MARIAN H PETTIBONE

Partial Revision of the Genus Sthenelais *Kinberg (Polychaeta: Sigalionidae) with Diagnoses of Two New Genera*

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY NUMBER 109

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ABSTRACT

Pettibone, Marian H. Partial Revision of the Genus *Sthenelais* Kinberg (Polychaeta: Sigalionidae), with Diagnoses of Two New Genera. *Smithsonian Contributions to Zoology,* number 109, 40 pages, 24 figures. 1971.—Supplementary descriptions are given for some of the species referred to *Sthenelais* Kinberg, including the two species originally described by Kinberg (1855) and three synonyms. Two groups of species are separated from *Sthenelais* and assigned to new genera: *Willeysthenelais,* with three new combinations, three synonyms, and four new species; and *Fimbriosthenelais,* with five new combinations, nine synonyms, and one new species. Definitions of the three genera, with keys to the presently recognized species of the new genera, are followed by redescriptions of the species, based in large part on examination of the type-specimens.

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Introduction

In connection with a long range study of the aphroditoid polychaetes, the species originally referred to *Sthenelais* by Kinberg (1855), including two species and three synonyms, are redescribed. Two groups of species, originally described under *Sthenelais,* are separated therefrom: *Willeysthenelais,* new genus, including three new combinations, three synonyms, and four new species, and *Fimbriosthenelais,* new genus, comprising five new combinations, nine synonyms, and one new species.

In addition to the collections in the Smithsonian Institution (USNM), type material and other specimens were obtained on loan or in exchange from the following Museums: Allan Hancock Foundation, Los Angeles (AHF), through K. Fauchald; British Museum (Natural History), London (BMNH), through J. D. George; Museum National d'Histoire Naturelle, Paris, (MNHNP), through J. Renaud-Mornant; Naturhistoriska Riksmuseet, Stockholm (NRS), through R. Oleröd; Rijksmuseum van Natuurlijke Historie, Leiden (RNHL), through J. van der Land; Zoologische Museum Universiteit van Amsterdam (ZMA), through S. van der Spoel; Zoologisches Museum, Berlin (ZMB), through G. Hartwich; and Zoologisches Museum, Hamburg (ZMH), through G. Hartmann-Schröder. An additional specimen was received from the private collections of Professor John H. Day, University of Cape Town. Through the courtesy of Dr. Olga Hartman, some specimens were examined at the Allan Hancock Foundation, Los Angeles (AHF) during a visit in December 1969.

I wish to thank the above-mentioned individuals for their cooperation and help. The manuscript benefited from the suggestions of M. L. Jones and F. A. Chace, Jr., both of the Smithsonian Institution.

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Abbreviations Used in the Figures

I–IV, segments
ac, aciculum
acL, acicular lobe
a-uB, anterior upper bract
a-vB, anteroventral bract
au, auricle or antennal ctenidium
bK, basal knob
br, branchia
buC, buccal cirrus
ct, ctenidia
dR, dorsal ridge
dTc, dorsal tentacular cirrus
dTu, dorsal tubercle
IpaS, inner palpal sheath
ItL, inner tentacular lobe
lAn, lateral antenna

lL, lateral lip
mAn, median antenna
noB, notopodial bract
nuO, nuchal organ
pa, palp
pB, posterior bract
st, stylode
vC, ventral cirrus
vPa, ventral papilla
vTc, ventral tentacular cirrus

Key to the Sigalionid Genera *Sthenelais* Kinberg, *Fimbriosthenelais*, New Genus, and *Willeysthenelais*, New Genus

1. Ventral cirri with long papillae on medial bases (Figure 7*a,b*). Without paired ctenidia either on lateral lips or medial to ventral cirri of any anterior segments (Figure 6*b*). ***Willeysthenelais***, new genus
1'. Ventral cirri without long papillae on medial bases (Figure 2*i,j*). With paired small ctenidia on lateral lips and medial to ventral cirri of some anterior segments (Figure 1*b*) 2
2. Parapodial stylodes not papillated (Figure 2*b,c*) ..... ***Sthenelais*** Kinberg
2'. Parapodial stylodes papillated (Figure 15*c,d*) ..... ***Fimbriosthenelais***, new genus

Genus *Sthenelais* Kinberg, 1855

Sthenelais Kinberg, 1855. Type-species: *S. helenae* Kinberg, 1855, designated by Hartman (1949:34). Gender: feminine.

Conconia Schmarda, 1861. Type-species: *C. caerulea* Schmarda, 1861 [=*S. helenae* Kinberg], by monotypy. Gender: feminine.

DIAGNOSIS.—Body elongate, vermiform, with numerous segments; broad middorsal ridge on some anterior segments, bordered by few pairs of small ctenidia. Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 27, and continuing on all segments. Elytra large, covering dorsum, with microtubercles and lateral fringes of papillae. Dorsal tubercles on segments 3, 6, 8, and alternate segments to 26. Prostomium rounded, fused to first or tentacular segment; median antenna with stout cylindrical ceratophore furnished with lateral auricles and terminal style; lateral antennae fused to inner dorsal sides of tentacular parapodia; four eyes; palps emerging ventral to tentacular parapodia; paired oval nuchal organs (sometimes inconspicuous). Tentacular parapodia extending anteroventrally to prostomium, each with pair of tentacular cirri, single aciculum, two bundles of capillary setae, L-shaped inner tentacular lobe with ciliated ridge and fused to inner palpal sheath; ciliated dorsal ctenidium. Parapodia of second or buccal segment extending anteriorly, with ventral buccal cirri longer than those following; small ctenidia on lateral lips and medial to ventral cirri on some anterior segments. Third segment with dorsal tubercles fused to posterior sides of elytrophores of segment II. Neurosetae of segments II and III compound falcigerous with articulated blades and bifid tips (rarely some additional compound spinigers—in *S. articulata*).

Branchiae cirriform, ciliated, on external borders of all elytrophores and dorsal tubercles except few anterior ones. Parapodial ctenidia cup-shaped, ciliated, three per parapodium, beginning on segment II. Parapodia with accessory bracts and stylodes; stylodes not papillate. Notopodia clavate, with bracts nearly encircling acicular lobes. Notosetae numerous, arranged in semicircular row and directed posterodorsally, finely spinuous, and tapering to capillary tips. Neuropodia with conical acicular lobes; bilobed C-shaped posterior bracts directed anteriorly on upper and lower margins; crescent-shaped anteroventral and anterior upper bracts. Neurosetae arranged in three groups: upper group within anterior upper bracts, C-shaped group of stouter neurosetae within posterior bracts, and lower arched group of more slender neurosetae within anteroventral bracts. Neurosetae simple spinous (in upper group) and compound falcigerous with some blades articulated and tips bifid; distal parts of stems smooth and spinous. Ventral cirri subulate, with outer basal knobs (without long papillae on medial bases). Pharynx with eleven pairs of papillae and two pairs of jaws.

REMARKS.—The genus *Sthenelais* was established by Kinberg (1855:387) for two species: *S. helenae* Kinberg from Valparaiso, Chile, and *S. articulata* Kinberg from Rio de Janeiro, Brazil. The type-specimens, deposited in the Naturhistoriska Riksmuseet, Stockholm, were examined by Hartman (1949:34) and *S. helenae* was selected as the type-species. *Con-*

conia Schmarda (1861:150), based on the monotypic species *C. caerulea* Schmarda from Conconia Island, north of Valparaiso, Chile, was referred to *Sthenelais* by Quatrefages (1865:279). No types of *C. caerulea* are available, but specimens from Chile, so identified by Ehlers (1901:56) and deposited in the Hamburg Museum, were examined. They agree with *S. helenae* and the two species are herein considered to be synonymous.

The following species, referable to *Sthenelais,* are covered in this report:

1. *S. helenae* Kinberg (1855). Chile.
2. *S. articulata* Kinberg (1855). Brazil.
3. *Conconia caerulea* Schmarda (1861). Chile. See *S. helenae* Kinberg.
4. *S. trivittata* Grube (1875). Chile. See *S. helenae* Kinberg.
5. *S. maculata* Hartman (1939). Peru. See *S. helenae* Kinberg.

The two species originally referred to *Sthenelais* by Kinberg (1855), together with their synonyms, are described. Additional species of *Sthenelais* will be covered in a subsequent report.

Sthenelais helenae Kinberg

FIGURES 1–3

Sthenelais helenae Kinberg, 1855:387; 1858:27, pl. 8: fig. 36A–H.—Hartman 1949:35, pl. 5: fig. 1, pl. 6: figs. 1–5.
Conconia caerulea Schmarda, 1861:150, text-figure, pl. 37: fig. 319.
Sthenelais coerulea [sic].—Quatrefages 1865:279.—Ehlers 1901:56, pl. 4: figs. 14–16, pl. 5: figs. 1–5.—Monro 1933:17.
Sthenelais trivittata Grube, 1875:75, 77.
Sthenelais maculata Hartman, 1939:64, pl. 15: figs. 176–187.—Hartmann-Schröder, 1965:84, figs. 31–35.

MATERIAL EXAMINED.—Valparaiso, Chile, 11–15 meters, *Eugenie* Expedition—7 syntypes of *Sthenelais helenae* (NRS 381).

Valparaiso, Chile, McIntosh collection (as *S. trivittata* Grube)—1 specimen (BMNH 1921:5:1:617).

Chile (identified by Ehlers, 1901, as *Sthenelais coerulea*): Iquique, 15 meters, Ringe, collector—3 specimens (ZMH 610; USNM 43556); Taltal, 18 meters, Paessler, collector—2 specimens (ZMH 609); Valparaiso, Museum Godefroy—1 specimen (ZMH 611); Talcahuano, 9 meters, Paessler, collector—1 specimen (ZMH 3781); Lota, Concepción province, 15 meters, Michaelsen, collector—1 specimen (ZMH 5799).

Bay of Talcahuano, Chile, mud bottom, Captain Piening of the *Padua,* collector (identified by H. Augener as *S. coerulea*)—2 specimens (ZMH 11475).

Peru, Independencia Bay, 15 meters, sand and shell, *Velero* station 833–38, 10 February 1938—syntype of *Sthenelais maculata* (AHF).

Galapagos, James Island, James Bay, 9–11 meters, clean sand and algae, C. Crossland, collector (as *S. coerulea* by Monro)—1 small specimen (BMNH 1932:12:24:251).

DESCRIPTION.—Length up to 110 mm, width 3 to 6 mm, including setae, segments numerous (about 200). Wide middorsal ridge on segments 2–5, with three pairs of small ctenidia alongside (Figures 1*a,* 3*a*). Elytra thin, transparent to opaque, suborbicular, subrectangular to subreniform. Anterior elytra with uniformly distributed microtubercles and lateral borders with papillae; microtubercles low, rounded to subconical (Figures 1*h,* 3*k,l*). More posterior elytra with microtubercles confined to anterior and medial regions, sometimes few submarginal papillae near lateral papillate borders (Figures 1*i,* 3*m,n*). Elytra mottled with dark pigment, sometimes darker rings around region of elytrophores (Figure 3*k–n*).

Prostomium with median antenna with large lateral auricles on ceratophore and moderately long tapered style; lateral antennae short, subulate; four eyes arranged in square, rather small, anterior pair larger than posterior pair; palps extending about to segment 7 (6–8); nuchal organs partially hidden by dorsal ridge and first pair of ctenidia (Figures 1*a–c,* 3*a*). Tentacular parapodium with dorsal tentacular cirrus slightly shorter than median antenna; ventral tentacular cirrus about half as long as dorsal cirrus; inner tentacular lobe extending beyond ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figures 1*a–d,* 3*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments, with pair of small ctenidia on lateral lips (Figures 1*a,b,e,f;* 3*b,c*). Blades of compound falcigerous neuroseta with 1–4 articles, with bifid tips, stems with numerous spinous rows (6–30); lower neurosetae more slender than middle and upper ones (Figures 1*g,* 3*d*). Few upper simple spinous neurosetae beginning on segment III (Figure 2*e*). Additional small ctenidia located medial to elytrophores of segment II (Figure

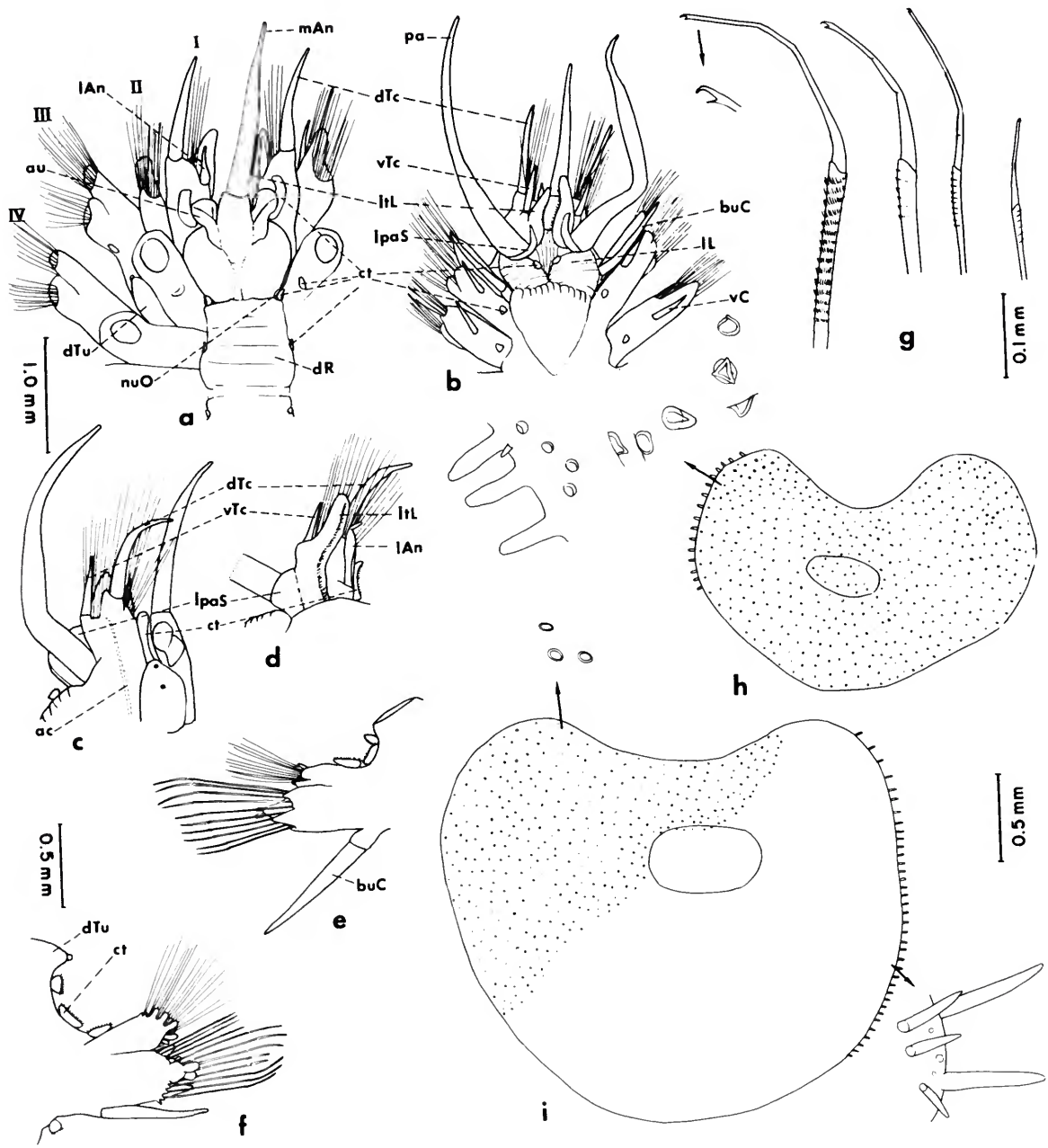

FIGURE 1.—*Sthenelais helenae* (syntype, NRS 381): *a*, Anterior end, dorsal view (eyes faded); *b*, same, ventral view; *c*, same, left tentacular parapodium (segment I), lateral view; *d*, right tentacular parapodium, medial view; *e*, second parapodium, posterior view; *f*, third parapodium, anterior view; *g*, upper, middle and lower neurosetae from segment II; *h*, second left elytron; *i*, 13th right elytron.

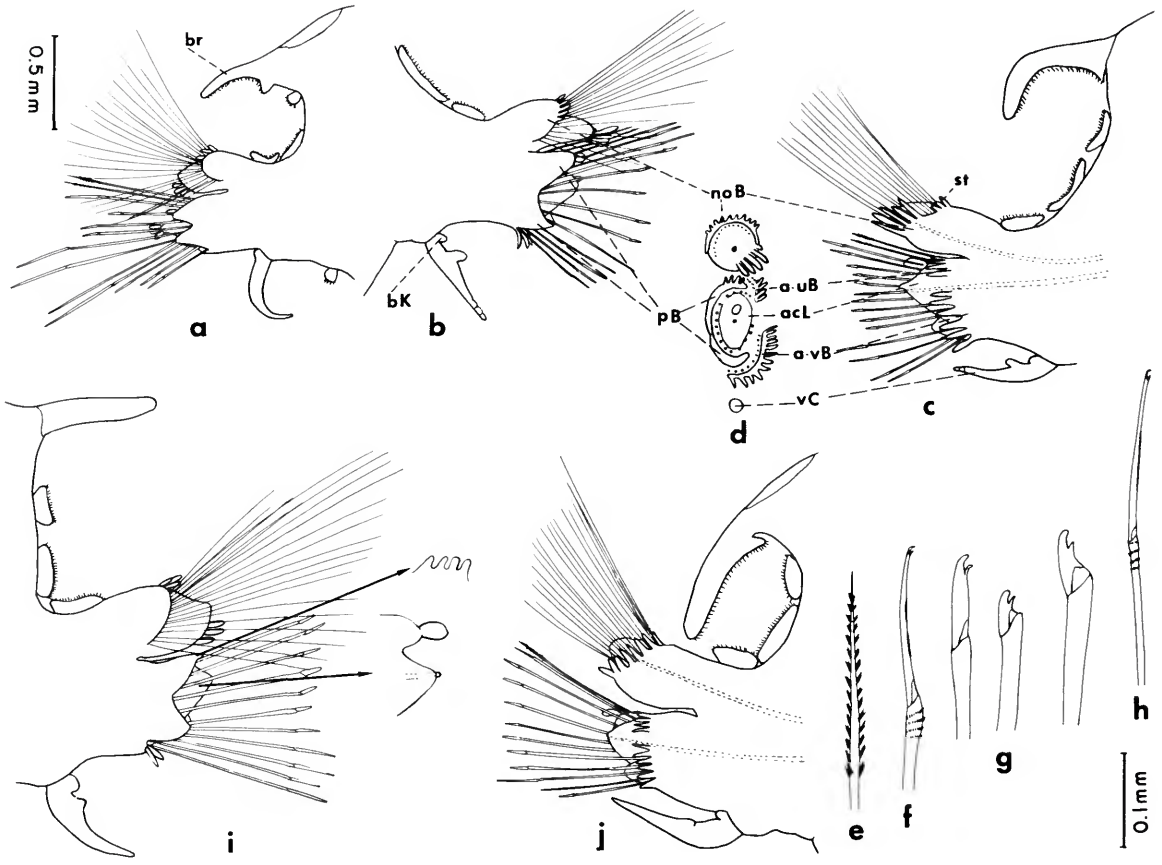

FIGURE 2.—*Sthenelais helenae* (syntype, NRS 381): *a*, Fourth parapodium, posterior view; *b*, parapodium from anterior region (about segment 25), posterior view; *c*, same, anterior view; *d*, same, diagrammatic end view showing arrangement of setae and bracts; *e*, upper simple spinous neuroseta; *f*, upper compound facigerous neuroseta; *g*, middle compound falcigerous neurosetae; *h*, lower compound falcigerous neuroseta; *i*, parapodium from middle region, posterior view; *j*, same, anterior view.

1*a*) and medial to ventral cirri of segments III–VII (Figure 1*b*).

Parapodia of anterior (Figures 2*a–d*, 3*e,f*) and middle regions (Figure 2*i,j*) similar. Cirriform branchiae beginning on segment IV (Figure 2*a*). Notopodial bracts fimbriated, lower anterior papillae longer than dorsoposterior ones. Neuropodial acicular lobes usually with bulbous stylodes (1–3 on segments II–IV, 2–0 on following segments). Upper lobes of bilobed posterior bracts with several stylodes on upper anterior part. Anteroventral and anterior upper bracts fimbriated—with row of long papillae. C-shaped group of stout neurosetae with blades short to longer, with 1–3 articles; stems smooth or with faint spinous rows (Figures 2*g*, 3*i*). Upper anterior group of neurosetae simple spinous (Figures 2*e*, 3*g*) and compound falcigerous with blades of 3 articles and stems with few spinous rows (Figures 2*f*, 3*h*). Blades of anteroventral slender neurosetae with 1–4 articles; stems with 2–5 spinous rows (Figures 2*h*, 3*j*). Ventral cirri with basal knob and more or less distinctly inflated more distally.

