

ALLAN HANCOCK MONOGRAPHS
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NUMBER 6

DEEP-WATER BENTHIC POLYCHAETOUS
ANNELIDS OFF NEW ENGLAND TO
BERMUDA AND OTHER
NORTH ATLANTIC AREAS
PART II

BY

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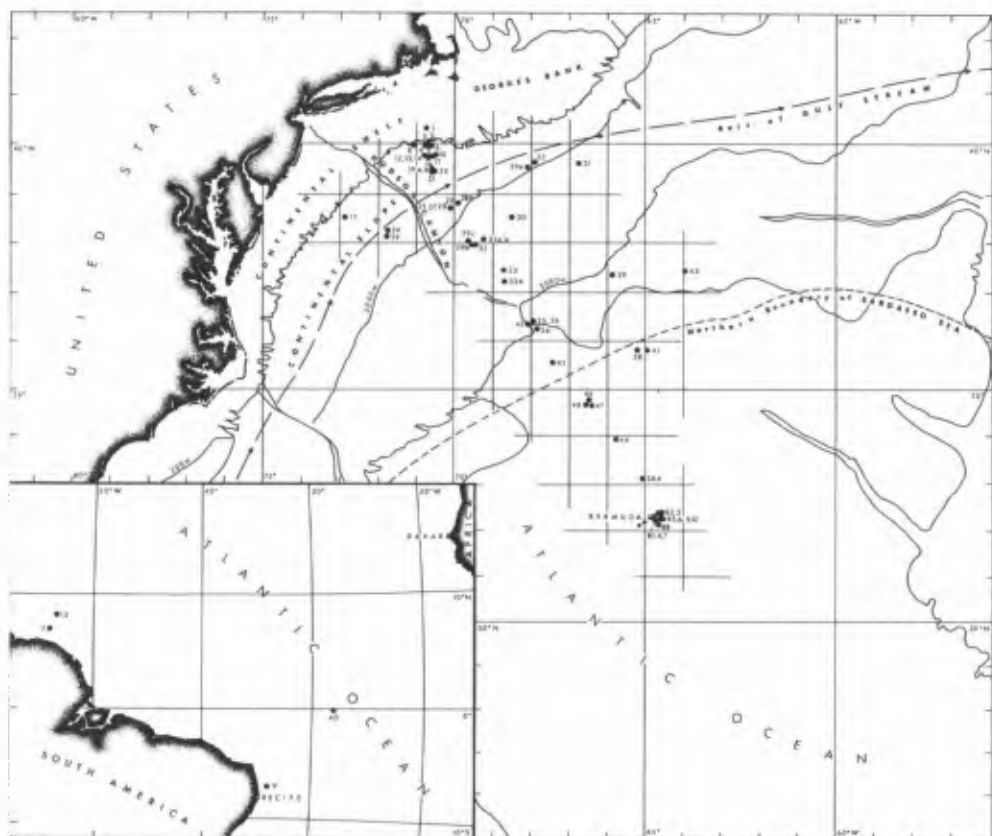


Chart showing localities of stations in the northwest Atlantic Ocean, Bermuda Islands, and equatorial region between Dakar and northeast South America. Major benthic areas are indicated, including the Continental shelf and slope, the Hudson Canyon, axis of Gulf Stream, northern boundary of Sargasso Sea; depth contours are given for depths of 200, 3000, and 5000 meters. The numbers accompanying the black dots are station numbers, given in the Station List for Atlantis and Chain cruises, p. 234.

DEEP-WATER BENTHIC POLYCHAETOUS ANNELIDS OFF NEW ENGLAND
TO BERMUDA AND OTHER NORTH ATLANTIC AREAS

PART 2

by

Olga Hartman and Kristian Fauchald

INTRODUCTION

This is a continuation of "Deep-water benthic polychaetous annelids off New England to Bermuda and other North Atlantic areas" (see Hartman, 1965). A new deep-water and abyssal polychaete fauna is described, coming chiefly from great depths in the northwest Atlantic Ocean, and centered partly under the Gulf Stream, south to the northern end of the Sargasso Sea. Polychaetes from shallower depths in adjacent areas were discussed in the earlier report, based on samples coming from shelf and slope depths off New England, the Bermuda rise, and equatorial areas of the North Atlantic Basin, resulting in the recovery of about 250 species. The new samples are from areas more remote from land and in greater depths.

Sixty-seven useful samples, from selected profiles in the northwestern Atlantic Ocean, in depths of 96 to 5042 meters, have yielded 374 identified species and about 30 others which may be recognized as additional species when more complete specimens can be recovered. The highest numbers of specimens come from slope depths in northernmost localities, and the lowest numbers in greatest depths, farthest from land; but the number of species runs high in all latitudes and depths. Three major localities are identified--the northwest Atlantic deep slope and basin, the Bermuda rise, and the equatorial latitude. A significant number of species is unique to each of the three areas (cf. charts, below); this may reflect change not only

with latitude but also with geographic location.

A summary of samples with numbers of species and specimens gives the following results:

12 slope samples, in depths of less than 2000 meters, yielded
244 species and 41,278 specimens;

18 abyssal samples, in depths of 2000 to 3834 meters, yielded
211 species and 8315 specimens;

14 abyssal samples, in depths of 4001 to 4900 meters, yielded
147 species and 2754 specimens;

9 abyssal samples, in depths of over 5000 meters, yielded 89
species and 554 specimens;

10 samples from the Bermuda rise, in depths of 1000 to 2223
meters, yielded 115 species and 2139 specimens;

4 equatorial samples, in depths of 520 to 4825 meters, yielded
133 species and 3075 specimens.

The 67 samples contained at least 374 species and 58,115
specimens.

Analyses show that faunal compositions change with latitude; numbers of specimens diminish with depth, but population diversity remains fairly constant in all latitudes, in shallowest to greatest depths.

ACKNOWLEDGMENTS

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SYSTEMATIC LIST OF POLYCHAETOUS ANNELIDS, Emended
(Those preceded by * will be found in the first part, 1965)

Family APHRODITIDAE

- *Aphrodita aculeata Linnaeus, 1761
Laetmonice filicornis Kinberg, 1855
Laetmonice spp.

Family POLYNOIDAE

- Antinoana fusca, new genus, new species
Eunoe cf spinulosa Verrill, 1879
*Eunoe nodosa (Sars, 1861)
*Eunoe sp.
Harmothoe sp.
Macellicephala sp.
harmothoids
polynoids

Family SIGALIONIDAE

- Leanira minor Hartman, 1965
Leanira sp.
Pholoe anoculata Hartman, 1965
Pholoe sp.
Psammolyce globula Hartman, 1965
Sthenelais sp.
Sthenolepis tetragona (Oersted, 1845)
sigalionids

Family PEISIDICIDAE

- Peisidice bermudensis, new species

Family PISIONIDAE

- Pisionura abyssorum, new genus, new species

Family CHRYSOPETALIDAE

Dysponetus gracilis Hartman, 1965

?Dysponetus sp.

Family AMPHINOMIDAE

Chloeia sp.

*Notopygos megalops McIntosh, 1885

Paramphinome jeffreysii (McIntosh, 1868)

Pareurythoe sp.

amphinomid

Family EUPHROSINIDAE

Euphrosine sp.

Family PHYLLODOCIDAE

*Anaitides groenlandica (Oersted, 1843)

Anaitides sp., anoculate

Anaitides sp., oculate

Austrophyllum maculatum, new species

Cirrodoce cristata, new genus, new species

Eulalia anoculata, new species

*Eulalia spp.

?Eumida sp.

*Nereiphylla antennata Hartman, 1965

Nereiphylla paretii Blainville, 1828

Notalia sp.

*Paranaitis kosteriensis (Malmgren, 1867)

Paranaitis wahlbergi (Malmgren, 1865)

Pirakia lanceolata, new species

Protomystides bidentata (Langerhans, 1880)

Pseudomystides limbata punctata Hartman, 1965

phyllococids

Family ALCIOPIDAE

Vanadis sp.

alciopid

Family LOPADORRHYNCHIDAE

Lopadorrhynchus ?uncinatus Fauvel, 1915Lopadorrhynchus sp.Maupasia sp.

lopadorrhynchid

Family LACYDONIIDAE

*Paralacydonia paradoxa Fauvel, 1913

Family IOSPILIDAE

*Phalacrophorus pictus Greef, 1879

Family TYPHLOSCOLECIDAE

*Travisiopsis lanceolata Southern, 1910?Typhloscolex sp.

typhloscolecid

Family TOMOPTERIDAE

Tomopteris sp.

Family HESIONIDAE

Hesiocaeca bermudensis Hartman, 1965Neopodarke woodsholea Hartman, 1965Nereimyra ?punctata (Müller, 1788)

hesionids

Family PILARGIDAE

Ancistrosyllis groenlandica McIntosh, 1879Ancistrosyllis sp.Sigambra tentaculata (Treadwell, 1941)

Synelmis albini (Langerhans, 1881)

pilargid

Family SYLLIDAE

Braniella pupa Hartman, 1965

Exogone dispar (Webster, 1879)

Exogone verugera profunda Hartman, 1965

Exogone sp.

*Exogonella longipedata Hartman, 1965

*Exogoninae

Exogonita oculata, new genus, new species

Langerhansia anoculata, new species

*Odontosyllis sp.

*Pionosyllis procera Hartman, 1965

Sphaerosyllis brevifrons Webster and Benedict, 1884

*Sphaerosyllis hystrix Claparède, 1863

Typosyllis tegulum, new species

Typosyllis spp.

syllids

Family NEREIDAE

Ceratocephale loveni Malmgren, 1867

?Ceratocephale sp.

Ceratonereis versipedata Ehlers, 1887

*Eunereis sp.

Namalycastis profundus Hartman, 1965

Nereis caecoides Hartman, 1965

*Nereis zonata Malmgren, 1867

Nereis sp.

*Nicon uncinatus Hartman, 1965

Nicon sp.

Platynereis dumerilii (Audouin and Milne Edwards, 1833)

?Platynereis sp.

nereids

Family NEPHTYIDAE

Aglaophamus groenlandiae Hartman, 1967

*Aglaophamus igalis Hartman, 1965

Aglaophamus minusculus Hartman, 1965

*Aglaophamus sp., acirrate

Aglaophamus spp.

*Nephtys hystericis McIntosh, 1900

Nephtys paradoxa Malm, 1874

Nephtys near squamosa Ehlers, 1887

nephtyids

Family SPHAERODORIDAE

Clavodorum atlanticum, new genus, new species

Ephesiella macrocirris, new name

Ephesiella mixta, new species

Ephesiopsis quayanae, new genus, new species

Sphaerodoropsis corrugata, new genus, new name

Sphaerodoropsis elegans, new species

Sphaerodoropsis longipalpa, new name

Family GLYCERIDAE

*Glycera americana Leidy, 1855

Glycera mimica Hartman, 1965

Glycera tessellata Grube, 1863

Glycera spp.

Family GONIADIDAE

Glycinde profunda, new species

Goniada norvegica Oersted, 1845

Goniada sp.

Progoniada regularis Hartman, 1965

Family ONUPHIDAE

Hyalinoecia tubicola (Müller, 1776)

Hyalinoecia sp.

*Nothria atlantisa Hartman, 1965

Nothria conchylega (Sars, 1835)

*Nothria iridescens (Johnson, 1901)

Nothria pallidula Hartman, 1965

Nothria textor, new species

Nothria spp.

Onuphis quadricuspis Sars, 1872

*Paranorthia atlantica Hartman, 1965

*Paronuphis bermudensis Hartman, 1965

*Rhamphobrachium agassizi Ehlers, 1887

Family EUNICIDAE

*Eunice collini Augener, 1906

Eunice norvegica (Linnaeus, 1767)

Eunice sp.

*Marphysa bellii (Audouin and Milne Edwards, 1833)

Family LUMBRINERIDAE

Lumbrineris atlantica (Kinberg, 1865)

Lumbrineris crassicephala Hartman, 1965

Lumbrineris fragilis (Müller, 1776)

Lumbrineris latreilli Audouin and Milne Edwards, 1834

Lumbrineris paradoxa (Saint-Joseph, 1888)

Lumbrineris near tenuis (Verrill, 1873)

Lumbrineris, sp. A

Lumbrineris, sp. B

Lumbrineris spp.

Ninoe brevipes (McIntosh, 1903)

Ninoe dibranchia, new species

Ninoe gayheadia Hartman, 1965

Family ARABELLIDAE

*Drilonereis falcata minor Hartman, 1955

*Drilonereis longa Webster, 1879

Drilonereis sp.

