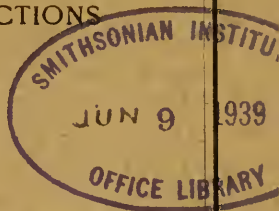


SMITHSONIAN MISCELLANEOUS COLLECTIONS  
VOLUME 98, NUMBER 13



THE POLYCHAETOUS ANNELIDS  
COLLECTED ON THE PRESIDENTIAL  
CRUISE OF 1938

BY  
OLGA HARTMAN  
The Allan Hancock Foundation  
University of Southern California



(PUBLICATION 3538)

CITY OF WASHINGTON  
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THE POLYCHAETOUS ANNELIDS COLLECTED ON  
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By OLGA HARTMAN

*The Allan Hancock Foundation, University of Southern California*

These collections were made from July 18 to August 6, 1938. Localities include western Mexico, Clipperton Island, Galápagos Islands, Cocos Island, all in the eastern Pacific, and Old Providence Island, in the Caribbean Sea. Depths range from intertidal to 15 fathoms.

Though small, the collection is represented by 17 families, with 31 species, of which 2, *Neanthes roosevelti* and *Polydora tricuspa*, are new to science, 1, *Cirratulus niger*, is newly named, and 2 others, *Scalisetosus* sp., and *Armandia* sp., may represent undescribed species. Several others have had their range extended considerably into tropical waters.

Following is a list of stations, with species encountered:

Station No. 3-38. July 18. Magdalena Bay, inside northern point of entrance to bay, between Belcher Point and anchorage, dredged in 10-15 fathoms; sandy, weedy bottom.

	No. of specimens
<i>Halosydna fuscomarmorata</i> (Grube).....	6
<i>Palcanotus chrysolepis</i> Schmarda.....	1
<i>Uncinereis agassizi</i> (Ehlers).....	about 50
<i>Nereis callaona</i> Grube.....	2
<i>Emice aedificatrix</i> Monro.....	1
<i>Polyopthalmus pictus</i> (Dujardin).....	about 100
<i>Armandia</i> , sp. ....	1
<i>Metachone mollis</i> Bush.....	5

Station No. 4-38. July 18. Magdalena Bay, Lower California; filamentous green algae from deeper end of preceding dredge haul.

	No. of specimens
<i>Uncinereis agassizi</i> (Ehlers).....	10

Station No. 5-38. July 19. Cape San Lucas, Lower California. Off Punta Gorda, off rocky shore to west and San Jose del Cabo Bay; dredged in 6-10 fathoms.

	No. of specimens
<i>Halosydna fuscomarmorata</i> (Grube).....	1
<i>Eusigalion spinosum</i> Hartman (in press).....	1
<i>Uncinercis agassizi</i> (Ehlers).....	3
<i>Eunice aedificatrix</i> Monro.....	1
<i>Polyophthalmus pictus</i> (Dujardin).....	4
<i>Metachone</i> sp., fragment.....	1

Station No. 8-38. July 20. Socorro Island, Mexico. On sandy bottom, from off landing beach toward rocky point forming east side of cove where landing place is located; dredged in 7-8 fathoms.

	No. of specimens
<i>Eunice biannulata</i> Moore.....	1
<i>Cirratulus niger</i> , new name.....	3

Station No. 9-38. July 21. Clipperton Island. Shore collecting on rocks to south of landing place.

	No. of specimens
<i>Eurythoë complanata</i> (Pallas).....	7
<i>Anaitides lamellifera</i> (Pallas).....	1
<i>Eunice</i> ( <i>Palolo</i> ) <i>siciliensis</i> Grube.....	2
<i>Mesochaetopterus minutus</i> Potts.....	numerous tubes
<i>Idanthyrsus pennatus</i> (Peters).....	1

Station No. 15-38. July 24. Sullivan Bay, James Island, Galápagos. Shore and tide-pool collecting.

	No. of specimens
<i>Scalisetosus</i> , sp. ....	1
<i>Syllis fuscoturata</i> Augener.....	4
<i>Syllis hyalina</i> Grube.....	2
<i>Neanthes roosevelti</i> , new species.....	2
<i>Polydora tricuspis</i> , new species.....	1
<i>Idanthyrsus pennatus</i> (Peters).....	dried tubes

Station No. 16-38. July 25. Narborough Island, Galápagos. Shore collecting.

	No. of specimens
? <i>Syllis fuscoturata</i> Augener.....	1

Station No. 19-38. July 26. Elizabeth Bay, Albemarle Island, Galápagos. Bay at south end of black beach north of mangrove, north of two "red" Islands.

No. of specimens

*Nicolea galapagensis* Chamberlin..... 1

Station No. 20-38. July 26. Locality as for No. 19-38. Taken off anchor chain.

No. of specimens

*Peisidice aspera* Johnson..... 1

Station No. 28-38. August 3. Chatham Bay, Cocos Island. Bottom sample, mostly sand.

No. of specimens

*Chloëia entypha* Chamberlin..... 1

Station No. 30-38. August 6. Old Providence Island, Caribbean Sea. Shore, reef, and tide-pool collecting.

No. of specimens

*Hermenia verruculosa* Grube..... 1  
*Harmothoë lanceocirrata* Treadwell..... 1  
*Eurythoë complanata* (Pallas)..... 5  
*Hermodice carunculata* (Pallas)..... 3  
*Hesione intertexta* Grube..... 1  
*Eunice schemacephala* Schmarda..... 2  
*Polynnia nebulosa* (Montagu)..... 3  
*Sabellastarte indica* (Savigny)..... 1

The collection includes representatives of 17 families, with species distributed as follows:

## POLYNOIDAE

*Halosydna juscomarmorata* (Grube)  
*Hermenia verruculosa* Grube  
*Scalissetosus*, sp.  
*Harmothoë lanceocirrata* Treadwell

## POLYDONTIDAE

*Peisidice aspera* Johnson

## SIGALIONIDAE

*Eusigalion spinosum* Hartman

## CHRYSOPETALIDAE

*Paleanotus chrysolepis* Schmarda

## AMPHINOMIDAE

*Eurythoë complanata* (Pallas)  
*Hermodice carunculata* (Pallas)  
*Chloëia entypha* Chamberlin

## PHYLLODOCIDAE

*Anaitides lamellifera* (Pallas)

## HESIONIDAE

*Hesione intertexta* Grube

## SYLLIDAE

*Syllis hyalina* Grube  
*Syllis fuscocuturata* Augener

## NEREIDAE

*Uncinereis agassizi* (Ehlers)  
 ? *Nereis callaona* Grube  
*Neanthes roosevelti*, n. sp.

