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A Guide to the Marine Flora and Fauna of the Bay of Fundy: Annelida : Polychaeta

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Biological Station,
St. Andrews, N.B., EOG 2X0

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Les numéros 1-456 de cette série ont été publiés à titre de Rapports techniques de l'Office des recherches sur les pêcheries du Canada. Les numéros 457-700, à titre de Rapports techniques de la Direction générale de la recherche et du développement, Service des pêches et de la mer, ministère de l'Environnement. Le nom de la série a été modifié à partir du numéro 701.

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Fisheries and Marine Service
Technical Report 920

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A GUIDE TO THE MARINE FLORA AND FAUNA OF THE BAY OF FUNDY:
ANNELIDA:POLYCHAETA

by

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This is the one hundred and twenty-second Technical Report from
the Biological Station, St. Andrews, N.B.

PREFACE

This Technical Report is part of a series originating at the St. Andrews Biological Station entitled "Guide to the Marine Fauna and Flora of the Bay of Fundy." The series will consist of original and/or adapted, illustrated manuals on the identification, distribution and general biology of the estuarine and marine animals and plants occurring within the Bay of Fundy.

The series is a continuation and expansion of "A Preliminary Guide to the Littoral and Sublittoral Marine Invertebrates of Passamaquoddy Bay" and is produced under the auspices of Fisheries and Environmental Sciences to assist in environmental studies concerning the Bay of Fundy. The guide is being prepared in collaboration with systematic specialists and the manuals will be based as much as possible on recent revisionary systematic research. Each manual, concerning major taxon, will include an introduction, illustrated glossary of terms, illustrated keys, alphabetic checklist and available information on distribution, habitat, life-history related biology, and references to the major literature on the group.

The series is intended for use by students and researchers wishing to identify marine organisms found in the Bay of Fundy. They are written as much as possible so that persons without a systematic background may use them, and with the hope they will serve as a guide to additional information concerning a taxon. Since the Bay of Fundy has a wide range of physical habitats and organisms, these manuals will be useful for organism identification throughout the Maritimes and may, in some cases, replace or expand the old "Canadian Atlantic Fauna." In general the manuals will be complementary to the Natural History Series currently in progress at the National Museum of Natural Sciences, Ottawa.

Whenever possible, representative specimens dealt with in the manuals will be deposited in the reference collection of the Identification Center at the Biological Station, St. Andrews. Researchers in the Bay of Fundy are requested to donate to this collection series of specimens they believe should be available for future examination.

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ABSTRACT

Appy, Teresa D., Leslie E. Linkletter, and M. J. Dadswell. 1980. A guide to the marine flora and fauna of the Bay of Fundy: Annelida:Polychaeta. Fish. Mar. Serv. Tech. Rep. 920, v + 124 p.

Forty-two families and 188 species of polychaetes known from the Bay of Fundy are distinguished in an illustrated dichotomous key. A description and the biology and distribution records are given for each species. Twelve species are new to the eastern Canada marine fauna. They are: *Lepidometria commensalis* Webster, *Hartmania moorei* Pettibone, *Syllis gracilis* Grube, *Parapionosyllis longicirrata* (Webster and Grube), *Autolytus fasciatus* (Bosc), *Lumbrineris tenuis* (Verrill), *Protodorvillea kefersteini* (McIntosh), *Mediomastis ambiseta* (Hartman), *Aricidea quadrilobata* Webster and Benedict, *Paraonis fulgens* (Levinson), *Euclymene zonalis* (Verrill) and *Aglaophamus neotenus* Noyes.

Key words: Polychaeta, marine, check lists, identification keys, Bay of Fundy, Canada, new records

RÉSUMÉ

Appy, Teresa D., Leslie E. Linkletter, and M. J. Dadswell. 1980. A guide to the marine flora and fauna of the Bay of Fundy: Annelida:Polychaeta. Fish. Mar. Serv. Tech. Rep. 920, v + 124 p.

Dans une clef dichotome illustrée 42 familles et 188 espèces de polychètes connus dans la Baie de Fundy sont distinguées. On présente une description de chaque espèce et quelques notes sur leurs biologie et distribution. Douze espèces sont nouvelles à la faune marine notée pour le Canada de l'est. Ce sont: *Lepidometria commensalis* Webster, *Hartmania moorei* Pettibone, *Syllis gracilis* Grube, *Parapionosyllis longicirrata* (Webster and Grube), *Autolytus fasciatus* (Bosc), *Lumbrineris tenuis* (Verrill), *Protodorvillea kefersteini* (McIntosh), *Mediomastis ambiseta* (Hartman), *Aricidea quadrilobata* Webster and Benedict, *Paraonis fulgens* (Levinson), *Euclymene zonalis* (Verrill) et *Aglaophamus neotenus* Noyes.

INTRODUCTION

The class Polychaeta (bristle worms) is grouped with the classes Oligochaeta (earthworms), Hirudinea (leeches) and Myzostomaria (parasitic worms) to form the phylum of segmented worms, the Annelida. Polychaetes are dioecious, primarily marine, and differ externally from the other annelid groups in possessing cephalic appendages and parapodia with bundles of setae, and lacking a clitellum. Detailed accounts of the class Polychaeta are given by Gosner (1971) and Fauchald (1977). The keys in this work apply only to families and species of polychaetes found within the Bay of Fundy but, because of the environmental range in the Bay, the species keyed are probably representative of entire Maritime Canada. The key is based largely on specimens housed in the Identification Center collection at the Biological Station, St. Andrews, N.B.

The key is in two parts, a family key and a series of keys to species within each family. The order of families in the key is alphabetical. A glossary and labelled illustrations, and an explanation of symbols used are provided to assist with descriptive terminology. An alphabetical family and species index is included as an appendix. A short description of each species in which remarks, color (when living), biology and distribution (North American and Bay of Fundy) are included (for numbered distribution localities in text, refer to Fig. 1 and 2). Labelled illustrations are provided for most species; for redrawn figures, sources are: (F) Fauvel (1927); (H) Hartman (1944); (P) Pettibone (1963). All illustrations unless otherwise acknowledged were drawn by T. Appy from preserved specimens. Supplementary tabular comparisons are included for those families or genera in which species identification is difficult (Appendix I). A summary of reproduction in the families Nereididae and Syllidae is included (Appendix II and III).

This polychaete key is the second in a series on the Bay of Fundy fauna. It has drawn heavily on previous works including Brinkhurst et al. (1975), Linkletter et al. (1977) and unpublished manuscripts available at the Biological Station:

Klawe, W. L. MS 1955. A collection of polychaetous annelids from New Brunswick and Nova Scotia. 9 p.

Klawe, W. L. MS 1970. Commercial gathering, holding and shipping of bait worms (*Glycera dibranchiata*) Ehlers. Fish. Res. Board Can., Biol. Stn., St. Andrews, N.B., Orig. MS No. 1096, 11 p., 21 fig.

and at Acadia University:

Peterson, K. W., and M. E. Peterson. MS 1976. Hydrozoa and Polychaeta from the littoral zone in the Nova Scotian part of the Bay of Fundy. Unpubl. MS, 15 p.

It was prepared to assist in the baseline studies now being undertaken on the Bay of Fundy in conjunction with the possible development of Fundy tidal power.

The authors suggest in cases where scientific reliability is essential (physiology, indicator organism biology, etc.), identifications of species be cross-checked by reference to Pettibone (1963), reference to the original description or recent monograph, or by submitting specimens to an authority. All omissions and mistakes in this work are ours and we request that readers draw our attention to any which may exist.

RELAXING AND PRESERVING

Polychaetes are among the most abundant of marine organisms and usually form more than half the fauna encountered during most biological surveys in the sea. Fortunately, they present little problem when preserving, and most can be successfully dealt with in the field using a 10% formalin solution. Relaxed specimens of most species are easily obtained by placing the specimens in clean sea water, then adding 70% alcohol drop by drop until the specimens no longer respond to touch.

Tube forms may be made to leave their tubes by placing the specimens in clean sea water, then sprinkling menthol on the water and leaving overnight. Most worms will emerge, and those that do not can be withdrawn in the morning without fear of contraction. An alternate method for tube forms is to leave the specimens in ample sea water and allow the water to deoxygenate. The worms will emerge and die in a relaxed position; however, the process must be watched closely to obtain the worms before they begin to decompose.

Polynoids are particularly difficult because they readily lose their scales when preserving or alcohol relaxing is attempted. Two methods may be used: the worm is removed from the water, placed on blotting paper and allowed to die by drying (not too dry), or the specimen is left in water in a freezer until the animal is just frozen, then preserved.

The best preservative for polychaetes is formol-alcohol, both for hardening and permanent storage. Formol-alcohol is a mixture of 19 parts 70% ethanol and 1 part 40% formaldehyde (commercial formalin, full strength). Alternatively, the relaxed specimens may be killed and hardened for a few days in a 10% formalin solution, then transferred without washing to 70% ethanol.

The majority of this account was based on that in Wagstaffe and Fidler (1955), and this publication should be consulted for detailed instructions on relaxing, mounting and preservation. The methods for relaxing Polynoids is from MacGinitie (1955).

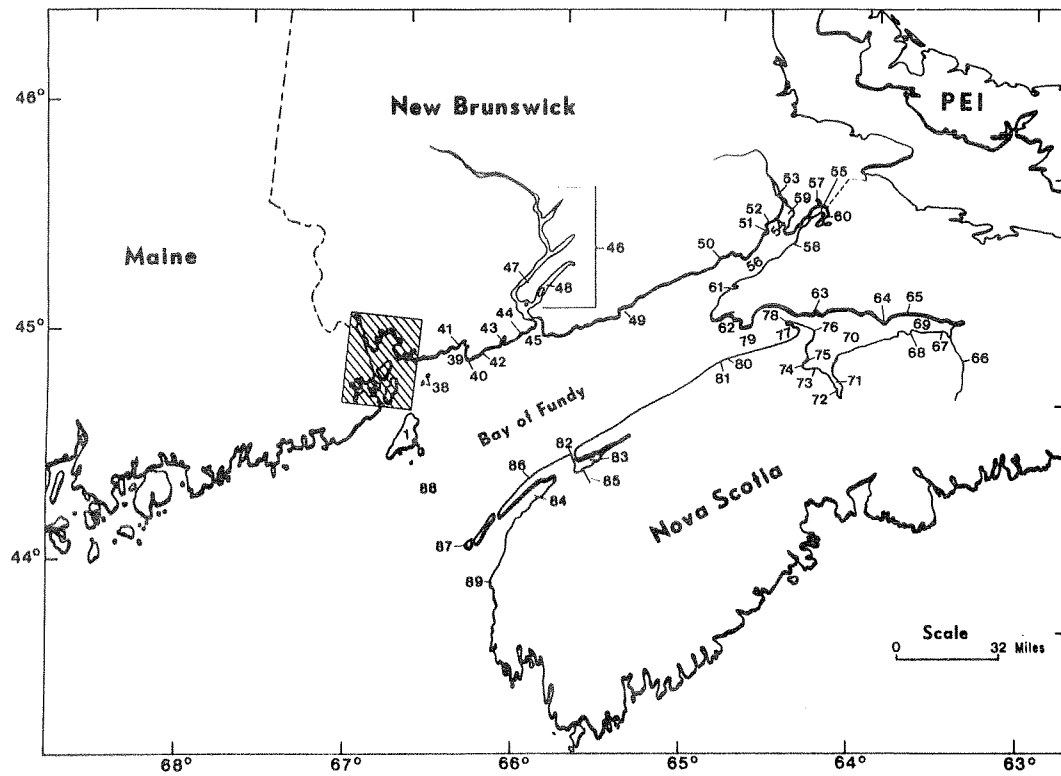


Fig. 1. Map of the Bay of Fundy - localities 1 and 38-89

- | | |
|--|------------------------------|
| 1. Grand Manan | 64. Economy Point |
| 38. The Wolves (deepwater station, 80 m) | 65. Bass River |
| 39. Maces Bay (includes Pocologan) | 66. Shubenacadie Estuary |
| 40. Point Lepreau | 67. Seimah |
| 41. New River Beach | 68. Noel |
| 42. Lepreau Estuary | 69. Cobequid Bay |
| 43. Musquash Estuary | 70. Minas Basin |
| 44. Lorneville Harbour | 71. Avon River |
| 45. Saint John Harbour | 72. Windsor |
| 46. Saint John Estuary | 73. Evangeline Beach |
| 47. Long Reach | 74. Canning |
| 48. Kennebecasis Bay | 75. Kingsport Beach |
| 49. Quaco Bay (includes St. Martins) | 76. Blomidon |
| 50. Alma | 77. Scots Bay (Scotsman Bay) |
| 51. Marys Point | 78. Cape Split |
| 52. Daniels Flats | 79. Minas Channel |
| 53. Petitcodiac River | 80. Canada Creek |
| 54. Shepody Bay | 81. Black Rock |
| 55. Cumberland Basin | 82. Digby Gut |
| 56. Chignecto Bay | 83. Annapolis Basin |
| 57. Tantramar River | 84. St. Mary's Bay |
| 58. Joggins | 85. Bear River |
| 59. Grande Anse | 86. Digby Neck |
| 60. Elysian Fields | 87. Brier Island |
| 61. Apple River | 88. Grand Manan Basin |
| 62. Advocate Bay | 89. Cape St. Mary |
| 63. Parrsboro | |

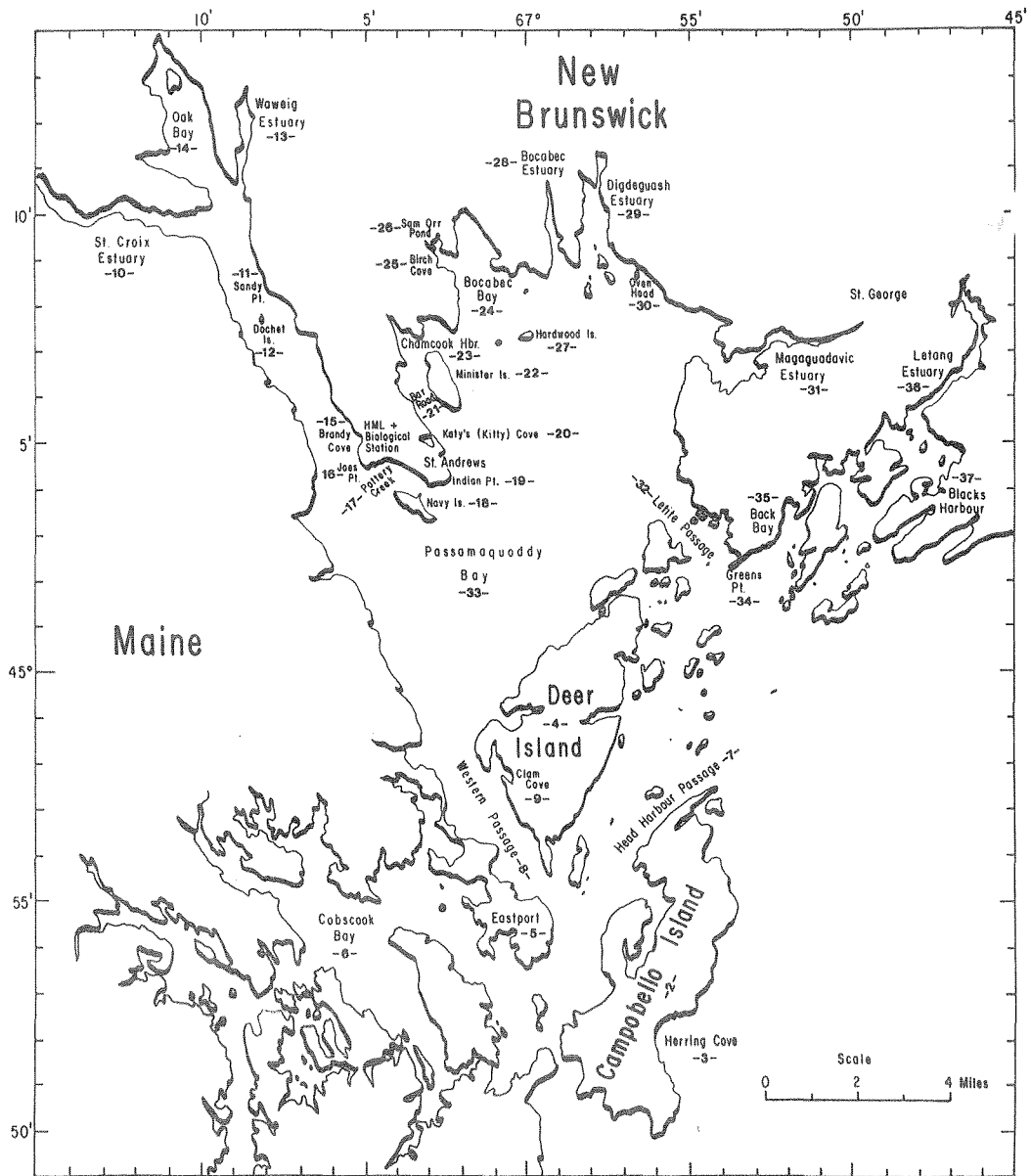


Fig. 2. Map of Passamaquoddy Bay indicating localities 2-37.

GLOSSARY

- ACICULUM - supportive setae found internally in each parapodial ramus (Fig. 4).
- ACICULAR SETA - thick, projecting seta.
- ANNULI - external division of segments into superficial furrows.
- ASETIGEROUS - segment lacking setae.
- BIFURCATE - forked (Fig. 12).
- BIFID - split in two (Fig. 11).
- BIRAMOUS - having two branches; used when describing parapodia having both noto- and neuropodia present.
- BRANCHIA - extension of body wall containing vascular tissue; a gill.
- CAPILLARY SETA - simple tapering seta.
- CARUNCLE - posterior sensory organ projecting from the prostomium over the first several segments.
- CEPHALIC CAGE - numerous long setae enclosing and protecting the head region.
- CHEVRON - V-shaped chitinized jaw piece at the base of the eversible pharynx in some goniadids.
- CIRRUS - sensory projection, usually slender (Figs. 3, 4).
- CLAVATE - club-shaped.
- COMPOUND SETA - jointed seta (Fig. 6).
- CORDIFORM - heart-shaped.
- CROCHET - small hook.
- DEXTRAL - the right.
- ELYTRON - dorsal scale.
- FALCIGER - distally blunt and curved setae (Fig. 7).
- FILIFORM - threadlike.
- FRONTAL ANTENNA - antenna located on the prostomial ridge.
- HETEROGOMPH ARTICULATION - with articulation clearly oblique to the long axis of the shaft (Fig. 14)
- HOMOGOMPH ARTICULATION - with articulation distinctly and symmetrically at right angles to the axis of the shaft (Fig. 15).
- HOODED HOOK (SETA) - seta distally covered by a delicate chitinous envelope or guard (Fig. 9).
- LAMELLA - flattened plates anterior and posterior to the setae.
- LIGULE - finger-shaped major process on a parapodium.
- LIMBATE SETA - simple seta having a flattened border or wing (Fig. 8).
- MANTLE - outer soft fold of integument.
- NEUROPODIUM - ventral lobe (ramus) of a parapodium (Fig. 4).
- NEUROSETA - seta of the neuropodium (Fig. 4).
- NOTOPODIUM - dorsal lobe (ramus) of a parapodium (Fig. 4).
- NOTOSETA - seta of the notopodium (Fig. 4).
- NUCHAL - pertaining to neck; used when describing sensory organs found on posterodorsal side of head and variously developed as paired or single processes, pits or grooves, or as paired epaulettes.
- OCCIPITAL ANTENNA - antenna located on the posterodorsal part of the prostomium.
- OPERCULUM - lid-like structure; used by some tubicolous worms as stoppers for their tubes.
- PALEA - strong or broad, usually flattened seta.
- PALPS - sensory or feeding appendages on the prostomium or anterior segments (Fig. 3).
- PAPILLA - a conical dermal structure; nipple.
- PARAGNATH - chitinous denticle in the pharyngeal cavity of nereids.
- PARAPODIUM - foot; paired, laterally arranged projection on body segments; consists of a noto- and neuropodium (Figs. 3, 4).

- PECTINATE - comb-like.
- PERISTOMIUM - first distinct post-prostomial region; segment with mouth and any segments fused to mouth segment.
- PROSTOMIUM - pre-segmental part of body anterior to the mouth (Fig. 3).
- PYGIDIUM - post-segmental part of body carrying the anus.
- RADIOLE - one of the main tentacles in the branchial plume of sabellids and serpulids.
- RAMUS - branch-like structure; used when describing notopodium (dorsal ramus) and neuropodium (ventral ramus).
- ROSTRATE - beaked.
- SCAPHE - flattened caudal appendage of amphipetids.
- SETA - bristle-like structure secreted by the parapodium (Fig. 3).
- SETIGER - segment bearing setae (Fig. 3).
- SIMPLE SETA - unjointed seta (Fig. 5).
- SINISTRAL - the left.
- SPINIGER - seta that tapers to a fine point; most frequently used when describing compound setae (Fig. 6).
- SUBBIRAMOUS - used when describing parapodia having well developed neuropodia and reduced notopodia.
- TORUS - ridge bearing uncini.
- UNCINUS - small hook, usually arranged in rows (Fig. 13).
- UNIRAMOUS - with one branch only; used when describing parapodia in which one ramus, most frequently the notopodium, is absent.

Note: See Fauchald (1977) for complete glossary of Polychaete terms (pages 156-160).

General Features of a Polychaete -
Nereis pelagica

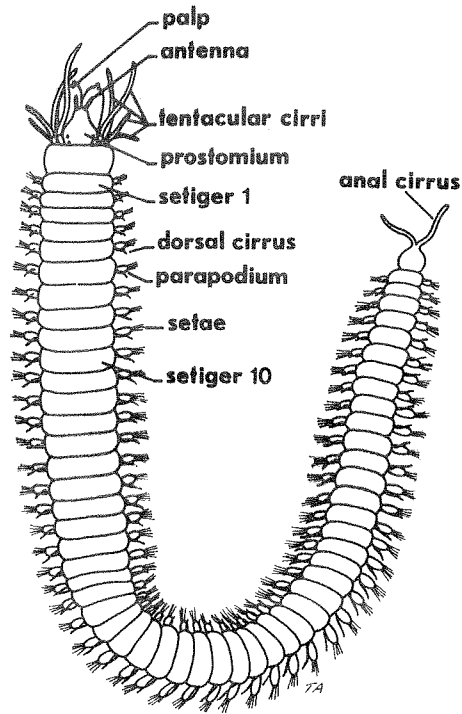


Fig. 3. Entire, dorsal view.

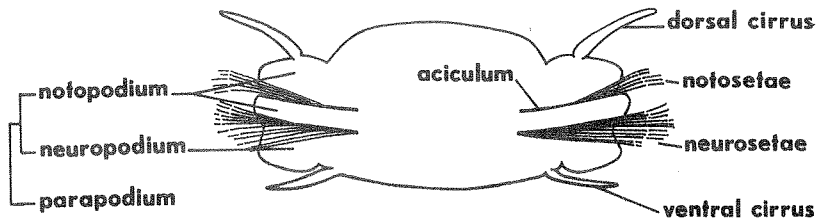


Fig. 4. Cross-section.

Seta Types



Fig. 5.

6.

7.

8.

9.



10.

11.

12.



13.

14.

15.

- 5. Capillary (simple)
- 6. Compound spiniger
- 7. Falciger (falcate)
- 8. Limbate
- 9. Crotchet (hooded hook)
- 10. Bidentate
- 11. Bifid
- 12. Bifurcate
- 13. Uncinus
- 14. Heterogomph articulation
(i.e. compound heterogomph
falciger)
- 15. Homogomph articulation
(i.e. compound homogomph
falciger)

EXPLANATION OF SYMBOLS ON FIGURES

a C, anal cirrus
a La, anterior lamella
a P, anal plate
ac, aciculum
ac L, acicular lobe
ac S, acicular seta
an, antenna
b S, basal spur
br, branchia
br M, branchial membrane
bu S, buccal segment
c C, cephalic cage
c P, cephalic peak
ca, capsule
car, caruncle
cer, ceratophore
ch, chevron
ci, cirrus
co, collar or collarette
cr, crotchet
ct, ctenidium
d C, dorsal cirrus
D h S, dorsal hooked seta
D t C, dorsal tentacular cirrus
e, eye
el, elytron or scale
f An, frontal antenna
fl, flange
fr, fringe
fr H, frontal horn
g H, genital hook
h Se, hooded seta
int C, interramal cirrus
int Po, interramal pouch
j, jaw
k, keel
l An, lateral antenna
li Pl, cephalic limbate plate
m, mouth
m An, median antenna
m R, maxillary ring
m Set 5, modified setiger 5
ne, neuropodium
ne Ci, neuropodial cirrus
ne Cr, neuropodial crotchet
ne Li, neuropodial ligule
ne S, neurosetae
no, notopodium
no Cr, notopodial crotchet
no Li, notopodial ligule
no S, notosetae
nu E, nuchal epaulette
nu F, nuchal fold
oc An, occipital antenna
op, operculum
o R, oral ring
o T, oral tentacle
p La, posterior lamella
pa, palp
pal, paleae
palm M, palmar membrane
pap, papilla
para, paragnath
pi, pinnule
pig B, pigment bands
post L, postsetal lobe
post Pap, postsetal papillae or podial fringe
pr, prostomium
pre L, presetal lobe
prob, proboscis
rad, radiole
s S, swimming setae
sc, scaphe
sc H, scaphal hook
seg, segment
set, setigerous segment or "setiger"
set Lo, setigerous lobe
sh, sheath
sub F, subpodial flange
sub Pap, subpodal lateral papilla
t C, tentacular cirrus
t F, tentacular filament
th M, thoracic membrane
to, tooth
tu, tubercle
unc, uncini
v C, ventral cirrus
v G, ventral groove
v Pap, ventral papillae or ventral fringe
V t C, ventral tentacular cirrus

Roman numerals indicate body segments (in Phyllodocidae), and areas of proboscis (in Nereidae).

ARTIFICIAL KEY TO THE FAMILIES OF POLYCHAETA FROM THE BAY OF FUNDY

Note: Polychaete diversity and the loss of parts by individual worms make the development of family keys difficult. Users must expect to develop a degree of familiarity with polychaete terminology and familial characters before key use will be eased.

- 1 a. Body transparent; parapodia biramous, each ramus bordered by flattened fin-like membranes or pinnules; without external setae; usually planktonic but often found sublittorally among seaweeds (Fig. 16A) TOMOPTERIDAE (p. 102)
- b. Body opaque; without pinnules; with external setae; usually benthic but occasionally planktonic (reproductive forms) 2 ✓
- 2 (1) a. Dorsum more or less covered with deciduous scales or elytra (Fig. 17A) or with distinct elytral scars present on dorsal side of notopodial bases [scales may be hidden by dorsal feltage of matted capillary notosetae (Fig. 17B)]; or dorsal surface bristly, formed by numerous spine-like notosetae in transverse rows or clusters (Fig. 17C, D); worms usually dorsoventrally flattened, segmentation sometimes indistinct 3
- b. Dorsum without elytra, elytral scars, feltage or bristles; usually part or all of worm circular in cross-section, segmentation usually distinct 8 ✓
- 3 (2) a. Dorsum with scales, elytra, elytral scars or scales and feltage 4
- b. Dorsum bristly, convex, with numerous spine-like notosetae in transverse rows 6
- 4 (3) a. Scales completely or partially obscured by felt-like covering; facial tubercle well developed, single median antenna; ventral surface and parapodia with numerous globular papillae (Fig. 17B) APHRODITIDAE (p. 21)
- b. Scales not obscured by felt-like covering; facial tubercle poorly developed or lacking, one to three antennae; ventral surface without numerous globular papillae 5
- 5 (4) a. With filiform dorsal cirri on segments without scales (lift scales to observe); not all posterior segments scaled; prostomium bilobed (Fig. 129); neurosetae simple (Fig. 17A) POLYNOIDAE (p. 67)
- b. Without filiform dorsal cirri; scales on all posterior segments; prostomium suboval or subglobular; neurosetae simple and compound SIGALIONIDAE (p. 82)
- 6 (3) a. Branchiae present, dichotomously branched; prostomium with a caruncle extending posteriorly, 1 small median antenna (Fig. 56B); neuropodia not sharply set off from notopodia; notosetae bifurcate, neurosetae simple, numerous; anal cirri a pair of oval, cushion-like lobes (Fig. 17C) EUPHROSINIDAE (p. 31)
- b. Branchiae absent; prostomium with globular antenna (1 or 3); neuropodia sharply set off from notopodia; notosetae simple, spine-like; neurosetae compound, 1 to numerous, and cirri absent 7
- 7 (6) a. Prostomium distinct, 3 globular antennae; segmentation distinct, notosetae in lateral tufts curving dorsally and forming fan-shaped groups, or transverse rows (Fig. 17D) CHRYSOPETALIDAE (p. 26)
- b. Prostomium inconspicuous, 1 globular median antenna; segmentation indistinct, indicated by transverse rows of notosetae, neurosetae 1 or a few, bifurcate; carnivorous or parasitic on sponges SPINTHERIDAE (p. 84)
- 8 (2) a. Segmentation indistinct except as marked by parapodia; body covered with papillae and 2 or more rows of large spherical capsules (Fig. 16B) SPHAERODORIDAE (p. 83)
- b. Segmentation distinct; body without large spherical capsules 9 ✓

- 9 (8) a. Posterior end covered ventrally with 2 large, trapezoidal sternal plates with long stiff radiating bundles of setae on external sides; body grub-like, long filiform anal branchiae (Fig. 16C) STERNASPIDAE (p. 92)
- b. Posterior end without sternal plates 10 ✓
- 10 (9) a. Prostomium more or less concealed; anterior end transformed into crown of feathery tentacles (branchial plume) (Fig. 18A), long tentacular filaments (Fig. 18B), or with chitinous golden paleae (Fig. 19B-D), or long setae directed forward, sometimes forming a cephalic cage (Fig. 18C) 11
- b. Prostomium generally visible; without tentacular crown or long specialized setae . . 18 ✓
- 11 (10) a. Anterior end with branchial plume of feathery tentacles 12
- b. Anterior end without branchial plume; with tentacular filaments, paleae or specialized setae 13
- 12 (11) a. Tube calcareous, irregular in form (spirally coiled in *Spirorbis*); usually 1 or 2 tentacles modified to form a plug-like stalked operculum (Fig. 18A); thoracic membrane present, collarette on first segment SERPULIDAE (p. 79)
- b. Tube not calcareous, may be horny, mucoid or membranous; without opercula; without thoracic membrane; base of branchial lobes surrounded by collar (Fig. 145) SABELLIDAE (p. 73)
- 13 (11) a. Anterior end with 2 or 3 comb-like series of golden paleae (Fig. 19B, C, D) 14
- b. Anterior end without paleae (Fig. 19A) 16
- 14 (13) a. Posterior end with scaphe (Fig. 34B); anterior end with 2 bundles of paleae in horizontal rows (Fig. 19C); tubes conical, free, formed of closely fitted sand grains (Fig. 34D) AMPHICTENIDAE (p. 20)
- b. Posterior end without scaphe; paleae in concentric or horizontal rows; tubes otherwise 15
- 15 (14) a. Anterior end with 1-3 concentric rows of paleae (Fig. 19D), without branchiae; mouth surrounded by non-retractile filiform tentacles; tube attached, of sand grains SABELLARIIDAE (p. 73)
- b. Anterior end with paleae in 2 horizontal rows; with 4 pairs of filiform branchiae (Fig. 19B); numerous short tentacular filaments, retractile in mouth; tube membranous, covered with mud or foreign bodies AMPHARETIDAE (in part, p. 17)
- 16 (13) a. Anterior end with long, chambered setae directed forward forming a cephalic cage (Fig. 18C) or without tentacular filaments and body papillated, not regionated; may be encased in thick mucous mantle (*Brada* sp. has filiform branchiae (retractile in mouth)) FLABELLIGERIDAE (p. 31)
- b. Anterior end without long specialized setae forming cephalic cage; with tentacular filaments (Fig. 18B); body without papillae, regionated; tube membranous 17
- 17 (16) a. Branchiae present, in two groups either side of anterior dorsum, digitiform and smooth (Fig. 19A), (Note: branchiae often lost but scars remain); buccal tentacles short, retractile; uncini with teeth in one or a few rows . . . AMPHARETIDAE (in part, p. 17)
- b. Branchiae if present on 2-3 successive segments, stalked, branched or filamentous (Fig. 195); buccal tentacles numerous, long, non-retractile, form a tangled string-like mass on anterior end; uncini with several teeth in one or more transverse rows (Fig. 18B) TEREBELLIDAE (p. 98)

- 18¹ (10) a. Prostomium with at least one pair of appendages, either antennae (Fig. 20A) or palps (Fig. 23C), may be minute (Fig. 20C, 21A, B); or anterior portion of body with appendages on or in front of the first setiger (Fig. 23B, 24B) (Caution: grooved tentacular palps may be missing, their loss indicated by scars) 19
 - b. Prostomium without appendages (Fig. 25, 27, 28) or with one median antennae (Fig. 26A); anterior portion of body without appendages on or in front of the first setiger (Fig. 25A) 33
- 19 (18) a. Prostomium with at least one pair of antennae (Fig. 20A, 21C, 22A); may be minute (Fig. 20C, 21A), palps if present frontal and reduced (Fig. 21B, 22A) (except Dorvilleidae) 20
 - b. Prostomium without antennae (may have 1 small occipital antenna, Fig. 169A); anterior end bearing long grooved tentacular palps, with or without tentacular filaments (Fig. 23A, 24B); may be missing, look for scars 29
- 20 (19) a. Prostomium with 1 pair articulated antennae and 1 pair lateroventral palps; first 2 segments apodous; with short dorsal and ventral subulate cirri, without branchiae; body small to minute, up to 5 mm (Fig. 20A) DORVILLEIDAE (p. 29)
 - b. Prostomium with 2 or more antennae, if palps present usually reduced, if not reduced then 3 or more antennae (Fig. 22B); first 2 segments with or without appendages; body medium to large 21
- 21 (20) a. Prostomium with 4 minute antennae (Fig. 20C, 21A); with 0 or 2 tentacular cirri; without palps 22
 - b. Prostomium with 2-5 medium to large antennae (Fig. 20B, 21B, C); 0-8 pairs tentacular cirri; with or without palps 24
- 22 (21) a. Prostomium subquadrate, small, 2 pairs minute antennae, 1 pair frontal, 1 pair concealed at lateroposterior corners of prostomium (Fig. 21A); proboscis with a circle of papillae terminally; body rectangular in cross-section; parapodia large, biramous, with lamellae (Fig. 84); single anal cirrus NEPHTHYIDAE (p. 44)
 - b. Prostomium conical, transversely annulated, ending in 4 minute antennae arranged in a cross (Fig. 20C, D); proboscis has 1-2 pairs of black, hooked jaws terminally; parapodia small, without lamellae (Fig. 64B); 2 anal cirri 23
- 23 (22) a. Anterior region of body with uniramous parapodia, longer posterior region with biramous parapodia, segments uniannulated (Fig. 20C); both dorsal and ventral cirri well developed; proboscis with 1 pair dentate GONIADIDAE (p. 36)
 - b. Parapodia all similar, either all uniramous or all biramous; segments bi- or triannulate proboscis with 4 strong jaws (Fig. 20D) GLYCERIDAE (p. 35)
- 24 (21) a. Prostomium conical with 4 frontal antennae at tip, with or without 1 median antennae (Fig. 20B), 2 eyes; 2-4 pairs of prominent tentacular cirri, no palps; parapodia uniramous with dorsal and ventral cirri flattened, leaf-like or globular; proboscis without jaws PHYLLODOCIDAE (p. 60)
 - b. Prostomium various, 0-3 frontal antennae; palps present, may be reduced or fused; parapodia uni- or biramous, dorsal and ventral cirri, if present, not leaf-like or globular 25

¹Note: this step is difficult but unavoidable if a rapid key to family is to be presented. In general appendages can be distinguished as follows: antennae usually have annulations; palps are thick, cylindrical, have smooth surfaces, ventral grooves (not always) and a twisted or coiled appearance; tentacular cirri are slender and cylindrical. Antennae are always on the prostomium; palps on the prostomium and/or on or anterior to the first setiger; cirri, on the peristomium or on cephalized segments.

- 25 (24) a. Biramous parapodia with extra tongue-like or conical lobes called ligules (Fig. 93B, C); proboscis muscular, eversible, with 1 pair dark jaws, toothed along concave edge, with small denticles (paragraths) on sides of proboscis²; prostomium with 4 eyes, 2 frontal antennae, 1 pair biarticulate palps and 4 pairs tentacular cirri (Fig. 21B) NEREIDAE (p. 49)
- b. Parapodia without ligules; prostomium without same combination of characters 26
- 26 (25) a. Prostomium with 0-2 eyes, 5-7 antennae, 1 pair globular, ventral palps (Fig. 21C, D); 0-1 pair tentacular cirri; jaws with mandibles and maxillae 27
- b. Prostomium with 4 eyes, 2-3 antennae, 1 pair palps which may be fused or biarticulated, 1-8 pair tentacular cirri (Fig. 22A, C); jaws if present otherwise 28
- 27 (26) a. Anterior parapodia directed forward, provided with hooded setae; branchiae simple, cirriform, begin setiger 9-13; 5 occipital antennae, 2 frontal antennae (Fig. 21C); first apparent segment apodous and achaetous ONUPHIDAE (p. 51)
- b. Anterior parapodia not directed forward, without hooded setae; branchiae, pectinately branched; 5 occipital antennae, no frontal antennae (Fig. 21D); first 2 segments apodous and achaetous EUNICIDAE (p. 30)
- 28 (26) a. Parapodia uniramous (may be biramous in sexual epitokes; App. III, p. 120), usually with conspicuous dorsal cirri; prostomium suboval, 3 antennae, 1-2 pairs tentacular cirri; palps simple, may be reduced and fused (Fig. 22A, B) SYLLIDAE (p. 92)
- b. Parapodia bi- or subbiramous; prostomium suboval to subquadrate, 2 or 3 antennae, 2-8 pairs tentacular cirri; palps biarticulated (Fig. 22C) HESIONIDAE (p. 38)
- 29 (19) a. Body regionated, setiger transition either gradual (Fig. 23A) or sharp (Fig. 23B, C) 30
- b. Body setigers similar throughout length (Fig. 24) 32
- 30 (29) a. Body not sharply divided into regions (with a gradual transition in setiger form) (Fig. 23A); branchiae strap-like, dorsal (Fig. 170); without dorsal and ventral cirri; all setae simple SPIONIDAE (p. 85)
- b. Body sharply divided into regions; branchiae, if present, lateral 31
- 31 (30) a. Prostomium subconical to suboval with pair of nuchal folds (Fig. 23B); branchiae absent [do not confuse with cylindrical notopodia and interrhamal cirri (Fig. 39B)]; parapodia biramous, without notosetae, some anterior neuropodia with fimbriated subpodal flanges APISTOBRANCHIDAE (p. 22)
- b. Prostomium elongate oval, wedged between first 2 setigers (Fig. 23C); branchiae present; parapodia biramous (except in middle uniramous region), with notosetae; first 4 setigers modified, setiger 3 (sometimes 2 also) with dark, heavy acicular neuropodial spines and a few capillary setae in vertical series TROCHOCHAETIDAE (p. 103)
- 32 (29) a. Prostomium with 2 stout palps; anterior of body with minute cylindrical papillae; 4-6 pairs long, stout branchiae on anterior segments (Fig. 24A); neurosetae compound hooded falcigers ACROCIRRIDAE (p. 17)
- b. Prostomium bare; 2 large, grooved tentacular palps or 2 groups of 2-18 tentacular filaments anterior to first setiger (Fig. 24B); long filamentous branchiae inserted above notopodia, few to numerous; all setae simple CIRRHATULIDAE (p. 27)

²If not everted, proboscis observed by incision mid-ventral of tentacular segment.