Haematocleptes leaenae, new species

Family DORVILLEIDAE

Dorvillea rudolphi anoculata Hartman, 1965

Dorvillea sp.

Ophryotrocha sp.

*Protodorvillea minuta Hartman, 1965

Protodorvillea sp.

dorvilleid

Family ORBINIIDAE

Califia schmitti (Pettibone, 1957)

Haploscoloplos fragilis intermedius Hartman, 1965

Haploscoloplos spp.

Microrbinia linea Hartman, 1965

*Naineris quadricuspida (Fabricius, 1780)

Phylo felix Kinberg, 1866

*Phylo norvegicus (Sars, 1872)

*Scoloplos (Leodamas) ohlini (Ehlers, 1901)

Scoloplos spp.

orbiniid, unknown genus and species

*orbiniids

Family PARAONIDAE

Aedicira belgicae (Fauvel, 1936)

Aedicira parva, new species

*Aparaonis abyssalis Hartman, 1965

Aricidea abbranchiata Hartman, 1965

Aricidea neosuecica Hartman, 1965

Aricidea suecica Eliason, 1920

Aricidea tetrabbranchia, new species

Aricidea spp.

*Cirrophorus aciculatus Hartman, 1957

*Cirrophorus lyriformis (Annenkova, 1934)

Paradoneis abbranchiata Hartman, 1965

*Paradoneis lyra (Southern, 1914)

Paraonides monilaris, new species

Paraonides rubriceps, new species

Paraonis cornatus Hartman, 1965

Paraonis gracilis (Tauber, 1879)

Paraonis gracilis, aristate

Paraonis reductus Hartman, 1965

Paraonis uncinatus Hartman, 1965

paraonids

Family APISTOBANCHIDAE

Apistobanchus typicus (Webster and Benedict, 1887)

Family SPIONIDAE

Laonice antarcticae Hartman, 1953

Laonice cirrata (Sars, 1851)

Laonice spp.

*Nerinides near tridentata Southern, 1914

*Polydora caulleryi Mesnil, 1897

Polydora sp.

Prionospio cirrifera Wirén, 1883

*Prionospio delta Hartman, 1965

Prionospio ehlersi Fauvel, 1928

Prionospio steenstrupi Malmgren, 1867

Prionospio spp.

*Spiophanes bombyx (Claparède, 1870)

Spiophanes kroyeri Grube, 1860

*Spiophanes wigleyi Pettibone, 1961

Spiophanes spp.

spionids

?spionid, unknown

Family near SPIONIDAE

*Aberranta enigmatica Hartman, 1965

Family MAGELONIDAE

*Magelona americana Hartman, 1965

Magelona capax Hartman, 1965

Magelona spp.

Family DISOMIDAE

Disoma watsoni Fauvel, 1916

Disoma spp.

Family POECILOCHAETIDAE

Poecilochaetus bermudensis Hartman, 1965

Poecilochaetus fulgoris Claparède, in Ehlers, 1875

Poecilochaetus spp.

poecilochaetid

Family HETEROSPIONIDAE

Heterospio longissima Ehlers, 1875

Family CHAETOPTERIDAE

Phyllochaetopterus sp.

?Telepsavus sp.

Family CIRRATULIDAE

*Caulleriella ?zetlandica (McIntosh, 1911)

*Caulleriella sp.

Chaetozone gayheadia Hartman, 1965

Chaetozone setosa Malmgren, 1867

Chaetozone spp.

*Dodecaceria diceria Hartman, 1951

Tharyx annulosus Hartman, 1965

Tharyx marioni (Saint-Joseph, 1894)

Tharyx nigrorostrum, new species

Tharyx spp.

cirratulids

Family COSSURIDAE

Cossura longocirrata Webster and Benedict, 1887

Cossura sp.

Family CTENODRILIDAE

*Zeppelinina prolonga Hartman, 1965

Family FLABELLIGERIDAE

Brada villosa (Rathke, 1843)

*Buskiella borealis Hartman, 1965

Fauveliopsis brevis (Hartman, 1965), new combination

Fauveliopsis glabra (Hartman, 1960), new combination

Fauveliopsis scabra, new species

Flabelligella cirrata, new species

Flabelligella minuta Hartman, 1965

Flabelligella papillata Hartman, 1965

Flabelligella sp.

Flabelligera sp.

Ilyphagus octobranchus Hartman, 1965

Ilyphagus sp.

Therochaeta collarifera (Ehlers, 1887)

flabelligerids

Family SCALIBREGMIDAE

Asclerocheilus beringianus Uschakov, 1955

Asclerocheilus intermedius (Saint-Joseph, 1894)

Asclerocheilus sp.

Neolipobranchius glabrus, new genus, new species

Pseudoscalibregma aciculata Hartman, 1965

Pseudoscalibregma parva (Hansen, 1878)

Pseudoscalibregma sp.

Scalibregma inflata Rathke, 1843

Scalibregmella antennata, new genus, new species

Scalispinigera cirrata, new species

Sclerobregma branchiata Hartman, 1965

scalibregmids

Family OPHELIIDAE

Ammotrypane abbranchiata (Støp-Bowitz, 1948)

Ammotrypane ?aulogaster Rathke, 1843

Ammotrypane aulogastrella, new species

Ammotrypane chaetifera Hartman, 1965

Ammotrypane cylindricaudatus Hansen, 1878

Ammotrypane spp.

Ammotrypanella arctica McIntosh, 1879

Kesun gravieri (McIntosh, 1908), new combination

Ophelia profunda Hartman, 1965

Tachytrypane jeffreysii McIntosh, 1879

*Travisia forbesii Johnston, 1840

opheliid

Family STERNASPIDAE

*Sternaspis fossor Stimpson, 1854

Sternaspis sp.

Family CAPITELLIDAE

Barantolla near americana Hartman, 1963

Capitella near capitata (Fabricius, 1780)

Capitella aberranta, new species

Dasybranchus sp.

Heteromastus filiformis (Claparède, 1864)

*Leiocapitella atlantica Hartman, 1965

?Leiochrides sp.

Notomastus latericeus Sars, 1851

Notomastus teres Hartman, 1965

Notomastus spp.

*Pseudocapitella incerta Fauvel, 1913

capitellid

Family MALDANIDAE

- *Asychis atlanticus Kinberg, 1867
Asychis biceps (Sars, 1861)
- *Asychis collariceps (Augener, 1906)
Clymenura borealis (Arwidsson, 1907)
- *Clymenura cirrata (Ehlers, 1887)
- *Clymenura polaris (Théel, 1879)
Clymenura sp.
Isocirrus planiceps (Sars, 1872)
Isocirrus sp.
- *Lumbriclymene ?minor Arwidsson, 1907
- *Lumbriclymene nasuta Wesenberg-Lund, 1948
Lumbriclymene sp.
- *Maldane cuculligera Ehlers, 1887
- *Maldane glebifex Grube, 1860
Maldane sarsi Malmgren, 1865
- *Microclymene tricirrata Arwidsson, 1907
Nicomache lumbricalis (Fabricius, 1780)
- *Nicomache sp.
Notoproctus abyssus, new species
Notoproctus oculatus Arwidsson, 1907, anoculate
Praxillella gracilis (Sars, 1861)
Praxillella praetermissa (Malmgren, 1866)
Praxillella spp.
- *Praxillura longissima Arwidsson, 1907
- *Rhodine gracilior Tauber, 1879
Rhodine sp.
maldanids

Family OWENIIDAE

Myriochele near heeri Malmgren, 1867

Myriochele ?pygidialis Hartman, 1960

Myriochele spp.

*Myriowenia gosnoldi Hartman, 1965

*Owenia ?fusiformis delle Chiaje, 1844

Family BOGUEIDAE, new family

Boquea enigmatica Hartman, 1945

Boquella ornata, new genus, new species

Family SABELLARIIDAE

Monorchos varians (Treadwell, 1901)

Phalacrostemma cidariophilum Marenzeller, 1895

Phalacrostemma elegans Fauvel, 1911

sabellariid

Family PECTINARIIDAE

pectinariid

Family AMPHARETIDAE

Amage sp.

Ampharete arctica Malmgren, 1866

Ampharete spp.

Amphicteis gunneri (Sars, 1835)

Amphicteis sargassoensis, new species

Amphicteis trichophora Hartman, 1965

Amphicteis vestis Hartman, 1965

Amphicteis sp.

Anobothrus gracilis (Malmgren, 1866)

Auchenoplax crinita Ehlers, 1887

Glyphanostomum pallescens (Théel, 1878)

Glyphanostomum sp.

Lysippe labiata Malmgren, 1866

*Melinna cristata (Sars, 1851)

Melinna sp.

Melinnata americana Hartman, 1965

melinnid

*Muggoides cinctus Hartman, 1965

Neopaiwa cirrata, new genus, new species

Phyllampharete longicirra, new genus, new species

Samytha sexcirrata (Sars, 1856)

Samythella elongata Verrill, 1873

*Sosanella apalea Hartman, 1965

ampharetid, apaleal

ampharetid, paleal

ampharetid, with tattered tube

ampharetids

Family TERESELLIDAE

Amaeana trilobata (Sars, 1863)

Amaeana sp.

Artacama globosa, new species

Euthelepus abbranchiatus, new species

Euthelepus atlanticus, new species

*Laphania boeckii Malmgren

Leaena minima Hartman, 1965

Leaena sp.

Pista cristata (Müller, 1776)

Polycirrus albicans (Malmgren, 1865)

Polycirrus medusa Grube, 1855

*Streblosoma sp.

terebellid, abranchiata

terebellids

Family TRICHOBRANCHIDAE

*Filibranchus roseus Malm, 1874

Filibranchus sp.

Terebellides lobatus, new species

Terebellides stroemii Sars, 1835

Terebellides sp.

Trichobranchus americanus Hartman, 1965

Unobranchus abyssalis Hartman, 1965

trichobranchids

Family SABELLIDAE

Chone sp.

Euchone incolor Hartman, 1965

Euchone spp.

*Fabricia sabella (Ehrenberg, 1837)

Jasmineira bermudensis Hartman, 1965

Jasmineira filiformis Hartman, 1965

Jasmineira sp.

*Megalomma bioculata (Ehlers, 1887)

Potamethus singularis Hartman, 1965

sabellids

Family SERPULIDAE

Filogranula ?gracilis Langerhans, 1884

?Filogranula spp.

Spirodiscus grimaldii Fauvel, 1909

spirorbid, with dextral tube

spirorbid, with opercular incubation

Vermiliopsis plangerhansi Fauvel, 1909

serpulids

DESCRIPTIONS OF SPECIES

Family APHRODITIDAE

Laetmonice filicornis Kinberg, 1855

Laetmonice filicornis Hartman, 1965, p. 49.

New Record: Ch 89 (3).

Distribution: Slope depth, 196 m; northwestern Europe.

Laetmonice spp.

Records:¹ Ch 103 (3); A 126 (1); A 70 (1); Ch 84 (2);
A 125 (1, jv); Ch 100 (2); A 118 (1).

Distribution: Abyssal depths to 4892 m.

Family POLYNOIDAE

Genus Antinoana, new genus

Type A. fusca, new species

The body is harmothoid, short, broadly depressed, and consists of not more than 26 or 27 segments. The prostomium has frontal peaks, a thick, long median antenna, and a pair of smaller lateral ones, and two pairs of eyes. Parapodia are distinctly biramous, their acicular lobes prolonged; a rodlike aciculum projects from the tip. Elytra number 12 or 13 pairs;

¹Records are listed by increasing depth for North Atlantic stations, followed by Bermuda rise samples, and finally those from equatorial latitudes.

they are inserted on setigers 2, 4, 5, and then on alternate segments to the end; the last are minute; they cover the dorsum more or less completely.

Antinoana differs from other genera of the subfamily HARMOTHOINAE in having 27 segments, instead of 37 or more; elytra number 12 or 13 pairs, instead of 15 or more. Notosetae are much thicker than neurosetae, and the latter are slender and distally bifid. The allied genus, Austrolaenilla Bergström, 1916, with type A. antarctica Bergström, 1916, is a much larger species with 37 setigers and 15 pairs of elytra; its neurosetae are distally entire; lateral hairs are profusely present and extend beyond the tip of the shaft. Antinoella Augener (1928, p. 676), with type A. sarsi (Kinberg), has 37 setigers and two kinds of neurosetae, both finer than notosetae; the superior-most have fine, hairlike tips, and the lowermost are shorter and coarser than other setae.

