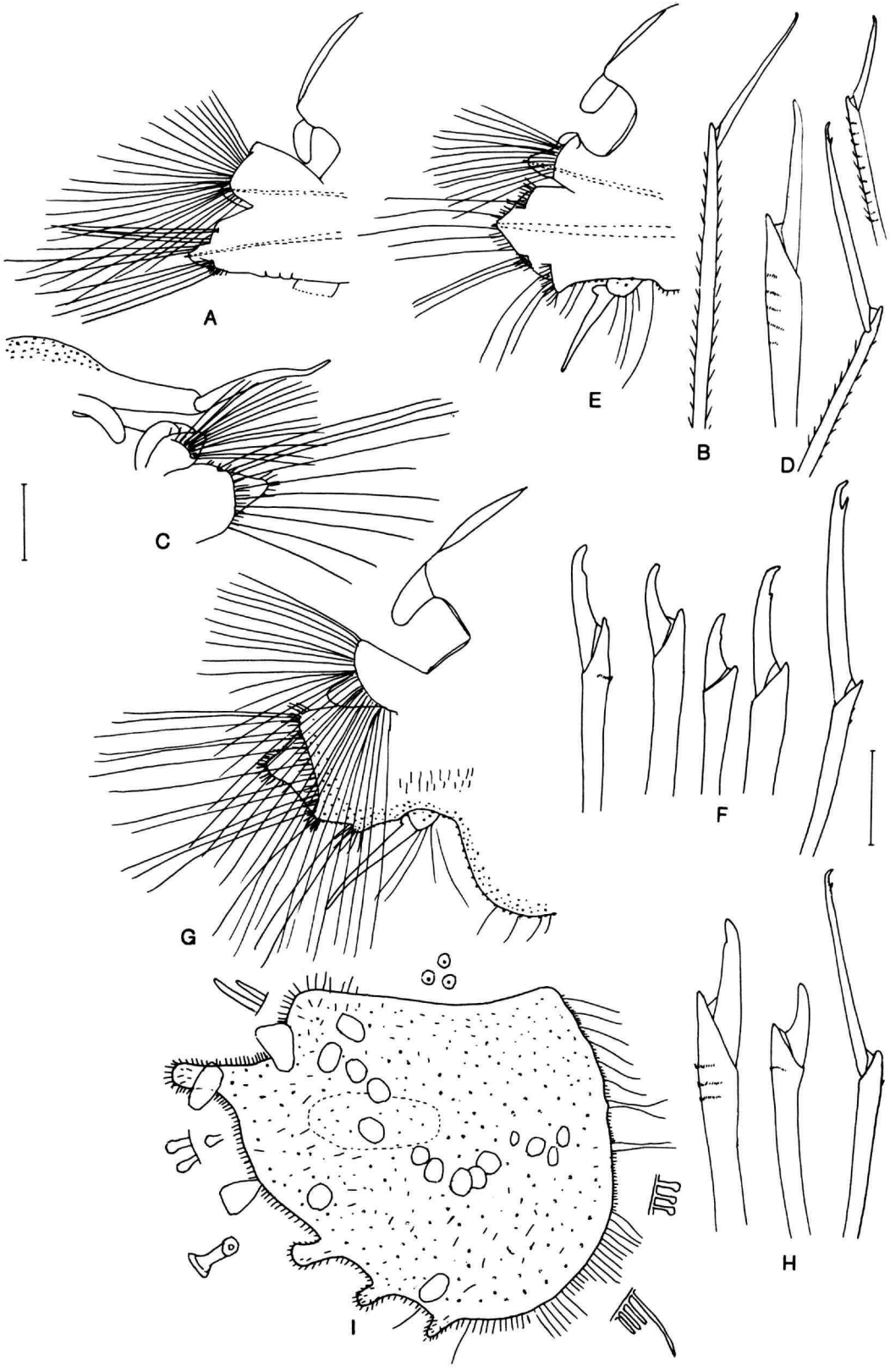
A
E
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FIGURE 43 (left).—*Pelogenia fimbriata* (holotype of *Psammolyce fimbriata*): A, right elytrigerous parapodium from segment II, anterior view, acicula dotted, ventral buccal cirrus missing; B, neuroseta from same; C, right cirrigerous parapodium from segment III, posterior view, ventral cirrus missing; D, two upper and one lower neurosetae from same; E, right elytrigerous parapodium from anterior region, anterior view, acicula dotted; F, upper, 3 middle, and lower neurosetae from same; G, left elytrigerous parapodium from middle region, posteior view; H, upper, middle, and lower neurosetae from same; I, right elytron from anterior region, with detail of papillae. (Scales: A,C,E,G,I = 0.5 mm; B,D,F,H = 0.1 mm.)

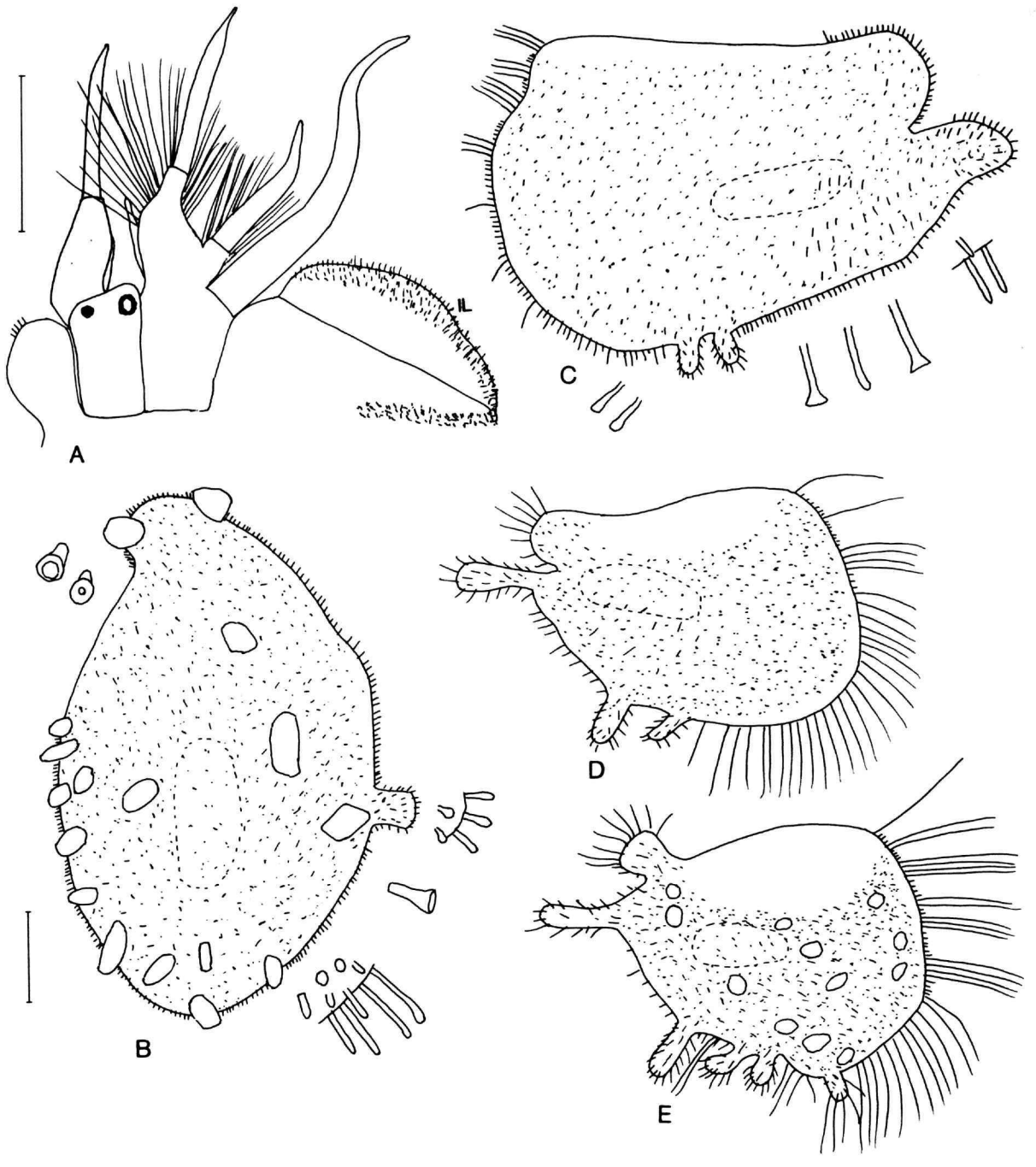


FIGURE 44.—*Pelogenia fimbriata* (specimen from North Pacific Ocean, USNM 35021): A, lateral view of anterior end, prostomium and tentaculophore withdrawn in segment II, right parapodium of segment II cut off; B, right 1st elytron from segment II, with detail of papillae; C, left anterior elytron, with detail of papillae; D, right middle elytron; E, right posterior elytron. (Scales: A = 1.0 mm; B-E = 0.5 mm.)

slightly hooked tips, with or without delicate secondary tooth (Figure 43B; Hartman, 1939, pl. 20: fig. 246). Segment III with long dorsal cirri attached to dorsal tubercles, with branchiae on lower sides; cirrophores extending to tips of notopodia, styles about length of cirrophores, extending beyond tips of notosetae (Figure 43C); lower neurosetae similar to those on segment II but with fewer spinous rows; upper neurosetae stouter, stems with fewer spinous rows (4–5), blades with tips entire or bifid (Figure 43D; Hartman, 1939, pl. 20: figs. 249, 250; pl. 21: figs. 257, 258).

Biramous parapodia with notopodia smaller than neuropodia; notopodia subconical, with large subdistal, semicircular bracts enclosing numerous notosetae; ctenidia in form of low ridges in areas between notopodia and elytrophores or between dorsal tubercles and branchiae; larger neuropodia with subconical acicular lobes, papillate distally, with usual 3 subdistal papillate bracts; ventral cirri with cirrophores with long papillae projecting ventrally, styles with basal knobs on upper basal sides, tapering and extending beyond lower sides of neuropodia; long papillae on anterior and posterior sides of neuropodia (Figure 43E,G; Hartman, 1939, pl. 20: fig. 251). Notosetae numerous, slender, spinous, with capillary tips, extending dorsally, laterally, and posteroventrally beyond ventral cirri (Figure 43E,G; Hartman, 1939, pl. 20: figs. 248, 251). Compound neurosetae stout, upper ones (4) within dorso-anterior bracts, stems with 1–5 spinous rows, blades with slightly hooked, entire tips or slight indication of secondary tooth; middle neurosetae (11) within semicircular postacicular bracts, stems with 0–3 spinous rows; blades short, with entire or bifid tips; lower neurosetae (8) within ventro-anterior bracts, more slender, stems with 1–2 faint spinous rows, blades long, with entire or bifid hooked tips (Figure 43F,H; Hartman, 1939, pl. 20: figs. 247, 253, 254; pl. 21: figs. 262–264).

DISTRIBUTION.—North Pacific Ocean: Southern California, Panama; Gulf of California: Mexico; Caribbean Sea: Panama; Gulf of Mexico: Florida; North Atlantic Ocean: Florida, Georgia, South Carolina; intertidal to 73 meters.

Pelogenia anoculata (Hartman, 1939), new combination

FIGURES 45, 46

Psammolyce antipoda anoculata Hartman, 1939:77, pl. 22: figs. 268–272.
Psammolyce spinosa.—Fauchald, 1977:9.—Not Hartman, 1939.

MATERIAL EXAMINED.—EASTERN PACIFIC OCEAN: *Costa Rica:* Playa Blanca, shore, shale beach between beach and rocky reef, sta 465-35, 8 Feb 1935, holotype (LACM-AHF 71).

CARIBBEAN SEA: *Panama:* Galeta Reef, *Thalassia* zone, STRI coll, 9 Jul 1970, 2 specimens (USNM 54379, as *P. spinosa* by Fauchald, 1977). Devil's Beach, Fort Sherman, poison sta, M.L. Jones et al., coll., sta 172-2, 16 Nov 1972, 4 specimens (USNM 60178).

Venezuela: Cubagua Island, sta 35b, 17 Nov 1967, M.E. Rice, collector, 1 specimen (USNM 60177).

NORTH ATLANTIC OCEAN: *Bahamas:* Andros Island, Feb 1966, M.L. Jones, collector, 1 small specimen (USNM 60176).

Turks and Caicos: Inside fringe reef, rubble bottom, 9 Apr 1989, R. Heard, collector, 2 small specimens (USNM 146129).

GULF OF MEXICO: *United States:* FLORIDA: Dry Tortugas, off Loggerhead Key, from matrix of large brain coral, 3 m, 19 Aug 1966, R.F. Cressey, collector, 1 specimen (USNM 60179).

TYPE MATERIAL.—Holotype nearly complete, about 200 segments, 90 mm long and 9 mm wide, with setae. Prostomium and tentacular segment withdrawn in anterior segments, 2 pairs of eyes overlooked by Hartman, and not absent as indicated by the name *anoculata*.

DESCRIPTION.—Figured specimen from Panama (USNM 60178) 67 mm long and 6 mm wide, with setae, 100 segments. Dorsum and elytra covered with foreign material, sand grains, and broken shells; papillae on dorsum mostly single, few in groups of 3–4, with flattened tops (Figure 46A); ventrum with filiform papillae, longest on midventral grooves, lower lips (Figure 45C), and bases of neuropodia. First elytra large, oval, with slight anterior notch; very numerous clavate and flat-topped papillae on and near margins and scattered on surfaces; foreign material firmly attached and removed with difficulty (Figure 46C); few following elytra subreniform; borders papillate, except for anterior borders; surfaces with very numerous elongate papillae with flattened tops concentrated along medial sides (Figure 46D); more posterior elytra subquadrate, with single clavate processes on medial sides near places of attachment to elytrophores, borders and surfaces with numerous papillae with flattened tops and long cylindrical papillae, in addition to globular and clavate papillae (Figure 46E,F; Hartman, 1939, pl. 22: figs. 269, 270).

