

SOME POLYCHAETOUS ANNELIDS FROM THE DEEP BASINS IN SOGNEFJORDEN, WESTERN NORWAY

By

KRISTIAN FAUCHALD

Allan Hancock Foundation, Los Angeles

ABSTRACT

Twenty-one species of polychaetous annelids have been found in deep-water collections from Sognefjorden, western Norway. *Antinoella plumosa*, *Pseudeurythoe hemuli*, *Drilonereis brattstroemi*, *Fauveliopsis brattgardii*, and *Leiochrides norvegicus* are newly described.

The polychaete fauna of the deep basin of Sognefjorden is very poorly known. A few samples were taken in the basin during a shake-down cruise for the Norwegian North Atlantic Expedition in 1872; *Sthenolepis tetragona* (as *Leanira t.*) and *Cirratulus cirratus* were reported from these samples by HANSEN (1882). BRATTEGARD (1967) discussed a series of samples taken by him in 1966 and mentioned the presence of *Phylo norvegicus* in addition to the two above-mentioned species. These three polychaetes represent the total known polychaete fauna in the basin.

The present collection is from the material collected by BRATTEGARD; it includes twenty-one identifiable species of polychaetes; fragments of other, non-identifiable species are also present. A review of the physical and chemical parameters and a listing of the total known benthic fauna in the basin was given by BRATTEGARD (1967). He also analyzed the distribution of the pogonophoran *Siboglinum ekmani* that appears to be one of the dominant organisms in these bottoms. BRATTEGARD demonstrated that all samples were taken from essentially the same population of pogonophorans. The differences between the samples in terms of polychaetous annelids are certainly minor and the samples are here considered as being taken from one faunal area.

The fauna appears poor compared to the fauna in similar depths elsewhere in the northern Atlantic Ocean (HARTMAN 1965; HARTMAN & FAUCHALD 1971). This apparent poverty is partially due to the fact that the samples were screened with 2 mm screens; in the other surveys 0.5 mm screens were used. Most deep-water polychaetes are rather small; characteristically, it is the smaller species that are absent in the present material.

Species of the families, Onuphidae and Ampharetidae are completely absent in the present collection. These two families are usually well represented in deep-water collections and are often dominant. The absence of members of these two

Contribution from the Biological Station of the University of Bergen, Espesgrend, N-5065 Blomsterdalen, Norway.

families is hardly due to the sampling technique. Most species in both families are rather large; they are furthermore tubicolous and should have been caught at least in the Agassiz-trawl, if not in the grabs. The tubes are large enough to be caught in a 2 mm screen. This difference between the deep basin in Sognefjorden and the open deep areas may indicate a different origin for the basin-fauna than implied by the depth alone.

STATION LIST

Sta. S1. Sognefjorden, south of Raudberg light, 61°03'N, 05°24'E, 1248–1228 m, clay, 3 May 1966, Agassiz-trawl.

Sta. S2. Sognefjorden, southwest of Raudberg light, 61°03'36"N, 05°22'36"E, 1224 m, clay, 3 May 1966, twin Petersen-grabs covering 0.5 m².

Sta. S3. Sognefjorden, southwest of the mouth of Vadheimsfjorden, 61°08'15"N, 05°45'30"E 1272 m, clay with brownish top layer, 4 May 1966, twin Petersen-grabs covering 0.6 m².

Sta. S7. Sognefjorden, north of Ortnevik, 61°07'55"N, 06°08'36"E, 1245 m, clay, 5–6 May 1966, twin Petersen-grabs covering 0.6 m².

F a m i l y Polynoidae *Antinoella plumosa*, new species Fig. 1

The holotype is a nearly complete specimen with 28 setigers that is 20 mm long and 8 mm wide with setae. The body without setae is 5 mm wide. The specimen is light yellow and has tan square patches on the dorsum of each segment. It is dorsoventrally flattened and the parapodia are strongly prolonged in posterior setigers.

The prostomium (Fig. 1 A) is ovate and has two pairs of eyes. The anterior pair is at the widest part and the posterior pair near the posterior margin of the prostomium. The anterior eyes are larger than the posterior ones. The paired antennae are less than half as long as the length of the prostomium; each is covered with papillae. The median antennal style is absent, but appears to have been considerably larger than the lateral antennae. The palps are long and smooth. The first parapodia are prolonged and directed forwards along the sides of the prostomium; they have truncate lobes external to the pointed acicular lobes. Each of these external lobes carries a pair of tentacular cirri. Each tentacular cirrus is covered with papillae.