Antinoana fusca, new species

(Plate 1, Figs. a-h)

Records: Ch 89 (40); Ch 105 (14); Ch 87 (200, TYPE); A 73 (382); Ch 103 (50); A 62 (41); A 66 (16); Ch 76 (5); A 72 (51); A 64 (56); A 71 (4, jv); A 95 (10); A 126 (12); Ch 85 (15); ?A 70 (3, jv).

Description: Mature specimens are dark gray to black dorsally and pale ventrally; immature specimens are white to pale translucent. Adults measure 10-11 mm long and 4 mm wide without setae; segments number 25 or 26. Juveniles are less than half as long and have 19 or fewer setigers. The depressed body is broad in front and tapers posteriorly to a slender pygidium. The prostomium is harmothoid, wider than long, and has distinct peaks which may be directed upward (Fig. a). The four eyes are

very small black spots; the anterior pair is at the midlength or widest part of the prostomium, and the posterior pair near the posterior end; a patch of dispersed spots may occur on the post-medial part of the prostomium (from Sta. A 95). The thick, yellow pharyngeal region extends through five segments (setigers 5-9); thereafter, in mature specimens, the body cavity is distended with gonadial cells; ova are moderately small, dark and numerous, with many crowded into each segment.

The style of the median prostomial antenna is prolonged, its length nearly that of the palpi but slenderer; it is inserted on a short base, and is lightly papillated. The paired antennae are much shorter; each has a short, globular base and a slender, papillated style shorter than the prostomium. The cylindrical, distally tapering palpi are thicker than other appendages and extend back through the fifth setiger; their surface is white and smooth. The first parapodia are directed forward at the sides of the prostomium; each has a long, papillated dorsal and a ventral cirrus, the latter resembling the median prostomial antenna but somewhat longer; a small setal fascicle is visible at the base of the dorsal cirrus and a projecting aciculum at the upper base of the ventral cirrus.

More posterior parapodia are lateral and their setae arranged in full, spreading fascicles. Noto- and neuro-acicular lobes taper, are laterally prolonged, and each has a single yellow, rodlike aciculum directed beyond the end of the lobe (Fig. b). Notopodia are shorter than neuropodia. Notosetae include thick, slightly curved, short setae (Fig. d) in the upper end of the series, and increasingly longer (Fig. e) ones below; they number 12 to 18 or more in a fascicle. Neurosetae (Figs. f-h) terminate in a long, whiplike tip minutely bifid; they are thickened below the serrated cutting edge and the

stalk is cylindrical; although the thickest setae are nearly twice as thick as the slenderest, they intergrade completely. Ventral cirri are inserted nearly midway along the base of the long neuropodium (Fig. b).

Elytra number 11 or 12 pairs and are inserted on setigers 2, 4, 5, 7, 9, 11, 13, 15, 19, 21, and 23; setiger 25 is reduced and may lack elytra, but it retains the base of a cirrus. Small specimens may have only eight or nine pairs of elytra. A typical elytrum (Fig. c) has lateral fimbriae and surface microtubercles.

Distribution: Slope and abyssal depths, 196 to 4680 m.

Eunoe cf spinulosa Verrill, 1879

Eunoe spinulosa Hartman, 1942, p. 24.

Record: A 64 (4).

Diagnosis: Elytral microtubercles are widely dispersed and cover the elytral surface; each is distally triangular, entire and slightly falcate. All setae are marginally serrated. Notosetae are thicker than neurosetae and range from short and curved in superior position, to longer, slightly slenderer and nearly straight in inferior one; the shorter notosetae number about six in a fascicle, and the longer eight. Neurosetae are distally entire; they range from long, in superior position, to short in lowermost end of the series. The distal end of neuroacicular lobes is prolonged as a papilla above the emergence of the rodlike, distally pointed aciculum.

Distribution: Abyssal depths, 2886 m; off New England.

Genus Harmothoe Kinberg, 1855

Harmothoe sp.

Record: Ch 89 (7).

Distribution: Slope depth, 196 m.

Genus Macellicephala McIntosh, 1885

Macellicephala sp.

Records: A 70 (fgm); ?Ch 84 (2, fgm, each with very small eyes); ?A 121 (2, fgm); A 120 (1); A 155 (5).

Diagnosis: All specimens are fragments; total number of segments may not exceed 18. The powerful maxillary apparatus is yellow, thick, thrust forward and exposed in some specimens. The long, laterally directed parapodia are frayed. Parapodia are supported by long, distally curved, embedded acicula directed laterally, and yellow setae, as characteristic of the genus. A typical parapodium has seven to twelve setae; each is distally rounded and has a longitudinal groove bordered on either side by a coarsely toothed ridge, the serrations numbering six or seven on a side, and coarser than in previously described species; they include the following, from North Atlantic regions:

M. abyssi Fauvel, 1913, Gulf of Gascogne, in 4380 m;

M. affinis Fauvel, 1914, off Madeira, in 2380 m;

M. atlantica Støp-Bowitz, 1948, from North Atlantic, in 1100 m;

M. grimaldi Fauvel, 1913, off Azores, pelagic in 0-3000 m;

M. paucidentata Eliason, 1962, from the Skagerrak, in 478 m;

M. violacea (Levinsen, 1886) off Greenland, in 200-733 m.

These species are not clearly distinguishable from one another.

Distribution: Abyssal depth, 4680 to 5023 m.

harothoids, unidentifiable

Records: A 58 (4); A 126 (12); Ch 84 (fgm); A 125 (1);
A 122 (2); A 123 (1); A 118 (3,fgm).

Remarks: Most records refer to fragments or immature individuals that do not exceed a few mm in length; some lack eyes; others, from Sta. A 125, have four very small eyes.

Distribution: Abyssal depths, 2000 to 5023 m; Bermuda rise, 1135-1153 m.

polynoids, unidentifiable

New Records: Ch 105 (1, jv); Ch 103 (1); A 64 (fgm); A 63 (fgm); A 65 (3, jv); A 95 (4); Ch 78 (5, fgm); A 121 (1, jv); Ch 80 (fgm).

Distribution: Slope and abyssal depths, 530 to 4970 m.

Family SIGALIONIDAE

Key to Species

- 1. Neurosetae distally falcigerous 2
- 1. Neurosetae distally spinigerous 4
- 2. Prostomium with median antenna, but without paired ones Pholoe anoculata
- 2. Prostomium with median and paired antennae 3
- 3. Elytra thick, covered with sand Psammolyce globula
- 3. Elytra thin, translucent, without sand Sthenelais sp.
- 4. Prostomium without lateral ctenidia at base of median antenna Leanira minor
- 4. Prostomium with lateral ctenidia at base of median antenna Sthenolepis tetragona

Leanira minor Hartman, 1965

Leanira minor Hartman, 1965, p. 51, pl. 2.

New Records: Ch 105 (1); Ch 87 (1); A 73 (2); Ch 103 (1); GH 3 (1); A 62 (35); A 66 (3); Ch 76 (13); A 72 (7); A 64 (33); A 63 (2); A 65 (1); A 71 (fgm); A 95 (7); Ch 85 (100); A 70 (3); A 118 (28).

Distribution: Slope and abyssal depths, 530 to 4680 m; Bermuda rise, 1135-1153 m.

Leanira sp.

Records: Ch 78 (17); Ch 84 (3); A 121 (2); A 125 (1); A 122 (6).

Remarks: Fragmented and juvenile individuals are referred to this genus because neurosetae are composite spinigers, and the median prostomial antenna lacks ctenidia.

Distribution: Abyssal depths, 3828 to 4853 m.

Pholoe anoculata Hartman, 1965

(Plate 2, Figs. f-h)

Pholoe minuta anoculata Hartman, 1965, p. 52.

New Records: Ch 87 (51); A 73 (386); Ch 103 (4); GH 3 (1).

Diagnosis: Elytra from median segments are rhomboid and have nearly smooth margins (Fig. f). Composite setae have distal falcate appendages ranging from longer (Fig. g) to shorter (Fig. h). The elytral fringe is non-annulated, differing there-in from Pholoe minuta (Fabricius).

Distribution: Slope and abyssal depths, 1102 to 5000 m.

Pholoe sp.

Records: A 58 (fgm); A 62 (9); A 66 (1).

Remarks: Small or fragmented individuals are not identifiable to a named species.

Distribution: Abyssal depths, 2000 to 2802 m.

Psammolyce globula Hartman, 1965

(Plate 3, Figs. d-f)

Psammolyce globula Hartman, 1965, p. 53, pl. 3.

New Record: A 118 (fgm).

Remarks: The fragment lacks the cephalic structures but parapodial parts are characteristic. Neuropodia have spreading fascicles of slender capillary setae that are laterally spinose (Fig. f); neurosetae include composite falcigers in which appendages are short and thick (Fig. d) to longer and slenderer (Fig. e); all have the distal ends deeply incised; the accessory tooth is very slender and the shaft is smooth.

Distribution: Bermuda rise, 1135-1153 m.

Genus Sthenelais Kinberg, 1855

Sthenelais sp.

(Plate 3, Figs. g-h)

Record: A 119 (1).

Diagnosis: A fragment measures 21.5 mm long for 47 setigers; a short, posterior end is lacking. Width in front, without parapodia, is 1.6 mm. Only two elytra remain, on setigers 30 and 31; they are translucent and laterally smooth. The prostomium has small, oval lateral ctenidia; eyes are lacking. Noto-setae are in long, slender fascicles; each seta is straight, has

closely spaced, short marginal spines continuous all around; the setae extend distally beyond the neurosetae. Neuropodia have composite yellow falcigers; in anterior and median segments, each is distally bifid and the appendage multiarticulate, with two (Fig. g) or more (Fig. h) articles; an occasional one has a simple appendage. The number of articles ranges from one to twelve and the distal fang has a delicate, lateral sheath appressed to it. Farther back the number of thick, short falcigers increases, chiefly at the lower end of the fascicle. It approaches Sthenelais verruculosa Johnson (1897) in having multiarticulate neurosetae; it differs in lacking prostomial eyes; the ctenidia are minute instead of large and auricular, and elytra are smooth instead of papillated (see Hartman, 1939, p. 62).

Distribution: Bermuda rise, 2223 m.

Sthenolepis tetragona (Oersted, 1845)

Sthenolepis tetragona Hartman, 1965, p. 55.

New Record: Ch 87 (17).

Remarks: Four of the specimens are large; all others are much smaller, perhaps juvenile.

Distribution: Slope depths, 1102 m; western Europe.

sigalionids, unidentified

Records: Ch 80 (2); A 118 (2); A 119 (1).

Distribution: Abyssal depth, 4970 m; Bermuda rise, 1102 to 2223 m.

Family PEISIDICIDAE

as PEISIDICINAE Darboux, 1899, p. 73, 116.

The subfamily PEISIDICINAE Darboux (1899, p. 116) was

originally erected as a tribe of the APHRODITIDAE for a single genus and species, Peisidice aspera Johnson, 1897. It was distinguished from the SIGALIONIDAE by having elytra on alternate segments, instead of every third one, in the posterior half of the body; the body is short and trim instead of long and linear; the prostomium has a single median antenna. The first segment is represented by paired parapodia, each with spreading fascicles of notosetae and a dorsal cirrus resembling the median prostomial antenna. Elytra are firmly attached, laterally fimbriated, and their upper surface ornamented with concentric rings. Notopodia have slender, spinose simple setae, and neuropodia have composite falcigers. Dorsal cirri are absent.

Peisidice and Parapholoe Hartmann-Schroeder, 1965, with a single species, P. tuberculata Hartmann-Schroeder (1965, p. 92) from Chile, share common characters, and seem to be identical in so far as their present characteristics are known.

Genus Peisidice Johnson, 1897

Type P. aspera Johnson, 1897

The body is short and truncate, has fewer than 40 segments. The prostomium has four sessile eyes and an unpaired antenna; lateral antennae are absent. Paired palpi are thick at the base and taper distally. Parapodia of the first segment are directed forward, at the sides of the prostomium; each has a pair of long, dorsal cirri resembling the median prostomial antenna; its setal fascicles are spreading and the numerous, simple setae are directed forward. Elytra number 14 to 19 pairs, are inserted on segments 2, 4, 5, 7, and on alternate segments to the end of the body; the elytral surface has concentric rings. Parapodia, after the first, are biramous. Dorsal cirri and branchiae are

absent; ventral cirri are present. Notozetæ are simple, distally pointed and marginally serrated. Neurosetæ are short-appendaged, composite falcigers and all of one kind. The eversible proboscis is muscular and armed with four horny jaws.