Prostomium and tentaculophores fused basally and withdrawn in segment II; prostomium elongate-oval, with 2 pairs of rather large eyes (overlooked by Hartman), ventral pair slightly larger than dorsal pair; ceratophore of median antenna large, bulbous, style about 2 times longer than ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, pair of longer dorsal and shorter ventral tentacular cirri on outer side, and 2 bundles of capillary notosetae and inner tentacular sheath on inner side; palps emerging lateral and ventral to tentaculophores, long, tapering, with short inner palpal sheaths, continuous with inner tentacular sheaths; lateral antennae short, subulate, attached on tentaculophores below setal bundles (Figure 45A,B; Hartman, 1939, pl. 22: fig. 268). Segment II with middorsal notch with few papillae between large elytrophores, without branchiae, with biramous parapodia and long ventral buccal cirri; lower lip with long papillae (Figure 45A,C); compound neurosetae slender, stems with long spinous regions, blades with curved, entire tips (Figure 45D; Hartman, 1939, pl. 22: fig. 271). Segment III with long dorsal cirri on dorsal tubercles (overlooked by Hartman); long cirrophores extending to near tips of notopodia, with small branchiae on bases; styles longer than cirrophores, extending beyond neurosetae (Figure 45E); neurosetae similar to those on segment II but stems stouter and blades mostly with bifid,

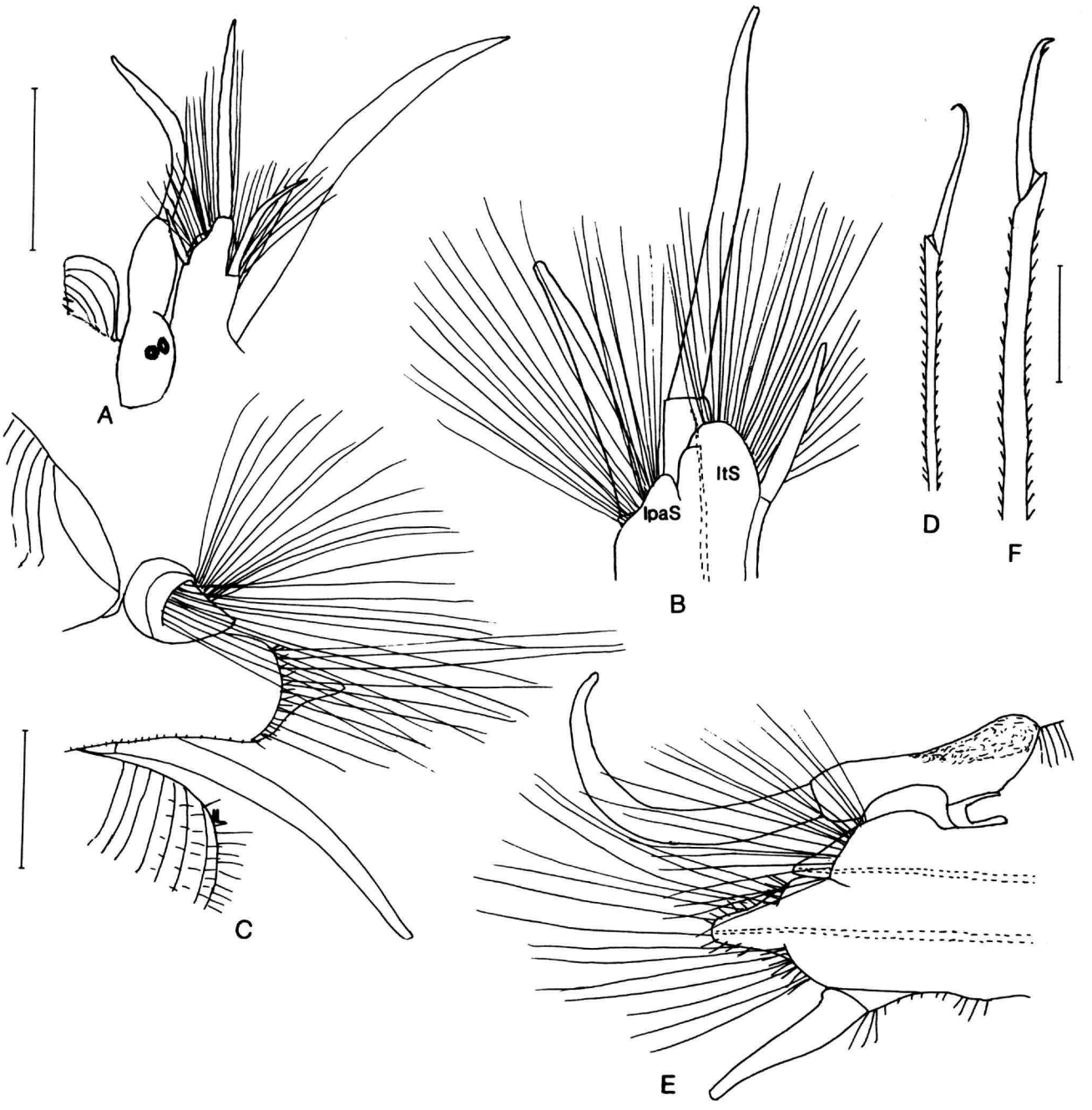


FIGURE 45.—*Pelogenia anoculata* (specimen from Panama, USNM 60178): A, lateral view of anterior end, prostomium, and tentaculophore withdrawn in segment II; B, right tentaculophore, inner view, aciculum dotted; C, right elytrigerous parapodium from segment II, posterior view; D, neuroseta from same; E, right cirrigerous parapodium from segment III, anterior view, acicula dotted; F, neuroseta from same. (Scales: A = 1.0 mm; B,C,E = 0.5 mm; D,F = 0.1 mm.)

hooked tips (Figure 45F).

Biramous parapodia with smaller notopodia and larger neuropodia; notopodia subconical, with large subterminal flanges enclosing numerous notosetae; dorsal ciliated ridges on notopodia continuous with ciliated ridges or ctenidia in curved areas between elytrophores or between dorsal tubercles and

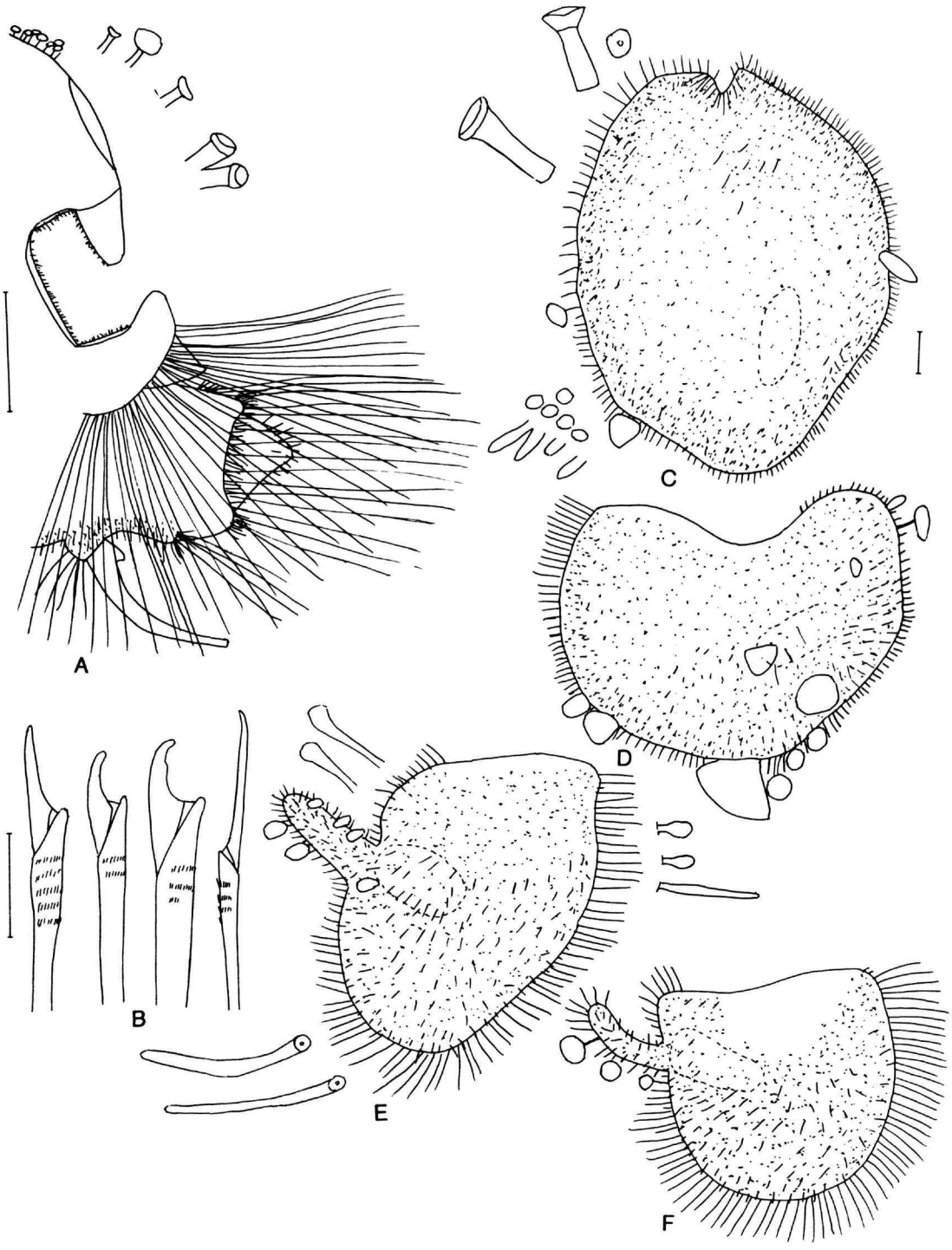


FIGURE 46.—*Pelogenia anoculata* (specimen from Panama, USNM 60178): A, right elytrigerous parapodium from segment 30, posterior view, with detail of papillae on dorsum; B, upper, 2 middle, and lower neurosetae from same; C, left lst elytron from segment II, with detail of papillae; D, left 2nd elytron from segment IV; E, right 9th elytron from segment 17, with detail of papillae; F, right elytron from segment 30. (Scales: A = 0.5 mm; B = 0.1 mm; C-F = 0.2 mm.)

branchiae; larger neuropodia subconical, papillate distally, with usual 3 papillate bracts enclosing neurosetae; ventral cirri with long papillae on cirrophores, styles short, subulate, with bulbous knobs on upper basal sides (Figure 46A). Notosetae numerous spinous capillaries, projecting anteriorly, laterally, and posteroventrally beyond ventral cirri. Neurosetae compound, upper group (3–4) within dorso-anterior bracts, stems with 5–6 spinous rows, blades entire or slight indication of secondary tooth; middle group (9–10) within postacicular bracts, stems with 2–3 spinous rows, blades short, strongly hooked, entire or bifid; lower group (6–7) within ventro-anterior bracts, stems more slender, with 3–4 spinous rows, blades rather long, mostly with entire, hooked tips (Figure 46B; Hartman, 1939, pl. 22: fig. 272).

DISTRIBUTION.—Eastern Pacific Ocean: Costa Rica; North Atlantic Ocean: Bahamas, Turks and Caicos; Caribbean Sea: Panama, Venezuela; Gulf of Mexico: Florida; intertidal to 3 meters.

Pelogenia hartmanae, new species

FIGURES 47, 48

Psammolyce rigida.—Treadwell, 1901:188.—Not Grube, 1868a.
Eupholoe acuminata Treadwell, 1934:3 [part, not holotype].
Psammolyce rigida (?).—Treadwell, 1939:194.—Not Grube, 1868a.
Psammolyce sp. Hartman, 1942a:109.
Psammolyce arenosa.—Hartman, 1956:274 [part; record of *P. rigida* by Treadwell, 1901].—Not Delle Chiaje, 1830.

MATERIAL EXAMINED.—CARIBBEAN SEA: *Puerto Rico:* Mayaguez Harbor, R/V *Fish Hawk* sta 6062, 20 Jan 1899, 46–55 m, paratype (USNM 15954, as *P. rigida* and *P. rigida* (?) by Treadwell, 1901, 1939; as *Psammolyce* sp., perhaps new species, by Hartman, 1942a). 18°30′N, 66°23′W, Johnson-Smithsonian Deep-Sea Exp. sta 26, 7 Feb 1933, 73 m, holotype (USNM 20065, as *E. acuminata* by Treadwell, 1934; as *Psammolyce* sp., perhaps new species by Hartman, 1942a).

TYPE MATERIAL.—Both types incomplete posteriorly, holotype with 48 segments, 29 mm long and 8 mm wide, with setae; paratype with 29 segments, 17 mm long and 9 mm wide.

DESCRIPTION.—Body flattened ventrally, arched dorsally. Dorsum and elytra sparsely covered with sand, shell fragments, and foraminifera. Dorsum with scattered, erect papillate processes (Figure 47A,B). Ventrum thickly papillate with short papillae, with longer papillae along lateral sides and lower lip. First elytra elongate-oval, with rounded processes on lateral sides; fringes of short papillae on margins, surfaces with numerous globular papillae and some longer papillae with flattened tops (Figure 48C); 2nd elytra subreniform, slightly notched medially, with balloon-like papillate processes on posterior sides; thickly papillate along lateral borders; adherent sandy particles more concentrated on central parts (Figure 48D); more posterior elytra subtriangular, deeply notched medially, with posterior process enlarged, balloon-like, and thickly papillate with long papillae; 2–3 smaller rounded processes on posterior borders; lateral borders with long papillae, surfaces with long papillae with flattened tops (Figure 48E,F).

Prostomium and tentaculophore partially withdrawn in segment II; prostomium oval, with 2 pairs of rather large eyes, ventral pair about 2 times larger than dorsal pair; median antenna with large ceratophore, inflated dorsally, with lateral ridges, style longer than ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 bundles of capillary notosetae and inner tentacular sheath on inner side; palps long, tapering, emerging lateral and ventral to tentaculophores, with inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae short, subulate, attached to inner dorsal sides of tentaculophores (Figure 47A). Segment II notched middorsally, with 2 papillate processes in notch, very large elytrophores with small lateral branchiae; biramous parapodia and ventral buccal cirri long, extending to tips of neurosetae (Figure 47A,C); compound neurosetae slender, stems with long spinous regions, blades tapering to slightly hooked, entire tips (Figure 47D). Segment III with long dorsal cirri on dorsal tubercles, with branchiae on lower sides; cirrophores long, extending to level of notopodial flanges, styles longer than cirrophores, extending to near tips of neurosetae (Figure 47E); lower neurosetae similar to those on segment II, except with shorter spinous regions; middle neurosetae stouter, stems with 12 or so spinous rows, blades with hooked, entire or bifid tips (Figure 47F).

Biramous parapodia with notopodia short, subconical, with large subdistal flanges encircling numerous notosetae; ciliated bands or ctenidia in curved areas between notopodia and branchiae and between dorsal tubercles or elytrophores; larger neuropodia subconical, papillate distally, with usual 3 papillated bracts; ventral sides of neuropodia with globular papillae and longer filamentous papillae on anterior and posterior sides; ventral cirri with cirrophores with long papillae, styles subulate, with basal knobs on upper sides; notosetae slender spinous capillaries, extending dorsally, laterally, and posteroventrally beyond ventral cirri (Figure 48A). Neurosetae stout compound falcigers, blades all with entire, slightly hooked tips; upper ones (2–4) within dorso-anterior bracts, stems with 4–5 spinous rows, blades rather long; middle ones (7–11) within postacicular bracts, stems with 1–2 spinous rows, blades short; lower ones (5–7) within ventro-anterior bracts, stems with single spinous rows, blades rather long (Figure 48B).

ETYMOLOGY.—The species is named for Olga Hartman, who earlier indicated that the specimen, selected as the holotype, perhaps represented an undescribed form.

DISTRIBUTION.—Caribbean Sea: Puerto Rico; in 46 to 73 meters.

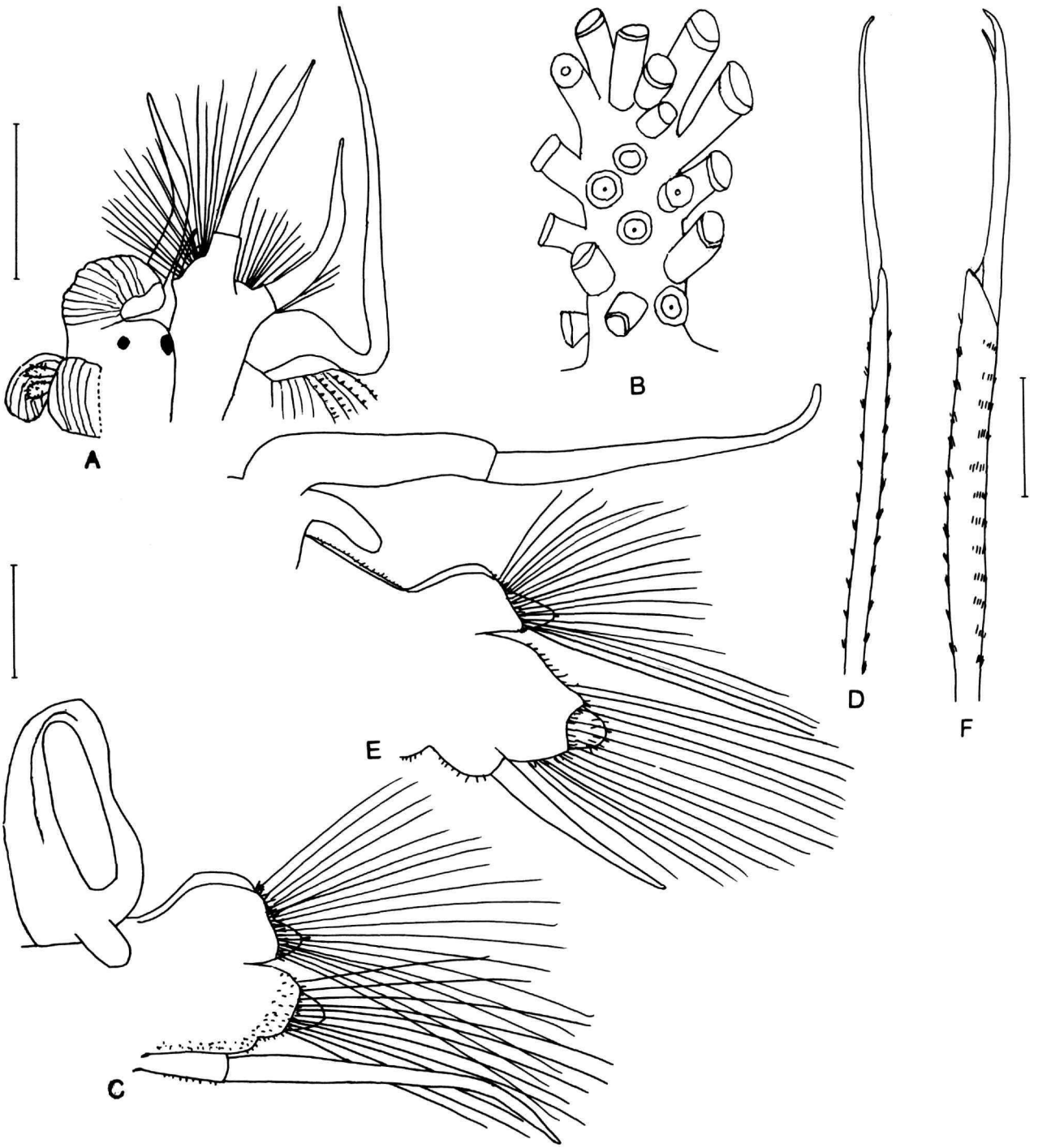


FIGURE 47.—*Pelogenia hartmanae*, new species (holotype): A, lateral view of anterior end, segment II cut back on dotted line; B, papillate process from dorsal surface; C, right elytrigerous parapodium from segment II, posterior view; D, neuroseta from same; E, right cirrigerous parapodium from segment III, posterior view; F, middle neuroseta from same. (Scales: A = 1.0 mm; B,D,F = 0.1 mm; C,E = 0.5 mm.)