REMARKS.—*Sthenelais trivittata* Grube (1875:75, 77) from Valparaiso, Chile, was referred to *Sthenelais*

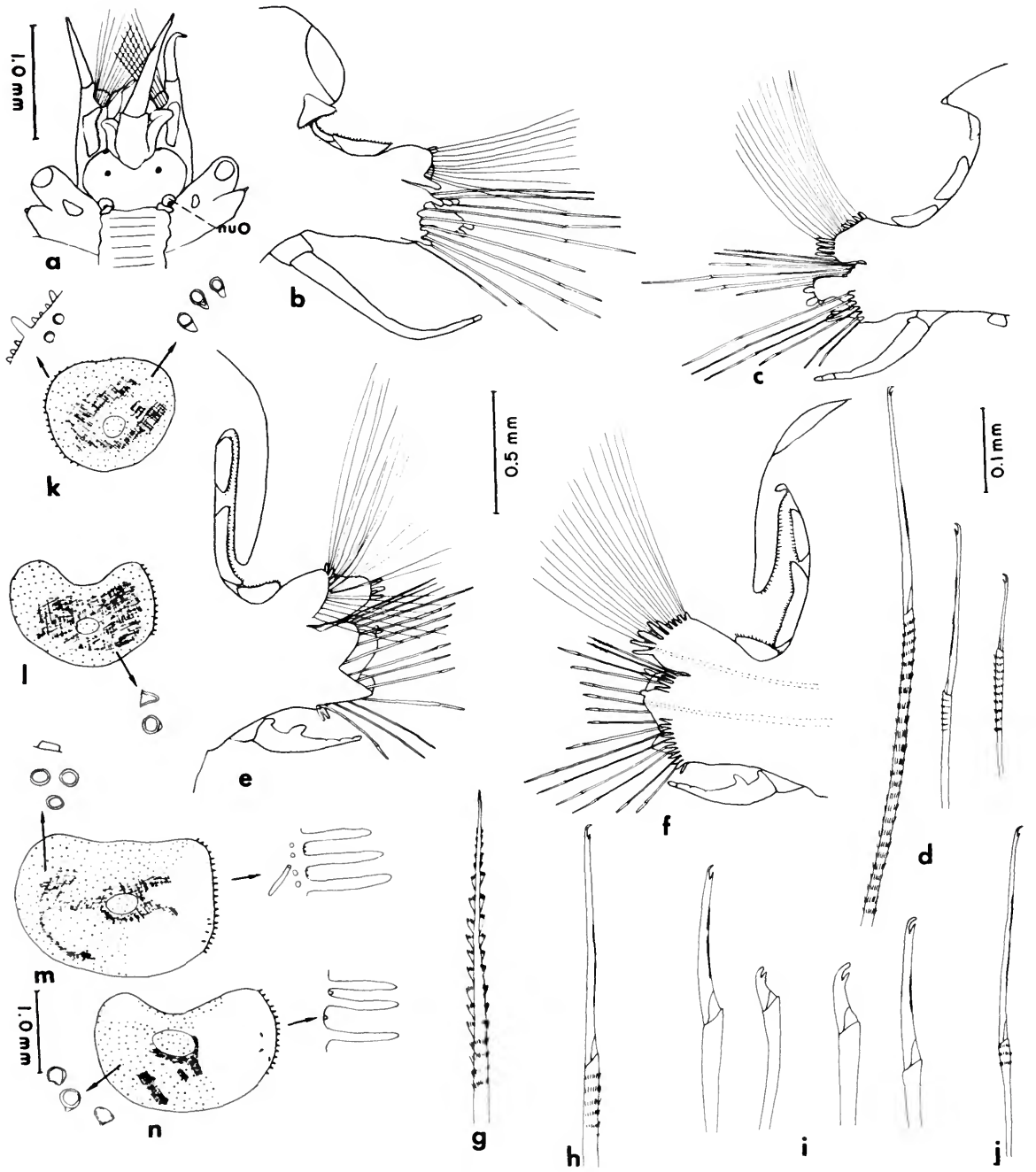

FIGURE 3.—*Sthenelais helenae* (syntype of *S. maculata*, AHF): *a*, Anterior end, dorsal view; *b*, second parapodium, posterior view; *c*, third parapodium, anterior view; *d*, upper, middle and lower neurosetae from segment II; *e*, parapodium from anterior region, posterior view; *f*, same, anterior view; *g*, upper simple neuroseta from same; *h*, upper neuroseta from same; *i*, middle neurosetae from same; *j*, lower neuroseta from same; *k*, first right elytron; *l*, second right elytron; *m*, right elytron from anterior region; *n*, same, from middle region.

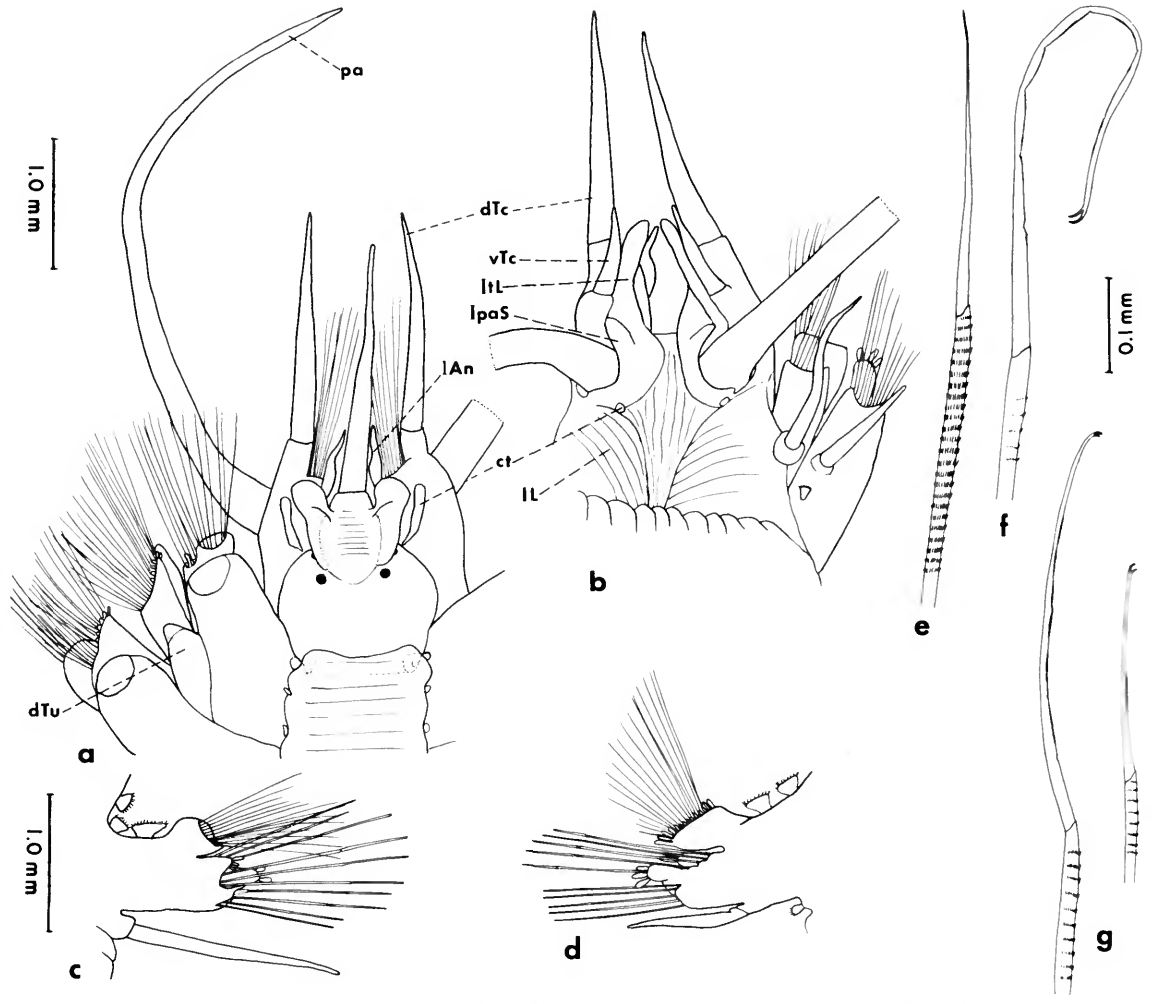

FIGURE 4.—*Sthenelais articulata* (lectotype, NRS 380): *a*, Anterior end, dorsal view, posterior part of prostomium and nuchal organs covered by dorsal ridge; *b*, same, ventral view; *c*, second parapodium, posterior view; *d*, third parapodium, anterior view; *e*, upper neuroseta from segment II: *f*, middle neuroseta from same; *g*, lower neurosetae from same.

coerulea [sic] (Schmarda, 1861) by Ehlers (1901: 56). Both of the above species and *S. maculata* Hartman from Peru to western Mexico are referred herein to *S. helenae*.

DISTRIBUTION.—Chile to western Mexico, Galapagos Islands. Littoral to 140 meters.

Sthenelais articulata Kinberg

FIGURES 4, 5

Sthenelais articulata Kinberg, 1855:387; 1858:28, pl. 8: fig. 38, pl. 10: fig. 62.—Hartman 1949:36, pl. 6: figs. 6–9 (part).

MATERIAL EXAMINED.—Rio de Janeiro, Brazil, *Eugenie* Expedition station 215—lectotype of *Sthenelais articulata* (NRS 380). Ilha San Sebastiao, Sao Paulo, Brazil, 1915, E. Garbe, collector—1 specimen (USNM 19046).

REMARKS.—The type-material of *S. articulata* consists of two specimens: the larger one, in three pieces with the pharynx cut out (jaws figured by Kinberg

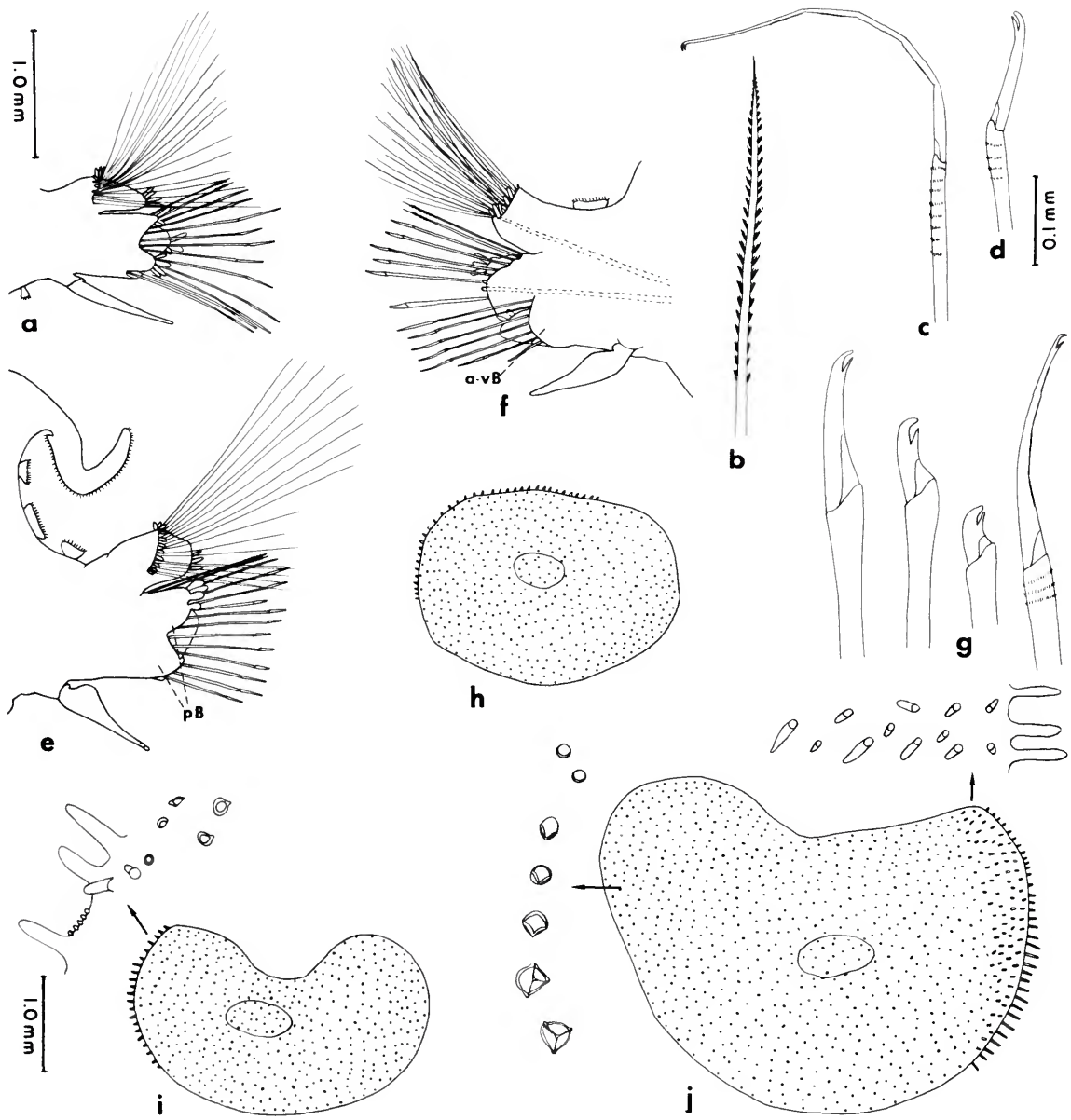

FIGURE 5.—*Sthenelais articulata* (lectotype, NRS 380): *a*, Fourth parapodium, posterior view; *b*, upper simple spinous neuroseta from same; *c*, upper compound falcigerous neuroseta from same; *d*, middle compound falcigerous neuroseta from same; *e*, parapodium from anterior region (about segment 25), posterior view; *f*, same, anterior view; *g*, stouter neurosetae from same; *h*, first left elytron; *i*, second left elytron; *j*, 12th right elytron.

on pl. 10: fig. 62), agrees with the descriptions and figures of Kinberg; the smaller specimen possesses only compound spinigerous neurosetae. The larger specimen is here designated as the lectotype. A third specimen from *Eugenie* station 218 (NRS 382) was given an unpublished manuscript name by Kinberg; it does not agree with *S. articulata.* Of these three specimens, mentioned by Hartman (1949:36) in the type-material of Kinberg, only the lectotype agrees with the original description.

DESCRIPTION.—Length more than 120 mm, width 10 mm, including setae, segments numerous (more than 160). Wide middorsal ridge on segments 2–5, with four pairs of small ctenidia alongside (Figure 4*a*). Elytra thin, transparent, suborbicular to subreniform; surface covered with oval to conical microtubercles. First pair of elytra with fringe of short papillae on anterior and lateral borders (Figure 5*h*); second pair of elytra with lateral fringe of papillae and few submarginal ones (Figure 5*i*); anterior and middle elytra with lateral fringes of papillae and about seven irregular rows of smaller submarginal ones (Figure 5*j*).

Prostomium with median antennae with large lateral auricles on ceratophore and moderately long tapered style; lateral antennae short, subulate; four eyes arranged in square, rather small, anterior pair larger than posterior pair, nearly hidden by antennal auricles; palps extending about to segment 5; nuchal organs hidden by dorsal ridge (Figure 4*a*). Tentacular parapodia with dorsal tentacular cirri subequal in length to median antenna; ventral tentacular cirrus about half as long as dorsal cirrus; inner tentacular lobe extending to tip of ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 4*a,b*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments, with pair of small ctenidia on lateral lips (Figure 4*a–d*). Upper neurosetae compound spinigers, with blades tapering to fine tips; stems with numerous (about 25) spinous rows (Figure 4*e*); remaining neurosetae compound falcigerous, with blades multiarticulate (2–8 articles); stems with faint to distinct spinous rows (6–12) (Figure 4*f,g*). Few upper simple spinous neurosetae beginning on segment III. Additional small ctenidia medial to ventral cirri on segments III–X (Figure 4*b,d*).

Parapodia of anterior (Figure 5*a,e,f*) and middle regions similar. Cirriform branchiae beginning on segment IV. Notopodial bracts fimbriated, lower anterior papillae longer than dorsoposterior ones. Neuropodial acicular lobes usually without stylodes except in some anterior parapodia. Upper lobes of bilobed posterior bracts with several stylodes on upper anterior part; lower lobes with several stylodes in anterior parapodia; few stylodes present or absent on anterior portion in more posterior parapodia. Anteroventral bracts low, entire, without papillae; anterior upper bracts indistinct. C-shaped group of stout neurosetae with blades short to long, with 1–3 articles; stems smooth or with faint spinous rows (Figure 5*d,g*). Upper anterior group of neurosetae simple spinous (Figure 5*b*) and compound falcigerous with multiarticulated blades (3–7 articles) and stems with 8–10 spinous rows (Figure 5*c*). Blades of anteroventral slender neurosetae with 1–5 articles; stems with 2–6 spinous rows. Ventral cirri with basal knobs and more or less distinctly inflated more distally.

DISTRIBUTION.—Brazil.

Willeysthenelais, new genus

TYPE-SPECIES.—*Sthenelais diplocirrus* Grube, 1875. Gender: feminine.

DIAGNOSIS.—Body elongate, vermiform, with numerous segments; broad middorsal ridge on some anterior segments, bordered by few pairs of ctenidia. Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 27, and continuing on all segments. Elytra large, covering dorsum, with microtubercles or papillae and lateral fringes of papillae. Dorsal tubercles on segments 3, 6, 8, and alternate segments to 26. Prostomium rounded, fused to first or tentacular segment; median antenna with stout cylindrical ceratophore furnished with lateral auricles and terminal style; lateral antennae fused to inner dorsal sides of tentacular parapodia; four eyes; palps emerging ventral to tentacular parapodia; paired oval nuchal organs. Tentacular parapodia extending anteroventral to prostomium, each with pair of tentacular cirri, single aciculum, two bundles of capillary setae, L-shaped inner tentacular lobe with ciliated ridge and fused to inner palpal sheath; ciliated dorsal ctenidium. Parapodia of second or buccal segment extending anteriorly, with ventral buccal cirri longer than those following; without ctenidia on lateral lips or medial to ventral cirri on some anterior segments.

Third segment with dorsal tubercles fused to posterior sides of elytrophores of segment II. Neurosetae of segments II and III compound falcigerous, with articulated blades and bifid tips.

Branchiae cirriform, ciliated, on external borders of all elytrophores and dorsal tubercles except few anterior ones. Parapodial ctenidia cup-shaped, three per parapodium, beginning on segment II. Parapodia with accessory bracts and stylodes; stylodes not papillate. Notopodia clavate, with bracts nearly encircling acicular lobes. Notosetae numerous, arranged in semicircular row and directed posterodorsally, finely spinous, and tapering to capillary tips. Neuropodia with conical acicular lobes; bilobed C-shaped posterior bracts directed anteriorly on upper and lower margins; anteroventral crescent-shaped and anterior upper bracts. Neurosetae arranged in three groups: upper group within anterior upper bracts, C-shaped group of stouter neurosetae within posterior bracts, and lower arched group of more slender neurosetae within anteroventral bracts. Neurosetae simple spinous (in upper group; sometimes absent) and compound falcigerous with some blades articulated and tips bifid; distal parts of stems smooth or spinous. Ventral cirri subulate, with outer basal bulbs (sometimes elongate) and long papillae on medial bases. Pharynx with eleven pairs of papillae and two pairs of jaws.

ETYMOLOGY.—The genus is named for Arthur Willey, pioneer worker on the Polychaeta, who first figured the characteristic accessory long papillae on the bases of the ventral cirri of *Sthenelais zeylanica* Willey, 1905.

The following species of *Sthenelais* are referred herein to *Willeysthenelais:*

1. *S. diplocirrus* Grube, 1875. Upolu, Samoa. See *W. diplocirrus* (Grube).
2. *S. zeylanica* Willey, 1905. Trincomalee, Ceylon. See *W. diplocirrus* (Grube).
3. *S. foliosa* Potts, 1910. Seychelles. See *W. foliosa* (Potts).
4. *S. orientalis* Potts, 1910. Seychelles. See *W. diplocirrus* (Grube).
5. *S. heterochela* Horst, 1917. Indonesia. See *W. heterochela* (Horst).
6. *S. variabilis,* var. *colorata* Monro, 1924. Eastern Australia. See *W. diplocirrus* (Grube).

The following species of *Willeysthenelais* are recognized:

1. *W. diplocirrus* (Grube).
2. *W. foliosa* (Potts).
3. *W. heterochela* (Horst).
4. *W. suluensis* new species [*Sthenelais orientalis.*—Horst, 1971. Not Potts, 1910].
5. *W. horsti* new species [*Sthenelais variabilis.*—Horst, 1917 (part). Not Potts, 1910].
6. *W. bandaensis* new species [*Sthenelais variabilis.*—Horst, 1917 (part). Not Potts, 1910].
7. *W. suezensis* new species [*Sthenelais zeylanica.*—Fauvel, 1927. Not Willey, 1905].

Key to the Species of *Willeysthenelais*, New Genus

1. Inner teeth of bifid heterogomph falcigers greatly elongate (Figure 14*f,j,k.*) [Ventral surface smooth. Elytra mostly smooth, with microtubercles confined to anterior regions (Figure 14*l–n*). With 2–3 long papillae on bases of ventral cirri (Figure 14*g,h*).]
W. heterochela (Horst)

1′. Inner teeth of bifid heterogomph falcigers not greatly elongate (Figure 7*e–g*). 2

2. Basal knobs on ventral cirri elongate (Figure 7*a,b*). [Ventral surface papillated more posteriorly. Elytra with conical and flattened microtubercles (Figure 7*j–m*).]
W. diplocirrus (Grube), new combination

2′. Basal knobs on ventral cirri not elongate (Figure 10*a,b*) 3

3. Elytra mostly covered with long cylindrical papillae (Figure 12*n,o*). [Ventral surface thickly papillated anteriorly (Figure 12*b*). Simple spinous neurosetae present (beginning on setiger III, Figure 12*j*).] ..... ***W. suluensis,*** new species

3′. Elytra not mostly covered with long cylindrical papillae 4

4. Elytra mostly smooth, with flattened, rounded microtubercles confined to anterior and medial regions (Figure 11*m–o*). Ventral surface smooth, not papillated)
W. bandaensis, new species

4′. With conical and flattened oval microtubercles on most of elytral surfaces (Figure 10*g–j*). Ventral surface papillated (not noticeable anteriorly) 5

Key to the Species of *Willeysthenelais*, New Genus—*Continued*

5. Several long papillae (1–4) on medial bases of ventral cirri (Figure 10*a,b*). [With papillae on ventral sides of neuropodia medial to anteroventral bracts (Figure 10*a,b*). Upper anterior group of neurosetae simple spinous and long multiarticulated compound falcigerous (Figure 10*c,d*).] ..... ***W. horsti***, new species
5′. Single long papilla on medial bases of ventral cirri (Figure 13*c,d,h*) 6
6. Upper group of neurosetae not different from middle group (Figure 13*e,f*). Without long subdistal papillae on ventral sides of neuropodia medial to anteroventral bracts (Figure 13*c,d,h*) ..... ***W. suezensis***, new species
6′. Upper group of neurosetae wtih long multiarticulated blades. With long papillae on ventral sides of neuropodia medial to anteroventral bracts ..... ***W. foliosa*** (Potts)

Willeysthenelais diplocirrus (Grube), new combination

FIGURES 6–8

Sthenelais diplocirrus Grube, 1875:75, 77.
Sthenelais zeylanica Willey, 1905:258, pl. 2: fig. 48.—Okuda 1937:268, fig. 9a–f.—Gallardo 1968:52, pl. 5: fig. 11.—Not Fauvel 1927:416 [=*Willeysthenelais suezensis*, new species].—Not Thomassin 1970:60.
Sthenelais orientalis Potts, 1910:348, pl. 21: fig. 62.—Not Horst 1917:113 [=*Willeysthenelais suluensis*, new species].
Sthenelais variabilis var. *colorata* Monro 1924:52.
Sthenelais colorata.—Hartman 1949:36.