## EUNICIDAE

*Eunice biannulata* Moore  
*Eunice aedificatrix* Monro  
*Eunice schemacephala* Schmarda  
*Eunice (Palolo) siciliensis* Grube

## SPIONIDAE

*Polydora tricuspis*, n. sp.

## CHAETOPTERIDAE

*Mesochaetopterus minutus* Potts

## CIRRATULIDAE

*Cirratulus niger*, new name

## OPHELIIDAE

*Polyophthalmus pictus* (Dujardin)  
*Armandia*, sp.

## SABELLARIIDAE

*Idanthyrus pennatus* (Peters)

## TEREBELLIDAE

*Nicolca galapagensis* Chamberlin  
*Polymnia nebulosa* (Montagu)

## SABELLIDAE

*Sabellastarte indica* (Savigny)  
*Metachone mollis* Bush

## POLYNOIDAE

## HALOSYDNA FUSCOMARMORATA (Grube)

*Polynoë fuscomarmorata* GRUBE, 1876, p. 62.  
*Halosydna fuscomarmorata* MONRO, 1928, p. 566.

*Collection*.—Station Nos. 3-38, 5-38; 7 specimens.

Color dark gray. Ventrums with a broad dark neural stripe, and a longitudinal stripe on either side over the nephridial region. Elytra 18 pairs, with entire margin; neuropodial setae distally bifid. The nephridial papillae are subglobular.

*Distribution*.—Peru; Panama; Lower California.

## HERMENIA VERRUCULOSA Grube

*Hermenia verruculosa* GRUBE, 1856, p. 44; MONRO, 1928, p. 40.

*Collection*.—Station No. 30-38; 1 specimen.

Length about 18 mm. Surface dorsally and ventrally closely covered with many tubercles. All elytra except first pair have been lost, the first are small, circular, not meeting in the middorsal line, their margins are entire, their surface tubercled. Dorsum is reddish brown, ventrum flesh-colored. The neuropodial setae are stout, with a main fang and a lateral tooth, but without lateral serrations.

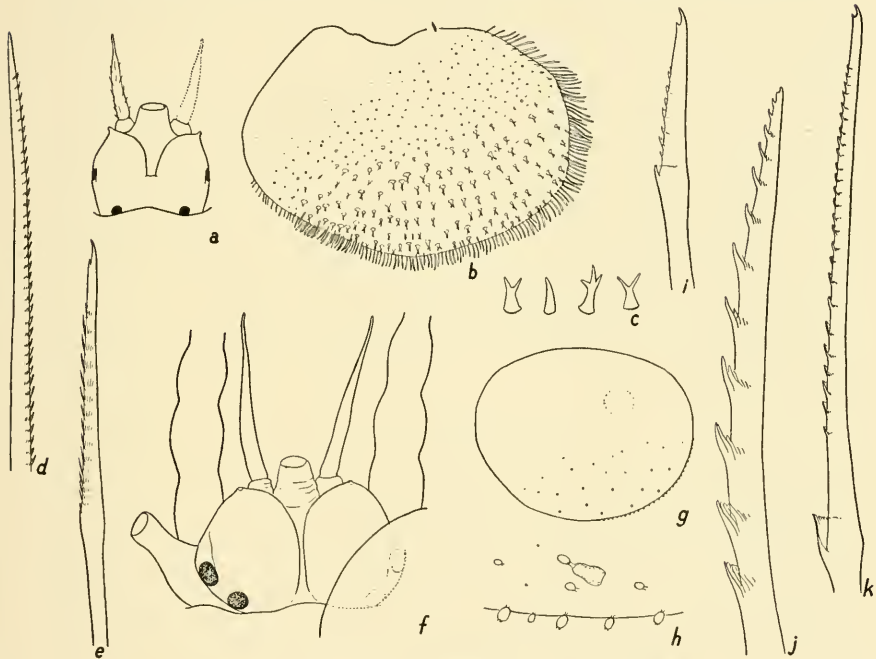


## HARMOTHOË LANCEOCIRRATA Treadwell

FIGS. 1, a-c

*Harmothoë lanceocirrata* TREADWELL, 1928, p. 454.*Harmothoë lanceolata* TREADWELL, 1928, explanation of figures.*Collection*.—Station No. 30-38; 1 specimen.

The single individual is not quite complete posteriorly. It consists of 26 anterior segments, 16 mm. long; the last segment is the thir-

FIG. 1.—Species of *Harmothoë* and *Scalisetosus*.

a-c, *Harmothoë lanceocirrata*: a, prostomium, in dorsal view, the right antenna indicated in dotted outline,  $\times 40$ ; b, tenth elytrum, from right side,  $\times 15$ ; c, simple, bifid, and trifid spines from tenth elytrum,  $\times 40$ ; d, a long notopodial seta from a median parapodium,  $\times 78$ ; e, a neuropodial seta from middle part of fascicle, taken from a median parapodium,  $\times 78$ .

f-k, *Scalisetosus*, sp.: f, prostomium, bases of palpi, and part of right first elytrum,  $\times 40$ ; g, elytrum from near middle of body, the elytral scar indicated,  $\times 20$ ; h, portion of elytrum, with 5 marginal papillae and a larger surface spine with soft terminal knob,  $\times 175$ ; i, inferior neuropodial seta from a median parapodium,  $\times 175$ ; j, tip of a notopodial seta from a median parapodium,  $\times 175$ ; k, tip of a superior neuropodial seta from a median parapodium,  $\times 175$ .

teenth elytriphorous. Body colorless save for 4 black eyes; setae and acicula pale straw-colored. All cirri have been lost except the left prostomial antenna, this is hirsute, and has the proportions shown by Treadwell (1928, p. 454) for the right prostomial antenna. All elytra missing except the tenth from the right side; it is only slightly

excavate at its anterior margin, heavily and closely fringed at its post-lateral margins (fig. 1, *b*), and has many tall, slender tubercles, particularly crowded on its posterior two-thirds. These tubercles are either simple, spinelike, or have their distal ends terminating in 2 or 3 sharp cusps (fig. 1, *c*). Each spine arises from an elytral aerolation which is difficult to make out unless the elytrum is cleared, because of the abundance of the surface structures.