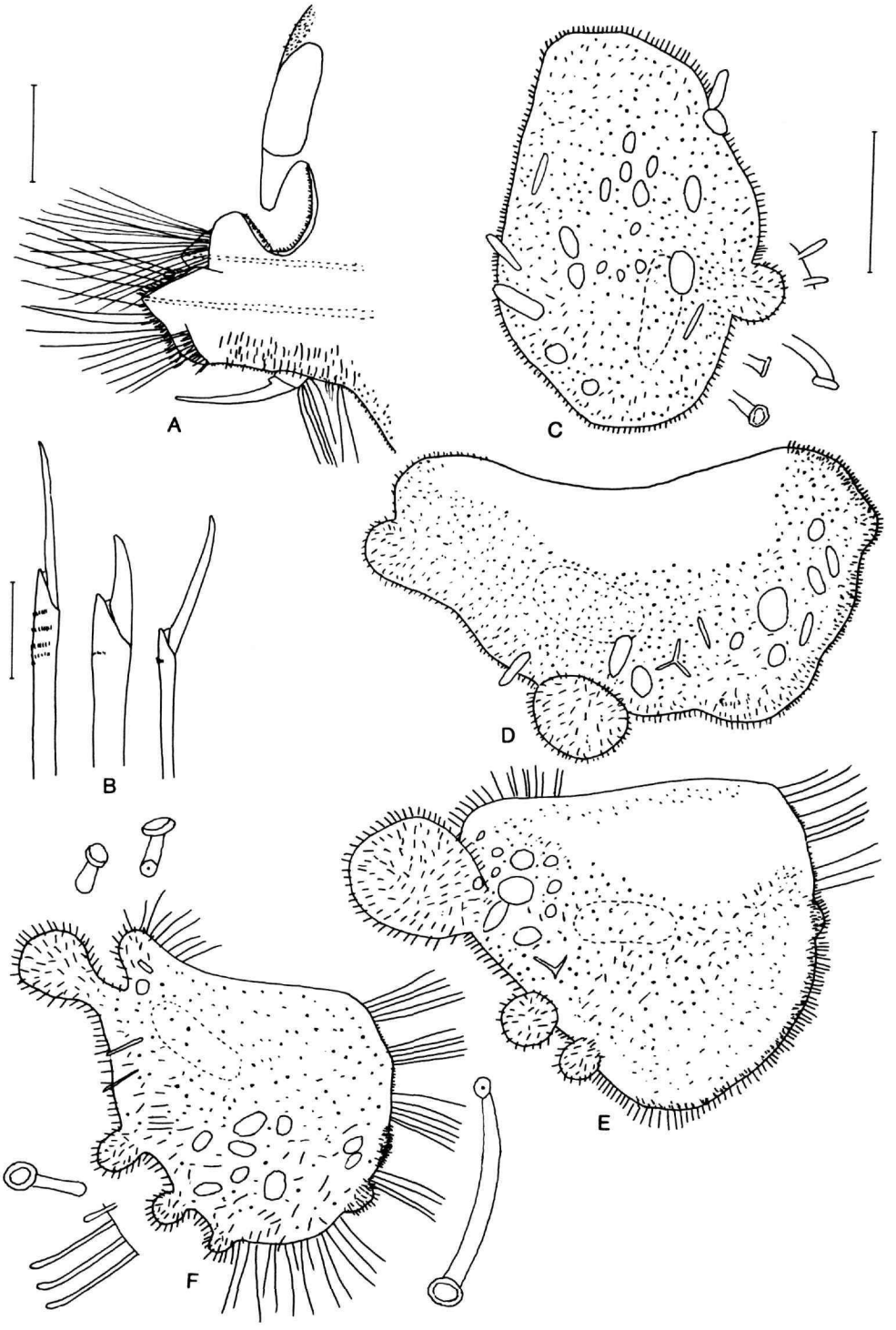


FIGURE 48.—*Pelogenia hartmanae,* new species (holotype): A, right parapodium from segment 14, with dorsal tubercle, anterior view, acicula dotted; B, upper, middle, and lower neurosetae from same; C, right 1st elytron from segment II, with detail of papillae; D, right 2nd elytron from segment IV; E, right 8th elytron from segment 15; F, right elytron from segment 45, with detail of papillae. (Scales: A = 0.5 mm; B = 0.1 mm; C-F = 1.0 mm.)

Claparedepelogenia, new name for *Lepidopleurus* Claparède, 1868

Lepidopleurus Claparède, 1868:415 [preoccupied by Risso, 1826, in Mollusca].

TYPE SPECIES.—*Lepidopleurus inclusus* Claparède, 1868, by monotypy. Gender: feminine.

DIAGNOSIS.—Pelogeniinae with long dorsal cirri on segment III, styles longer than cirrophores. Ceratophore of median antenna with enlarged bulbous base and middorsal ridge. Segment II with middorsal ridge and neuropodia with long filiform appendages. First pair of elytra greatly elongated, indented anteriorly. Compound neurosetae falcigers, blades with bifid tips. Without facial tubercle.

Claparedepelogenia inclusa (Claparède, 1868), new combination

FIGURES 49, 50

Lepidopleurus inclusus Claparède, 1868:415, pl. 6: fig. 4, 4A–E.

Psammolyce herminiae?—McIntosh, 1876:410, pl. 73: figs. 10–16.—Langerhans, 1880:277, pl. 4: fig. 7.—Not *Sigalion herminiae* Audouin and Milne-Edwards, 1832.

Psammolyce carpenteri McIntosh, 1876:410 [footnote under *P. herminiae*?].

Psammolyce umbonifera Grube, 1877:521 [new synonymy].

Psammolyce (Lepidopleurus inclusa.—Pruvot, 1895:646.

Psammolyce arenosa.—Bernardi, 1912:98, figs. 1, 2.—Not *Sigalion arenosum* Delle Chiaje, 1830.

Psammolyce inclusa.—Fauvel, 1923:107, fig. 40n; 1934:15.—Bellan, 1961:90; 1964:34.—Anton-Erxleben, 1977:40, fig. 6.

MATERIAL EXAMINED.—NORTH ATLANTIC OCEAN: E of Greenland, 75°52′N, 23°08′W, *Gazelle* Expedition, holotype of *Psammolyce umbonifera* (ZMHUB 653).

MEDITERRANEAN SEA: *Italy:* Naples, H. Augener, ident., 1 specimen (ZMH V-4046). *France:* Marseille, south road, 50 m, 1969–1970, M. Pichon, collector, 7 specimens (USNM 146140). S of Ile de Rion, 60–80 m, coherent detritus, 1969–1970, M. Pichon, collector, 1 specimen (USNM 146139). *Algeria:* North Coast of Africa, off Tangier Bay 13–93 m, mud and muddy sand, *Porcupine* Expedition, 1870, 4 syntypes of *Psammolyce carpenteri* (BMNH 1921.5.1.651).

TYPE MATERIAL.—No types are available for *Lepidopleurus inclusus*. The four syntypes of *Psammolyce carpenteri*, described by McIntosh (1876) under *Psammolyce herminiae* Aud. and Ed.?, with the footnote, "If this should prove to be a new form, *P. carpenteri* may appropriately be given to it." The syntypes are anterior fragments, the largest with 42 segments, 32 mm long and 9 mm wide. The holotype of *Psammolyce umbonifera* is an anterior fragment with 30 segments, 29 mm long and 10 mm wide; the first pair of elytra are deeply notched.

DESCRIPTION.—Body flattened ventrally, arched dorsally, attenuated posteriorly; middorsum after about segment 17 covered with shell fragments, foraminifera, and sand grains (beginning more anteriorly on smaller specimens); dorsum with low papillae and prominent groups of branched adhesive papillae; ventrum covered with globular papillae, with long papillae medial to ventral cirri. First elytra greatly enlarged, elongate-oval, deeply indented anteriorly and forming 2 convex processes, smaller medial processes meeting middorsally and forming "bivalved" rostrum and enclosing prostomium and tentaculophores; larger, rounded lateral processes extending laterally and ventrally, enclosing anterior parapodia and mouth region; elytra completely covered with foreign material; borders with short papillae and surfaces with globular papillae and cylindrical papillae with distal plates (Figure 50D; Claparède, 1868, pl. 6: fig. 4, 4D; Bernardi, 1912, fig. 1; Anton-Erxleben, 1977, fig. 6); 2nd elytra overlapping middorsally; 3rd to 6th pairs gradually leaving middorsum uncovered; elytra from 9th pair and those subsequent confined to lateral sides of body; 2nd to 6th elytra wide, subreniform, with lateral borders scalloped and fringed with long papilla on crests and small rounded papillae in valleys, with low rounded papillae on surfaces; foreign material confined mostly to small oval areas near places of attachment to elytrophores (Figure 50E; McIntosh, 1876, pl. 73: fig. 10); 7th and more posterior elytra suboval, with foreign material nearly covering exposed parts (Figure 50F; Claparède, 1868, pl. 6: fig. 4E); elytra in far posterior region (about segment 48) with additional medial processes with numerous adhesive papillae.

Prostomium and tentaculophores fused basally and withdrawn in segments II and III (only distal parts visible unless cut back); prostomium elongate-oval, with 2 pairs of eyes (overlooked by Claparède), smaller dorsal pair and much larger ventral pair; median antenna with ceratophore large, bulbous basally, with dorsal and lateral crests, style long, filiform; tentaculophores ventral and anterior to prostomium, each with single aciculum, pair of longer dorsal and shorter ventral tentacular cirri on outer side, and 2 bundles of long capillary notosetae and rounded inner tentacular sheath on inner side; palps stout, tapered, emerging ventral to tentaculophores, with inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae small, subulate, attached to dorsal sides of tentaculophores (Figure 49A,B: Bernard, 1912, fig. 2). Segment II with middorsal ridge projecting anteriorly over prostomium, between large elytrophores, with small branchiae; biramous parapodia, and long ventral buccal cirri; notopodia with conical acicular lobes and large subdistal flanges enclosing numerous notosetae; neuropodia subconical with elongate, clavate appendages (Figure 49A–C); neurosetae slender, compound, stems with long spinous regions, blades tapering to long capillary tips (Figure 49D; McIntosh, 1876, pl. 73: fig. 11). Segment III with long dorsal cirri on dorsal tubercles, with branchiae on lower sides; cirrophores long, styles more than twice as long as cirrophores, extending about to tips of neurosetae (Figure 49E); lower neurosetae similar to those of segment II; middle and upper neurosetae stouter, similar to

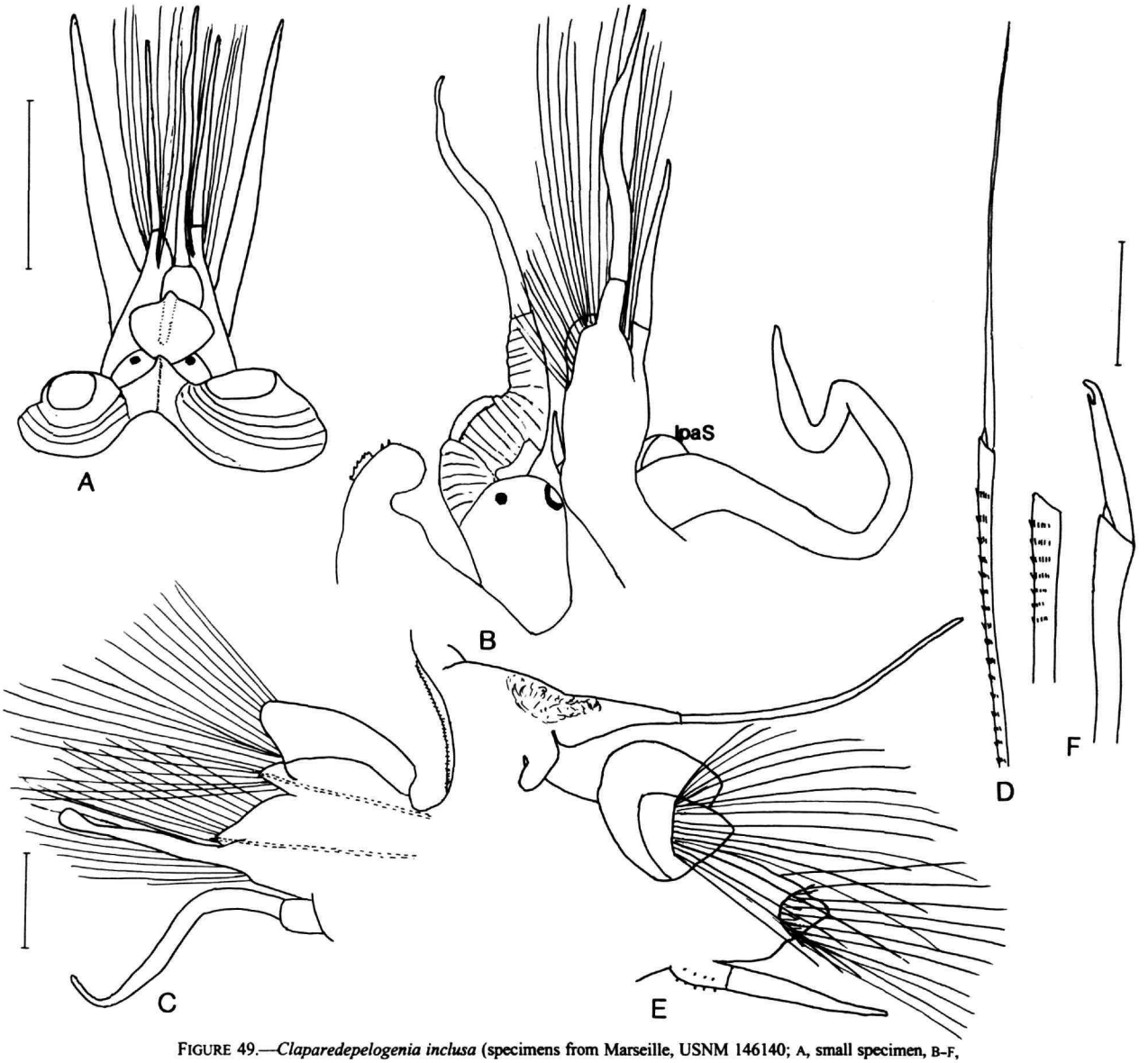


FIGURE 49.—*Claparedepelogenia inclusa* (specimens from Marseille, USNM 146140; A, small specimen, B–F, larger specimen): A, dorsal view of anterior end, ventral tentacular cirri not visible, parapodia of segment II not shown; B, lateral view of anterior end, right parapodia of segments II and III cut off; C, right elytrigerous parapodium of segment II, anterior view, acicula dotted; D, neuroseta from same; E, right cirrigerous parapodium of segment III, posterior view; F, upper (blade missing) and middle neurosetae from same. (Scales: A,B = 1.0 mm; C,E = 0.5 mm; D,F = 0.1 mm.)

more posterior neurosetae (Figure 49F; McIntosh, 1876, pl. 73: figs. 12–14).