- 33 (18) a. Some segments much longer than wide (Fig. 25, bamboo worms); neuropodia long transverse row in at least some setigers 34
- b. Segments not longer than wide; neuropodia not long transverse welts 35 ✓
- 34 (33) a. Segments mostly only slightly longer than wide (Fig. 25A); uncini neurosetae in one row; body truncate at both ends; prostomium hood-like or with limbate plate (Fig. 81B); pygidium limbate, spatulate or funnel-like MALDANIDAE (p. 41)
- b. All segments much longer than wide (3-4x) (Fig. 25B); uncini neurosetae in dense fields; prostomium not hood-like OWENIIDAE (p. 56)
- 35 (33) a. Branchiae dorsal to notopodia on dorsal aspect of body (Fig. 26A, 104), simple, strap-like or foliaceous giving ragged brush-like appearance to abdominal region; part of body distinctly an inversed semicircle (☺); parapodia biramous, all setae simple 36 ✓
- b. Branchiae, if present, lateral (Fig. 28C) or branching (Fig. 27C, D), body usually cylindrical; parapodia biramous or uniramous; seta simple or compound 37
- 36 (35) a. Body divided into 2 regions, anterior (thoracic) region with parapodia lateral; posterior (abdominal) region with parapodia dorsal (Fig. 26B); parapodia with projecting lobes, with internal acicula; branchiae present on all posterior segments; no tube ORBINIDAE (p. 54)
- b. Body relatively unregionated (Fig. 26A); parapodia all dorsal, without projecting lobes, no internal acicula; branchiae lacking from posterior segments; tube of mucus and sand or mud PARAONIDAE (p. 58) ✓
- 37 (35) a. Parapodia uniramous, small, with limbate setae (Fig. 41B); first two segments achaetous and apodous; proboscis only slightly eversible, armed with dark chitinous jaws, body cylindrical 38
- b. Parapodia biramous, may be reduced without parapodial lobes, segment 2 usually with setae; proboscis without jaws; body various, grub-like or oligochaete-like (Fig. 28B, 44) 39
- 38 (37) a. Parapodia with hooded hooks; aciculae dark or pale; body earthworm-like (Fig. 27A) LUMBRINERIDAE (p. 40)
- b. Parapodia without hooded hooks; aciculae pale (Fig. 40); body iridescent (Fig. 27B) ARABELLIDAE (p. 23)
- 39 (37) a. Branchiae branched, 4 or 11-13 pairs; portion of body inflated, integument somewhat annulated and checkered (Fig. 27C) 40
- b. Branchiae, if present, cirriform, integument not checkered 41
- 40 (39) a. Branchiae, anterior, 4 pairs (Fig. 27C), they may be small; prostomium small, bilobed or with T-shaped frontal horns; body often anteriorly inflated SCALIBREGIMIDAE (p. 78)
- b. Branchiae, middle region, 11-13 pairs, often pinnate; prostomium small, simple or trilobed; body regionated, posterior region apodous and achaetous (Fig. 27D) ARENICOLIDAE (p. 23)
- 41 (39) a. With a single long cirrus present dorsally on segment 4 reaching to segment 25 (look for scar, may be missing; Fig. 28A); without branchiae; all setae simple, capillary COSSURIDAE (p. 29)
- b. Without cirrus; with or without branchiae, may be posterior only, if lacking branchiae some setae crochet 42
- 42 (41) a. Setae capillary only; branchiae paired, lateral, cirriform, extending along most of body (occasionally lacking) (Fig. 28C); body uniform, may have ventral groove OPHELIIDAE (p. 52)
- b. Setae capillary with or without a row of crochets; branchiae absent or reduced (Fig. 44), posterior only; body weakly divided in two regions, anterior portion somewhat inflated (Fig. 28B), coelomic fluid deep red CAPITELLIDAE (p. 24)

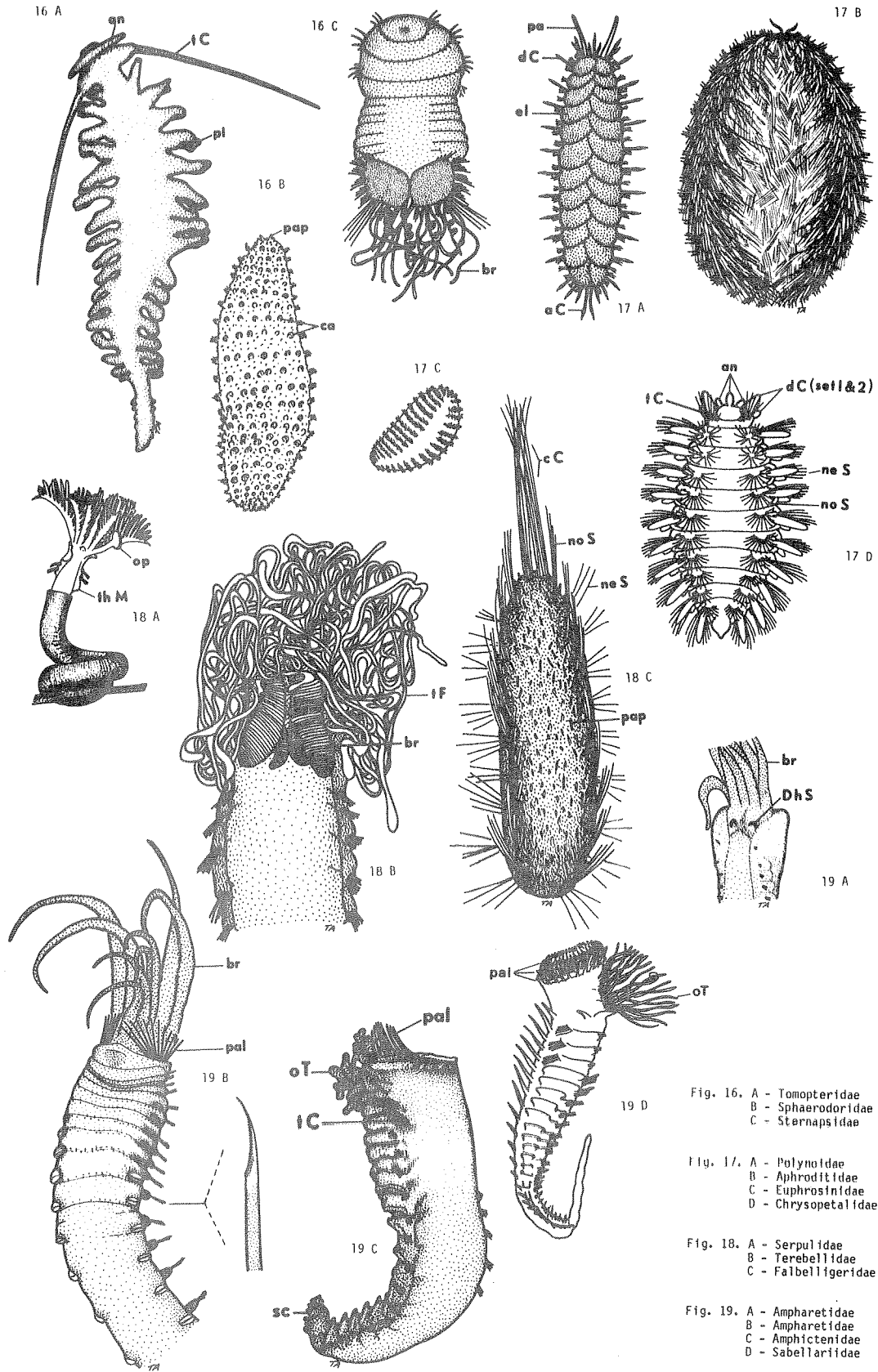


Fig. 16. A - Tomopteridae
B - Sphaerodoridae
C - Sternapsidae

Fig. 17. A - Polynoidea
B - Aphroditidae
C - Euprosinidae
D - Chrysopetalidae

Fig. 18. A - Serpulidae
B - Terebellidae
C - Falbelligeridae

Fig. 19. A - Ampharetidae
B - Ampharetidae
C - Amphictenidae
D - Sabellariidae

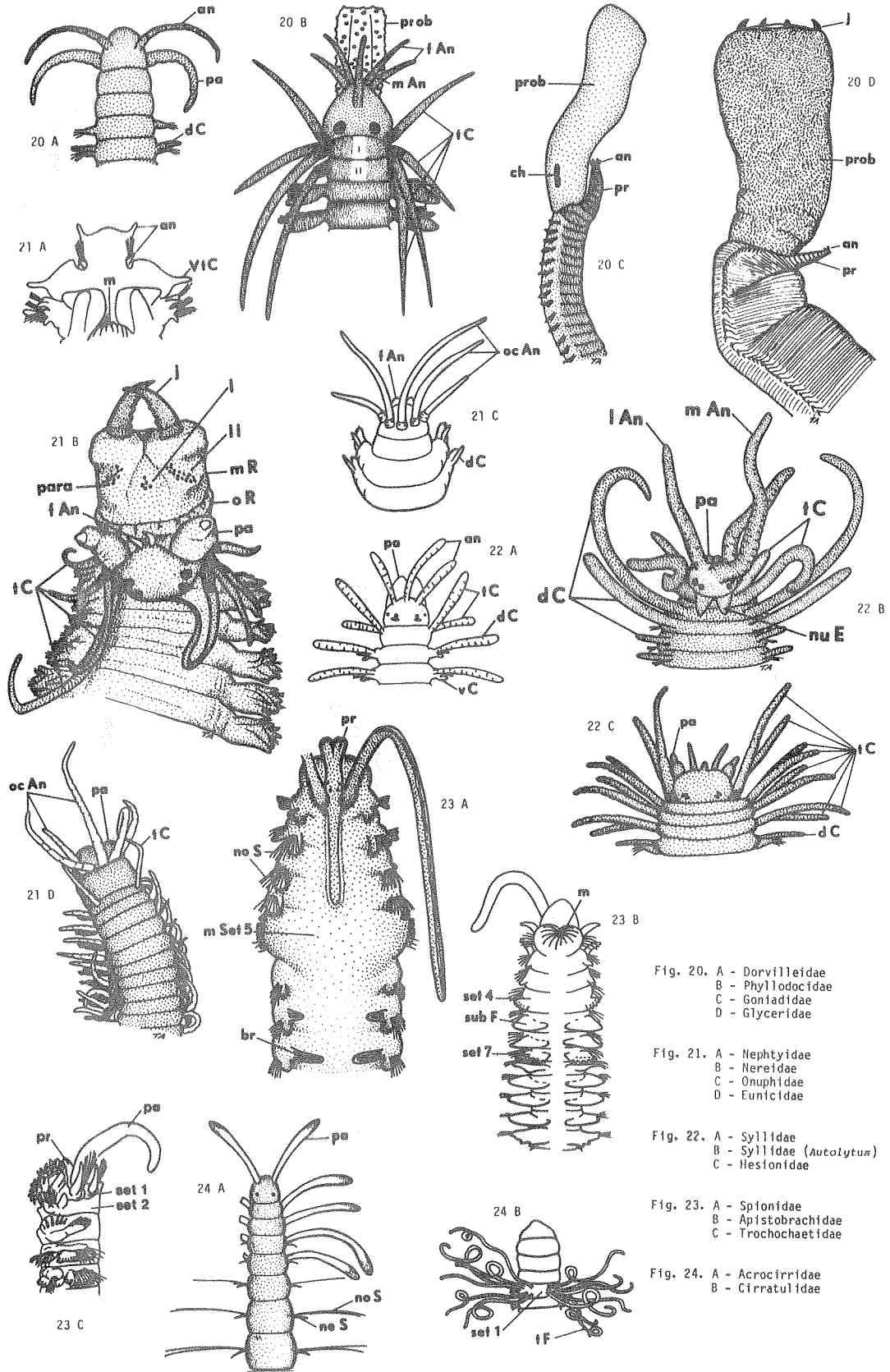


Fig. 20. A - Dorvilleidae
 B - Phyllodocidae
 C - Goniadidae
 D - Glyceridae

Fig. 21. A - Nephtyidae
 B - Nereidae
 C - Onuphidae
 D - Eunicidae

Fig. 22. A - Syllidae
 B - Syllidae (*Autolytus*)
 C - Hesionidae

Fig. 23. A - Spionidae
 B - Apistobrachiidae
 C - Trochochaetidae

Fig. 24. A - Acrocirridae
 B - Cirratulidae

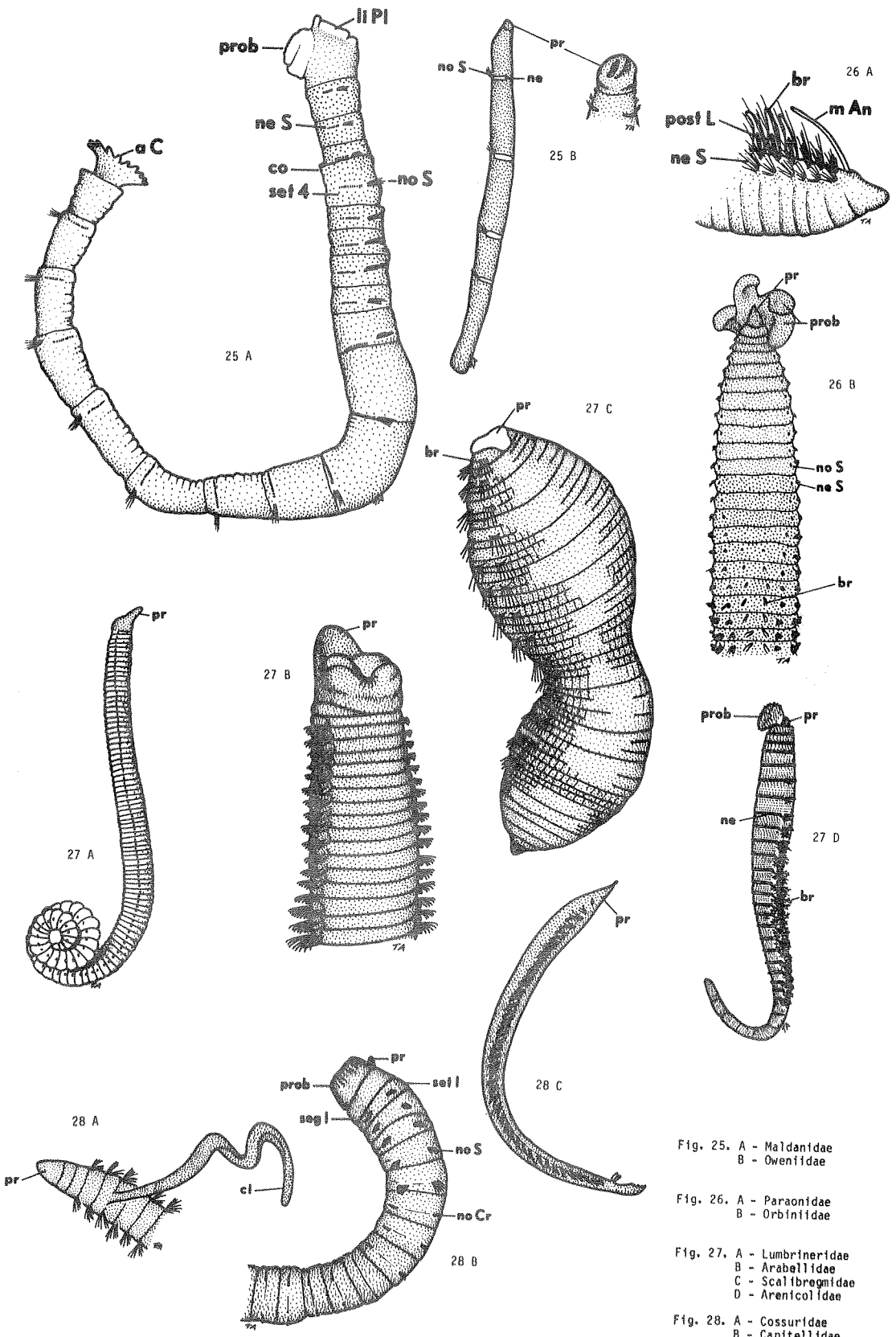


Fig. 25. A - Maldanidae
B - Oweniidae

Fig. 26. A - Paraonidae
B - Orbinidae

Fig. 27. A - Lumbrineridae
B - Arabellidae
C - Scalibregmidae
D - Arenicolidae

Fig. 28. A - Cossuridae
B - Capitellidae
C - Opheliidae

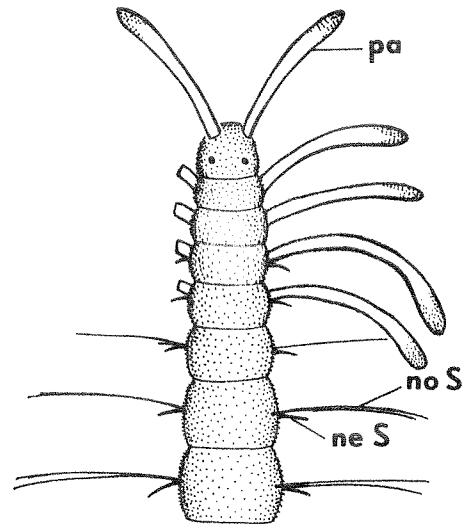
Family ACROCIRRIDAE Banse 1969

Body vermiform; prostomium blunt with 2 large grooved tentacular palps, with eyes; mouth opening subterminal; proboscis unarmed; division of body into thorax and abdomen, weakly indicated externally; epidermis with papillae; several aciculae; notosetae segmented and spinose, neurosetae compound hooded falcigers.

Macrochaeta (Ledon) leidyi (Verrill 1882)

Prostomium with palps; branchiae 4-6 pairs; notosetae almost twice as long as body is wide; length up to 15 mm. Color - dark olive green to brown. Biology - found from the surface to 22 m. This is a species of uncertain standing, not seen since Verrill's original collections (Banse 1969). Distribution - Boreal; Bay of Fundy: 1.

Fig. 29 - Anterior end, dorsal view, approx. 20x (H).



Family AMPHARETIDAE Malmgren 1867

Body divided into 2 distinct regions: 1) thoracic, with dorsal bundles of capillary setae and ventral uncinigerous pinnules; 2) abdominal, with uncinigerous pinnules only. Prostomium more or less distinctly trilobed; oral tentacles numerous, filiform, retractile in mouth; branchiae filiform or subulate, 3-4 pairs, inserted on dorsal part of first segments; with or without paleae; tube membranous, covered with mud or with agglutinated foreign bodies.

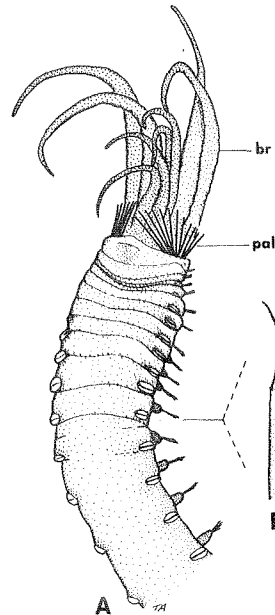
Key to Species

- 1a Paleae present (Fig. 30) 2
- 1b Paleae rudimentary or absent 4

2a Setiger 11 setae modified, distal end reflexed with fine spines on reflexed side (Fig. 30B)
..... *Anobothrus gracilis* (Malmgren 1866)

Paleae 12-14 pairs; branchiae 8; thoracic setigers 15 (1st rudimentary); thoracic uncini teeth 6; abdominal segments 13; pygidium with small papillae; length up to 35 mm, width up to 3 mm. Biology - thick mud tubes. Distribution - Boreal, 18-238 m; Bay of Fundy: 31, 44.

Fig. 30 - A. Anterior end, ventral view, 8x
B. Seta from setiger 11 (Berkeley and Berkeley 1952).

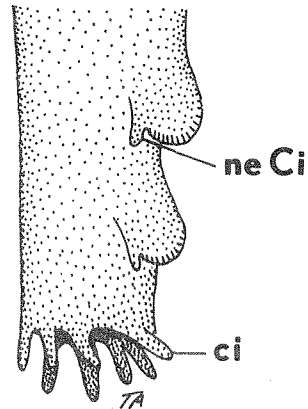


2b Setiger 11 setae unmodified 3

3a Paleae 10-30 pairs; abdominal neuropodial cirri prominent . . *Ampharete acutifrons* (Grube 1860)

Branchiae 8; thoracic setigers 14; thoracic uncini teeth 8-10; abdominal segments 12; pygidium with numerous cirri; length up to 25 mm, width up to 4 mm. Color - transparent, but appears reddish or greenish due to body contents. Biology - found just below low water to 2500 m. Tube membranous with soft grey debris. Distribution - Boreal, Virginian, intertidal - 11 m; Bay of Fundy: 18, 29, 36, 44.

Fig. 31 - Posterior end, lateral view 72x.



3b Paleae 9-16 pairs; abdominal neuropodial cirri inconspicuous . . . *Ampharete arctica* Malmgren 1866

Branchiae 8; thoracic setigers 14; thoracic uncini teeth 6-8; abdominal segments 12-13; pygidium with 2 cirri; length up to 45 mm, width up to 7 mm. Color - transparent but appears reddish or greenish due to body contents. Biology - found from shallow to deep water. Tube with stiff, smooth, compact mud (thicker than in *A. acutifrons*). Distribution - deep water, Bay of Fundy to Arctic; Bay of Fundy; 15, 27, 32, 33, 34, 44.

4a Anterior dorsal hooked setae present, 1 large pair *Melinna cristata* (Sars 1851)

Paleae absent; branchiae 8; thoracic setigers 16; thoracic uncini teeth 4; abdominal segments 50. Biology - euryhaline. Tube of mud, with few small pebbles. Distribution - Boreal, Virginian, intertidal to 300 m; Bay of Fundy: 8, 33, 43, 44.

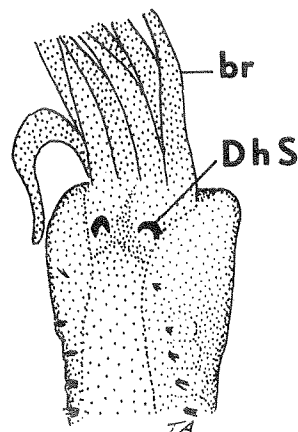


Fig. 32 - Anterior end, dorsal view, branchiae shown only in part, 35x.

4b Anterior dorsal hooked setae absent 5

5a Branchiae 6 (long); thoracic setigers 17; paleae absent *Samytha sexcirrata* (Sars 1856)

Very rare species, listed as Boreal, deepwater by Gosner (1971).

5b Branchiae 8; thoracic setigers 13-14 6

6a Abdominal neuropodial cirri long, digitiform; abdominal segments 15-17 *Sabellides octocirrata* (Sars 1835)

Paleae rudimentary or absent; thoracic uncini teeth 3-4; pygidium with 2 cirri; length up to 10 mm, width up to 1 mm. Distribution - Bay of Fundy: 8, 31.

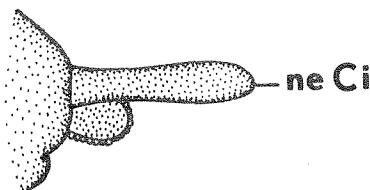


Fig. 33 - Abdominal parapodium (F).

6b Abdominal neuropodial cirri inconspicuous; abdominal segments 13-14 *Asabellides oculata* (Webster 1879)

Paleae absent; thoracic uncini teeth 5; pygidium with 2 cirri; length up to 20 mm. Color - transparent, but appears red due to blood. Biology - euryhaline. Found from 4 to 16 m. Distribution - warmwater species, Bay of Fundy - south: Bay of Fundy; 18, 21, 33, 36, 70.

Family AMPHICTENIDAE (=PECTINARIIDAE) Quatrefages 1865

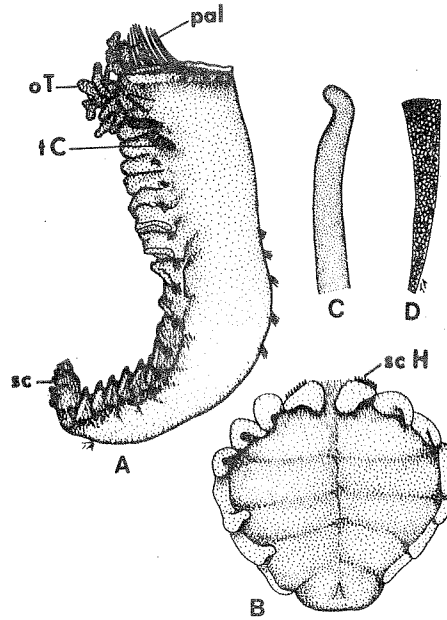
Body short, conical, few segments, divided into three regions: anterior thoracic; median abdominal; posterior scaphe. Prostomium reduced; first setiger with 2 bundles of paleae (strong setae forming a comb used in digging); numerous prehensile oral tentacles present ventral to paleae; with 2 pairs tentacular cirri; tube rigid, fragile, more or less tusk-shaped, built of fine to coarse sand.

Key to Species

1a Cephalic paleae 7-10 pairs with heavy blunt tips; scaphal hooks 6-10 pairs with distinct shoulder (Fig. 34C) *Cistena granulata* (Linnaeus 1767)

Length up to 52 mm, width up to 8 mm. Color - paleae are shiny gold. Biology - found intertidally in tidepools, under rocks and in mussel beds, to 50 m. Forms a beautifully arched conical tube of a single layer of coarse sand grains cemented together. Distribution - Boreal, 27-55 m; Bay of Fundy: 1, 8, 15, 18, 19, 21, 36, 44.

Fig. 34A - Entire, dorsolateral view, 4x; B - Scaphe, dorsal view, 17x; C - Scaphal hook (Pettibone 1952); D - Tube, 0.5x.



1b Not as above 2

2a Scaphal hooks 15-16 pair, without shoulder, terminating in small knob *Cistena gouldii* (Verrill 1873)

Cephalic paleae 9-15 pairs with slender pointed tips; length up to 40 mm, width up to 7 mm. Color - paleae are shiny gold. Biology - found in fairly clean sand where wave action is considerable. A common euryhaline species. Tube long, conical, covered with a very fine light-colored sand, fragile and translucent; it is open at both ends, the smaller end directed upward and open at the surface. Distribution - Virginian, intertidal to 30 m; Bay of Fundy: 15, 18, 19, 21, 36, 44.

Fig. 35 - Scaphal hook (Pettibone 1952).



2b Scaphal hooks 6-9 pairs, without shoulder, tapering gradually

..... *Cistena hyperborea* (Malmgren 1866)

Cephalic paleae 10-15 pairs with slender pointed tips. Length up to 55 mm, width up to 12 mm. Color - paleae shiny gold. Biology - dredged. Tube made of fine sand. Distribution - Boreal, deep water.

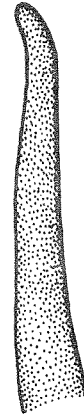


Fig. 36 - Scaphal hook (Pettibone 1952).

Family APHRODITIDAE Malmgren 1867

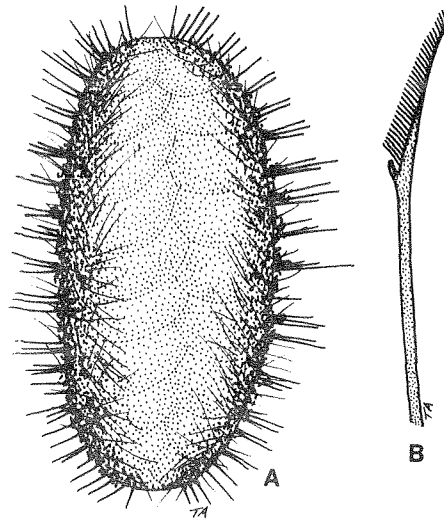
Body short and broad, with 15-20 pairs, large, overlapping elytra; dorsum completely or partially covered by a feltage composed of fine capillary notosetae, large brownish protective spines, and mucus, mud, sand, debris; ventral surface and parapodia covered with globular papillae.

Key to Species

1a Dorsal feltage usually not covering elytra completely (may be absent); neurosetae with unilateral fringe and a basal spur (Fig. 37B) *Laetmonice filicornis* Kinberg 1855

Ocular peduncles present; median antenna long, inflated at the tip. Notosetae: capillary; large protective, with barbed tips. Length up to 90 mm, width up to 45 mm. Biology - found on bottoms of mud and fine sand, restricted mostly to the open sea in 34-4716 m. Distribution - Davis Strait to Gulf of Mexico; Bay of Fundy: deep water.

Fig. 37 - A. Entire, dorsal view, 6x; B. Neuroseta, 50x.

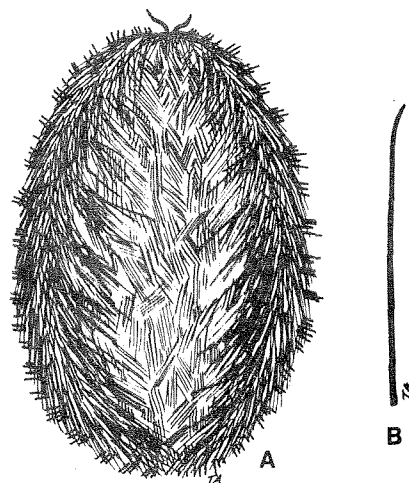


1b Dorsal feltage a thick tangled matting completely covering elytra; neurosetae pointed to slightly hooked, without unilateral fringe or basal spur (Fig. 38B)

..... *Aphrodita hastata* Moore 1905

Ocular peduncles absent; median antenna short. Notosetae: capillary; large protective, without barbed tips. Length up to 150 mm, width up to 75 mm. Biology - the "Sea Mouse" is usually found on bottoms of mud to 1991 m, and is sometimes found washed up on shore after a storm. Distribution - Gulf of St. Lawrence to Chesapeake Bay; Bay of Fundy: 1, 8, 15, 27, 31, 44, 49, 83, 86.

Fig. 38 - A. Entire, dorsal view, 6x; B. Neuroseta, 50x.



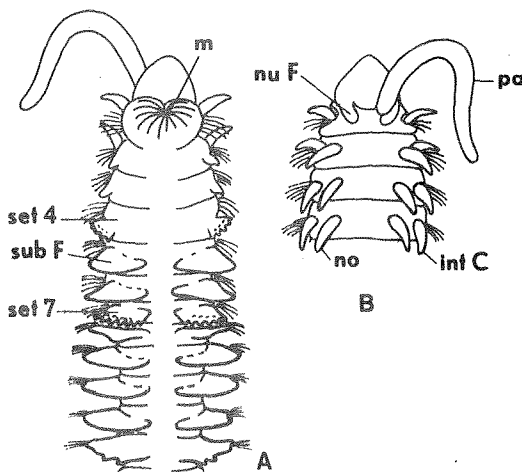
Family APISTOBRANCHIDAE Mesnil and Caullery 1898

Body small, elongate, vermiform, fragmenting readily; prostomium and buccal segment fused, with a pair of nuchal folds and a pair of long contractile tentacular palps; without branchiae, antennae, or eyes; with anal cirri; body divided into 2-3 more or less distinct regions, neuropodia of anterior and middle regions with numerous rows of simple setae and fimbriated subpodal flanges on some segments, notopodia in anterior region with interramal cirri, without notosetae.

Apistobranchus tullbergi (Théel 1879)

Color - white or yellowish white; setae yellowish brown or reddish amber colored. Biology - probably live in tubes. Dredged on bottoms of fine to coarse sand, soft mud, clay with shells, sand with gravel and shells, from low water to 90 m. Distribution - Gulf of St. Lawrence to Massachusetts; Bay of Fundy: 5, 8.

Fig. 39 - A. Anterior end, ventral view (P); B. Anterior end, dorsal view (P).



Family ARABELLIDAE Hartman 1944

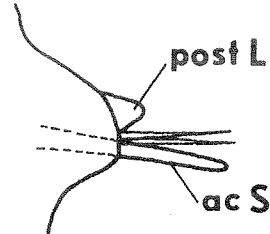
Body elongate, cylindrical, of nearly uniform width; prostomium conical or flattened spatulate lobe, without appendages, with or without eyes; parapodia essentially uniramous, without hooded hooks; without dorsal and ventral cirri and branchiae; pygidium with 2-4 short anal cirri; proboscis eversible, with jaw pieces; body color iridescent in living specimens.

Key to species

- 1a With stout acicula or acicular setae projecting from parapodia
 *Drilonereis magna* Webster and Benedict 1887

Eyes absent; length up to 330 mm, width up to 3 mm. Color - light brown to pink iridescence. Biology - found in mud, gravel and fine to coarse sand, from low water to 1080 m. Distribution - Newfoundland to Gulf of Mexico; Bay of Fundy: 5, 8, 32

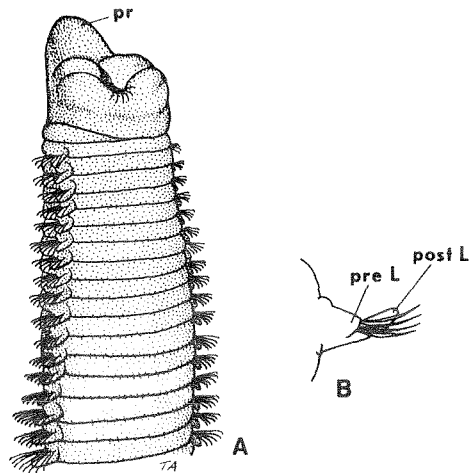
Fig. 40 - Parapodium (P)



- 1b Without acicula or acicular setae projecting from parapodia (Fig. 41B)
 *Arabella iricolor* (Montagu 1804)

Eyes 4; length up to 600 mm, width up to 5 mm. Color - reddish or brownish, with brilliant iridescence. Biology - the "opal worm" secretes a thick coat of mucus, and is common in sand and muddy sand, under rocks, among mussels, etc., from the intertidal zone to 90 m. Distribution - Cosmopolitan in temperate and tropical zone, Bay of Fundy to Florida; Bay of Fundy: 8, 18, 21, 28, 44.

Fig. 41 - A. Anterior end, ventrolateral view, 10x; B. Middle parapodium, anterior view (P).



Family ARENICOLIDAE Johnston 1835

Prostomium blunt, small; body divided into 2 or 3 regions, second or abdominal branchial region with pair of dorsal branched gills on each segment; notopodia conical, with capillary setae; neuropodia uncinigerous tori.

Arenicola marina Linnaeus 1758

Body with caudal apodous and achaetous region (third region); branchiae branched or pinnate; proboscis papillate; epidermis thick and strongly areolated. Color - grey to greenish grey. Biology - the "lugworm" found in U-shaped burrows in sand or gravel from the lower intertidal zone to 40 m. Common on flat, sandy-mud beaches. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 1, 8, 17, 44.

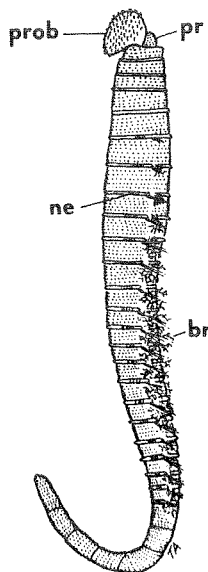


Fig. 42 - Generalized *Arenicola*, 1x.

Family CAPITELLIDAE Grube 1862

Prostomium conical, more or less retractile, without appendages. Body weakly divided into 2 regions: anterior thoracic, somewhat inflated; posterior abdominal, longer and thinner. Parapodia reduced to bundles of capillary setae or to dorsal and ventral uncinigerous tori bearing a row of crotchets. Coelomic fluid deep red. Burrow in galleries coated with a thin layer of mucus. The most earthworm-like of the common marine polychaetes.

Key to Species

- 1a Thoracic segments 12; setae begin on thoracic segment 2 (Fig. 43); branchiae present in abdominal region (Fig. 44) 2
- 1b Thoracic segments fewer than 12; branchiae absent 3
- 2a Capillary setae on first 5 setigers *Heteromastus filiformis* (Claparède 1864)

Genital hooks absent; length up to 40 mm, width up to 0.5 mm. Color - dark purplish red anteriorly, flesh-color to bright red posteriorly. Biology - common in mud from low water to 60 m (present study). Very common and occurring in tremendous numbers on soft mud in Chignecto Bay and Minas Bay. Distribution - Boreal; Bay of Fundy: 26, 32, 52, 54, 55, 58, 59, 60, 64, 70, 71.

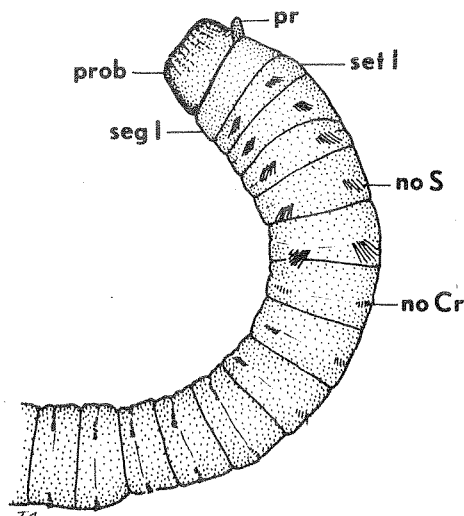
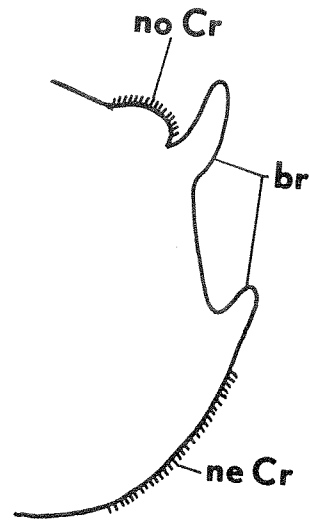


Fig. 43 - Anterior end, lateral view, 25x.

2b Capillary setae on first 11 setigers *Notomastus latericeus* Sars 1850

Genital hooks absent; length up to 200 mm, width up to 4 mm. Color - anterior region blood red, light yellowish posteriorly. Biology - found in muddy sand, shallow euryhaline. Distribution - Boreal-Virginian.

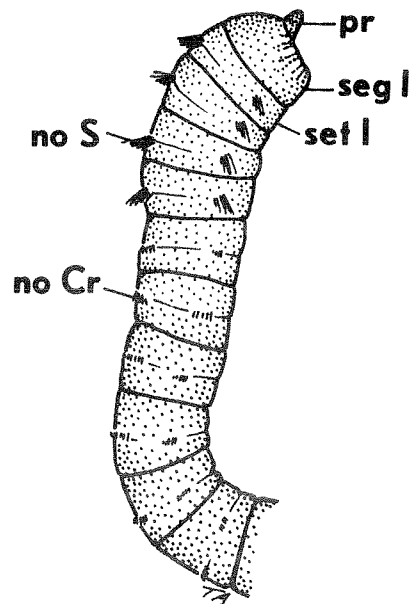
Fig. 44 - Parapodium from posterior region (Pettibone 1952).



3a Capillary setae on first 4 setigers; thoracic segments 11; setae begin on segment 2 *Mediomastus ambiseta* (Hartman 1944)

Setae begin on thoracic segment 2; genital hooks absent; length up to 12 mm, width up to 0.5 mm. Biology - found in mud from low water to 60 m (present study). Distribution - Bay of Fundy: 15, 17, 29, 33.

Fig. 45 - Anterior end, lateral view, 35x.



3b Capillary setae on first 7 setigers; thoracic segments 9; setae begin on segment 1 *Capitella capitata* (Fabricius 1780)

Genital hooks absent in female, present in male between setigers 8 and 9; length up to 100 mm, width up to 2 mm. Color - anterior end red-pink becoming more yellowish posteriorly. Biology - found in sand, mud or gravel in estuarine and marine habitats from low water to 1000 m. The typical polychaete, of enriched, oxygen deficient muds, typically found in polluted situations such as sewage outfalls and around fish processing plants. Distribution - Gulf of St. Lawrence to Caribbean; Bay of Fundy: 9, 15, 17, 18, 36, 43, 70.