Notopodial and neuropodial setae are disposed in stout, full, spreading fascicles. The notopodial setae (fig. 1, *d*) are somewhat thicker than the neuropodial setae (fig. 1, *e*), and extend nearly as far laterally.

This specimen departs somewhat from the original description in the following: (1) The prostomium is broader than long, and has 4 black eyes (fig. 1, *a*); (2) the aerolation of the elytra is much less conspicuous, though obviously present; (3) the elytral fringe is heavier and longer, and (4) the elytral tubercles are simple, bifid, or trifid, though the bifid tubercles predominate. These differences are perhaps not sufficiently great to indicate specific variation.

*Distribution.*—Caribbean Sea (Treadwell); Old Providence Island, Caribbean Sea.

#### SCALISETOSUS, sp.

FIGS. 1, *f-k*

*Collection.*—Station No. 15-38; 1 specimen.

Length 15 mm., number of segments 40, the last 2 small. Color of dorsal and ventral sides, as also elytra, is diffused purple, but the dorsum of each segment has 2 narrow, transverse, beadlike rows of pale spots and a pale segmental groove. There are 14 (or possibly 15) pairs of elythrophanes, the last pair tiny.

The prostomium is paler, but purplish, like the rest of the body. It is nearly twice as broad as long, its lobes bulging and terminating distally in minute peaks. There is a distinct median sulcus. The 4 eyes are disposed at the sides, posterior to the widest part of the prostomium. The median ceratophore is inserted near the anterior end, its style lost (fig. 1, *f*). Paired prostomial antennae are long, tapering, but greatly exceeded in length by the palpi. The latter are somewhat annulated in their basal halves. The distal half tapers gradually and ends in a blunt tip. The palpi are over twice as long as the paired prostomial antennae.

Parapodia are elongate, the acicular lobes drawn out in a tip, from which the pale acicula project. The notosetal fascicles are less than

half as heavy as the neurosetal, and their setae extend laterally only about as far as the bases of the neuropodial setae. Notopodial setae are stouter than the neuropodial setae, they are serrated along their lateral edge and end in a blunt, bifid tip (fig. 1, *j*). Neuropodial setae are much more numerous, and finer; the superiormost has a long serrated blade (fig. 1, *k*), which is about four times as long as that of the inferiormost seta (fig. 1, *i*).

The elytra appear smooth, with entire margins, but under low magnification they are seen to have minute marginal papillae (fig. 1, *g*) and some widely spaced elytral tubercles, posterior to the elytral scar. The larger tubercles are unique in that a harder, chitinous basal portion supports a soft, terminal papilla (fig. 1, *h*).

This individual approaches the description of *S. tentaculatus* Horst (1917, p. 100) in some respects, but it differs in having notopodial setae that are distinctly serrated.

## POLYDONTIDAE

### PEISIDICE ASPERA Johnson

*Peisidice aspera* JOHNSON, 1897, p. 184.

*Collection*.—Station No. 20-38; 1 specimen.

A minute specimen, less than 5 mm. long, with only about 30 setigerous segments, and only 16 pairs of elytra. The dorsum is medially exposed and discloses a papillated dorsal body surface. Since this was taken from the anchor chain, it may represent an early, settling, postlarval stage.

*Distribution*.—Central and southern California; Alaska; British Columbia; Galápagos. This record extends the range far to the south, into tropical waters.

## SIGALIONIDAE

### EUSIGALION SPINOSUM Hartman

*Eusigalion spinosum* HARTMAN (Allan Hancock Foundation, in press).

*Collection*.—Station No. 5-38; 1 specimen.

Length 40 mm., consists of 90 segments, a posterior portion missing. Pale or white, with a dusky longitudinal stripe over the neural area. Elytra white, firmly attached.

*Distribution*.—Southern California, south to Lower California, Mexico.

## CHRY SOPETALIDAE

## PALEANOTUS CHRYSOLEPIS Schmarda

*Paleanotus chrysolepis* SCHMARDA, 1861, p. 163; MONRO, 1933, p. 19.

*Heteropale bellis* JOHNSON, 1897, p. 163.

*Collection*.—Station No. 3-38; 1 specimen.

Immature, about 8 mm. long; agrees well with Johnson's description of *Heteropale bellis* (1897, p. 163). It is uniformly straw-colored in preservative.

*Distribution*.—Cape of Good Hope; Australia; western Canada south to Lower California; Mexico; Panama.

## AMPHINOMIDAE

## EURYTHOË COMPLANATA (Pallas)

*Eurythoë complanata* AUGENER, 1913, p. 87; CHAMBERLIN, 1919, p. 28.

*Collection*.—Station Nos. 9-38, 30-38. 12 specimens.

Length to 60 mm.

*Distribution*.—Cosmopolitan, in warmer waters.

## HERMODICE CARUNCULATA (Pallas)

*Hermodice carunculata* FAUVEL, 1923, p. 130.

*Collection*.—Station No. 30-38; 3 specimens.

Length to 68 mm.

*Distribution*.—Indian Ocean; warmer waters of eastern and western Atlantic; West Indies.

## CHLOEIA ENTYPA Chamberlin

*Chloeia entypa* CHAMBERLIN, 1919, p. 30; TREADWELL, 1937, p. 147.

*Collection*.—Station No. 28-38; 1 specimen.