Biramous parapodia with smaller notopodia and larger neuropodia; notopodia subconical, with large subdistal flanges encircling notosetae; ciliated ridges in curved areas between notopodia and branchiae or between elytrophores and dorsal tubercles; neuropodia with subconical distally papillate acicular lobe, with usual 3 subdistal papillate bracts; ventral cirri with cirrophores with tufts of long papillae, styles subulate, with bulbous knobs on upper basal sides; long papillae on anterior and posterior sides of neuropodia and medial to ventral cirri; notosetae numerous spinous capillaries, extending anteri-

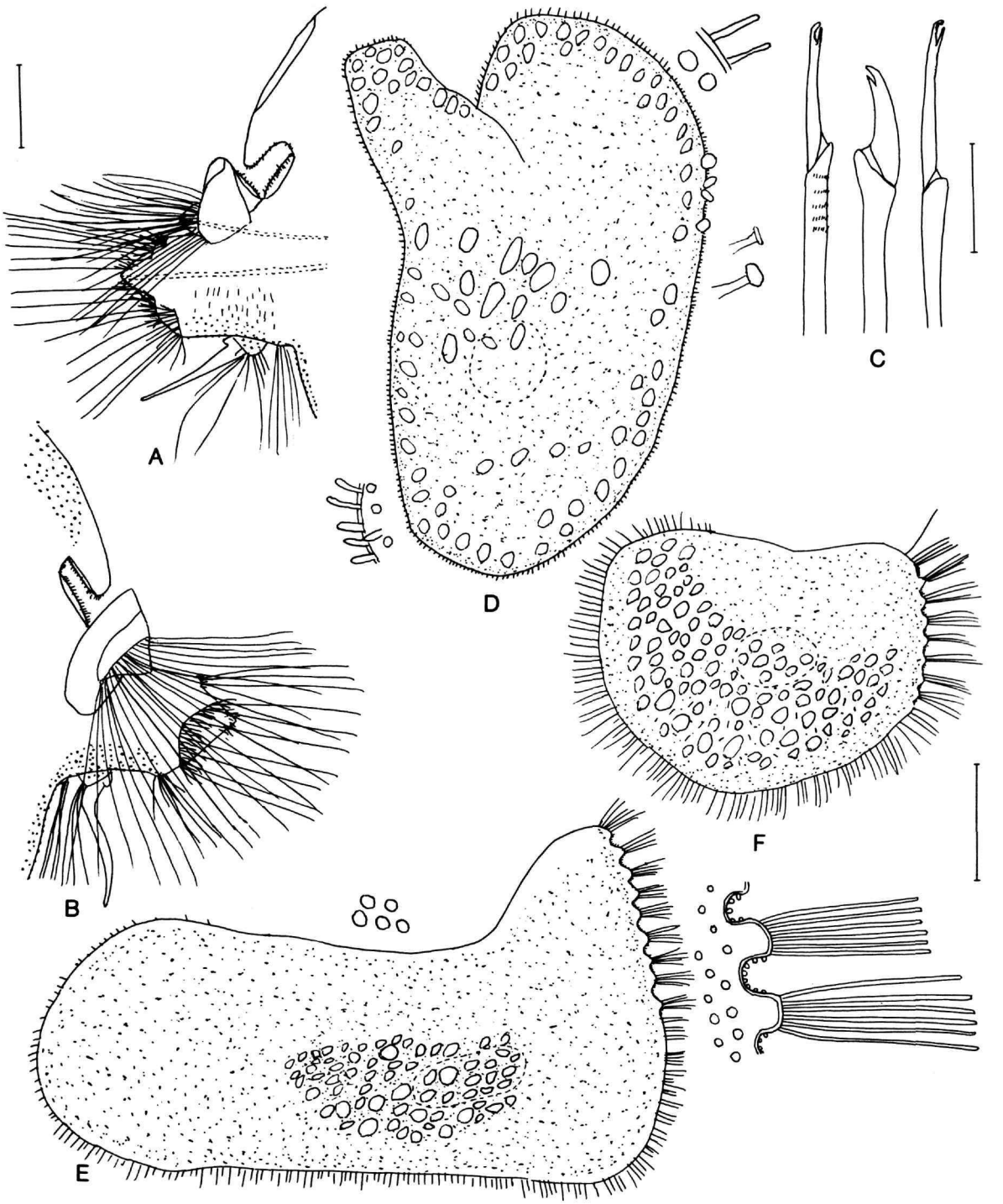


FIGURE 50.—*Claparedepelogenia inclusa* (larger specimen from Marseille, USNM 146140): A, right elytrigerous parapodium from segment 15, anterior view, acicula dotted; B, right parapodium with dorsal tubercle from segment 16, posterior view; C, upper, middle, and lower neurosetae from same; D, right 1st elytron from segment II, with detail of papillae; E, right 5th elytron from segment IX, with detail of papillae and lateral border; F, right 14th elytron from segment 28. (Scales: A,B = 0.5 mm; C = 0.1 mm; D–F = 1.0 mm.)

orly, laterally, and posteroventrally beyond ventral cirri and visible between parapodia (Figure 50A,B; Claparède, 1868, pl. 6: fig. 4C). Neurosetae dark amber-colored compound falcigers with bifid tips; upper ones (4) within dorso-anterior bracts, stems with about 5 spinous rows, blades with secondary tooth sometimes lacking; middle neurosetae (12) within C-shaped postacicular bracts, stems stouter, smooth, blades shorter; lower neurosetae (7) within ventro-anterior bracts, stems more slender, smooth, blades longer (Figure 50C; Claparède, 1868, pl. 6: fig. 4A,B; McIntosh, 1876, pl. 73: fig. 16).

DISTRIBUTION.—North Atlantic Ocean: Off Greenland, Madeira Islands; Mediterranean Sea: Italy, France, Algeria; in 13 to 93 meters.

Pottsipelogenia, new genus

TYPE SPECIES.—*Psammolyce gracilis* Potts, 1910. Gender: feminine.

DIAGNOSIS.—Pelogeniinae with dorsal cirri on segment III, with short cirrophores and very long styles. Neuropodia with segment II without long terminal appendages. Neurosetae compound falcigers, with blades all with bifid tips, stems mostly with spinous rows. Prostomium with small lateral ctenidia (except *P. malayana*). Upper lip with facial tubercle. Elytral and neuropodial filiform papillae not articulated.

ETYMOLOGY.—The genus is named for Frank A. Potts, plus *Pelogenia*.

Key to the Species of *Pottsipelogenia*

1. Middorsum of segment II with mound of adhesive papillae [Figure 56D,E]. Cirrophores of ventral cirri with short papillae [Figure 57E]. First pair of elytra elongate-oval, not bilobed [Figure 56A]. Branchiae beginning on segment II [Figures 56D, 57A] . . . . . ***P. treadwelli,*** new species

   Middorsum of segment II without mound of adhesive papillae. Cirrophores of ventral cirri with long papillae [Figures 52A, 53F, 55E, 59A] 2

2. First pair of elytra elongate-oval, not bilobed [Figure 52C] . . . ***P. gracilis*** (Potts)

   First pair of elytra bilobed anteriorly, with deep grooves [Figures 54A, 59C] . . . 3

3. Middle elytra without medial processes, without scalloped lateral borders [Figure 59E] . . . . . ***P. gallardoi,*** new species

   Middle elytra with medial processes, lateral borders scalloped, with long papillae alternating with minute papillae [Figures 53I, 54E] 4

4. Branchiae beginning on segment II [Figure 53C]. Prostomium with lateral ctenidia [Figure 53A,B]. Blades of lower neurosetae not extra long [Figure 53G] . . . . . ***P. fijiensis*** (McIntosh)

   Branchiae beginning on segment III [Figure 55C]. Prostomium without lateral ctenidia [Figure 54F,G]. Blades of lower neurosetae extra long [Figure 55F] . . . . . ***P. malayana*** (Horst)

Pottsipelogenia gracilis (Potts, 1910), new combination

FIGURES 51, 52

Psammolyce gracilis Potts, 1910:348, pl. 19: fig. 20; pl. 21: figs. 60, 61.

MATERIAL EXAMINED.—INDIAN OCEAN: Saya de Malha Bank, 86 m, shelly rubble and mud, sta C12, 6 Sep 1905, holotype (BMNH 1924.3.1.68).

TYPE MATERIAL.—Holotype anterior fragment, with 36 segments, 15 mm long and 5 mm wide, with setae.

DESCRIPTION.—Dorsum and exposed parts of elytra covered with sand grains, sponge spicules, and foraminifera; ventrum with globular papillae, long papillae along midventral groove and on lower lip medially on segments II–IV. First pair of elytra elongate-oval, completely covered with foreign material, with fringes of short papillae on margins, some short papillae on surfaces along with long papillae with flattened tops (Figure 52C); 2nd elytra oval, anterior part of lateral borders scalloped, with 3 groups of 3–6 long papillae interspersed with groups of globular papillae, remaining borders with short papillae, longer on medial sides, globular and long papillae on surfaces (Figure 52D); beginning with 3rd elytra, medial sides with projecting, digitiform processes covered with long adhesive papillae; borders with long cylindrical papillae, including scalloped areas on anterior lateral parts; surfaces with long cylindrical papillae concentrated in central parts and long papillae with flattened tops concentrated near medial borders (Figure 52E,F; Potts, 1910, pl. 19: fig. 20).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of large eyes, smaller dorsal pair visible dorsally; median antenna with large, bulbous ceratophore with lateral ridges and small oval ctenidia medial to eyes, style shorter than ceratophore; tentaculophores lateral and ventral to prostomium, each with

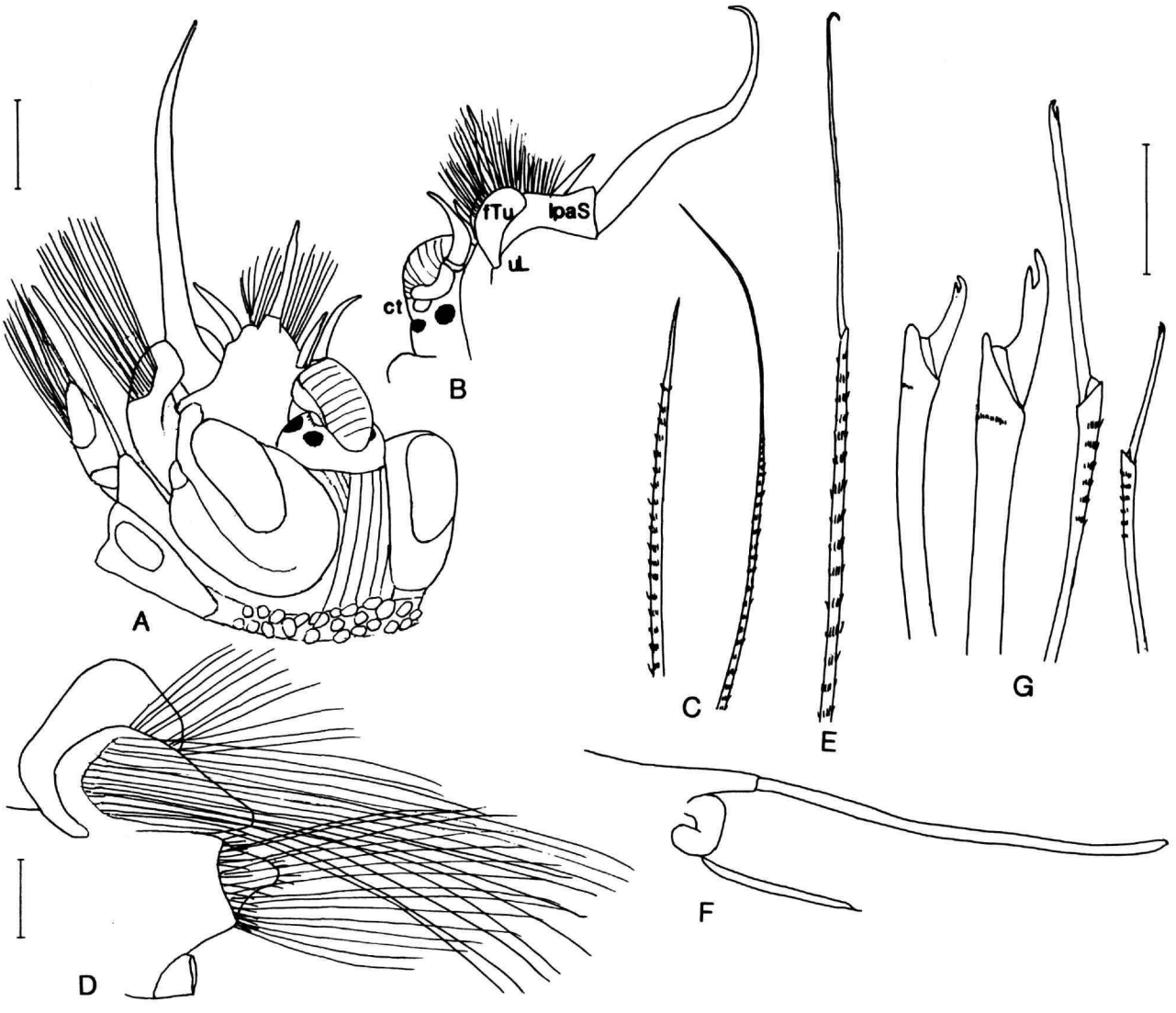


FIGURE 51.—*Pottsipelogenia gracilis* (holotype of *Psammolyce gracilis*): A, dorsolateral view of left side of anterior end, including parapodia of segments I–III and elytrophore of segment IV; B, inner view of prostomium, left tentaculophore of segment I, palp, and facial tubercle on upper lip, right tentaculophore and palp removed; C, upper and lower notosetae from same; D, right parapodium from segment II, posterior view, ventral buccal cirrus broken off; E, lower neuroseta from same; F, right dorsal tubercle, dorsal cirrus, and branchia from segment III, posterior view; G, 2 middle and 2 lower neurosetae from segment IV. (Scales: A,B = 0.5 mm; C,E,G = 0.1 mm; D,F = 0.2 mm.)

single aciculum, subequal dorsal and ventral tentacular cirri on outer side, and 2 bundles of notosetae and inner tentacular sheath on inner side; palps long, tapered, with inner palpal sheaths, continuous with inner tentacular sheaths; lateral antennae short, subulate, attached to anterodorsal sides of tentaculophores; bulbous facial tubercle on short stalk attached to upper lip of mouth, between inner tentacular sheaths (Figure 51A,B); notosetae slender, spinous, lower ones tapering to long capillary tips, middle and upper ones slightly stouter, tapering to slender (not capillary) tips (Figure 51C).