MATERIAL EXAMINED.—Upolu, Samoa—holotype of *Sthenelais diplocirrus* (ZMH 612).

Amirante, Seychelles, 46–91 meters—holotype of *Sthenelais orientalis* (BMNH 1924: 3: 1: 76).

Port Denison, eastern Australia, 7 meters, sand and shells, *Alert* Expedition—holotype of *Sthenelais variabilis* var. *colorata* (BMNH 1925: 1: 28: 51).

Nha Trang, South Vietnam, V. A. Gallardo, collector: station 138, 16 February 1960, 3 meters, coarse sand with shell and coral debris—1 specimen (AHF); station 245, 16 March 1960, 11 meters, muddy sand with shell debris—1 specimen (USNM 43555).

TYPE MATERIAL.—The holotype of *Sthenelais diplocirrus* consists of an anterior fragment of 40 segments, 42 mm in length, and 10 mm in width, including setae. No simple spinous neurosetae were observed.

The holotype of *Sthenelais orientalis* is an anterior fragment of 62 segments, about 45 mm long, and 8 mm wide, including setae. A single simple spinous neuroseta was observed on some of the parapodia.

The holotype of *Sthenelais variabilis* var. *colorata* consists of an anterior fragment of 36 segments and a middle fragment of 12 segments, with a total length of 40 mm and a width of 7 mm, including setae. A few (1–2) simple spinous neurosetae were observed in some of the parapodia. Some of the elytra show the circular patches of pigmentation surrounding the microtubercles, described by Monro (1924:53). The coloration is due to reddish foreign material and is not present on all the elytra.

DESCRIPTION.—Length more than 45 mm, width up to 10 mm, including setae, segments numerous. Wide middorsal ridge on segments 2–5, with three pairs of small ctenidia alongside (Figures 6*a*, 8*a*). Ventral surface papillate, especially more posteriorly (from about segment 20 on; Figures 7*i*, 8*f*). Elytra fleshly, opaque, suborbicular to subreniform, with uniformly distributed microtubercles, scattered clavate micropapillae, and lateral borders with long papillae; sometimes with additional submarginal papillae on lateral and posterior borders; microtubercles low, rounded to subconical (Figures 7*j–m*, 8*j*).

Prostomium with median antenna with large subtriangular auricles on ceratophore and rather short tapered style; lateral antennae short, subulate; four eyes arranged in square, moderate in size, anterior pair larger than posterior pair (sometimes partially hidden by ceratophore and auricles of median antenna); palps extending about to segment 7 (6–9); nuchal organs prominent (Figures 6*a*, 8*a*). Tentacular parapodia with dorsal tentacular cirri subequal in length to median antenna; ventral tentacular cirrus about two thirds as long as dorsal cirrus; inner tentacular lobe extending nearly to tip of ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figures 6*a–c*, 8*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments (Figures 6*d,e*; 8*a–c*). All neurosetae compound falcigers; upper ones with long multiarticulated blades (7–12 articles) and stems with faint spinous rows (Figure

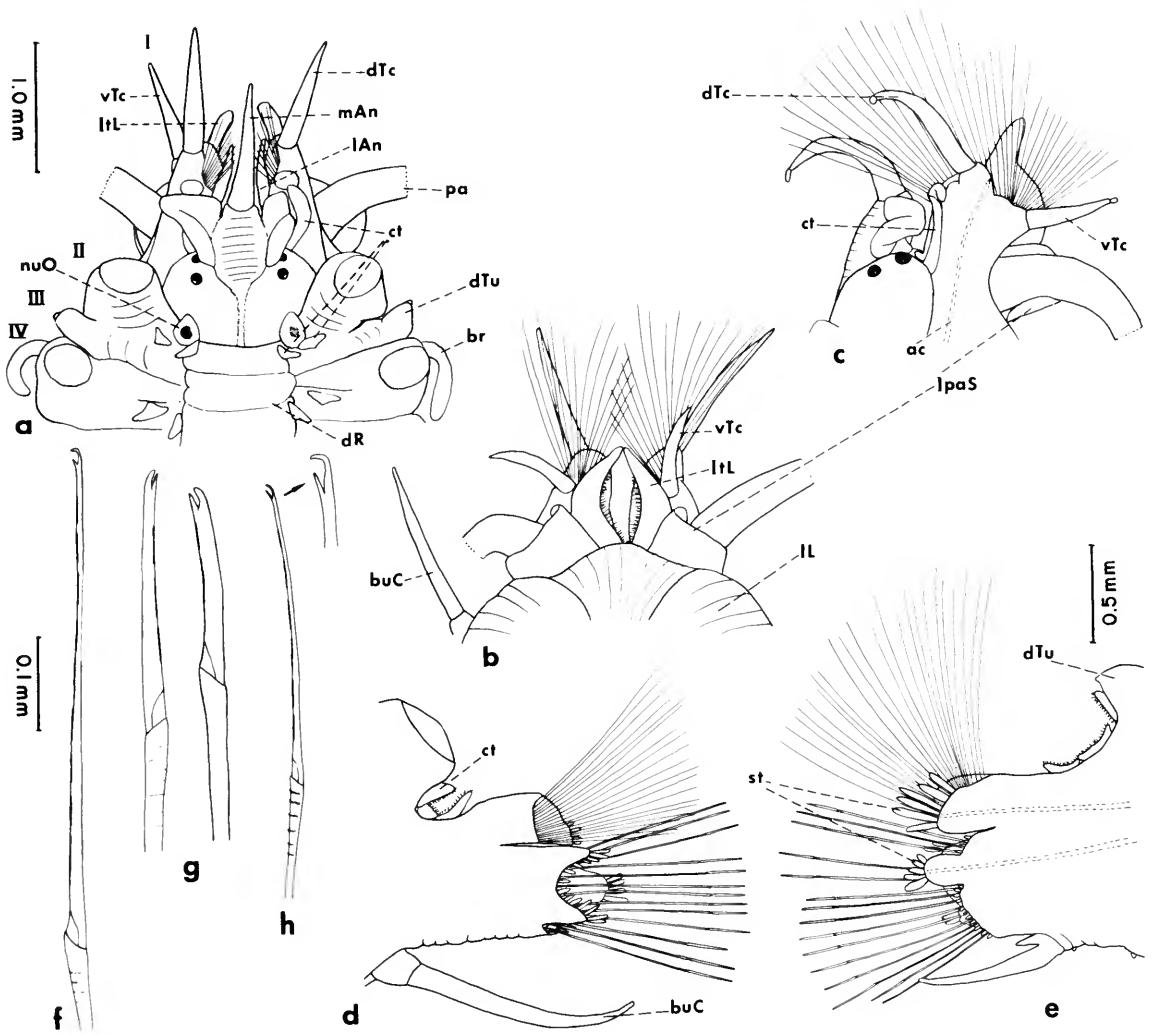

FIGURE 6.—*Willeysthenelais diplocirrus* (holotype of *Sthenelais orientalis*, BMNH 1924: 3: 1: 76): *a*, Anterior end, dorsal view, parapodia of segments II–IV not shown; *b*, same, ventral view; *c*, prostomium and first or tentacular segment, lateral view; *d*, second parapodium, posterior view; *e*, third parapodium, anterior view; *f*, upper neuroseta from second parapodium; *g*, middle neurosetae from same; *h*, lower neuroseta from same.

6*f*); blades of slightly stouter middle ones with 1–7 articles and stems smooth or with faint spinous rows (Figure 6*g*); blades of lower slender ones with 5–10 articles and stems with about six faint spinous rows (Figure 6*h*). Additional small ctenidia located medial to elytrophores of segments II and IV (Figures 6*a*, 8*a*).

Parapodia of anterior (Figures 7*a–c*, 8*e*) and middle regions (Figures 7*h,i*; 8*f*) similar. Cirriform branchiae beginning on segment IV (or small one on II). Clavate notopodia with stylodes (about five) and fimbriated bracts—row of short papillae posteriorly and longer papillae or stylodes on lower anterior part. Neuropodial acicular lobes with 1–3 oval stylodes. Bilobed posterior bracts fimbriated—papillae longer on upper and lower parts. Anteroventral and

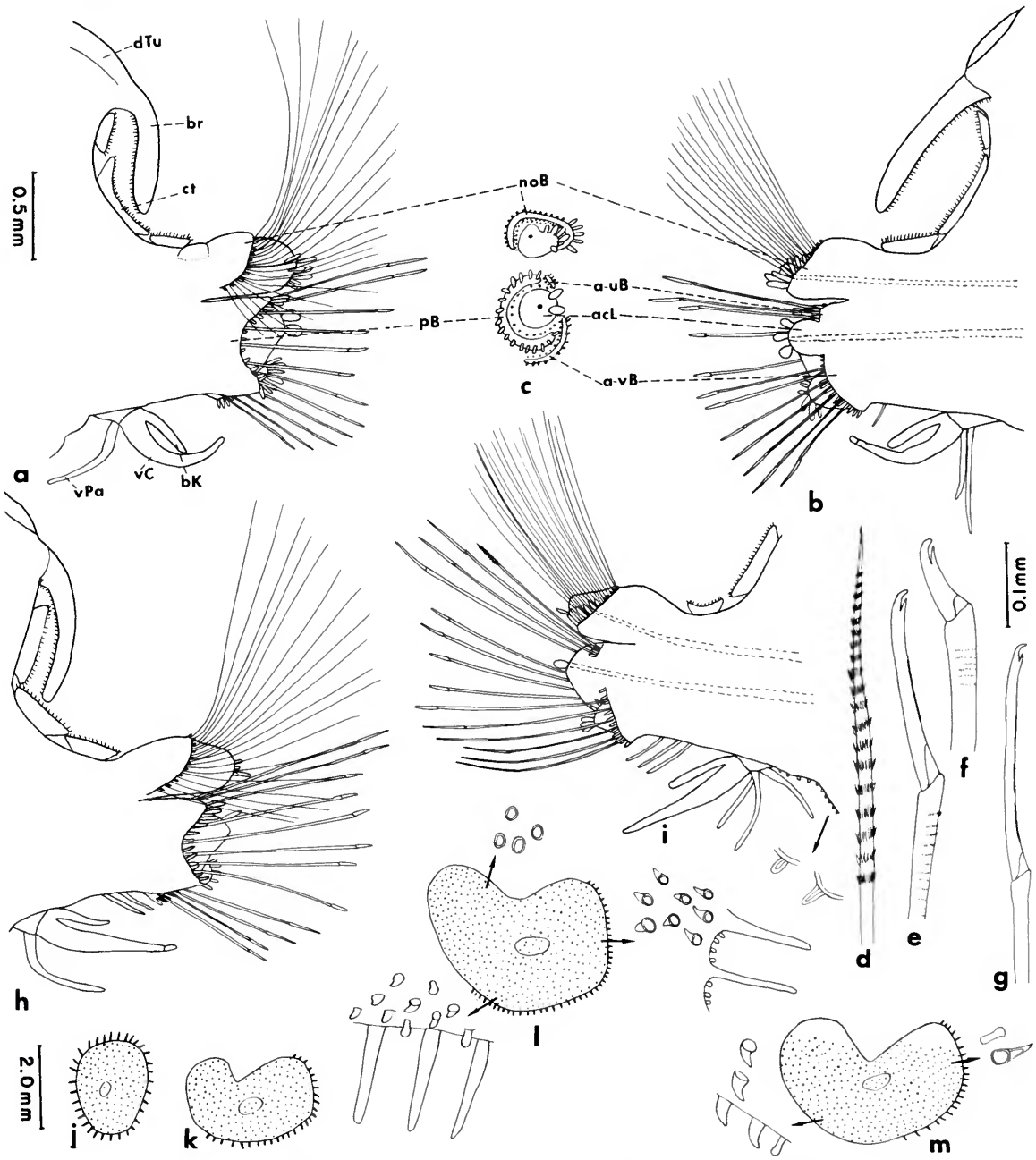

FIGURE 7.—*Willeysthenelais diplocirrus* (holotype of *Sthenelais orientalis*, BMNH 1924: 3: 1: 76): *a*, Parapodium from anterior region, posterior view; *b*, same, anterior view; *c*, same, diagrammatic end view showing arrangement of setae and bracts; *d*, upper simple spinous neuroseta; *e*, upper compound falcigerous neuroseta; *f*, middle compound falcigerous neuroseta; *g*, lower compound falcigerous neuroseta; *h*, parapodium from middle region, posterior view; *i*, same, anterior view; *j*, first elytron; *k*, second elytron; *l*, elytron from anterior region; *m*, elytron from middle region.

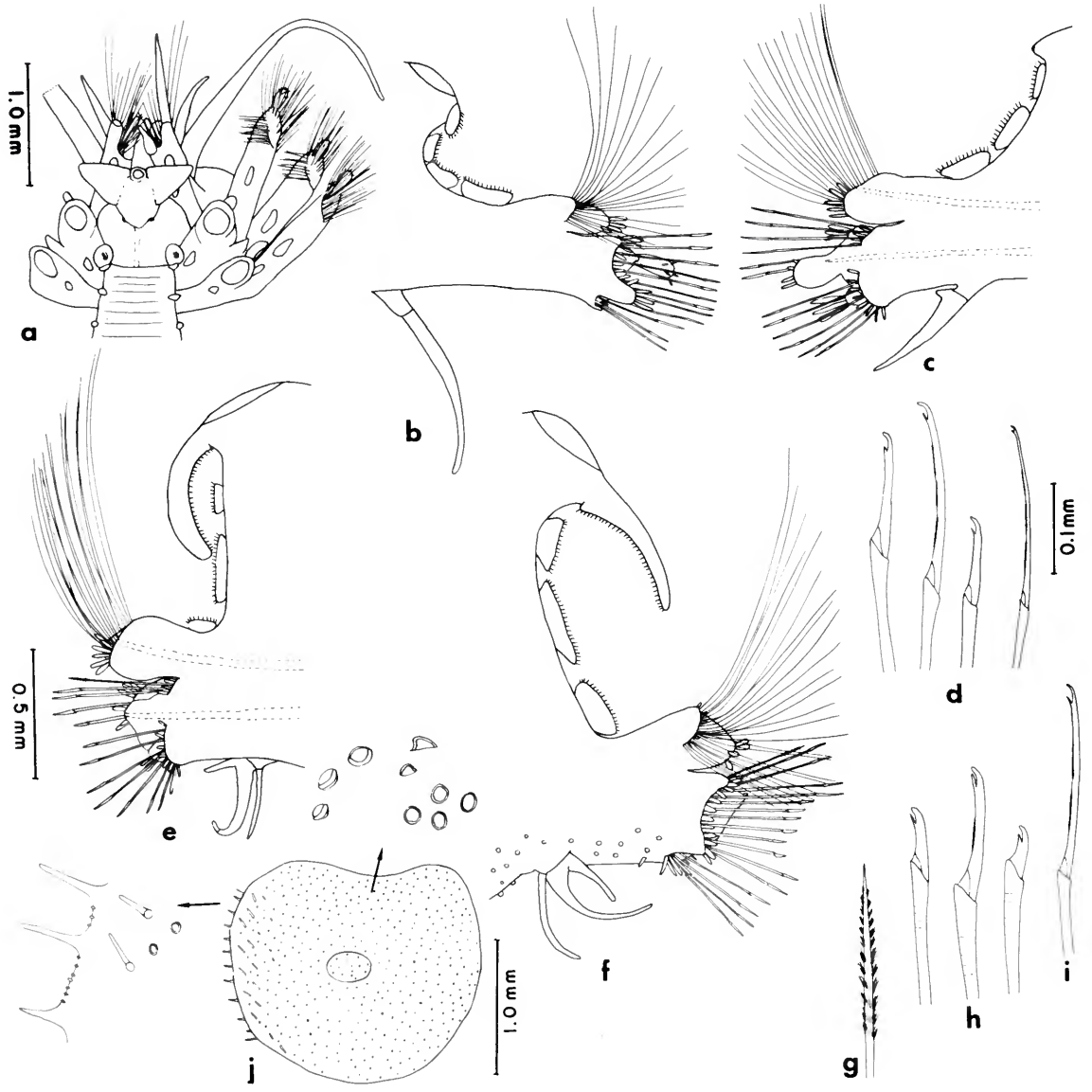

FIGURE 8.—*Willeysthenelais diplocirrus* (specimen from South Vietnam, USNM 43555): *a*, Anterior end, dorsal view; styles of median antenna and upper left tentacular cirrus missing; *b*, second parapodium, posterior view; *c*, third parapodium, anterior view; *d*, upper, middle and lower neurosetae from same; *e*, parapodium from anterior region, anterior view; *f*, parapodium from middle region, posterior view; *g*, upper simple neuroseta from same; *h*, middle neurosetae from same; *i*, lower neuroseta from same; *j*, elytron.

anterior upper bracts fimbriated, with rows of short papillae. Extra papillae (1–4) on lower side of neuropodia medial to anteroventral bracts, beginning about segment 17, increasing in length and number posteriorly. C-shaped group of stout neurosetae with blades short to longer with 1–2 articles; stems with faint spinous rows (Figures 7*f*, 8*h*). Blades of upper anterior group of compound falcigers with 2–6 articles; stems with rather faint spinous rows (Figure 7*e*); simple spinous neurosetae present (1–2) or absent (Figures 7*d*, 8*g*). Blades of anteroventral slender neurosetae with 3–6 articles; stems smooth or with few faint spines (Figures 7*g*, 8*i*). Ventral cirri tapered, with outer basal knob elongated to slightly more than half length of style (small on segment III); long papillae on medial bases of ventral cirri beginning about segment 7 (6–9), usually two in number, sometimes increasing to three (rarely four; single papilla only on smaller specimens from South Vietnam).

REMARKS.—The presence or absence of simple spinous neurosetae, usually a constant character in various sigalionid species, appears to be erratic in *W. diplocirrus*. No simple neurosetae were observed on the holotype of *S. diplocirrus;* none were reported by Willey for *S. zeylanica;* a single one was observed in some of the parapodia of the holotype of *S. orientalis;* 1–2 simple neurosetae were found in some of the parapodia of the holotype of *S. variabilis* var. *colorata* and smaller specimens from South Vietnam (as *S. zeylanica* by Gallardo).

DISTRIBUTION.—Indopacific—Samoa, Eastern Australia, Palau Islands, South Vietnam, Ceylon, Seychelles. In 3 to 91 meters.

Willeysthenelais foliosa (Potts), new combination

Sthenelais foliosa Potts, 1910:351, pl. 21: fig. 64.

MATERIAL EXAMINED.—Saya de Malha, Seychelles, 86 meters, shelly mud, Sealark Expedition 1905, J. S. Gardiner, collector—holotype (BMNH 1924: 3: 1: 73).

TYPE MATERIAL.—The holotype, in rather poor shape, consists of an anterior fragment of 35 segments, 16 mm in length, and 5 mm in width, including setae. The elytra are inflated and many of the setae are broken and covered with crystals.

DESCRIPTION.—Ventral surface papillate, especially posteriorly. Elytra transparent, with uniformly distributed microtubercles, scattered long cylindrical papillae, and lateral borders with few, short papillae; microtubercles sharply conical and flattened, rounded.

Prostomium with median antenna with large expanded auricles on ceratophore; four eyes arranged in square, anterior pair hidden by antennal auricles; palps extending to segment 5. Tentacular parapodia with dorsal tentacular cirri subequal in length to median antenna; ventral tentacular cirri shorter than dorsal cirri; dorsal ctenidia elongate-oval.

Neurosetae of segments II and III with long multiarticulated blades. Branchiae, ctenidia, and parapodia similar to *W. diplocirrus*. Extra papillae (1–3) on lower sides of neuropodia medial to anteroventral bracts. C-shaped groups of stout neurosetae with blades short, with bifid tips; stems with faint spinous rows. Upper anterior group of neurosetae compound falcigerous with long multiarticulated blades; simple spinous ones absent. Anteroventral slender neurosetae with long, multiarticulated blades; stems with few faint spinous rows. Ventral cirri with short outer basal knobs (not elongated, as in *W. diplocirrus*); single long papilla on medial base of ventral cirrus (at least to segment 35).

DISTRIBUTION.—Indian Ocean (Seychelles). In 86 meters.

Willeysthenelais horsti, new species

FIGURES 9, 10

Sthenelais variabilis.—Horst 1917:111, pl. 22: fig. 6 (part; *Siboga* stations 51, 164, 260). [Not Potts 1910]

MATERIAL EXAMINED.—Molo Strait, southern part, 69–91 meters, sand with shells and stones, *Siboga* station 51, 19 April 1899—paratype (USNM 43554). 1°42.5′S, 130°47.5′E, 32 meters, sand, small stones and shells, *Siboga* station 164, 20 August 1899—2 paratypes (ZMA 1387.3, RMNHL 1197). Off Great Kei Island, 5°36.5′S, 132°55.2′E, 90 meters, sand, coral and shells, *Siboga* station 260, 16–18 December 1899—holotype (ZMA 1387.5) and paratype (RMNHL 1196).