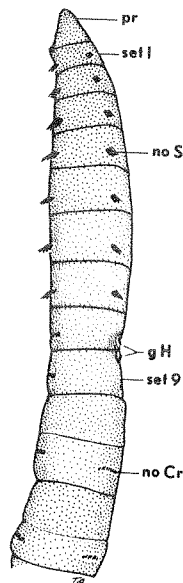


Fig. 46 - Anterior end, lateral view, male, 8x.

Family CHRYSOPETALIDAE Ehlers 1864

Prostomium with 3 antennae, 2 ventral palps, 0-4 eyes; with 1-4 pairs tentacular cirri; parapodia biramous; notosetae simple, in lateral tufts curving dorsally and forming fan-shaped groups; neurosetae compound; without branchiae *Dysponetus pygmaeus* Levinsen 1879

Body minute, elongate oval; prostomium with 3 short elliptical antennae, globular palps; parapodia biramous from setiger 3 on; anal segment prolonged into conical cirriform structure; length up to 3 mm, width up to 1.5 mm. Noto-setae do not form expanded palae as in other chrysopetalids. Biology - dredged on sandy bottom and found in holdfasts of *Laminaria*, from low water to 50 m. Distribution - Greenland to Maine; Bay of Fundy: 5, 8.

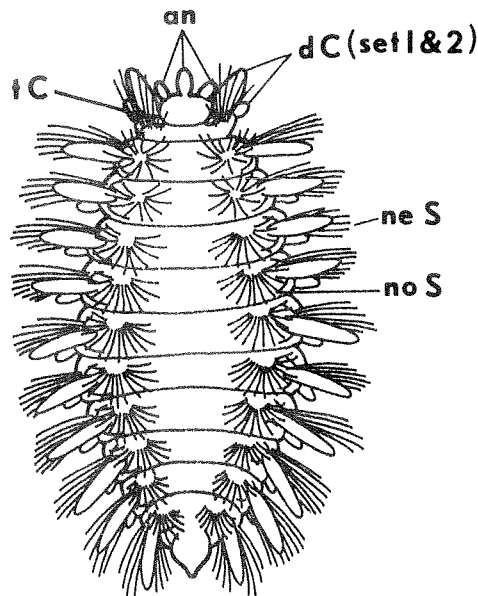


Fig. 47 - Entire, dorsal view (P).

Family CIRRATULIDAE Carus 1863

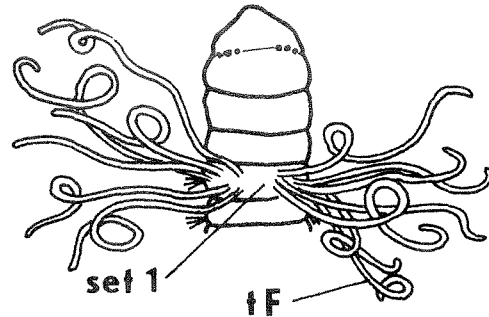
Body cylindrical with numerous short segments; prostomium small, conical, without appendages; with or without eyes; with one pair of grooved spioniform palps, or number of grooved tentacular filaments inserted on dorsal surface of an anterior segment; branchiae simple, filamentous, long, contractile, inserted above notopodia on few to many segments; parapodia reduced; all setae simple, capillary or acicular crotchets; without dorsal, ventral, or anal cirri; proboscis unarmed.

Key to Species

1a Large, grooved tentacular palps absent; tentacular filaments in 2 groups of 2-18 on first setiger *Cirratulus cirratus* (Müller 1776)

Eyes 2-7 in a row; branchiae numerous; setae capillary and acicular crotchets; length up to 300 mm, width up to 5 mm. Biology - found from low water to 2900 m. Distribution - Boreal; Bay of Fundy: 1, 8, 15, 70.

Fig. 48 - Anterior end, dorsal view, approx. 2x (F).

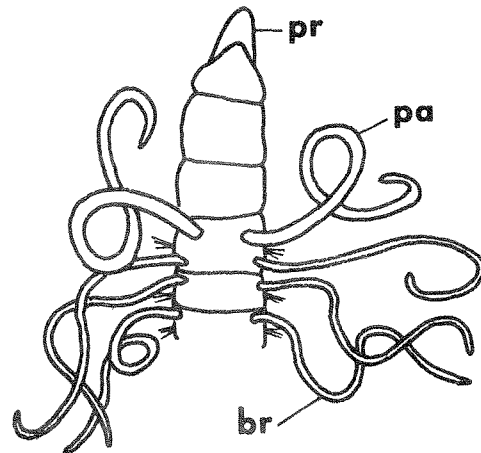


1b Large, grooved tentacular palps present; tentacular filaments absent; with numerous long branchiae (Fig. 49) 2

2a All setae capillary; distally pointed *Tharyx acutus* Webster and Benedict 1887

Body elongate; prostomium pointed, with pair of dorsolateral nuchal slits; branchiae long, cirriform, begin on setiger 1, diminish in length posteriorly; length up to 15 mm, width up to 1 mm. Color - brown, yellow or yellowish white, with numerous brown specks. Biology - found in sand or sandy mud, from 10-20 m. Distribution - Boreal; Bay of Fundy: 8, 15, 24, 26, 27, 28, 32, 33, 36, 44, 45, 46, 70.

Fig. 49 - Anterior end, dorsal view, approx. 16x (F).



2b Acicular setae (crotchets) present as well as capillaries, former sometimes restricted to posterior segments (Fig. 51B) 3

3a Branchiae 4-6 pairs; setae capillary finely serrated on one edge, and crotchets
..... *Dodecaceria concharum* Oersted 1843

Body thick, often flattened and widened posteriorly; branchiae occurring only in anterior region, decreasing in length from prostomium; length up to 60 mm, width up to 3 mm. Color - ranges from dark green to black. Biology - found on calcareous substrate from 30-50 m. Distribution - Boreal; Bay of Fundy: 18, 70.

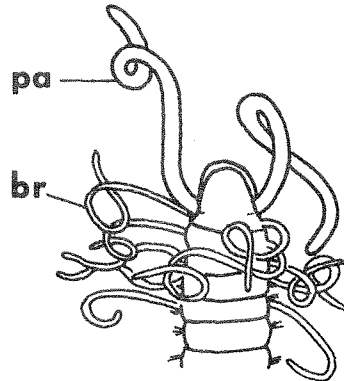


Fig. 50 - Anterior end, dorsal view, approx. 6x (F).

3b Branchiae numerous, more than 6 pairs 4

4a Acicular crotchets in posterior segments distally entire (unidentate), almost encircling body in posterior region (Fig. 51B) *Chaetozone setosa* Malmgren 1867

Body elongate, fusiform, with branchiae along entire surface; prostomium conical, acutely pointed; length up to 25 mm, width up to 2 mm. Color - grey to brown. Biology - found from low water to 2600 m. Distribution - Boreal; Bay of Fundy: 8, 15, 17, 18, 32, 38, 43, 45, 70.

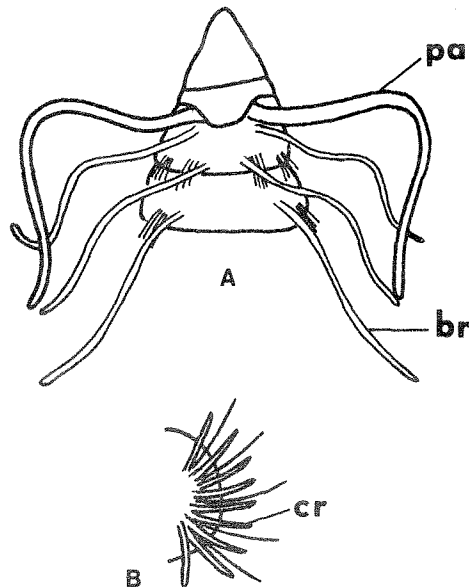


Fig. 51 - A. Anterior end, dorsal view, approx. 10x (F); B. Posterior segment, approx. 32x (F).

4b Acicular crotchets in posterior segments distally bi- or multifid (Fig. 11)
..... *Caulleriella fragilis* Leidy 1855

Body cylindrical; prostomium conical, pointed, with 2 eyes; aciculae in 2 rows, 5-8 in each fasciculus; length 6-7 mm, width 0.5 mm (approx.). Color - reddish orange or bright lemon yellow, posterior may be greenish. Emit a bluish fluorescence when irritated. Biology - found under stones in low water, and in *Laminaria* holdfasts and between barnacles in the intertidal zone. Distribution - Bay of Fundy: 70.

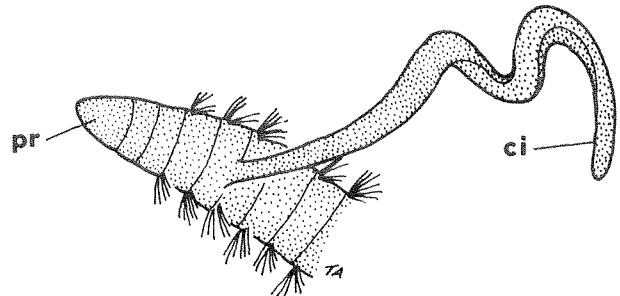
Family COSSURIDAE Day 1963

Prostomium without appendages, with a single long median cirrus dorsally on one anterior setiger; proboscis a ventral pad; parapodia biramous, with reduced parapodial lobes; all setae simple.

Cossura longocirrata Webster and Benedict 1887

With a single long median cirrus on 4th segment, reaching to segment 25. Biology - a burrower common in sand and especially in deep slope and abyssal muds. Distribution - Boreal; Bay of Fundy: 8, 24, 32, 45, 46.

Fig. 52 - Anterior end, dorsal view, 50x.



Family DORVILLEIDAE Chamberlin 1919c

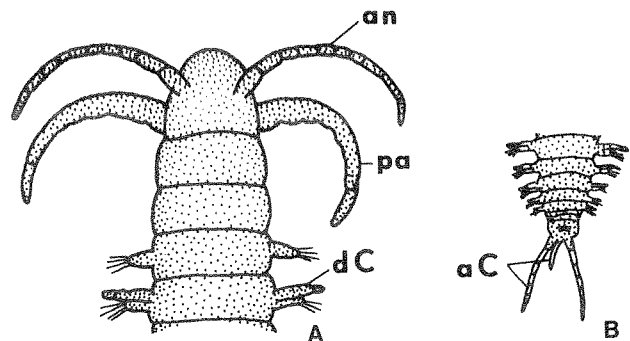
Body slender, small to minute; prostomium with 2 more or less articulated antennae, 2 ventral palps, 0-4 eyes; maxillae consist of 4 series of very numerous chitinous pieces; with dorsal and ventral cirri; with 2-4 anal cirri; without branchiae.

Key to Species

1a Prostomium without eyes; prostomial antennae long, with 10-15 articles
..... *Stauronereis caecus* (Webster and Benedict 1884)

Anal segment with 3 anal cirri, lateral-ventral pair longer and annulated, median-ventral one shorter; length up to 8 mm, width up to 0.6 mm. Color - white. Biology - found at low water in sand, where they secrete abundant mucus and may form temporary tubes. Dredged on bottoms of mud, sand, tubes, shells, and among tunicates. Distribution - Gulf of St. Lawrence to Massachusetts; Bay of Fundy: 70.

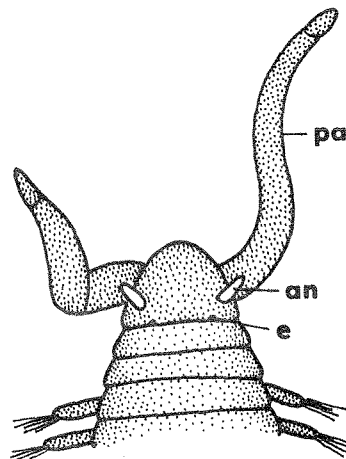
Fig. 53 - A. Anterior end, dorsal view (P); B. Posterior end, dorsal view (P).



1b Prostomium with eyes; prostomial antennae small . . . *Protodorvillea kefersteini* McIntosh 1869

Palps well developed; length up to 5 mm.
Biology - occurs in shallow and low water where they secrete abundant mucus and burrow in sand, forming temporary tubes. Distribution - Bay of Fundy: 17.

Fig. 54 - Anterior end, dorsal view.



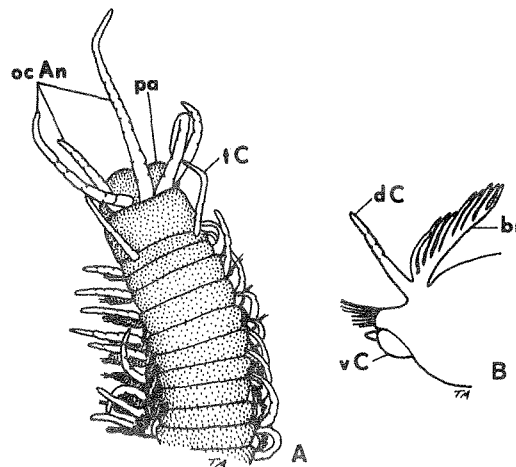
Family EUNICIDAE Savigny 1818

Body elongate, tapered posteriorly; prostomium with 1, 3, or 5 occipital antennae, palps fused to prostomium and indicated by a deep median groove ventrally, frontal antennae absent, with usually 2 eyes; parapodia uniramous; branchiae, when present, appended to medial side of dorsal cirri; with 2-4 anal cirri.

Eunice pennata (O. F. Müller 1776)

With 2 tentacular cirri on dorsal side of second segment; acicula yellow; branchiae begin on setiger 3, continue to setigers 40-50, with middle and posterior parts of body without branchiae, pectinately branched; length up to 150 mm, width up to 8 mm; tube thin, rough, with debris. Biology - dredged on most types of bottoms; may be associated with corals. Their parchment-like tubes are frequently attached to stones and empty shells. Found from low water to 2848 m. Distribution - Greenland to off Florida; Bay of Fundy: 1.

Fig. 55 - A. Anterior end, dorsal view, 6x;
B. Parapodium, posterior view, 12x.



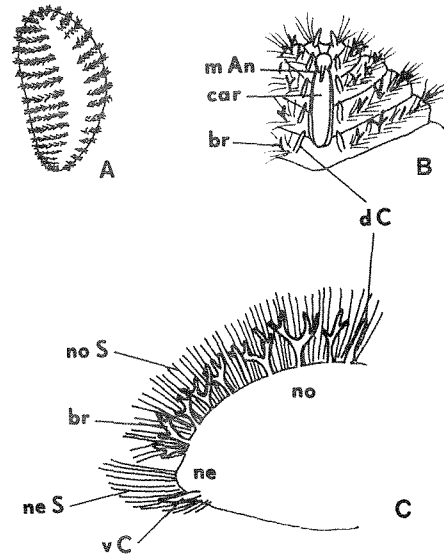
Family EUPHROSINIDAE Williams 1851

Body short, elliptical; ventrum flat, dorsum convex and bristly, formed by elongated, ridge-like, transverse, setigerous notopodia with numerous spine-like notosetae nearly covering the dorsum; prostomium elongated, folded over anterior end, with caruncle extending posteriorly; parapodia biramous, with rami slightly distinct; branchiae present, dicotomously branched; anal cirri a pair of oval, cushion-like lobes.

Euphrosine borealis Oersted 1843

Biology - dredged on bottoms of mud, rocks, stones, sand and gravel, from 36-229 m.
Distribution - Arctic to Massachusetts; Bay of Fundy: 1, 82.

Fig. 56 - A. Entire, dorsal view, 1x; B. Anterior end, dorsal view (P) C. Parapodium, posterior view (P).



Family FLABELLIGERIDAE Saint-Joseph 1894

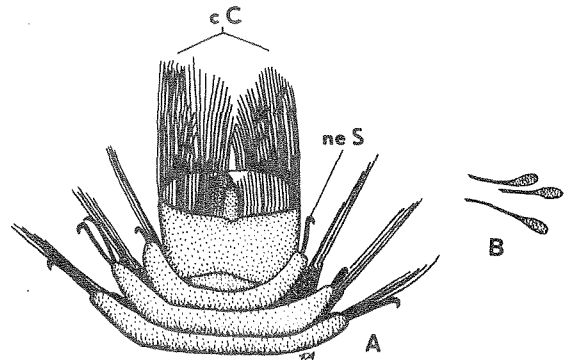
Body cylindrical or fusiform, most forms with epidermal papillae; prostomium and buccal segment forming a retractile tube, with eyes, 2 large palps, numerous filiform cephalic branchiae; parapodia biramous, with notosetae and neurosetae (setae of first segments may be prolonged forward to form a cephalic cage). Supplementary tabular comparison p. 108.

Key to Species

- 1a Cephalic cage present (Figs. 57A, 58) 2
- 1b Cephalic cage absent 6
- 2a Body covered with a thick mucous mantle containing numerous, elongate papillae with bulbous tips (Fig. 57B); neurosetae 1-2 large hooks *Flabelligera affinis* Sars 1829

Notosetae capillary; length up to 130 mm, width up to 15 mm. Biology - found from the intertidal zone to 40 m. The thick transparent mantle of mucus may be covered with mud on the outside. Distribution - Arctic to Boreal; Bay of Fundy: 1, 8, 18, 21, 33, 34.

Fig. 57 - A. Anterior end, ventral view (mucus mantle removed) 12x; B. Papillae, 50x.

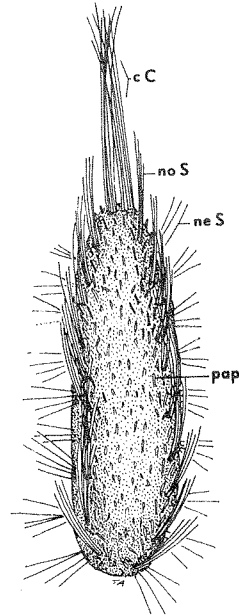


2b Mucus mantle absent 3

3a Both neurosetae and notosetae long, capillary (notosetae directed dorsally); papillae numerous, elongate *Diplocirrus hirsutus* (Hansen 1879)

Length up to 25 mm, width up to 2 mm. Color - pale greenish. Biology - found in shallow water. Distribution - Boreal; Bay of Fundy: 18, 32, 33, 36.

Fig. 58 - Entire, dorsal view, 16x.

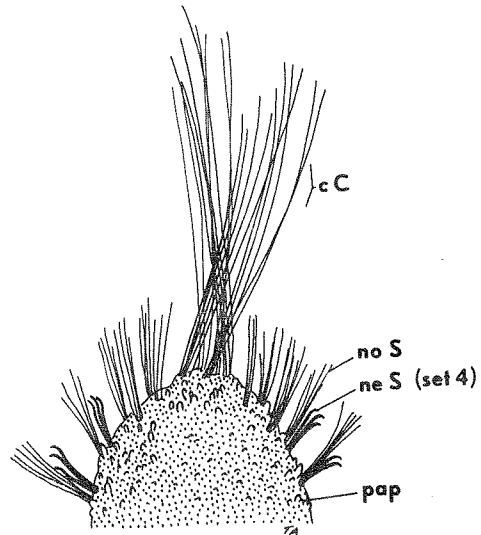


3b Neurosetae hooked, not capillary 4

4a Capillary setae on first 3 setigers, the hooked neurosetae beginning on setiger 4; papillae elongate, cylindrical or capitate *Pherusa plumosa* (Muller 1776)

Notosetae capillary; length up to 60 mm, width up to 5 mm. Color - grey or brown, with the papillae agglutinated with sand and mud. Biology - found from 15-20 m. Distribution - Boreal; Bay of Fundy: 8, 21.

Fig. 59 - Anterior end, ventral view, 25 x.

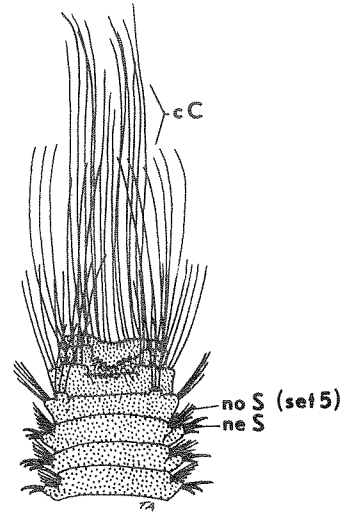


4b Hooked neurosetae beginning on setiger 5 5

5a Papillae short granulous; notosetae capillary, after setiger 5, 6-10 per bundle
. *Pherusa affinis* (Leidy 1855)

Length up to 60 mm, width up to 3.5 mm.
Biology - found intertidally and in shallow water, in mud. Distribution - Arctic to Boreal; Bay of Fundy: 16, 19, 21, 44.

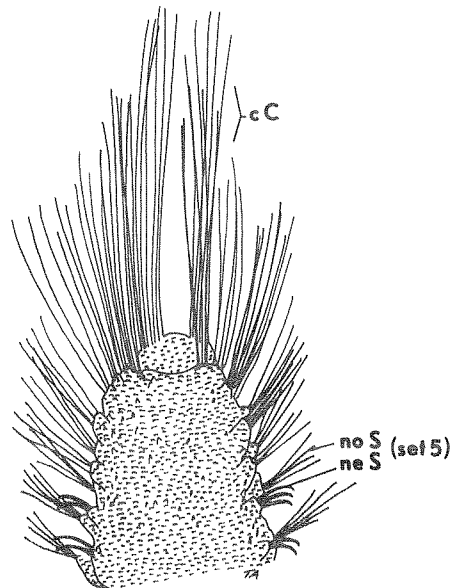
Fig. 60 - Anterior end, dorsal view, 6x.



5b Papillae elongate and stout; notosetae capillary, after setiger 5, 4-5 per bundle
. *Pherusa aspera* (Stimpson 1854)

Length up to 50 mm. Biology - found on shelly bottoms in 45 m. Distribution - Boreal; Bay of Fundy: 24, 28.

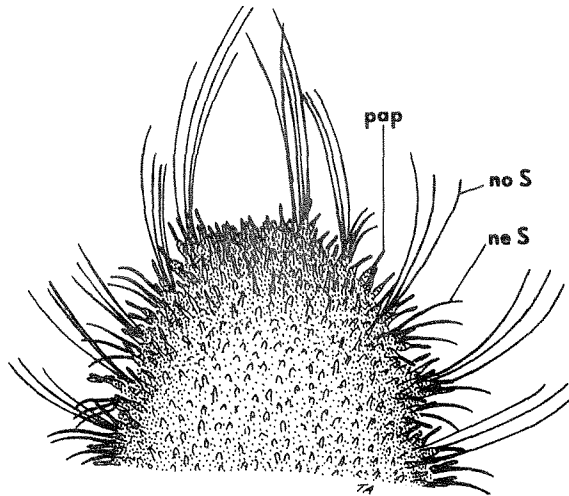
Fig. 61 - Anterior end, ventral view, 25x.



6a Notosetae capillary, long and slender, well developed, 2-5 per bundle; neurosetae 3-6 large setae with fragile tips *Brada villosa* (Rathke 1843)

Papillae cylindrical with clavate ends especially long and arranged in rosettes around the neurosetae, covered with adherent sand; length up to 60 mm, width up to 9 mm. Color - body may be a grayish-brown; neurosetae are amber-colored with transparent tips. Biology - found in 14-450 m, often among mussels. Distribution - Boreal; Bay of Fundy: 16, 29, 33, 36.

Fig. 62 - Anterior end, dorsal view, 25x.

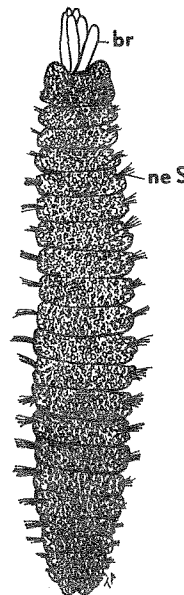


6b Notosetae capillary, poorly developed, 0-2 per bundle; neurosetae 4-9 large setae with curved tips 7

7a Notosetae 2 per bundle; neurosetae 4-6 large setae; papillae elongate, conical, 2/3 covered with sand *Brada granosa* Stimpson 1854

Notoetiae very delicate, indistinct; length up to 18 mm, width up to 4 mm. Biology - found from low water to 54 m. Distribution - Boreal; Bay of Fundy: 6, 8.

Fig. 63 - Entire, ventral view, 5x.



7b Notosetae 0-2 per bundle; neurosetae 4 (2-9) large setae; papillae small, globular, covered with thin layer of sand *Brada inhabilis* (Rathke 1843)

Notosetae very delicate, indistinct; length up to 60 mm, width up to 12 mm. Biology - found in low water to 1097 m. Distribution - Bay of Fundy, 1.

Family GLYCERIDAE Grube 1850

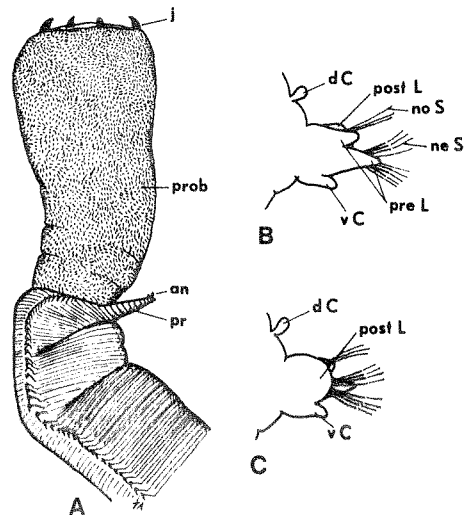
Body rounded, long, tapering gradually toward both ends; body either with only uniramous or only biramous parapodia; prostomium small, sharply conical, transversely annulated, with 4 minute antennae; dorsal cirri small globular, ventral cirri larger, conical; 2 anal cirri; branchiae present or absent; proboscis muscular, armed distally with 4 equally-spaced, large, dark, hooked jaws, surface of proboscis covered with small papillae giving a velvety aspect; common name "bloodworm" associated with its pinkish to red body color.

Key to Species

1a Anterior and middle parapodia with 1 post- and 2 presetal lobes; branchiae absent (Fig. 64B) *Glycera capitata* Oersted 1843

Segments usually triannulate; length up to 150 mm, width up to 8 mm. Biology - not common, but found in sand, mud and muddy gravel, from low water to 3800 m. Distribution - Arctic and Antarctic, to mid latitudes in deep water; Bay of Fundy: 1, 8, 15, 44.

Fig. 64 - A. Anterior end, lateral view, 4x; B. Middle parapodium, anterior view (P); C. Middle parapodium posterior view (P).

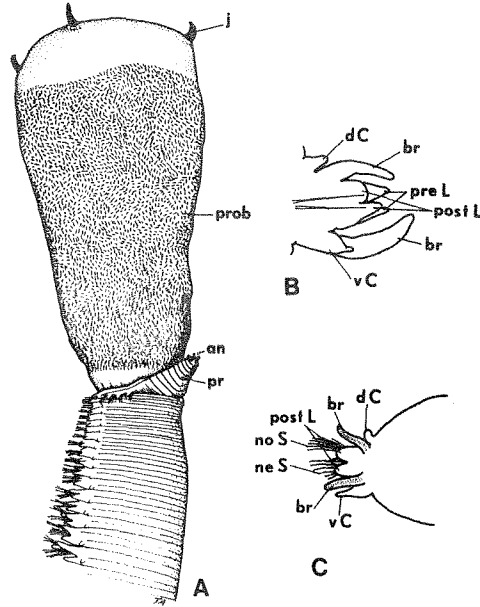


1b Anterior and middle parapodia with 2 post- and 2 presetal lobes; branchiae present (Fig. 65B) 2

2a Branchiae nonretractile, digitiform, above and below setal lobes (Fig. 65C); length up to 370 mm, width up to 11 mm *Glycera dibranchiata* Ehlers 1868

Segments usually biannulate. Color - pale pink or purplish, with large black jaws. Biology - euryhaline, very common on intertidal mud flats, found to 440 m. Often used as fish bait (Klawe and Dickie 1957). Distribution - Gulf of St. Lawrence to Florida; Bay of Fundy: 8, 10, 13, 15, 17, 21, 23, 26, 29, 31, 45, 46, 52, 54, 55, 70, 71, 75, 79, 84.

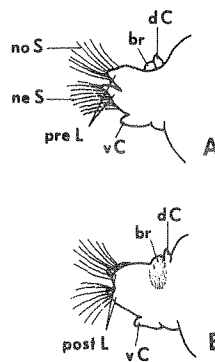
Fig. 65 - A. Anterior end, lateral view, 4x; B. Parapodium from setiger 25, posterior view, setae omitted (P); C. Middle parapodium, posterior view (P).



2b Branchiae retractile, blisterlike, above setal lobes; length up to 800 mm, width up to 22 mm *Glycera robusta* Ehlers 1868

Segments usually biannulate. Biology - a common deep burrower found in sand and sandy mud from low intertidal to 400 m. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 84.

Fig. 66 - A. Middle parapodium, anterior view (P); B. Middle parapodium, posterior view (P).



Family GONIADIDAE Kinberg 1866

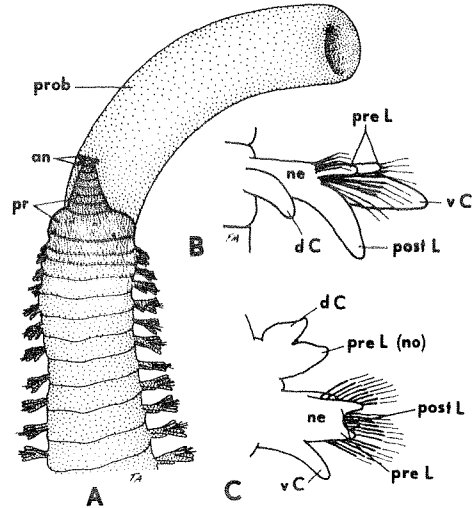
Body long, slender; shorter anterior region with uniramous parapodia, longer posterior region with biramous parapodia and rami well separated; prostomium long, conical, transversely annulated; proboscis 1 pair dentate jaws; small distal ring with 4 small, usually biarticulated antennae; parapodia with well developed dorsal and ventral cirri; branchiae absent.

Key to Species

1a Chevrons on proboscis absent; 58 (56-64) uniramous parapodia; anterior parapodia with bilobed presetal and entire postsetal lobes (Fig. 67B); length up to 760 mm, width up to 14 mm *Ophioglycera gigantea* Verrill 1885

Color - Iridescent dark blue with bright red parapodia. Biology - found in mud, intertidally to 50 m, sexual forms planktonic. Distribution - Nova Scotia to Rhode Island; Bay of Fundy: 15, 16, 36, 44.

Fig. 67 - A. Anterior end, dorsal view, 4x; B. Anterior uniramous parapodium, dorsal view, 18x; C. Posterior biramous parapodium, anterior view (P).

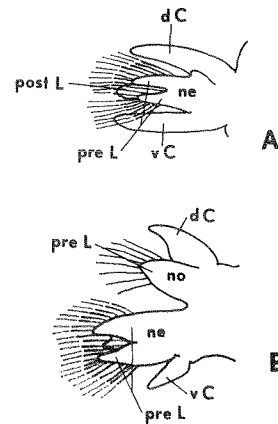


1b Chevrons on proboscis present (Fig. 69) 2

2a Anterior parapodia with bilobed presetal lobes and entire postsetal lobes (Fig. 68A); chevrons 17 (15-21); 34 (33-37) uniramous parapodia; length up to 300 mm, width up to 9 mm *Goniada norvegica* Oersted 1845

Biology - dredged on bottoms of soft sticky mud, fine sand, muddy sand with rocks and shells from low water to 839 m. Distribution - Arctic to Rhode Island; Bay of Fundy: 44.

Fig. 68 - A. Anterior uniramous parapodium, anterior view (P); B. Posterior biramous parapodium, anterior view (P).

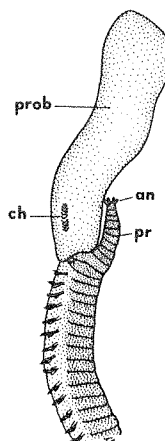


2b Anterior parapodia with entire presetal and postsetal lobes (Fig. 70A) 3

3a Chevrons 9 (7-11); 39 (38-40) uniramous parapodia; length up to 100 mm
 *Goniada maculata* Oersted 1843

Color - transparent-green. Biology - found on sand, mud, and gravelly sand, from low water to 2400 m. Distribution - Arctic to Long Island Sound; Bay of Fundy: 1, 8, 15, 18, 29, 33, 36, 44, 46.

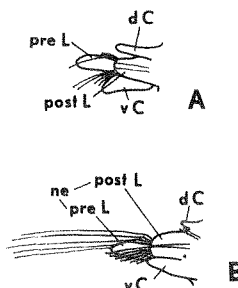
Fig. 69 - Anterior end, lateral view, 8x.



3b Chevrons 26; 30 (27-32) uniramous parapodia; length up to 50 mm, width up to 1 mm
 *Goniadella gracilis* Verrill 1873

Biology - found burrowing in fine sand at low water. Dredged on bottoms of fine gravel, fine to coarse sand and soft mud to 85 m. Distribution - Gulf of St. Lawrence to Massachusetts; Bay of Fundy: not yet recorded, but presence was suspected.

Fig. 70 - A. Anterior uniramous parapodium from setiger 10, posterior view (P); B. Middle biramous parapodium from setiger 50, posterior view (P).



Family HESIONIDAE Sars 1862

Body relatively short, convex dorsally, flattened ventrally; prostomium distinct, usually with 4 eyes, 2 or 3 antennae, 2 palps (may be biarticulate); tentacular cirri 2-8 pairs; parapodia with notopodia always reduced compared to neuropodia; notosetae simple or lacking, neurosetae compound; dorsal cirri short to long, smooth or more or less articulated; ventral cirri shorter; 2 anal cirri; body often brilliantly colored.

Key to Species

1a Tentacular cirri 8 pairs, articulated; anal plate absent
..... *Gyptis vittata* Webster and Benedict 1887

Palps biarticulated (not obvious); dorsal cirri articulated (not obvious); anal cirri long; length up to 6 mm, width up to 2 mm. Color - without color or with yellowish brown bands. Biology - found at low water under rocks, dredged on bottoms of shells to 55 m. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 5, 8.

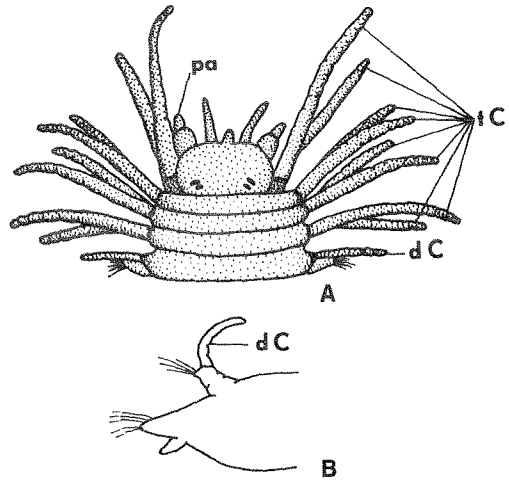


Fig. 71 - A. Anterior end, dorsal view; B. Parapodium (P).

1b Tentacular cirri 6 pairs; anal plate present (Fig. 73) 2

2a Anal plate flat, bilobed; anal cirri long . . *Microphthalmus aberrans* (Webster and Benedict 1887)

Tentacular cirri not articulated; palps fili-form; dorsal cirri digitiform; length up to 9 mm, width up to 1 mm. Color - white or slightly dusky. Biology - appears to be hermaphroditic. Found at low water in sand, and associated with terebellids *Lysilla alba* and *Endoplobranchus sanguineus*. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 5, 8, 79.

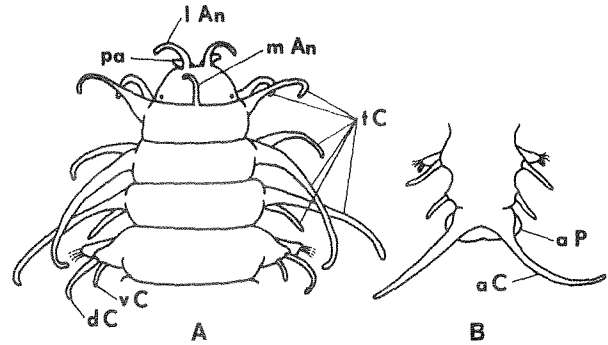


Fig. 72 - A. Anterior end, dorsal view (P); B. Posterior end, dorsal view (P).

2b Anal plate hood shaped, with border entire; anal cirri short
..... *Microphthalmus sczelkowiei* Mecanikow 1865

Palps filiform; dorsal cirri short, digitiform, not extending much beyond the neurosetae; length up to 6 mm, width up to 0.5 mm. Color - body dotted with brown pigment. Biology - found in low water in sand and rubble, under stones, and on muddy bottom. Distribution - Upper Bay of Fundy to Massachusetts; Bay of Fundy: 70.

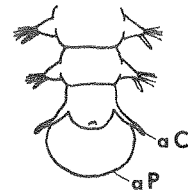


Fig. 73 - Posterior end, dorsal view (P).

Family LUMBRINERIDAE Malmgren 1867

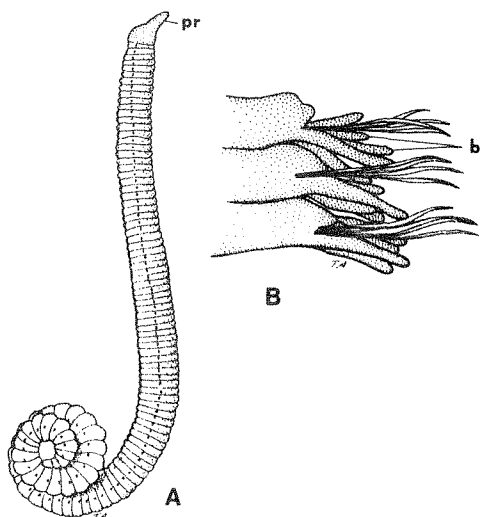
Body elongate, linear, cylindrical; prostomium conical or a subspherical lobe, without appendages, with ventral pair of buccal cushion-like lips; first 2 segments fused ventrally, forming longitudinal ridges at the lower lip; parapodia uniramous; without dorsal and ventral cirri; usually with 4 short anal cirri; with or without parapodial branchiae; proboscis eversible, with jaws; fragment easily.

Key to Species

1a Branchiae present, palmately branched on setigers 2-26 (Fig. 74B) . . . *Ninoe nigripes* Verrill 1873

Hooded hooks simple; acicula black in color, setae dark at base; posterior postsetal lobes somewhat digitiform; length up to 100 mm, width up to 4 mm. Color - iridescent tan, reddish, or bright orange with eggs. Parapodia appear dark; branchia bright red. Found on mud and sand from low water to 1200 m, forms tubes of mucus and mud. Distribution - Gulf of St. Lawrence to Florida; Bay of Fundy: 8, 10, 15, 18, 24, 26, 27, 28, 29, 31, 32, 33, 36, 44, 45, 46.

Fig. 74 - A. Entire, lateral view, 4x; B. Parapodia from mid-anterior region, dorsal view, 35x.

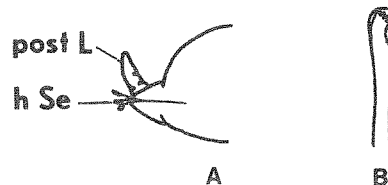


1b Branchiae absent 2

2a Posterior postsetal lobes elongate, digitiform, erect (Fig. 75A); hooded hooks simple, begin on setiger 9 (1-17) *Lumbrineris tenuis* (Verrill 1873)

Acicula yellow in color; setae light yellow; length up to 150 mm, width up to 1 mm. Color - iridescent, light to dark red, yellowish orange to greenish. Found on mud and sand from low water to 328 m. Distribution - Bay of Fundy to Chesapeake Bay; Bay of Fundy: 8, 17.

Fig. 75 - A. Parapodium from far posterior region, anterior view (P); B. Hooded hook (P).