A new species of the genus has been recovered from the Bermuda rise.

Key to Species

- Segments number 35 to 38; neurosetal appendage dentate; body
measures 7-8 mm long aspera and tuberculata
- Segments number 30 to 32; neurosetal appendage smooth; body
measures 3-4 mm long bermudensis

Peisidice bermudensis, new species
(Plate 2, Figs. a-e)

Record: A 118 (ca 120, TYPE).

Description: Length of the body is 3.0 to 4 mm, width 1.1 to 1.4 mm and segments number 30-32. The body is trim, broadly depressed, and the dorsum is completely covered by the overlapping elytra, except for the middorsum, which is papillated and appears scabrous under high magnification. The prostomium is subrectangular, wider than long, and has four sessile black eyes, with the two on each side near together and on the anterior half of the lobe. The long, median antenna is subdistally clubbed and has a slender base and tapering tip; it is papillated at the inflated region. The paired palpi are thick, long, taper distally to slender tips; they extend distally about as far as the median antenna; when retracted they appear wrinkled. A facial tuberclelike membrane forms an extension of the lower lip; this is a flat, shelflike membrane extending midventrally across to the bases of the long, first pair of ventral cirri; the outer

surface of the membrane is papillated. The first parapodia are directed forward; each has a spreading fascicle of capillary setae.

Elytra are inserted on setigers 2, 4, 5, 7, and on alternate segments to 27; they number 14 pairs. Each is lozenge-shaped, wider than long, and has concentric rings on the exposed surface; the margin is fimbriated along outer and posterior edges (Fig. b). Parapodia (Fig. a) are biramous; notopodia are thick, distally blunt, and have simple setae. Neuropodia are directed ventrolaterally. Notosetae are long, slender, coarsely serrated at the cutting edge (Fig. c). Neurosetae are shorter (Fig. e) to longer (Fig. d) appendaged; cutting edges are smooth; the distal end of the shaft is smooth.

P. bermudensis differs from P. aspera Johnson in being much smaller, having fewer segments and elytra, and coming from muddy sediments instead of stony bottoms, and from deep, instead of littoral, depths.

Distribution: Bermuda rise, 1135-1153 m.

Family PISIONIDAE

This small family is known for only four genera, of which all but Pisione Grube are monotypic. The best known, Pisione, has eleven species coming from world-wide areas. Pisionella Hartman, 1939, originates from Peru; Pisionidens Aiyar and Alikunhi, 1943, comes from India, and Anoplopisione Laubier, 1967, from the Ivory Coast, Africa. Another, Dawbinia Benham, 1950, from New Zealand, must be referred to the NEREIDAE, subfamily LYCASTINAE, because it has the prostomium of a nereid, uniramous parapodia with composite spinigers and falcigers, and the anterior end has two pairs of tentacular cirri. Laubier (1967, p. 1433) has suggested that it is an aberrant nereid.

Most pisionids have reduced parapodia, represented only by neuropodia; notopodia are present as embedded acicula. A maxillary apparatus is present in all species but Anoplopisione. Setae are present from the second or third segment. Their alliances are with the SIGALIONIDAE in their cephalic and parapodial structures. Most species come from littoral depths; the deepest record up to now is Pisione longipalpa Uschakov (1956, p. 1813) from the Kurile Islands, in 918 m. The occurrence of another species from abyssal depths, in the North Atlantic Ocean, is therefore of interest, since it represents not only the deepest find but is from a locality isolated from all others.

Key to Genera

1. Parapodia biramous; setae present from segment 4. . . Pisionura
1. Parapodia uniramous or seemingly so; setae first
present from segment 2 or 3. 2
2. Anterior end with a median antenna. Pisionella
2. Anterior end without a median antenna. 3
3. Maxillary apparatus absent. Anoplopisione
3. Maxillary apparatus present and conspicuous. 4
4. First tentacular cirri and palpal bases at the
same level. Pisione
4. First tentacular cirri far in front of palpal
bases. Pisionidens

Genus Pisionura, new genus

Type P. abyssorum, new species

The prostomium is fused with the buccal, or first, segment so that it is inseparable from it; palpi and processes of the first segment extend forward in front of the prostomium. The paired ventral palpi resemble the cirri of the first segment.

Each of the parapodia of the first segment has a yellow, embedded, slender, rodlike aciculum. The prostomium lacks eyes or other visible color marks. The second segment is a smooth ring with a pair of cirriform tentacular cirri in line with the ventral oral slit. The third segment is similar to the second but its cirri are slightly shorter. The fourth segment is the first one with setae. Typical parapodia are broadly biramous, with notopodia and neuropodia well developed. Setae are entirely composite spinigers.

Pisionura differs from all other genera of pisionids in having biramous parapodia; setae are first present from segment 4 instead of 2 or 3. The posterior end is unknown.

Pisionura abyssorum, new species

(Plate 4, Figs. a, b)

Record: A 120 (2, TYPE).

Description: The larger specimen measures 2 mm long by 0.3 mm wide and consists of the cephalic region followed by 18 setigers; a short tail end is lacking; the smaller one is 0.9 mm long for ten setigers and 0.2 mm wide. The yellow, chitinized pharyngeal apparatus is visible through three setigers; it consists of long, falcate maxillae and dentate plates. The anterior end (Fig. a) terminates in a slightly wider than long, broadly rounded, depressed cephalic region with a pair of forwardly directed, smooth palpi which exceed the prostomium in length; a pair of shorter, slenderer cirriform processes is inserted at the upper bases; these cirri are medially separated by a slight frontal incision. A median antenna and eyes are absent. Embedded acicular rods can be seen by transmitted light. The oral aperture is in line with the insertion of a pair of long, cirriform, lateral processes representing the dorsal and

ventral cirri of the second segment. The third segment has a pair of similarly long, slender cirri. The fourth segment is the first with setae; they emerge from a small lobe with minute cirri. The second setiger is larger than the first, has more conspicuous setae in biramous fascicles. Farther back each of the parapodia has a long, cirriiform dorsal cirrus, a slender notopodium with a postsetal lobe resembling the dorsal cirrus, and a ventral cirrus inserted at the ventral base of the parapodium (Fig. b shows a ninth parapodium). Setae are all of one kind, composite spinigers with a long appendage.

Distribution: Abyssal depth, 5018-5023 m.

Family CHRYSOPETALIDAE

Dysponetus gracilis Hartman, 1965

Dysponetus gracilis Hartman, 1965, p. 56, pl. 1.

New Records: A 73 (26); A 66 (1).

Distribution: Slope and abyssal depths, 1330 to 2802 m.

?Dysponetus sp.

Record: A 119 (fgm).

Distribution: Bermuda rise, 2095-2223 m.

Family AMPHINOMIDAE

Chloeia sp.

Chloeia sp. Hartman, 1965, p. 57.

New Records: A 72 (24); A 118 (70); A 119 (7).

Remarks: Most individuals are small, coiled chaetosphaeres or pelagic stages.

Distribution: Abyssal depths, 2864 to 4725 m; Bermuda rise, 1135 to 2223 m.

Paramphinome jeffreysii (McIntosh, 1868)

Paramphinome jeffreysii Hartman, 1965, p. 58, pl. 1.

New Records: Ch 89 (3); Ch 105B (990); Ch 87 (109); A 73 (155); A 58 (12); Ch 103 (9); GH 3 (2); A 62 (6); A 66 (2); Ch 76 (6); A 72 (1); A 64 (7); A 65 (1); A 118 (5); A 119 (21).

Distribution: Slope and abyssal depths, 192 to 2891 m; Bermuda rise, 1153 to 2223 m.

Genus Pareurythoe Gustafson, 1930

Pareurythoe sp.

Record: A 118 (5).

Remarks: Length is about 4 mm for 20 setigers. The small prostomium is broadly oval, has a pair of minute eyes on its anterior half; the caruncle is flat, smooth dorsally, and extends back through three setigers.

Distribution: Bermuda rise, 1135-1153 m.

amphinomid

Record: Ch 99 (1).

Distribution: Abyssal depth, about 5000 m.

Family EUPHROSINIDAE

Genus Euphrosine Savigny, 1818

Euphrosine sp.

Record: Ch 100 (2).

Remarks: Only chaetosphaere larvae are represented.

Distribution: Abyssal depths, 4743-4892 m.

Family PHYLLODOCIDAE

Because PHYLLODOCIDAE are generally regarded as littoral or shallow water forms, it is unusual to find 18 species in ten genera and more than 800 individuals present in these samples coming from great depths. Most individuals are small to minute, slender or stringlike, and measure at most a few mm long; this is in contrast to the large, multicolored, foliaceous, shallow water species which may measure to 750 mm long. Abyssal forms have small to inconspicuous dorsal and ventral cirri; they may lack prostomial eyes, and the diagnostic pharyngeal armature is seldom extended; dissection into the very slender anterior end is very difficult and usually results in destruction of the specimen.

The classification to genera is according to Bergström, 1914, in which the formula of tentacular cirri and the structure of the pharyngeal apparatus provide the chief means to identification. The system is particularly difficult to apply on small, imperfect specimens which have lost their cirri and have the proboscis completely withdrawn. The large category of phyllodocids, below, may include generic and specific categories not previously named, but difficult to clarify because of the minuteness and fragile nature of the materials.

Anaitides sp., anoculate

Record: A 126 (3).

Remarks: The prostomium lacks eyes and nuchal papilla, both of which are usually present in species of the genus. Each of the first four pairs of tentacular cirri is broadly foliose, subcircular and shorter than the parapodial lobes. Ventral cirri are thick, long, taper distally, and extend beyond the

ends of parapodia.

Distribution: Abyssal depth, 3806 m.

Anaitides sp., oculate

Record: Ch 89 (9).

Diagnosis: The largest specimens measure 2.5 to 4 mm long by 0.5 mm wide and have up to 32 setigers. The prostomium is trapezoidal, longer than wide, and has two large eyes near the postlateral margins. A nuchal papilla is not visible. The four pairs of tentacular cirri are long and cirriform; the longest extend back through about six segments. The everted proboscis is diffusely papillated in its distal half, and has six paired, longitudinal rows of papillae on its basal half; middorsal and midventral areas are bare. Dorsal cirri are foliose; each is rectangular, longer than wide and somewhat erect. These specimens differ from Anaitides groenlandica (Oersted) (see Hartman, 1965, p. 59) in lacking a nuchal papilla.

Distribution: Slope depth, 196 m.

Genus Austrophyllum Bergström, 1914, emended

Type A. charcoti (Gravier, 1911)

Four pairs of tentacular cirri are inserted on three successive segments, according to the formula $1 + \frac{S}{L} + \frac{S}{N}$, where L represents a long cirrus, S setae, and N a normal ventral cirrus. This genus differs from typical PHYLLODOCINAE in having biacicular parapodia; it is therefore allied to Notophyllum Oersted, Hesperophyllum Chamberlin and Nipponophyllum (see Imajima and Hartman, 1964, p. 66). Austrophyllum is unique for having the first segment a complete ring, and the ventral cirrus

of the second segment cirriform.

Austrophyllum maculatum, new species

(Plate 5, Figs. a-d)

Record: A 70 (1, TYPE).

Description: A nearly complete specimen measures 19 mm long by 1.8 mm wide with parapodia, in the anterior third or widest part of the body. It is pale brown, with a dark sub-circular patch on the prostomium; similar color occurs on dorsal cirri; segmental lines are pale. The prostomium is subcircular in dorsal view (Fig. a); two pairs of frontal antennae are inserted anterolaterally, the dorsal pair being slightly longer; a small, postmedian nuchal papilla, or base of a median antenna, is visible. Eyes are absent. The proboscis was not everted and could not be examined. The first segment is represented by a pair of lateral pads on which the first pair of tentacular cirri are inserted. The second segment is reduced middorsally and is largest laterally, where the dorsal and ventral cirriform tentacles are attached. The third segment is a complete ring with long dorsal cirri and a base of short, broad ventral cirri. Most of the normal cirri have fallen from the specimen.