REMARKS.—The seven specimens, from five *Siboga* stations and identified by Horst as *Sthenelais variabilis* Potts, proved to be a mixture of three species. One of them, from station 114, agrees with *S. dubiosa* Horst and is referred herein to *Fimbriosthenelais longipinnis* (Grube). Another specimen, from station 240, is referred to *Willeysthenelais bandaensis*, new

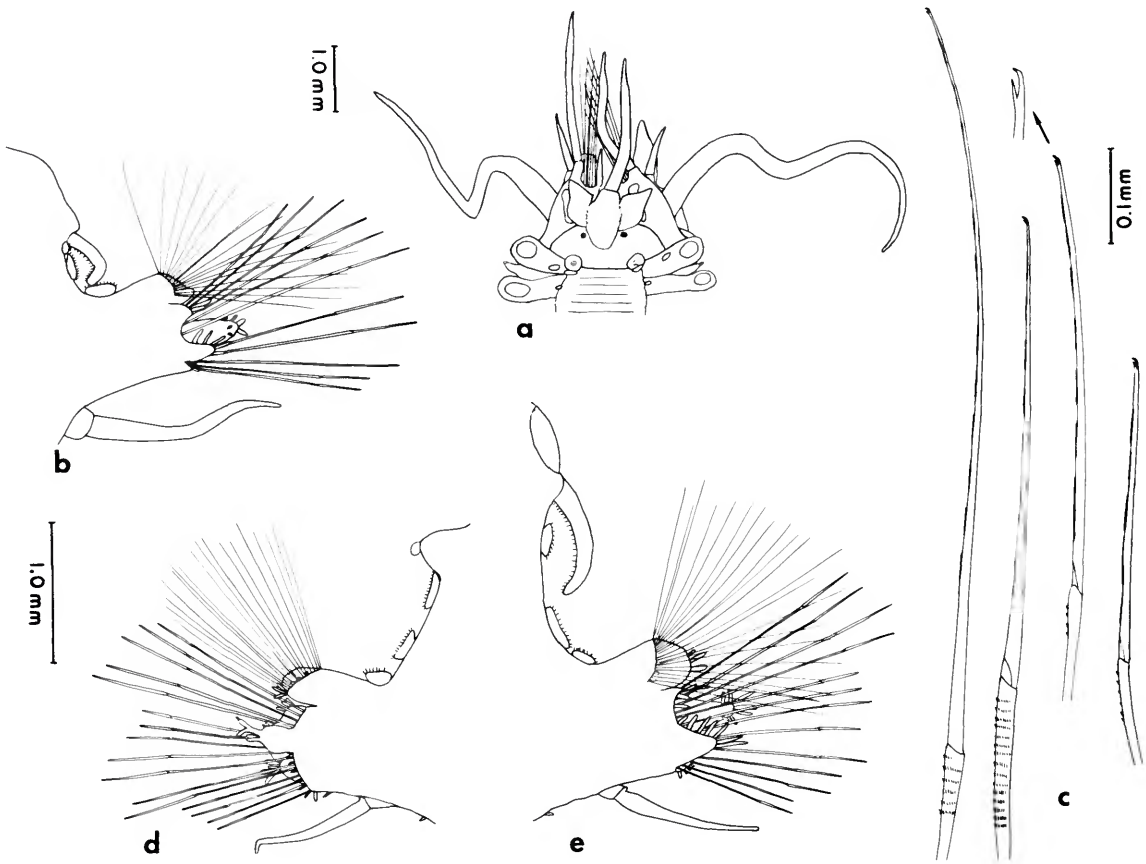

FIGURE 9.—*Willeysthenelais horsti*, new species (holotype, ZMA 1387.5): *a*, Anterior end, dorsal view, pharynx everted, causing prostomium to appear much wider than long; parapodia of segments II–IV not shown; *b*, second parapodium, posterior view; *c*, upper, middle and lower neurosetae from same; *d*, third parapodium, anterior view, *e*, fourth parapodium, posterior view.

species. The five remaining specimens, from stations 51, 164, and 260, form the basis for *W. horsti,* new species. The figure and description by Horst for *S. variabilis* agree with *W. horsti,* rather than the other two species.

TYPE-MATERIAL.—The holotype, in four pieces with posterior end missing, consists of 85 segments, 75 mm in length, and 9 mm in width, including setae; the pharynx is everted. The paratype from the same *Siboga* station consists of an anterior fragment of 38 segments, 35 mm in length, and 11 mm in width, including setae; the pharynx is withdrawn.

DESCRIPTION.—Length more than 85 mm, width up to 11 mm, including setae, segments numerous. Wide middorsal ridge on segments 2–5, with three pairs of small ctenidia alongside (Figure 9*a*). Ventral surface finely papillate, especially more posteriorly (Figure 10*a*). Elytra oval to subreniform, with uniformly distributed microtubercles except for small anterior bare areas; lateral borders with long papillae; sometimes with additional scattered submarginal papillae near lateral borders of more posterior elytra; microtubercles sharply conical and low, rounded (Figure 10*g–j*).

Prostomium with median antenna with large subtriangular auricles on ceratophore and moderately

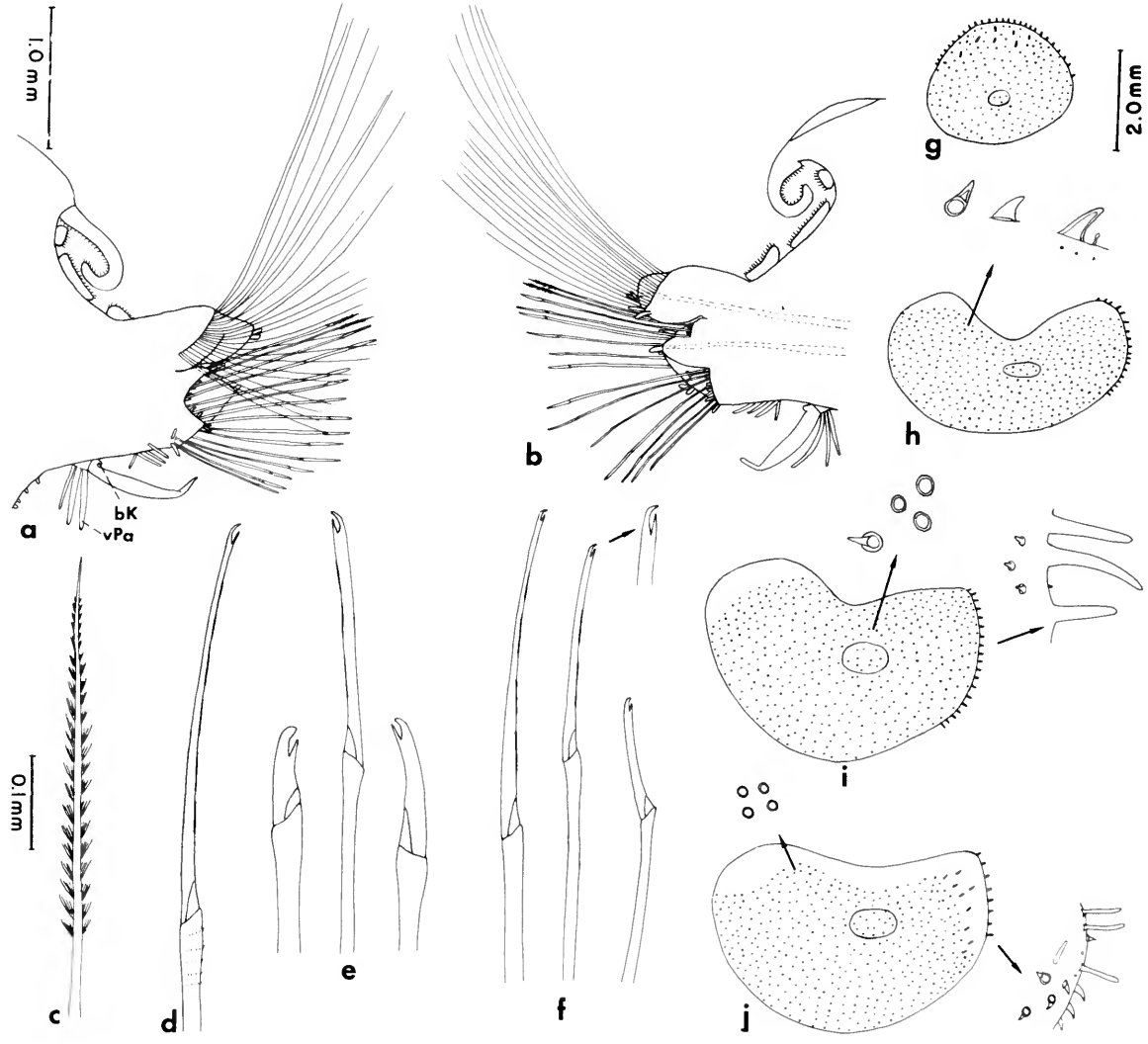

FIGURE 10.—*Willeysthenelais horsti*, new species (holotype, ZMA 1387.5): *a*, Parapodium from anterior region (about segment 25), posterior view; *b*, same, anterior view; *c*, upper simple spinous neuroseta; *d*, upper compound falcigerous neuroseta; *e*, middle neurosetae; *f*, lower neurosetae; *g*, first elytron; *h*, third elytron; *i*, anterior elytron (about segment 25); *j*, more posterior elytron.

long tapered style; lateral antennae short, subulate; four eyes arranged in square, moderate in size, anterior pair much larger than posterior pair and hidden by auricles of median antenna; palps extending about to segment 7 (6–8); nuchal organs prominent (Figure 9*a*). Tentacular parapodia with dorsal tentacular cirri subequal in length to median antenna; ventral tentacular cirri about half as long as dorsal cirri; inner tentacular lobe extending beyond tip of ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 9*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments (Figure 9*b–d*). All neurosetae compound falcigers;

upper ones with very long, multiarticulated blades and stems with numerous spinous rows; middle and lower neurosetae with shorter multiarticulated blades and stems with few spines (Figure 9*c*). Additional small ctenidia located medial to elytrophores of segment II (Figures 9*a*).

Parapodia of anterior (Figures 9*e*, 10*a,b*) and middle regions similar. Cirriform branchia beginning on segment II (Figure 9*b*). Clavate notopodia with stylodes and fimbriated bracts—row of short papillae posteriorly and longer papillae or stylodes on lower anterior part. Neuropodial acicular lobes with several stylodes on anterior parapodia and single one more posteriorly. Bilobed posterior bracts fimbriated, with papillae longer on upper and lower parts. Anteroventral and anterior upper bracts fimbriated, with rows of short papillae. Several longer papillae on ventral sides of neuropodia medial to anteroventral bracts. C-shaped group of stout neurosetae with blades short to longer, with 1–3 articles; stems smooth (Figure 10*e*). Upper anterior group formed of simple spinous neurosetae (Figure 10*c*) and compound falcigers with blades of 6–7 articles and stems with faint spinous rows (Figure 10*d*). Blades of anteroventral slender neurosetae with 1–6 articles; stems smooth (Figure 10*f*). Ventral cirri tapered, with small outer basal knob; long papillae on medial bases of ventral cirri, beginning about segment 6, up to 3–4 in number. Pharynx with eleven pairs of dorsal and ventral papillae in addition to lateral pair.

DISTRIBUTION.—Indonesia. In 32 to 91 meters.

Willeysthenelais bandaensis, new species

FIGURE 11

Sthenelais variabilis.—Horst 1917:111 (part; *Siboga* station 240). [Not Potts, 1910]

MATERIAL EXAMINED.—Banda Anchorage, 9–45 meters, *Siboga* station 240, 22 November–1 December 1899—holotype (ZMA 1387.4).

DESCRIPTION.—Length of holotype (anterior fragment of 46 segments) 20 mm, width, including setae, 5 mm. Wide middorsal ridge on segments 2–5 (Figure 11*a*). Ventral surface smooth, not papillate. Elytra subreniform, mostly smooth, with microtubercles confined to anterior crescent-shaped areas (Figure 11*m*) and on medial areas of more posterior elytra (Figure 11*n,o*), with long papillae along lateral borders and several irregular submarginal rows; microtubercles low, rounded.

Prostomium with median antenna with large auricles on ceratophore and moderately long style; lateral antennae short, subulate; four eyes arranged in square, moderate in size, anterior pair larger than posterior pair, hidden by auricles of median antenna; palps extending about to segment 5; nuchal organs prominent (Figure 11*a*). Tentacular parapodia with dorsal tentacular cirri shorter than median antenna; ventral tentacular cirri about half as long as dorsal cirri; inner tentacular lobe extending nearly to tip of ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 11*a,b*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments (Figure 11*a,c–e*). All neurosetae compound falcigerous, upper ones with long multiarticulate blades (about 6 articles) and stems with spinous rows; middle ones stouter, with articulate blades (about 4 articles) and stems smooth; lower ones slender, with articulate blades and stems with few spines (Figure 11*d*). Additional small ctenidia located medial to elytrophores of segment II (Figure 11*a*).

Parapodia of anterior (Figure 11*f–h*) and middle regions similar. Cirriform branchiae beginning on segment IV (Figure 11*f*). Clavate notopodia with few stylodes and fimbriated bracts—few papillae on lower anterior part. Neuropodial acicular lobes with 1–3 oval stylodes. Bilobed posterior bracts fimbriated—papillae longer on upper and lower parts. Anteroventral bracts fimbriated, with row of short papillae. Additional papillae (2–4) on lower sides of neuropodia medial to anteroventral bracts. Blades of C-shaped group of stout neurosetae short to longer, with 1–2 articles, with smooth stems (Figure 11*k*). Upper anterior group of neurosetae simple spinous (Figure 11*i*) and compound falcigerous with long articulate blades (about 6 articles); stems with few spines (Figure 11*j*). Blades of anteroventral slender neurosetae with 2–5 articles; stems smooth or with few spines (Figure 11*l*). Ventral cirri tapered, with short outer basal knob; usually 2 (2–3) long papillae on medial bases of ventral cirri.

DISTRIBUTION.—Indonesia. In 9 to 45 meters.

Willeysthenelais suluensis, new species

FIGURE 12

Sthenelais orientalis.—Horst 1917:113, pl. 22: figs. 8, 9, pl. 23: figs. 1, 2. [Not Potts 1910]

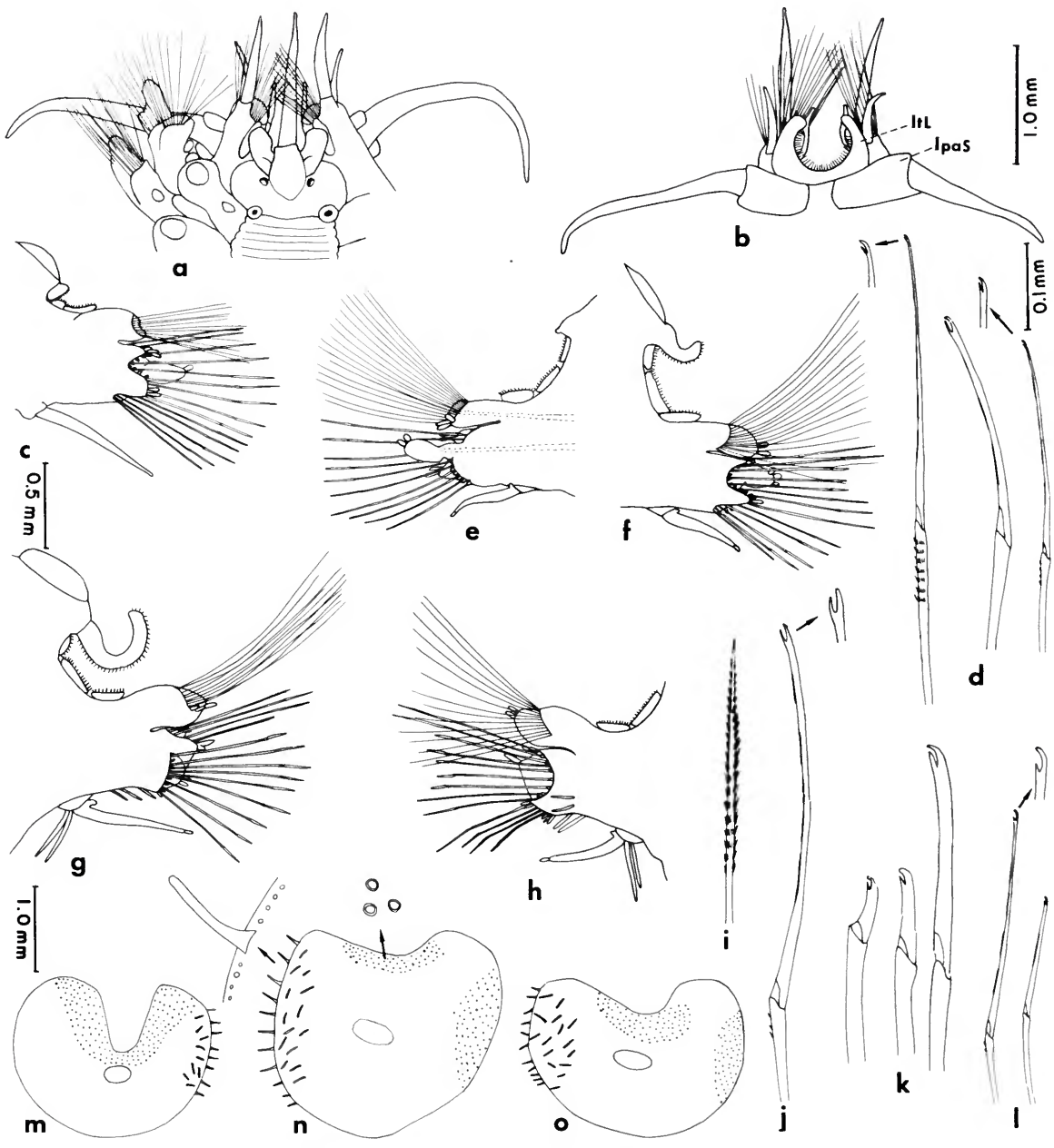

FIGURE 11.—*Willeysthenelais bandaensis,* new species (holotype, ZMA 1387.4): *a,* Anterior end, dorsal view; *b,* same, ventral view, pharynx partially everted (not shown); *c,* second parapodium posterior view; *d,* upper, middle and lower neurosetae from same; *e,* third parapodium, anterior view; *f,* fourth parapodium, posterior view; *g,* parapodium from anterior region (about segment 25), anterior view; *h,* same, posterior view; *i,* upper simple spinous neuroseta; *j,* upper compound falcigerous neuroseta; *k,* middle stout neurosetae; *l,* lower slender neurosetae; *m,* third right elytron; *n,* elytron from anterior region (about segment 19); *o,* elytron from middle region (about segment 44).

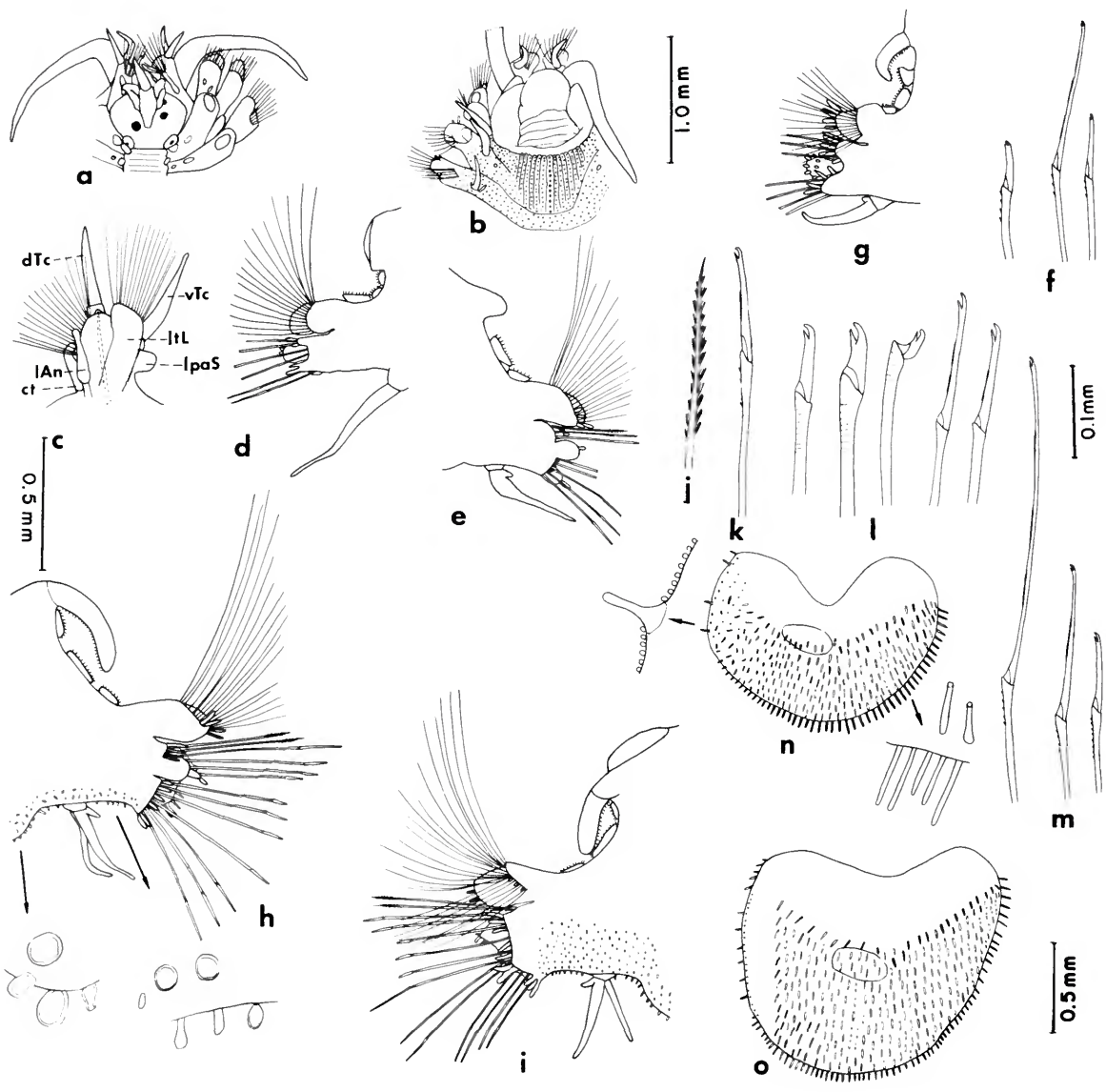

FIGURE 12.—*Willeysthenelais suluensis*, new species (holotype, ZMA 1386): *a*, Anterior end, dorsal view, left posterior eye abnormally misplaced; *b*, anterior end, ventral view, pharynx partially everted; *c*, first or tentacular parapodium, medial view; *d*, second parapodium, posterior view; *e*, third parapodium, anterior view, neurosetae mostly broken; *f*, middle and lower neurosetae from same; *g*, fourth parapodium, posterior view, neurosetae mostly broken; *h*, parapodium from anterior region (about segment 25), anterior view; *i*, same, posterior view; *j*, upper simple spinous neuroseta; *k*, upper compound falcigerous neuroseta; *l*, middle stout neurosetae; *m*, lower slender neurosetae, *n*, second left elytron; *o*, 13th left elytron.