Tiny, with only 12 setigerous segments and a posterior growth zone. The proboscis is protruded, forming a large, corrugated, globular sack on the ventral side of the prostomium and first 2 segments. The dorsum has weak longitudinal stripes.

*Distribution*.—Southern California, south to Panama.

## PHYLLODOCIDAE

## ANAITIDES LAMELLIFERA (Pallas)

FIG. 2, a

*Phyllodoce (Anaitides) lamellifera* MONRO, 1933, p. 22.

*Phyllodoce lamelligera* FAUVEL, 1923, p. 147.

*Collection*.—Station No. 9-38; 1 specimen.

Length about 108 mm., number of segments about 279; long, slender, the parapodia held at right angles to the body, and con-

spicuous throughout. Color pale, with traces of a dark transverse band across the middle dorsum of each segment in the anterior region. Third tentacular segment without setae.

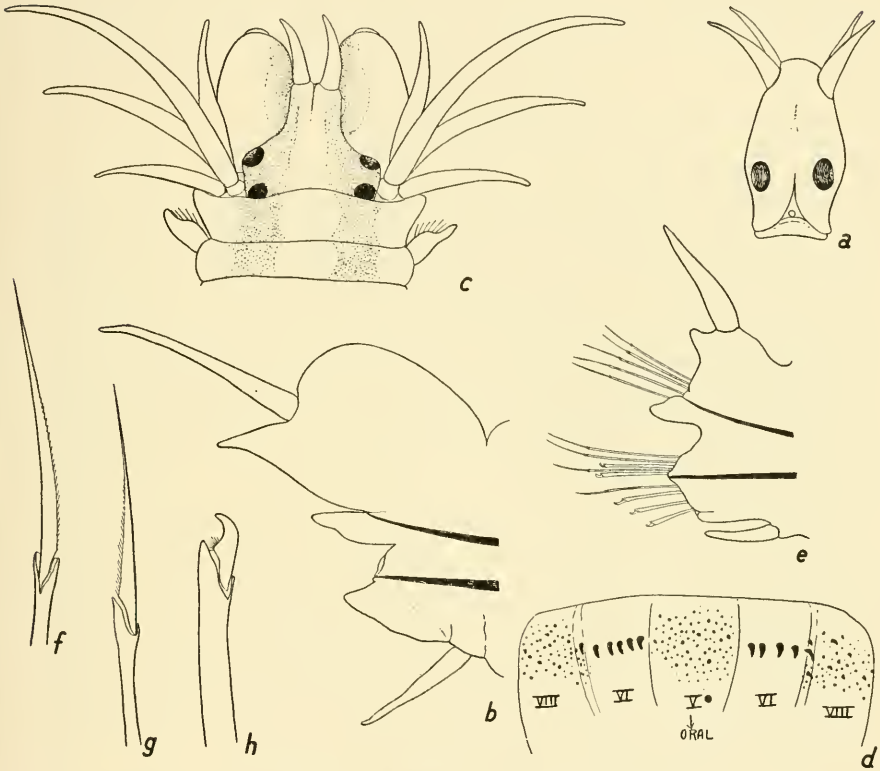


FIG. 2.—Species of *Anaitides*, *Nereis*, and *Neanthes*.

*a*, *Anaitides lamellifera*: prostomium, in dorsal view, showing median sulcus and nuchal papilla,  $\times 21$ ; *b*, *Nereis callaona*: 50th parapodium, or 10th last, with large dorsal ligules,  $\times 44$ ; *c-h*, *Neanthes roosevelti*: *c*, prostomium and first two segments, palpi somewhat turned under; stippling indicates areas of brown pigmentation,  $\times 44$ ; *d*, portion of protruded proboscis, including areas V, VI and parts of VIII,  $\times 44$ ; *e*, 38th parapodium, or 12th last, from left side, in posterior view,  $\times 86$ ; *f*, homogomph notopodial seta from 38th parapodium,  $\times 430$ ; *g*, heterogomph, spinigerous neuropodial seta, from 38th parapodium,  $\times 430$ ; *h*, heterogomph falcigerous neuropodial seta, from 38th parapodium,  $\times 430$ .

The prostomium is emarginate at its posterior margin (fig. 2, *a*), contrasting therein with the description of European specimens (see Fauvel, 1923, fig. 52, *a*) and has an occipital button, contrasting with Monro's specimen from Taboga Island (Monro, 1933, p. 22). The parapodia have approximately the same outlines as shown by Monro (1933, figs. 10, *a*, *b*).

The name, *A. lamellifera* (Pallas), is used instead of *A. lamelligera* Johnston (see Fauvel, 1923, p. 147) for the reasons set forth by Monro (1933, p. 22).

*Distribution*.—Cosmopolitan, in warmer waters; littoral zones.

## HESIONIDAE

### HESIONE INTERTEXTA Grube

*Hesione intertexta* GRUBE, 1878, p. 102; MONRO, 1931, p. 9.

*Hesione panamena* CHAMBERLIN, 1919, p. 188.

*Collection*.—Station No. 30-38; 1 specimen.

Length 41 mm. The dorsal pigmented pattern consists of a white, transverse band across the parapodial ridge, between which are from 5 to 7 more or less regular transverse bands of brown, broken by narrow white transverse lines. The prostomial antennae are tiny; the 8 pairs of peristomial cirri are all fairly long. The guard of the composite setae approaches the apical tooth (see Monro, 1931, p. 9).

*Distribution*.—Philippines; Great Barrier Reef; Brazil; Panama, Lower California, Mexico; Caribbean Sea.

## SYLLIDAE

### SYLLIS FUSCOSUTURATA Augener

*Syllis fuscoturata* AUGENER, 1922, p. 43; MONRO, 1933, p. 32.

*Collection*.—Station Nos. 15-38, 16-38; 5 specimens.

The prostomium and setae are well illustrated by Monro (1933, p. 32). Identification with Augener's species is uncertain for the same reasons Monro has given (1933, p. 34).

*Distribution*.—West Indies; Panama; Galápagos?

### SYLLIS HYALINA Grube

*Syllis hyalina* FAUVEL, 1923, p. 262.

*Collection*.—Station No. 15-38; 2 specimens.