Normal parapodia have a thick, distally expanded attachment for the dorsal cirrus, an embedded aciculum, and in some segments a simple, slender seta (Fig. b). Neuropodia are equally large, have a broadly rounded postsetal lobe and a slenderer, shorter, acicular lobe through which the single, yellow aciculum projects. A fan-shaped setal fascicle with about 28 spinigers is directed laterally. Setae are of one kind; each has a thick articulation (Fig. c) and a long, tapering, spinigerous appendage; the end of the shaft is uniformly spinose (Fig. d).

Austrophyllum maculatum is distinguishable from known species of the genus in having acutely pointed neuroacicular lobes instead of rounded ones (see Hartman, 1964, p. 52). The prostomium has a short or papillar median antenna instead of a long one; notopodia have sparse numbers of simple setae or they may be lacking.

Distribution: Abyssal depth, 4680 m.

Genus Cirrodoce, new genus

Type C. cristata, new species

PHYLLODOCIDAE are defined (Bergström, 1914, p. 53) as having four prostomial antennae, lacking palpi; eyes small or not greatly enlarged; nuchal organs well developed; tentacular cirri numbering two to four pairs; setae first present from segment 2 or 3, and proboscis long, cylindrical, without hard jaws.

A unique specimen has been recovered, which is undoubtedly a member of this family but differs from the definition in several respects. The prostomium has two instead of four antennae; nuchal organs are lacking; eyes are moderately large and setae are present on the first segment. In the last respect the specimen agrees with the pelagic genus, Haliplanes Reibisch, family LOPADORRHYNCHIDAE, which also has setae present in the first visible segment; but its setae are simple, modified spines, instead of composite spinigers like those farther back. The tentacular formula may be expressed as $S \frac{1}{1} + S \frac{1}{N}$, where S represents setae, 1 a tentacular cirrus, and N normal ventral cirrus. Parapodia are uniramous throughout. Dorsal cirri are cirriform. The eversible pharynx is cylindrical and covered with dispersed papillae.

Cirrodoce differs from other phyllodocids in having the

first visible segment complete, with composite spinigerous setae; the prostomium has two instead of four antennae, and eyes are large instead of small. A single species is known.

Cirrodoce cristata, new species

(Plate 3, Figs. a-c)

Record: Ch 89 (1).

Description: A complete though fragmented specimen, in two pieces, measures 20 mm long for 75 anterior segments and 2 mm long for 12 posterior ones, or 22 mm for the 87 segments. It is widest medially and tapers at both ends; color is dull yellow without pigment pattern. Most of the cirri have fallen off, but an occasional short, cirriform one remains. The prostomium is subquadrate, slightly longer than wide, excavate at its midfront, and slightly concave at the sides; it has two large circular eyes on its posterior half, each with a pale, circular lens. A single pair of clavate frontal antennae is inserted at ectal margins (Fig. a). A median antenna and nuchal organs have not been identified.

A unique feature is the presence of an auricular lobe attached to the front face of each of the first parapodia; this is appressed between the first segment and prostomium so that it appears to be prostomial, but its base of attachment is clearly on the first parapodium. A homologous structure in other phyllodocids and its possible function are unknown.

The first segment is a complete ring, forming the lower lip on its ventral side; laterally it has the first parapodia, which resemble those farther back except that the setal fascicles are smaller and the tentaculophores are larger and more conspicuous. The styles of the anteriormost tentacles are missing, but those of the second segment are long, cirriform,

tapering distally. Setae of the first and second segments are composite spinigers, like those farther back.

Another unusual feature is the presence of raised, paired organs on the dorsum (Fig. b), within the parapodial bases, from segment 2 to the end; they increase in size to form a trim row along the length of the body; at greatest development they are somewhat erect, hollowed on their medial sides, and seem to be subcutaneously connected across the middorsum.

All setae are composite spinigers, with the distal end of the shaft minutely spinous, and the appendage long, tapering, with minute serrations at the cutting edge (Fig. c).

The specific name refers to the paired dorsal crests of the body segments.

Distribution: Slope depth, 196 m.

Eulalia anocolata, new species

(Plate 6, Figs. a-d)

Records: Ch 105B (5); Ch 87 (70, TYPE); A 58 (2); Ch 103 (2); A 66 (1); Ch 76 (1); A 64 (1); A 63 (3); A 95 (15); A 126 (42); Ch 85 (15); Ch 83 (1).

Description: Most specimens are pale with brown prostomium, dorsal and ventral cirri and pygidial processes; the ventrum is pale. The body is long, linear and depressed. Total length is 10 to 17 mm, width 0.8-0.9 mm and segments number about 175. The posterior end of the body is more or less coiled. The prostomium is a subconical to subquadrate lobe without eyes and median antenna (Fig. a), thus differing from typical Eulalia species. The tentacular formula is $1 + \frac{S\ 1}{1} + \frac{S\ 1}{N}$, where 1 represents a cirrus, S setae, and N normal ventral cirrus. The everted proboscis is long, cylindrical, and diffusely papillated. The first three segments are complete rings; each has

cirriform to tapering tentacular cirri; the first segment has one pair, shorter than others; the second has a longer dorsal and a shorter ventral pair, and the third segment has a dorsal cirrus similar to the long second one, but shorter. More posterior segments have normal uniramous parapodia. The posterior end tapers and has a pair of long conical, pygidial processes inserted laterally (Fig. b).

Parapodial bases are longest in front and gradually shorter in median segments. Anteriormost dorsal cirri are oval and somewhat larger than the similar ventral cirri; the acicular lobe is distally entire and the setae are in fan-shaped fascicles; they number about eight in a series (Fig. c). Farther back the dorsal cirri elongate but are still thick, inflated, and ventral cirri are proportionately smaller. Setae are entirely spinigerous, with the appendage much longer than wide and the articulation thick and smooth (Fig. d).

Eulalia anocolata differs from other species of the genus in that it lacks a median antenna and nuchal papilla. Eyes are absent and parapodia have thick, oval to elongate dorsal and ventral cirri.

Some earlier reported records of Eulalia sp. (Hartman, 1965, p. 60) may belong to this species.

Distribution: Slope and abyssal depths, 530 to 5000 m.

?Eumida sp.

Record: Ch 105B (10).

Diagnosis: Length is 9-11 mm, width 0.5 mm, and setigers number more than 150. The body is long and linear; its dorsum, ventrum, and cirri are speckled with dark spots over a pale ground. The prostomium lacks eyes, has four frontal antennae and a small median one inserted far back. The first segment is

incomplete dorsally, and all others are complete rings. Tentacular cirri are spindle-shaped, present as one pair on the first, two on the second, and one on the third segment. Setae are first present from segment 2. Dorsal cirri are longer than wide, thick, and taper to a blunt tip. The proboscis was not everted and not examined. The pygidium has a pair of long, lateral, digitate cirri, each as long as the last eight segments. These specimens are referred to Eumida, though questionably, because the first segment is incomplete dorsally.

Distribution: Slope depth, 530 m.

Nereiphylla paretii Blainville, 1828

Nereiphylla paretii Bergström, 1914, pp. 163-165.

Record: Ch 89 (2).

Distribution: Slope depth, 196 m; western Europe.

Genus Notalia Bergström, 1914

Notalia sp.

Records: A 118 (3); A 119 (1).

Diagnosis: The tentacular cirrus of the second segment is asymmetrical, thick, whereas others are cirriform or spindle-shaped. The surface of the body is finely punctate. The first three segments are complete rings. The prostomium lacks a median antenna and eyes. The prostomium is a little longer than wide, distally rounded and posteriorly slightly concave. The two pairs of frontal antennae are laterally attached. Parapodia have thick, oval, dark brown dorsal and ventral cirri. The proboscis was not extended; if it is smooth, the species belongs to Notalia; if papillated, its position is questionable.

Distribution: Bermuda rise, 1135-2223 m.

Paranaitis wahlbergi (Malmgren, 1865)

Paranaitis wahlbergi Hartman, 1965, p. 62.

New Records: Ch 87 (4); A 73 (10); A 64 (1); A 63 (1); A 95 (4); A 126 (1); A 69 (2); Ch 100 (1); NN 1 (1).

Distribution: Slope and abyssal depths, 1102 to 4950 m; western Europe.

Genus Pirakia Bergström, 1914

Type P. punctifera (Grube, 1860)

Tentacular cirri number four pairs and are inserted according to the formula $1 + \frac{S \ 1}{a1} + \frac{S \ 1}{aN}$, where 1 represents a slender, cirriform cirrus, S setae, a an embedded aciculum, and N a normal ventral cirrus. All tentacular segments are free from one another and from the prostomium; the first segment is dorsally reduced. The prostomium has two pairs of frontal and one median antennae. The proboscis is cylindrical, diffusely papillated overall, and the distal end has a complete circlet of small, crowded papillae. Parapodia are uniramous; dorsal and ventral cirri are foliaceous to lanceolate, and setal lobes are prolonged. Setae are composite spinigers.

Pirakia lanceolata, new species

(Plate 7, Figs. a-d)

Eumida ?sanguinea, anoculate, Hartman, 1965, p. 60.

Records: E 3 (1); Ch 87 (35); A 73 (150, TYPE); G 1 (2); Ch 103 (1); Ch 84 (25).

Description: Length without the everted proboscis is about 20 mm, width to 2 mm and setigers number about 120. The body is moderately short, depressed and linear. The dorsum is yellowish to brown, with the pigment most intense on dorsal cirri. The

epithelium is pale yellow and minutely punctate all over; specks are most numerous on dorsal cirri. The prostomium is white with minute punctations; it is broader than long, approximately hexagonal, with the widest part in the posterior third. Two pairs of frontal antennae are attached at outer, ectal margins, and a somewhat smaller median antenna is at the posterior third; eyes are absent. The everted proboscis is cylindrical, coarsely papillated overall (Fig. a); its distal end terminates in a circllet of about 48 short papillae. The first segment is represented by a pair of cirriform cirri which are surpassed by those of the second segment, but are otherwise similar. The second segment has two pairs of tentacular cirri, with the dorsal pair the longer; a small fascicle of setae emerges ventrally. The third segment has long dorsal and normal ventral cirri; its setal fascicle is larger than the first. All other segments are normal.

A median parapodium (Fig. b) has a lanceolate dorsal cirrus longer than wide, with broad base and slightly acute tip; venation is pinnate. Ventral cirri resemble dorsal cirri but are slenderer and taper distally. Posterior cirri resemble those in median segments but gradually diminish in size. The setigerous lobe is distally triangular, with the longest part superior and presetal. The postsetal lobe is short. Setae are composite spinigers with the distal end of the shaft minutely spinose (Figs. c, d). The body terminates in a bluntly rounded pygidium without processes. Ovigerous adults occupy dead tubes of Phyllochaetopterus in which they are tightly wedged; individual ova are yolky and comparatively large.

Pirakia lanceolata differs from P. punctifera Bergström, the only other known species of the genus, in having lanceolate, instead of cordate, dorsal cirri; parapodial lobes are not deeply

incised; the first is much smaller, measures only 20 mm long.

Eulalia longicirrata Støp-Bowitz (1948) from the northeast Atlantic Ocean, in 1100 m, may be congeneric, because it also has the first segment dorsally reduced. Its generic position is in doubt because the proboscis remains unknown. It is not a Eulalia, which is identified by having the first three segments as complete rings.

Distribution: Slope and abyssal depths, 823-5 to 4749 m.

Protomystides bidentata (Langerhans, 1880)

Protomystides bidentata Hartman, 1965, p. 62.

New Record: Ch 89 (1).

Distribution: Slope depths, 196 and 1102 m; southwestern Europe.

Pseudomystides limbata punctata Hartman, 1965

Pseudomystides limbata punctata Hartman, 1965, p. 63.

New Records: Ch 105B (8); Ch 87 (5); A 73 (2); Ch 103 (49); A 62 (6); A 66 (14); A 64 (1); A 63 (2); A 71 (1); A 95 (26); A 126 (16); Ch 85 (1); A 70 (4); Ch 84 (2); Ch 100 (2); A 119 (2, fgm).

Distribution: Slope and abyssal depths, 530 to 4892 m.

phyllococids

Records: Ch 89 (1); Ch 87 (ca 50); Ch 103 (1); A 66 (fgm); A 64 (fgm); A 95 (4); A 126 (8); Ch 85 (1); A 70 (2); Ch 84 (12); A 125 (2); A 122 (2); A 124 (fgm); Ch 100 (3); A 93 (1); A 120 (2); Ch 81 (fgm); A 155 (2).