MATERIAL EXAMINED.—Anchorage off North Ubian, 6° 7.5'N, 120° 26'E, 16–23 meters, *Lithothamnion* bottom, *Siboga* station 99, 28–30 June 1899—holotype (ZMA 1386). South-east side of Pearl Bank, Sulu Archipelago, 15 meters, *Lithothamnion* bottom, *Siboga* station 96, 27 June 1899—paratype (RMNHL 1194).

DESCRIPTION.—Length of holotype (anterior fragment of 34 segments) 11 mm, width 3 mm, including setae; length of paratype (anterior fragment of 60 segments) 20 mm, width 3 mm, including setae. Wide middorsal ridge on segments 2 to 5, with three pairs of small ctenidia alongside (Figure 12*a*). Ventral surface and ventral sides of parapodia thickly papillate (Figure 12*b,h,i*). Elytra oval to subreniform; except for anterior bare areas and some lateral bare areas in more posterior elytra, surface covered with numerous long cylindrical papillae and few scattered clavate papillae; external borders with few marginal papillae, enlarged basally, and row of rounded sensory micropapillae (Figure 12*n,o*).

Prostomium with median antenna with rather large subtriangular auricles on ceratophore and short tapered style; lateral antennae short, subulate; four eyes arranged in square, moderate in size, anterior pair larger than posterior pair, partly hidden by antennal auricles; palps extending to segments 5–7; nuchal organs prominent (Figure 12*a*). Tentacular parapodium with both dorsal and ventral tentacular cirri subequal in length to median antenna; inner tentacular lobe extending slightly beyond acicular lobe, fused to shorter rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 12*a–c*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments (Figure 12*a,d,e*). Neurosetae compound falcigerous with blades short to long, multiarticulate (Figure 12*f*). Additional small ctenidia located medial to elytrophores of segments II and IV (Figure 12*a*).

Parapodia of anterior (Figure 12*g–i*) and middle regions similar. Cirriform branchiae beginning on segment IV. Clavate notopodia with stylodes and fimbriated bracts—row of short papillae posteriorly and longer papillae or stylodes on lower anterior part. Neuropodial acicular lobes with few oval stylodes. Slightly bilobed posterior bracts fimbriated—papillae longer on upper and lower parts. Anteroventral and anterior upper bracts fimbriated, with rows of long papillae. Blades of C-shaped group of stout neurosetae short to longer with 1–3 articles; stems smooth or with faint spinous rows (Figure 12*l*). Upper anterior group of neurosetae simple spinous (beginning on segment III; Figure 12*j*) and compound falcigerous with blades of 2 articles and stems with about 5 spines (not always present; Figure 12*k*). Blades of anteroventral slender neurosetae with 1–5 articles; stems with 5–8 faint spines (Figure 12*m*). Ventral cirri tapered, with prominent outer basal knobs and single long papilla on medial base.

DISTRIBUTION.—Indonesia. In 15 to 23 meters.

Willeysthenelais suezensis, new species

FIGURE 13

Sthenelais zeylanica.—Fauvel 1927:416. [Not Willey 1905]

MATERIAL EXAMINED.—Lake Timsah, Suez Canal, Suez Canal Expedition, station T–8, 4 December 1924—holotype (BMNH 1926:11:12:20–22).

TYPE-MATERIAL.—The holotype consists of a long coiled specimen of about 135 segments with the posterior end missing, about 60 mm in length and 4 mm in width, including setae; the pharynx is everted.

DESCRIPTION.—Wide middorsal ridge on anterior segments, with seven pairs of small ctenidia alongside on segments 2–11 (Figure 13*a*). Ventral surface thickly papillate with globular papillae, especially posteriorly (Figure 13*d,h*). Elytra suborbicular to subreniform; first elytron with scattered micropapillae and fringe of papillae on anterior and lateral margins (Figure 13*j*); elytra from anterior region with flattened and conical microtubercles, scattered micropapillae and lateral fringes of papillae (Figure 13*k,l*); those from middle region with dense groups of microtubercles on anterior and medial areas and scattered larger microtubercles and micropapillae on other regions (Figure 13*m*); elytra from posterior region mostly with cylindrical papillae and few scattered microtubercles (Figure 13*n*).

Prostomium with median antenna with large auricles on ceratophore and rather short tapered style; lateral antennae short, subulate; four eyes arranged in square on slightly raised ocular areas, rather small, anterior pair larger than posterior pair, partly hidden by antennal auricles; palps extending about to segment 5; nuchal organs prominent (Figure 13*a*). Tentacular parapodium with dorsal and ventral

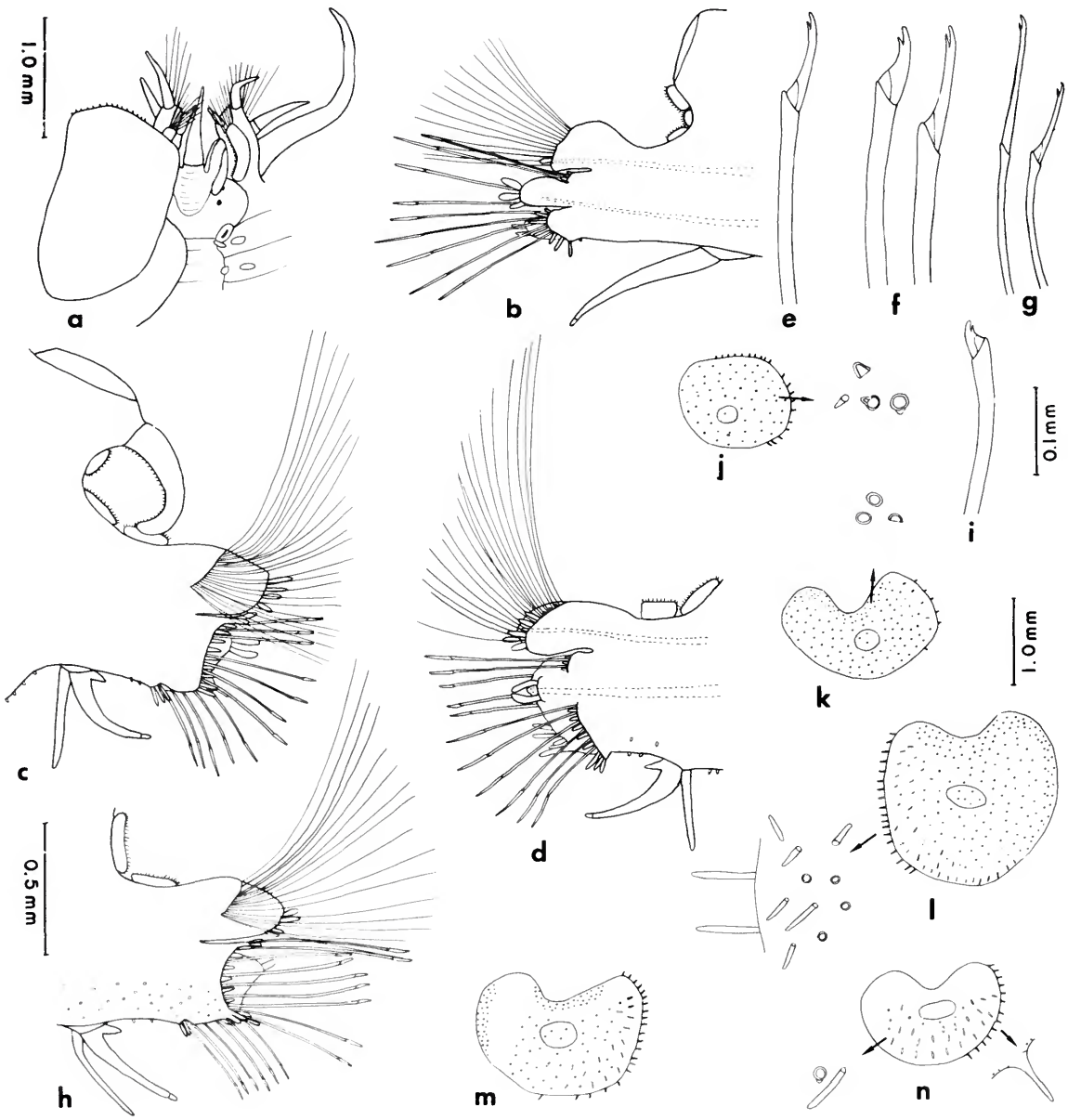

FIGURE 13.—*Willeysthenelais suezensis* new species (holotype, BMNH 1926: 11: 12: 20–22): *a*, Anterior end, dorsal view; *b*, second parapodium, anterior view; *c*, parapodium from anterior region, posterior view; *d*, same, anterior view; *e*, upper neuroseta from same; *f*, middle neurosetae from same; *g*, lower neurosetae from same; *h*, parapodium from middle region, posterior view; *i*, middle neuroseta from same; *j*, first elytron; *k*, second elytron; *l*, elytron from anterior region; *m*, elytron from middle region; *n*, elytron from posterior region.

tentacular cirri subequal in length, shorter than median antenna; inner tentacular lobe fused to large rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 13*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments (Figure 13*b*). All neurosetae compound falcigerous, with smooth stems; blades of upper stouter ones with 1–7 articles; blades of lower slender ones with 2–7 articles. Additional small ctenidia located medial to elytrophores of segments II and IV (Figure 13*a*).

Parapodia of anterior (Figure 13*c,d*) and middle regions (Figure 13*h*) similar. Cirriform branchiae beginning on segment IV. Clavate notopodia with stylodes and fimbriated bracts—row of short and longer papillae or stylodes on lower anterior part. Neuropodial acicular lobes with 1–2 oval stylodes. Slightly bilobed posterior bracts fimbriated—papillae longer on upper and lower parts. Anteroventral and anterior upper bracts fimbriated, with rows of short papillae. C-shaped group of stout neurosetae with blades short to longer, with stems smooth (Figure 13*f,i*). Upper anterior group of compound falcigers similar to middle group, with stems sometimes showing faint spines (Figure 13*e*); without simple spinous neurosetae except occasionally in far posterior parapodia. Blades of anteroventral slender neurosetae with 1–3 articles, with smooth stems (Figure 13*g*). Ventral cirri tapered, with prominent outer basal knobs; single long papilla on medial base of ventral cirrus, beginning on segment V.

DISTRIBUTION.—Suez Canal.

Willeysthenelais heterochela (Horst), new combination

FIGURE 14

Sthenelais heterochela Horst, 1917:113, pl. 23: figs. 3–6.

MATERIAL EXAMINED.—Sanana Bay, east coast of Sula Besi, 22 meters, mud, *Siboga* station 193, 13/14 September 1899—holotype (ZMA 1383).

TYPE MATERIAL.—The holotype consists of an anterior fragment of 53 segments, 30 mm in length and 5 mm in width, including setae. It is a female having numerous eggs in the body cavity.

DESCRIPTION.—Wide middorsal ridge on anterior segments, with few pairs of small ctenidia alongside (Figure 14*a*). Ventral surface smooth. Elytra delicate, transparent, subreniform, smooth except for areas along anterior borders furnished with small rounded microtubercles; lateral borders with long papillae; elytra of anterior and middle regions with lateral notch (Figure 14*l–n*).

Prostomium with median antenna with large rounded auricles on ceratophore and moderately long tapered style; lateral antennae short, subulate; four eyes arranged in square, moderate in size, anterior pair much larger than posterior pair, hidden by antennal auricles; palps extending about to segment 7; nuchal organs prominent (Figure 14*a,b*). Tentacular parapodia with dorsal tentacular cirri subequal in length to median antenna; ventral tentacular cirrus about half as long as dorsal cirrus; inner tentacular lobe not extending beyond tip of ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 14*a–c*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments, with more numerous and longer papillae or stylodes. (Figure 14*a,d,e*). Neurosetae compound falcigerous with blades of 1–4 articles, with elongated terminal inner tooth; stems smooth or with 3–5 spinous rows (Figure 14*f*); upper simple spinous neurosetae beginning on segment III. Additional small ctenidia located medial to elytrophores of segment II (Figure 14*a*).

Parapodia of anterior (Figure 14*g,h*) and middle regions similar. Cirriform branchiae beginning on segment IV. Clavate notopodia with stylodes and fimbriated bracts—few posterior papillae and few papillae or stylodes on lower anterior part. Neuropodial acicular lobes with single oval stylode. Bilobed posterior bracts fimbriated—papillae longer on upper and lower parts. Anteroventral bracts fimbriated, with row of short papillae. Extra papillae (2–4) on lower sides of neuropodia medial to anteroventral bracts. C-shaped group of stout neurosetae with blades short, with greatly elongated inner curved distal tooth; stems smooth (Figure 14*j*). Upper anterior group simple spinous neurosetae (Figure 14*i*). Anteroventral slender neurosetae similar to those of middle group (Figure 14*k*). Ventral cirri tapered, with small outer basal knob; long papillae on medial bases of ventral cirri beginning on segment III (single one), usually 2, sometimes 3.

DISTRIBUTION.—Indonesia. In 22 meters.

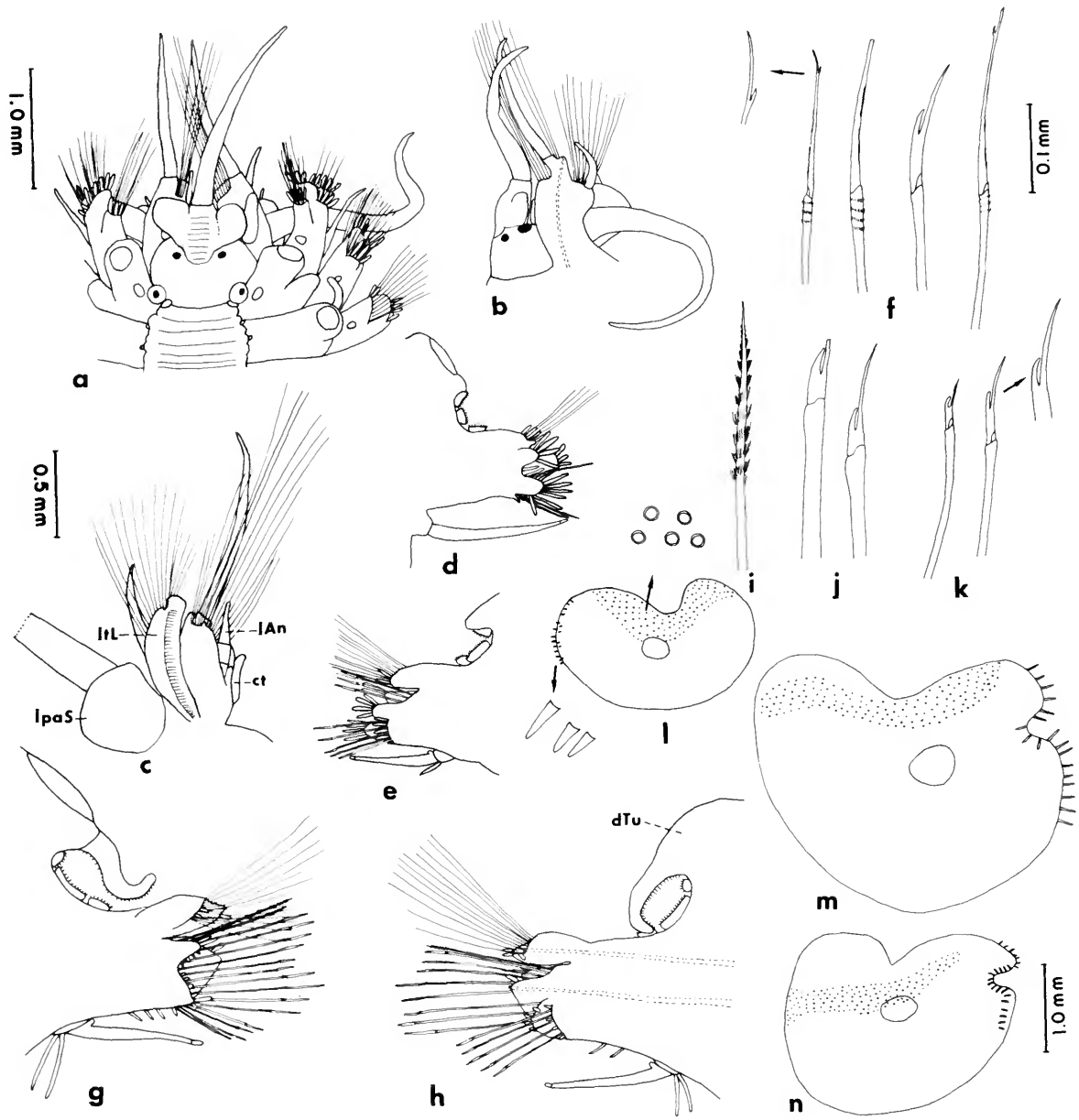

FIGURE 14.—*Willeysthenelais heterochela* (holotype, ZMA 1383): *a*, Anterior end, dorsal view; *b*, prostomium and right tentacular parapodium, lateral view; *c*, right tentacular parapodium, medial view; *d*, second parapodium, posterior view, neurosetae mostly broken; *e*, third parapodium, anterior view; *f*, neurosetae from same; *g*, parapodium from anterior region (about segment 25), posterior view; *h*, same, anterior view; *i*, upper simple spinous neuroseta from same; *j*, middle neurosetae from same; *k*, lower neurosetae from same; *l*, left second elytron; *m*, right elytron from anterior region (about segment 25); *n*, right elytron from middle region (about segment 50).

Fimbriosthenelais, new genus

TYPE-SPECIES.—*Sthenelais longipinnis* Grube, 1870. Gender: feminine.

DIAGNOSIS.—Body elongate, vermiform, with numerous segments; broad middorsal ridge on some anterior segments, bordered by few pairs of small ctenidia. Elytra numerous pairs, on segments 2, 4, 5, 7, alternate segments to 27, and continuing on all segments. Elytra large, covering dorsum, with microtubercles or papillae and lateral fringes of papillae [absent in *F. laevis* (Kinberg)?]. Dorsal tubercles on segments 3, 6, 8, and alternate segments to 26. Prostomium rounded, fused to first or tentacular segment; median antenna with stout cylindrical ceratophore furnished with lateral auricles and terminal style; lateral antennae fused to inner dorsal sides of tentacular parapodia; four eyes; palps emerging ventral to tentacular parapodia; paired oval nuchal organs (sometimes inconspicuous). Tentacular parapodia extending anteroventral to prostomium, each with pair of tentacular cirri, single aciculum, two bundles of capillary setae, L-shaped inner tentacular lobe with ciliated ridge and fused to inner palpal sheath; ciliated dorsal ctenidium. Parapodia of second or buccal segment extending anteriorly, with ventral buccal cirri longer than those following; small ctenidia on lateral lips and medial to ventral cirri of some anterior segments. Third segment with dorsal tubercles fused to posterior sides of elytrophores of segment II. Neurosetae of segments II and III compound falcigerous with articulate blades and bifid tips.

Branchiae cirriform, ciliated, on external borders of all elytrophores and dorsal tubercles except few anterior ones. Parapodial ctenidia cup-shaped, ciliated, three per parapodium, beginning on segment II. Parapodia with accessory bracts and papillate stylodes. Notopodia clavate, with bracts nearly encircling acicular lobes. Notosetae numerous, arranged in semicircular row and directed posterodorsally, finely spinous, and tapering to capillary tips. Neuropodia with conical acicular lobes; truncate or bilobed C-shaped posterior bracts directed anteriorly on upper and lower margins; crescent-shaped anteroventral and anterior upper bracts. Neurosetae arranged in three groups: upper group within anterior upper bracts, C-shaped group of stouter neurosetae within posterior bracts, and lower arched group of more slender neurosetae within anteroventral bracts. Neurosetae simple spinous (in upper group; sometimes absent) and compound falcigerous with some blades articulate and tips bifid; distal parts of stems smooth or spinous. Ventral cirri subulate, with outer basal knobs (without long papillae on medial bases). Pharynx with eleven or thirteen pairs of papillae and two pairs of jaws.

ETYMOLOGY.—The genus is named for the characteristic fimbriated or papillated parapodial stylodes.

The following species of *Sthenelais* are referred herein to *Fimbriosthenelais,* new genus:

1. *S. laevis* Kinberg, 1858. Society Islands, Central Pacific. See *F. laevis* (Kinberg).
2. *S. longipinnis* Grube, 1870. Red Sea. See *F. longipinnis* (Grube).
3. *S.? zetlandica* McIntosh, 1876a. North Atlantic off Shetland Islands. See *F. zetlandica* (McIntosh).
4. *S. atlantica* McIntosh, 1876b. North Atlantic off Great Britain. See *F. zetlandica* (McIntosh).
5. *S. minor* Pruvot and Racovitza, 1895. France. See *F. minor* (Pruvot and Racovitza).
6. *S. sarsi* McIntosh, 1897. Norway. See *F. zetlandica* (McIntosh).
7. *S. variabilis* var. *glabra* Potts, 1910. Maldives. See *F. longipinnis* (Grube).
8. *S. variabilis* var. *hirsuta* Potts, 1910. Maldives. See *F. hirsuta* (Potts).
9. *S. calcarea* Potts, 1910. Maldives. See *F. hirsuta* (Potts).
10. *S. dubiosa* Horst, 1917. Indonesia. See *F. longipinnis* (Grube).
11. *S. minor* var. *digitata* Fauvel, 1919. Red Sea. See *F. longipinnis* (Grube).
12. *S. dahli* Augener, 1927. New Britain, Bismark Archipelago. See *F. hirsuta* (Potts).
13. *S. papillosa* Day, 1960. South Africa. See *F. zetlandica* (McIntosh).
14. *S. vachoni* Rullier, 1964. Cape Verde Islands, off NW Africa. See *F. zetlandica* (McIntosh).