*Distribution*.—Cosmopolitan.

## NEREIDAE

### UNCINEREIS AGASSIZI (Ehlers)

*Nereis agassizi* EILERS, 1868, p. 542; JOHNSON, 1901, p. 399.

*Nereis notomacula* TREADWELL, 1914, p. 191.

*Uncinereis subita* CHAMBERLIN, 1919, p. 215.

*Uncinereis agassizi* HARTMAN, 1938a, p. 15.

*Collection*.—Station Nos. 3-38, 4-38, 5-38; over 60 specimens.

To 40 mm. long; none are in the epitokous stage. As typical of the more northern representatives, the stout notopodial uncinigerous

hooks, which characterize this genus, have no indication of a suture, but are strictly simple. The segments of the posterior half of the body have characteristic dark color patches on the dorsal side of the parapodia, and over the body segments, in line with the parapodia.

*Distribution.*—Japan; northeast Pacific, from Alaska south to Lower California, Mexico; Australia; Galápagos Islands.

? **NEREIS CALLAONA** Grube

FIG. 2, *b*

*Nereis callaona* GRUBE, 1856, p. 165; AUGENER, 1918, p. 184.

*Nereis heterocirrata* TREADWELL, 1931, p. 1; HARTMAN, 1938, p. 14.

*Nereis eucaipitis* HARTMAN, 1936, p. 468.

*Collection.*—Station No. 3-38; 2 specimens.

Length 24 and 34 mm.; number of segments 60. Color pale, eyes deep red; acicula are black with paler tips; setae are amber-colored. Posterior parapodia are characterized by having a broad, convex dorsal lobe (fig. 2, *b*). The arrangement of paragnaths is as follows: Area I with 2 cones in tandem, the one on the oral side the larger; area II with a crescent of about 18 cones, ranging from small flat cones near the jaws to tall cones more distally; area III with oval patch of about 25, in 3 or 4 irregular rows, the largest paragnaths on the oral side; area IV with a crescent including about 25 cones resembling those on area III; area V with none; area VI with 4 in a diamond or with 6 to 8 disposed in 2 transverse rows; areas VII and VIII with a continuous series of about 4-6 rows, of many (over 100) smaller cones, separated from one another, the row on the maxillary side with the larger cones. The jaws are burnt amber, translucent, with about 5 poorly marked teeth, the fang proportionately long.

The identity of these two specimens with *N. callaona* is in some doubt because of the greater number of paragnaths on the oral ring; these are disposed in more than 2 transverse rows on areas VII and VIII. *Nereis heterocirrata* Treadwell is obviously the same as *Nereis callaona* Grube, a possibility that Fauvel has already pointed out (in litt.).

**NEANTHES ROOSEVELTI**, n. sp.

FIGS. 2, *c-h*

*Collection.*—Station No. 15-38; 2 specimens.

Length to 10 mm., number of setigerous segments to 50. The dorsum crossed by dark brown, segmental, transverse bands; a similar pigment on the sides of the prostomium and the inner sides of the palpi.

The prostomium is dorsally flattened, its basal half as broad as the prostomium is long; provided with 4 well-separated dark eyes, disposed in a rectangle; the anterior half of the prostomium narrows rapidly to a blunt, truncate anterior margin, where the prostomial antennae are inserted (fig. 2, *c*). The prostomial antennae are white, their bases nearly touching, they extend distally almost as far as the palpi when the latter are directed forward. The palpi are pale, with brown pigment on their inner faces; they are inserted at the sides of the prostomial lobe so as to leave only a small space between their bases and those of the prostomial antennae.

Peristomial cirri are pale, short; the longest extends posteriorly to about the fifth parapodial segment, the shortest about as long as the prostomial antennae. The peristomial ring is only slightly longer than the next segment (fig. 2, *c*).

The paragnathal armature consists of the following: Area I with 2 larger, pointed cones in tandem and about 50 smaller cones of varying sizes covering the space between the paired areas on II; area II with 8-10 larger cones, about as large as those on area IV (areas I and II are confluent); area III with about 20 larger cones, these disposed in a longer outer row of 7 cones, and 2-3 shorter rows of similar cones; area IV with about 12 larger cones in 2 crescentic rows (areas III and IV are continuous). The cones on areas III and IV are the largest on the proboscis. Area V with about 50 minute cones, separated from one another and completely filling the space between the paired areas VI (fig. 2, *d*); area VI with 5 large, pointed cones disposed in a straight, transverse line, continuous with areas VIII; areas VII and VIII form a broad, continuous zone about one-half as broad as the oral ring is long, consisting of many tiny cones (well over 100) and a few larger points scattered among the tiny points. These paragnaths compare in size and form with those on areas I and V. The jaws are dark brown, with a curved fang and about 5 oblique teeth.

Parapodia are lateral, the setigerous lobes moderately stout but not conspicuous. The dorsal ligule is approximately equitriangular in anterior parapodia, its dorsal cirrus inserted on its dorsal, proximal base, and about twice as long as the ligule. Posteriorly, the dorsal ligule decreases gradually in size, and by the fortieth segment is much smaller than the dorsal cirrus (fig. 2, *c*). Ventral cirri are pale, small, not extending distally as far as the ventral lobe (fig. 2, *e*).

Setae include (1) homogomph spinigers, with fairly short, serrated blade (fig. 2, *f*), (2) heterogomph spinigers, resembling the first in



size and form (fig. 2, *g*), and (3) falcigerous heterogomph falcigers (fig. 2, *h*) in neuropodia. There are no homogomph falcigers.

*Neanthes roosevelti* approaches *N. cricognatha* Ehlers (1905, p. 29) from New Zealand, in having a large number of paragnaths. It differs, however, in having them disposed otherwise; also, the posterior parapodial lobes differ in being much reduced in this species.

It is a pleasure to dedicate this species to the Honorable Franklin Delano Roosevelt, President of the United States, who sponsored the scientific studies made on the Presidential Cruise of 1938.

*Holotype*.—U.S.N.M. no. 20427.