2b Not as above 3

3a Hooded hooks simple, begin on setiger 30 (15-50) (Fig. 76B); acicula black in color; setae dark at base *Lumbrineris fragilis* (O.F. Muller 1776)

Posterior postsetal lobes somewhat digitiform, extending dorsally; length up to 380 μm, width up to 12 μm. Color - iridescent, reddish orange or brown, yellowish, or pale cream, with whitish transverse bands; setae dark. Found in mud, muddy sand and gravelly mud, intertidally to 3500 m. Distribution - Arctic to Virginia; Bay of Fundy: 4, 8, 10, 13, 15, 17, 21, 24, 27, 28, 29, 31, 32, 33, 36, 44, 45, 46, 84.

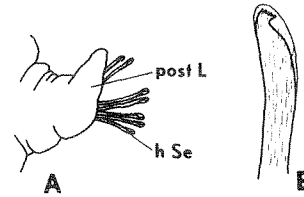


Fig. 76 - A. Posterior parapodium, posterior view (P); B. Hooded hook from setiger 48 (P).

3b Hooded hooks: anterior compound (Fig. 77C); middle and posterior simple. Acicula yellow in color; setae light *Lumbrineris latreilli* (Audouin and Milne-Edwards 1833)

Posterior postsetal lobes slightly more slender and digitiform; length up to 300 μm, width up to 5 μm. Color - pale pink, orange or brown, with metallic iridescence. Found in mud and sand, under stones and among roots of eelgrass, from low water to 2322 m. Distribution - Cosmopolitan, Greenland to North Carolina; Bay of Fundy: 33, 70.

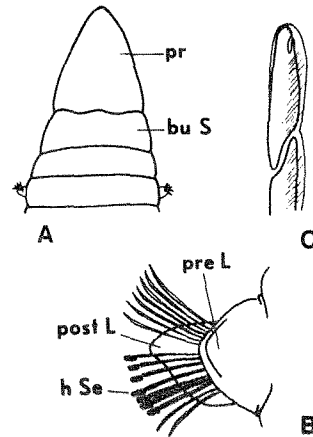


Fig. 77 - A. Anterior end, dorsal view (P); B. Anterior parapodium, anterior view (P); C. Compound hooded hook from anterior parapodium (P).

Family MALDANIDAE Malmgren 1867

Body long, cylindrical, truncate at one or both ends; most species with long cylindrical segments; prostomium small, hood-like, without appendages; notopodia short, rounded; neuropodia elongated tori; pygidium a limbate plate, spatulate, or funnel-like; tube cylindrical, membranous, covered with mud or sand; popular name, "bamboo-worms."

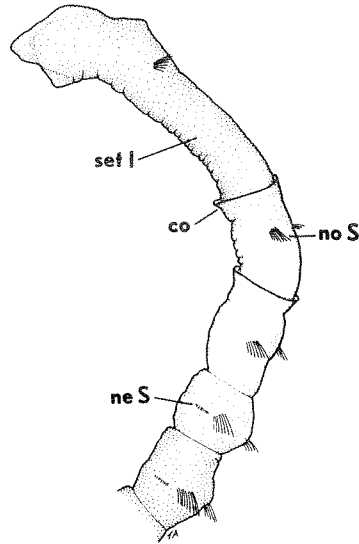
Key to Species

- 1a Cephalic limbate plate and keel absent (Fig. 79) 2
- 1b Cephalic limbate plate and keel present (Fig. 81A,B) 3

2a Collarette present on setigers 2, 3, and last 7; neurosetae on first 3 setigers absent; setigers 16 in number *Rhodine lovéni* Malmgren 1865

Biology - dredged on muddy bottoms from low water to 100 m. Distribution - Bay of Fundy to New England; Bay of Fundy: 8, 16, 32, 33, 44.

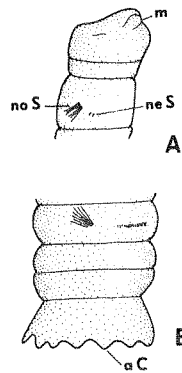
Fig. 78 - Anterior end, lateral view, 16 x.



2b Collarettes absent; with 1-2 neurosetae on first 3 setigers; setigers 21-22 in number *Nicomache lumbricalis* (Fabricius 1780)

Anal cirri subequal, 14-30; length up to 160 mm, width up to 5 mm. Biology - dredged in mud or sand, 22-51 m. Distribution - Gulf of St. Lawrence to New England; Bay of Fundy: 8.

Fig. 79 - A. Anterior end, lateral view (Pettibone 1952); B. Posterior end (Pettibone 1952).

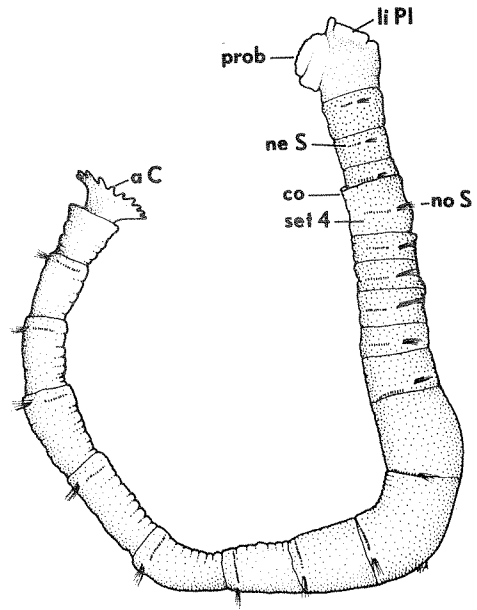


3a Collarette on setiger 4; with 6-7 neurosetae on first 3 setigers

..... *Clymenella torquata* (Leidy 1855)

Anal cirri subequal; setigers 18; length up to 160 mm. Color - pale red with brighter bands around the segments or cream color with red nodes. Biology - euryhaline; especially common in this region in sheltered coves (Rowe and Tyler 1969) from low water to 120 m. Tubes round, long, straight, thin; constructed of sand and mucus. Distribution - European; Gulf of St. Lawrence to Florida; Bay of Fundy: 4, 8, 15, 17, 18, 21, 44, 46, 70, 84.

Fig. 80 - Entire, lateral view, 8x.



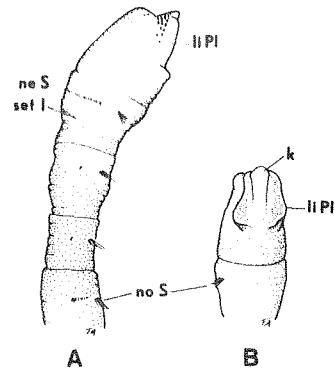
3b Collarette absent, anal cirri subequal with ventral cirrus longest (Fig. 83B) 4

4a Anterior 4 setigers multiannulated, 22 setigers, 2 achaetous preanal segments, anus sunk in pygidial funnel; with 1-2 acicular neurosetae on first 3 setigers

..... *Euclymene zonalis* (Verrill 1874)

Anal cirri subequal, ventral cirrus longest; segments 25, anterior 4 multiannulated; length up to 60 mm. Color - light orange-yellow with dark pigment spots ventrally on the cephalic plate which remain when worm is preserved. Biology - euryhaline; found in sand or mud from 7-37 m. Distribution - Gulf of St. Lawrence to Maine; Bay of Fundy: 4, 8, 70, 71.

Fig. 81 - A. Anterior end, lateral view, 8x; B. Prostomium and setiger 1, frontal view, 8x.

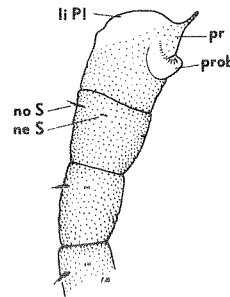


4b Anterior 4 setigers smooth or with shallow wrinkles, 18-20 setigers, 4-5 achaetous preanal segments, anal cone protrusable beyond anal cirri 5

5a Prostomium terminating anteriorly in a digitiform prolongation; usually with 1-3 acicular neurosetae on first 3 setigers *Praxillella gracilis* (Sars 1861)

Setigers 19; length up to 76 mm, width up to 2 mm. Biology - dredged in sand or mud. Distribution - Labrador to New England; Bay of Fundy: 8, 15.

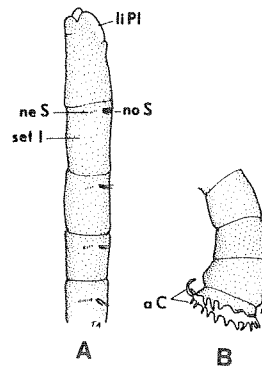
Fig. 82 - Anterior end, lateral view, 8x.



5b Prostomium without digitiform prolongation; with 2-11 neuropodial crotchets on first 3 setigers *Praxillella praetermissa* (Malmgren 1866)

Setigers 19; length up to 100 mm, width up to 2 mm. Color - body with brownish or red bands. Biology - found in tubes of clay, sand and small bits of gravel from low water to 2225 m. Distribution - Gulf of St. Lawrence to New England; Bay of Fundy: 4, 8, 15, 21, 36.

Fig. 83 - A. Anterior end, lateral view, 8x; B. Posterior end, lateral view, 8x.



Family NEPHTYIDAE Grube 1850

Body elongated with numerous short segments; prostomium small, flattened, with 4 short conical antennae; tentacular segment with reduced notopodia and neuropodia, setae, a pair of ventral tentacular cirri, with or without dorsal tentacular cirri; ventral part of first five segments modified to permit passage of large muscular proboscis; parapodial rami with acicular lobes flattened anteroposteriorly, with or without anterior and posterior lamellae (flattened plates anterior and posterior to setae), usually with curved branchiae. Supplementary tabular comparison of the genus *Nephtys* p. 109.

Key to Species

- 1a Branchiae involute, curved or rolled in spiral inwardly toward lateral side of body (Fig. 84) 2
- 1b Branchiae recurved, with convex side toward lateral side of body (Fig. 87B) 3

2a Prostomium without eyes; posterior parapodial lamellae foliaceous, longer than acicular lobes *Aglaophamus circinata* (Verrill 1874)

Branchiae begin at setiger 2, end near posterior end; tentacular neuropodial lobe enlarged; dorsal tentacular cirri absent; acicular lobe conical; anterior parapodial lamellae rudimentary to short; preacicular setae short, post-acicular long; length up to 50 mm, width up to 5 mm. Biology - euryhaline, dredged from bottoms of mud, sand, rocks and shells, from 14-774 m. Distribution - Gulf of St. Lawrence to Long Island Sound; Bay of Fundy: 8.

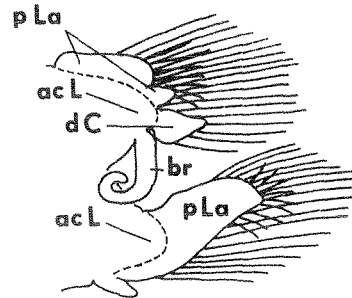


Fig. 84 - Parapodium, posterior view (P).

2b Prostomium with eyes dorsally on setiger 3; posterior parapodial lamellae rudimentary; acicular lobe with protuberance (Fig. 85B) *Aglaophamus neotenus* (Noyes 1980)

Branchiae begin at setiger 5-6, end at setiger 15-20; tentacular neuropodial lobe not enlarged; dorsal tentacular cirri absent; anterior parapodial lamellae rudimentary; pre- and post-acicular setae equal in length; pygidium with thin anal cirrus, length up to 10 mm. Color - varies from creamy white to pink or light orange. Biology - polyhaline, found in mixtures of silt, clay, and sand in water sheltered from open sea but exposed to tidal currents, 10-25 o/oo. Distribution - Estuaries New Brunswick and Maine; Bay of Fundy: 47, 48, 73 (10-60 m).

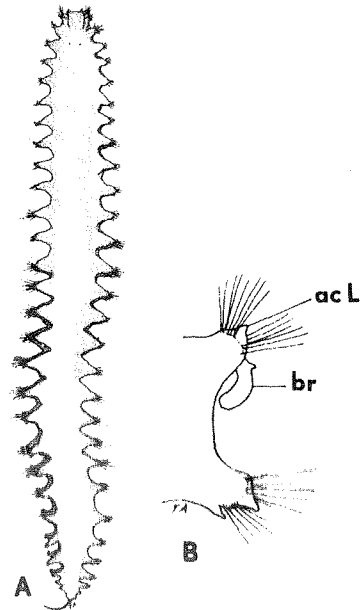


Fig. 85 - A. Entire, dorsal view, 10x; B. Parapodium, 50x.

- 3a Tentacular segment with enlarged neuropodial lobe lateral to setigerous lobe, with large ventral tentacular cirrus; without dorsal tentacular cirri (Fig. 86) 4
- 3b Tentacular segment without especially enlarged neuropodial lobe; with dorsal and ventral tentacular cirri subequal or dorsal pair smaller than ventral pair (may be reduced to a tubercle) (Fig. 88A) 5

4a Ventral tentacular cirri anterolateral, anterior to widest part of enlarged tentacular segment *Nephtys picta* Ehlers 1868

Branchiae begin on setiger 3-4, end near posterior end; unpaired papilla on proboscis present; acicular lobe with anterior and middle region bilobed; anterior parapodial lamella shorter than, or equal to acicular lobe; posterior parapodial lamellae elongated-oval, longer than acicular lobe; setae dark colored basally; length up to 60 mm, width up to 4 mm. Color - colorless with faintly to darkly pigmented bands on anterior region. Biology - found at low water in sand, and dredged on bottoms of sand, with shell, seaweed, to 38 m. Distribution - Bay of Fundy to South Carolina; Bay of Fundy: 8.

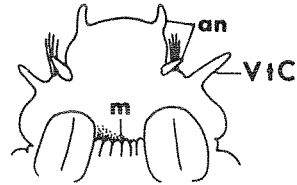


Fig. 86 - Anterior end, ventral view (P).

4b Ventral tentacular cirri lateral and continuous with widest part of enlarged tentacular segment (Fig. 87A) *Nephtys bucera* Ehlers 1868

Branchiae begin on setiger 4-8, end near posterior end; unpaired papilla on proboscis present; acicular lobe bilobed; anterior parapodial lamellae shorter than acicular lobe; posterior parapodial lamellae elongate-oval, longer than acicular lobe; setae long and flowing, light in color; length up to 300 mm, width up to 20 mm. Color - colorless, dusky with darker pigmented bands, or white with dark V-shaped bands; prostomium colorless or with dark spot in center. Biology - found at low water in sand and dredged on bottoms of sand and stones, to 177 m. Distribution - Gulf of St. Lawrence to North Carolina; Bay of Fundy: 41.

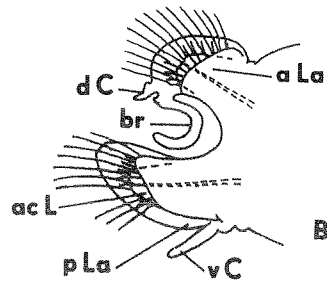
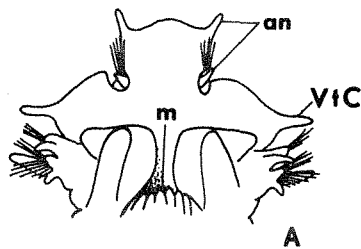


Fig. 87 - A. Anterior end, ventral view (P); B. Middle parapodium, anterior view (P).

5a Anterior and posterior parapodial lamellae about equally well developed, enclosing conical acicular lobes (Fig. 88B) *Nephtys incisa* Malmgren 1865

BROWN

Branchiae begin on setiger 6-8, absent from last 12 setigers; unpaired papilla on proboscis present; acicular lobe acutely pointed; setae rather short, dark colored basally; length up to 150 mm, width up to 15 mm. Color - white or brownish (sometimes pink with eggs), with red middorsal blood vessel and branchiae. Biology - the most abundant nephtyid, found from low water to 1750 m. Distribution - Greenland to Chesapeake Bay; Bay of Fundy: 8, 15, 17, 18, 24, 27, 29, 32, 33, 36, 42, 43, 44, 45, 46.

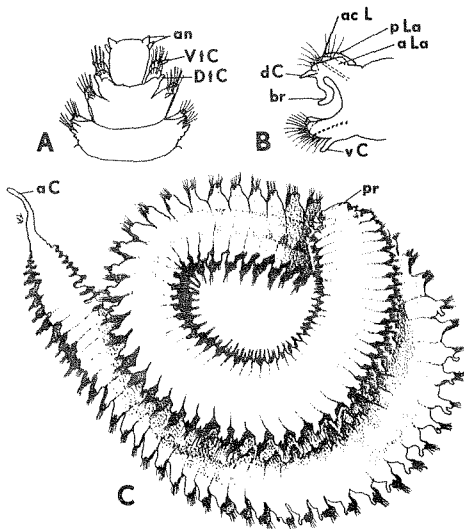


Fig. 88 - A. Anterior end, dorsal view (P);
 B. Middle parapodium, anterior view (P); C. Entire, dorsal view 3x.

5b At least anterior parapodial lamellae rudimentary (Fig. 89) 6

6a Branchiae wide, foliaceous; posterior parapodial lamellae shorter than acicular lobes *Nephtys paradoxa* Malm 1874

Branchiae begin on setiger 8-14, absent from last 15-40 setigers; unpaired papilla on proboscis absent; acicular lobes round to conical; preacicular setae short, postacicular setae longer; length up to 200 mm, width up to 13 mm. Biology - dredged on bottoms of mud, sandy mud with fine gravel, rocks, and worm tubes, from 6-7202 m. Distribution - Arctic south to Delaware in deep water; Bay of Fundy: 1.

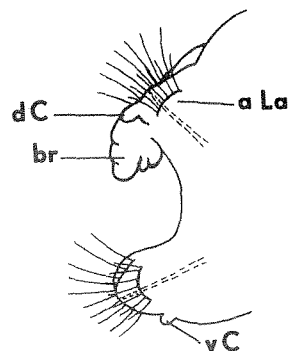


Fig. 89 - Middle parapodium, anterior view (P).

6b Branchiae cirriform, may be inflated basally; posterior parapodial lamellae as long as or longer than acicular lobes (Fig. 91A) 7

7a Posterior parapodial lamellae rather short, about same length or only slightly surpassing acicular lobes *Nephtys ciliata* (O.F. Müller 1789)

Branchiae begin on setiger 4-8, rudimentary on last 20-30 setigers; unpaired papillae on proboscis present; acicular lobe bilobed; setae light colored, preacicular short, postacicular long and flowing; length up to 300 mm, width up to 13 mm. Color - light brown with brown iridescence. Biology - found on sand, mud or gravelly mud, from low water to 925 m. Distribution - Arctic to Massachusetts; Bay of Fundy: 1, 8, 10, 13, 15, 16, 36, 44, 46.

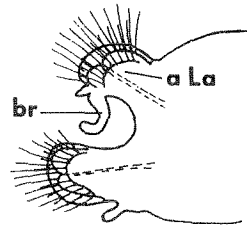


Fig. 90 - Anterior parapodium, anterior view (P).

7b Posterior parapodial lamellae longer (Fig. 91A) 8

8a Branchiae inflated basally (Fig. 91A), rudimentary or absent on posterior half of body; both noto- and neuropodial posterior lamella, short, inconspicuous in posterior region of body (Fig. 91B) *Nephtys discors* Ehlers 1868

Branchiae begin on setiger 6; unpaired papilla on proboscis absent; acicular lobe bilobed to round; posterior parapodial lamellae large, foliaceous, in anterior and middle regions; preacicular setae short, postacicular longer; length up to 300 mm, width up to 12 mm. Biology - found at low water on bottoms of muddy or gravelly sand, among mussels. Dredged on bottoms of mud, stones, and worm tubes, to 483 m. Distribution - Gulf of St. Lawrence to Maine; Bay of Fundy: 8, 18.

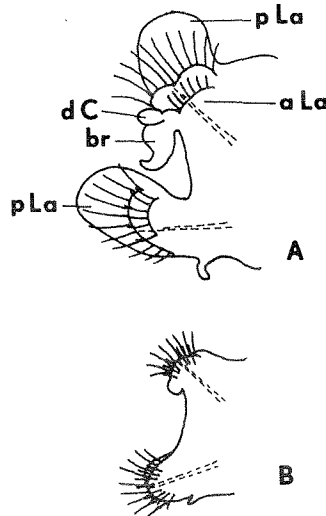


Fig. 91 - A. Middle parapodium, anterior view (P); B. Posterior parapodium, anterior view (P).

8b Branchiae cirriform, continuing to near posterior end; posterior lamellae better developed in posterior region *Nephtys caeca* (Fabricius 1780)

Branchiae begin on setiger 4-6; unpaired papilla on proboscis absent; acicular lobe bilobed to round; posterior parapodial lamellae oval, foliaceous; setae light colored, preacicular short, postacicular long; length up to 250 mm, width up to 15 mm. Color - varies from white with tan iridescence to greenish bronzy. Biology - found on most bottoms from the intertidal zone to 600 m, common intertidally on sand beaches. Distribution - Greenland to Rhode Island; Bay of Fundy: 8, 10, 17, 18, 21, 26, 39, 43, 45, 46, 54, 55, 70, 71, 84.

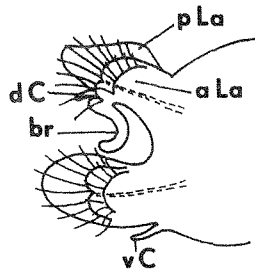


Fig. 92 - Anterior parapodium, anterior view (P).

Family NEREIDAE Johnston 1845

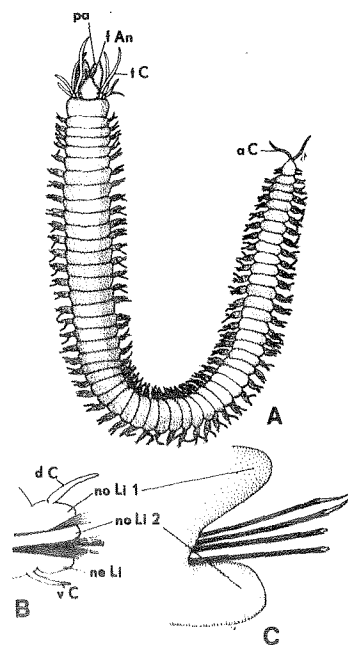
Body usually elongate, cylindrical, attenuated posteriorly; prostomium distinct, with 4 eyes, 2 frontal antennae, 2 biarticulated palps; 4 pairs tentacular cirri present; parapodia usually biramous, with dorsal and ventral cirri, with extra tongue-like extensions or ligules; pygidium with pair of anal cirri; proboscis muscular, eversible, differentiated into oral and maxillary rings, with a pair of horny jaws that are toothed along the concave edge, with horny denticles (paragnaths); may undergo a heteronereid stage at maturity (see p. 119). Supplementary tabular comparison p. 110.

Key to Species

- 1a Notopodial ligules 2 (Fig. 93B); middle and posterior notopodia with homogomph spinigers and homogomph falcigers (Fig. 93C), or homogomph falcigers only 2
- 1b Notopodial ligules 3 (Fig. 95A); notopodia with homogomph spinigers only, without falcigerous setae 3
- 2a Ligules short, thick, evenly rounded; tentacular cirri extend to setiger 2 *Nereis pelagica* Linnaeus 1758

Dorsal cirri longer than ligules; area I with 2 (1-3) paragnaths, area II with 4 (2-8); length up to 155 mm, width up to 14 mm. Color - usually uniformly brownish-grey, may be reddish-brown to green. Biology - found on all types of bottoms from lower half of intertidal zone to 1200 m, but usually on lower half of intertidal zone. Distribution - Arctic to Florida; Bay of Fundy: 1, 8, 15, 16, 18, 31, 33, 41, 44, 70, 77, 82, 86.

Fig. 93 - A. Entire, dorsal view, 3x; B. Parapodium from anterior region (P); C. Notopodium (in part) from middle region, with 2 homogomph spinigers above and 2 homogomph falcigers below, 25 x.



- 2b Ligules triangular to conical; tentacular cirri extend to setiger 2-5 *Nereis zonata* Malmgren 1867

Dorsal cirri longer than ligules; area I with 0-1 paragnaths, area II with 6-10 (or more); length up to 125 mm, width up to 7 mm. Color - smaller specimens colorless, larger with faint to dark wide transverse bands of reddish, brown, or violet. Biology - found on bottoms of shells, sand, and gravel in 18-135 m, usually coexists with *Maldanopsis elongata*. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 8, 46.

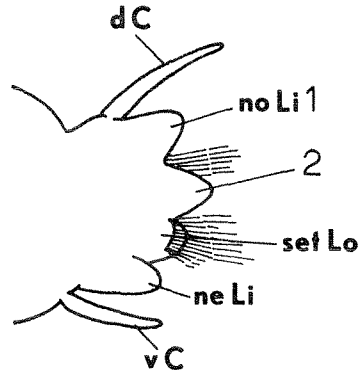


Fig. 94 - Parapodium from anterior region (P).

3a Ligules triangular. Posterior upper neurosetae modified; 1-3 heavy specialized falcigers with end pieces partially or completely fused to shafts (Fig. 95B)
..... *Nereis diversicolor* Muller 1776

Tentacular cirri extend to setiger 4-7; dorsal cirri shorter than ligules; area I with 0-9 paragnaths, area II with 1-9; length up to 200 mm, width up to 10 mm. Color - variable, as indicated by its specific name. Biology - euryhaline, almost entirely restricted to littoral zone. Common where there is large admixture of fresh water. Found on bottoms of clay, mud, sand, and among peat and roots of marsh grass. Found on exposed beaches and protected shores, from high intertidal to 40 m. Heteronereid stage absent. Distribution - Greenland to Massachusetts, Europe; Bay of Fundy: 26, 36, 43, 46, 47, 48, 63, 70, 75.

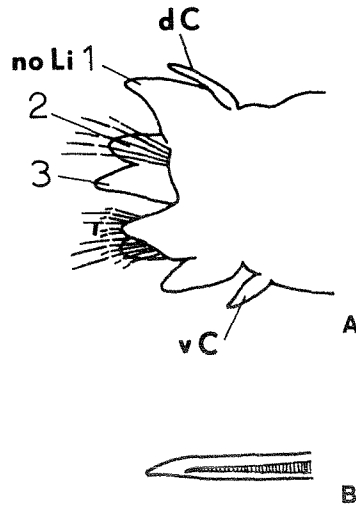


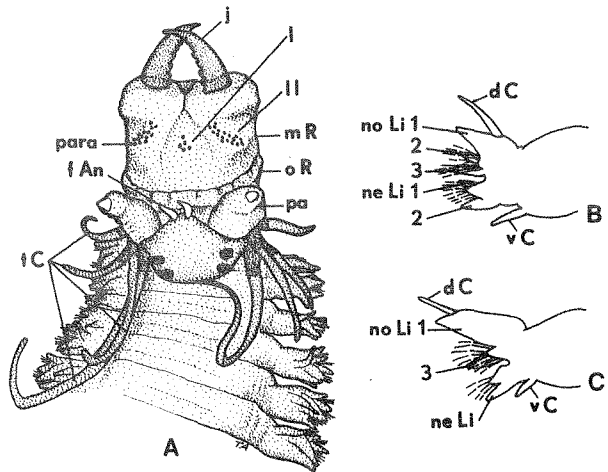
Fig. 95 - A. Parapodium from anterior region (P); B. Modified upper neuroseta from posterior parapodium (P).

3b Not as above 4

4a Ligules conical, in posterior region upper dorsal ligules elongate with dorsal cirri terminal; dorsal cirri longer than ligules *Nereis succinea* (Frey and Leuchart 1847)

Tentacular cirri extend to setiger 3-8; area I with 1-6 paragnaths, area II with oval mass of paragnaths; length up to 190 mm, width up to 7 mm. Color - prostomium and anterior end darkly pigmented both in life and when preserved; posterior end greenish to pale red, dotted with white, or dark over entire dorsum. Biology - euryhaline, found from high tide line to sub-intertidal levels, in variety of niches. Found on sandy shores and dredged in mud to 45 m; sexual epitokes at surface, usually swarm during August. Distribution - Gulf of St. Lawrence to Mexico; Bay of Fundy: 31, 84.

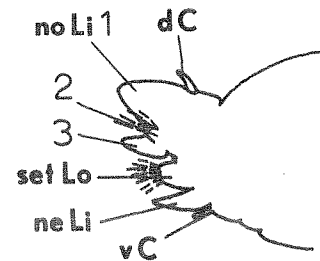
Fig. 96 - A. Anterior end, dorsal view, 8x; B. Parapodium from anterior region (P); C. Parapodium from posterior region (P).



4b Upper notopodial ligule broadly triangular, much larger than the other ligules; dorsal cirri shorter than ligules *Nereis virens* Sars 1835

Tentacular cirri extend to setiger 3-9; area I with 0-7 paragnaths, area II with 0-5; length up to 900 mm, width up to 43 mm. Color - usually dark green-brown with bright orange parapodia. Biology - euryhaline, found on all types of bottom, especially sand or mud, from high water to 160 m; commonly named "clam - or sandworm." Abundant on sand-mud flats at low tide level, where it burrows to depths of 45 cm (Pettibone 1963). May grow very large, up to nearly a meter. Large specimens can give an unwary collector a vicious bite. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 1, 8, 15, 16, 18, 31, 32, 33, 41, 44, 70, 77, 82, 86.

Fig. 97 - Parapodium from middle region (P).



Family ONUPHIDAE Kinberg 1865

Body elongate, vermiform, with smooth iridescent cuticle; prostomium with 2 globular ventral palps, 2 short ovoid, frontal antennae, 5 long occipital antennae; parapodia essentially uniramous, anterior parapodia directed anteriorly and with special hooded setae; tubes with parchment-like base on inside, outside with attached foreign particles.

Nothria (Onuphis) conchylega Sars 1835

Prostomium with 1 pair large eyes; branchiae simple, cirriform, beginning on setiger 9-13, continuing to near end of body; first 2 setigers with presetal lamellar process large, flat, curved around acicular setae (Fig. 98B); acicular hooked setae stout, amber-colored, hooded (unless worn); 2 long anal cirri; length up to 150 mm, width up to 5 mm; tube free (worm may drag it along), flattened, covered with pebbles and stones. Color - variable, bluish with red transverse stripes, or whitish yellow with violet brown bands, with rust colored spots on bases of parapodia and cirri. Biology - found on most types of bottoms from low water to 1932 m. Distribution - Arctic south to West Indies; Bay of Fundy: 1, 8.

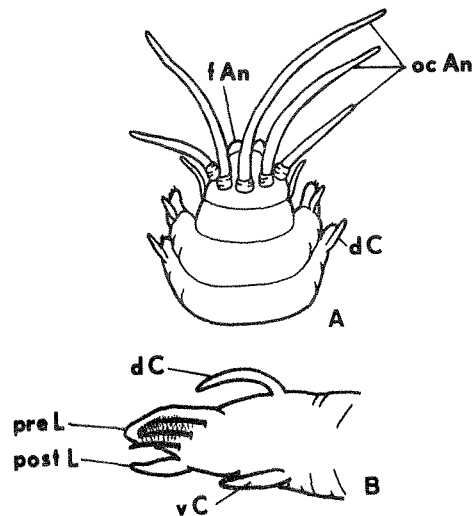


Fig. 98 - A. Anterior end, dorsal view of generalized onuphid (P); B. Parapodium from first setiger, anteroventral view (P).

Family OPHELIIDAE Malmgren 1867

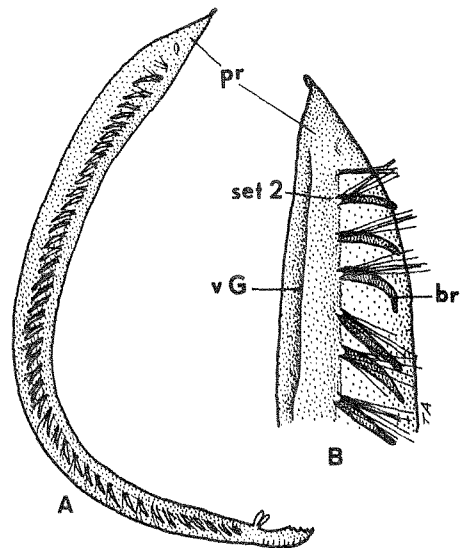
Prostomium small, conical, without appendages; branchiae paired, lateral, cirriform, extending along most of body (sometimes lacking); rami of parapodia reduced or lacking, i.e., reduced to bundles of setae; setae all simple, capillary.

Key to Species

- 1a Body amphioxus-shaped; prostomium terminating in a small globular palpode; ventral groove extending along length of body *Ophelina acuminata* Oersted 1843 [was *Ammotrypane aulogaster* Rathke 1843 but former has priority (Pettibone, pers. comm.). 50-year rule should be invoked here to restore *A. aulogaster*]

Branchiae begin on setiger 2; length up to 60 mm, width up to 5 mm. Color - grey. Biology - found in mud from low water to 250 m. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 8, 15, 17, 18, 33, 36, 41, 44.

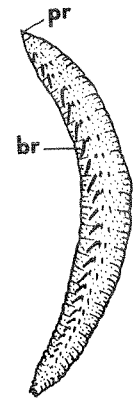
Fig. 99 - A. Entire, lateral view; B. Anterior end, lateral view, 12x.



- 1b Body rounded, tapering at both ends; prostomium without terminal palpode 2
- 2a Ventral groove absent; branchiae begin on setiger 2 *Travisia carnea* Verrill 1873

Length up to 59 mm, width up to 8 mm. Biology - found on sand flats. Distribution - Virginian; Bay of Fundy: 1?

Fig. 100 - Entire, lateral view (H).



- 2b Ventral groove present 3

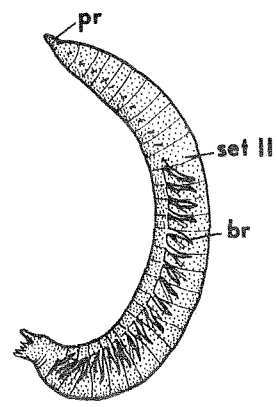
- 3a Body rounded (inflated) anteriorly, ventral groove begins on setiger 9-10; branchiae 11-15 pairs, begin on setigers 11-12 *Ophelia bicornis* Savigny 1818

Biology - euryhaline, found in shallow, warm water. Distribution - Bay of Fundy to Carolinas?: Bay of Fundy; 70.

- 3b Ventral groove begins on setiger 7-10; branchiae begin on setiger 10-11 *Ophelia limacina* Rathke 1843

Length up to 50 mm, width up to 5 mm. Distribution - Gulf of St. Lawrence south to Carolinas; Bay of Fundy: 1.

Fig. 101 - Entire, lateral view.



Family ORBINIIDAE Hartman 1942

Body long, slender, vermiform. Body divided into 2 regions: shorter thoracic region, flattened dorsoventrally, enlarged, firm, with parapodia lateral in position; much longer abdominal region, semicylindrical, with parapodia shifted dorsally giving ragged brush-like appearance. Prostomium without appendages; proboscis eversible, sac-like. They are noted for their fragileness. When removed from their burrows they usually throw themselves into close spiral coils. Supplementary tabular comparison of the genus *Scoloplos* p. 111.

Key to Species

1a Postsetal neuropodial lobes of thoracic segments fimbriated, with vertical rows of postsetal papillae or podal fringe (Fig. 102A) *Orbinia ornata* Hartman 1942

Thoracic setigers about 24 (19-32) in number; thoracic neuropodial postsetal lobes with 4-18 papillae, with several rows of crotchets (2-7 rows); abdominal parapodia without ventral cirri; anal ring with pair of long, slender cirri. Color - yellow orange, yellowish red, deep red, reddish brown, with bright red dorsal branchiae and parapodial lobes. Eggs pale or yellowish. Biology - found at low water in mud or sand and dredged in shallow water on bottoms of silty sand. May form delicate mucus sandy tubes. Distribution - Bay of Fundy to Florida; Bay of Fundy: 41, 70.

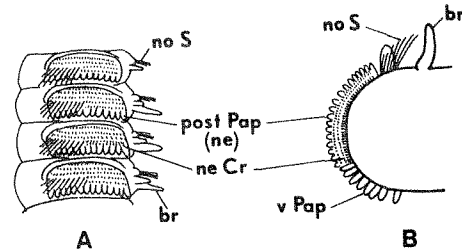


Fig. 102 - A. Setigers 4-7, lateral view (P); B. Thoracic parapodium from setiger 15, anterior view (P).

Note: While this paper was in press *Orbinia swani* Pettibone, 1957 was reported from New River Beach (Bay of Fundy; 41). It differs from *O. ornata* in having ventral cirri in abdominal parapodia, *O. ornata* without (see Pettibone 1963).

1b Postsetal neuropodial lobes of thoracic segments not fimbriated 2

2a Prostomium round to subglobular; branchiae begin on setiger 5 (4-6) *Naineris quadricuspida* (Fabricius 1780)

Thoracic setigers 13 (11-17) in number; inter-ramal cirri present; thoracic neuropodia with about 5 vertical rows of short crotchets; length up to 80 mm, width up to 3 mm. Color - generally brownish but may be yellow in summer due to presence of eggs. Biology - common in tidepools, under rocks and among shells from intertidal zone to 2000 m. Distribution - Arctic to Massachusetts; Bay of Fundy: 1, 8, 10, 15, 18, 33, 34, 70.

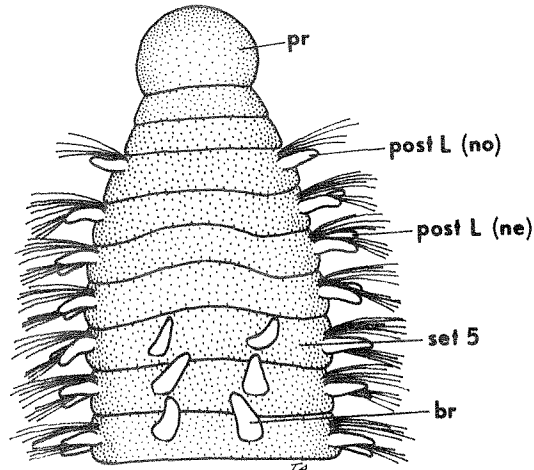


Fig. 103 - Anterior end, dorsal view, 50x.

2b Prostomium conical (Fig. 107); branchiae begin on setiger 9-32 3

- 3a With interramal cirri on anterior abdominal segments (Fig. 104) 4
- 3b Without interramal cirri (Fig. 106B) 5

4a Abdominal segments with entire subpodal flanges uniting neuropodia with sides of body *Scoloplos robustus* (Verrill 1873)

Thoracic setigers 23 (15-33); branchiae begin on setiger 24 (16-32); length up to 375 mm, width up to 10 mm. Color - orange-red, orange-yellow, with red middorsal blood vessel and branchiae. Biology - found in vertical burrows in sand or mud from low water to 56 m. The worm breaks up easily when disturbed. Distribution - Gulf of St. Lawrence to North Carolina; Bay of Fundy: not yet recorded, should be present in Minas Basin.

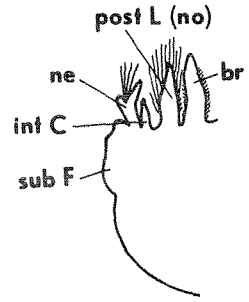


Fig. 104 - Abdominal parapodium, posterior view (P).

4b Abdominal segments with 2 conical subpodal papillae (Fig. 105B) *Scoloplos fragilis* (Verrill 1873)

Thoracic setigers 16 (15-19); branchiae begin on setiger 16 (11-23); length up to 150 mm, width up to 3 mm. Color - dull yellow, orange brown, greenish, pale red, reddish yellow, with red middorsal blood vessel and red to red-brown branchiae. Biology - found burrowing in bottoms of sand or mud from low water to 101 m. Distribution - Gulf of St. Lawrence to Florida; Bay of Fundy: 26, 71.