Where fully developed each parapodium (Fig. 1 I) has a long, narrow base; the notopodium is sharply pointed and the notaculum is projecting freely from the setal lobe. Each neuropodial acicular lobe is sharply pointed and has a short, digitiform lobe on the superior edge near the tip. The short ventral cirri are covered with papillae. The dorsal cirri reach beyond the tip of the setae and are densely

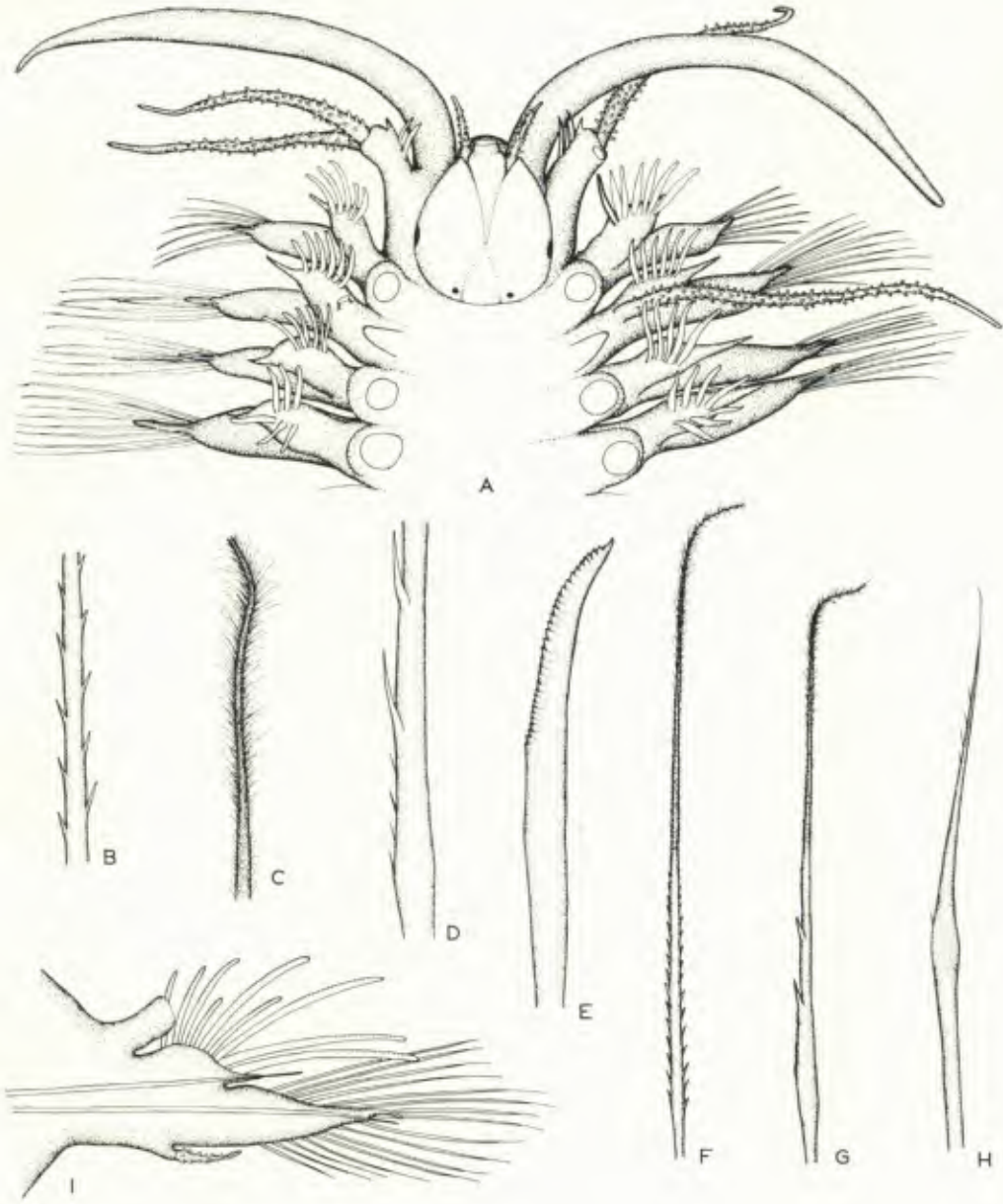


Fig. 1. *Antinoella plumosa*, new species. A. Anterior end, dorsal view, 23 \times . B. Median portion, superior neuroseta, 385 \times . C. Distal portion, superior neuroseta, 385 \times . D. Median portion, median neuroseta, 385 \times . E. Notoseta, 160 \times . F. Superior neuroseta, 160 \times . G. Median neuroseta, 160 \times . H. Inferiormost neuroseta, 160 \times . I. Median parapodium, 25 \times .

studded with papillae. Elytrae are absent; thirteen pairs of elytral scars were present, but the specimen is incomplete posteriorly.

Two-three setae resembling the notosetae are present in the first setiger. All notosetae (Fig. 1 E) are of one kind; each is recurved and has series of transverse ridges on the convex side; the tip is slightly falcate. Neuropodial setae are of three kinds. Ventralmost in each fascicle is found a single, nearly smooth, medially expanded pointed seta (Fig. 1 H). Medially in each fascicle is found approximately twelve long, slender setae; each of the medial setae (Fig. 1 D, G) has two distinct large teeth along the cutting edge and is distally heavily plumose. Superiormost in each neuropodial fascicle is found ten-fifteen long, slender setae (Fig. 1 B-D, F), which resemble the median kind in that they are distally plumose; they differ in that the median portion of each seta has a series of fifteen-twenty sharply pointed teeth on each side.

A. plumosa resembles *A. sarsi* (MALMGREN 1865, pp. 75-78, Pl. 9, fig. 6) closely. MALMGREN had two different groups of specimens in the original material; one group was from the Baltic Sea, the other was from Spitzbergen and northern Norway. He commented on the different sizes of the specimens and on some apparently related differences in setal construction and coloration. Later MALMGREN (1867, pp. 136-137) indicated that