## EUNICIDAE

### EUNICE BIANNULATA Moore

*Eunice biannulata* MOORE, 1904, p. 487.

*Eunice longicirrata*, var., HARTMAN, 1938b, p. 97.

*Collection*.—Station No. 8-38; 1 specimen.

Length about 30 mm.; parapodial segments 2, 3, and 7 pale. Composite setae distally bifid; the stout simple hooks are bifid. Dorsal cirri faintly annulated.

*Distribution*.—Western Canada south to southern California; Socorro Island, Mexico.

### EUNICE AEDIFICATRIX Monro

FIGS. 3, *a-b*

*Eunice antennata* SAVIGNY, *aedificatrix* MONRO, 1933, p. 60.

*Collection*.—Station Nos. 3-38, 5-38; 2 specimens.

An anterior fragment of 83 segments is 36 mm. long and 4.5 mm. wide (station No. 5-38); another with 31 anterior segments is only 12 mm. long. The prostomial antennae are closely moniliform, with 12 to 15 articles. The peristomial tentacles are nearly smooth and about two-thirds as long as the peristomial ring. The branchiae are present from the sixth setigerous segment; they are pinnate, the first with 3 filaments which are shorter and weaker than the dorsal cirri, the second have 6 filaments, the third 10 filaments, increasing to 15 filaments at the fifteenth parapodium. From the twenty-fifth to the thirtieth segments the branchiae diminish in size, and at the fortieth they do not extend distally much beyond the dorsal cirri. At the eighty-third segment they are still present with 5 pinnate filaments. Posterior simple hooks are trifold (fig. 3, *b*).

This differs from *E. antennata* Savigny in that the branchiae diminish in size after the thirtieth segment; the peristomial cirri are not annulated; the composite setae are distally bifid (fig. 3, *a*).

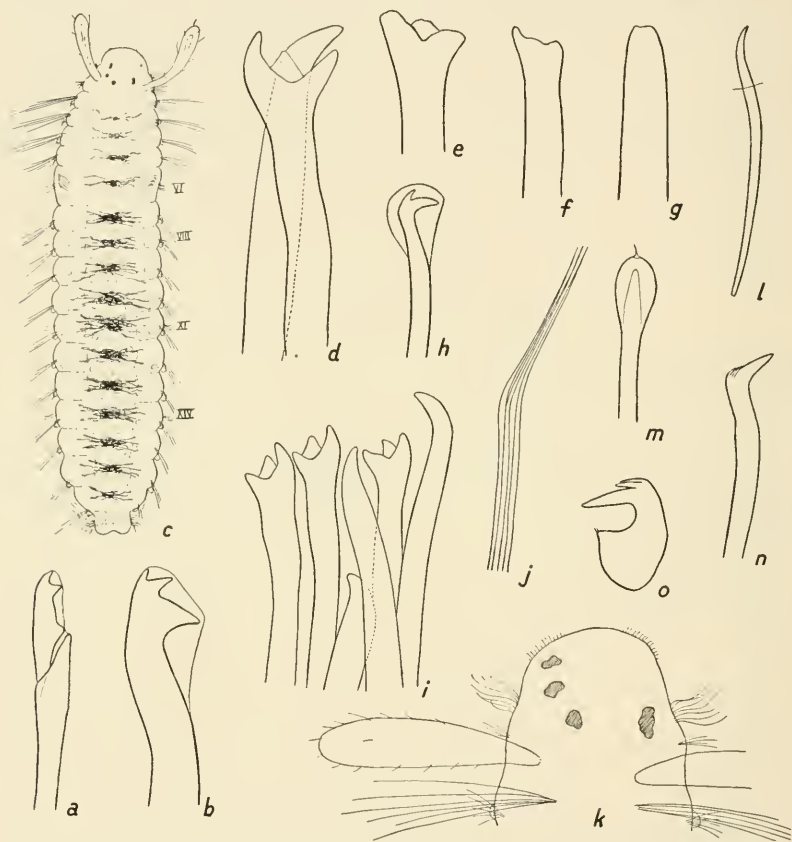


FIG. 3.—Species of *Eunice*, *Polydora*, *Cirratulus*, and *Metachone*.

*a-b*, *Eunice aedificatrix*: *a*, composite seta, with bifid tip,  $\times 195$ ; *b*, simple, uncinigerous seta, with trifid tip,  $\times 195$ .

*c-k*, *Polydora tricuspis*: *c*, a planktonic larva, in dorsal view, showing characteristic pigmented pattern, rounded prostomium, paratrochs on segments VI, VIII, XI, and XIV, and parapodial glands in segments VIII to XII, somewhat depressed under cover slip,  $\times 60$ ; *d*, a falcigerous and a tricuspid seta, unworn, from the dorsal fascicle of the 6th segment,  $\times 430$ ; *e* and *f*, worn tricuspid setae from the same fascicle as that shown in figure *d*,  $\times 430$ ; *g*, a worn falcate seta from the same fascicle,  $\times 430$ ; *h*, a hooded crotchet for a neuropodium posterior to the 8th segment,  $\times 430$ ; *i*, stout hooks from planktonic larva,  $\times 570$ ; *j*, fascicle of capillary setae ventral to the hooks shown in *i*,  $\times 570$ ; *k*, anterior end of a 16-segmented larva showing small setal fascicle in segment I, and reduced neuropodial fascicle in II, depressed under cover slip,  $\times 180$ .

*l*, *Cirratulus niger*: an uncinigerous seta from a median parapodium,  $\times 195$ .

*m-o*, *Metachone mollis*: *m*, a spatulate notopodial seta, with minute mucron,  $\times 195$ ; *n*, a thoracic uncinus, from a median thoracic parapodium,  $\times 195$ ; *o*, abdominal uncinus, from an anterior abdominal parapodium,  $\times 195$ .

Monro described a parchment tube with specimens from Panama. No tubes were collected with the specimens at hand.

*Distribution*.—Panama; Lower California, Mexico.

#### **EUNICE SCHEMACEPHALA Schmarda**

*Eunice schemacephala* SCHMARDA, 1861, p. 132; AUGENER, 1925, p. 28.