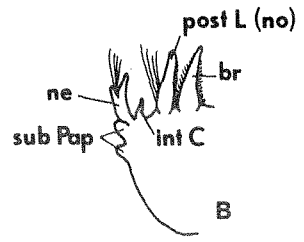
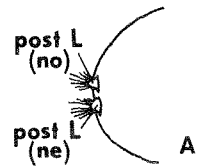
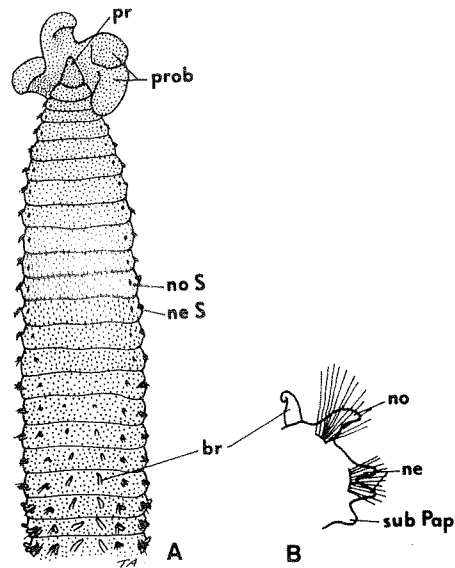


Fig. 105 - A. Thoracic parapodium, posterior view (P); B. Abdominal parapodium, posterior view (P).

5a With 1-2 extra subpodal papillae on last few thoracic and first few abdominal segments *Scoloplos armiger* (O.F. Muller 1776)

Thoracic setigers 17 (12-20); branchiae begin on setiger 12 (9-17); length up to 120 mm, width up to 2.5 mm. Color - red or reddish orange. Biology - found intertidally in sand or mud. Dredged on bottoms of sand, mud, or combinations of sand, mud, and stones to 1980 m. Distribution - Circumpolar, bipolar, Labrador to Massachusetts; Bay of Fundy: 1, 8, 15, 26, 29, 41, 42, 44, 70.

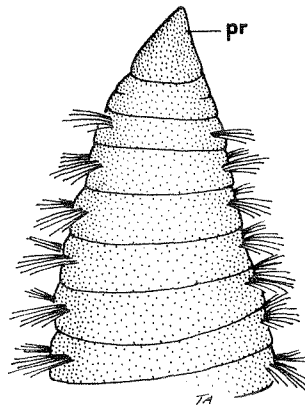
Fig. 106 - A. Anterior end, dorsal view, 8x; B. Transitional parapodium from setiger 15 (P).



5b. Without extra subpodal papillae on transitional segments . . . *Scoloplos acutus* (Verrill 1873)

Thoracic setigers 14 (13-15); branchiae begin on setiger 12 (10-14); length up to 40 mm, width up to 1 mm. Color - light red or pale (with yellow digestive tract showing through). Biology - dredged on bottoms of sand, mud, or combinations of sand, mud, gravel, shells, and tubes, from 5-177 m. Distribution - Baffin Island to off Chesapeake Bay; Bay of Fundy: 26, 46.

Fig. 107 - Anterior end, dorsal view, 50x.



Family OWENIIDAE Rioja 1917

Anterior segments much longer than wide; prostomium fused with buccal segment, without appendages or terminated in a lobed, slashed branchial membrane; neuropodial hooks in dense fields; tube incrustated with sand or shell.

Key to Species

1a Prostomium rounded, without appendages or branchiae *Myriochele heeri* Malmgren 1867

Pygidium rounded; tube membraneous, covered with fine sand; length up to 30 mm, width up to 1.5 mm. Color - neuropodia give satiny appearance. Biology - Dredged 11-50 m. Distribution - Gulf of St. Lawrence to Massachusetts; Bay of Fundy: 8.

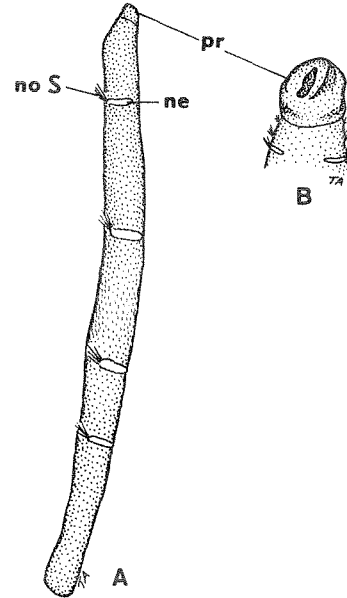


Fig. 108 - A. Entire, lateral view, 12x; B. anterior end, ventral view, 25x.

1b Prostomium ending in a slashed branchial membrane *Owenia fusiformis* delle Chiaje 1841

Pygidium bilobed; tube membraneous, covered with sand and shell debris; length up to 100 mm, width up to 3 mm. Color - greenish or yellowish, branchial membrane reddish. Neuropodia give satiny appearance. Biology - dredged, 46-55 m. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 8.

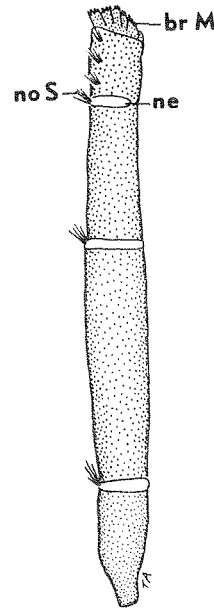


Fig. 109 - Entire, lateral view, 12x.

Family PARAONIDAE Cerruti 1909

Body long, slender, thread-like, with numerous segments; prostomium distinct, simple, subconical, with or without dorsal median antenna; parapodia biramous, parapodia without projecting setal lobes; with conical, cirriform or filiform postsetal notopodial lobes; setae all simple; branchiae dorsal to notopodia, simple, paired, strap-like or wide foliaceous, ciliated, absent from few anterior segments (3-6) and long posterior region (4-60 pairs of branchiae); anal cirri 2-3. Supplementary tabular comparison p. 112.

Key to Species

- 1a Median antenna present (Fig. 110A) 2
- 1b Median antenna absent 4
- 2a Median antenna long, filiform, extending to setiger 4-6 *Aricidea quadrilobata* Webster and Benedict 1887

Branchiae 9-10 pairs, broad base, abruptly pointed distally, begin at setiger 4. Posterior neuropodial setae: upper capillary; middle curved with mucronate tips; lower, few, S-shaped crochets (Fig. 110C). Length up to 6 mm, width up to 0.6 mm. Color - light green with glistening white setae and green branchiae with red centers. Biology - found on bottoms of soft or sandy mud, from low water to 60 m. Worm may be surrounded by a mucus tube. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 8, 24, 27, 33.

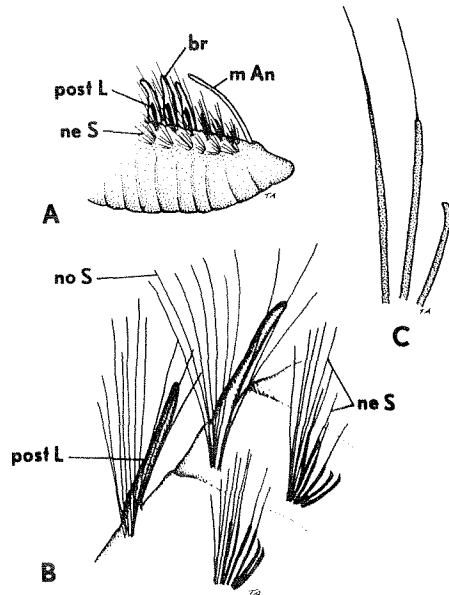


Fig. 110 - A. Anterior end, lateral view 30x; B. Posterior segments, 120x; C. Posterior neuropodial setae; left - capillary, middle - mucronate, right - crotchet, 270x.

- 2b Median antenna short, extending at most to setiger 2 3
- 3a Median antenna short, subulate to fusiform, extends to setiger 2 *Aricidea suecica* Eliason 1920

Branchiae 15-19 pairs (10-24), strap-like, tapering gradually, begin at setiger 4. Posterior neuropodial setae: long capillary; short stouter ones with long mucronate tips (Fig. 111). Length up to 20 mm, width up to 1 mm. Colorless. Biology - found on various types of bottoms with mud, from 5-2258 m. Distribution - Greenland to Massachusetts; Bay of Fundy: 17, 24, 32, 34, 43, 45, 46, 70.

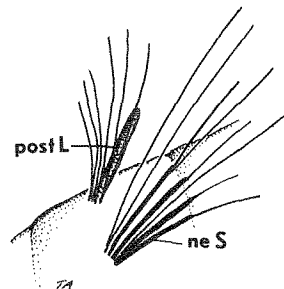


Fig. 111 - Posterior segment, 200 x.

3b Median antenna short, filiform to clavate, extends to setiger 1
..... *Aricidea catherinae* Laubier 1967

Branchiae 13 pairs (11-22), strap-like, tapering gradually, begin at setiger 4. Posterior neuropodial setae: capillary; shorter hooked crotchets with faint sheaths. Length up to 20 mm, width up to 1.5 mm. Color - greenish yellow on prostomium and anterior segments. Biology - found on sandy and muddy bottoms, from 1.8-1908 m. Distribution - Davis Strait to Long Island Sound; Bay of Fundy: 8, 17, 45, 46.

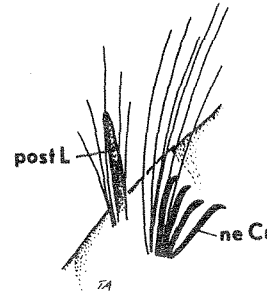


Fig. 112 - Posterior segment, 200x.

4a Branchiae 16-25 pairs, wide, foliaceous, with narrow tips, begin at setiger 4
..... *Paraonis fulgens* (Levinsen 1883)

Posterior neuropodial setae: capillary; 1-2 hooked crotchets beginning on setiger 50. Length up to 30 mm, width up to 1 mm. Color - deprived of sand, the worm will roll in a knot except for the anterior-branchial part, the rolled end is greenish-black in color and keeps its color when preserved. Biology - found in open-ocean, at low water on sandy beaches and on bottoms of mud. It may be surrounded by thin tubes of sand. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 21, 24, 41.

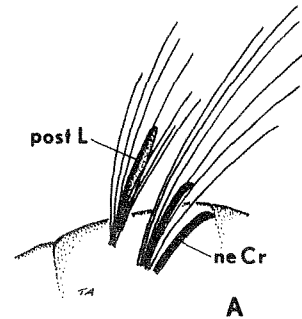
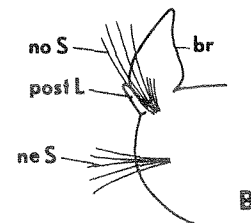


Fig. 113 - Posterior segment, 200x; B. Branchial segment (P).

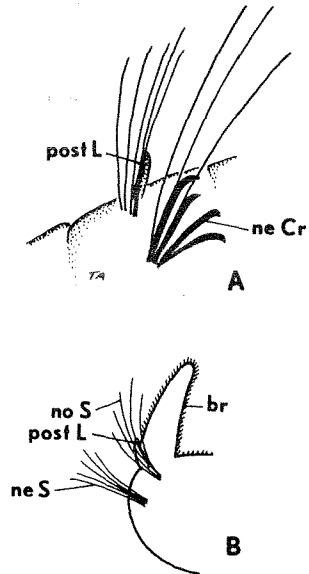


4b Branchiae strap-like, 7-17 pairs 5

5a Posterior neuropodial setae: capillary; 3-6 hooked crotchets beginning on setiger 20; branchiae begin setigers 6-7 *Tauberia gracilis* (Tauber 1879)

Branchiae 9-14 pairs, begin at setiger 6-7; length up to 25 mm, width up to 0.5 mm. Colorless. Biology - found on various types of bottoms with mud, from 5-2002 m. Distribution - Greenland to Massachusetts; Bay of Fundy: 8, 24, 45, 46.

Fig. 114 - A. Posterior segment, 200x; B. Branchial segment (P).



5b Posterior neuropodial setae capillary only; branchiae begin setigers 4-5 *Paraonis lyra* (Southern 1914)

Branchiae 7 (7-17) pairs, begin at setiger 4-5; notosetae capillaries, with 1-3 shorter lyrate setae beginning in branchial region. Length up to 20 mm, width up to 0.3 mm. Colorless. Biology - dredged on bottoms of sand, muddy sand, fine gravel, and grey ooze, from 1.8-1908 m. Distribution - European, Gulf of St. Lawrence to Massachusetts; Bay of Fundy: 70.

Fig. 115 - Lyrate notoseta (P).



Family PHYLLODOCIDAE Williams 1851

Body long and slender with numerous segments; prostomium well developed, usually with 0-4 small eyes, with 4 frontal antennae, with or without median antenna, without palps; 2-4 pairs of tentacular cirri present; parapodia uniramous (usually) with dorsal and ventral cirri enlarged and leaf-like; dorsal cirri may be large, more or less covering dorsum; all neurosetae compound; notosetae, when present, simple; 2 anal cirri present; mucus secreted in quantities; eggs characteristically green. Supplementary tabular comparison p. 113.

Key to Species

- 1a Tentacular cirri 2 or 3 pairs (Fig. 116A); median antenna absent 2
- 1b Tentacular cirri 4 pairs (Fig. 122A); median antenna present or absent 8

- 2a Tentacular cirri 3 pairs 3
- 2b Tentacular cirri 2 pairs 4
- 3a 1 pair tentacular cirri on first segment and 2 pairs on second segment; dorsal, ventral and anal cirri oval, thick flattened *Mystides borealis* Théel 1879

Tentacular cirri subequal; prostomium suboval; proboscis with soft papillae; length up to 16 mm, width up to 0.8 mm. Color - body yellowish brown or light green, with darker cirri. Biology - found from low water to 425 m on sand, muddy sand, stones, rocks and shells. Distribution - Arctic to Maine; Bay of Fundy; 33.

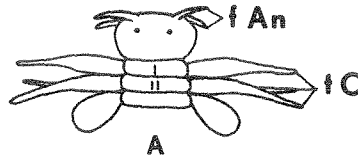
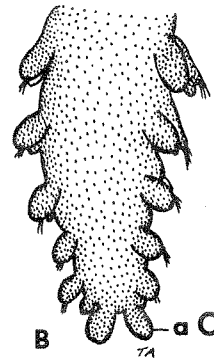


Fig. 116 - A. Anterior end, dorsal view (P); B. Posterior end, dorsal view, 60x.



- 3b 1 pair tentacular cirri on each of 3 different tentacular segments (segments 1, 2 and 3); dorsal and ventral cirri foliaceous; 2 anal cirri *Protomystides* Czerniavsky 1882

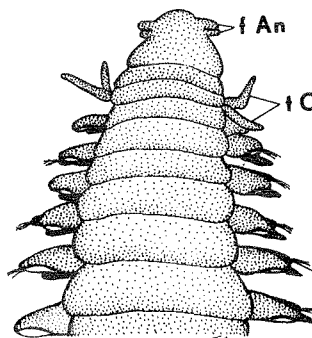
Body filiform; prostomium elongated, with 2 eyes and 4 antennae. *P. sp.* reported by Petersen and Petersen (1976) in the Minas Basin (70). No description available.

- 4a Anal cirri short, thick, almost spherical (Fig. 117C); dorsal cirri symmetrical (Fig. 117B) 5
- 4b Not as above 6

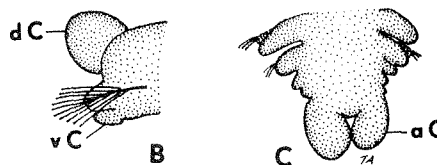
5a Dorsal cirri longer than wide, subequal to parapodial lobe; length up to 160 mm, width up to 5 mm *Eteone longa* (Fabricius 1780)

Color - white to light grey-orange, or green.
 Biology - found from high intertidal to 1850 m in sand, muddy sand and gravel. Distribution - Arctic to off North Carolina; Bay of Fundy: 15, 17, 18, 19, 21, 24, 26, 28, 36, 46, 52, 56, 58, 59, 64, 70.

Fig. 117 - A. Anterior end, dorsal view, 25x;
 B. Middle parapodium (P); C. Posterior end, dorsal view, 50x.



A



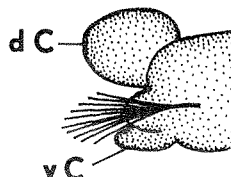
B

C

5b Dorsal cirri wider than long, larger than parapodial lobe; length up to 120 mm, width up to 4 mm *Eteone flava* (Fabricius 1780)

Color - greyish white, pinkish, pale yellow or brick red. Biology - found intertidally among rocks and gravelly sand, and dredged on muddy bottoms. Distribution - Arctic to Maine; Bay of Fundy: 18, 33.

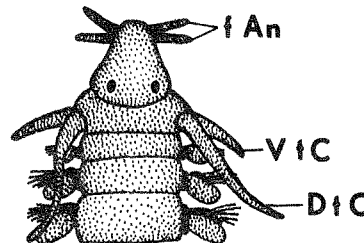
Fig. 118 - Middle parapodium (P).



6a Dorsal tentacular cirri twice length of ventral tentacular cirri; dorsal cirri broadly rounded, wide as long; anal cirri stout, elongate *Eteone trilineata* Webster and Benedict 1887

Length up to 10 mm, width up to 1 mm. Color - yellowish in color with narrow median and wide lateral longitudinal bands of dark brown. Biology - found at low water and by shallow dredging on bottoms of sand and sandy mud with shells. Distribution - Gulf of St. Lawrence to off Massachusetts; Bay of Fundy: 5, 8, 70.

Fig. 119 - Anterior end, dorsal view (P).



6b Not as above 7

7a Tentacular cirri subequal; dorsal cirri asymmetrical, longer than wide; anal cirri subulate, tapering *Eteone heteropoda* Hartman 1951

Length up to 93 mm, width up to 3 mm. Color - pale yellow or greenish, with dorsal and anal cirri darker. Biology - found intertidally in sand, mud and clay, and on bottoms of sandy mud in estuaries and salt ponds of low salinity. Dredged on bottoms of mud and shells. Distribution - Minas Basin to Chesapeake Bay; Bay of Fundy: 70, 71.

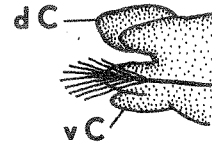


Fig. 120 - Middle parapodium (P).

7b Ventral tentacular cirri 2-3 times length of dorsal tentacular cirri; dorsal cirri asymmetrical, wider than long; anal cirri subulate, tapering *Eteone lactea* Claparède 1868

Segment 2 with ventral cirri only, without setigerous lobe; length up to 230 mm, width up to 3 mm. Color - milky white, with or without flaky white specks, or pale yellow. Biology - found intertidally near high water line. Common in sandy mud. Dredged on bottoms of sand, gravel, shells and mussel beds in 3-180 m. Distribution - Gulf of St. Lawrence to Florida; Bay of Fundy: 70.

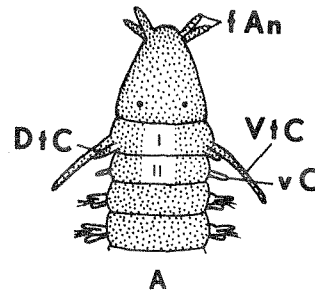
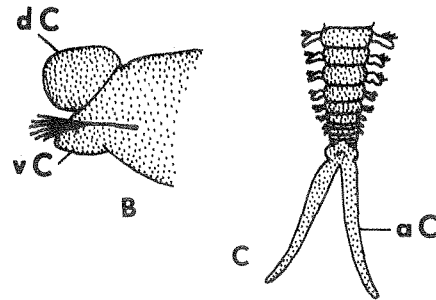


Fig. 121 - A. Anterior end, dorsal view (P);
B. Middle parapodium (P); C.
Posterior end, dorsal view (P).

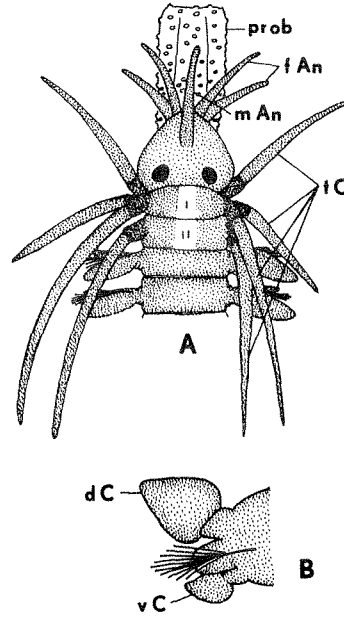


8a Median antenna present; prostomium suboval to subconical (Fig. 122A) 9
8b Median antenna absent 11

9a Dorsal cirri cordiform (heart-shaped), pointed; ventral cirri thin, oval-lanceolate; anal cirri wide basally, tapering; proboscis smooth to sparsely papillated
..... *Eumida sanguinea* (Oersted 1843)

Length up to 60 mm, width up to 4 mm. Color - extremely variable, pale, tannish, yellow to brown, dotted or transversely banded with green or brown. Biology - found intertidally, on shells, under rocks, and commonly on pilings. Dredged on various types of bottoms and especially abundant with sandy tunicates. Distribution - Gulf of St. Lawrence to Georgia; Bay of Fundy: 70.

Fig. 122 - A. Anterior end, dorsal view (P);
B. Parapodium (P).

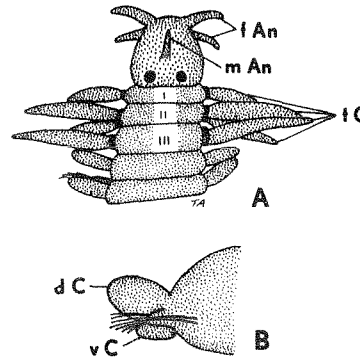


9b Not as above 10

10a Dorsal cirri oval-obtuse, rounded distally; ventral cirri small, obtuse-oval; anal cirri subulate to clavate; proboscis thickly papillated . . . *Eulalia bilineata* (Johnston 1840)

Length up to 100 mm, width up to 2 mm. Color - greyish with dark green or brown bands (which are not always obvious) on each side and dark spots on the bases of the parapodia. Biology - found intertidally to 2500 m among rocks, algae, bryozoans and hydroids. May form epitokous sexual form. Distribution - Arctic to North Carolina; Bay of Fundy: 8, 10, 16, 18, 32, 70.

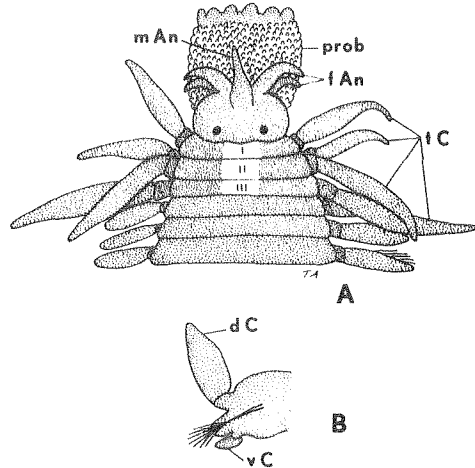
Fig. 123 - A. Anterior end, dorsal view, 50x;
B. Parapodium (P).



10b Dorsal cirri elongate-lanceolate, pointed distally; ventral cirri small, oval;
 anal cirri fusiform to lanceolate; proboscis thickly papillated
 *Eulalia viridis* (Linnaeus 1767)

Length up to 150 mm, width up to 3 mm. Color -
 a brilliant pale to dark green with or without
 brown spots on the dorsal cirri. Biology -
 found intertidally to 250 m in sand, mud or
 gravel among shells, algae and tunicates. Dis-
 tribution - Arctic to New Jersey; Bay of Fundy:
 8, 10, 16, 18, 70.

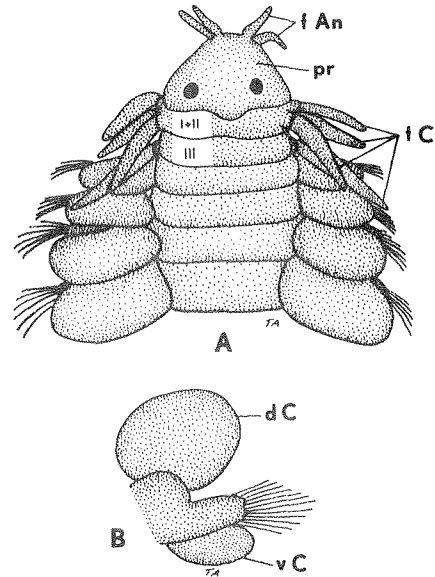
Fig. 124 - A. Anterior end, dorsal view, 40x;
 B. Parapodium (P).



11a Prostomium suboval with distinct posterior extension *Paranaitis speciosa* (Webster 1880)

Dorsal cirri large, overlapping; ventral cirri
 elongate-oval; anal cirri oblong-oval; proboscis
 papillated. Length up to 18 mm, width up to 3
 mm. Color - white or greenish with segments 9
 and 10 red and all segments after 10 have trans-
 verse bands of red. Biology - found from low
 water to 200 m in sand and mud. Distribution -
 Bay of Fundy to Chesapeake Bay; Bay of Fundy:
 8, 15, 18, 27, 33.

Fig. 125 - A. Anterior end, dorsal view, 50x;
 B. Middle parapodium, 25x.

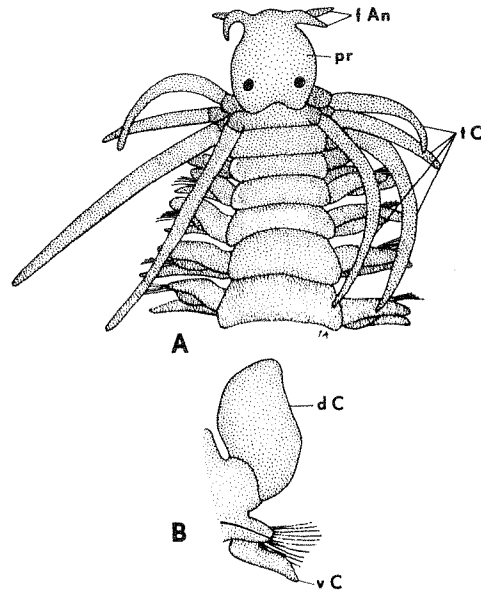


11b Prostomium cordiform (heart-shaped); dorsal cirri subquadrangular; anal cirri
 cylindrical, tapering 12

12a Ventral cirri pointed; proboscis with 12 longitudinal rows of 8-12 papillae; length up to 150 mm, width up to 3 mm *Phyllodoce mucosa* Oersted 1843

Color - transparent whitish or pale green, with a mid-dorsal band of brown, and brown or yellow pigment at the bases of the parapodia (thus 3 longitudinal pigmented bands). Dorsal cirri with central brown spots. Biology - found intertidally to 475 m in muddy sand and gravel, on rocks and shells. Distribution - Bay of Fundy to New Jersey; Bay of Fundy: 8, 15, 17, 18, 21, 36, 45, 46, 47.

Fig. 126 - A. Anterior end, dorsal view, 35x; B. Left parapodium from segment 55 (P).

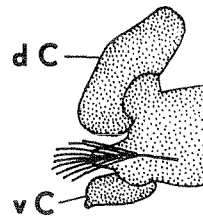


12b Not as above 13

13a Ventral cirri oval with asymmetrical pointed tip; proboscis with 12 longitudinal rows of 10-20 papillae; length up to 450 mm, width up to 9 mm *Phyllodoce groenlandica* Oersted 1842

Color - greenish-grey with irregular brown markings on dorsum. Dorsal cirri greenish or brown, with white borders. Biology - found from low water to 1600 m in sand, holdfasts of algae and on pilings. Distribution - Arctic to off North Carolina; Bay of Fundy: 1, 8, 16, 17, 32, 33, 79.

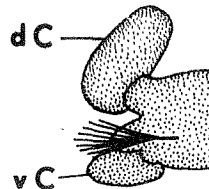
Fig. 127 - Parapodium (P).



13b Ventral cirri oval, not pointed; proboscis with 12 longitudinal rows of 6-8 papillae; length up to 100 mm, width up to 2 mm *Phyllodoce maculata* (Linnaeus 1767)

Color - a bright yellowish-green with 3 brownish bands, 1 mid-dorsally and 2 dorsolaterally. The dorsal cirri are spotted. Biology - found intertidally to 180 m in tidepools, on algae, hydroids and shells on muddy bottoms. Numerous among fouling organisms, secrete abundant mucus. Distribution - Greenland to Rhode Island; Bay of Fundy: 16, 17, 21, 36, 70.

Fig. 128 - Parapodium (P).



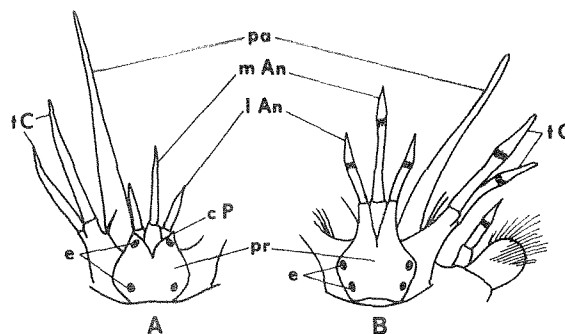
Family POLYNOIDAE Malmgren 1867

Body relatively short or long and vermiform; elytra not concealed under felt-like setae; with dorsal cirri on segments without elytra; pygidium with pair of anal cirri; prostomium bilobed, usually with 2 pairs of eyes, 3 antennae, a pair of palps; ventral surface without numerous globular papillae; proboscis with 2 pair amber-colored jaws and circle of papillae. Supplementary tabular comparison p. 114.

Key to Species

- 1a Lateral antenna inserted terminally on anterior prolongations of prostomium;
notosetae finer than neurosetae (Fig. 129B) 2
- 1b Lateral antenna inserted ventral to median antenna (Fig. 129A) 3

Fig. 129 - A. *Harmothoe imbricata*: prostomium and tentacular segment, dorsal view, elytra removed (P); B. *Lepidonotus squamatus*: prostomium and first 2 segments, dorsal view, elytra removed (P)



- 2a Segments few (26); elytral pairs 12 *Lepidonotus squamatus* (Linné 1758)

Elytra with lateral fringe, microtubercles and macrotubercles; upper notosetae fine with blunt tips, rest tapering to capillary tips; neurosetae stout with spinous rows and smooth hooked tips; posterior pair of elytra notched medially; length up to 50 mm, width up to 15 mm. Color - elytral coloration varies from mottled brown to uniformly tan with reddish or greenish brown tubercles. Biology - abundant; found in brackish waters from the intertidal zone to 2800 m, clinging to a number of variable surfaces, and is rarely found in mud. When disturbed it rolls up like a pill bug. Does not lose its scales readily as do some polynoids. Very common on wharf pilings just subtidally. Distribution - Labrador to New Jersey; Bay of Fundy: 1, 8, 15, 16, 18, 19, 21, 33, 36, 40, 42, 44, 70, 86.

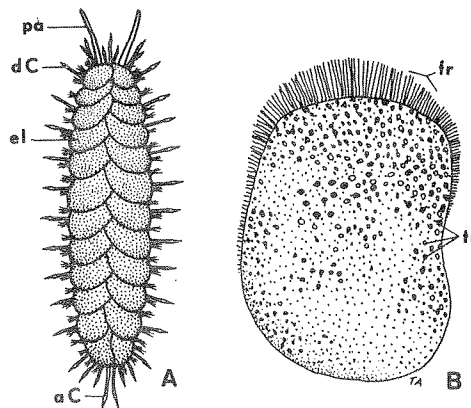


Fig. 130 - A. Entire, dorsal view (P); B. Elytron, 8x.

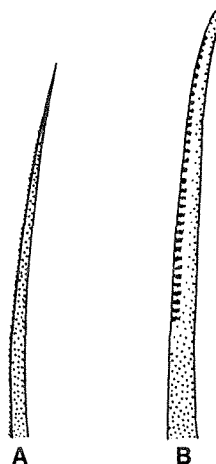
2b Segments numerous (more than 50); elytral pairs numerous (more than 23)
 *Lepidametria commensalis* Webster 1879

Elytra without fringe and tubercles; notosetae few, delicate capillary; neurosetae stout, bidentate upper 1 or 2 stouter, pointed; length up to 100 mm, width up to 9 mm. Color - body and elytra darkly pigmented. Biology - an active crawler, usually confined to the intertidal region, and lives commensally with other polychaetes, mostly terebellids. Distribution - Massachusetts to Florida; Bay of Fundy: suspected in Minas Basin, 70.

3a At least some notosetae with slender capillary tips (Fig. 131A) or notosetae more slender than neurosetae; notosetae with or without spinous rows 4

3b Noto setae as stout as or stouter than neurosetae, with well marked spinous rows and smooth blunt to pointed tips (Fig. 131B) 7

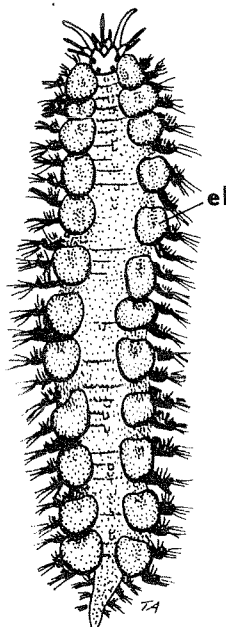
Fig. 131 - A. *Hartmania moorei*: notoseta with capillary tip (P); B. *Antinoella sarsi*: notoseta stout with blunt tip (P).



4a Segments more than 45; elytra on anterior part of body only *Enipo gracilis* (Verrill 1874)

Body with mid-dorsal row of papillae or nodules; elytra occupying lateral regions only; prostomium without or with weakly developed cephalic peaks; length up to 76 mm, width up to 9 mm. Color - brownish to yellowish, with light brown mid-dorsal nodules. Biology - found on muddy bottoms. Distribution - Gulf of St. Lawrence; Bay of Fundy: suspected in Passamaquoddy Bay.

Fig. 132 - Entire, dorsal view, 12x.



4b Segment about 40; elytra cover dorsum 5

5a Neurosetae with slender sharp tips, not hooked; notosetae widest basally, tapering to capillary tips; elytra without lateral fringe or tubercles *Hartmania moorei* Pettibone 1955

Prostomium with distinct cephalic peaks, with 4 small eyes; neurosetae with long shafts and enlarged spinous region, ending in short slender tips; length up to 15 mm, width up to 5.2 mm. Biology - found in the intertidal region or dredged on bottoms of mud and sand down to 162 m; lives commensally with *Nereis virens* and *Praxillella gracilis*. Distribution - Gulf of St. Lawrence (ID Center record) to Cape Cod; Bay of Fundy: 32.

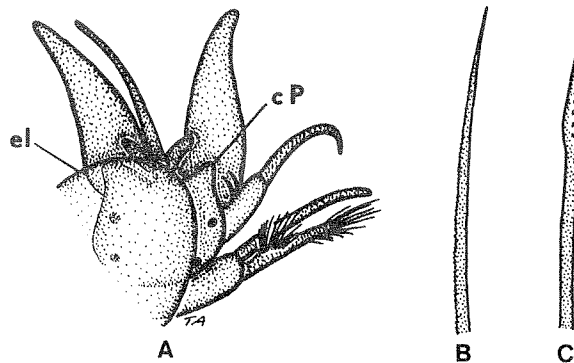


Fig. 133 - A. Anterior end, dorsal view, elytron removed from one side, 25x; B. Notoseta (P); C. Neuroseta (P).

5b At least some of neurosetae with hooked tips 6

6a Neurosetae of 2 forms: 1) with slender sharp tips; 2) with bifid tips (Fig. 134A). Elytra without lateral fringe, smooth except for scattered microtubercles on anterior curved part *Arcteobia anticostiensis* (McIntosh 1874)

Prostomium with distinct cephalic peaks; anterior pair of eyes anteroventral. Upper notosetae shorter, stouter, with blunt tips; rest of notosetae with capillary tips. Length up to 26 mm, width up to 8 mm. Color - irregularly banded mid-dorsally, greenish to greenish black, with reddish brown pigmented areas on the elytra. Biology - found on muddy bottoms at depths of 5-171 m; sometimes found living commensally in tubes of terebellids or maldanids. Distribution - Labrador to Massachusetts; Bay of Fundy: suspected in Passamaquoddy Bay.

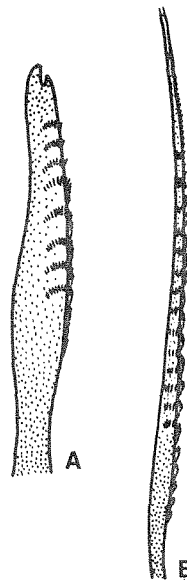


Fig. 134 - A. Lower neuroseta, with bifid tip (P); B. Upper neuroseta, with slender tip (P).

6b Neurosetae with entire tips, not bifid; elytra with lateral fringe and microtubercles *Gattyana cirrosa* (Pallas 1766)

Elytra with long papillae scattered on surface and external borders; microtubercles simple, bifid, or quadrifid. Length up to 45 mm, width up to 12 mm. Color - usually covered with debris giving a brown straggly appearance. Biology - found in low water to 681 m, in a number of environments: combinations of mud, sand, shells, etc.; on rocky ledges, in encrusting calcareous algae; living commensally with terebellids. Distribution - Labrador to South Carolina; Bay of Fundy: 33, 70.

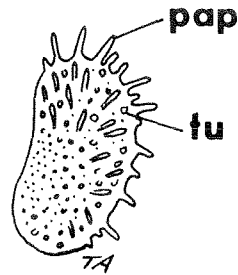


Fig. 135 - Elytron, 80x.

7a Neurosetae long, slender, finely spinous with pointed to blunt smooth tips *Antinoella sarsi* (Malmgren 1865)

Elytra large, thin, soft, smooth, with scattered microtubercles and short clavate papillae; notopodia and neuropodia extending into conspicuous digitiform acicular lobes (Fig. 136); dorsal cirrus long, with papillae; length up to 68 mm, width up to 27 mm. Biology - dredged on bottoms of mud with gravel or stones, in depths of 5-2187 m; may be pelagic. Distribution - Arctic to Massachusetts; Bay of Fundy: 29, 46.

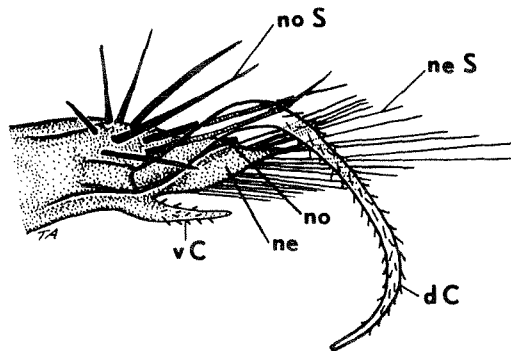


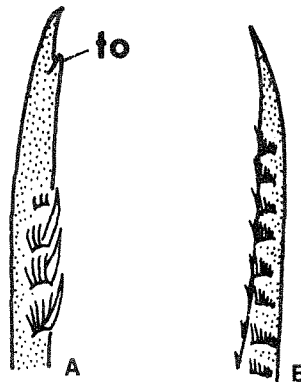
Fig. 136 - Parapodium, dorsal view, 50x.

7b Neurosetae stouter with distinct spinous region, straight or slightly hooked tips, not capillary 8

8a Neurosetae with distinct spinous region, tips hooked or slightly hooked, with or without small subterminal tooth (Fig. 137A) 9

8b Neurosetae with distinct spinous region, entire bare tips (Fig. 137B) 10

Fig. 137 - A. *Harmothoe imbricata*: neuroseta with tip slightly hooked, with tooth (P); B. *H. nodosa*: neuroseta with entire bare tip (P).