Segment II with large elytrophores with lateral branchiae, biramous parapodia and ventral buccal cirri (styles broken off); notopodia with conical acicular lobes, with large flaring subdistal flanges enclosing notosetae; neuropodia papillate

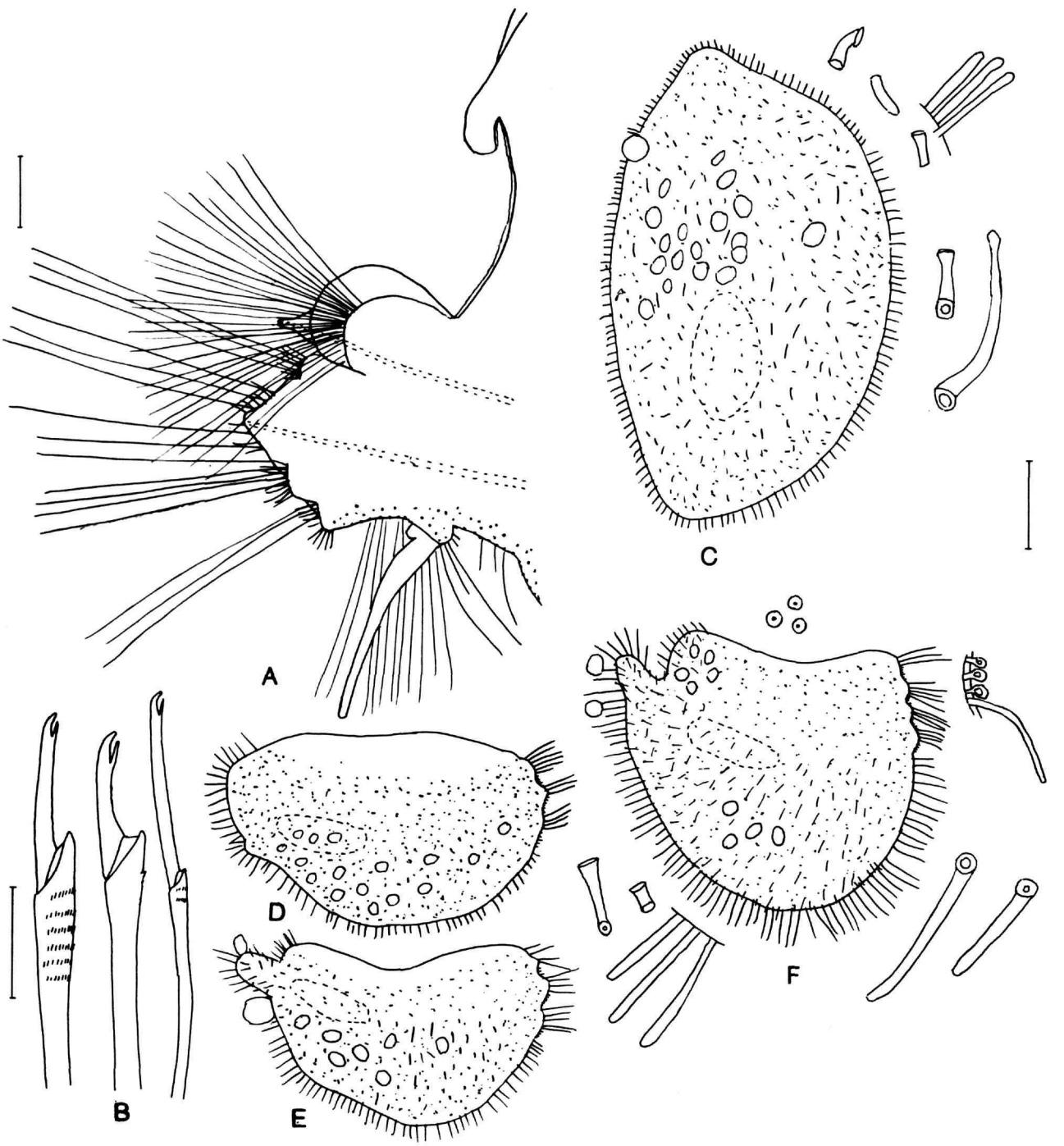


FIGURE 52.—*Pottsipelogenia gracilis* (holotype of *Psammolyce gracilis*): A, right elytrigerous parapodium from segment 17, anterior view, acicula dotted; B, upper, middle, and lower neurosetae from same; C, right 1st elytron from segment II, with detail of papillae; D, right 2nd elytron from segment IV; E, right 3rd elytron from segment V; F, right elytron from segment 17, with detail of papillae. (Scales: A = 0.2 mm; B = 0.1 mm; C-F = 0.5 mm.)

distally, with papillate bracts; upper notosetae shorter, with tapering tips, lower notosetae extra long, with long capillary tips, extending beyond neurosetae; compound neurosetae slender, stems with numerous spinous rows, blades long, with delicate curled tips (Figure 51D,E). Segment III with dorsal tubercles with long dorsal cirri (overlooked by Potts), cirrophores rather short, with branchiae on bases, styles very long, extending to near tips of setae (Figure 51A,F); neurosetae all with bifid, hooked tips; lower ones slender, stems with 7–8 spinous rows, blades long; middle and upper neurosetae stouter, stems with 1–2 spinous rows, blades moderately long (mostly broken) (Figure 51G).

Biramous parapodia with smaller notopodia subconical, with large subdistal flanges enclosing notosetae; indistinct ctenidia in form of low ridges between notopodia and branchiae or between elytrophores and dorsal tubercles; larger neuropodia subconical, papillate distally, with usual 3 papillated bracts enclosing neurosetae; ventral cirri with cirrophores with 3–4 long papillae, styles short, tapering, with bulbous knobs on upper basal sides; notosetae numerous spinous capillaries, extending anteriorly, laterally, and posteroventrally beyond ventral cirri (Figure 52A). Neurosetae compound falcigers, all with bifid, hooked tips; upper ones within dorso-anterior bracts, stems with 4–6 spinous rows; middle ones within postacicular bracts, stems with 0–1 spinous rows; lower ones within ventro-anterior bracts, stems more slender, with 2 spinous rows, blades longer (Figure 52B; Potts, 1910, pl. 21: figs. 60, 61).

DISTRIBUTION.—Indian Ocean: Saya de Malha Bank; in 86 meters.

Pottsipelogenia fijiensis (McIntosh, 1885), new combination

FIGURE 53

Psammolyce fijiensis McIntosh, 1885:148, pl. 21: fig. 6; pl. 22: fig. 4; pl. 24: fig. 6; pl. 13A: fig. 18.—Not Treadwell, 1906:1156 [= *Pottsipelogenia treadwelli,* n. sp.].—Not Treadwell, 1920:592 [= *Pelogenia* sp., poor condition].—Not Rullier, 1964:138 [= *Pholoides dorsipapillata* (Marenzeller)].—Not Gallardo, 1968:50 [= *Pottsipelogenia gallardoi,* n. sp.].

MATERIAL EXAMINED.—SOUTH PACIFIC OCEAN: *Fiji:* Off Levuka, dredged, R/V *Challenger* sta, Jul–Aug 1874, holotype of *Psammolyce fijiensis* (BMNH 1885.12.1.114).

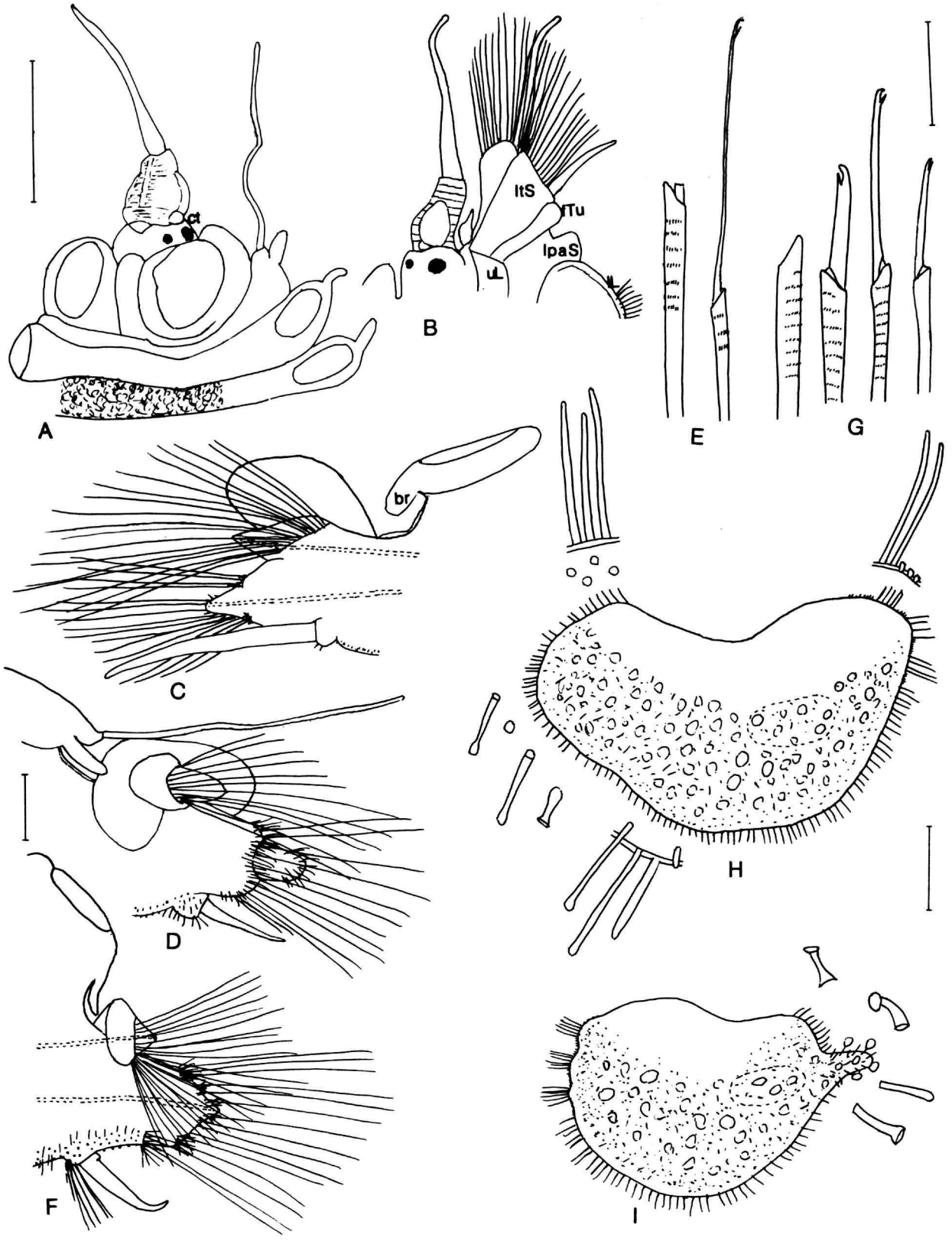
TYPE MATERIAL.—Holotype incomplete, in 3 pieces totaling 44 segments, 18 mm long and 5 mm wide, with setae; 2nd left parapodium and 2 elytra, including first right elytron, on 3 slides.

DESCRIPTION.—Dorsum and elytra covered with sand grains; dorsal surface with thickly distributed adhesive papillae, some branched on more posterior segments; ventrum with globular papillae, with filiform papillae on lower lip between parapodia of segments II–IV and on lateral sides of body. First pair of elytra elongate, subtriangular, prow-shaped, right elytron overlapping left one, with papillate margins, surfaces covered with sand grains (McIntosh, 1885, pl. 22: fig. 4); following elytra subreniform, exposed surfaces with globular and filiform papillae, some with flattened tops; margins with long papillae; with groups of long papillae alternating with globular papillae on antero-lateral parts (Figure 53H; McIntosh, 1885, pl. 24: fig. 6); more posterior elytra with additional projecting digitiform medial processes covered with adhesive papillae, surfaces with rusty brown foreign material and sand grains (Figure 53I: McIntosh, 1885, pl. 22: fig. 4).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, small dorsally and much larger ventrally; median antenna with large bulbous ceratophore, with lateral ridges, with small ctenidia basally; filiform style about twice length of ceratophore; tentaculophores fused basally and medially below ceratophore of median antenna, each with single aciculum, pair of longer dorsal and shorter ventral tentacular cirri on outer side, and 2 fan-shaped bundles of capillary, spinous notosetae and inner tentacular sheath on inner side; left palp missing, right palp short, regenerating, with inner palpal sheath continuous with inner tentacular sheaths; lateral antennae short, subulate, attached very close together on tentaculophores, close to prostomium; bulbous facial tubercle on rather long stalk attached to upper lip (Figure 53A,B; McIntosh, 1885, pl. 21: fig. 6). Segment II with middorsal nuchal fold overhanging prostomium between first pair of large elytrophores, with small lateral branchiae; biramous parapodia with notopodia with extra large, delicate, subdistal flanges enclosing long notosetae; neuropodia with short papillae; long ventral buccal cirri extending to tips of lower neurosetae; neurosetae slender, stems with long spinous regions, blades long, capillary, with entire, curled tips (Figure 53A–C). Segment III with dorsal tubercles and long dorsal cirri, cirrophores short, with branchiae on lower sides, styles slender, very long, extending to tips of setae; lower neurosetae slender, stems with few spinous rows, blades long, slender, with bifid, hooked tips; upper neurosetae stouter, stems with 7 spinous rows, blades broken off (Figure 53A,D,E).

Biramous parapodia with smaller notopodia subconical, with well-developed subdistal flanges enclosing numerous notosetae; larger neuropodia subconical, papillate distally, with usual 3 papillated bracts enclosing neurosetae, with long papillae on anterior and posterior sides; cirrophores of ventral cirri with long papillae, styles short, tapering, with bulbous knobs on upper basal sides (Figure 53F). Notosetae numerous spinous capillaries, extending anteriorly, laterally, and posteroventrally.

FIGURE 53 (right).—*Pottsipelogenia fijiensis* (holotype of *Psammolyce fijiensis*): A, dorsolateral view of anterior end, parapodia of segments I–V not shown; B, lateral view of prostomium, inner view of tentaculophore of segment I, upper lip with facial tubercle and lower lip with long papillae; C, right elytrigerous parapodium from segment II, anterior view, acicula dotted; D, right cirrigerous parapodium from segment III, posterior view; E, upper (blade broken) and lower neurosetae from same; F, left elytrigerous parapodium from segment 30, anterior view, acicula dotted; G, upper (blade broken), 2 middle, and lower neurosetae from same; H, right 4th elytron from segment VII, with detail of papillae; I, left elytron from middle fragment, with detail of papillae. (Scales: A,B = 1.0 mm; C,D,F = 0.3 mm; E,G = 0.1 mm; H,I = 0.5 mm.)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Neurosetae compound falcigers, blades moderately long, all with bifid, hooked tips; stems of upper and middle neurosetae with 7–8 faint spinous rows, stems of lower neurosetae more slender, smooth (Figure 53G; McIntosh, 1885, pl. 13A: fig. 18).

DISTRIBUTION.—South Pacific Ocean: Fiji.

Pottsipelogenia malayana (Horst, 1913), new combination

FIGURES 54, 55

Psammolyce malayana Horst, 1913:190; 1917:126, pl. 27: figs. 11, 13.—Takahashi, 1938:201, fig. 7a–d.

Psammolyce antipoda.—Augener, 1927a:124.—Not *Pelogenia antipoda* Schmarda, 1861.

MATERIAL EXAMINED.—INDO-PACIFIC OCEAN: *Indonesia:* Anchorage off Lirung, Salibabu Island, up to 36 m, R/V *Siboga* sta 133, syntype of *P. malayana* (ZMA 1207.4). NW of Waigen Island, 0°03.8′N, 24.3′E, 141 m, R/V *Siboga* sta 153, syntype of *P. malayana* (ZMA 1207.1). Moluccas, E of Ambon, 03°36′S, 128°24′E, 110–115 m, sand and rubble, Muriel King Memorial Exp. sta AHI/4, 31 May 1970, L. Joll, collector, 1 specimen (WAM 61-86). *Papua New Guinea:* Bismarck Archipelago, Ralum, New Britain, 180 m, F. Dahl., collector, 21 Nov 1896, 1 specimen (ZMHUB 6549, as *P. antipoda* by Augener,1927a).

TYPE MATERIAL.—Two syntypes, anterior fragments with 27 and 36 segments, 10 and 14 mm long, 5 and 6 mm wide, with setae, respectively.