*Eunice fucata* EHLERS, 1887, p. 91.

*Collection*.—Station No. 30-38; 2 specimens.

Two sexually mature individuals, one a male, the posterior portions broken and turgid with white gonadial products, the other a gravid female, the eggs olive green in alcohol. Setae are pale straw color, acicula dark.

Augener (1925, p. 28) has discussed the synonymy of this common West Indian species, and at the same time identified his west African *E. fucata* (1918, p. 316) with another species.

*Distribution*.—West Indies; Florida; Caribbean Sea.

#### **EUNICE (PALOLO) SICILIENSIS Grube**

*Eunice siciliensis* FAUVEL, 1923, p. 405; MONRO, 1933, p. 62.

*Collection*.—Station No. 9-38; 2 specimens.

An anterior fragment with about 65 segments is 16 mm. long and 2.5 mm. wide. It is pale except for black eyes and dark acicula. Heavy white calcareous mandibles protrude partly from the mouth. Branchiae are present from the forty-seventh parapodium to the end of the piece as simple filaments, exceeding the dorsal cirri in length. Composite setae are pale, distally bifid. There are no simple neuropodial hooks.

Another specimen about 25 mm. long consists of about 100 posterior segments with anal ring, and a regenerated anterior end including prostomium and about 25 anterior segments. The ability to regenerate lost anterior parts is not uncommon in this family.

*Distribution*.—Cosmopolitan, in tropical and subtropical seas.

### **CHAETOPTERIDAE**

#### **MESOCHAETOPTERUS MINUTUS Potts**

*Mesochaetopterus minutus* POTTS, 1914, p. 963; MONRO, 1928, p. 92; 1933, p. 1052.

*Collection*.—Station No. 9-38; many tubes, some with their inhabitants.

Numerous light, sand-covered tubes, to 50 mm. long and about 1 mm. wide. The sand covers a transparent chitinous tube in which

no annulations were observed. The occupants are difficult to extract entire from the slender tubes, but are probably very much shorter than the tubes they occupy.

*Distribution.*—Cape Verde Islands; Torres Strait Settlements; Galápagos Islands; Clipperton Island.

## SPIONIDAE

### POLYDORA TRICUSPA, n. sp.

FIGS. 3, *c-k*

*Collection.*—Station No. 15-38; 1 specimen.

Length of 30 anterior segments is 5 mm., width 0.6 mm. Colorless except for 3 black eye spots, 2 of which are anterior, at the sides of the prostomium, and an unpaired one more posteriorly, on the prostomial ridge. A dark stripe marks the dorsal longitudinal vessel.

The prostomium is rounded anteriorly, snoutlike, its length about as great as the base of the head is wide at the place where the palpi are inserted. The prostomial caruncle extends posteriorly as a low ridge to the anterior margin of the modified segment. The palpi have been lost.

Branchiae are present from segment 8 (the second post modified) to segment 25, or 18 pairs. They are cirriform, recurved over the dorsum, slightly overlapping except in the last 3 branchial segments, where they are shorter.

The second segment (first setigerous) has a dorsal fascicle of lanceolate setae. Segments 3-5 have lanceolate setae in notopodial and neuropodial fascicles. Segment 6 is modified, provided with 2 kinds of stout uncini in the dorsal fascicle, and a small fascicle of slender lanceolate setae ventrally. The stout uncini include 4-5 pairs of (1) longer, pointed spines bent at the tip (fig. 3, *d*), and (2) equally heavy, though somewhat shorter, triple pronged spines, accompanying the pointed spines (fig. 3, *d*). On worn spines (figs. 3, *e-g*) the tips are missing. No fine pennoned, companion setae were distinguished. Bifid hooded crotchets are present in neuropodia from the eighth segment. They have a long main fang, nearly at right angles to the main stem, and a distal tooth less than half as large (fig. 3, *h*). All notopodia have only lanceolate setae.

This single specimen is of unique interest because of its relation to observations made on planktonic larval forms during March to April, 1938. These studies were carried on at the Scripps Institution of Oceanography at La Jolla, Calif., under the sponsorship of Dr.

Martin W. Johnson. Plankton tows were made from the end of a 1,000-foot pier, along the open ocean. Frequently these tows contained larvae of a *Polydora* in which the modified hooks and hooded crotchets are strikingly like those in the unique specimen from James Island (cf. figs. 3, *i* and 3, *d*). Also, these pelagic larvae had up to 19 setigerous segments, indicating a long pelagic life, and hence the possibility of being widely disseminated by ocean currents. In spite of shore collecting in the vicinity of La Jolla, the adults were not recovered. Subintertidal zones were not examined.

These larvae are characterized as follows (based on living larvae): Each setigerous segment has a single black, irregular blotch over the middle dorsum; the prostomium is broadly rounded anteriorly (fig. 3, *c*); there are 4 (more or less) eye spots; the palpi are stout, short; ciliated paratrochs are present on segments VI (modified), VIII, XI, XIV, and ciliated rings on the peristomium and anus. Parapodial glands are visible in segments VIII to XII (fig. 3, *c*); the first segment (= peristomium) has a few short ventral setae which are perhaps lost later; the second segment has both dorsal and ventral fascicles, the ventral setae much the shorter, and not present in the adult (fig. 3, *k*); hooded crotchets are present from segment VIII; segment VI has two kinds of stout modified hooks (fig. 3, *i*) identical with those in the specimen from the Galápagos Islands and a slender fascicle of 4 or 5 capillary setae (fig. 3, *j*). No branchiae are visible.

*Polydora tricuspa* differs from other species of *Polydora* in that the modified segment (VI) has 2 kinds of stout hooks, a falcate and a tricuspid, in addition to a ventral fascicle of lanceolate setae. The hooked crotchets are bifid; branchiae are limited to 18 segments.

*Holotype*.—U.S.N.M. no. 20428.

*Distribution*.—Galápagos Islands; southern California.

## CIRRATULIDAE

### CIRRATULUS NIGER, new name

FIG. 3, b

*Cirratulus nigromaculata* TREADWELL, 1902, p. 204, *not* GRUBE, 1870, p. 504.