The following species of *Fimbriosthenelais,* new genus are recognized:

1. *F. laevis* (Kinberg).
2. *F. longipinnis* (Grube).
3. *F. zetlandica* (McIntosh)
4. *F. minor* (Pruvot and Racovitza).
5. *F. hirsuta* (Potts).
6. *F. hobbsi* new species.

REMARKS.—One of the characters that has been used to separate species has been the presence or absence of simple spinous neurosetae. This character appears to have doubtful value in some of the species referred to *Fimbriosthenelais*. The simple neurosetae are apparently absent in *F. zetlandica* (including *atlantica, sarsi, papillosa,* and *vachoni*), *F. hobbsi* (at least to segment 31), and *F. laevis* (at least to segment 15). They may be present (2–3 per parapodium), except in more anterior segments, in *F. longipinnis* (including *variabilis* var. *glabra* and *dubiosa*); they were not observed in *S. minor* var. *digitata* by Fauvel. In the lectotype of *F. hirsuta,* they are absent except for a single one observed in some of the posterior parapodia; a single one is present in some parapodia of *S. calcarea;* they were not observed in *S. dahli* by Augener. In *F. minor,* they appear to be present (St. Joseph's specimen from Brest, France) or absent (not observed by Pruvot and Racovitza).

Key to the Species of *Fimbriosthenelais,* New Genus

1. Neuropodial posterior bracts bilobed (Figures 16*a*, 18*d*, 23*e*). Compound falcigerous neurosetae differing markedly in length and width 2
1′. Neuropodial posterior bracts truncate, not bilobed, with row of papillate stylodes (Figures 21*e*, 22*a*, 24*d*). Compound falcigerous neurosetae similar, not differing markedly in length and width; blades of upper and lower neurosetae with 2–3 articles; middle ones with 2 articles (Figures 22*c-e*, 24*f*-h). [Ventral surface thickly papillate. Nuchal organs inconspicuous] 5
2′. Blades of compound falcigerous neurosetae of middle group with 1 article; those of upper and lower groups with 1–3 articles (Figure 23*h-j*). Lobes of bilobed posterior bracts without stylodes (Figure 23*e*). Branchiae beginning on segment IV. Nuchal organs indistinct (Figure 23*a*). Ventral surface smooth. [Lateral borders of elytra with long papillae; elytral surface with scattered microtubercles, characteristically encrusted with sand grains (Figure 23*k-m*)] ..... ***F. minor*** (Pruvot and Racovitza)
2′. Blades of compound falcigerous neurosetae of middle group with 1–3 articles; those of upper and lower groups with 2–8 articles (Figures 16*d-f*, 18*g-i*, 20*a-c*). Upper and lower lobes of bilobed posterior bracts each with few papillate stylodes (Figures 16*a*, 18*d*). Branchiae beginning on segment VI. Nuchal organs distinct (Figure 15*a*). Ventral surface finely papillate 3
3. Elytra smooth, without tubercles or papillae (according to Kinberg; all elytra now missing on holotype) ..... ***F. laevis*** (Kinberg)
3′. Elytra with microtubercles and papillae 4
4. Elytra with simple lateral fringes of papillae; microtubercles confined chiefly to anterior and medial areas (except for few anterior elytra; Figures 16*g-i*, 17*a-e*) ..... ***F. longipinnis*** (Grube)
4′. Elytra with lateral fringes of papillae as well as some submarginal ones; microtubercles distributed throughout (Figures 18*j*, 19*a-e*) ..... ***F. hirsuta*** (Potts)
5. Elytra with lateral and posterior borders with short clavate to globular micropapillae; elytral surface with flat to subconical microtubercles, some very lightly chitinized and appearing areolate (Figures 21*i,j*, 22*f*). Branchiae beginning on segment IV ..... ***F. zetlandica*** (McIntosh)
5′. Elytra with lateral borders with long papillae; elytral surface with scattered microtubercle-papillae (Figure 24*i-k*). Branchiae beginning on segment VI ..... ***F. hobbsi*** new species

Fimbriosthenelais longipinnis (Grube), new combination

FIGURES 15–17

Sthenelais longipinnis Grube, 1870:493; 1875:75, 77.
Sthenelais variabilis Potts, 1910:349 (part; var. *glabra*), pl. 19: fig. 22 [not fig. 23], pl. 21: fig. 63—Horst 1917:11 [part; *Siboga* station 114].—Monro 1939:172 [part; not Cape Verde Islands].
Sthenelais dubiosa Horst, 1917:111, pl. 22: fig. 7.
[?]*Sthenelais minor* var. *digitata* Fauvel, 1919:344.

MATERIAL EXAMINED.—Red Sea, Ehrenberg, collector—holotype of *Sthenelais longipinnis* (ZMB 495).

Maldive Islands, Hulule, Male Atoll, 20 June 1900, J. S. Gardiner, collector—lectotype of *Sthenelais variabilis* (var. *glabra*) (BMNH 1924:3:1:105).

Indonesia: Bay of Badjo, west coast of Flores, shore, *Siboga* station 50, 16/18 April 1899—syntype of *Sthenelais dubiosa* (ZMA 1388). Kwandang Bay entrance, 0°58.5′N, 122°55′E, 75 meters, very fine hard sand, *Siboga* station 114, 8 July 1899—1 speci-

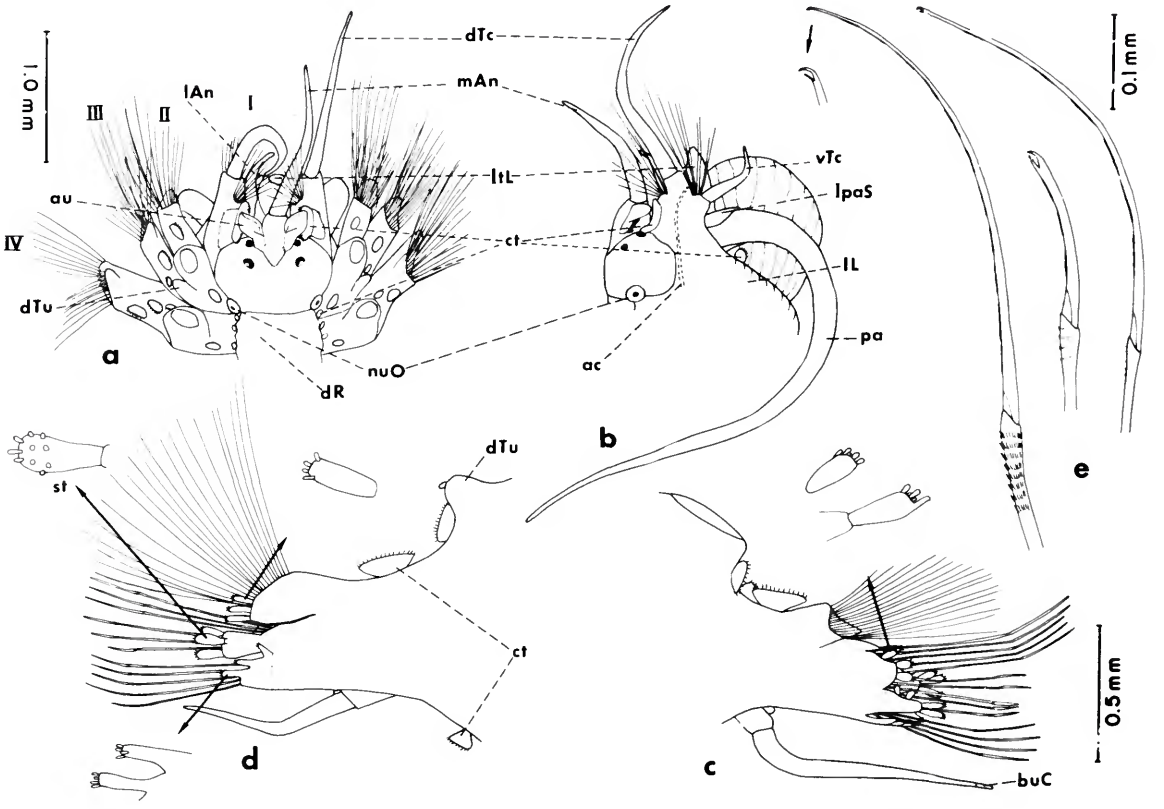

FIGURE 15.—*Fimbriosthenelais longipinnis* (syntype of *Sthenelais dubiosa*, ZMA 1388): *a*, Anterior end, dorsal view; *b*, lateral view of prostomium and right tentacular parapodium, pharynx partially everted; *c*, second parapodium, posterior view; *d*, third parapodium, anterior view; *e*, upper, middle, and lower neurosetae from same.

men (ZMA 1387.2; identified by Horst as *S. variabilis*). Anchorage east of Dangar Besar, Saleh Bay, reef, *Siboga* station 313, 14/16 February 1900—syntype of *S. dubiosa* (RMNHL 1195).

Marianas, Lagoon west of Saipan, 4 May 1949, P. E. Cloud, collector—1 specimen (USNM 26096).

TYPE-MATERIAL.—The holotype of *Sthenelais longipinnis* (ZMB 495) consists of an anterior fragment of 25 segments and a posterior fragment of 56 segments, including a regenerating end of about 13 segments, with a total length of 29 mm and 3 mm in width, including setae. All the elytra are now missing except for a single one loose in the vial (Figure 17*a*).

The types of *Sthenelais variabilis*, deposited in the British Museum, consist of three syntypes from the Maldive Islands (BMNH 1924:3:1:105–106). Potts (1910) described two varieties, var. *glabra* and var. *hirsuta*, based chiefly on differences in the elytra. The varieties were not clearly indicated on the labels. One of the three syntypes agrees with the var. *glabra* and is herein selected as the lectotype (BMNH 1924: 3:1:105). The other two specimens (BMNH 1924: 3:1:106a, b) agree with var. *hirsuta* and are referred to *Fimbriosthenelais hirsuta*. The lectotype of *S. variabilis* var. *glabra* consists of an anterior fragment of 58 segments, 22 mm long and 4 mm wide, including setae; eggs are present in the body cavity. Some of the elytra show faint color markings.

The two syntypes of *Sthenelais dubiosa* consist of anterior fragments. One of them (ZMA 1388) has

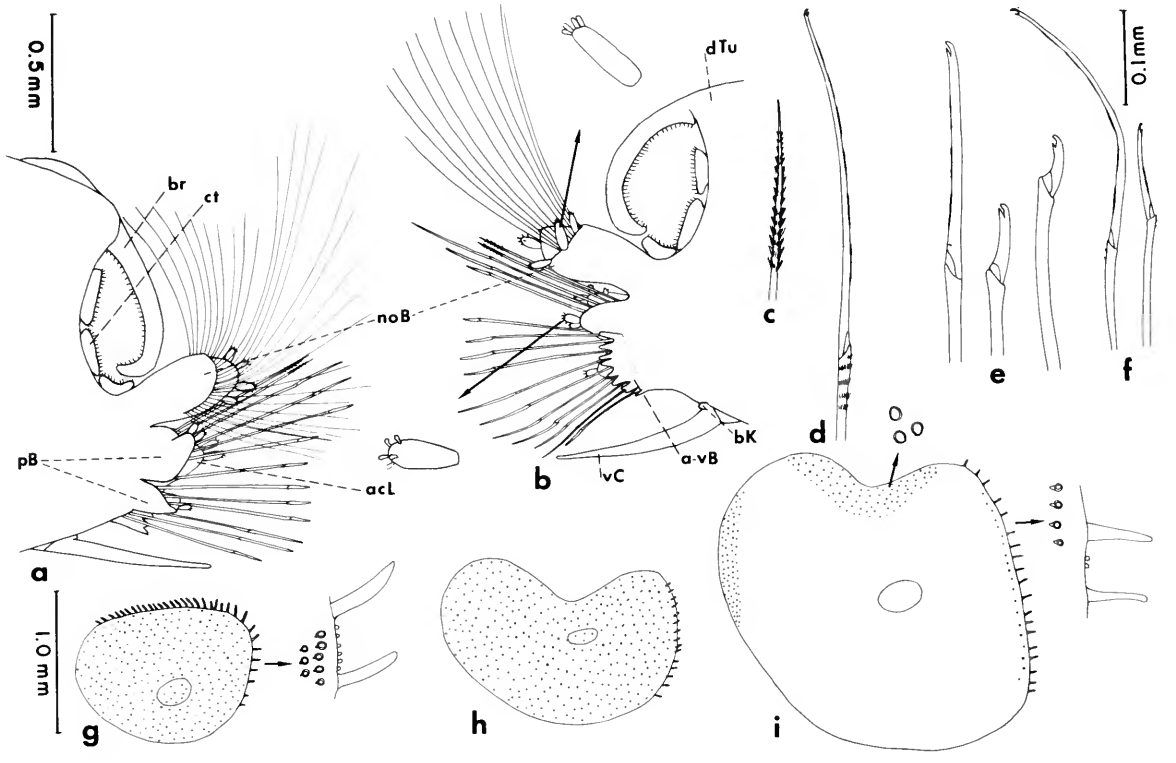

FIGURE 16.—*Fimbriosthenelais longipinnis* (syntype of *Sthenelais dubiosa*, ZMA 1388): *a*, Parapodium from anterior region (about segment 25), posterior view; *b*, same, anterior view; *c*, upper simple neuroseta from same; *d*, upper compound falcigerous neuroseta from same; *e*, middle neurosetae from same; *f*, lower neurosetae from same; *g*, right first elytron; *h*, right third elytron; *i*, right 13th elytron.

41 segments and is 22 mm long and 4 mm wide, including setae. The other syntype (RMNHL 1195) has 34 segments, is 13 mm long and 5 mm wide, including setae.

DESCRIPTION.—Length more than 30 mm, width 3 to 5 mm, including setae, segments numerous (more than 80). Wide middorsal ridge on segments 2–5, with 2–4 pairs of small ctenidia alongside (Figure 15*a*). Ventral surface finely papillate. Elytra thin, transparent, suborbicular, subrectangular to subreniform. Anterior elytra with uniformly distributed microtubercles and lateral borders with papillae; microtubercles low, rounded to subconical (Figures 16*h*, 17*b*). More posterior elytra with microtubercles confined to anterior and medial regions, sometimes with few submarginal microtubercles near lateral papillate borders (Figures 16*i*, 17*a,c–e*).

Prostomium with median antenna with large auricles on ceratophore and moderately long tapered style; lateral antennae short, subulate; four eyes arranged in square, moderately large, anterior pair much larger than posterior pair; palps extending about to segment 12 (9–16); nuchal organs small (Figure 15*a,b*). Tentacular parapodium with dorsal tentacular cirri longer than median antenna; ventral tentacular cirrus about half as long as dorsal cirrus; inner tentacular lobe shorter than ventral tentacular cirrus, fused to shorter, rounded inner palpal sheath; dorsal ctenidium elongate-oval (Figure 15*a,b*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments; with pair of small ctenidia on lateral lips (Figure 15*a–d*). All neurosetae compound falcigerous, with articulate blades (3–11 articles), and bifid tips;

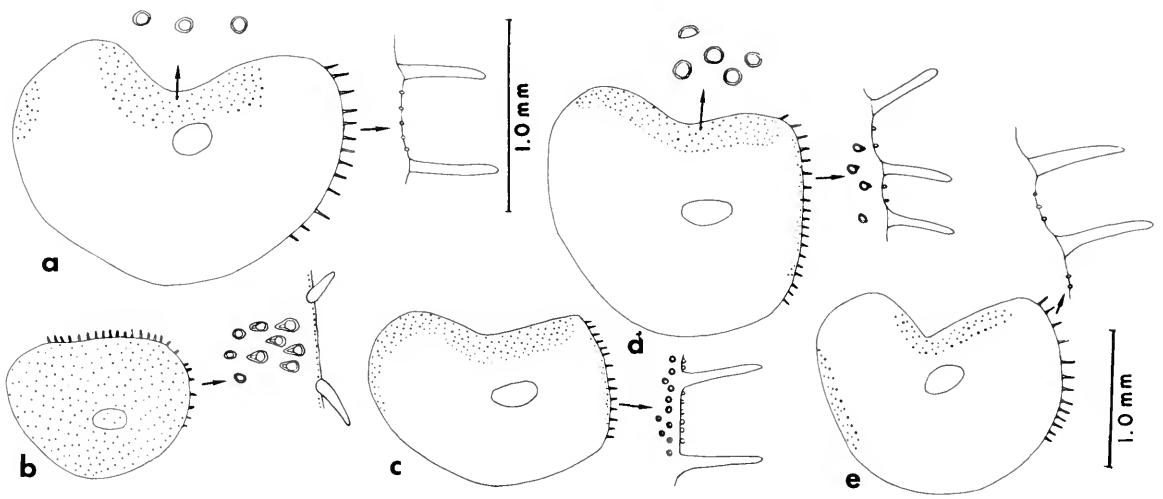

FIGURE 17.—*Fimbriosthenelais longipinnis* (*a*, holotype of *Sthenelais longipinnis*, ZMB 495; *b–e*, lectotype of *Sthenelais variabilis* var. *glabra*, BMNH 1924: 3: 1: 105): *a*, Elytron (loose in vial); *b*, first elytron; *c*, third elytron; *d*, elytron from anterior region; *e*, elytron from middle region.

stems with 3–10 spinous rows; lower neurosetae more slender than middle and upper ones (Figure 15*e*). Additional small ctenidia located medial to elytrophores of segments II and IV and medial to ventral cirri of segments III–XIII (Figure 15*a,d*).

Parapodia of anterior (Figure 16*a,b*) and middle regions similar. Cirriform branchiae beginning on segment VI. Notopodial bracts with row of papillate clavate stylodes on anterior side. Neuropodial acicular lobes with 1–2 papillate clavate stylodes. Upper and lower lobes of bilobed posterior bracts each with few papillate clavate stylodes (1–3). Anteroventral bracts fimbriated. Anterior upper bracts inconspicuous. Blades of C-shaped group of stout neurosetae short to longer, with 1–3 articles; stems smooth or with few spines (Figure 16*e*). Upper anterior group of neurosetae simple spinous (Figure 16*c*; not present on more anterior segments) and compound falcigerous with articulate blades (4–7 articles) and stems with 2–7 spinous rows (Figure 16*d*). Blades of anteroventral slender neurosetae with 2–7 articles; stems with 1–2 spines (Figure 16*f*). Ventral cirri with small basal knob.

REMARKS.—The types of *Sthenelais minor* var. *digitata* Fauvel (1919) from the Red Sea were not available for study. The original description agrees for the most part with *W. longipinnis*, also from the Red Sea, except for the absence of simple spinous neurosetae. This character appears to be somewhat variable in at least some of the species of *Fimbriosthenelais*.

DISTRIBUTION.—Red Sea, Indopacific (Maldives, Zanzibar, Indonesia), Central Pacific (Marianas). Low water to 75 meters.

Fimbriosthenelais hirsuta (Potts), new combination

FIGURES 18, 19

Sthenelais variabilis Potts, 1910:349 (part; var. *hirsuta*), pl. 19: fig. 23.
Sthenelais calcarea Potts, 1910:349, pl. 19: fig. 24.
Sthenelais dahli Augener, 1927:125, fig. 1a-e.
Sthenelais variabilis var. *hirsuta*.—De Silva 1961:168, fig. 3.

MATERIAL EXAMINED.—Maldives, Hulule, Male Atoll, 20 June 1900, J. S. Gardiner, collector—2 lectotypes of *Sthenelais variabilis* var. *hirsuta* (BMNH 1924:3:1:106a,b). Maldives, Goidu, Gorfurfehendu Atoll, J. S. Gardiner, collector—syntype of *Sthenelais calcarea* (BMNH 1924:3:1:92). Ralum, New Britain, Bismark Archipelago, 5 meters, 28 November 1896, Dahl, collector—holotype of *Sthenelais dahli* (ZMB 6551).