the two groups could be considered distinct species and gave a new name, *A. promamme*, to the form from northern Norway and Spitzbergen. MALMGREN gave good illustrations of the setae, but did not mention the presence of any plumosity in any of the setae. DITLEVSEN (1917, pp. 23-24) mentioned that some specimens of *A. sarsi* taken off Jan Mayen, had pilose setae, but gave no further details on setal structures.

The genus *Antinoella* was separated from *Antinoe*, in which all the names previously mentioned had been described, by AUGENER (1928, pp. 786-689); AUGENER considered the two forms described by MALMGREN as synonymous; he did not mention pilosity of the setae in any of his specimens.

A. plumosa differs from *A. sarsi* in that it has three kinds of neuropodial setae: these include a series of setae with two large teeth on the cutting edge, a series of setae with teeth along the whole cutting edge, and a single smooth seta ventrally. *A. sarsi* has two kinds of neurosetae; some are evenly dentate along the whole cutting edge, others are smooth. All neuropodial setae, except the ventralmost one, are distally prominently plumose in *A. plumosa*; neurosetae in *A. sarsi* are distally smooth, with the possible exception of the specimen reported from Jan Mayen by DITLEVSEN (1917), which may belong to *A. plumosa* or to another similar species.

Material examined: S3 (1, holotype, Zoological Museum, University of Bergen, Norway, number 52 203).

Harmothoe, species indeterminable

One indeterminable fragment of a species of *Harmothoe* is present. It has a short prostomium with a pair of very large eyes covering the lateral sides. Elytrae and cephalic appendages are smooth. Neurosetae include both bidentate and unidentate kinds. The specimen does not appear to fit any species known from the eastern Atlantic Ocean.

Material examined: S7 (1 fragment).

Family Sigalionidae

Sthenolepis tetragona (ÖRSTED, 1845)

Leanira tetragona HANSEN 1882, p. 6; BIDENKAP 1894, pp. 65–66; FAUVEL 1923, p. 117, fig. 43a–g; BRATTEGARD 1967, p. 302.

Material examined: S2 (1).

Distribution: *S. tetragona* is known from both sides of the Atlantic Ocean south to Virginia and the Azores. It is very common in muddy bottoms in the Norwegian fjords.