*Collection*.—Station No. 8-38; 3 specimens.

Length to 13 mm., widest at about the tenth setigerous segment. General appearance dark, with pale tentacular cirri and white branchial filaments. Head and anterior end as shown by Treadwell (1902, p. 204). Under high magnification the dark color resolves itself into diffuse dusky patches, darkest over the middorsum in the anterior

region. The prostomium is pale with a dark, median, longitudinal stripe. The white branchial cirri have narrow black rings. Parapodial tentacular filaments posterior to the branchial region are dark with a subdistal white ring, and a terminal dark point.

The setae are pale, inconspicuous, and include pointed capillaries in both rami of the first 7 segments. More posteriorly, pointed setae alternate with thicker, uncinigerous setae. The latter are slightly curved (fig. 3, *l*) and terminate in a blunt point.

*Cirratulus nigromaculata* Treadwell is preoccupied by Grube (1870, p. 504) for a species from the Red Sea. A new name is therefore proposed.

*Distribution*.—Panama; Socorro Island, Mexico.

## OPHELIIDAE

### POLYOPHTHALMUS PICTUS (Dujardin)

*Polyopthalmus pictus* FAUVEL, 1927, p. 137.

? *Polyopthalmus australis* TREADWELL, 1914, p. 216.

*Collection*.—Station Nos. 3-38, 5-38; numerous specimens.

Length to 27 mm.; pigment pattern consists of rust-colored, transverse segmental bands dorsally, widest in the first 3 or 4 segments where they almost coalesce, and become narrower more posteriorly. The band is continued on the ventral side but interrupted ventrolaterally along the muscular ridge. There are 12 pairs of lateral eye spots. The prostomium is pale.

*P. australis* Treadwell (1914, p. 216), from southern California, is perhaps this same species, since it is known to occur commonly in the littoral zones of southern California.

*Distribution*.—Cosmopolitan, in warmer waters.

### ARMANDIA, sp.

*Collection*.—Station No. 3-38; 1 specimen.

In a collection with numerous individuals of *Polyopthalmus pictus* (Dujardin). Pale to white except for eye spots. Prostomium with 3 black, embedded eye spots. Consists of 36 setigerous segments. The proboscis is partly everted in the form of 8 dichotomously divided lobes, the largest lobes near the middle of the series. The prostomial lobe (anterior to the mouth) measures about as long as the length from the mouth to the fourth parapodium. Lateral eye spots are oval, black, present from between segments 2/3 to 32/33, though a few are missing. Branchiae are cirriform, present from the second setigerous segment to the second last, or 34 pairs.

The anal tube, without its terminal cirri, is about as long as the last 4 setigerous segments. It ends distally in 6 subequal cirri disposed in a crescent on the dorsal and lateral portions, and 2 ventral cirri, including a longer left and a shorter right, but both are larger than the lateral cirri.

The single individual is translucent, and believed to be immature. It differs from known species of *Armandia* in (1) its greater number of segments (36 setigerous), (2) the presence of lateral eye spots posterior to the seventeenth segment, and (3) the small number of anal cirri, a total of 8.

## SABELLARIIDAE

### IDANTHYRSUS PENNATUS (Peters)

*Pallasia pennata* FAUVEL, 1917, p. 262.

*Idanthyrus pennatus* MONRO, 1933b, p. 1065.

*Collection*.—Station Nos. 9-38, 15-38; 1 specimen and dried tubes.

Length to 55 mm. (Clipperton Island). The inside diameter of the tubes is approximately 5 mm.; the outer surface is covered with coarse yellow sand particles and shell fragments.

*Distribution*.—Cosmopolitan; littoral zones.

## TEREBELLIDAE

### NICOLEA GALAPAGENSIS Chamberlin

*Nicola galapagensis* CHAMBERLIN, 1919, p. 427.

*Nicola cetrata galapagensis* AUGENER, 1933, p. 65.

*Collection*.—Station No. 19-38; 1 specimen.

Length without tentacles about 50 mm.; color drab greenish gray in alcohol. There are 2 pairs of branchiae, the first somewhat larger than the second; and 19 ventral thoracic scutes, the last two not well marked.

*Distribution*.—Galápagos Islands; Australia (Augener).

### POLYMNIA NEBULOSA (Montagu)

*Polymnia nebulosa* FAUVEL, 1927, p. 257; MONRO, 1933b, p. 1072; OKUDA, 1937, p. 59.

*Collection*.—Station No. 30-38; 3 specimens.

The longest to 50 mm. without the tentacles, consists of 125 setigerous segments of which 17 are thoracic.

*Distribution*.—Cosmopolitan, in warm seas.

## SABELLIDAE

## SABELLASTARTE INDICA (Savigny)

*Sabellastarte indica* AUGENER, 1914, p. 115; MONRO, 1933b, p. 1079.

*Collection*.—Station No. 30-38; 1 specimen in tube.

Length, removed from tube, is 73 mm., of which the tentacles comprise 33 mm., and the abdomen 35 mm. Color in alcohol is brownish red.

*Distribution*.—Cosmopolitan, in warmer seas.

## METACHONE MOLLIS Bush

FIGS. 3, *m-o*

*Metachone mollis* BUSH, 1904, p. 216.

*Collection*.—Station Nos. 3-38, 5-38; 8 specimens.

Length to 25 mm. without branchial crown, width to 5 mm.; number of segments to 44, including 8 thoracic setigerous segments and 24-36 abdominal segments. The branchial crowns are lost from the larger specimens. On the smaller (9 mm. long) individuals there are 6 pairs of filaments, the branchial web extends distally to within one-third or one-fourth of the ends of the filaments.

Thoracic spatulate setae have an inconspicuous mucron (fig. 3, *m*), obsolete in some. The thoracic uncini have a stout proximal fang and about 3 smaller teeth (fig. 3, *n*). Abdominal uncini have teeth resembling those of the thoracic uncinigers but are not stalked (fig. 3, *o*). The collar is entire, straight, the lobes not prolonged.

*Distribution*.—California, south to Lower California, Mexico.

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