DESCRIPTION.—Dorsum and elytra covered with white calcareous sand (Horst, 1917, pl. 27: fig. 11; Takahashi, 1938, fig. 6a); dorsal surface with long adhesive papillae, ventrum with globular papillae, with long cylindrical papillae on lower lip and medial to ventral cirri. First pair of elytra very large, elongate-oval, deeply indented anteriorly, medial lobes directed dorsally, lateral lobes bent ventrally, long clavate papillae along borders and on surfaces (Figure 54A); few following elytra subreniform, exposed parts with globular and long adhesive papillae on surfaces and long papillae on borders (Figure 54B,C); more posterior elytra with antero-lateral borders wavy, with series of long papillae alternating with low globular papillae (Figure 54D); elytra from about segment 30 with additional digitiform medial processes covered with adhesive papillae (Figure 54E; Takahashi, 1938, fig. 6c).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, smaller dorsally and larger ventrally; median antenna with ceratophore large, bulbous basally, with lateral crests, without ctenidia, style about length of ceratophore; tentaculophores each with longer dorsal and shorter ventral tentacular cirri on outer side, and numerous notosetae and inner tentacular sheath on inner side; palps long, tapering, emerging lateral and ventral to tentaculophores, with inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae short, subulate, attached dorsally on tentaculophores; clavate facial tubercle on upper lip (Figure 54F,G; Takahashi, 1938, fig. 6b). Segment II with first pair of large elytrophores, without branchiae; notopodia with large subdistal flanges enclosing numerous long notosetae; neuropodia with papillate bracts; ventral buccal cirri with papillate cirrophores and long styles (Figure 55A; Takahashi, 1938, fig. 6b); neurosetae slender, stems with long spinous regions, blades long, slender, with hooked, entire tips (Figure 55B). Segment III with dorsal tubercles with very long dorsal cirri; cirrophores short, with small branchiae on bases, styles long, slender, extending beyond setae (Figure 55C; Takahasi, 1938, fig. 6b); lower neurosetae similar to those on segment II, except blades with slender, bifid tips; middle and upper neurosetae stout, stems with spinous rows, blades moderately long, with bifid tips (Figure 55D).

Biramous parapodia with smaller notopodia subconical, with well-developed subdistal flanges enclosing numerous notosetae; ciliated grooves between notopodia and branchiae or between elytrophores and dorsal tubercles; larger neuropodia subconical, papillate distally, with usual 3 papillate bracts; ventral cirri with long papillae on cirrophores, styles tapering, with bulbous knobs on upper basal sides (Figure 55E). Notosetae slender spinous capillaries, forming fan-shaped bundles, extending dorsally, laterally, and posteroventrally beyond ventral cirri; neurosetae compound falcigers, all with bifid, hooked tips; upper group (3) within dorso-anterior bracts, stems with 6–8 spinous rows, blades rather long; middle group (10) within C-shaped postacicular bracts, stems with 3–7 spinous rows, blades short to rather long; lower group (9) within ventro-anterior bracts, stems smooth or with few spinous rows, blades long (Figure 55F; Horst, 1917, pl. 27: figs. 12, 13; Takahashi, 1938, fig. 7a–d).

DISTRIBUTION.—Indo-Pacific Ocean: Indonesia, Papua New Guinea, Japan; in 0 to 180 meters.

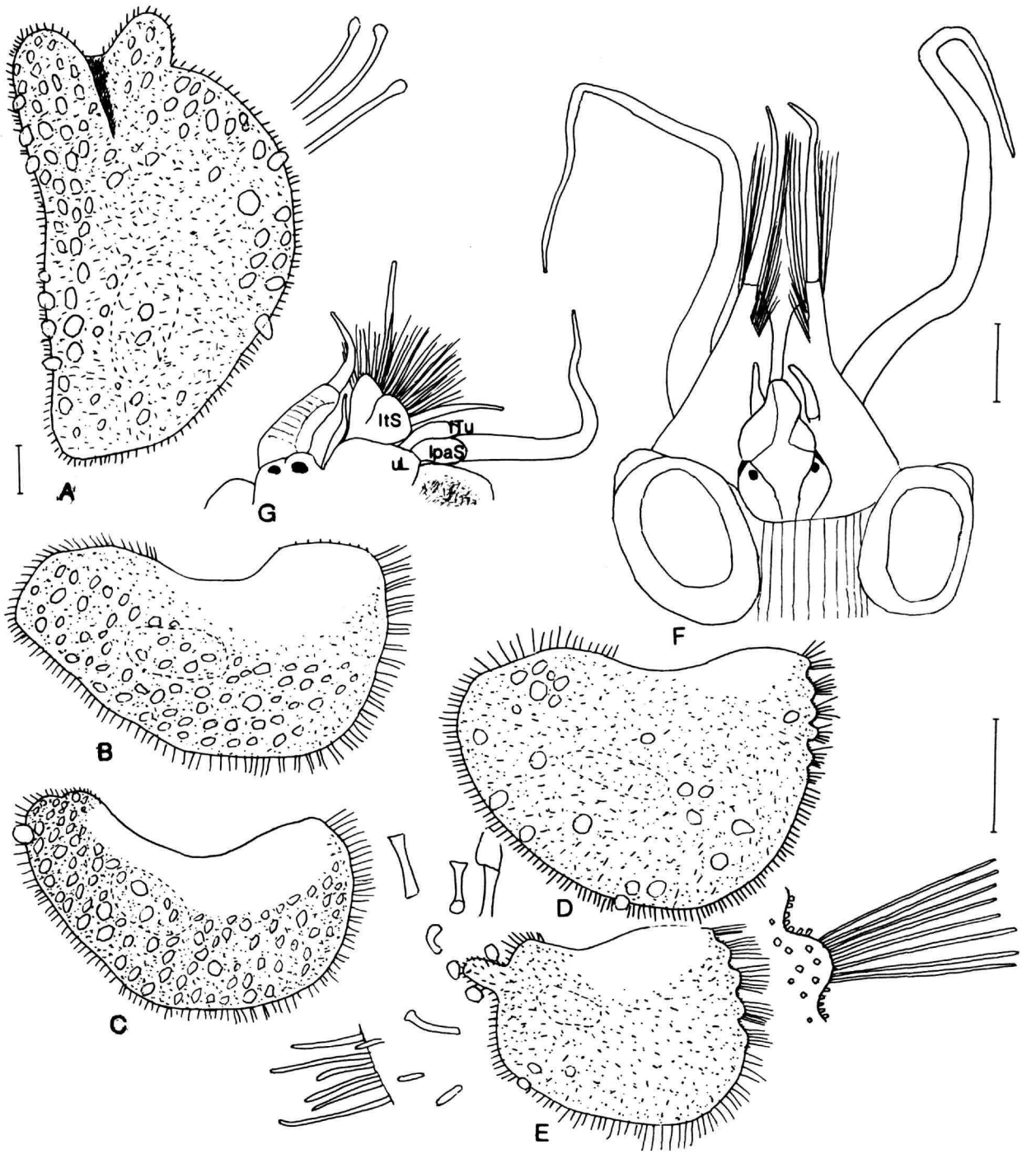


FIGURE 54.—*Pottsipelogenia malayana* (A-C, syntype of *Psammolyce malayana*, ZMA 1207.4; D-F, specimen from Moluccas, WAM 61-86; G, specimen from New Guinea, ZMHUB 6549): A, right 1st elytron from segment II, with detail of papillae; B, right 2nd elytron from segment IV; C, right 3rd elytron from segment V; D, right elytron from segment 13; E, right elytron from segment 30, with detail of papillae; F, dorsal view of anterior end, style of median antenna missing, parapodia of segment II not shown; G, inner view of prostomium, left tentaculophore and palp, and upper lip with clavate facial tubercle. (Scales: A-C = 0.3 mm; D,E = 1.0 mm; F,G = 0.5 mm.)

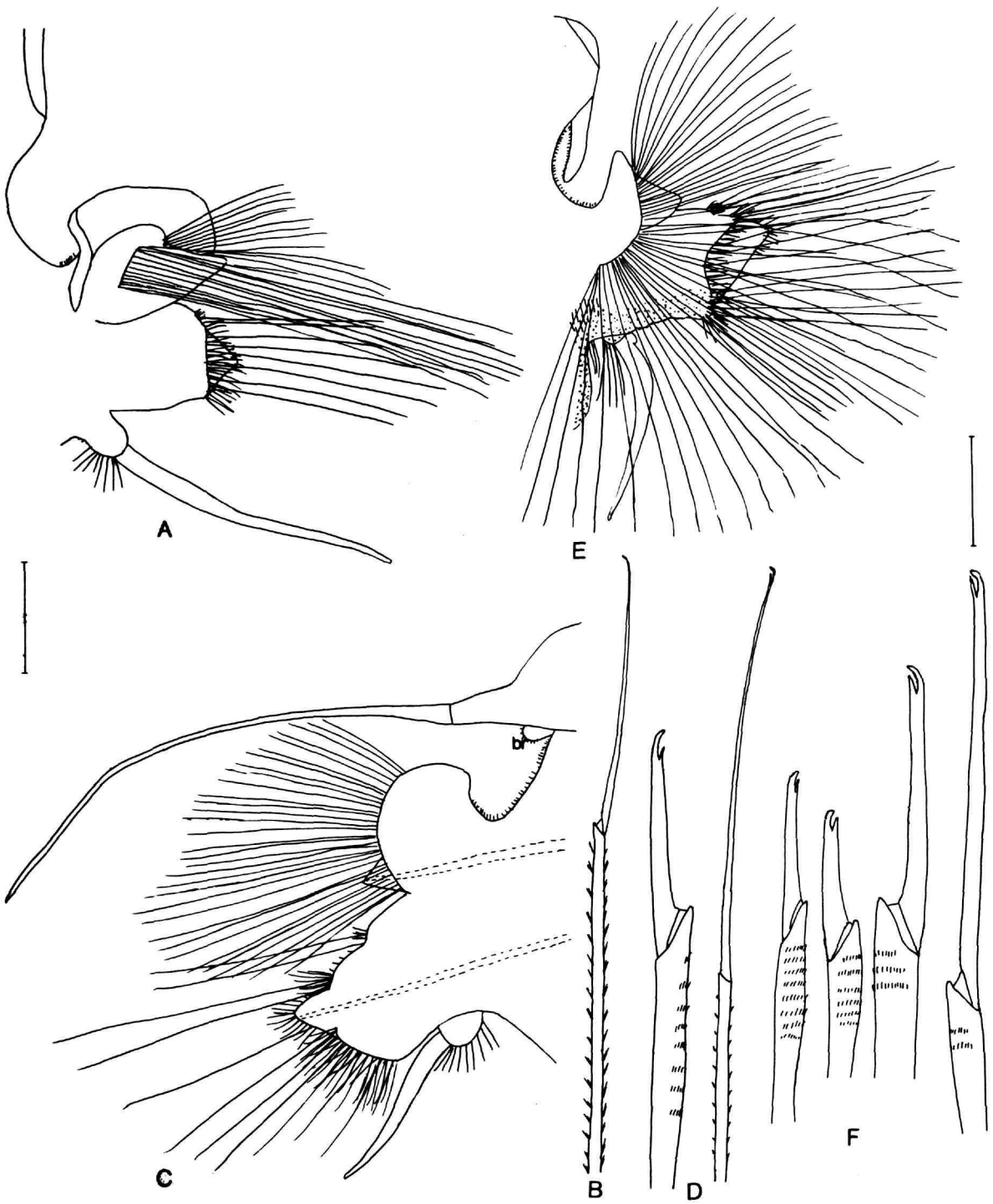


FIGURE 55.—*Pottsipelogenia malayana* (specimen from Moluccas, WAM 61-86): A, right elytrigerous parapodium from segment II, posterior view; B, neuroseta from same; C, right cirrigerous parapodium from segment III, anterior view, acicula dotted; D, upper and lower neurosetae from same; E, right elytrigerous parapodium from segment 30, posterior view; F, upper, 2 middle, and lower neurosetae from same. (Scales: A,C,E = 0.5 mm; B,D,F = 0.1 mm.)

Pottsipelogenia treadwelli, new species

FIGURES 56, 57

Psammolyce fijiensis.—Treadwell, 1906:1156.—Hartman, 1966:178.—Bailey-Brock and Hartman, 1987:242.— Not McIntosh, 1885.

MATERIAL EXAMINED.—CENTRAL PACIFIC OCEAN: *United States:* HAWAII: south coast of Molokai Island, 42–44 m, sandy and stony bottom, R/V *Albatross* sta 3847, 1902, holotype (USNM 5462, as *Psammolyce fijiensis* by Treadwell).

DESCRIPTION.—Holotype anterior fragment with 35 segments, 12 mm long and 6 mm wide, with setae; pharynx completely extended. Dorsum, ventrum, and parapodia thickly covered with rusty brown fine sediment. Dorsum with globular papillae and branched adhesive papillae; ventrum thickly covered with short cylindrical papillae, with long papillae on ventral lip region, along midventral groove, and on ventral bases of parapodia. First pair of elytra elongate-oval, with numerous long and short adhesive papillae on surfaces and cylindrical papillae along borders (Figure 56A); 2nd elytra bilobed medially, posterior lobes smaller; adhesive and cylindrical papillae along borders and on surfaces (Figure 56B); more posterior elytra bilobed medially, posterior lobes longer, forming projecting processes, additional rather indistinct, papillate processes on posterior borders with long cylindrical papillae on central parts of surfaces and with adhesive cylindrical papillae with flattened tops concentrated on medial fourth; antero-lateral borders wavy, with groups of long papillae alternating with globular papillae (Figure 56C).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, ventral pair about 2 times larger than dorsal pair; median antenna with large bulbous ceratophore with lateral ridges and oval ctenidia on basal sides anterior to dorsal eyes, style missing; tentaculophores each with single aciculum, dorsal tentacular cirrus about as long as ceratophore, ventral tentacular cirrus missing on outer side, and 2 bundles of capillary notosetae and delicate inner tentacular sheath on inner side; palps long, tapered, with inner palpal sheaths continuous with inner tentacular sheaths; lateral antennae short, attached to dorsal inner sides of tentaculophores; clavate facial tubercle attached to upper lip just ventral to fused inner tentacular sheaths (Figure 56D,E). Segment II with middorsal papillate mound with branched adhesive papillae (and adherent sand grains) between first pair of large elytrophores, with lateral branchiae; biramous parapodia with neuropodia papillate distally and with subdistal bracts with long papillae; long tapering ventral buccal cirri; neurosetae slender, stems with long spinous regions, blades long, with slender, hooked tips (Figures 56D,E, 57A,B). Extended pharynx with 11 pairs of border papillae and 2 pairs of amber-colored jaws. Segment III with dorsal tubercles and long dorsal cirri; cirrophores short, with branchiae on lower sides, styles broken off (presumably long); lower neurosetae similar to those on segment II but slightly stouter, with shorter spinous regions and blades long with bifid, hooked tips; upper neurosetae stouter, stems with 4–11 spinous rows, blades shorter, with bifid, hooked tips (Figure 57C,D).

Biramous parapodia with notopodia smaller than neuropodia; notopodia subconical, with large subdistal flanges enclosing numerous notosetae; without distinct ctenidia but with low ridges in curved areas between notopodia and branchiae and between elytrophores and dorsal tubercles; neuropodia large, subconical, with long papillae distally and with usual 3 subdistal bracts, but with extra long papillae, enclosing neurosetae; ventral cirri with cirrophores with short papillae, styles tapered, with basal knobs on upper sides; anterior and posterior sides of neuropodia with globular papillae; groups of long papillae medial to ventral cirri. Notosetae numerous spinous capillaries, extending dorsally, laterally, and posteroventrally, beyond ventral cirri (Figure 57E). Neurosetae stout compound falcigers, mostly with bifid hooked tips; upper ones (3–4) within dorso-anterior bracts, stems with 3–6 spinous rows, blades moderately long; middle ones (9–10) within C-shaped postacicular bracts, stems with single spinous rows, blades mostly shorter; lower ones (5–6) within ventro-anterior bracts, stems with 1–3 spinous rows, blades long (Figure 57F).

ETYMOLOGY.—The species is named for Aaron Louis Treadwell, who earlier examined the specimen herein selected as the holotype.