TYPE MATERIAL.—Both lectotypes of *Sthenelais*

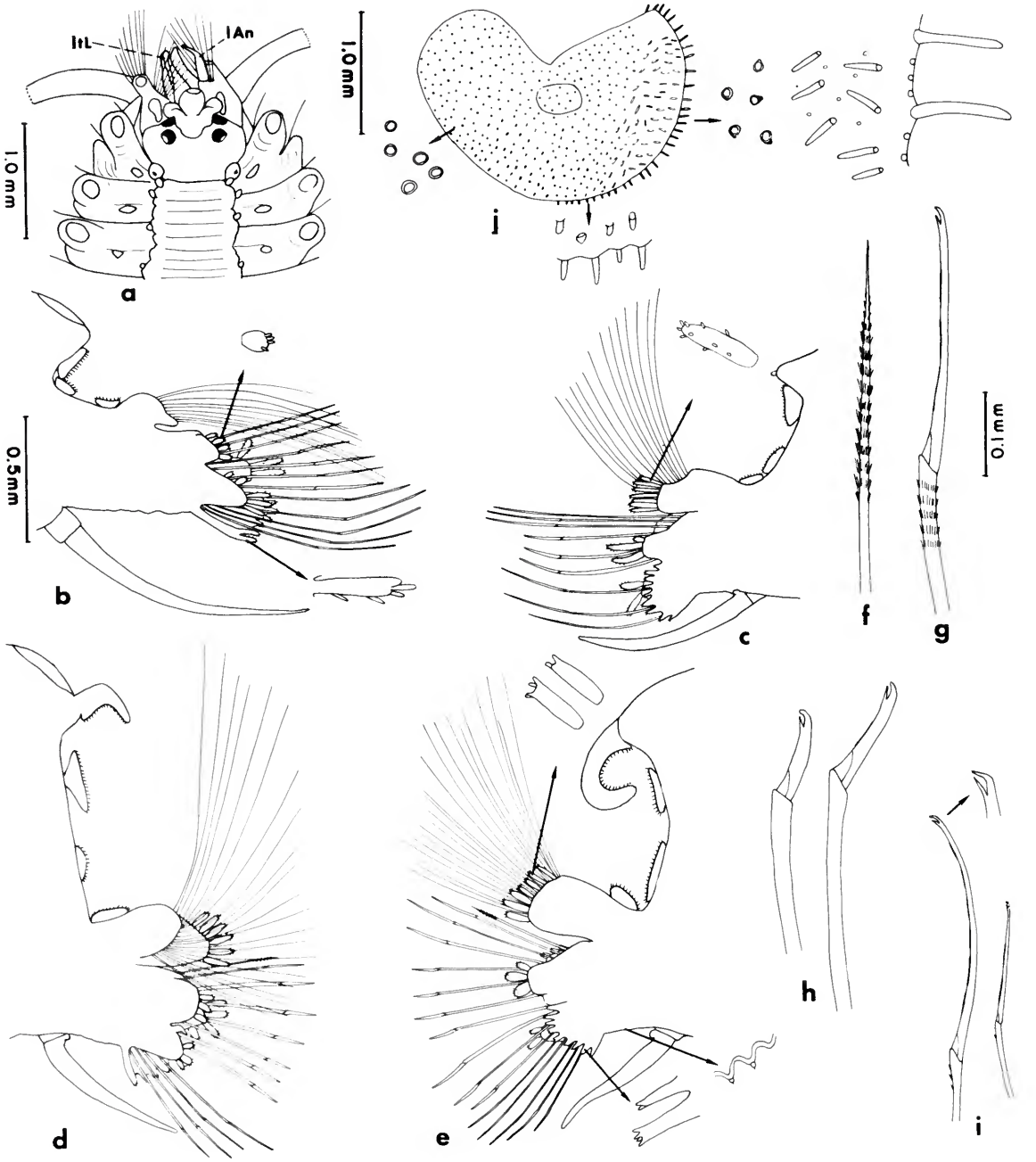

FIGURE 18.—*Fimbriosthenelais hirsuta* (lectotype of *Sthenelais variabilis* var. *hirsuta,* BMNH 1924: 3: 1: 106a): *a,* Anterior end, dorsal view; styles of median antenna and dorsal tentacular cirri missing; parapodia of segments II–V not shown; *b,* second parapodium, posterior view; *c,* third parapodium, anterior view; *d,* parapodium from anterior region, posterior view; *e,* same, anterior view; *f,* upper simple neuroseta from same; *g,* upper compound falcigerous neuroseta from same; *h,* middle neurosetae from same; *i,* lower neurosetae from same; *j,* elytron from middle region.

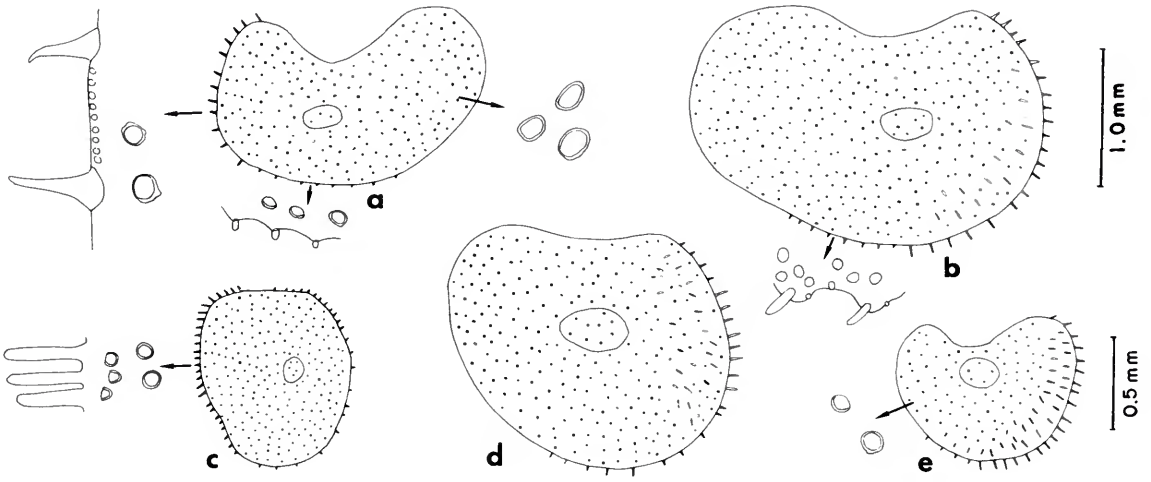

FIGURE 19.—*Fimbriosthenelais hirsuta* (*a,b*, holotype of *Sthenelais calcarea*, BMNH 1924: 3: 1: 92; *c–e*, holotype of *Sthenelais dahli*, ZMB 6551): *a*, Left second elytron; *b*, right elytron from anterior region; *c*, left first elytron; *d*, right elytron from anterior region; *e*, right elytron from middle region.

variabilis var. *hirsuta* consist of anterior fragments. One of them (106a) has 50 segments and is 28 mm long and 4 mm wide, including setae. The other (106b) has 72 segments, with a length of 44 mm, and a width of 4 mm, including setae.

The syntype of *Sthenelais calcarea* consists of an anterior fragment of about 85 segments, 40 mm in length and 4 mm in width, including setae.

The holotype of *Sthenelais dahli* consists of an anterior fragment of about 70 segments, 21 mm in length and 3 mm in width, including setae.

DESCRIPTION.—Length more than 57 mm, width 4 mm, including setae, segments numerous (more than 92). Wide middorsal ridge on segments 2–5, with 4 pairs of small ctenidia alongside (Figure 18*a*). Ventral surface finely papillate. Elytra suborbicular to subreniform, with uniformly distributed microtubercles; lateral borders and submarginal areas with long cylindrical papillae; microtubercles low, rounded to subconical (Figures 18*j*, 19*a–e*).

Prostomium with median antenna with large auricles on ceratophore (style missing); lateral antennae short, subulate; four eyes arranged in square, large, subequal in size or anterior pair larger than posterior pair; palps extending about to segment 10 (8–11); nuchal organs prominent (Figure 18*a*). Tentacular parapodium with dorsal tentacular cirrus moderately long; ventral tentacular cirrus about half as long as dorsal cirrus; inner tentacular lobe shorter than ventral tentacular cirrus, continuous with shorter, rounded inner palpal sheath; dorsal ctenidia elongate-oval (Figure 18*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments; with pair of small ctenidia on lateral lips (Figure 18*b,c*). All neurosetae compound falcigerous, with articulated blades (4–9 articles) and bifid tips; stems with 2–9 spinous rows; lower neurosetae more slender than middle and upper ones. Additional small ctenidia located medial to elytrophores of segments II, IV, and V and medial to ventral cirri of segments III–X (Figure 18*a*).

Parapodia of anterior (Figure 18*d,e*) and middle regions similar. Cirriform branchiae beginning on segment VI. Notopodial bracts with row of papillate clavate stylodes on anterior side. Neuropodial acicular lobes with 2–3 papillate clavate stylodes. Upper and lower lobes of bilobed posterior bracts each with 3–4 papillate clavate stylodes. Anteroventral bracts fimbriated. Anterior upper bracts inconspicuous. Blades of C-shaped group of stout neurosetae short to longer with 1–3 articles; stems smooth (Figure

18*h*). Upper anterior group of neurosetae simple, spinous (Figure 18*f;* single one present or absent) and compound falcigerous with articulated blades (3–8 articles) and stems with 4–7 spinous rows (Figure 18*g*). Blades of anteroventral slender neurosetae with 3–8 articles; stems with 2–3 spines (Figure 18*i*). Ventral cirri with small basal knob.

DISTRIBUTION.—Indopacific–Maldives, Ceylon, New Britain.

Fimbriosthenelais laevis (Kinberg), new combination

FIGURE 20

Sthenelais laevis Kinberg, 1858:29, pl. 8: fig. 40.—Hartman 1949:35, pl. 5: figs. 7–9.

MATERIAL EXAMINED.—Eimeo reefs, Society Islands, South Pacific, among corals, *Eugenie* Expedition—holotype (NRS 383).

TYPE-MATERIAL.—The holotype is in poor shape, being flaccid and covered with crystals and fine filaments. It consists of an anterior fragment of 15 segments (36 originally, according to Kinberg), 6 mm long (20 mm—Kinberg), and 4 mm in width, including setae. All of the elytra are now missing.

DESCRIPTION.—Wide middorsal ridge on segments 2–5, with four pairs of small ctenidia alongside. Ventral surface finely papillate. Elytra missing (according to Kinberg, elytra smooth, lacking microtubercles and papillae). Prostomium with median antenna with large auricles on ceratophore; style missing; lateral antennae short, tapered (indicated as tentacular cirri by Kinberg); eyes faded (4 semilunar eyes on 2 semiglobular bulbs, according to Kinberg); palps extending to segment 11; nuchal organs small, rounded (see Kinberg, pl. 8: fig. 40B). Tentacular parapodia with two pairs of tentacular cirri; styles of dorsal ones missing (their cirrophores confused with lateral antennae by Kinberg); ventral tentacular cirri short, tapered; inner tentacular lobes shorter than ventral tentacular cirri, continuous with shorter, rounded inner palpal sheaths; dorsal ctenidium elongate-oval (see Kinberg, pl. 8: fig. 40B).

Branchiae beginning on segment VI. Parapodia similar to those of *F. longipinnis*. Blades of C-shaped group of neurosetae short to longer, with 1–3 articles; stems smooth (Figure 20*b*). Blades of upper anterior group of compound falcigerous neurosetae with 3–8 articles; stems with 4–5 spinous rows (Figure 20*a*; simple spinous neurosetae absent). Blades of anteroventral slender neurosetae with 3–6 articles; stems with 1–3 faint spines (Figure 20*c*).

DISTRIBUTION.—Central Pacific (Society Islands).

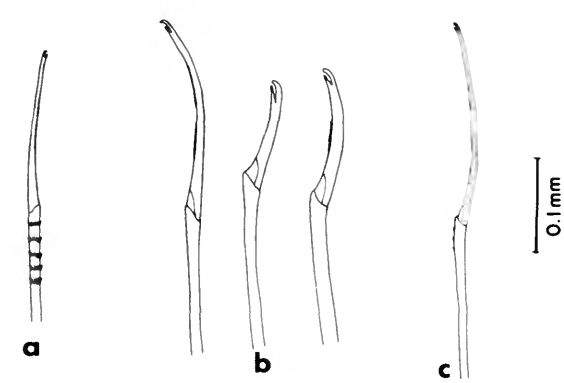

FIGURE 20.—*Fimbriosthenelais laevis* (holotype, NRS 383): *a*, Upper neuroseta; *b*, middle neurosetae; *c*, lower neuroseta.

Fimbriosthenelais zetlandica (McIntosh), new combination

FIGURES 21, 22

Sthenelais? zetlandica McIntosh, 1876a:390, pl. 70: figs. 15–17.

Sthenelais atlantica McIntosh, 1876b:405, pl. 72, figs. 16, 17; 1900:415, pl. 29: fig. 2, pl. 34: fig. 8, pl. 41: figs, 27, 28.

Sthenelais sarsi McIntosh, 1897:174, pl. 3: figs. 1–5.

Sthenelais zetlandica.—McIntosh 1900:414, pl. 30: fig. 14, pl. 34: fig. 7, pl. 41: figs. 24–26.—Southern 1914:55, pl. 6: fig. 13A,B.—Eliason 1962:228.

Sthenelais papillosa Day, 1960:289, fig. 3e-j; 1967:108, fig. 1.20.a-e.

Sthenelais vachoni Rullier, 1961:139, fig. 6,A–L.

MATERIAL EXAMINED.—North Atlantic off Shetland Island, dredged, 1867, G. Jeffreys, collector—holotype of *Sthenelais? zetlandica* (BMNH 1921:5:1:593). North Atlantic off Great Britain, 558 meters, *Porcupine* station 2, 1870—holotype of *Sthenelais atlantica* (BMNH 1921:5:1:594).

Cape Verde Islands off Northwest Africa, 15° 16′30″N, 23°47′35″W, 50–65 meters, shelly bottom, *Calypso* station 26, 18 November 1959—holotype of *Sthenelais vachoni* (MNHNP).

False Bay, South Africa, 34°13.3′S, 18°31′E, 39

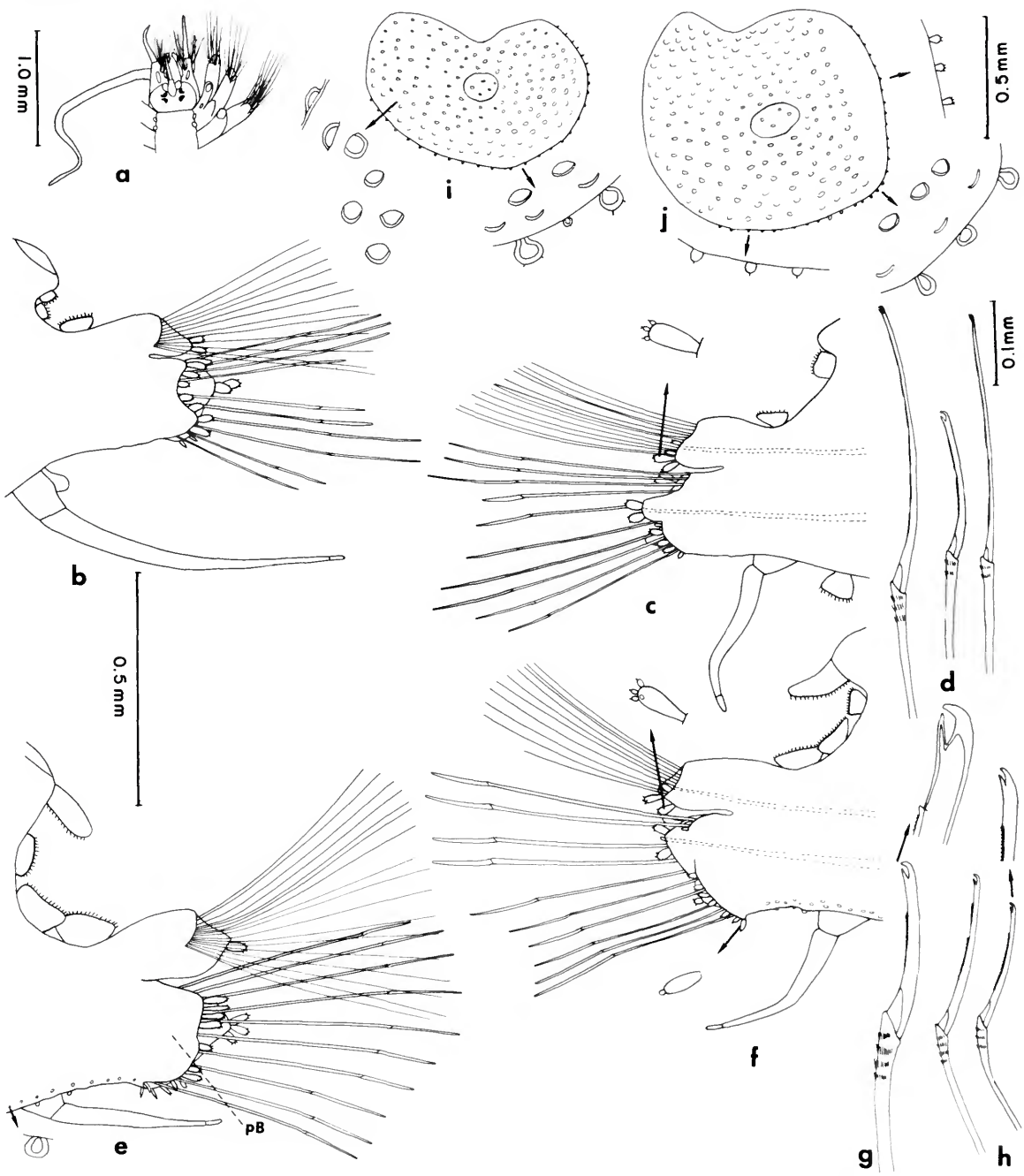

FIGURE 21.—*Fimbriosthenelais zetlandica* (holotype of *Sthenelais vachoni,* MNHNP): *a,* Anterior end, dorsal view; *b,* second parapodium, posterior view; *c,* third parapodium, anterior view; *d,* upper, middle, and lower neurosetae from same; *e,* parapodium from anterior region, posterior view; *f,* same, anterior view; *g,* middle neuroseta from same; *h,* lower neurosetae from same; *i,* right third elytron; *j,* elytron from anterior region.

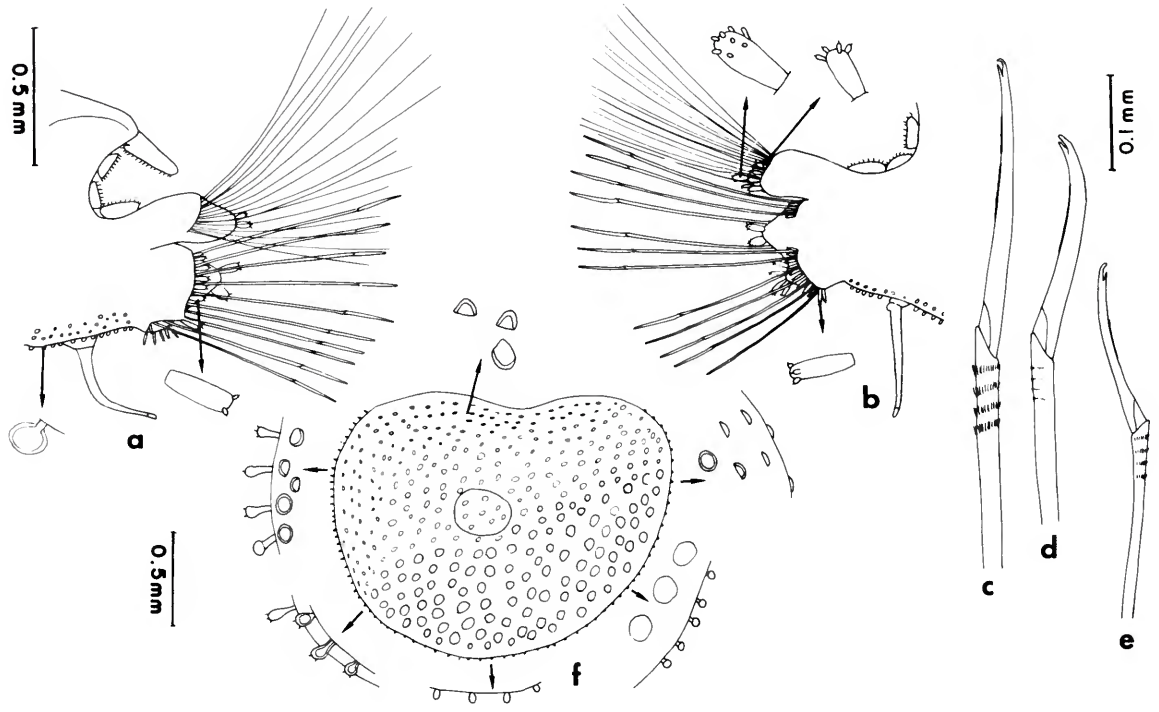

FIGURE 22.—*Fimbriosthenelais zetlandica* (holotype of *Sthenelais zetlandica*, BMNH 1921: 5: 1: 593): *a*, Parapodium from anterior region, posterior *view; b*, same, anterior view; *c*, upper neuroseta from same; *d*, middle neuroseta from same; *e*, lower neuroseta from same; *f*, left elytron from anterior region.

meters, sand, FAL station 444E—1 specimen (J. H. Day collection).

TYPE-MATERIAL.—The holotype of *Sthenelais? zetlandica* consists of an anterior fragment of 20 segments lacking a head end (segments 12–31, judged by the arrangement of the elytrophores and dorsal tubercles), 9 mm in length and 4 mm in width, including setae.

The holotype of *Sthenelais atlantica* consists of an anterior fragment of 29 segments, 8 mm in length, and 3 mm in width, including setae. It is in poor shape.

The holotype of *Sthenelais vachoni* is a complete specimen of about 95 segments, 22 mm in length, and 2 mm in width, including setae.

The specimen of *Sthenelais papillosa,* collected near the type-locality in False Bay, South Africa, consists of an anterior fragment of 45 segments, 15 mm in length and 3 mm in width, including setae.

DESCRIPTION.—Length more than 40 mm, width 2 to 4 mm, including setae, segments numerous (more than 100). Wide middorsal ridge on segments 2–5 rather indistinct, with 2 pairs of small ctenidia alongside (Figure 21*a*). Ventral surface thickly papillate with small globular papillae (Figure 22*a,b*). Elytra delicate, transparent, suborbicular, subrectangular to subreniform, nearly covered with flat to subconical microtubercles, being very lightly chitinized especially on posterior parts of elytra and appearing somewhat areolate; lateral and posterior margins with short clavate to globular micropapillae with minute sensory hairs on tips (Figures 21*i,j*; 22*f*).

Prostomium with median antenna with rather small auricles and short tapered style; lateral antennae short, subulate; four subequal, comparatively large eyes arranged in square in middle of prostomium;

palps extending about to segment 8 (5–9); nuchal organs inconspicuous (Figure 21*a*). Tentacular parapodia with dorsal tentacular cirri subequal to or slightly longer than median antenna; ventral tentacular cirri about half as long as dorsal cirri; inner tentacular lobes shorter than ventral tentacular cirri, fused to shorter, rounded inner palpal sheaths; dorsal ctenidia elongate-oval (Figure 21*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments, with pair of small ctenidia on lateral lips (Figure 21*b,c*). All neurosetae compound falcigerous; blades with 2–9 articles and bifid tips; stems with 2–4 spinous rows (Figure 21*d*). Additional small ctenidia located medial to elytrophores of segment II, lateral to bases of ventral buccal cirri (II), and medial to ventral cirri of segments III–VIII (Figure 21*a–c*).