Remarks: Most are fragments or very small specimens. A small fragment from Sta. Ch 103 measuring several mm long, is unique for having greatly prolonged antennae; frontal antennae

are about two-thirds as long as the prostomium and inserted frontolaterally. A similar median antenna is inserted far back, between a pair of minute eyes. Segment I is dorsally reduced and represented by a pair of long, cirriform tentacular cirri; segment II is complete with long, dorsal and ventral tentacular cirri. Segment III has long dorsal cirri and normal ventral cirri. Parapodia have long, ovate, foliose dorsal cirri; ventral cirri are triangular, longer than wide and extend distally beyond the neuropodial tips. The proboscidal formula is unknown.

Distribution: Slope and abyssal depths, 196 to 5042 m; equatorial region, 4825 m.

Family ALCIOPIDAE

Genus Vanadis Claparède, 1870

Vanadis sp.

Record: A 70 (1).

Distribution: Abyssal depth, 4680 m.

alciopid

alciopid, Hartman, 1965, p. 64.

New Records: Ch 84 (2); A 124 (2).

Distribution: Abyssal depths, 4769 and 4862 m.

Family LOPADORRHYNCHIDAE

Genus Lopadorrhynchus Grube, 1855

Lopadorrhynchus ?uncinatus Fauvel, 1915

Records: A 95 (5); Ch 84 (1); A 122 (1).

Remarks: The body is long, linear; the first three segments

have modified spines, with those of the second segment the most conspicuous. The prostomium is broadly truncate in front and has lateral antennae. The first and second segments have dorsal cirri and three pairs of large spines; the third segment has acicular spines shoved ventrally.

Distribution: Abyssal depth, 3753 to 4833 m; off Azores and Mediterranean Sea, pelagic to 3250 m.

Lopadorrhynchus sp.

Records: Ch 85 (1); Ch 100 (1); Ch 83 (1).

Distribution: Abyssal depths, to 3834 - 5000 m.

Maupasia sp.

Maupasia sp., Hartman, 1965, p. 64.

New Record: Ch 78 (1).

Remarks: The short blunt body is white, measures 2.5 mm long by 1 mm wide, and consists of 15 setigers. The second tentacular cirrus is prolonged. Normal dorsal cirri are globular and ventral cirri lanceolate. Setae are slender, composite, with a long appendage, and the shaft terminates in a very long tooth.

Distribution: Abyssal depth, to 3828 m.

lopadorrhynchid

Records: A 70 (2); Ch 83 (1); A 120 (1).

Remarks: Specimens have only one anterior setiger with conspicuous setal rows.

Distribution: Abyssal depth, 4680 to 5023 m.

Family TYPHLOSACLECIDAE

Genus Typhloscolex Busch, 1851?Typhloscolex sp.Record: Ch 100 (1).Distribution: Abyssal depth, 4892 - 4743 m.

typhloscolecid

Records: A 70 (1); A 120 (1).Distribution: Abyssal depths, 4680 - 5018 m.

Family TOMOPTERIDAE

Tomopteris sp.Tomopteris sp., Hartman, 1965, p. 66.New Records: Ch 89 (3); A 73 (1); A 126 (1); Ch 85 (1);
A 70 (1); Ch 83 (3).Distribution: Slope and abyssal depths, 196 to 5000 m.

Family HESIONIDAE

Hesiocaeca bermudensis Hartman, 1965Hesiocaeca bermudensis Hartman, 1965, p. 67.New Record: A 119 (13).Distribution: Bermuda rise, 2095 - 2223 m.Neopodarke woodsholea Hartman, 1965Neopodarke woodsholea Hartman, 1965, p. 69.New Records: Ch 89 (1); Ch 105B (13); Ch 87 (101); Ch 103
(23).Distribution: Slope and abyssal depths, 196 to 2022 m.

Nereimyra ?punctata (Müller, 1788)

Castalia punctata Fauvel, 1923, p. 240, fig. 89.

Nereimyra punctata Støp-Bowitz, 1948, p. 61.

New Record: A 73 (76).

Distribution: Slope depths, 1470-1330 m; western and southern Europe; off New England.

hesionids

Records: A 58 (9); A 64 (2); A 63 (fgm); A 122 (1).

Distribution: Abyssal depths, 2000 to 4833 m.

Family PILARGIDAE

Ancistrotyllis groenlandica McIntosh, 1879

Ancistrotyllis groenlandica Hartman, 1965, p. 71.

New Records: Ch 105B (7); Ch 87 (36); GH 3 (4); A 64 (1).

Distribution: Slope and abyssal depths, 530 to 2886 m; Greenland.

Ancistrotyllis sp.

Ancistrotyllis sp., Hartman, 1965, p. 71.

New Records: A 73 (1); A 62 (1); Ch 76 (fgm); A 63 (1); A 95 (1); Ch 83 (2).

Distribution: Slope and abyssal depths, 1330 to 5000 m.

Genus Sigambra Müller, 1858

Sigambra tentaculata (Treadwell, 1941)

Ancistrotyllis tentaculata Hartman, 1965, p. 71.

Sigambra tentaculata Pettibone, 1966, p. 182, figs. 14, 15.

New Records: Ch 87 (2); A 58 (1); A 64 (1); A 65 (2); A 71

(1); A 95 (3); Ch 85 (fgm); Ch 84 (1); KK 4 (1); ?A 122 (fgm); A 120 (4).

Distribution: Slope and abyssal depth, 196 to 5023 m; cosmopolitan.

Genus Synelmis Chamberlin, 1919

Synelmis albini (Langerhans, 1881)

Ancistrosyllis albini Hartman, 1965, p. 70.

Synelmis albini Pettibone, 1966, p. 191, figs. 19-21.

New Records: GH 3 (1); A 118 (4); A 119 (1).

Distribution: Abyssal depth, 2478 m; Bermuda rise, 1135-2223 m; off Madeira, Spain.

pilargid

Record: A 73 (2).

Distribution: Slope depth, 1470-1330 m.

Family SYLLIDAE

Braniella pupa Hartman, 1965

Braniella pupa Hartman, 1965, p. 73, pl. 8.

New Records: Ch 105B (6); A 95 (4); A 126 (4); A 125 (1); Ch 100 (3); A 155 (12).

Remarks: Specimens from equatorial station A 155 are ovigerous, with yolky ova.

Distribution: Slope and abyssal depths, 530-4892 m; equatorial region, 4825 m.

Exogone dispar (Webster, 1879)

Exogone dispar Hartman, 1965, p. 74.

New Records: Ch 89 (144); Ch 105B (91); Ch 87 (363); A 73

(35); Ch 103 (1); A 62 (12); A 66 (60); A 64 (2); A 63 (12); A 65 (2); A 71 (7); A 95 (2); A 126 (9); A 70 (3); Ch 84 (4); KK 4 (1); Ch 100 (4); A 120 (1); ?A 119 (1); A 155 (6).

Remarks: Most specimens have a prolonged median antenna inserted postmedially on the prostomium; lateral antennae are very short and inserted in front of the eyes; palpi are completely fused except for a slight midfrontal incision. Variation occurs in the presence or absence of black eyes; they may be conspicuous to absent in specimens coming from the same sample.

Variations in reproductive phenomena also occur. Specimens coming from the shallowest sample, Sta. Ch 105B, have externally attached embryos but no long natatory setae. Those from Sta. A 73 have large yolky ova attached from setiger 18 to the tenth last setiger, usually a pair to a segment but at irregular intervals, and these segments have long, capillary setae. Individuals from Sta. A 62 are of two kinds; some consist of 29 setigers, have long natatory setae from setiger 7 to 22; others have up to 46 setigers and long setae from setiger 17 to 29; eyes may be present or obscure.

It may be concluded that populations from shallower depths become mature either with or without long setae, whereas those from the greatest depth have natatory setae.

Distribution: Slope and abyssal depths, 196 to 5023 m; Bermuda rise, 2095-2223 m; equatorial region, 4825 m.

Exogone verugera profunda Hartman, 1965

Exogone verugera profunda Hartman, 1965, p. 75.

Remarks: The type specimen originates from Sta. S1 2.

Exogone sp.

Record: A 125 (2).

Distribution: Abyssal depth, 4825 m.

Genus Exogonita, new genus

Type E. oculata, new species

The body is short and linear, as is characteristic of the EXOGONINAE. Palpi are fused medially. The prostomium is broadly rectangular and lacks antennae. The first segment is a short, smooth ring with two pairs of blunt, tentacular cirri. The second segment is the first setigerous. The eversible proboscis is smooth, armed with a yellow, distally blunt tooth; the proventriculus is muscular and extends through about four segments. Parapodia are uniramous; setae are composite spinigers in superior position, and composite falcigers in inferior position; yellow acicula occur singly. Median and posterior parapodia have simple setae in uppermost and lowermost positions.

Exogonita differs from Exogone Oersted in lacking prostomial antennae, and having two pairs of tentacular cirri on the first segment. It differs from Grubea Quatrefages in lacking prostomial antennae, and from Exogonella Hartman, in having peristomial cirri.

Exogonita oculata, new species

(Plate 8, Figs. a-e)

Records: A 125 (5, TYPE); A 126 (3).

Description: The body measures about 5 mm long by 0.5 mm wide and consists of approximately 52 setigers; it is pale, linear, and tapers posteriorly to a blunt pygidium without visible appendages. The everted proboscis terminates in a closely crenulated margin; it is lined by a chitinized membrane and has a large, blunt, yellow tooth far front in dorsal position. The

proventriculus, when withdrawn, extends through setigers 4 to 7, and has about 12 rows of glands. Palpi are directed forward and completely fused medially except for a shallow frontal emargination (Fig. a); together the two are about as wide as long. The prostomium is broadly rectangular, smooth and flat; it has two pairs of red eyes at outer ectal margins; the two eyes of a side are confluent. The first segment is a short, smooth ring shorter than the prostomium. Two pairs of short, digitate cirri are inserted laterally; the dorsal is longer than the ventral pair. The second segment is the first setigerous; it is longer than the peristomium, has inconspicuous parapodia with dorsal and ventral cirri and a small fascicle of composite falcigers. The second setiger resembles the first one but lacks dorsal cirri, and the third setiger is normal, with cirri.

The first four setigers have composite falcigers (Fig. e) and single embedded acicula; the falcigers number six to eight in a fascicle and each falciger has a short appendage with falcate tip and deeply incised end (Fig. e). Thereafter parapodia have a superiormost composite spiniger (Fig. d) accompanying the falcigers. Median and posterior parapodia have, in addition, a simple superior seta (Fig. c) and a similar one below (Fig. b); they are distally bidentate, with the lowermost the thickest.

Distribution: Abyssal depths, 3806 to 4825 m.

Langerhansia anoculata, new species

(Plate 8, Figs. f-i)

Langerhansia cornuta Hartman, 1965, p. 78; not Rathke, 1843.

Records: C 1 (16); Ch 89 (44); S1 2 (7); S1 3 (144); S1 4 (1); Ch 87 (1); A 73 (14); F 1 (17); G 1 (4); Ch 103 (10, TYPE); GH 4 (7); GH 3 (1); A 62 (8); GH 1 (1); A 66 (11); Ch 76 (8); A 72 (2); A 64 (27); A 63 (1); A 65 (3); HH 3 (16); Ch 33 (4);

Ch 12 (6).

Description: A nearly complete specimen is 11.1 mm long by 0.6 mm wide and has about 50 setigers. The prostomium is short, triangular, widest in back and lacks eyes (Fig. f). The median antenna is inserted postmedially, and the shorter paired antennae are frontal; each one is annulated. Palpi are large, taper distally to blunt tips; their bases are fused medially. The proventriculus is long, cylindrical, and extends through ten setigers; when everted, it is seen to terminate in a circlet of ten short papillae. The first segment is a short, smooth ring with two pairs of articulated cirri; the upper pair is 1.5 times as long as the lower one; the first has about 11 and the second fewer articles.

Parapodia are uniramous (Fig. g); each has short-appendaged falcigers in which the tip is bifid (Fig. h). Long-appendaged spinigers (Fig. i) occur in anterior segments; under very high magnification they are seen to be minutely incised (Fig. i, right).

These specimens were first referred to Langerhansia cornuta (Rathke) because of the presence of long-appendaged setae in anterior segments. They differ in that L. anoculata lacks eyes, the prostomial antennae have a different insertion, and the details of setae differ.

Distribution: Shallow to deep slope depths, 97 to 2900 m; equatorial region, 520 to 805 m.

Sphaerosyllis brevifrons Webster and Benedict, 1884

Sphaerosyllis brevifrons Hartman, 1965, p. 80.