9a Anterior pair of eyes anteroventral near cephalic peaks; not visible dorsally (except through prostomium) (Fig. 138A) *Harmothoe imbricata* (Linné 1767)

Prostomium with distinct cephalic peaks; elytra with lateral fringe present or absent, conical microtubercles, globular to elongate macro-tubercles; notosetae stout with distinct spinous rows; neurosetae with distinct spinous region and smooth, hooked tips, usually with subterminal tooth (Fig. 138C); length up to 65 mm, width up to 19 mm. Color - irregularly pigmented dorsally, greyish to blackish, dark green or brown. Biology - euryhaline; found in all northern waters intertidally to 4000 m. Scales may fall off when handled, common in plankton of Saint John River estuary. Distribution - Arctic to New Jersey; Bay of Fundy: 1, 8, 15, 16, 17, 18, 21, 33, 36, 40, 42, 44, 47, 48, 70.

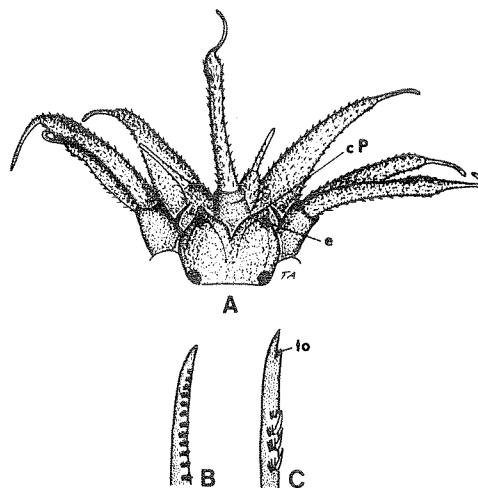


Fig. 138 - A. Prostomium and tentacular segment, dorsal view, 18x; B. Tip of notoseta (N); C. Tip of neuroseta (P).

9b Anterior pair of eyes anterolateral, visible dorsally *Harmothoe extenuata* (Grube 1840)

Prostomium with distinct cephalic peaks; elytra with lateral fringe, conical 1- or 2-pronged microtubercles, sausage-shaped macro-tubercles present or absent; notosetae stout with distinct spinous rows; neurosetae with enlarged spinous region, with tips slightly hooked, small secondary tooth present or absent; length up to 74 mm, width up to 20 mm. Color - irregularly pigmented dorsally, somewhat banded, brownish to greyish green. Biology - euryhaline; abundant intertidally on piles, mussels, and with other polynoids, or dredged on all types of bottoms to 1000 m. More robust than *H. imbricata*. Distribution - Arctic to Chesapeake Bay; Bay of Fundy: 8, 15, 16, 18, 32, 33.

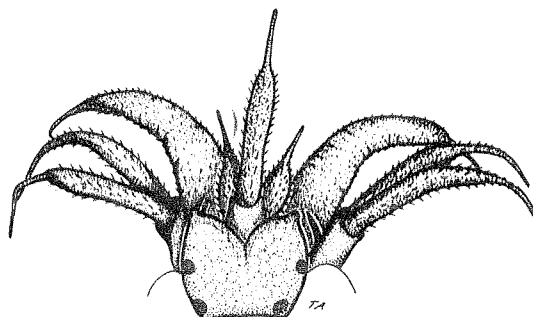


Fig. 139 - Prostomium and tentacular segment, dorsal view, 16x.

10a Elytra with macrotubercles semi-globular, near external border, with roughened tips, setae yellow *Harmothoe nodosa* (Sars 1860)

Prostomium with cephalic peaks short and blunt or lacking; elytra with lateral fringe, micro-tubercles semi-globular, some bifid, macrotubercles confined mostly to single row near external border; notosetae stout, with distinct spinous rows; length up to 90 mm, width up to 39 mm. Color - dorsal surface colorless or banded with olive brown; elytra yellow or tannish mottled with reddish brown. Biology - found on bottoms of mud, stones, rubble, and various combinations of mud, sand, etc., 20-1200 m. Distribution - Arctic to New Jersey; Bay of Fundy: 1, 8, 59.

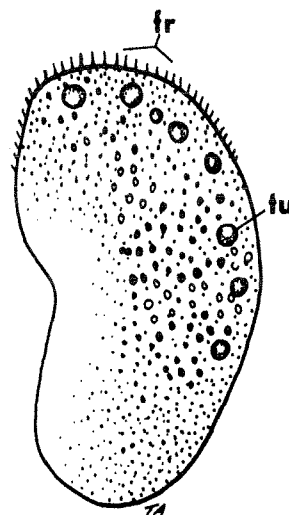


Fig. 140 - Elytron, 7x.

10b Elytra with macrotubercles branched, scattered on elytral surface; setae dark amber *Harmothoe oerstedii* (Malmgren 1865)

Prostomium with cephalic peaks poorly developed or lacking; elytra with lateral fringe, micro-tubercles 1- to many-pronged; notosetae stout with distinct spinous rows; length up to 80 mm, width up to 30 mm. Color - dorsal surface dusky, dark or greenish black; elytra mottled with brown and grey. Biology - found from low water in rocky tidepools, to 1000 m. Dredged on all types of bottoms. Distribution - Arctic to Rhode Island; Bay of Fundy: 1, 10, 18, 36.

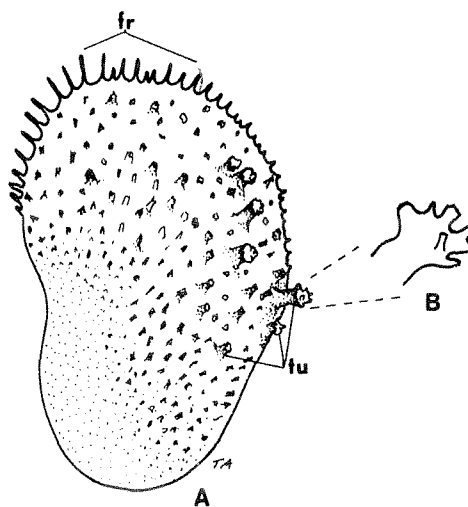


Fig. 141 - A. Elytron, 12x; B. Macrotubercle, 50x.

Family SABELLARIIDAE Johnston 1865

Peristomium bearing 1-3 concentric rows of golden yellow paleae, forming an operculum for closing the tube; prostomium indistinct, between 2 large opercular peduncles, with a pair of palps; mouth surrounded by numerous filiform oral tentacles; body divided into 3 regions.

Sabellaria vulgaris Verrill 1873

With 3 concentric rows of paleae; 3 parathoracic segments with paddle-like setae. Biology - important as reef-builders. Found in shallow water, dredged on shells or in bryozoan nodules. Tube of coarse sand grains cemented together, on shells, corals, rocks, etc. Distribution - Bay of Fundy: 44, 70.

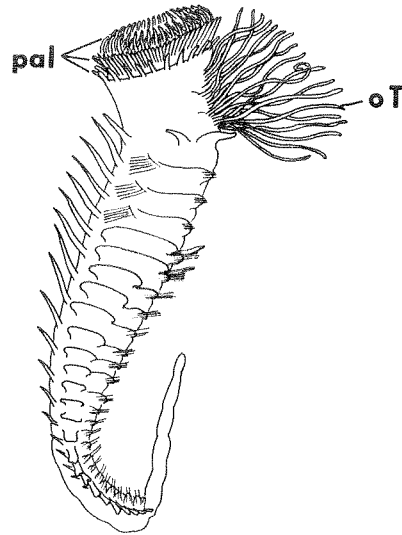


Fig. 142 - Entire, lateral view, approx. 25x (Smith 1964).

Family SABELLIDAE Malmgren 1867

Body cylindrical, tapered posteriorly; mouth terminal with a dorsal lip, 2 ventral palps, 2 fleshy palps, with funnel-like branchial plume surrounding mouth; base of branchial lobes surrounded by collar, excepting a break mid-dorsally; branchial filaments bearing rows of barbules; operculum absent; thoracic region with dorsal setae and ventral uncinigerous tori, reversed abdominally; with a median ciliated fecal groove running length of body, ventral in abdominal region and crossing to dorsal surface in thoracic region; tube of varying material, but never calcareous. Supplementary tabular comparison p. 115.

Key to Species

- 1a Minute species, body 12 segments; radioles simple, unbranched filaments (Fig. 143), 4-20 (4-36) pairs; without palmar membrane 2
- 1b Minute species (10-12 segments) with radioles pectinately branched (Fig. 145), or larger species (>12 segments) with or without pectinately branched radioles 3

2a With 4 pairs of radioles *Manayunkia aestuarina* (Bourne 1883)

Collar well developed (1 pair eyespots may be seen on collar); length from 4-6 mm. Color - body colorless or slightly brownish, transparent; branchial filaments pale yellow; palps green. Biology - found in mud, estuarine, never in full sea water. Distribution - Bay of Fundy: 75.

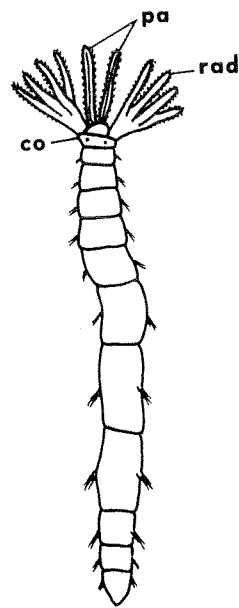


Fig. 143 - Entire, ventral view (F).

2b With 20 pairs of radioles *Manayunkia speciosa* Leidy 1858

Collar well developed (1 pair eyespots may be seen on collar); length up to 4.9 mm, width up to 0.3 mm. Color - translucent olive green, slightly brownish around branchial lobes. Biology - dredged on bottom of grey clayish mud. Tubes with mud and fine particles agglutinated by a mucoid secretion (tube may be several times longer than worm). Usually in fresh or nearly fresh water at the head of estuaries. Distribution - St. Lawrence R. to New Jersey; Bay of Fundy: unrecorded but suspect in Saint John R.

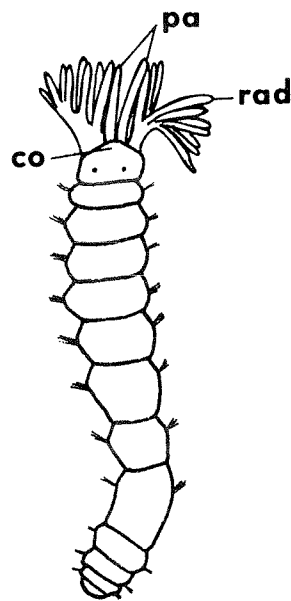
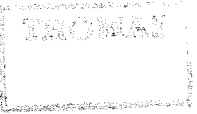


Fig. 144 - Entire, ventral view, approx. 55x (Pettibone 1953).



3a Minute species, body 10-12 segments; palmar membrane absent . . *Fabricia sabella* (Ehrenberg 1836)

Collar poorly developed, a ventral spatulate lip; branchial filaments without eyes; length up to 3.1 mm, width up to 0.6 mm. Color - yellowish. Biology - the soft mucus tube found embedded in sand or mud, intertidally to 450 m. Distribution - Boreal, Virginian; Bay of Fundy: 8, 15, 19, 32, 70, 84.

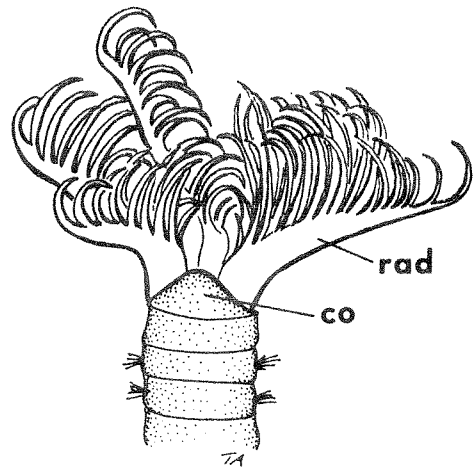


Fig. 145 - Anterior end, ventral view, 65x.

3b Larger species, body >12 segments; palmar membrane present (poorly developed in some) (Fig. 149A) 4

4a Branchial filaments with eyes (Fig. 147B) 5

4b Branchial filaments without eyes 6

5a Dorsal thoracic setae limbate only *Sabella crassicornis* Sars 1851

Collar well developed; 4 lobes, separated mid-dorsally, lateral notches and mid-ventral slit. Palmar membrane poorly developed; branchial filaments with 2-8 pairs of eyes; length up to 80 mm, width up to 4 mm. Biology - free end of tube flexible, covered with a thin smooth layer of mud; embedded part horny, rigid, covered with sand grains and foreign material. Found in low water to 27 m. Distribution - Nova Scotia to Cape Cod; Bay of Fundy: 8.

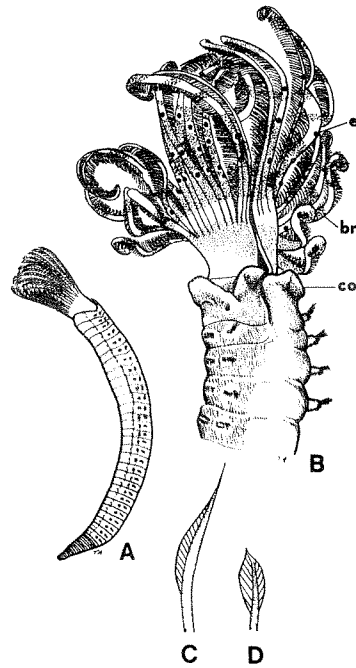


Fig. 146 - Dorsal thoracic limbate seta (F).

5b Dorsal thoracic setae limbate and spatulate (Fig. 147C, D)
 *Potamilla reniformis* (Leukart 1849)

Collar well developed; 4 lobes, mid-dorsal depression, notched dorsolaterally, and mid-ventral slit. Palmar membrane poorly developed; branchial filaments with 0-8 large eyes in a row; length up to 100 mm, width up to 2 mm. Color - branchial filaments often banded with wine red. Biology - tube horny, translucent, leathery, covered with sand or mud; free end usually flattened. Found from low water to 625 m. Distribution - Gulf of St. Lawrence to Cape Cod; Bay of Fundy: 18, 33, 34, 44, 70.

Fig. 147 - A. Entire, ventrolateral view, 3x;
 B. Anterior end, dorsolateral view, 6x; C. Limbate seta (F); D. Spatulate seta (F).



6a Dorsal thoracic setae limbate only (Fig. 147C) 7
 6b Dorsal thoracic setae limbate and spatulate (Fig. 147C, D) 8

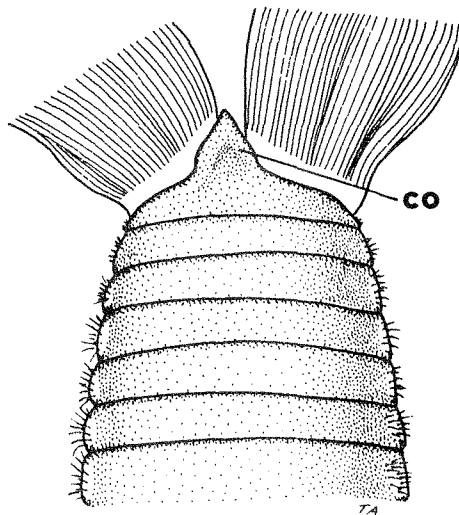
7a Collar well developed; 4 lobes, separated mid-dorsally, lateral notches and mid-ventral slit. Palmar membrane poorly developed *Sabella penicillus* (Linnaeus 1767)

Length up to 115 mm, width up to 6 mm. Distribution - Gulf of St. Lawrence, south: Bay of Fundy; 1, 33.

7b Collar poorly developed; a triangular ventral lobe; palmar membrane well developed; uncinigerous tori absent *Myxicola infundibulum* (Renier 1804)

Length up to 125 mm, width up to 10 mm. Color - uniform dark green or brown. Biology - tube thick, gelatinous, transparent, elastic, buried in sand. Found from low water to 550 m; may form interconnected colonies generally in cracks in bedrock (MacKay 1977), used for medical research. Distribution - Nova Scotia to Carolinas; Bay of Fundy: 1, 4, 7, 8, 15, 24, 32, 34, 38, 39.

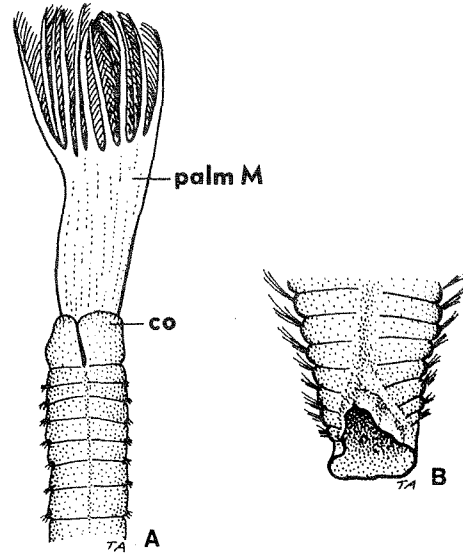
Fig. 148 - Anterior end, ventral view, branchial plume shown only in part, 6x.



8a Posterior end with ventral sucker-like disc (Fig. 149B) *Euchone rubrocincta* (Sars 1861)

Collar well developed; notched mid-dorsally and small mid-ventral slit. Palmar membrane well developed; length up to 30 mm, width up to 2,5 mm. Biology - the membranous tube covered with sand, mud or pebbles. Found in shallow water. Distribution - Labrador to Cape Cod; Bay of Fundy: 15, 18.

Fig. 149 - A. Anterior end, dorsal view, 12x;
B. Posterior end, ventral view, 12x.

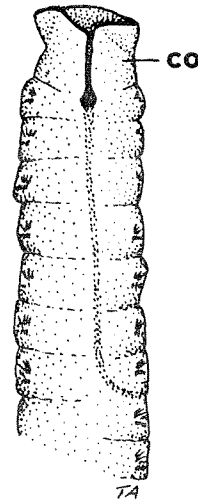


8b Not as above 9

9a Collar well developed; with mid-dorsal slit. Palmar membrane well developed; length up to 30 mm, width up to 2.5 mm *Chone infundibuliformis* Kroyer 1856

Biology - the membranous tube encrusted with sand, mud or pebbles. Found from low water to 3500 m. Distribution - Boreal; Bay of Fundy: 8, 32, 33, 36, 38.

Fig. 150 - Anterior end, dorsal view, branchial plume removed, 8x.

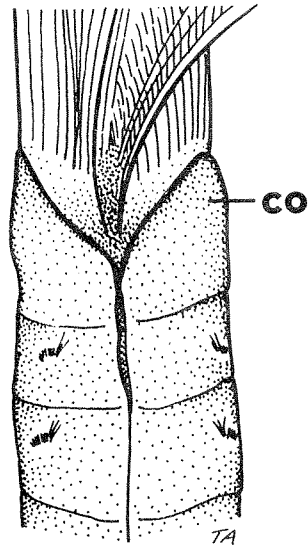


9b Collar well developed; 2 lobes, separated dorsally, and mid-ventral slit.
Palmar membrane poorly developed; length up to 84 mm, width up to 3 mm

..... *Potamilla neglecta* (Sars 1851)

Biology - horny, transparent tube more or less covered with sand or mud. Found in low water. Dredged, 9-50 m. Distribution - Gulf of St. Lawrence to Virginia; Bay of Fundy: 1, 36, 70.

Fig. 151 - Anterior end, dorsal view, branchial plume shown only in part, 35x.



Family SCALIBREGMIDAE Malmgren 1867

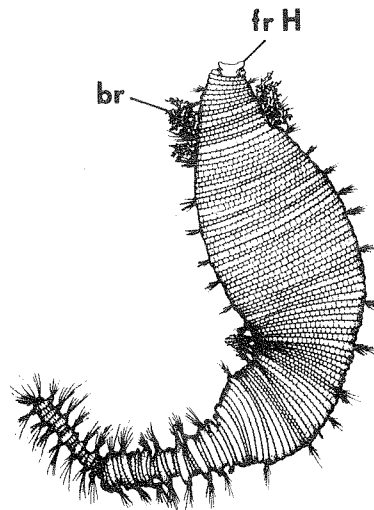
Body often anteriorly inflated; prostomium bilobed or with T-shaped frontal horns; branchiae limited to anterior few segments (usually 4 pairs on setigers 2-5), branched; rami of parapodia small, setae simple, capillary and forked; integument checkered and divided into suprafacial annuli.

Key to Species

1a Body inflated anteriorly then tapering; prostomium T-shaped with frontal horns *Scalibregma inflatum* Rathke 1843

Body 45-60 segments; dorsal and ventral cirri digitiform, present from setiger 16-18; annuli 4 per segment; anal cirri 4-7; length up to 100 mm, width up to 13 mm. Color - orange yellow. Biology - found from low water to 2600 m. Distribution - Circumpolar, Arctic to Virginia; Bay of Fundy: 8, 33, 46.

Fig. 152 - Entire, dorsal view, 5x (Fauchald 1977).



1b Body short and fusiform; prostomium bilobed, without frontal horns
 *Polyphysia crassa* (Oersted 1843)

Body 35-40 segments; dorsal and ventral cirri absent; annuli 2 or 3 per segment; anal cirri absent; length up to 40 mm, width up to 15 mm. Biology - found in mud or sand from 40-1500 m. Distribution - Gulf of St. Lawrence to Massachusetts; Bay of Fundy: 33.

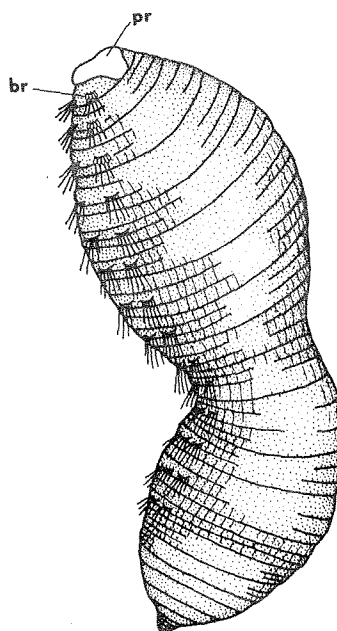


Fig. 153 - Entire, dorsolateral view, approx. 3x.

Family SERPULIDAE Johnston 1865

Body separated into two regions: a thorax with thoracic membrane, collar, dorsal capillary or limbate setae; an abdomen with ventral setae, dorsal uncini. Usually with 1-2 opercula; terminal branchial plume present; tube calcareous.

Key to Species

- 1a Calcareous tube single, closely coiled; operculum 1; thoracic setigers 3-4
 (Fig. 154B, 155) 2
- 1b Not as above 4
- 2a Calcareous tube coiled dextrally, 3½ coils, diameter 1-3 mm
 *Spirorbis spirillum* (Linnaeus 1767)

Branchiae 9; operculum vase-shaped. Color - tube white, opaque, shiny and smooth. Biology - found in deep water with the tube firmly attached to hydroids, algae, stones and carapaces of crustaceans. When attached to rough surfaces, as branching bryozoan colonies, the tube is not coiled flatly but rather partly unrolled, the last coil raised from the substratum. Broods eggs and embryos within tube. Distribution - Labrador to Cape Cod; Bay of Fundy: 1, 8, 21, 32, 33, 36, 70, 82.

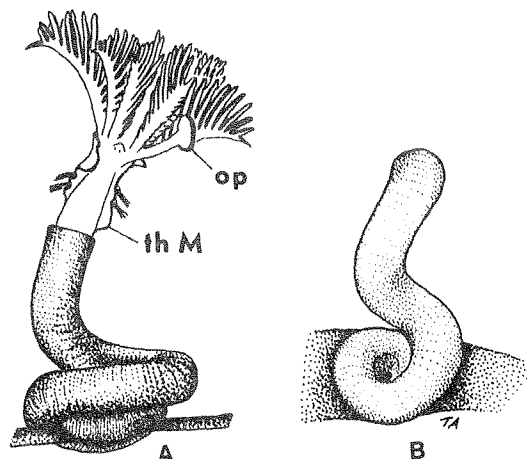


Fig. 154 - A. Entire animal with tube (H); B. Tube, 12x.

2b Calcareous tube coiled sinistrally, 2-4 coils, diameter 1-2 mm 3

3a Tube with 2-4 coils, diameter 2 mm *Spirorbis spirorbis* Linnaeus 1758
(*S. borealis* of Gosner (1971))

Branchiae 9; operculum funnel-shaped. Color - branchiae greenish; tube rough, dull, a pasty-white, coiled around a deep umbilicus. Biology - common intertidally where the tubes are cemented to rocks and algae. Distribution - Newfoundland to Bay of Fundy; Bay of Fundy: 15, 40, 42, 82.

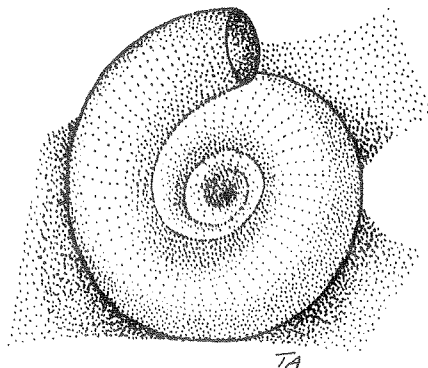


Fig. 155 - Tube, 15x.

3b Tube with 2 coils (may have 2-3 longitudinal keels), diameter 1-2 mm *Spirorbis granulatus* (Levinsen 1883)

Color - tube a dull, chalky white. Biology - found in mud and rocks from low water to 63 m. Distribution - Gulf of St. Lawrence to Bay of Fundy; Bay of Fundy: 1, 33.

4a Operculum absent; tube single, variously crooked *Protula tubularia* (Montagu 1803)

Thoracic setigers 7; tube length up to 50 mm, width up to 8 mm. Biology - found on muddy and gravelly bottoms, usually attached to *Placopecten*. Tubes are large, rather thick and strong, and are irregularly and variably contorted. Distribution - Nova Scotia south to Carolinas; Bay of Fundy: 1, 84.

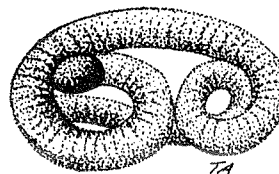


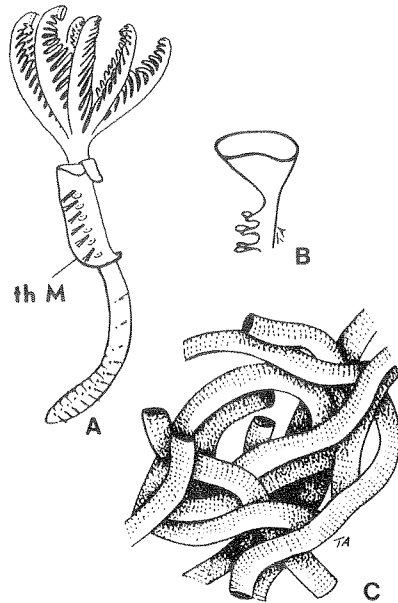
Fig. 156 - Tube, 1x.

4b Operculum present 5

5a Operculum 2 (with barbules basally on the peduncle); tubes aggregated, intertwining *Filograna implexa* (Berkley 1851)

Thoracic setigers 6-9; tube length up to 5 mm, width up to 0.25 mm. Biology - tubes are small, usually aggregated in a lacy, intertwining, coral-like meshwork, 33-55 m. Distribution - Nova Scotia to Cape Cod; Bay of Fundy: 86.

Fig. 157 - A. Entire, right lateral view (H); B. Operculum; C. Tubes, 12x.

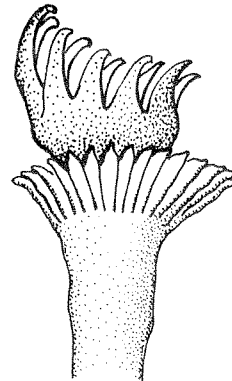


5b Operculum 1 6

6a Operculum 1 (compound, 2-tiered); tube single or aggregated, variously crooked *Hydroides dianthus* Verrill 1873

Thoracic setigers 7; tube length up to 75 mm, width up to 3 mm. Color - tube white opaque. Biology - found isolated or grouped in colonies on stones and shells, from low water to 15 m. Tube with or without a slightly marked longitudinal crest. Distribution - Bay of Fundy to Carolinas; Bay of Fundy: 8.

Fig. 158 - Operculum, approx. 20x (Hartman 1945).



6b Operculum 1; tube single, straight or undulate *Chitinopoma serrula* (Stimpson 1853)

Tube length up to 25 mm, width up to 0.5 mm.
Biology - found in deep water, frequently in the
test of *Ascidia callosa* and sometimes of
Placopecten. The tube is very small and thick.
Distribution - Arctic to Bay of Fundy; Bay of
Fundy: 1.

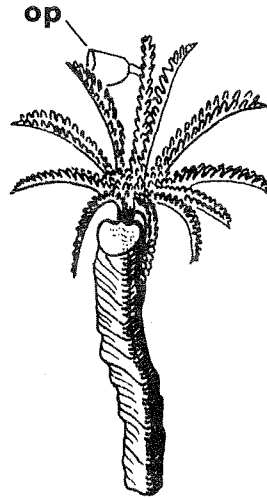


Fig. 159 - Distal end of tube with extended
anterior end of animal (H).

Family SIGALIONIDAE Malmgren 1867

Body long, narrow, with numerous pairs of elytra on alternate segments in anterior region and on all segments of posterior region; burrowing forms (e.g. *Sthenelais*) have cirriform branchiae, ciliated on the inner border, hanging down below the elytra; parapodia project laterally with notopodia and neuropodia equally well developed; prostomium with eyes, 1-3 antennae, and smooth ventral palps; muscular proboscis eversible, with border of marginal papillae and four interlocking chitinous jaws; carnivorous.

Key to Species

1a Median antenna long with stout ceratophore, with pair of ctenidia attached
(Fig. 160A); 2 lateral antennae present *Sthenelais limicola* (Ehlers 1864)

Body flattened ventrally, convex dorsally; branchiae cirriform; parapodial stylodes present; elytra smooth, with simple and bifid fringe, posterior ones with deep notch on external side (Fig. 160C); neurosetae compound, blade long or short, some with bifid tip; length up to 100 mm, width up to 4 mm. Colorless. Biology - found at low water on sandy bottom, and dredged on sandy and muddy bottoms, to 756 m. During storms it may be tossed on shore in large numbers. Distribution - Bay of Fundy to North Carolina; Bay of Fundy: 21, 22, 44, 45.

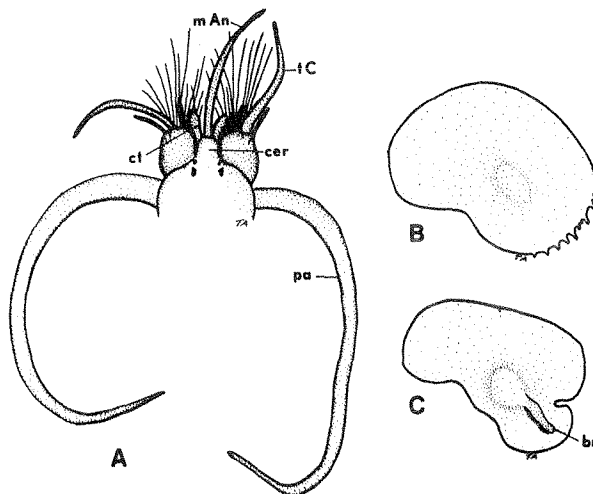


Fig. 160 - A. Anterior end, dorsal view, 16x;
B. Anterior elytron, 16x; C.
Posterior elytron with branchia, 16x.

1b Median antenna short without ctenidia; without lateral antennae; branchiae absent *Pholoe minuta* (Fabricius 1780)

Body flattened dorsoventrally; ventral surface and parapodial lobes covered with short papillae and usually with debris; parapodial stylodes absent; elytra covering dorsum except mid-dorsal part, smooth with moniliform papillae on posterior border; neurosetae compound, blade short entire; length up to 25 mm, width up to 4 mm. Color - varies from yellowish brown to pale pink mottled with brown. Females may appear pink due to presence of eggs. Biology - fragile, creeping form found under rocks, in crevices, among mussels, on various types of bottoms, etc., intertidally to 2500 m. Distribution - Arctic to Long Island Sound; Bay of Fundy: 1, 8, 15, 17, 18, 70.

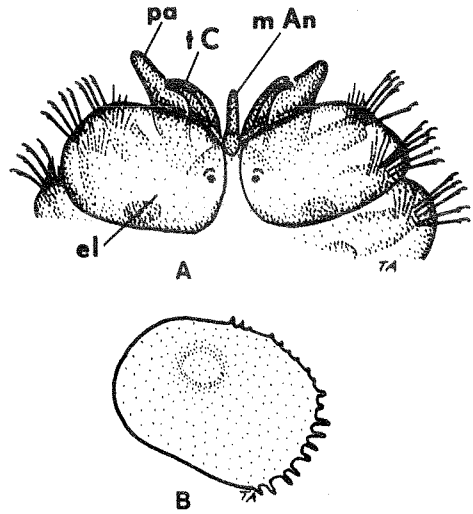


Fig. 161 - A. Anterior end, dorsal view, 50x; B. Elytron, 50x.

Family SPHAERODORIDAE Malmgren 1867

Body short, cylindrical; segmentation indistinct; eyes 2 or 4 under integument; integument covered with small glandular papillae and two or more rows of segmentally arranged large spherical glandular capsules; parapodia uniramous; setae simple or compound; pygidium with median papillae and pair of globular capsules; proboscis eversible, unarmed.

Key to Species

1a Setae simple, hooked (Fig. 162B); spherical glandular capsules in 2 dorsolateral longitudinal rows *Sphaerodorum gracilis* (Rathke 1843)

Body relatively long, 120 segments; length up to 60 mm, width up to 1 mm. Color - pale yellow to brownish yellow, with eyes deep brown. Biology - found at low water to 1302 m but more generally in deep water, in coralline algal region, in fissures of rocks, or dredged on bottoms of mud, sand, shells, etc. The worms may be found twisted in screw-like coils. Females may be filled with eggs. Distribution - Arctic south to Massachusetts; Bay of Fundy: 8.

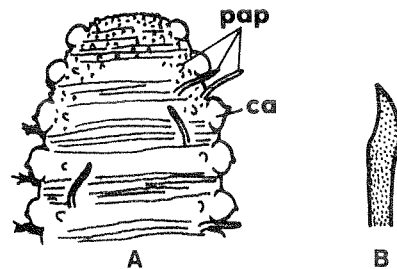
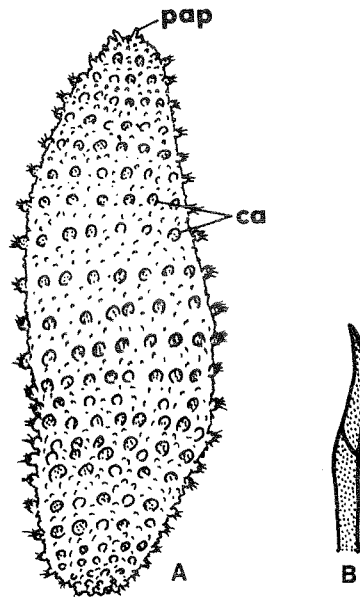


Fig. 162 - A. Anterior end, dorsal view (P); B. Seta (P).

1b Setae compound (Fig. 163B); spherical glandular capsules encircle dorsum in transverse rows *Sphaerodoropsis minuta* (Webster and Benedict 1887)

Body short, oval, 30 segments; spherical glandular capsules encircle dorsum in transverse rows; length up to 6 mm, width up to 1 mm. Biology - found at low water in holdfasts of *Laminaria* or dredged to 110 m on bottoms of mud, sand, rocks and shell. Females may be filled with eggs. Distribution - Arctic to Maine; Bay of Fundy: 5, 8, 18, 27, 33.

Fig. 163 - A. Entire, 25x; B. Seta (P).



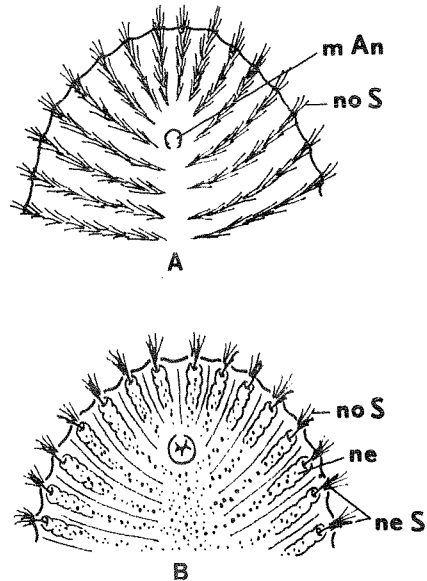
Family SPINTHERIDAE Johnston 1845

Body oval, flattened ventrally, convex dorsally; notopodia forming elongated transverse ridges with spinelike notosetae, nearly covering the dorsum; neuropodia cylindrical with 1 to several strong, compound, hooked neurosetae; prostomium tiny, inconspicuous, with large globular median antenna; branchiae absent. Associated with or parasitic on sponges.

Spinther citrinus (Stimpson 1854)

Length up to 28 mm, width up to 16 mm. Color - lemon yellow, resembling the sponges with which they are found. Biology - dredged on bottoms of gravel rocks with mud and coral, from 40-216 m. Distribution - Newfoundland to Cape Cod; Bay of Fundy: 1, 8.

Fig. 164 - A. Anterior end, dorsal view (P); B. Anterior end, ventral view (P).



Family SPIONIDAE Grube 1850

Body elongated, without distinct regions (segment 5 modified in *Polydora*); prostomium small, elongated, with 0-4 eyes, with 2 long tentacular palps, usually without occipital antenna; parapodia biramous, with parapodial lobes cirriform or foliaceous; branchiae ligulate or cirriform; dorsal and ventral cirri lacking; all setae simple, including capillaries and bi- or multidentate, hooded or non-hooded hooks; some forms build permanent tubes. Supplementary tabular comparison of the genus *Polydora* p. 116.

Key to Species

- 1a Setiger 5 modified with large specialized dorsal setae (Fig. 176A) 10
- 1b Setiger 5 not modified 2
- 2a Without branchiae; prostomium with pair of long frontal horns at anterior margin (prostomium T-shaped) *Spiophanes bombyx* (Claparède 1870)

Occipital antenna absent; pygidium with a pair of cirri; length up to 30 mm. Biology - found in sand at low water; builds slender, branched, sandy tubes, especially abundant in Minas Basin intertidal. Distribution - Minas Basin to Florida; Bay of Fundy: 70, 84.

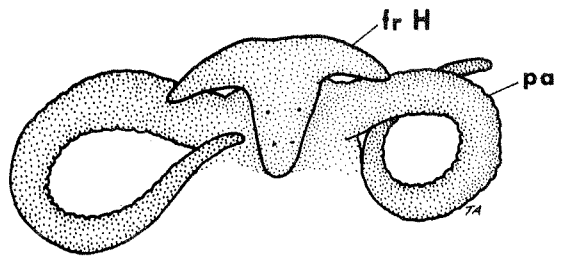
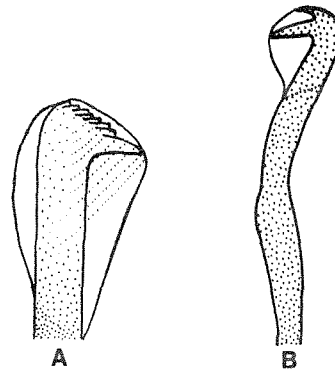


Fig. 165 - Anterior end, dorsal view.

- 2b With branchiae; prostomium not T-shaped 3
- 3a Branchiae 1-4 pairs; neuropodial hooded hooks multidentate (Fig. 166A) 4
- 3b Branchiae more than 4 pairs; neuropodial hooded hooks bi- or tridentate (Fig. 166B) 5

Fig. 166 - A. Multidentate neuropodial hooded hook; B. Bidentate neuropodial hooded hook.



4a Pygidium with 2 small ventral lobes; branchiae 1 pair, dorsal to palps
 *Streblospio benedicti* Webster 1879

Prostomium bluntly rounded anteriorly; multi-
 dentate neuropodial hooded hooks begin on
 setiger 7-9; second segment with dorsal mem-
 brane or "collar"; length up to 6 mm. Biology -
 euryhaline; found in estuarine and intertidal
 waters, and in fine mud with debris, to 10 m.
 Distribution - Gulf of St. Lawrence to Florida;
 Bay of Fundy: 8, 17, 26, 33, 36, 52, 59, 70, 71,
 84.