Family Amphinomidae

Pseudeurythoe hemuli, new species

Fig. 2 A–E

The holotype is a complete specimen with 27 setigers that is 7 mm long and 1.2 mm wide with setae. It is white and lacks color patterns. The body is sausage-shaped and the epithelium is slightly wrinkled.

The prostomium (Fig. 2 B) is divided into two parts by a transverse sulcus at the middle. The anterior part is evenly rounded; the posterior part, which is slightly narrower, is quadrangular. A pair of short, digitiform smooth antennae are on the anterior part and a short, unpaired antenna is near the posterior margin of the posterior part. The caruncle is visible as a small, button-shaped projection near the posterior margin of the prostomium. A pair of tentacular cirri are on the peristomium lateral to the paired antennae; each tentacular cirrus is short and slender.

The slender first notopodial postsetal lobes are longer than all other anterior appendages; the neuropodial postsetal lobes of the same setiger are similar, but shorter. The second and third setigers have diamond-shaped postsetal lobes in the notopodia; the neuropodial postsetal lobes are digitiform as are the postsetal lobes in all other setigers. Other parapodial lobes are low folds or are completely reduced.

Five pairs of branchia are present from setiger 4; each is dichotomously branched and emerges from a single stalk (Fig. 2C). The branchiae are situated posterior and slightly dorsal to the notopodia in the first branchial setiger and are directly posterior to the notopodia in other branchial setigers.

Notopodial setae are of two kinds; a number of long, slender smooth setae are present in all notopodial fascicles. Between these setae are found four or five thicker harpoon-like setae (Fig. 2 A). Neuropodial setae are also of two kinds; the long inferior setae (Fig. 2 D) are slender and have a large, closely appended spur; the distal parts of each seta is finely dentate. Median and superior setae (Fig. 2 E) are shorter and have a subdistal inflated area ending in a short spur; each of the median seta is distally finely dentate.

P. hemuli has branchiae from setiger 4 as do two other species in the genus, including *P. acarunculata* MONRO (1937, pp. 249–250, fig. 2 a–d) and *P. minuta* KNOX (1960), p. 80, figs. 1–6.

P. acarunculata has more than forty pairs of branchiae; it has distinct eyes; a caruncle and subdistally inflated setae are absent.

P. minuta has seven pairs of branchiae; subdistally inflated setae are absent. *P. hemuli* has five pairs of branchiae and subdistally inflated setae are present. Both the latter species have caruncles, but lack eyes.

P. hemuli is named for the hemuls, a group of often natural-history interested beings created by the Finnish author and artist Tove Jansson.

Material examined: Sl (2, holotype, Zoological Museum, University of Bergen, Norway, number 52 207).

F a m i l y Hesionidae

Nereimyra punctata (O. F. MÜLLER, 1788)

Castalia punctata BIDENKAP 1894, pp. 88–89; FAUVEL 1923, pp. 240–241, fig. 89f–k.

N. punctata has six pairs of tentacular cirri and the opening of the pharynx is bordered by a series of distinct, digitiform papillae. The present specimens are all posteriorly incomplete; the parapodia are long and slender. The setal equipment and the parapodial lobes are as illustrated by FAUVEL (1923).

Material examined: Sl (3).

Distribution: *N. punctata* is very common in shallow water along the Norwegian coast; it is found commonly on both sides of the Atlantic Ocean as far south as the Azores and North Carolina.

F a m i l y Nephthyidae

Nephtys incisa MALMGREN, 1865

Nephtys incisa FAUCHALD 1963, pp. 15–16, figs. 1H, 2C and 3B.

N. incisa has conical acicular lobes and the pre- and postacicular lobes are shorter than the acicular lobes. Interramal cirri are present from the sixth setiger.

Material examined: Sl (1).