New Records: Ch 89 (1); Ch 105B (1); Ch 87 (39); A 73 (40).

Distribution: Slope depths, 196 to 1470 m; off New England.

Typosyllis tegulum, new species

(Plate 9, Figs. a-c)

Record: Ch 89 (56, TYPE).

Description: The body measures 20 to 37 mm long by 1 to 1.7 mm wide; it consists of more than 102 segments. The prostomium is wider than long and has a pair of thick, long palpi fused only at the base; each palp is about as long as the prostomium is wide. The two pairs of eyes are near the outer lateral margins of the prostomium. A conspicuous pair of raised platforms (Fig. a) is located between the eyes and the insertion of the paired antennae. The median antenna is long, has short, cylindrical articles numbering 27, which increase in length distally. The paired antennae are similar but shorter (Fig. a).

The brown pharynx is about as long as the proventriculus is wide; it has a smooth anterior margin and a large dark tooth at middorsal position; the surrounding sheath is white and bordered by 12 short papillae. The proventriculus is barrel-shaped and about 1.5 times as long as wide.

Parapodia are uniramous (Fig. b) with long, multi-articled dorsal cirri, the anterior ones the longest. Articles number 27 to 50, with the shortest at the base, gradually increasing in length distally. Ventral cirri are simple, tapering distally; each extending beyond the setigerous lobe. Setae are composite falcigers; each has an appendage up to 7.5 times as long as wide, and terminates in a bifid tip (Fig. c). Parapodial acicula number one to three in a fascicle; each tapers distally and terminates in a slightly clubbed tip.

Some individuals are epitokous, in the Chaetosyllis stage; they consist of about 23 setigers. The prostomium is much broader than long and medially incised; it has two pairs of red

eyes, a pair of spherical palpi within the anterior eyes, and a pair of cirriform antennae within and dorsal to the posterior eyes. A pharyngeal apparatus is lacking, as is characteristic of epitokous stages. The first three segments are setigerous, have uniramous parapodia with composite falcigers. Thereafter a dorsal fascicle of simple, capillary setae accompanies the shorter composite falcigers. A stolon may contain well-developed ova, each measuring about 0.13 mm in diameter.

Typosyllis tegulum is unique in its prostomial and parapodial structures; the specific name refers to the platformlike membranes on the prostomium.

Distribution: New England slope, 196 m.

Typosyllis spp.

Typosyllis spp., Hartman, 1965, p. 81.

New Records: A 63 (6); A 118 (1).

Distribution: Abyssal depth, 2891 m; Bermuda rise, 1135-1153 m.

syllids

Records: Ch 87 (2); A 58 (fgm); A 63 (fgm); A 71 (fgm); A 93 (2).

Distribution: Slope and abyssal depths, 1102 to 5007 m.

Family NEREIDAE

Ceratocephale loveni Malmgren, 1867

Ceratocephale loveni Hartman, 1965, p. 83.

New Records: Ch 105B (15); Ch 87 (2); A 66 (10); A 64 (8); A 63 (3); A 65 (1); A 95 (1); A 69 (1); Ch 84 (2); KK 4 (1); Ch 100 (6); A 93 (1); A 120 (5); A 119 (7); ?A 155 (9).

Distribution: Slope and abyssal depths, 530 to 5023 m; Bermuda rise, 2095-2223 m; questionably equatorial region, 4825 m.

?Ceratocephale sp.

Record: Ch 85 (1, jv).

Distribution: Abyssal depth, 3834 m.

Genus Ceratonereis Kinberg, 1866

Ceratonereis versipedata Ehlers, 1887

Nereis (Ceratonereis) versipedata Ehlers, 1887, p. 116.

Ceratonereis versipedata Hartman, 1945, p. 21.

Records: A 66 (17); Ch 76 (17); A 126 (3); Ch 84 (1);
A 118 (4).

Remarks: Most specimens were removed from holes in cindery rocks. All are small, measuring less than 25 mm long. The prostomium has a pair of large anterior and one of much smaller posterior eyes. Palpi are knobbed, with their appendages directed medially. On the proboscis, the oral ring lacks paragnaths except for a small one on each area VI. The maxillary ring has sparse numbers on all areas but I. Notopodia have composite spinigers; neuropodia have composite spinigers in superior and median position, and composite short-appendaged falcigers in inferior position.

Distribution: Abyssal depths, 2802 to 4769 m; Bermuda rise, 1135-1153 m; West Indian region.

Namalycastis profundus Hartman, 1965

Namalycastis profundus Hartman, 1965, p. 84.

New Record: Ch 87 (1).

Distribution: Slope depth, 1102 m.

Nereis caecoides Hartman, 1965

Nereis caecoides Hartman, 1965, p. 85.

New Record: A 71 (4).

Distribution: Abyssal depth, 2946 m.

Nereis sp.

Record: Ch 80 (1).

Remarks: The prostomium has four small eyes, with the two of a side coalesced; paragnaths are present on both pharyngeal rings.

Distribution: Abyssal depth, 4970 m.

Nicon sp.

Nicon sp., Hartman, 1965, p. 87.

New Record: A 95 (2).

Remarks: The prostomium lacks eyes. Posterior notopodia have homomorph falcigers and single thick, distally blunt, light brown acicula. The parapodial dorsal ligule and its cirrus are prolonged.

Distribution: Abyssal depth, 3753 m.

Platynereis dumerilii

(Audouin and Milne Edwards, 1833)

Platynereis dumerilii Hartman, 1965, p. 88.

New Records: A 70 (9); KK 1 (5).

Distribution: Abyssal depth, 4680-4850 m; cosmopolitan.

?Platynereis sp.

Record: A 72 (1).

Distribution: Abyssal depth, 2864 m.

nereids

nereid, Hartman, 1965, p. 88.

New Records: Ch 87 (1); A 73 (9); A 58 (fgm); Ch 103 (16, jv); A 62 (1, jv); A 126 (9); A 70 (4, fgm); Ch 84 (1); A 121 (1, jv); A 125 (1); A 124 (1); A 155 (1).

Distribution: Slope and abyssal depths, 1102 to 4862 m; equatorial region, 4825 m.

Family NEPHTYIDAE

Aglaophamus groenlandiae Hartman, 1967

Aglaophamus sp., Hartman, 1965, p. 91 (Sta. GH 1).

Aglaophamus groenlandiae Hartman, 1967, p. 73, pl. 22.

Records: Ch 87 (9); A 73 (46); Ch 103 (7); A 62 (13); GH 1 (2); A 66 (2); A 72 (1); A 64 (6); Ch 85 (5, fgm); A 118 (6).

Diagnosis: Segmental lines are obscure on dorsum and ventrum, but distinct at the sides. The ventral prostomial antennae are inserted far back so as to resemble ventral cirri of the first parapodia. Setae are most numerous in prebranchial setigers, and diminish rapidly in number and length in postbranchial segments. Branchiae or interramal cirri are first present from setiger 11-13, and continue back through about 15 segments; they are large from the first, and the last one or several pairs are slenderer than the others. Preacicular setae are closely barred and thicker than postacicular setae. Acicula are translucent yellow and recurved at the tip. Furcate setae have not been observed. The everted proboscis terminates in twenty bifid papillae. Subdistally there are 11 longitudinal rows with up to nine papillae in a row; they cover the distal two-thirds of the proboscis; the largest papillae are distal, and they decrease in size proximally; a middorsal papilla resembles those

in the distalmost rows. The basal surface of the proboscis is smooth. The notopodial lobe is triangular and distally pointed; it is surpassed by its attached interramal cirrus.

A. groenlandiae resembles A. elamellata (Eliason, 1951) from the eastern North Atlantic Ocean, in 4540-4600 m, which has interramal cirri from setiger 11-13, but they are small from the first and increase in size through 10-15 segments, then continue large at least to setiger 42; notopodial cirri are oval instead of triangular, and anterior setae are unusually long in pre- and postacicular series.

Distribution: Slope to abyssal depths, 1102 to 3834 m; Bermuda rise, 1135-1153; off southern Greenland, 3404-3422 m.

Aglaophamus minusculus Hartman, 1965

Aglaophamus minusculus Hartman, 1965, p. 90.

New Record: Ch 89 (10, ovigerous).

Distribution: Slope depth, 196 m.

Aglaophamus spp.

Aglaophamus sp., Hartman, 1965, p. 91.

New Records: A 65 (fgm); A 95 (1, jv); Ch 87 (fgm).

Distribution: Abyssal depths, 2891 to 3753 m.

Nephtys paradoxa Malm, 1874

Nephtys paradoxa Hartman, 1965, p. 92.

New Records: GH 3 (1); A 66 (1); Ch 76 (8); A 72 (1).

Remarks: Interramal cirri are first present from setiger 10-15.

Distribution: Abyssal depths, 2478 to 2864 m.

Nephtys near squamosa Ehlers, 1887

Nephtys squamosa Hartman, 1965, p. 92.

New Record: Ch 89 (10).

Remarks: The superior end of notopodia is prolonged as a flat or squamose membrane beginning at setiger 13; it is most conspicuous in the posterior half of the body. A similar inferior, smaller membrane is present from setiger 4. These specimens differ from N. squamosa Ehlers (1887, p. 128) in that interramal cirri begin on setiger 3 instead of 4. The dissected proboscis has many rows of distal and subdistal papillae, with the middorsal one the largest; the proximal surface is smooth.

Distribution: Slope depth, 196 m.

nephtyids

nephtyids, Hartman, 1965, p. 93.

New Records: Ch 89 (16); A 62 (fgm); A 66 (fgm); A 64 (fgm).

Distribution: Slope and abyssal depths, 196 to 2886 m.

Family SPHAERODORIDAE

Seven species, newly described or newly named, are present in the material. Three new genera are described and the genus Ephesiella Chamberlin (1919) is emended.

Key to Species

1. Macrotubercles on dorsum stalked . . . Clavodorum atlanticum
1. Macrotubercles sessile 2
2. Two rows of macrotubercles on dorsum 3
2. Four or more rows of macrotubercles on dorsum 5
3. Both simple and composite setae present in all parapodia
 Ephesiopsis guayanae

3. All setae composite aside from a pair of recurved hooks in the first setiger 4
4. Five to six distal papillae on each parapodium, no erect papilla on superior margin of parapodium
 Ephesiella macrocirris
4. A single erect papilla on superior margin of parapodia; a single large median papilla on the face of each parapodium
 Ephesiella mixta
5. Two pairs of lateral antennae Sphaerodoropsis corrugata
5. Three pairs of lateral antennae 6
6. Parapodia two or three times as long as wide; presetal lobes absent
 Sphaerodoropsis elegans
6. Parapodia less than twice as long as wide; presetal lobes present
 Sphaerodoropsis longipalpa

Clavodorum, new genus

Sphaerodorids with stalked macrotubercles and a long, slender median antenna. The macrotubercles form six or eight rows on the dorsum; smaller tubercles, similarly stalked, may form irregular rows on the ventrum. Parapodia have large ventral cirri and usually distinct presetal lobes. Postsetal lobes are present. Nephridiopores are present on all setigers, except the first and last three or four. All setae are composite.

Genotype is C. atlanticum, new species.

Clavodorum atlanticum, new species

(Plate 32, Figs. a-d)

Records: Ch 84 (1); Ch 85 (1, TYPE).

Description: The type is an incomplete specimen with 12 setigers, 1.5 mm long and 0.5 mm wide with setae. It is white and lacks color patterns. Both specimens have a thick, loose

coat of mud particles covering the dorsum.

The anterior end (Fig. d) is bluntly rounded; the long median antenna is slender. Each of the superior lateral antennae has a thick basal boss which carries two short dorsal papillae in addition to the slender antenna. The long inferior antennae are slender. The whole anterior end is covered with short, slender papillae. Eyes are absent. Peristomial papillae are reduced and similar to the other papillae.

All parapodia (Fig. c) are long and slender, but are not noticeably prolonged in the posterior end. Each parapodium has a slender, somewhat clavate acicular lobe with a pointed tip. The short, bluntly rounded presetal lobe barely projects beyond the tip of the acicular lobe. A digitate postsetal lobe is present in all setigers. The ventral cirrus is clavate and projects well beyond the acicular lobe in all setigers. A large nephridial papilla is present on all parapodia except the first and last ones; otherwise the parapodia are smooth.

Six rows of clavate macrotubercles are present on the dorsum. Each has a long, slender stalk and a spherical head (Fig. a). Two rows of smaller tubercles are present on the ventrum; each has a short stalk and a small spherical head. Papillae are absent except for the dense cover near the anterior end.