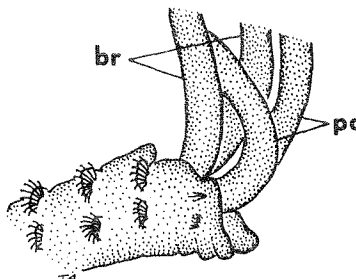


Fig. 167 - Anterior end, lateral view, 50x.

4b Pygidium with 2 short lateral and 1 long dorsal cirri; branchiae 4 pairs, pairs 1
 and 4 pinnate, begin on setiger 2 *Prionospio steenstrupi* Malmgren 1867

Prostomium rounded anteriorly; neuro- and noto-
 podial hooded hooks multidentate, posterior to
 setiger 8; length up to 16 mm. Biology - common
 in mud, from low water to 400 m. Distribution -
 Boreal; Bay of Fundy: 8, 15, 17, 18, 24, 28, 31,
 33.

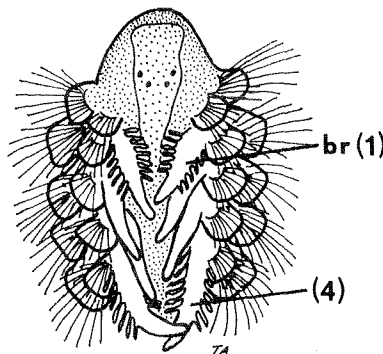


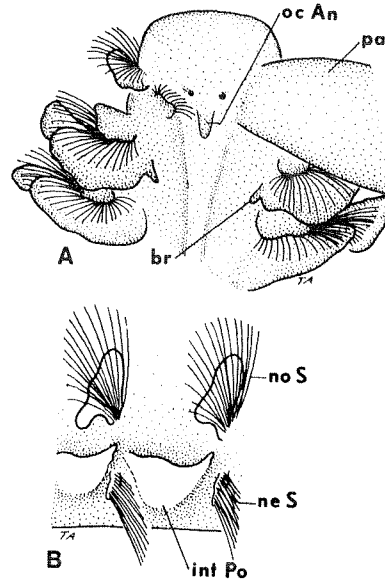
Fig. 168 - Anterior end, dorsal view, palps
 removed, 50x.

- 5a Pygidium with cirri, 3 to numerous (Fig. 171B) 6
- 5b Pygidium with 4 subequal finger-like lobes (Fig. 172B), or a thick cushion-like
 pad with dorsal indent 9
- 6a Occipital antenna present (may be small) (Fig. 169A) 7
- 6b Occipital antenna absent 8

7a Branchiae absent on last few segments, begin on setiger 2; neuropodia in posterior region connected by interrampal pouches (Fig. 169B) *Laonice cirrata* Sars 1851

Prostomium rounded anteriorly; neuropodial hooded hooks bi- or tridentate, begin on setiger 29-60; pygidium with 8-13 cirri; length up to 33 mm. Color - may appear yellow anteriorly and brown posteriorly. Biology - cosmopolitan from the Arctic to the Antarctic from 10 m to abyssal depths. Distribution - Bay of Fundy: 24, 28, 29, 31, 44.

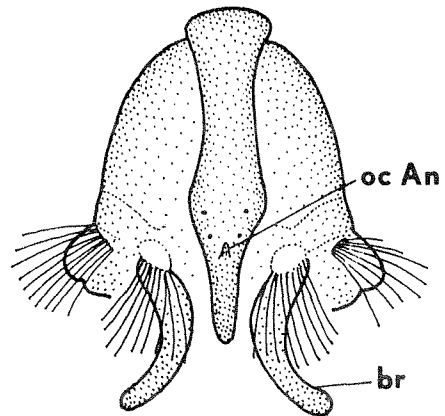
Fig. 169 - A. Anterior end, dorsal view, palp removed from one side, 42x; B. Posterior region, lateral view, 20x.



7b Occipital antenna small; branchiae present throughout, begin on setiger 1; ventral lamellae greatly reduced *Spio setosa* Verrill 1873

Prostomium broadly rounded anteriorly; neuropodial hooded hooks bidentate, about 16 in number; length up to 50 mm. Biology - found on intertidal sandbanks to low water. Distribution - Bay of Fundy, Virginian; Bay of Fundy: 17, 39, 43.

Fig. 170 - Anterior end, dorsal view (Hartman 1945, in part).



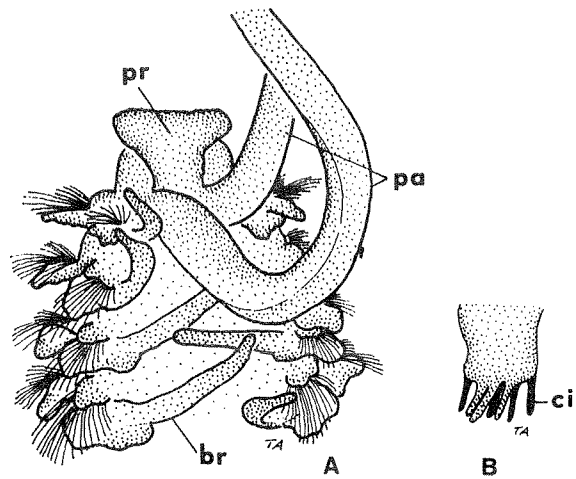
8a Prostomium broadly rounded anteriorly; branchiae present throughout, begin on setiger 1 *Spio filicornis* (O.F. Müller 1776)

Neuropodial hooded hooks bidentate, begin on setiger 9-18, about 6 in number; pygidium with cirri (4?); length up to 30 mm. Color - may appear whitish to tan with the dark brown gut showing through. The prostomium has dark brown patches and the palps also have brown markings. Biology - found on sandy beaches, intertidally to 400 m. The thick sandy tube stands vertically. Distribution - Bay of Fundy to Virginia; Bay of Fundy: 1, 10, 15, 16, 17, 18, 33, 46.

8b Prostomium short with blunt front horns (Fig. 171A); branchiae absent from posterior 1/2 to 1/3, begin on setiger 1 *Scolecoplepides viridis* Verrill 1873

Neuro- and notopodial hooded hooks bidentate, begin on setiger 24-51; pygidium with numerous cirri; length up to 94 mm. Color - may appear olive to bright green with bright red branchiae. Biology - typically estuarine; found burrowing in sand at low water, dominant worm in Bay of Fundy, warm estuaries. Distribution - Bay of Fundy to Florida?; Bay of Fundy: 17, 26, 28, 45, 46, 47, 70.

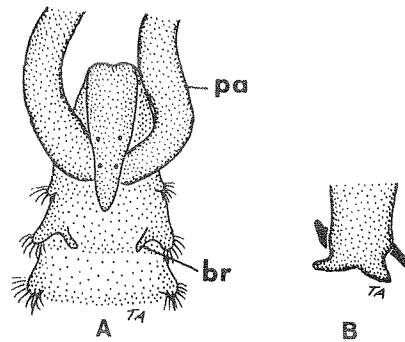
Fig. 171 - A. Anterior end, dorsal view, 25x; B. Posterior end, 25x.



9a Pygidium with 4 subequal finger-like lobes; branchiae simple, absent from last 7-15 segments, begin on setiger 11-13 *Pygospio elegans* Claparède 1863

Prostomium weakly bifid to rounded anteriorly; neuropodial hooded hooks bidentate, begin on setiger 8-9; males with 1 pair branchiae on setiger 2; length up to 12 mm. Biology - found intertidally. Distribution - Boreal; Bay of Fundy: 15, 41, 70.

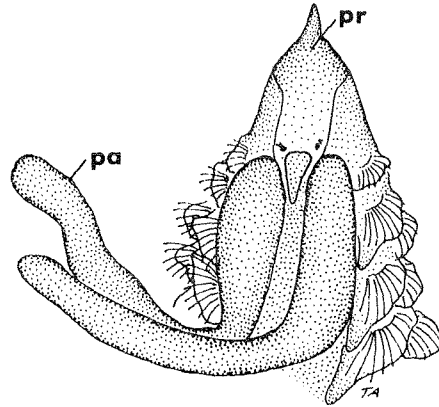
Fig. 172 - A. Anterior end, dorsal view, male, 60x; B. Posterior end, 60x.



9b Pygidium with thick cushion-like pad with dorsal indent; branchiae simple, may be absent on last few segments, begin on setiger 2 *Scoelelepis squamatus* (Müller 1806)

Prostomium acutely pointed anteriorly; neuropodial hooded hooks bidentate, begin on setiger 26-40; length up to 47 mm. Biology - found intertidally in sand and common on wave-washed sandy shores. Distribution - Virginian; Bay of Fundy: 41, 46.

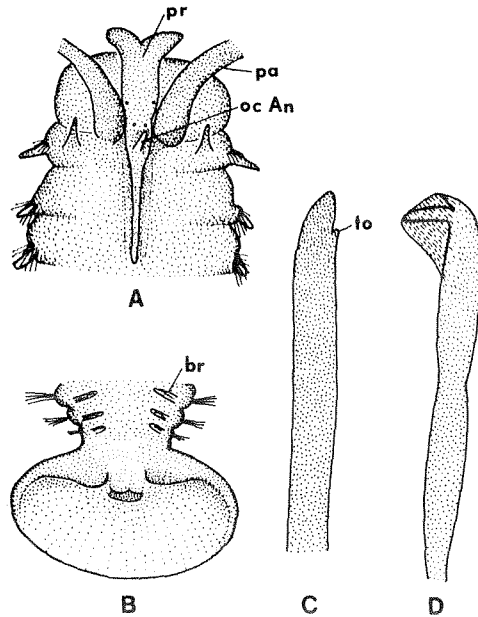
Fig. 173 - Anterior end, dorsal view, 53x.



- 10a Hooded hooks with construction on the shaft (hooks begin on setiger 7) (Fig. 174D); pygidium cup-shaped (Fig. 174B) 11
- 10b Hooded hooks without construction in shaft; pygidium with 1-4 lobes (Fig. 177A) 12
- 11a Median occipital antenna present *Polydora ligni* Webster 1879

Prostomium bifid, flaring laterally; branchiae absent on last few segments, begin on setiger 7; setiger 5 spine modified, falcate with small accessory tooth (Fig. 174C); neuropodial hooded hooks bidentate with constriction in shaft; pygidium with large flaring cup with dorsal gap (Fig. 174B); length up to 32 mm. Biology - euryhaline; found intertidally to a few meters, especially from estuarine habitats. Distribution - Bay of Fundy to Florida; Bay of Fundy: 17, 26, 36, 46, 47, 70, 84.

Fig. 174 - A. Anterior end, dorsal view, approx. 30x; B. Posterior end, dorsal view, approx. 18x; C. Heavy spine of setiger 5, approx. 120x; D. Hooded hook, approx. 600x (a-d after Blake 1971).



11b Median occipital antenna absent *Polydora websteri* Hartman 1943

Prostomium weakly incised to rounded anteriorly; branchiae absent on last few segments, begin on setiger 7; setiger 5 spine modified, falcate with lateral flange or sheath (Fig. 175B); neuropodial hooded hooks bidentate with constriction in shaft; pygidium with large flaring cup with dorsal gap; length up to 20 mm.

Biology - inconspicuous annelid often commensal on marine molluscs. It accumulates mud on the shell margin where it lives, and over which the mollusc secretes a limey shell to produce a blister, found in shallow depths. Distribution - Virginian; Bay of Fundy: 17, 18, 70.

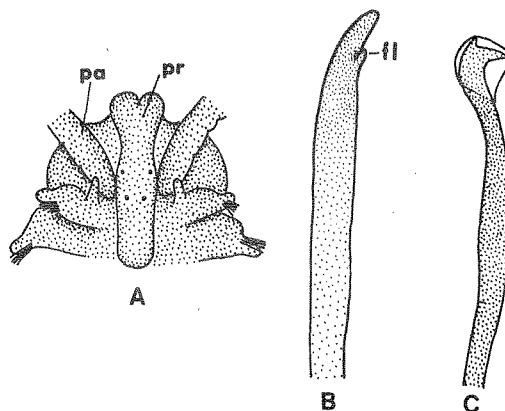


Fig. 175 - A. Anterior end, dorsal view, approx. 65x; B. Heavy spine of setiger 5, approx. 350x; C. Hooded hook, approx. 350x (a-c after Blake 1971).

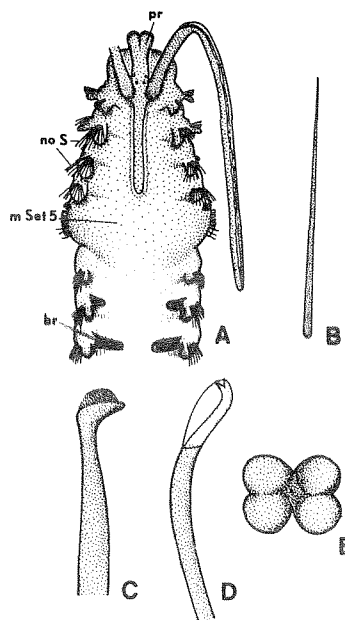
12a Posterior notopodial spines present, awl-shaped (Fig. 176B) 13

12b Not as above 14

13a Prostomium deeply incised; setiger 5 spine modified, falcate with bushy top (Fig. 176C) *Polydora caulleryi* Mesnil 1897

Branchiae absent on posterior 1/3, begin on setiger 7; neuropodial hooded hooks bidentate without constriction, begin on setiger 7 (Fig. 176D); pygidium with 4 equal lobes (Fig. 176E); length up to 50 mm. Biology - ranges from low intertidal to continental shelf depths of 200 m. Distribution - Bay of Fundy: 17.

Fig. 176 - A. Anterior end, dorsal view, approx. 25x; B. Posterior notopodial spine, approx. 144x; C. Heavy spine of setiger 5, approx. 135x; D. Hooded hook, approx. 660x; E. Pygidium, posterior view, approx. 32x (a-e after Blake 1971).



13b Prostomium distinctly bifid anteriorly; setiger 5 spine modified, bifid tip, with fine hairs between teeth (Fig. 177B) *Polydora quadrilobata* Jacobi 1883

Branchiae absent on posterior 1/3, begin on setiger 7; neuropodial hooded hooks bidentate without constriction, begin on setiger 7; pygidium with 4 subequal lobes (Fig. 177A); length up to 15 mm. Color - anterior end brown with a pigment pattern. Red blood prominent in branchiae and palps. Biology - found intertidally in sandy mud often among the larger *Clymenella* tubes. Tubes very small, made of fine silt; stand erect. Distribution - Bay of Fundy: 18, 19, 26.

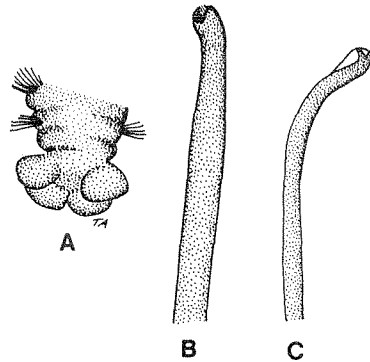


Fig. 177 - A. Posterior end, dorsal view, 40x; B. Heavy spine of setiger 5, approx. 183x; C. Hooded hook, approx. 440x (b-c after Blake 1971).

14a Prostomium bifid on anterior margin; eyes present or absent; branchiae absent on posterior 1/2, begin on setiger 7-9; pygidium with 4 subequal lobes *Polydora concharum* Verrill 1880

Setiger 5 spine modified, falcate with lateral sheath (sheath horizontal to main shaft) (Fig. 178B); neuropodial hooded hooks bidentate without constriction, begin on setiger 7; length up to 140 mm. Biology - found in dredged shells and decayed wood. Distribution - Gulf of St. Lawrence to Cape Cod; Bay of Fundy: 33.

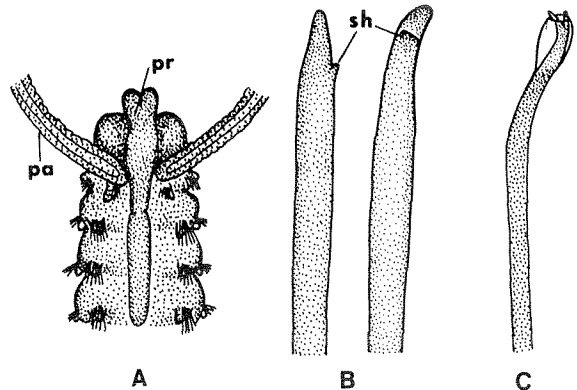


Fig. 178 - A. Anterior end, dorsal view, approx. 37x; B. Heavy spine of setiger 5, in 2 different views, approx. 420x; C. Hooded hook, approx. 650x (a-c after Blake 1971).

14b Prostomium distinctly bifid anteriorly; branchiae absent on last few segments, begin on setiger 8 (7-9); pygidium with 1-3 lobes (Fig. 179A) *Polydora socialis* Schmarda 1861

Setiger 5 spine modified, falcate with sub-terminal protuberance (Fig. 179B); neuropodial hooded hooks bidentate without constriction, begin on setiger 7; length up to 55 mm. Biology - found from intertidal to low water. Build soft, grey, mucoid tubes. Distribution - Carolinian; Bay of Fundy: 17.

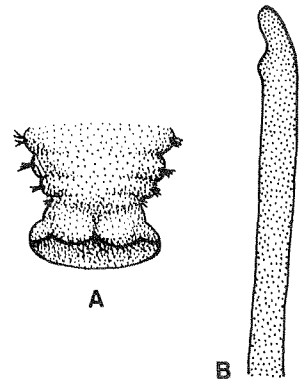


Fig. 179 - A. Posterior end, dorsal view, approx. 67x; B. Heavy spine of setiger 5, approx. 320x (a-b after Blake 1971).

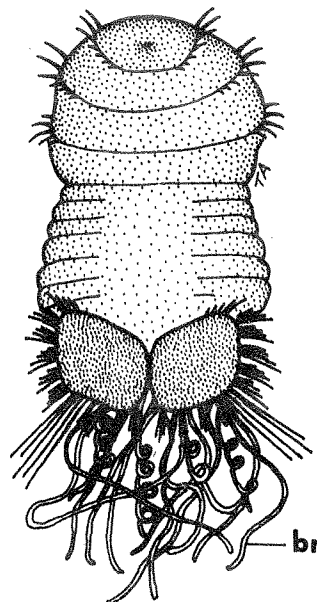
Family STERNASPIDAE Carus 1863

Body short, grub-like, inflated at both ends, anterior end may be retracted into more posterior segments, posterior end with a horny ventral shield formed of 2 trapezoidal plates provided laterally with radiating bundles of setae, with numerous long filiform anal branchiae; first 3 segments with lateral crescentric rows of strong yellow setae; integument covered with fine filiform papillae.

Sternaspis scutata (Renier 1807) (includes *S. fossor*)

Color - dull grey, ventral shield usually dark yellow or reddish brown. Biology - burrowers common in sandy and muddy substrates, found at all depths, but usually in depths of 100-200 m. Very common in fine mud bottom, forms large part of gray sole diet (pers. obs.). Distribution - Bay of Fundy: 1, 8, 24, 27, 32, 33, 36, 38, 44, 45, 46, 70.

Fig. 180 - Entire, ventral view, 7x.



Family SYLLIDAE Grube 1850

Body small to medium-sized, slender, nereidiform; parapodia uniramous, dorsal cirri usually conspicuous, with or without ventral cirri; prostomium with 3 antennae, 4 eyes (sometimes with additional minute anterior pair), 2 palps (May be reduced and fused to each other); tentacular cirri 1-2 pairs; proboscis armed with a single tooth or a crown of denticles, or unarmed; anal cirri 2-3; carnivorous. Reproduction direct (epigamy) or by stolons sometimes having sexual dimorphism; with long thin capillary swimming setae at maturity (see p. 120). Supplementary tabular comparison p. 117.

Key to Species

- 1a Tentacular cirri 1 pair, short (Fig. 181A) 2
- 1b Tentacular cirri 2 pair, long (Figs. 186, 187A) 6
- 2a Tentacular cirri equal antennae in length; antennae short, bulbous or wider basally (Fig. 181A) 3
- 2b Tentacular cirri shorter than dorsal cirri; antennae short, clavate, subequal or median longer (Fig. 185) 4

3a Body tiny, linear, papillate; basal 1/2 of palps fused; ventral cirri shorter than setal lobe; one upper simple seta, rest compound with distal blades entire, hooked (Fig. 181B) *Sphaerosyllis erinaceus* Claparède 1863

Proboscis armed with single anterior tooth; dorsal cirri absent from setiger 2, short, bulbous basally; length up to 4.5 mm, width up to 0.5 mm. Color - body colorless to a pale golden-brown. Females may have pink eggs attached to body. Biology - found at low water, in sand, under rocks, on sponges and pilings. Dredged on bottoms of stones, shells, hydroids, bryozoans and tunicates, to 136 m. Distribution - Arctic to Virginia; Bay of Fundy: 8, 16, 24.

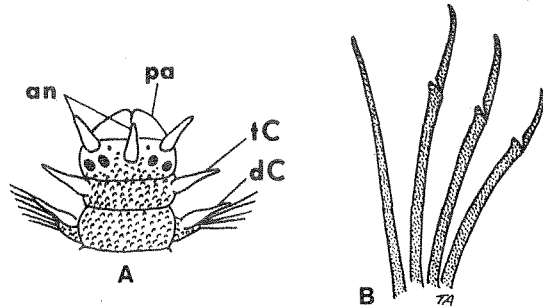


Fig. 181 - A. Anterior end, dorsal view (P); B. Parapodial setae.

3b Body tiny, linear, smooth; basal 1/3 of palps fused; ventral cirri as long as setal lobe; one upper simple seta, beveled at tip, rest compound with distal blades entire, slightly hooked *Parapionosyllis longicirrata* (Webster and Benedict 1884)

Proboscis armed with single anterior tooth; dorsal cirri subulate, extending slightly beyond setae; length up to 5 mm, width up to 0.3 mm. Color - body colorless, eyes red. Females may have orange-pink eggs attached to body. Biology - found at low water, in muddy sand, on shells, and among tubes of small malanids. Dredged on muddy bottoms to 18 m. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 15.

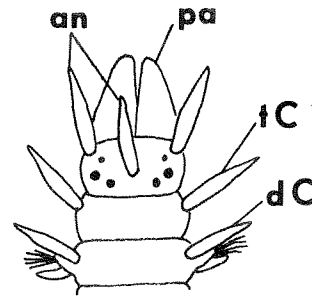


Fig. 182 - Anterior end, dorsal view (P).

4a Palps fused, rounded anteriorly; anterior parapodia with all setae compound, with short blades (Fig. 183B); dorsal cirri absent from setiger 2; shorter than setal lobe *Exogone hebes* (Webster and Benedict 1884)

Body tiny, linear, smooth; proboscis with circle of papillae and single conical tooth; nuchal epaulettes ciliated; ventral cirri shorter than setal lobe; length up to 10 mm, width up to 0.4 mm. Color - body grey, creamy white or golden yellow. Biology - young often found attached externally to the female's back. Found at low water in sand, sandy mud, in sand around roots of eelgrass. Dredged on bottoms of coarse sand and shell, to 150 m. Distribution - Greenland to Massachusetts; Bay of Fundy: 8, 17, 19, 70, 84.

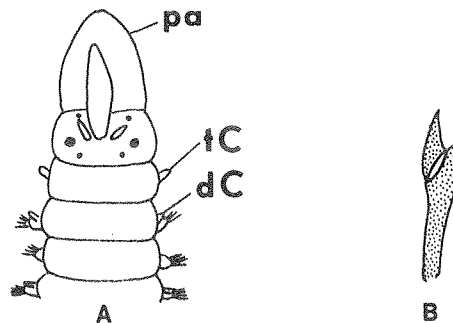


Fig. 183 - A. Anterior end, dorsal view (P); B. Compound seta from anterior parapodium (P).

4b Palps fused, with distinct or slight notch anteriorly; anterior parapodia with 3 kinds of setae (Fig. 184B, C, D); dorsal cirri present or absent on setiger 2, shorter than setal lobe 5

5a Palps with distinct notch anteriorly. Anterior parapodial setae: 1-2 simple curved; 1-3 compound spinigers; 2-6 compound falcigers (Fig. 184B, C, D). Length up to 8 mm, width up to 0.3 mm *Exogone verugera* (Claparède 1868)

Body tiny, linear, smooth; proboscis with circle of papillae and single conical tooth; nuchal epaulettes ciliated; ventral cirri shorter than setal lobe. Color - body colorless. Biology - females may have eggs or larvae attached to body. Found at low water in sand, mud, among bryozoans and algae. Dredged on bottoms of sand, muddy sand, rocks, etc., to 157 m. Distribution - Greenland to Massachusetts: Bay of Fundy; 8, 15, 18, 36.

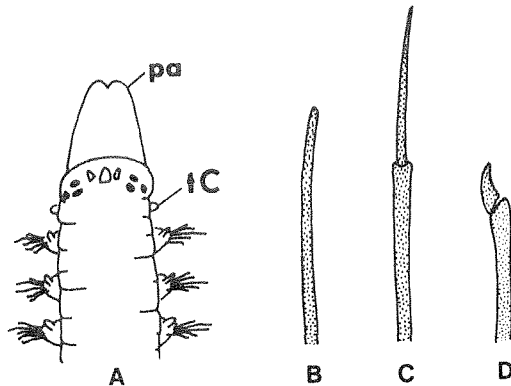


Fig. 184 - A. Anterior end, dorsal view (P); B. Upper simple seta (P); C. Compound spiniger (P); D. Compound falciger (P).

5b Palps with slight notch anteriorly. Anterior parapodial setae: 1 simple curved; 1-2 compound spinigers; 3-4 compound falcigers. Length up to 8 mm, width up to 0.5 mm *Exogone dispar* Webster 1879

Body tiny, linear, smooth; proboscis with circle of papillae and single conical tooth; nuchal epaulettes ciliated; ventral cirri shorter than setal lobe. Color - body colorless or white with slightly reddish tinge. Biology - females may have large purplish eggs or young attached to body. Found at low water, under rocks, in mussel beds, among debris, algal masses, on tubes of *Diopatra cuprea*, on pilings, on hydroids, in water-soaked wood. Dredged on bottoms of stones, shells, bryozoans and among tunicates, to 126 m. Distribution - Bay of Fundy to Florida: Bay of Fundy; 8, 17, 70.

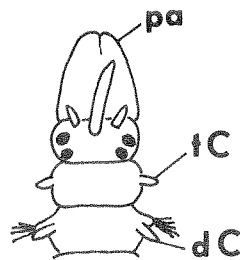
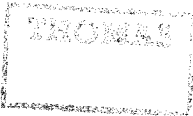


Fig. 185 - Anterior end, dorsal view (P).



6a Body short, flattened, 15 segments; palps small, not visible dorsally; nuchal epaulettes prominent, ciliated; tentacular cirri long, filiform, upper pair longer than lower pair *Amblyosyllis finmarchica* (Malmgren 1867)

Proboscis armed with circle of papillae and a circle of teeth; antennae long, filiform, smooth; ventral cirri length equals setal lobe; dorsal cirri long, faint to distinctly annulated; setae all compound, with blades hooked, tips entire; length up to 10 mm, width up to 2 mm. Biology - when mature, become modified sexual epitokes, eyes become enlarged, swimming setae develop, body is white, transparent, with dense yellowish material inside. Found at low water among boulders. Dredged on bottoms of rock and shell, in holdfasts of *Laminaria*, to 54 m. Distribution - Newfoundland to Maine; Bay of Fundy: 5.

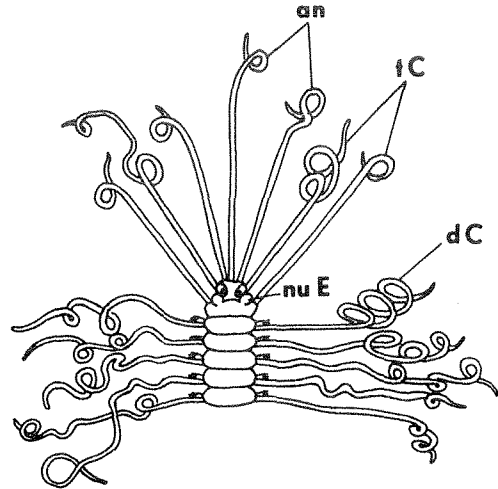


Fig. 186 - Anterior end, dorsal view, approx. 6x.

6b Not as above 7

7a Palps fused, turned ventrally; nuchal epaulettes present; dorsal cirri long, smooth, first 2 pairs very long; ventral cirri absent (Fig. 187A) *Autolytus* sp. (Genus not keyed. Refer to Pettibone (1963) for distinction of *A. emertoni* Verrill 1881, *A. prismaticus* (Fabricius 1780), *A. cornutus* Agassiz 1863, *A. prolifer* O.F. Müller 1788, and *A. alexandri* Malmgren 1867. All may occur in the bay of Fundy).

Proboscis with chitinous lining with a crown of teeth; antennae and tentacular cirri long, filiform, smooth or faintly annulated; setae simple and compound. (The description above is that of the stem form.) Reproduction by stolons, which differ from the stem form and are sexually dimorphic. Each species, then, has three types of individuals: stem form (Fig. 187A) which buds off asexually male or female stolons, singly or in chains; male stolons or polybostrichus stage (Fig. 187B); female stolons or sacconereis stage (Fig. 187C). Color - white, reddish-orange to pale orange, pale pink, sometimes banded with brown. Eyes red. Biology - found in low water to 481 m; sexual forms at surface. Distribution - Arctic to Florida; Bay of Fundy: 8, 10, 15, 16, 18, 33, 70, 79.

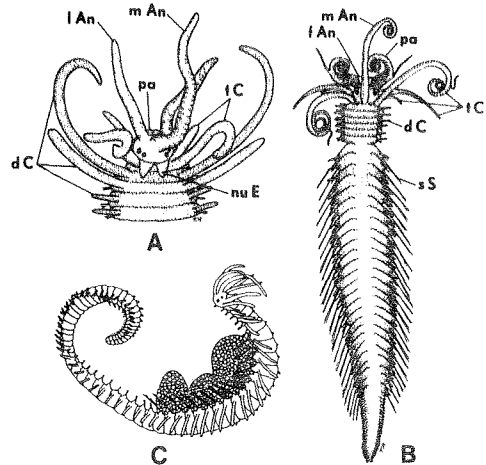
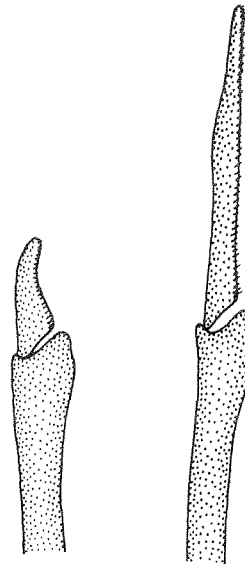


Fig. 187 - *A. Autolytus fasciatus* - stem form, anterior end, dorsal view, 23x; B. Same - male stolon, entire, dorsal view, 12x; C. Same - female stolon, entire, lateral view, with 3-lobed egg sac (P).

- 7b Not as above 8
- 8a Antennae, dorsal cirri and tentacular cirri distinctly annulated; palps not fused (Fig. 189A) 9
- 8b Antennae, dorsal cirri and tentacular cirri smooth, faintly, or irregularly annulated (Fig. 190A) 10
- 9a Dorsal cirri annulated, 11-40 articles; setae all compound, long and short distal blades; length up to 45 mm, width up to 12 mm *Syllis cornuta* Rathke 1843

Proboscis with smooth chitinous rim, large dorsal tooth, a ring of 10 short papillae; ventral cirri length equals setal lobe. Color - white. Biology - found in sand, mud, stones, among shells and sponges, from low water to 2800 m; sexual stolons found in plankton. Distribution - Cosmopolitan, Arctic to Florida; Bay of Fundy: 8, 16, 18, 36, 44.

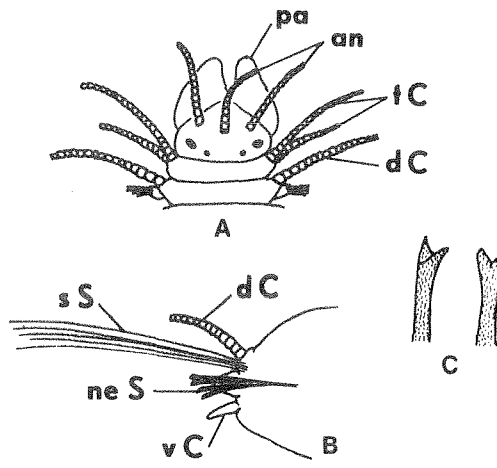
Fig. 188 - Neurosetae (P).



- 9b Dorsal cirri annulated 7-16 articles; some median segments with heavy, fiburcated, simple setae (Fig. 189C); length up to 50 mm, width up to 1 mm *Syllis gracilis* Grube 1840

Proboscis with smooth chitinous rim, large dorsal tooth, a ring of 10 short papillae; ventral cirri length equals setal lobe. Color - colorless or transversely banded with light brown dots; eyes orange-red. Biology - found from low water to 27 m. Distribution - Bay of Fundy to Florida; Bay of Fundy: 8, 15.

Fig. 189 - A. Anterior end, dorsal view (P); B. Parapodium of female stolon stage, with swimming setae (P); C. Neurosetae from middle segment (P).



10a Tentacular cirri irregularly annulated; setae all compound, short bidentate blades (Fig. 190B); proboscis armed with large median tooth
..... *Eusyllis blomstrandii* Malmgren 1867

Basal 1/3 of palps fused; antennae smooth or faintly annulated; ventral cirri shorter than setal lobe; dorsal cirri irregularly annulated, median and posterior cirri shorter than body width; length up to 32 mm, width up to 1.2 mm. Color - pale orange. Biology - found in sand, mud and gravel with shells, among hydroids and bryozoans, from low water to 850 m. Distribution - Arctic to Massachusetts; Bay of Fundy: 5, 16.

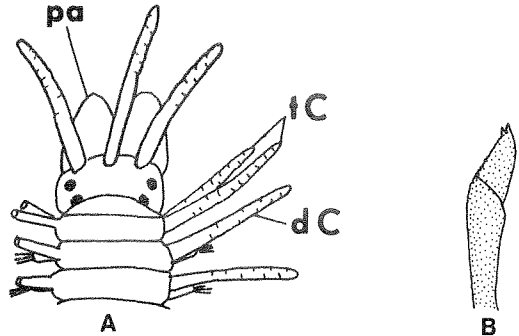


Fig. 190 - A. Anterior end, dorsal view (P); B. Compound bidentate seta (P).

10b Tentacular cirri similar to antennae (smooth or faintly wrinkled); 1 or 2 upper simple setae, rest compound; proboscis unarmed 11

11a Stem of compound setae with 2-3 terminal prongs; some anterior parapodia with enlarged knobbed acicula (Fig. 191); dorsal cirri irregularly annulated
..... *Streptosyllis varians* Webster and Benedict 1887

Inner part of palps fused; ventral cirri as long or longer than dorsal cirri; length up to 8 mm, width up to 0.8 mm. Color - body colorless; males with white sperm mass in body, females with few large polygonal white eggs. Biology - found at low water, in coarse sand and gravel. Distribution - Gulf of St. Lawrence to Maine; Bay of Fundy: 5, 8.

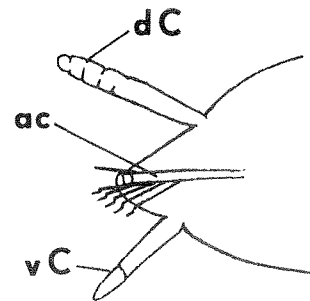


Fig. 191 - Parapodium from anterior region (P).

11b Compound setae with long and short bidentate blades; first few dorsal cirri clavate, rest distinctly annulated, longest 14-25 articles
..... *Syllides longocirrata* Oersted 1845

Basal 1/3 of palps fused; ventral cirri longer than setal lobe; length up to 7 mm, width up to 1 mm. Color - body colorless or yellow brown, dorsal cirri yellow, eggs greenish yellow, tentacular segment may be slightly raised and pigmented with golden dots. Biology - found at low water in sand, dredged on bottoms of sandy mud and gravel. Distribution - Bay of Fundy to Massachusetts; Bay of Fundy: 8, 70.

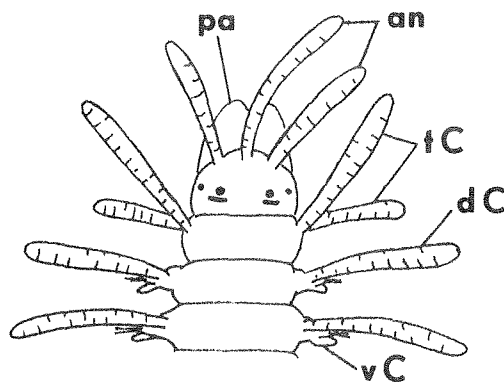


Fig. 192 - Anterior end, dorsal view (P).

Family TEREBELLIDAE Malmgren 1867

Body with two regions; the anterior (thoracic) with dorsal bundles of capillary setae and ventral uncinigerous tori, and the posterior (abdominal) with uncinigerous pinnules. Prostomium fused with the peristomium to form a cephalic lobe, often with eyes, with numerous filiform, non-retractile tentacular filaments, some or all grooved; with or without 1-3 pairs of branchiae on anterior segment; membranous tubes. Supplementary tabular comparison p. 118.

Key to Species

- 1a Branchiae absent; uncini in single rows only, begin after setiger 6 2
- 1b Branchiae present (Figs. 194, 195); uncini in single or double rows, beginning at setigers 2-6 4

2a Thoracic setigers 11-13; uncini begin at setiger 15-16 *Polycirrus medusa* Grube 1850

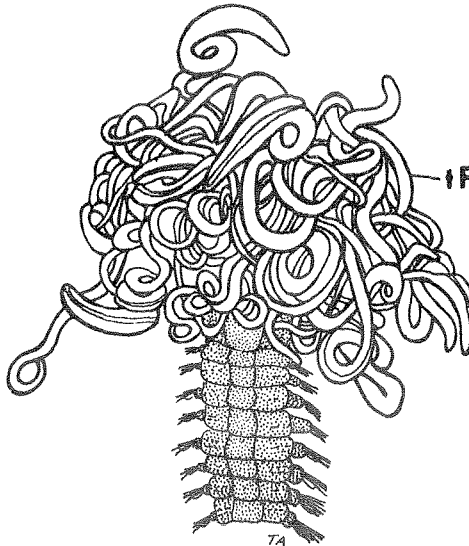
Length up to 70 mm, width up to 6 mm. Color - red. Biology - found in depths of 10-20 m. Distribution - Boreal; Bay of Fundy: 8.

2b Thoracic setigers more than 13; uncini begin a setiger 7 or 9 3

3a Thoracic setigers 16-19; uncini begin at setiger 7 *Polycirrus eximius* (Leidy 1855)

Length up to 25 mm, width up to 2 mm. Color - bright red. Biology - found from the intertidal zone to 16 m, among decaying shell fragments; does not construct tubes. Distribution - Virginian; Bay of Fundy: 18, 39, 43, 44, 70.

Fig. 193 - Anterior end, ventral view, 6x.



3b Thoracic setigers 24-32; uncini begin at setiger 9 *Polycirrus phosphoreus* Verrill 1880

Length up to 80 mm, width up to 6 mm. Color - phosphorescent lemon-yellow. Biology - found from the intertidal zone to 90 m. Distribution - Boreal; Bay of Fundy: 8, 16, 70, 84.