Parapodia of anterior (Figures 21*e,f*; 22*a,b*) and middle regions similar. Cirriform branchiae beginning on segment IV. Notopodial bracts with row of papillate clavate stylodes on anterior side. Neuropodial acicular lobes with 2–3 papillate clavate stylodes. Truncate posterior bracts with row of papillate clavate stylodes. Anteroventral and anterior upper bracts fimbriated—with rows of papillate stylodes. All neurosetae compound falcigerous with bidentate tips, similar in size and shape. Blades of C-shaped group of slightly stouter neurosetae with 2 articles (single article in more posterior neuropodia); stems with 2–4 faint spinous rows (Figures 21*g*, 22*d*). Blades of upper anterior group of neurosetae with 2–3 articles; stems with 3–5 spinous rows (Figure 22*c*). Blades of anteroventral slender neurosetae with 2–3 articles; stems with 2–3 spinous rows (Figures 21*h*, 22*e*). Ventral cirri with very small or inconspicuous basal knobs.

REMARKS.—McIntosh (1867a:390) indicated that the genus of *zetlandica* was questionable due to the absence of a head end on the holotype from off the Shetland Islands. Southern (1914:55) compared a specimen from off the Isle of Man with the holotype and supplemented the original deficient description by describing the head end. Fauvel (1923:112) and Hartman (1959:119, 121) referred both *S. atlantica* and *S. zetlandica* questionably to *Sthenelais minor* Pruvot and Racovitza (1895). Eliason (1962: 228) referred both *S. atlantica* and *S. sarsi* to *S. zetlandica*. The latter synonymy is followed herein, based on examination of the types of *S. atlantica* and *S. zetlandica*. The type of *S. sarsi* McIntosh from Hardanger Fjord, Norway, in 73 to 347.5 meters, was not available for study; it is not in the British Museum (Natural History). However, the description of *S. sarsi* agrees with that of *F. zetlandica*.

The palps were confused with the ventral tentacular cirri by Day (1960:289) in his description of *S. papillosa*.

DISTRIBUTION.—North and South Atlantic—off Norway, Skagerrak, Shetland Islands, Great Britain, Isle of Man, Northwest Africa (Cape Verde Islands) and South Africa (False Bay). In 33 to 558 meters.

Fimbriosthenelais minor (Pruvot and Racovitza), new combination

FIGURE 23

Sthenelais minor Pruvot and Racovitza, 1895:465, pl. 20: figs. 111–121.—Fauvel 1923:122, fig. 41 m–q.

Sthenelais minor?—Saint-Joseph 1899:171.

[Not?] *Sthenelais minor* var. *digitata* Fauvel, 1919:344. [?=*F. longipinnis*].

MATERIAL EXAMINED.—Brest, France, collection of M. le Baron de Saint-Joseph, No. 20, 1911—1 specimen (MNHNP).

DESCRIPTION.—Length up to 45 mm, width 3–4 mm, including setae, segments numerous (up to 140). Wide middorsal ridge on segments 2–5, with four pairs of small ctenidia alongside (Figure 23*a*). Ventral surface smooth, not papillate. Elytra thin, transparent, suborbicular, subrectangular to subreniform, with uniformly distributed microtubercles and lateral borders with long papillae and tactile micropapillae; microtubercles low, rounded to subconical; surface characteristically covered with scattered foreign material, including sand grains and debris (Figure 23*k–m*).

Prostomium with median antenna with moderately large auricles on ceratophore and moderately long tapered style; lateral antennae short, subulate; four eyes arranged in square, moderately large, anterior pair larger than posterior pair; palps extending about to segment 9; nuchal organs inconspicuous (Figure 23*a*). Tentacular parapodia with dorsal tentacular cirri subequal to or slightly shorter than median antenna; ventral tentacular cirri about half as long as dorsal cirri; inner tentacular lobes shorter than ventral tentacular cirri, fused to shorter, rounded inner palpal sheaths; dorsal ctenidia elongate-oval (Figure 23*a*).

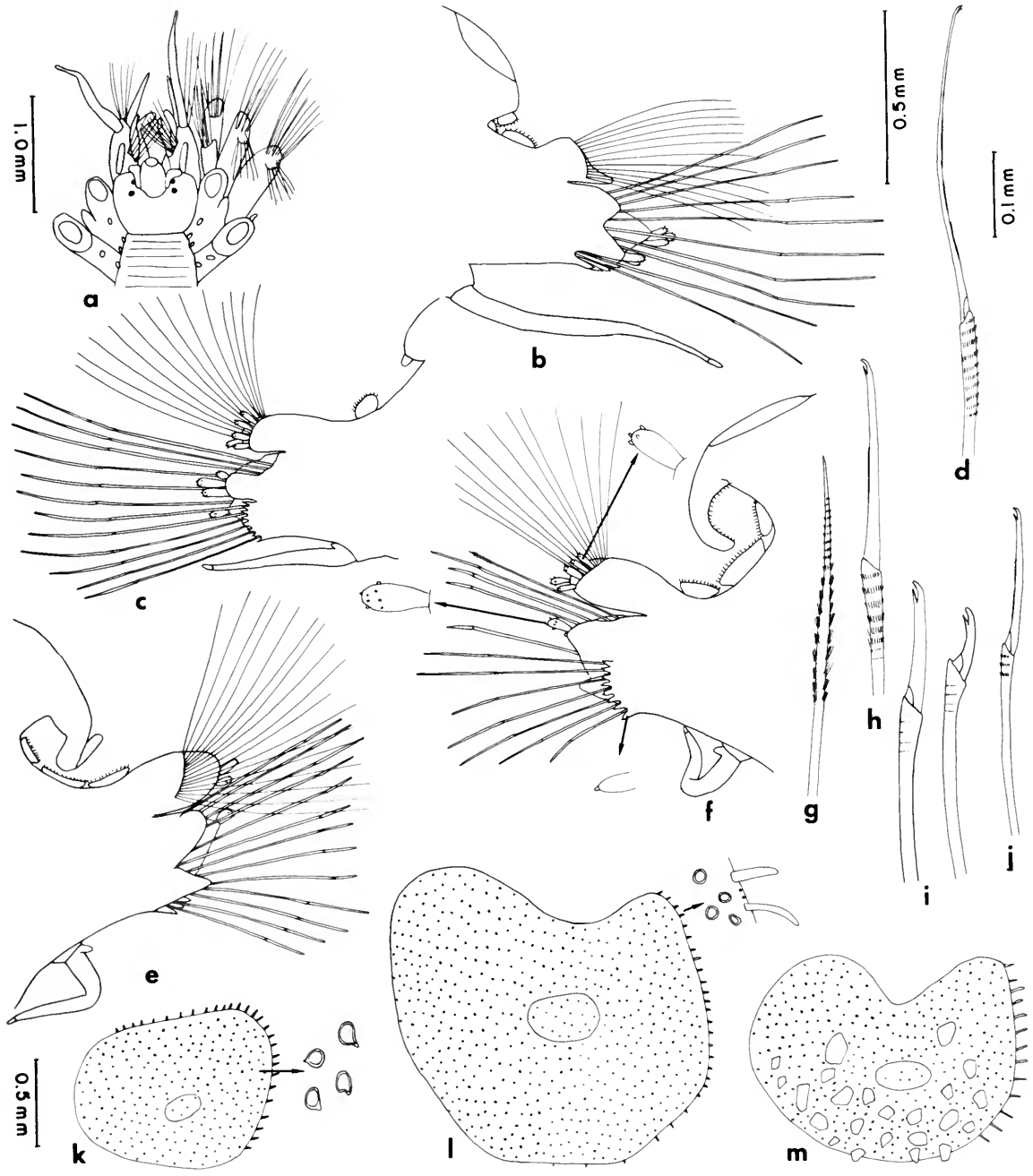

FIGURE 23.—*Fimbriosthenelais minor* (specimen from Brest, France, MNHNP): *a*, Anterior end, dorsal view; style of median antenna missing; *b*, second parapodium, posterior view; *c*, third parapodium, anterior view; *d*, upper neuroseta from same; *e*, parapodium from anterior region, posterior view; *f*, same, anterior view; *g*, upper simple spinous neuroseta; *h*, upper compound falcigerous neuroseta; *i*, middle neurosetae; *j*, lower neuroseta; *k*, first elytron; *l*, elytron from anterior region; *m*, elytron from middle region, encrusted with foreign material.

Parapodia of segments II and III directed anteriorly, slightly modified from following segments; with pair of small ctenidia on lateral lips (Figure 23*a–c*). All neurosetae compound falcigerous; blades with 2–8 articles and bifid tips; stems with 3–15 spinous rows (Figure 23*d*). Additional small ctenidia located medial to elytrophores of segments II and IV and medial to ventral cirri of segments III–VII (Figure 23*a*).

Parapodia of anterior (Figure 23*e,f*) and middle regions similar. Cirriform branchiae beginning on segment IV. Notopodial bracts with row of papillate clavate stylodes on anterior side. Neuropodial acicular lobes with 1–2 papillate clavate stylodes. Upper part of bilobed posterior bracts rounded; lower part subtriangular, sometimes terminating in single papillate stylode. Anteroventral bracts fimbriated. Anterior upper bracts inconspicuous. Blades of C-shaped group of stout neurosetae short to longer, with 1 article; stems with faint spinous rows (Figure 23*i*). Blades of upper anterior group of neurosetae with 2–3 articles; stems with 5–8 spinous rows (Figure 23*h*); 1–2 simple spinous neurosetae present or absent (Figure 23*g*; present in some of parapodia of specimen examined and noted by Saint-Joseph; not observed by Pruvot and Racovitza). Blades of anteroventral slender neurosetae with 1–3 articles; stems with 3 spinous rows (Figure 23*j*). Ventral cirri with small basal knobs.

DISTRIBUTION.—English Channel, France, Mediterranean.

REMARKS.—Saint-Joseph's specimen from Brest, France, seems to agree with the description and figures of *Sthenelais minor* by Pruvot and Racovitza except for the presence of some simple spinous neurosetae, as noted by Saint-Joseph when he questionably referred his specimen to this species; the type-specimens were not available for study. The types of *S. minor* var. *digitata* Fauvel (1919:344) from Djibouti, Red Sea, need to be reexamined (they are not deposited in the Paris Museum); the variety has been referred herein, questionably, to *Fimbriosthenelais longipinnis* (Grube), also from the Red Sea. Fauvel included *Sthenelais zeylanica* Willey (1905), questionably, in his new variety; Willey's species is referred herein to *Willeysthenelais diplocirrus* (Grube). Fauvel (1923:112) included both *S. atlantica* McIntosh (1876b) and *S. zetlandica* McIntosh (1876a) questionably under *S. minor*; these two species are referred herein to *Fimbriosthenelais zetlandica* (McIntosh).

Fimbriosthenelais hobbsi, new species

FIGURE 24

MATERIAL EXAMINED.—Siguanea Bay, Isle of Pines, Northwestern Caribbean, 4–8 meters, P. Bartsch, collector, Smithsonian-Roebling Exploring Expedition, station R-124, 11 April 1937—holotype (USNM 43553).

TYPE MATERIAL.—The holotype consists of an anterior fragment of 31 segments, 10 mm in length and 3 mm in width, including setae.

DESCRIPTION.—Wide middorsal ridge on segments 2–5, with 2 pairs of small ctenidia alongside (Figure 24*a*). Ventral surface thickly papillate with globular warts or papillae (Figure 24*d*). Elytra delicate, transparent, suborbicular, subrectangular to subreniform; lateral borders with papillae of variable lengths and tactile micropapillae; microtubercle-papillae of peculiar type (chitinous rounded tubercled bases continuous with tubular papillae and ending in rounded tips with sensory hairs) scattered throughout surface of first elytra and on posterior halves of following elytra (Figure 24*i–k*).

Prostomium with median antenna with small auricles and rather short style with bulbous tip; lateral antennae short, subulate; four eyes arranged in square, moderate and subequal in size, located lateral to ceratophore of median antenna; palps extending about to segment 9; nuchal organs inconspicuous (Figure 24*a*). Tentacular parapodia with dorsal tentacular cirri subequal to median antenna; ventral tentacular cirri slightly shorter than dorsal cirri; inner tentacular lobes shorter than ventral tentacular cirri, fused to shorter, rounded inner palpal sheaths; dorsal ctenidia elongate-oval (Figure 24*a*).

Parapodia of segments II and III directed anteriorly, slightly modified from following segments; with pair of ctenidia on lateral lips (Figure 24*a,b*). All neurosetae compound falcigerous; blades with 2–7 articles and bifid tips; stems with 2–4 spinous rows (Figure 24*c*). Additional small ctenidia located medial to elytrophores and lateral to ventral buccal cirri of segment II and medial to ventral cirri of segments III–VII (Figure 24*a,b*).

Parapodia of anterior region with cirriform branchiae beginning on segment VI (Figure 24*d,e*). Noto-

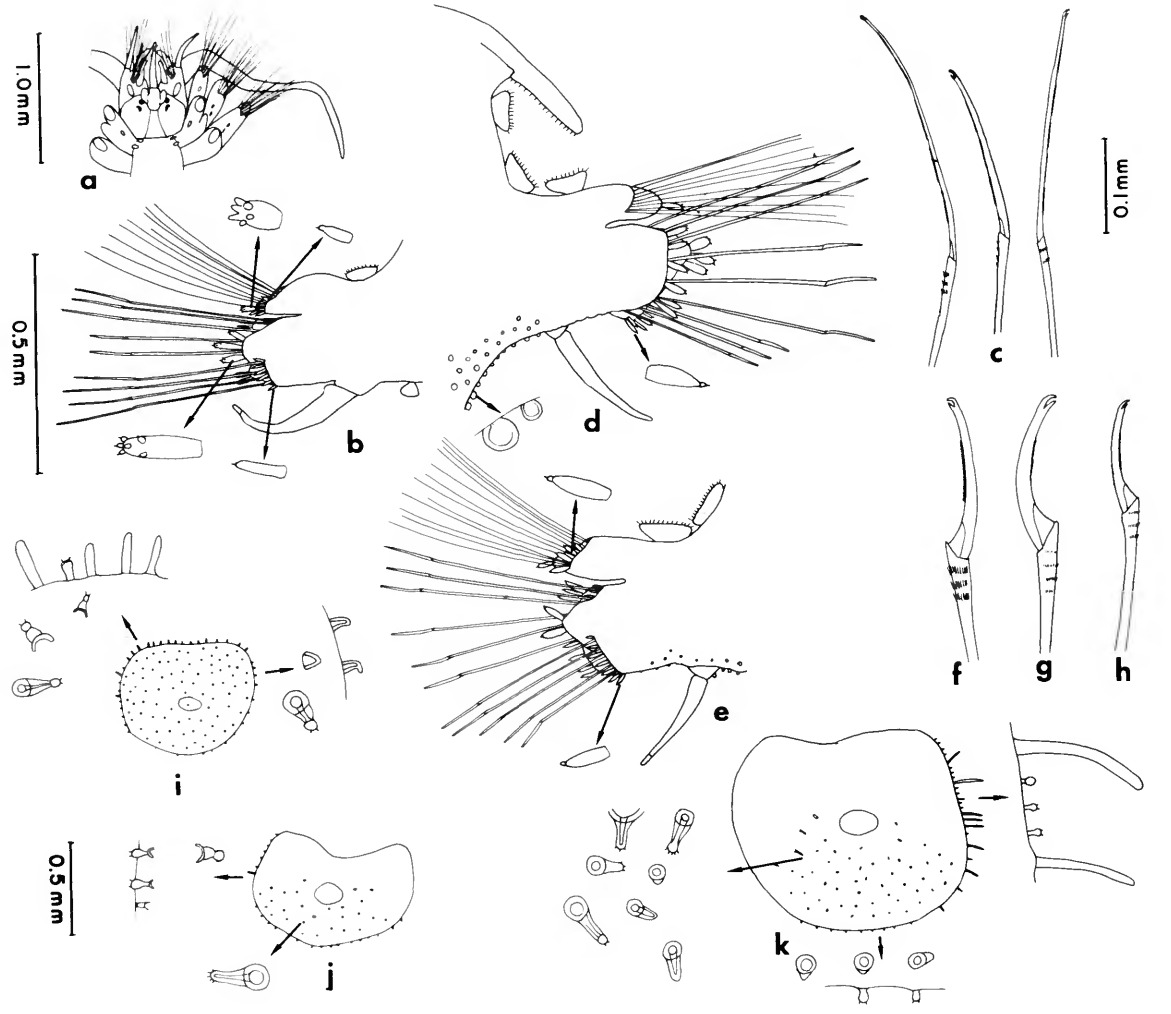

FIGURE 24.—*Fimbriosthenelais hobbsi*, new species (holotype, USNM 43553): *a*, Anterior end, dorsal view; *b*, third parapodium, anterior view; *c*, upper, middle, and lower neurosetae from same; *d*, parapodium from anterior region, posterior view; *e*, same, anterior view; *f*, upper neuroseta from same; *g*, middle neuroseta from same; *h*, lower neuroseta from same; *i*, first elytron; *j*, second elytron; *k*, elytron from anterior region.

podial bracts with row of papillate stylodes on anterior side. Neuropodial acicular lobes with 2–3 papillate clavate stylodes. Truncate posterior bracts with row of papillate stylodes. Anteroventral and anterior upper bracts fimbriated—with rows of papillate stylodes. Neurosetae all compound falcigers with bifid tips, all similar, differing only slightly in length and size; blades of upper and lower neurosetae with 2–3 articles; blades of slightly stouter middle neurosetae with 2 articles; stems with 2–4 spinous rows (Figure 24*f*–*h*). Simple neurosetae not observed (at least to segment 31). Ventral cirri with only slight indication of small basal knobs.

ETYMOLOGY.—The species is named for Dr. Horton H. Hobbs, Jr., in appreciation for the help he has given me in working over some of my polychaete manuscripts.

DISTRIBUTION.—Caribbean (Isle of Pines). In 4 to 8 meters.

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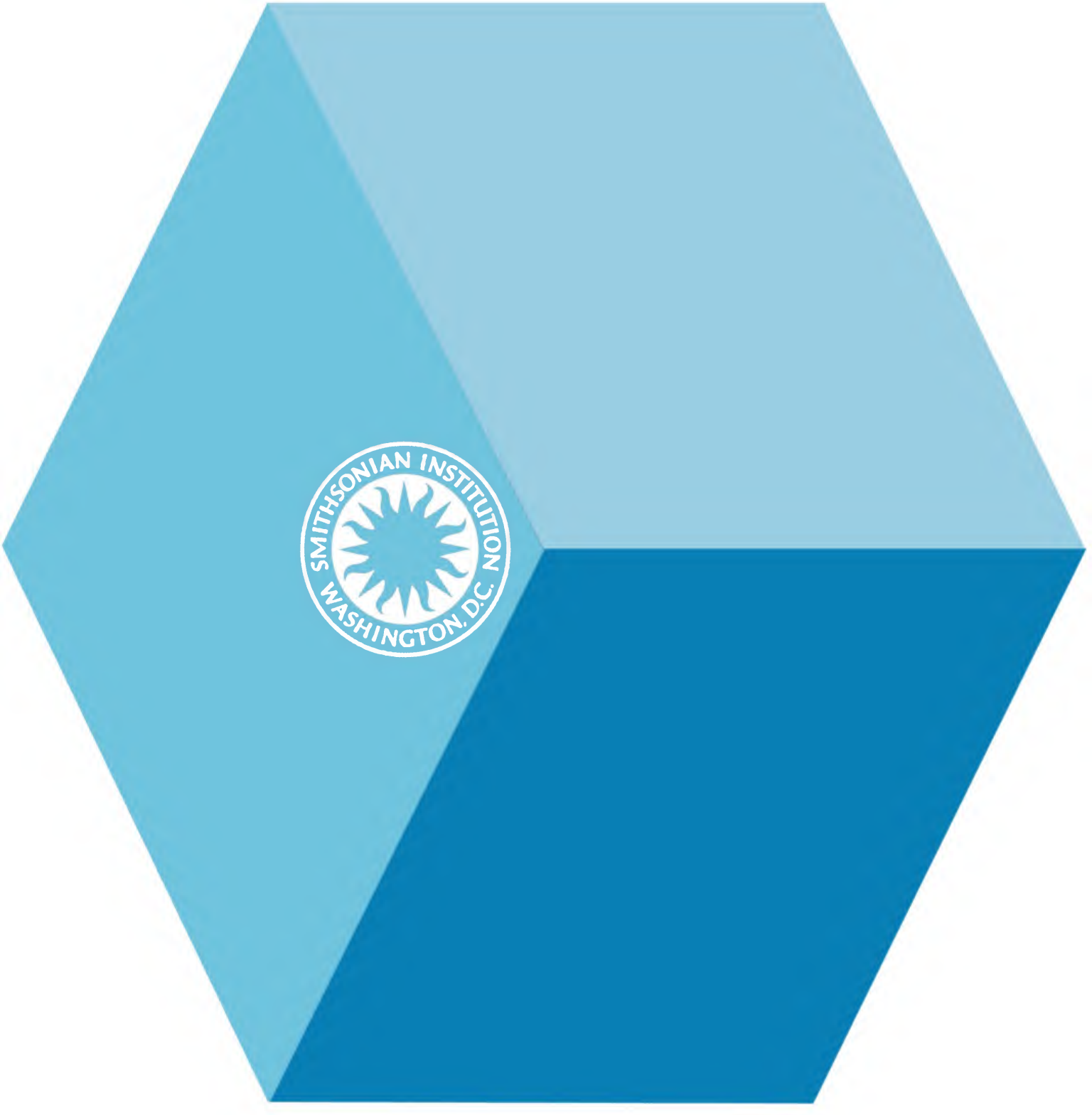
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