All setae are composite spinigers (Fig. b). The shafts are slightly inflated and the long, slender appendages are gently curved. The setae are smooth.

Distribution: Two stations northwest of Bermuda in 4749 and 3834 m depth.

Genus Ephesiella Chamberlin, 1919, emended

Species of this genus have two rows of macrotubercles; each macrotubercle has a distinct papilliform terminal papilla. Two

rows of microtubercles are also present. The body is usually long and slender with numerous segments. Setae are composite, except in the first setiger where a large simple, recurved hook is present in each parapodium in most species.

The genotype by original designation is E. peripatus (Claparède, 1863, see Chamberlin, 1919, p. 182); the specific name of this species is invalid and should be replaced with E. abyssorum (Hansen, 1878, p. 9, pl. 6, figs. 9-12, as Sphaerodorum). The specific name peripatus was used by Claparède (1863) in the belief that he had the species originally described under that name by Johnston (1844). Bebryce (later Pollicita) peripatus Johnston (1844) is synonymous with Sphaerodorum gracilis (Rathke, 1843) as first suggested by Johnston (1865, p. 208). Johnston's species was moved to the genus Sphaerodorum by Grube (1850, p. 315), so the specific name peripatus is also pre-occupied in the combination Sphaerodorum peripatus. The species described by Claparède and Hansen differs from the one described by Johnston in that the setae are composite in the former and simple in the latter. Other details are difficult to compare based on the original descriptions.

The junior synonym abyssorum Hansen (1878) is thus available for Claparède's species, as pointed out by Pettibone (1963, p. 208).

Ephesiella macrocirris, new name

(Plate 32, Figs. e-h)

Sphaerodorum sp. A, Hartman, 1965, p. 95, pl. 14, fig. d.

Records: A 62 (16); A 66 (1); A 73 (3, TYPE); Ch 87 (4); G 1 (1); GH (2).

Remarks: The type is a complete specimen with 58 setigers and is 6 mm long and 0.5 mm wide with setae. It is white and

lacks color patterns. The specimens from stations G 1 and GH were reported on by Hartman (1965, p. 95).

The present specimens fit the description by Hartman (1965) well. The anterior end (Fig. e) is blunt; the digitate lateral antennae are thick, as is the short median antenna. Each parapodium (Fig. h) has a conical acicular lobe and a dense cluster of five to eight slender papillae near the tip. Pre- and post-setal lobes cannot be distinguished. The very large ventral cirrus is nearly terminal; it is clavate and has a distinct digitate tip. The microtubercles (Fig. f) have short, wide collars and slender, digitate terminal papillae. Each of the first parapodia has two or three thick, recurved hooks (Fig. g). The setae are otherwise as described by Hartman (1965).

Distribution: Off New England in deep slope and abyssal depths.

Ephesiella mixta, new species

(Plate 32, Figs. i-n)

Record: A 95 (1, TYPE).

Description: The type is a complete specimen with nine setigers and is 1.2 mm long and 0.4 mm wide with setae. It is white and lacks color patterns. It has a very large, muscular proboscis and a smaller, distinctly muscular area in the posterior part of the intestine. The body cavity posterior to the proboscis contains what appears to be a number of developing embryos, each with from sixteen to thirty-two cells. A thick layer surrounding the posterior part of the intestine appears to contain developing male cells.

The anterior end (Fig. 1) is bluntly truncate with the bases of the lateral antennae projecting forward. All four lateral antennae are similar in size; each is digitate. The

median antenna is clavate and somewhat shorter than the lateral ones. At the bases of each antenna is found a single, short papilla; a median papilla is present anterior to the median antenna. A short, papillar peristomial cirrus is present on each side of the prostomium.

All parapodia are similar (Fig. n); each has a conical acicular lobe; pre- and postsetal lobes are absent. The anterior face of each parapodium has a large papilla and a large, erect papilla is present on the superior edge near the tip of the acicular lobe. The ventral cirrus is digitate with a distinct tip.

Two rows of macro- and two of microtubercles are present. Each macrotubercle (Fig. k) is spherical with a terminal papilla; each microtubercle (Fig. i) has a short collar and a nearly spherical terminal papilla. Papillae number two or three on the dorsum and five to six on the ventrum of each segment; they are not arranged in a definite pattern.

Each of the first parapodia has two recurved, stout hooks (Fig. j); other parapodia, eight in all, have composite falcigers. Each falciger (Fig. m) has a slightly inflated shaft and a slender, slightly falcate appendage. All setae are smooth.

E. mixta resembles E. macrocirris from the same deep water area. An erect distal papilla on the acicular lobe is present in E. mixta and absent in E. macrocirris. The number of papillae on the parapodia and the shape of the ventral cirri differ in the two species. E. mixta has, as far as known, the fewest segments of any sexually mature species in the family.

Distribution: E. mixta is known from abyssal depths off New England.

Ephesiopsis, new genus

The only known species in the genus has a long, slender

body; two rows of macro- and two of microtubercles are present. Recurved hooks are found in the first setiger; all other setigers have both simple and composite setae.

Ephesiopsis resembles Sphaerodorum Rathke (1843) and Ephesiella (see above). Both simple and composite setae are present in Ephesiopsis; all setae are simple in Sphaerodorum and all are composite in Ephesiella, apart from the recurved hooks which may be present in the first setiger.

Ephesiopsis guayanae, new name

(Plate 33, Figs. a-g)

Sphaerodorum sp. C, Hartman, 1965, p. 96, pl. 14, figs. a-b.

Record: Ch 35 Dr 33 (2, TYPE).

Remarks: A specimen from Ch 35 Dr 34 was reported by Hartman (1965, p. 96); this specimen has not been recovered.

The type is a complete specimen with 26 setigers and is 2.2 mm long and 0.2 mm wide with setae. It is brown and lacks color patterns.

The anterior end (Fig. a) is truncate; all the four long lateral antennae are slender; the digitate median antenna is less than half as long as the lateral ones. The peristomial cirri are short. Three papillae are present on the anterior margin between the lateral antennae and two are found between the lateral antennae and the peristomial cirri. A small papilla is at the base of each of the superior lateral antennae. A pair of eyes is present; each has two crescent-shaped pigmented areas.

All parapodia (Fig. g) are similar; each has a conical acicular lobe; pre- and postacicular lobes are absent. Four papillae are found near the base of the parapodium; one pair is on each face of the parapodium and one on each margin. Distally there is a small papilla on each margin and a very large one near

the tip on the superior side of the acicular lobe. The ventral cirrus is slender and appears to have one articulation.

Macrotubercles (Fig. f) are in two rows; each is small and ovate with a very large terminal papilla. Microtubercles (Fig. e) are also in two rows; each has a very short collar and a long, digitate terminal papilla.

Large recurved hooks (Fig. d) are present in each of the first parapodia; all other parapodia have both simple and composite setae. The simple setae (Fig. c) have a wide subdistal portion and a triangular bladelike distal end. Each composite seta (Fig. b) has a slightly inflated shaft and a small, recurved appendage.

E. guayanae is the only known species in the genus; the relationship to other known sphaerodorids is as discussed for the genus.

Distribution: E. guayanae is known from two localities in slope depths off Guayana, South America.

Sphaerodoropsis, new genus

All species have short, thick bodies. Four or more rows of sessile macrotubercles are present; papillae are usually present on the ventrum and sometimes between the rows of macrotubercles on the dorsum. Microtubercles are absent. Five or seven antennae are present on the anterior end and the peristomial cirri are usually well developed. All setae are composite; recurved hooks are absent. Eyes may be present.

Genotype is Sphaerodoropsis sphaerulifer (Moore, 1909, p. 336) from California.

Sphaerodoropsis corrugata, new name
(Plate 34, Figs. a-b)

Sphaerodoridium sp. A, Hartman, 1965, p. 94, pl. 14, fig. f.

Records: Ch 105B (5); Fl (1); Sl 4 (1, TYPE).

Remarks: The type and the specimen from Sta. Fl were described and illustrated by Hartman (1965).

The type is a complete specimen with 17 setigers and is 2 mm long and 0.5 mm wide with setae. It is light brown and lacks color patterns. The body is short and thick.

The truncate anterior end (Fig. a) is completely covered with long, slender papillae. The long lateral antennae are slender; the short median antenna is digitate. The short peristomial cirri are similar in length to the median antenna. Eyes are absent.

All parapodia are similar; the anterior ones are somewhat shorter than the posterior parapodia. Each parapodium (Fig. b) has a conical acicular lobe; pre- and postsetal lobes are absent. The long, digitate ventral cirrus does not project beyond the tip of the acicular lobe. An erect papilla is present on the superior margin. Each face of the parapodia has a single papilla near the base and a similar papilla near the middle of the superior margin; the latter papilla is distally clearly truncate. The skin of the parapodia is heavily wrinkled.

Four rows of macrotubercles are present; each macrotubercle is spherical and lacks a terminal papilla. Numerous papillae are scattered on the ventrum and between the rows of macrotubercles on the dorsum; each papilla is long and slender.

All setae are composite; each has a slightly inflated shaft and a slender, slightly falcate appendage.

S. corrugata resembles S. biserialis (Berkeley and Berkeley, 1944, p. 3-4, figs. 1-3) and S. philippi (Fauvel, 1911, pp. 19-21, pl. 1, figs. 16-20). Both were originally described in Sphaerodorum, but are here referred to Sphaerodoropsis.

A large truncate papilla is present on the superior edge of each parapodium in S. biserialis and S. corrugata; such papillae are absent in S. philippi. The presetal lobe is large and well developed in S. biserialis and absent in S. corrugata. The erect papilla on the superior edge of the parapodia in S. corrugata may resemble a presetal lobe, but the position in relation to the setae and the aciculum is clearly different from that of the presetal lobe in S. biserialis.

Distribution: Off New England and New York in depths from 400-1500 m.

Sphaerodoropsis elegans, new species

(Plate 34, Figs. c-e)

Records: A 64 (1); A 155 (2, TYPE).

Description: The type is a complete specimen with 17 setigers and is 2.2 mm long and 1 mm wide with setae. It is nearly white and lacks color patterns.

The anterior end (Fig. c) is bluntly rounded; three pairs of lateral antennae are present. The lowermost antennae are the longest and the uppermost the shortest. The short median antenna is clavate. The frontal margin has three simple papillae. The peristomial segment is unusually well developed; each side has a very long, slender peristomial cirrus and a small papilliform lobe on a large boss. Two short papillae are present on the margin between the base of the lowermost antennae and the peristomial boss. Eyes are absent.

All parapodia (Fig. e) are similar; each is long and slender with a bluntly conical acicular lobe. The postsetal lobe is digitiform; presetal lobes are absent. The ventral cirrus is truncate. Each parapodium has a single papilla near the base on the superior edge; other papillae are absent.

Four rows of macrotubercles are present; each macrotubercle

is spherical and lacks a terminal papilla. Papillae are present on the ventrum; each is short and blunt.

All setae (Fig. d) are similar; each has a long slender shaft and a slender, slightly falcate appendage.

S. elegans is characterized by the long slender parapodia; the large peristomial boss is unique in the genus.

Distribution: Off New England in 2886 m depth; off Brazil in 3730-3783 m depth.

Sphaerodoropsis longipalpa, new name

(Plate 34, Figs. f-g)

Sphaerodoridium sp. B, Hartman, 1965, p. 95, pl. 14, fig. e.

Records: A 73 (72); A 119 (2); Be 3 (1, TYPE); Ch 35 Dr 12 (1); Ch 87 (42); Ch 103 (2).

Remarks: The type, which is the specimen reported by Hartman (1965, p. 95), is a complete specimen with 19 setigers and is 4 mm long and 0.6 mm wide with setae. It is brown and lacks color patterns. The body is slightly tumid in most specimens.

The anterior end (Fig. f) is bluntly rounded; two pairs of lateral antennae are present. The slender inferior ones are very long; the digitate superior antennae are short. The clavate median antenna is somewhat longer than the superior lateral ones. The long peristomial cirri are digitate. Five slender papillae are on the anterior margin between the bases of the lateral antennae and a few more papillae are scattered over the surface of the prostomium. A single pair of eyes is present near the bases of the first parapodia.

All parapodia (Fig. g) are similar; each has a bluntly conical acicular lobe; the long presetal lobe is digitate. The postsetal lobe is short and blunt. The long ventral cirrus