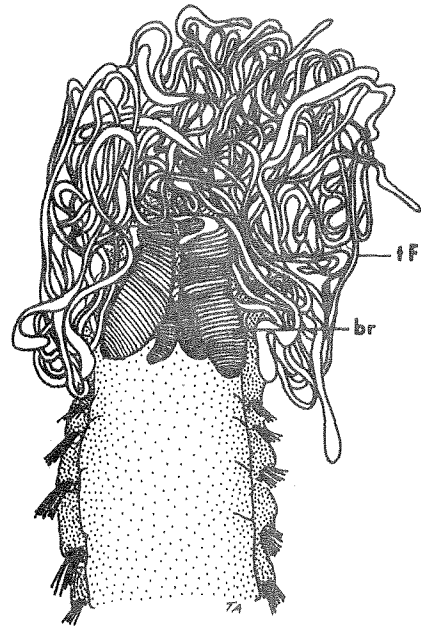
4a Branchiae 1-2 pairs (Figs. 194, 195) 5

4b Branchiae 3 pairs (Figs. 198, 199) 8

5a One median branchia with 4 pectinate lobes *Terebellides stroemi* Sars 1835

Thoracic setigers 18; uncini in single rows only, begin at setiger 6; length up to 75 mm, width up to 8 mm. Color - reddish. Biology - found from 20-200 m on muddy bottoms; the tube is sandy or muddy. Distribution - Boreal; Bay of Fundy: 8, 10, 15, 18, 24, 27, 28, 31, 33, 36, 46.

Fig. 194 - Anterior end, dorsal view, 12x.

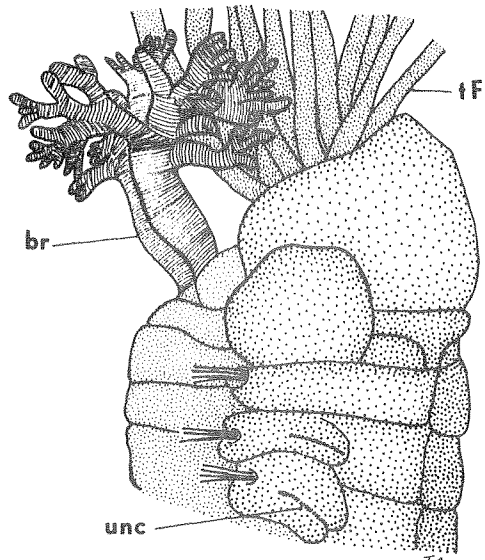


5b Not as above 6

6a Branchia 1 pair, branched *Pista maculata* (Dalvell 1853)

Thoracic setigers 16-17; uncini in single rows on first 6 uncinigerous segments, then in 2 rows; uncini begin at setiger 2; length up to 150 mm, width up to 6 mm. Biology - euryhaline; found in shallow water to 250 m. The tube is membranous with small pebbles and debris. Distribution - Virginian; Bay of Fundy: 8, 18, 70.

Fig. 195 - Anterior end, lateral view, tentacular filaments shown only in part, 25x.



- 6b Branchiae 2 pairs 7
- 7a Branchiae 2 pairs, branched; thoracic setigers 15 (14-18) . . . *Nicolea venustula* (Montagu 1818)

Uncini in single rows on first 6 uncinigerous segments, then in 2 rows; uncini begin at setiger 2; length up to 48 mm, width up to 5 mm. Biology - usually intertidal or in shallow water. Distribution - Labrador to Virginia; Bay of Fundy: 1, 8, 16, 38, 70.

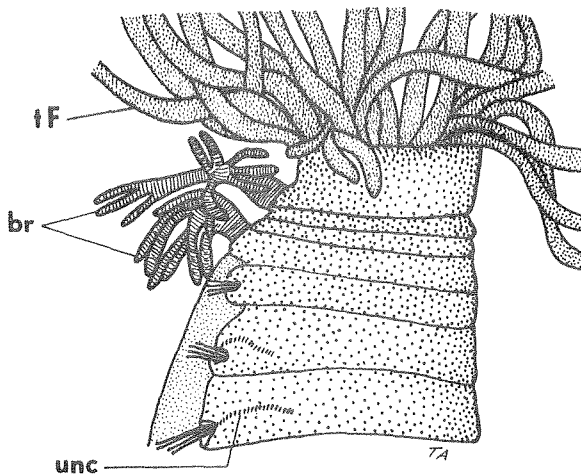


Fig. 196 - Anterior end, lateral view, tentacular filaments shown only in part, 25x.

- 7b Branchiae 2 pairs, numerous simple filaments, thoracic setigers at least 36 *Thelepus cincinnatus* (Fabricius 1780)

Uncini in single rows only, begin at setiger 3; length up to 200 mm, width up to 10 mm. Color - the body is pale red with numerous small glandular warts on the dorsal surface; tentacles orange to flesh color, with red dots. Biology - found intertidally to 1300 m. The tube is membranous, parchment-like. Distribution - Labrador to Cape Cod; Bay of Fundy: 1, 8.

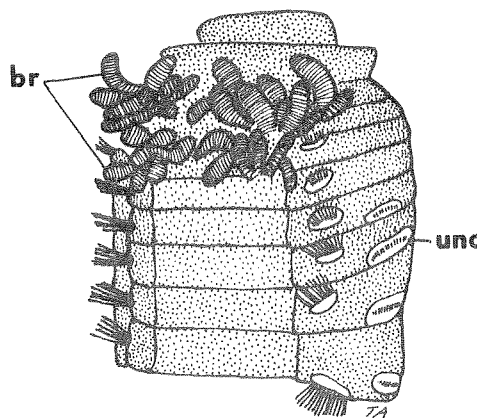


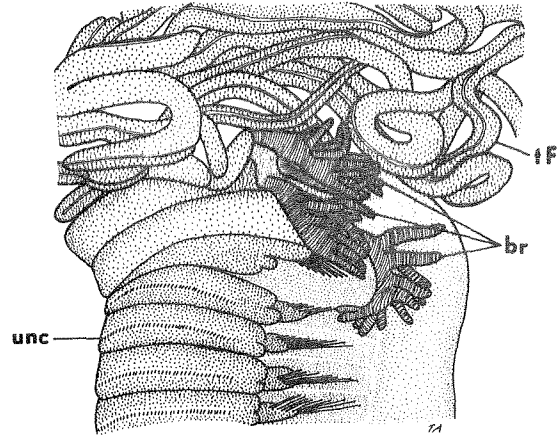
Fig. 197 - Anterior end, dorsolateral view, tentacular filaments removed, 14x.

- 8a Branchiae 3 pairs, branched (Fig. 198) 9
- 8b Branchiae 3 pairs, each pair a single simple filament or numerous simple filaments (Fig. 199) 11

9a Thoracic setigers 17; uncini in single rows on first 6 uncinigerous segments, then in 2 rows, begin at setiger 2; length up to 110 mm, width up to 7 mm
..... *Amphitrite affinis* Malmgren 1866

Distribution - Boreal; Bay of Fundy: yet unrecorded.

Fig. 198 - Anterior end, lateral view, tentacular filaments shown only in part, 17x.



9b Not as above 10

10a Thoracic setigers 24-25; uncini in single rows on first 6 uncinigerous segments, then in 2 rows, begin at setiger 2; length up to 250 mm, width up to 12 mm
..... *Amphitrite figulus* (Dalyell 1853)
(includes *A. johnstoni* Malmgren and *A. brunnea* Stimpson (Pettibone, pers. comm.)

Biology - the most conspicuous terebellid in this region, it is large, usually found intertidally in mud, under rocks or in mussel beds. The tube is made of mud and sand. Distribution - Boreal; Bay of Fundy: 1, 8, 10, 15, 16, 18, 19, 21, 36, 44, 45, 83.

10b Thoracic setigers 40-50; uncini in single rows on first 6 uncinigerous segments, then in 2 rows, begin at setiger 2; length up to 380 mm *Amphitrite ornata* (Leidy 1855)

Biology - euryhaline; forms muddy mounds on intertidal flats. Distribution - Virginian; Bay of Fundy: 70.

11a Branchiae 3 pairs, each 1 simple filament; thoracic setigers 15; uncini in single rows only; length up to 30 mm, width up to 3 mm *Trichobranthus glacialis* Malmgren 1866

Biology - found intertidal to 20 m. Distribution - Arctic to Maine; Bay of Fundy: 8, 32, 38.

11b Branchiae 3 pairs, numerous filaments 12

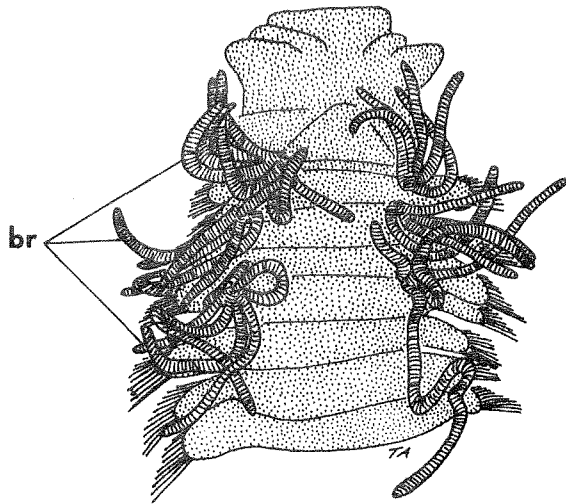
12a Thoracic setigers 17; uncini in single rows on first 6 uncinigerous segments, then in 2 rows, begin at setiger 2; length up to 200 mm, width up to 10 mm
..... *Amphitrite cirrata* Muller 1771

Biology - tubes thick-walled, muddy, found in littoral zone. Distribution - Boreal; Bay of Fundy: 1, 8, 21, 40, 42, 70.

12b Dorsal capillary setae continue on large part of body; uncini begin at setiger 4; length up to 75 mm, width up to 5 mm *Streblosoma spiralis* (Verrill 1874)

Biology - tubes hard, tightly coiled. Distribution - Gulf of St. Lawrence to Bay of Fundy: 44.

Fig. 199 - Anterior end, dorsal view, tentacular filaments removed, 14x.



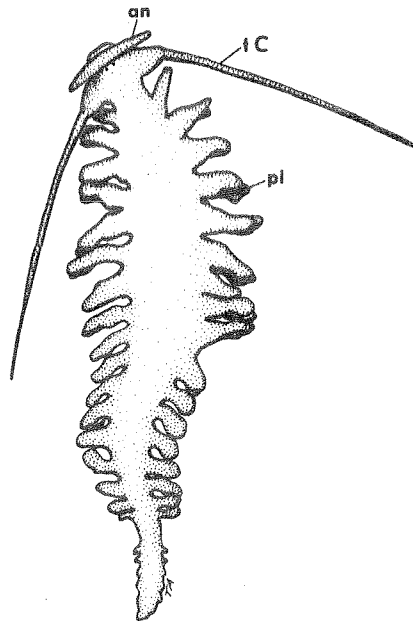
Family TOMOPTERIDAE Grube 1848

Exclusively pelagic; body colorless, transparent; parapodia without external setae, distally bilobed, each ramus bordered with flattened fin-like membrane or pinnule bearing various glands; prostomium and tentacular segments fused to form head region bearing pair of diverging flattened anterior antennae, large pair of tentacular cirri, and 2 eyes.

Tomopteris helgolandica Greeff 1879

Length up to 87 mm, width up to 8 mm. Biology - found from the surface (most often at night) to 1800 m, often captured over gravelly beaches in the spring. Distribution - Newfoundland to Gulf of Maine; Bay of Fundy: 1, 2, 4, 7, 8, 88.

Fig. 200 - Entire, dorsal view, 5x.



Family TROCHOCHAETIDAE Pettibone 1963

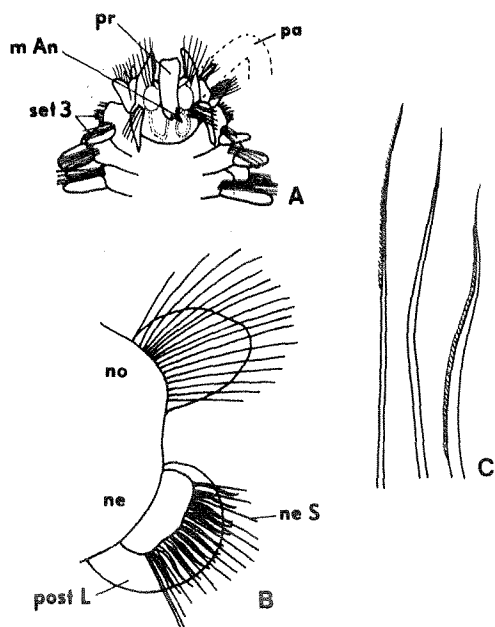
Body long, slender, fragile; prostomium elongated oval, wedged between first 2 setigerous segments, with long, grooved, fragile tentacular palps, with or without median occipital antenna; body divided into 2-3 regions; first 4 setigers modified, setiger 3 with dark heavy acicular neuropodial spines and few capillary setae in vertical series; proboscis eversible, lobulate soft sac, without jaws; tube of fine mud particles cemented together by secreted fibers.

Key to Species

- 1a Prostomium with small conical median antenna (Fig. 201A). Neuropodial postsetal lobes of thoracic region thick, fleshy, subconical; central group of stout neurosetae curved, with striated limbate borders and erect fine tips (Fig. 201B, C)
 *Trochochaeta watsoni* Fauvel 1916

Length of incomplete specimen of 25 segments, 5 mm; width 2 mm, including setae. Biology - found in shallow and deep water on bottoms of fine sand and mud. Both tube and worm very fragile. Distribution - Nova Scotia to Massachusetts; Bay of Fundy: 1.

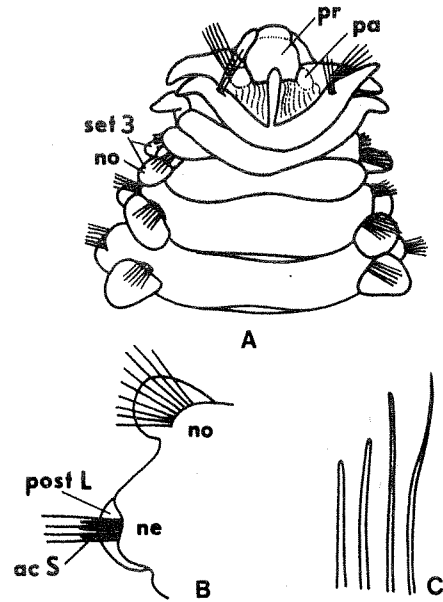
Fig. 201 - A. Anterior end, dorsal view, palps missing, approx. 25x; B. left parapodium 5, anterior view, approx. 65x; C. 3 neurosetae from parapodium 6, approx. 160x (a-c after Pettibone 1976).



1b Prostomium without median antenna (Fig. 202A). Neuropodial postsetal lobes of thoracic region low, subrectangular; central group of stout neurosetae straight, lanceolate, acicular (Fig. 202B, C) *Trochochaeta carica* Birula 1897

Length of complete specimen 40 mm; width in thoracic region 2 mm, including setae. Biology - found in fine sand and mud from 12-1558 m (maximum density in Kennebecasis Bay, 23 m). Distribution - New Brunswick to Massachusetts; Bay of Fundy: 46. 47.

Fig. 202 - A. Anterior end, dorsal view, palps missing, approx. 25x; B. Right parapodium 5, anterior view, approx. 50x; C. 4 neurosetae from right parapodium 5, approx. 120x (a-c after Pettibone 1976).



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Appendix I. Supplementary Tabular Comparisons

Family FLABELLIGERIDAE

	<i>Flabelligera affinis</i>	<i>Diplocirrus hirsutus</i>	<i>Pherusa plumosa</i>	<i>Pheursa affinis</i>	<i>Pherusa aspera</i>	<i>Brada villosa</i>	<i>Brada granosa</i>	<i>Brada inhabilis</i>
Cephalic cage	present	present weekly developed	present	present	present	absent	absent	absent
Notosetae	capillary	capillary directed dorsally	capillary	capillary, after setiger 5, 6-10/bundle	capillary, after setiger 5, 4-5/bundle	capillary, well developed, 2-5/ bundle	capillary, poorly developed, 2/bundle	capillary, poorly developed, 0-2/bundle
Neurosetae	1-2 large hooks	long capillary	hooks begin on setiger 4	hooks begin on setiger 5	hooks begin on setiger 5	3-6 large setae with fragile tips	4-6 large setae with curved tips	4(2-9) large setae with curved tips
Papillae	numerous elongate, with bulbous tips	numerous, elongate	elongate, cylindrical or capitata	short granulous	elongate and stout	elongate, encrusted with sand, not as elongate as <i>B. granosa</i>	elongate, conical 2/3 covered with sand	small, globular, covered with thin layer of sand
Length/width (in mm)	130/15	25/2	60/5	60/3.5	50/	60/9	18/4	60/12
Remarks	mucus mantle covering body							

Genus *Nephtys* (family NEPHTYIDAE)

	<i>Nephtys picta</i>	<i>Nephtys buccera</i>	<i>Nephtys incisa</i>	<i>Nephtys ciliata</i>	<i>Nephtys caeca</i>	<i>Nephtys discors</i>	<i>Nephtys paradoxa</i>
Branchiae begin	setiger 3-4	setiger 4-8	setiger 6-8	setiger 4-8	setiger 4-6	setiger 6	setiger 8-14
Branchiae end	near posterior end	near posterior end	absent from last 12 setigers	rudimentry on last 20-30 setigers	near posterior end	rudimentary on last 1/2 of body	absent from last 15-40 setigers
Unpaired papilla on proboscis	present	present	present	present	absent	absent	absent
Tentacular neuropodial lobe	enlarged, with ventral cirri anterolateral	enlarged, with ventral cirri lateral	not enlarged	not enlarged	not enlarged	not enlarged	not enlarged
Dorsal tentacular cirri	absent	absent	present	present	present	present	present
Acicular lobe	anterior and middle region bilobed	bilobed	acutely pointed	bilobed	bilobed to round	bilobed to round	round to conical
Anterior parapodial lamellae	shorter than, or equal to acicular lobe	shorter than acicular lobe	about equal to acicular lobes	rudimentary	rudimentary	rudimentary	rudimentary
Posterior parapodial lamellae	elongate-oval, longer than acicular lobe	elongate-oval, longer than acicular lobe	rounded, about equal to acicular lobes	rounded, about equal to acicular lobes	oval, foliaceous, longer than acicular lobes	large, foliaceous, longer than acicular lobes in anterior and middle regions	rounded, shorter than acicular lobes
Setae	darker basally, rather short	light, long and flowing	darker basally, rather short	light, preacicular short, postacicular long and flowing	light, preacicular, short, postacicular long	preacicular short, postacicular longer	preacicular short, postacicular longer
Length/width (mm)	60/4	300/20	150/15	300/13	250/15	300/12	200/13
Remarks	anterior body with pigment bands						foliaceous branchiae

Family NEREIDAE

	<i>Nereis virens</i>	<i>Nereis diversicolor</i>	<i>Nereis pelagica</i>	<i>Nereis zonata</i>	<i>Nereis succinea</i>
Number of notopodial ligules	3	3	2	2	3
Ligules shape	upper notopodial ligule broadly triangular, much larger than the other ligules	triangular	short, thick, evenly rounded	triangular to conical	conical, in posterior region upper dorsal ligules elongate with dorsal cirri terminal
Tentacular cirri extend to	setigers 3-9	setiger 4-7	setiger 2	setiger 2-5	setiger 3-8
Notosetae	homogomph spinigers only	homogomph spinigers only	homogomph falcigers homogomph spinigers	homogomph falcigers homogomph spinigers	homogomph spinigers only
Posterior upper neurosetae modified	absent	1-3 heavy specialized falcigers with end pieces partially or completely fused to shafts	absent	absent	absent
Dorsal cirri	shorter than ligules	shorter than ligules	longer than ligules	longer than ligules	longer than ligules
Number of paragnaths					
Area I	0-7	0-9	2(1-3)	0-1	1-6
Area II	0-5	1-9	4(2-8)	6-10 (or more)	oval mass
Heteronereid stage	present	absent	present	present	present
Length/width (in mm)	900/43	200/10	155/14	125/7	190/7
Remarks	euryhaline; "Clam or Sand-worm"	euryhaline			euryhaline

Genus *Scoloplos* (family ORBINIIDAE)

	<i>Scoloplos armiger</i>	<i>Scoloplos acutus</i>	<i>Scoloplos fragilis</i>	<i>Scoloplos robustus</i>
No. of thoracic setigers	17(12-20)	14(13-15)	16(15-19)	23(15-33)
Branchiae begin	setiger 12 (9-17)	setiger 12 (10-14)	setiger 16 (11-23)	setiger 24 (16-32)
Interramal cirri	absent	absent	present	present
No. of subpodal papillae in transitional region	1-2	absent	2	2-3
Length/width (in mm)	120/2.5	40/1	150/3	375/10

Family PARAONIDAE

	<i>Aricidea quadrilobata</i>	<i>Aricidea suecica</i>	<i>Aricidea catherinae</i>	<i>Tauberia gracilis</i>	<i>Paraonis fulgens</i>	<i>Paraonis lyra</i>
Median antenna	long, filiform, extends to setiger 4-6	short, subulate to fusiform, extends to seti- ger 2	short, filiform to clavate, extends to setiger 1	absent	absent	absent
Branchiae	9-10 prs, broad base, abruptly poin- ted distally	15-19 prs (10-24), strap- like, tapering gradually	13 prs (11-22), straplike, taper- ing gradually	9-14 prs, straplike, pointed	16-25 prs, wide, foliaceous, with narrow tips	7(7-17) prs, straplike
Branchiae begin	setiger 4	setiger 4	setiger 4	setiger 6-7	setiger 4	setiger 4-5
Posterior neuropodial setae	upper capillary, middle curved with mucronate tips, lower, few s-shaped crochets	long capillary and shorter, stouter ones with long mucronate tips	capillary and shorter hooked crochets with faint sheaths	capillary and 3-6 hooked crochets begin- ning on setiger 20	capillary and 1-2 hooked crochets beginning on setiger 50	capillary only
Length/width (in mm)	6/0.6	20/1	20/1.5	25/0.5	30/1	20/0.3

Family PHYLLODOCIDAE

	<i>Mystides borealis</i>	<i>Eteone trilineata</i>	<i>Eteone heteropoda</i>	<i>Eteone longa</i>	<i>Eteone flava</i>	<i>Eteone lactea</i>	<i>Eumida sanguinea</i>	<i>Eulalia bilineata</i>	<i>Eulalia viridis</i>	<i>Paranaitis speciosa</i>	<i>Phyllodoce mucosa</i>	<i>Phyllodoce groenlandica</i>	<i>Phyllodoce maculata</i>
No. of tentacular cirri	3 prs	2 prs	2 prs	2 prs	2 prs	2 prs	4 prs	4 prs	4 prs	4 prs	4 prs	4 prs	4 prs
Tentacular cirri	subequal	dorsal twice length of ventral	subequal	subequal	subequal	ventral 2-3 times length of dorsal	upper 2 prs longer	upper 2 prs longer	upper 2 prs longer	upper 2 prs longer	2 prs longer	2 prs longer	2 prs longer
Prostomium shape	suboval	subtriangular	subtriangular	subtriangular	subtriangular	subconical	suboval to subconical	suboval to subconical	suboval to subconical	suboval with distinct posterior extension	cordiform	cordiform	cordiform
Median antenna	absent	absent	absent	absent	absent	absent	present	present	present	absent	absent	absent	absent
Dorsal cirri	oval, thick, flattened	broadly rounded, wide as long	asymmetrical, longer than wide	symmetrical, longer than wide, subequal to parapodial lobe	symmetrical, wider than long, larger than parapodial lobe	asymmetrical, wider than long	cordiform, pointed	oval-obtuse, rounded distally	elongate-lanceolate pointed distally	large overlapping	subquadrangular	subquadrangular	subquadrangular
Ventral cirri	oval, thick flattened	elongate-oval	elongate-oval	elongate-oval	elongate-oval	elongate-oval	thin, oval lanceolate	small, obtuse-oval	small, oval	elongate-oval	pointed	oval with asymmetrical pointed tip	oval, not pointed
Anal cirri	oval, thick, flattened	stout, elongate	subulate, tapering	short, thick, almost spherical	short, thick, almost spherical	subulate, tapering	wide basally, tapering	subulate to clavate	fusiform to lanceolate	oblong-oval	cylindrical, tapering	cylindrical, tapering	cylindrical tapering
Proboscis	with soft papillae	smooth	smooth	smooth	smooth	---	smooth to sparsely papillated	thickly papillated	thickly papillated	papillated	with 12 longitudinal rows of 8-12 papillae	with 12 longitudinal rows of 10-20 papillae	with 12 longitudinal rows of 6-8 papillae
Length/width (in mm)	16/0.8	10/1	93/3	160/5	120/4	230/3	60/4	100/2	150/3	18/3	150/3	450/9	100/2

Five genera of the family POLYNOIDAE

	<i>Antinoella</i> <i>sarsi</i>	<i>Hartmania</i> <i>moorei</i>	<i>Arcetobia</i> <i>anticostiensis</i>	<i>Gattyana</i> <i>cirrosa</i>	<i>Harmothoe</i> <i>imbricata</i>	<i>Harmothoe</i> <i>extenuata</i>	<i>Harmothoe</i> <i>nodosa</i>	<i>Harmothoe</i> <i>oerstedii</i>
Elytra								
lateral fringe	absent	absent	absent	present	present or absent	present	present	present
microtubercles	present	absent	scattered on anterior	1-, 2-, or 4-	conical	conical 1- or 2-	semi-globular,	1-to many-
macrotubercles	clavate papillae	absent	curved part	pronged	globular to	pronged	some bifid	pronged
			absent	absent	elongate	present or absent,	near external bord-	branched
						sausage-shaped	er, with roughened	tips
Notosetae	stouter, with	widest basally,	upper short, stout	upper, stout	stouter with	stouter, with dis-	stouter, with	stouter, with
	distinct spinous	tapering to cap-	with blunt tips; rest	with blunt tips,	distinct spinous	tinct spinous rows	distinct spinous	distinct spinous
	rows	illary tips	with capillary tips	rest tapering to	rows		rows	rows
				capillary tips				
Neurosetae	slender, finely	stouter, long	2 forms: with slender	stouter, with	with distinct	enlarged spinous	with distinct	with distinct
	spinous, pointed	shafts and en-	sharp tips; with	distinct spinous	spinous region,	region, with tips	spinous region,	spinous region
	to blunt, smooth	larged spinous	bifid tips	region and	smooth hooked	slightly hooked,	and entire	and entire bare
	tips	region, ending		smooth hooked	tips; usually	small secondary	bare tips	tips
		in short slender		tips; tips not	with a sub-	tooth present or		
		tips, not hooked		bifid	terminal tooth	absent		
Length/width	68/27	15/5.2	26/8	45/12	65/19	74/20	90/39	80/30
(in mm)								
Remarks	notopodia and	lives commensal-	lives commensally	lives commensal-	euryhaline;	euryhaline; found		
	neuropodia ex-	ly with <i>Nereis</i>	with terebellids	ly with	anterior pair of	with other polynoids;		
	tending into	<i>virens</i> and	and maldanids	terebellids	eyes antero-	anterior pair of eyes		
	conspicuous	<i>Praxillella</i>			ventral, near	anterolateral, visible		
	digitiform	<i>gracilis</i>			cephalic peaks,	dorsally		
	acicular lobes				not visible			
					dorsally except			
					through prostom-			
					ium; very common			

Six genera of the family SABELLIDAE

	<i>Fabricia sabella</i>	<i>Euchone rubrocincta</i>	<i>Chone infundibuliformis</i>	<i>Sabella crassicornis</i>	<i>Sabella penicillus</i>	<i>Potamilla neglecta</i>	<i>Potamilla reniformis</i>	<i>Myxicola infundibulum</i>
Collarlette	poorly developed; a ventral spatulate lip	well developed; notched middorsally and small midventral slit	well developed; with mid-dorsal slit	well developed, 4 lobes, separated middorsally, lateral notches and mid-ventral slit	well developed; 4 lobes, separated middorsally, lateral notches and mid-ventral slit	well developed; 2 lobes, separated dorsally, and mid-ventral slit	well developed; 4 lobes, middorsal depression, notched dorso-laterally and mid-ventral slit	poorly developed; a triangular ventral lobe
Palmar membrane	absent	well developed	well developed	poorly developed	poorly developed	poorly developed	poorly developed	well developed
Branchial filaments	without eyes	without eyes	without eyes	with 2-8 pr of eyes	without eyes	without eyes	with 0-8 large eyes in a row	without eyes
Dorsal thoracic setae		limbate and spatulate	limbate and spatulate	limbate only	limbate only	limbate and spatulate	limbate and spatulate	limbate only
Length/width (in mm)	3.1/0.6	30/2.5	30/2.5	80/4	115/6	84/3	100/2	125/10
Remarks	minute species, with 10-12 segments	posterior end with ventral sucker-like disc					Branchial filaments often banded with wine red	uncinigerous tori absent

Genus *Polydora* (family SPIONIDAE)

	<i>Polydora ligni</i>	<i>Polydora websteri</i>	<i>Polydora caulleryi</i>	<i>Polydora quadrilobata</i>	<i>Polydora concharum</i>	<i>Polydora socialis</i>
Prostromium	bifid, flaring laterally	weakly incised to rounded anteriorly	deeply incised	distinctly bifid anteriorly	distinctly rounded anteriorly	distinctly bifid anteriorly
Occipital antenna	present	absent	absent	absent	absent	absent
Branchiae	simple; absent last few segments; begin setiger 7	simple; absent last few segments; begin setiger 7	simple, absent posterior 1/3; begin setiger 7	simple, absent on posterior 1/3; begin setiger 7	simple; absent on posterior 1/2; begin setiger 7-9	simple; absent on last few segments; begin setiger 8(7-9)
Seta of modified setiger 5	falcate with small accessory tooth	falcate with lateral flange or sheath	falcate with pectinate or bushy tops	bifid tip, with fine hairs between teeth	falcate with lateral sheath	falcate with sub-terminal protuberance
Neuropodial hooded hooks	with constriction in shaft	with constriction in shaft	no constriction	no constriction	no constriction	no constriction
Pygidium	large flaring cup with dorsal gap	large flaring cup with dorsal gap	4 equal lobes	4 subequal lobes	4 unequal lobes	1-3 lobes
Length (in mm)	32	20	50	15	140	55
Remarks	euryhaline	found in calcareous substrate	posterior notopodial spines awl-shaped	posterior notopodial spines awl-shaped; pigment pattern in anterior region	found in shells and decayed woods	

Family SYLLIDAE

	<i>Autolytus</i> sp.	<i>Amblyosyllis finnarchica</i>	<i>Syllis cornuta</i>	<i>Syllis gracilis</i>	<i>Exogone verucera</i>	<i>Exogone hebes</i>	<i>Exogone dispar</i>	<i>Sphaerosyllis erinaceus</i>	<i>Parapionosyllis longicirrata</i>	<i>Eusyllis blomstrandii</i>	<i>Streptosyllis varians</i>	<i>Syllides longocirrata</i>
Body	larger	short, flattened, 15 segments	larger	larger	tiny, linear, smooth	tiny, linear, smooth	tiny, linear, smooth	tiny, linear, papillate	tiny, linear, smooth	larger	larger	larger
Proboscis	with chitinous lining with a crown of teeth	armed with circle of papillae and a circle of teeth	smooth chitinous rim, large dorsal tooth, a ring of 10 short papillae	smooth chitinous rim, large dorsal tooth, a ring of 10 short papillae	a circle of papillae and a single conical tooth	a circle of papillae and a single conical tooth	a circle of papillae and a single conical tooth	armed with single anterior tooth	with single anterior tooth	armed with large median tooth	unarmed	unarmed
Palps	fused, turned ventrally	small, not visible dorsally	not fused	not fused	fused, distinct notch anteriorly	fused, rounded anteriorly	fused, slight notch anteriorly	basal 1/2 fused	basal 1/3 fused	basal 1/3 fused	inner part fused	basal 1/3 fused
Nuchal epaulettes	present	prominent, ciliated	absent	absent	present, ciliated	present, ciliated	present, ciliated			absent	absent	absent
Antennae	long, filiform, smooth or faintly annulated	long, filiform, smooth	long, filiform, distinctly annulated	long, filiform, distinctly annulated	short, clavate, subequal	short, clavate, median longer	short, clavate, median longer	short, bulbous basally	short, wider basally	long, filiform, smooth or faintly annulated	long, clavate, smooth	long, clavate, smooth or faintly wrinkled
Tentacular cirri	2 pr, long, filiform, smooth or faintly annulated	2 pr, long, filiform, upper longer than lower	2 pr, long, distinctly annulated	2 pr, long, distinctly annulated	1 pr, shorter than dorsal cirri	1 pr, shorter than dorsal cirri	1 pr, shorter than dorsal cirri	1 pr, short, equal antennae	1 pr, short, equal antennae	2 pr, long, irregularly annulated	2 pr, long, similar to antennae	2 pr, long, similar to antennae
Ventral cirri	absent	length equals setal lobe	length equals setal lobe	length equals setal lobe	shorter than setal lobe	shorter than setal lobe	shorter than setal lobe	shorter than setal lobe	as long as setal lobe	shorter than setal lobe	as long or longer than dorsal cirri	longer than setal lobe
Dorsal cirri	long, smooth, first 2 pr very long	long, faint to distinctly annulated	annulated, 11-40 articles	annulated, 7-16 articles	present or absent on setiger 2, shorter than setal lobe	absent from setiger 2, shorter than setal lobe	shorter than setal lobe	absent from setiger 2, short, bulbous basally	subulate, extending slightly beyond setae	irregularly annulated, median and posterior shorter than body width	clavate to filiform, irregularly annulated	first few clavate, rest distinctly annulated, longest 14-25 articles
Setae	simple and compound	all compound, with blades hooked, tips entire	all compound long and short distal blades	some median segments with heavy, bifurcated simple setae	anterior parapodia with 3 kinds: 1-2 simple curved; 1-3 compound spinigers; 2-6 compound falcigers	anterior parapodia with all setae compound, with short blades	anterior parapodia with 3 kinds: 1 simple curved; 1-2 compound spinigers; 3-4 compound falcigers	1 upper simple seta, rest compound with distal blades entire, hooked	1 upper simple seta, rest compound with distal blades entire, slightly hooked	all compound, short bidentate blades	1 or 2 upper simple setae, rest compound with 2-3 terminal prongs	1 or 2 upper simple setae, rest compound, long and short bidentate blades
Length/width (mm)		10/2	45/1.2	50/1	8/0.3	10/0.4	8/0.5	4.5/0.5	5/0.3	32/1.2	8/0.8	7/1
Remarks											some anterior parapodia with enlarged knobbed acicula	

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Family TERESELLIDAE

	<i>Polycirrus eximius</i>	<i>Polycirrus medusa</i>	<i>Polycirrus phosphoreus</i>	<i>Pista maculata</i>	<i>Nicolea venustula</i>	<i>Thelepus cinnamatus</i>	<i>Trichobranchus glacialis</i>	<i>Amphitrite affinis</i>	<i>Amphitrite figulus</i>	<i>Amphitrite ornata</i>	<i>Amphitrite cirrata</i>	<i>Streblosoma spiralis</i>	<i>Terebellides stroemi</i>
Branchiae	absent	absent	absent	1 pair, branched	2 pairs, branched	2 pairs, numerous simple filaments	3 pairs, each 1 simple filament	3 pairs, branched	3 pairs, branched	3 pairs, branched	3 pairs, numerous filaments	3 pairs, numerous filaments	1 median with 4 pectinate lobes
Number of thoracic setigers	16-19	11-13	24-32	16-17	15(14-18)	at least 36	15	17	24-25	40-50	17		18
Uncini	single rows only	single rows only	single rows only	single rows on first 6 uncinigerous segments, then in 2 rows	single rows on first 6 uncinigerous segments, then in 2 rows	single rows only	single rows only	single rows on first 6 uncini- gerous segments, then in 2 rows	single rows on first 6 uncini- gerous segments, then in two rows	single rows on first 6 uncini- gerous segments, then in 2 rows	single rows on first 6 uncini- gerous segments, then in two rows		single rows only
Uncini begin	setiger 7	setiger 15-16	setiger 9	setiger 2	setiger 2	setiger 3	setiger (?)	setiger 2	setiger 2	setiger 2	setiger 2	setiger 4	setiger 6
Length/width (in mm)	25/2	70/6	80/6	150/6	48/5	200/10	30/3	110/7	250/12	380/	200/10	75/5	75/8
Remarks	bright red	red	lemon-yellow	euryhaline		dorsal surface with numerous small glandular warts				euryhaline		tubes hard, tightly coiled	

Appendix II. Reproduction in nereidae

Many nereids at maturity undergo modifications, referred to as the epitokous phase or heteronereid stage. Epitoky varies from only slight modifications to sexually dimorphic male and females with such changes as eyes becoming greatly enlarged and body being divided into 2-3 distinct regions. The modified or natatory region has flattened parapodia with swimming setae and thin flattened extra lamellae on the parapodial lobes and bases of the dorsal and ventral cirri.

Nereis diversicolor - not modified.

Nereis virens - only slightly modified

- eyes slightly larger
- posterior 2/3's of body with segments more compressed
- first 7 prs of dorsal cirri become more cylindrical with curved tips (on males only?)
- first 5 prs of ventral cirri become slightly modified
- anal segment becomes crenulate
- the parapodia provided with a modified type of swimming setae as well as normal type.

N. succinea, *N. pelagica* and *N. zonata* - sharply modified heteronereids.

	<i>N. succinea</i>		<i>N. pelagic</i>		<i>N. zonata</i>	
	enlarged		enlarged		enlarged	
Body divided	3 regions		3 regions		2 regions	
	male	female	male	female	male	female
Number of setigers in anterior region	15(13-15)	17(13-18)	16	15-19	14-17	16-17
Dorsal cirri of anterior region	first 7 prs inflated subterminally	first 5 prs slightly modified	first 7 prs enlarged, cylindrical with curved tips	first 5 prs slightly modified	first 7-8 prs clubbed	first 7 prs slightly or not modified
Ventral cirri of anterior region			first 5-6 prs clubbed	first 4 prs slightly modified	first 5-7 prs clubbed	not modified
Dorsal cirri of modified region	crenulate on lower margin	smooth	crenulate on lower margin	smooth	crenulate on lower margin	smooth
Pygidium	crenulate	crenulate	papillate or crenulate	smooth		

Appendix III. Reproduction in Syllidae

Direct reproduction; when mature they form sexual epitokes, with swimming setae on the posterior segments.

Eusyllis blomstrandii - eggs and sperm given off into the water
- swimming setae begin on setiger 17 (13-17)

Syllides longocirrata - eggs and sperm given off into the water
- swimming setae begin on setiger 11-12

Streptosyllis varians - eggs and sperm given off into the water
- swimming setae begin on setiger 21

Amblyosyllis finmarchica - eggs and sperm given off into the water
- swimming setae begin on setiger 6

Exogone verugera - eggs attached to female
- swimming setae begin on setiger 18 (13-18)

Exogone dispar - eggs attached to female
- swimming setae begin on setiger 12 (6-15)

Exogone hebes - eggs attached to female
- swimming setae begin on setiger 11

Parapionosyllis longicirrata - eggs attached to females
- swimming setae begin on setiger 11

Sphaerosyllis erinaceus - eggs attached to females
- swimming setae begin on setiger 8

Indirect reproduction; when mature a variable number of posterior segments become modified to form a sexual stolon; with swimming setae and a newly formed head develops anteriorly on the stolon.

Syllis sp. - sexual stolons or chaetosyllis stage with male and female similar
- head appendages poorly developed
- pelagic larvae

Autolytus sp. - sexual stolons, male (polybostrichus stage) and female (sacconereis stage) stolons which differ markedly
- female with 3 subequal antennae and 1-3 prs tentacular cirri
- males with 1 pr short frontal antennae and 1 large median antenna and 2-3 prs tentacular cirri

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