COMPARISONS.—*Pottsipelogenia treadwelli* agrees with *P. gracilis* (McIntosh) in having the first pair of elytra elongate-oval and not deeply bilobed, as in the other species of *Pottsipelogenia*. In *P. treadwelli* the middorsum of segment II bears a mound with adhesive papillae, which is lacking on *P. gracilis*.

DISTRIBUTION.—Central Pacific Ocean: Hawaii; in 42 to 44 meters.

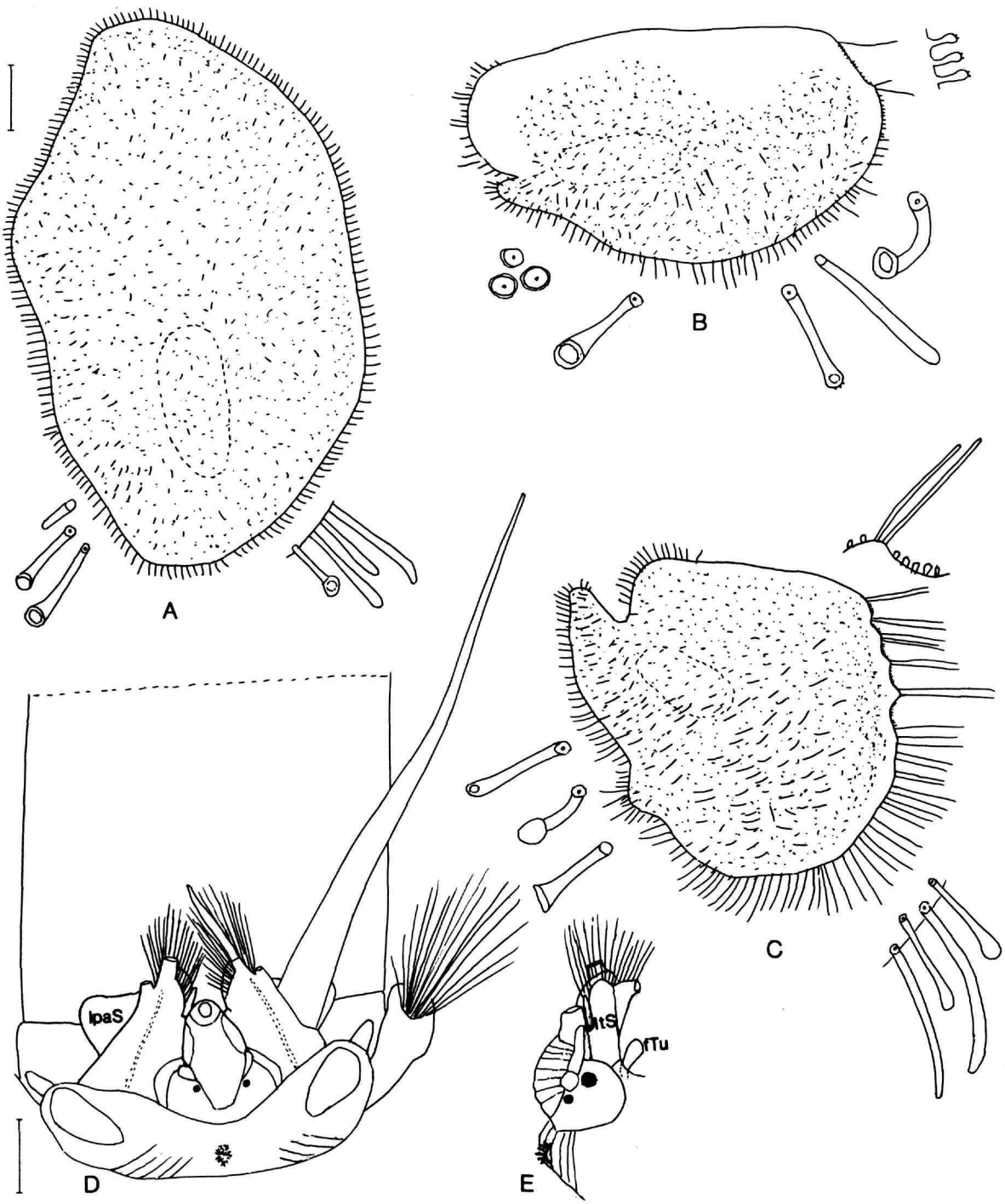


FIGURE 56.—*Pottsipelogenia treadwelli*, new species (holotype): A, right 1st elytron from segment II, with detail of papillae; B, right 2nd elytron from segment IV, with detail of papillae; C, right elytron from segment 21, with detail of papillae; D, dorsal view of anterior end, pharynx fully extended (only basal part shown), styles of median antenna, right ventral tentacular cirrus, right lateral antenna, left dorsal and ventral tentacular cirri, and left palp missing, acicula dotted; E, lateral view of prostomium and inner view of left tentaculophore of segment I, clavate facial tubercle on upper lip, and papillate tubercle on mid-dorsal region of segment II; styles of median antenna and tentacular cirri missing. (Scales: A-C = 0.3 mm; D,E = 0.5 mm.)

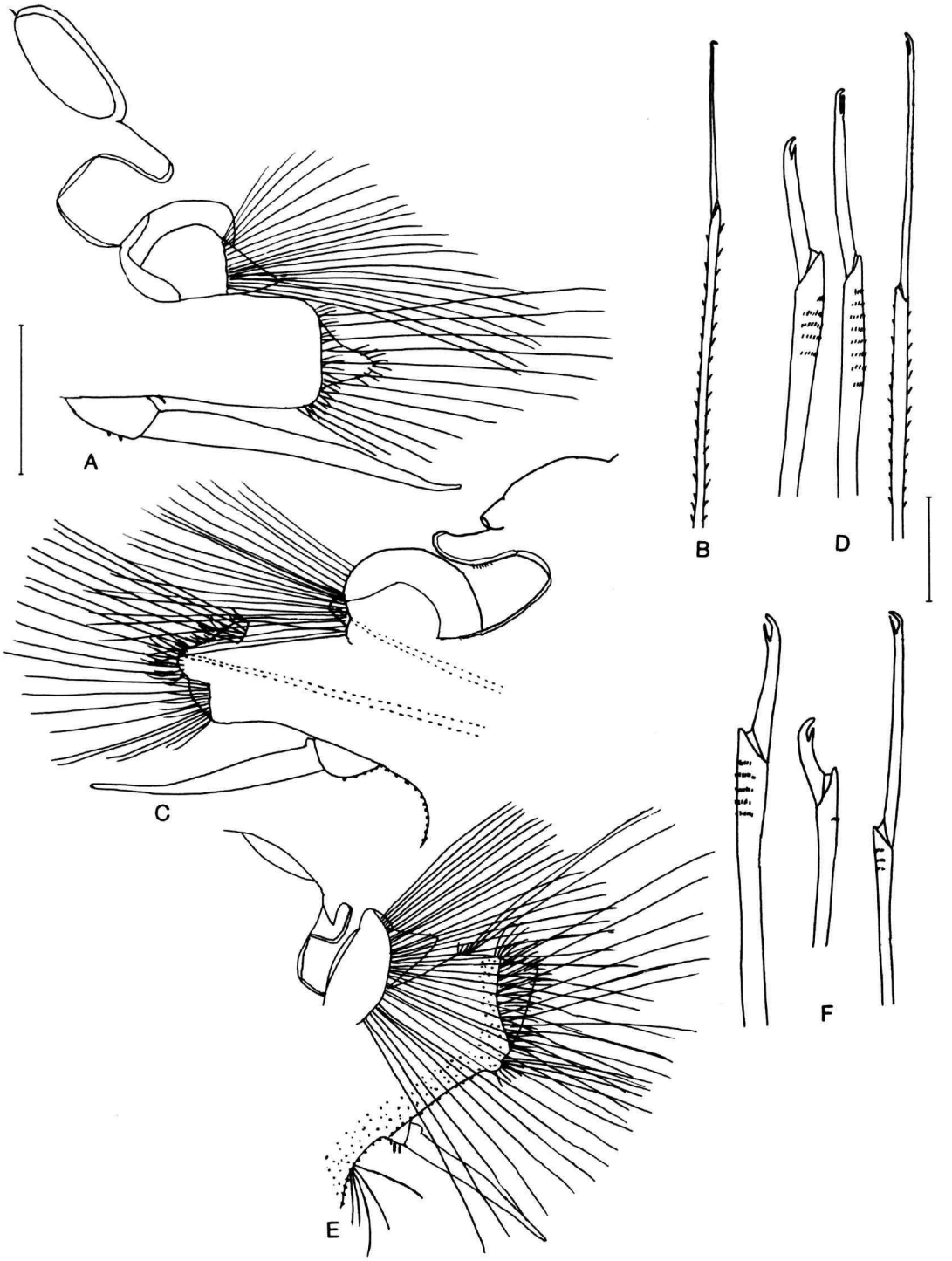


FIGURE 57.—*Pottsipelogenia treadwelli*, new species (holotype): A, right elytrigerous parapodium from segment II, posterior view; B, neuroseta from same; C, right cirrigerous parapodium from segment III, anterior view, style of dorsal cirrus broken off from cirrophore, acicula dotted; D, two upper and one lower neurosetae from same; E, right elytrigerous parapodium from segment 19, posterior view; F, upper, middle, and lower neurosetae from same. (Scales: A,C,E = 0.5 mm; B,D,F = 0.1 mm.)

Pottsipelogenia gallardoi, new species

FIGURES 58, 59

Psammolyce fijiensis.—Gallardo, 1968:50.—Not McIntosh, 1885.

MATERIAL EXAMINED.—INDO-PACIFIC OCEAN: *Viet Nam* [*Peoples' Republic of Vietnam*]: South China Sea, off Nha Trang, NAGA Expedition, sta 046, 14 Jan 1960, 9 m, fine and hard sand, holotype (LACM-AHF 1575, as *Psammolyce fijiensis* by Gallardo, 1968).

DESCRIPTION.—Holotype anterior fragment with 27 seg-

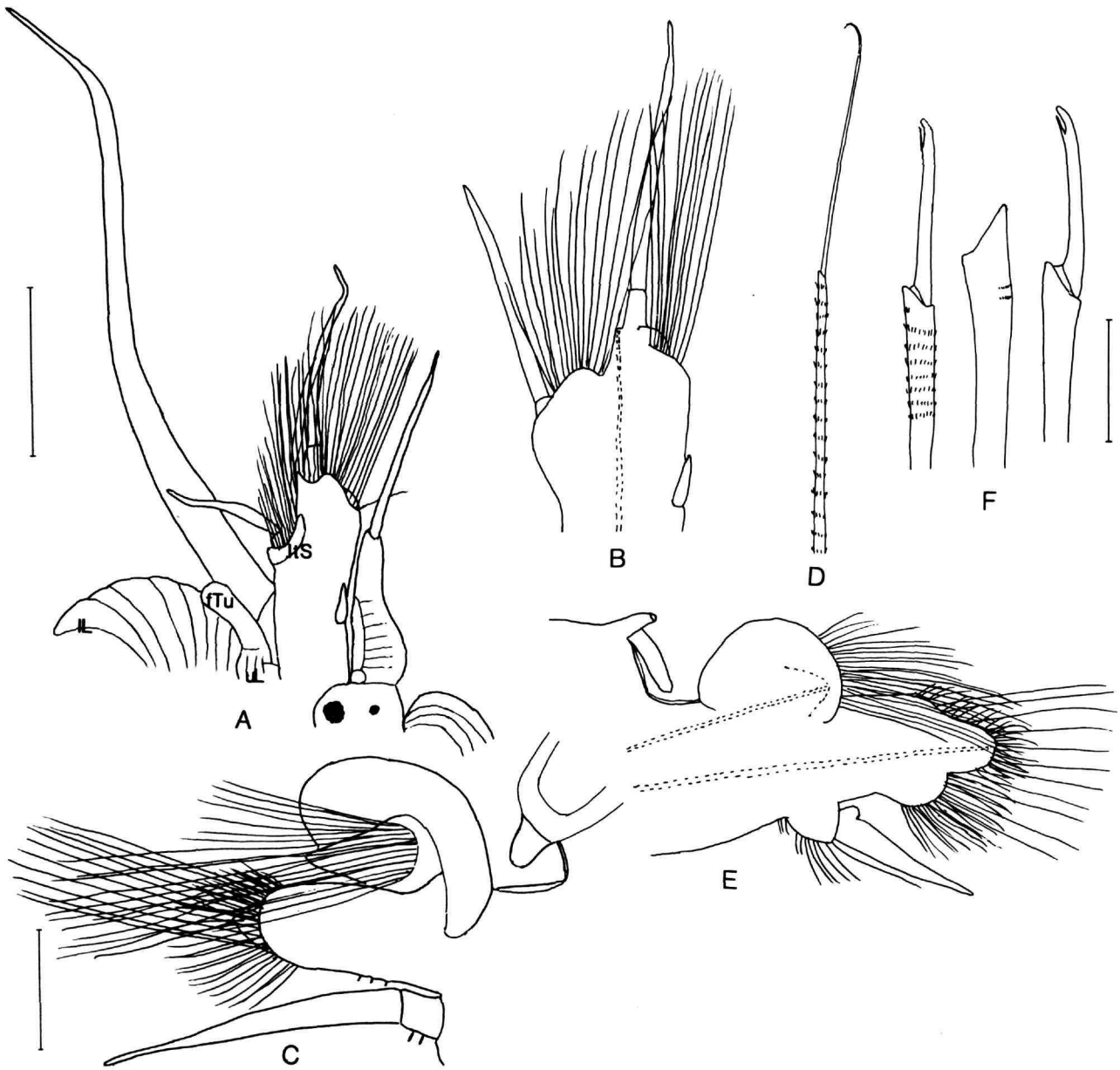


FIGURE 58.—*Pottsipelogenia gallardoi*, new species (holotype): A, lateral view of anterior end, withdrawn in segment II, inner view of right tentaculophore of segment I and palp, left tentaculophore and palp removed; B, left tentaculophore, outer view, aciculum dotted; C, left elytrigerous parapodium from segment II, posterior view; D, neuroseta from same; E, left cirrigerous parapodium from segment III, anterior view, acicula dotted, style of dorsal cirrus missing; F, upper, middle (blade broken off), and lower neurosetae from same. (Scales: A = 1.0 mm; B,C,E = 0.5 mm; D,F = 0.1 mm.)

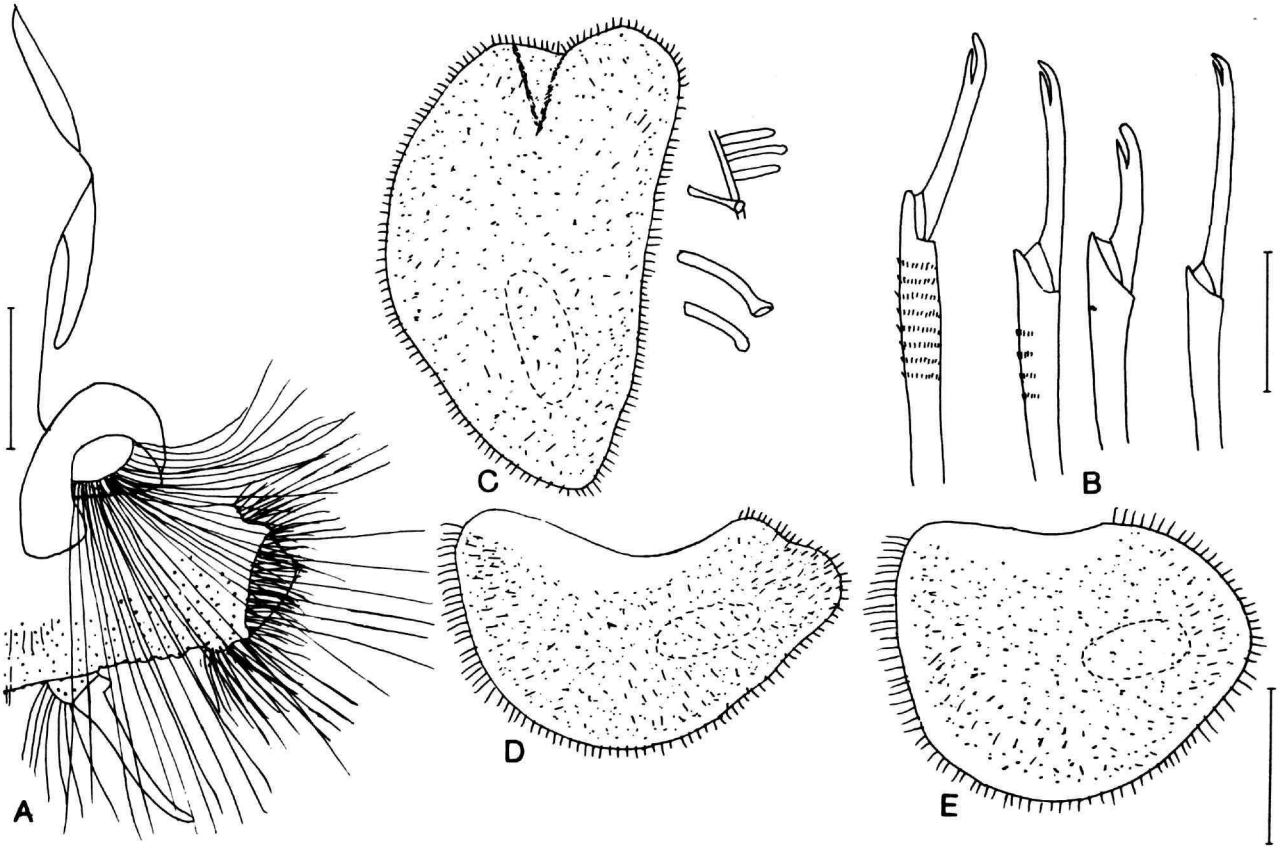


FIGURE 59.—*Pottsipelogenia gallardoi*, new species (holotype): A, right elytrigerous parapodium from segment 15, posterior view; B, upper, 2 middle, and lower neurosetae from same; C, left lst elytron from segment II, with detail of papillae; D, left 2nd elytron from segment IV; E, left posterior elytron. (Scales: A = 0.5 mm; B = 0.1 mm; C-E = 1.0 mm.)

ments, 18 mm long and 6 mm wide, with setae. Dorsum and elytra thickly covered with blackish and rusty red foreign material and firmly attached sand grains; dorsum with cylindrical and branched adhesive papillae; ventrum covered with low globular papillae, with long cylindrical papillae on lower lip, along midventral groove, and laterally along bases of parapodia. First pair of elytra elongate-oval, deeply notched anteriorly, borders with papillate fringe, surfaces with adhesive papillae with flattened tops (Figure 59C); 2nd elytra subreniform, slightly bilobed medially, surfaces with globular and long adhesive papillae (Figure 59D); more posterior elytra suboval, lateral borders with longer papillae, surfaces with globular papillae and long adhesive papillae with flattened tops, more numerous on medial areas; without medial or posterior processes (at least to segment 27) (Figure 59E).

Prostomium and tentaculophores fused basally and partially withdrawn in segment II; prostomium oval, with 2 pairs of eyes, ventral pair about 3 times larger than dorsal pair; median antenna with ceratophore large, bulbous basally, with lateral ridges and small, oval ctenidia anterior to dorsal eyes, style about as long as ceratophore; tentaculophores lateral and ventral to prostomium, each with single aciculum, with dorsal tentacular cirrus, about as long as style of median antenna, and slightly shorter ventral tentacular cirrus on outer side, and fan-shaped bundle of spinous capillary notosetae and small inner tentacular sheath on inner side; palps long, tapering, emerging lateral and ventral to tentaculophores, with low inner palpal sheaths; lateral antennae small, subulate, attached on middle of dorsal sides of tentaculophores; rather long, clavate facial tubercle attached to upper lip (Figure 58A,B). Segment II with first pair of large elytrophores, with lateral branchiae; notopodia with large subdistal flanges enclosing numerous notosetae; neuropodia with numerous long papillae on bracts enclosing neurosetae; ventral buccal cirri long, tapering; compound neurosetae slender, stems with numerous spinous rows, blades long, with curled, entire tips (Figure 58C,D). Segment III with dorsal tubercles and long dorsal cirri; cirrophores short, with branchiae on basal sides, styles missing

(presumably long); notopodia and neuropodia similar to those on segment II; ventral cirri with long papillae on cirrophores, styles short, tapering; neurosetae similar to more posterior neurosetae (Figure 58E,F).

Parapodia biramous with smaller notopodia subconical, with prominent subdistal flanges enclosing numerous notosetae; without distinct ctenidia in curved areas between notopodia and branchiae or between elytrophores and dorsal tubercles; larger neuropodia subconical with long papillae distally, with usual 3 subdistal bracts with numerous long papillae enclosing neurosetae; ventral cirri with cirrophores with long papillae (10 or so), styles short, tapering, with basal knobs on upper sides; ventral sides of neuropodia with globular papillae, with long papillae on anterior and posterior sides; notosetae slender spinous capillaries, extending anteriorly, laterally, and posteroventrally beyond ventral cirri (Figure 59A). Neurosetae stout, compound falcigers, all with bifid, hooked tips; upper ones within dorso-anterior bracts, stems with 4–9 spinous rows, blades moderately long; middle ones within C-shaped postacicular bracts, stems with 0–4 spinous rows, blades mostly shorter; lower ones within ventro-anterior bracts, more slender, stems smooth, blades slightly longer (Figure 59B).

ETYMOLOGY.—The species is named for Victor Ariel Gallardo, who earlier examined the specimen selected as the holotype.

COMPARISONS.—*Pottsipelogenia gallardoi* differs from the other species of *Pottsipelogenia* in lacking medial processes on the elytra.

DISTRIBUTION.—Indo-Pacific Ocean: People's Republic of Viet Nam; in 9 meters.

Heteropelogenia, new genus

TYPE SPECIES.—*Psammolyce articulata* Day, 1960. Gender: feminine.

DIAGNOSIS.—Pelogeniinae with dorsal cirri on segment III, with styles about as long as cirrophores. Neuropodia of segment II without long terminal appendages. Neuropodia of segment III with digitiform presetal extensions. Compound falcigerous neurosetae with blades long and short, mostly with bifid tips. Prostomium with bulbous ctenidia. Upper lip with facial tubercle. Elytral and neuropodial filiform papillae articulated.

ETYMOLOGY.—*Hetero* (different), plus *Pelogenia,* indicating some differences from *Pelogenia.*

Heteropelogenia articulata (Day, 1960), new combination

FIGURE 60

Psammolyce articulata Day, 1960:293, fig. 4g–l; 1967:105, fig. 1.19.g–l.—Kirkegaard, 1983:199.

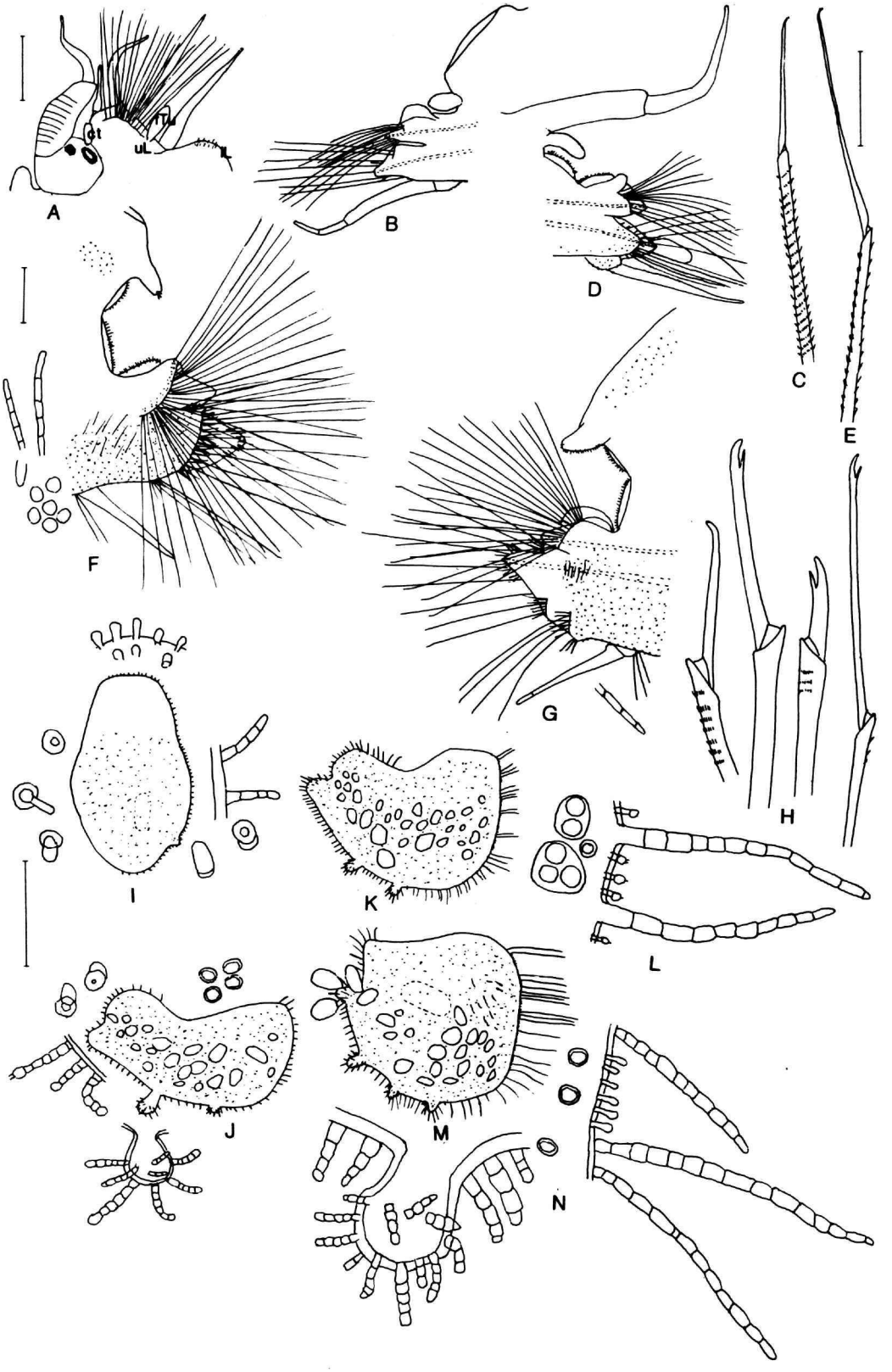
MATERIAL EXAMINED.—INDIAN OCEAN: *South Africa:* Natal, E of Durban, 29°45'S, 31°39'E, 430–445 m, R/V *Anton Bruun* cruise 7, sta 390C, 8 Sep 1964, International Indian Ocean Expedition, 1 specimen (LACM-AHF, as *Psammolyce articulata* by Hartman in MS).

REMARKS.—The type material, originally described from False Bay, South Africa, in 21 to 42 meters, was not located. The available specimen from near the type locality, in 430–445 meters, allows the original description to be supplemented and revised. Kirkegaard (1983) reported a median fragment from off Cape Town in 50 meters.

DESCRIPTION.—Incomplete anterior fragment with 40 segments, 14 mm long and 6 mm wide, with setae. Body flattened ventrally, arched dorsally; middorsum uncovered, elytra with scattered large and small sand grains and foraminifera; ventrum with small rounded papillae. First pair of elytra elongate-oval, with short papillae on anterior, lateral, and posterior borders, and scattered papillae on surfaces (Figure 60I; Day, 1960, fig. 4g; 1967, fig. 1.19.g,h); following few elytra subreniform, with medial notch forming 2 papillate processes, with additional 2 posterior papillate processes; surfaces with scattered micropapillae and microtubercles, and adherent sand grains; borders with articulated papillae (Figure 60J–L); following elytra squarish, with 2 medial and 1–3 posterior bulbous papillate processes and additional articulated papillae on surfaces (Figure 60M,N; Day, 1960, fig. 4k,l; 1967, fig. 1.19.i).

Prostomium and tentaculophores fused basally and withdrawn in segments II and III; prostomium rounded, with 2 pairs of eyes, dorsolateral pair and much larger ventral pair, with pair of bulbous ctenidia below eyes, not attached (as usual) to ceratophore of median antenna (called lateral antennae by Day); median antenna with ceratophore large, bulbous, curved ventrally, style about as long as ceratophore; tentaculophores lateral and ventral to prostomium, each with small subulate lateral antenna on dorsal side, dorsal tentacular cirrus, about as long as median antenna, and longer ventral tentacular cirrus on outer side, and 2 bundles of long capillary notosetae on inner side; palps long, emerging ventral to tentaculophores (called long tapering ventral tentacular cirri by Day (palps shorter on specimen examined, perhaps regenerating); bulbous facial tubercle attached to upper lip; lower lip with short papillae (Figure 60A; Day, 1960, fig. 4g). Segment II with 1st pair of large elytrophores, with lateral branchiae; biramous parapodia, and long distally articulated ventral buccal cirri; notosetae spinous capillaries; neurosetae compound, stems slender, with

FIGURE 60 (right).—*Heteropelogenia articulata* (specimen from Natal, LACM-AHF): A, lateral view of prostomium and inner view of left tentaculophore of segment I and palp, right tentaculophore and parapodium of segment II cut off; B, right elytrigerous parapodium from segment II, anterior view, acicula dotted; C, neuroseta from same; D, right cirrigerous parapodium from segment III, posterior view, acicula dotted; E, lower neuroseta from same; F, right elytrigerous parapodium from segment 21, posterior view, with detail of papillae on neuropodium; G, right parapodium from segment 22 with dorsal tubercle, anterior view, acicula dotted, with detail of papilla on cirrophore of ventral cirrus; H, upper, 2 middle, and lower neurosetae from same; I, right 1st elytron from segment II, with detail of papillae; J, right 2nd elytron from segment IV, with detail of papillae and posterior process; K, right 4th elytron from segment VII; L, lateral border from same; M, right elytron from segment 25; N, lateral border papillae and posterior process from same. (Scales: A = 0.5 mm; B,D,F,G = 0.3 mm; C,E,H,L,N = 0.1 mm; I–K,M = 1.0 mm.)


A
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long spinous regions, blades long, finely spinous, with slender, curved tips (Figure 60B,C; Day, 1960, fig. 4g). Segment III with dorsal tubercles with branchiae and long dorsal cirri; cirrophores long, extending to tips of notopodia, styles about length of cirrophores; ciliated ctenidia on dorsal sides of notopodia; neuropodia with long digitiform extensions on presetal acicular lobes; neurosetae similar to those on segment II only with longer blades (Figure 60D,E; Day, 1960, fig. 4g).

Biramous parapodia with notopodia smaller than neuropodia; 3 ciliated ctenidia in curved areas between notopodia and branchiae or between elytrophores and dorsal tubercles; notopodia subconical, with subdistal flanges enclosing numerous notosetae; larger neuropodia with subconical acicular lobes, papillate distally, with usual 3 subdistal papillate bracts; papillae filiform, all articulated; ventral cirri with cirrophores with 2–3 long, articulated papillae, styles tapering, with basal knobs on upper sides; oval papillae on anterior, ventral, and posterior sides of neuropodia, plus some long articulated papillae on sides (Figure 60F,G; Day, 1960, fig. 4j). Notosetae numerous spinous capillaries, extending anteriorly, dorsally, and posteroventrally beyond ventral cirri; neurosetae compound falcigers, upper groups (6) within dorso-anterior bracts, stems with 7 or so spinous rows, blades rather long, with entire tips; middle groups (10) within C-shaped postacicular bracts, stems smooth or with few spinous rows, blades short and longer, with bifid tips; lower groups (6) within ventro-anterior bracts, stems more slender, smooth or with few spinous rows, blades long, with bifid tips (Figure 60H; Day, 1960, fig. 4b).

DISTRIBUTION.—Indian Ocean: South Africa; in 21 to 445 meters.

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