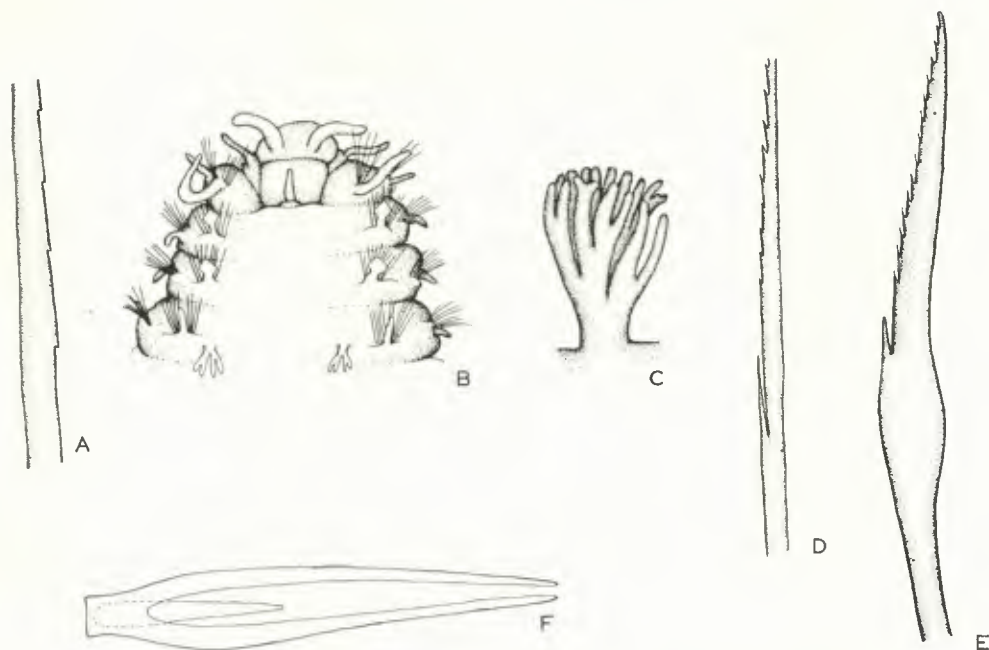


Fig. 2. *Pseudeurythoe hemuli*, new species. A. Notoseta, 950 \times . B. Anterior end, dorsal view, 50 \times . C. Branchia, fourth branchial setiger, 75 \times . D. Inferior neuroseta, 950 \times . E. Superior neuroseta, 950 \times . *Drilonereis brattstroemi*, new species. F. Maxillary carriers, approximately 50 \times .

Distribution: *N. incisa* is known from both sides of the Atlantic Ocean as far south as the Mediterranean and Virginia. It is characteristic of the deeper waters of the Norwegian fjords.

Family Glyceridae

Glycera alba (O. F. MÜLLER, 1776)

Glycera alba Stöp-Bowitz 1941, pp. 197–204, figs. 3–4.

G. alba has two presetal and two postsetal lobes of which the inferior postsetal lobe is short and rounded; all other parapodial lobes are pointed. The branchiae are at the superior edge of each parapodium in median and posterior setigers. *G. alba* is perhaps the most common glycerid in Norwegian waters.

Material examined: S1 (1); S7 (1).

Distribution: *G. alba* is common along eastern Atlantic shores from Norway to the Mediterranean; it appears to be most common in shallow water, but has also been reported from great depths in the Norwegian fjords.

F a m i l y Lumbrineridae

Lumbrineris latreilli AUDOUIN and MILNE EDWARDS, 1834

Lumbriconereis latreilli FAUVEL 1923, pp. 431-432, fig. 17m-r.

Lumbrineris latreilli HARTMAN 1944, pp. 158-159, pl. 9, figs. 213-216; FAUCHALD 1970, pp. 94-97, pl. 15, figs. 1-6.

L. latreilli, which has been reported from nearly worldwide areas, has short parapodial lobes in all setigers. Lightcolored acicular and composite setae in anterior setigers. The maxillary formula is symmetrically 1-5-2-1.

The present specimens are all rather small and appear immature.

M a t e r i a l e x a m i n e d : S1 (5); S2 (2); S3 (2); S7 (2).

D i s t r i b u t i o n : *L. latreilli* as presently defined, is nearly cosmopolitan in shelf and upper slope depths.

F a m i l y Arabellidae

Drilonereis brattstroemi, new species

Fig. 2 F.

The holotype is an incomplete specimen with 149 setigers that is 40 mm long and 1.5 mm wide. The prostomium is bluntly conical and has two longitudinal grooves on the dorsal side. The two peristomial segments are wider than long; each is as long as the first setiger.

All parapodia are similar; each has a bluntly rounded setal lobe and a short, conical postsetal lobe. Presetal lobes are absent. Prolonged lobes are absent in the posterior parts of the fragments.

The jaw-apparatus consists of five pairs of maxillae; mandibles are absent. Each maxilla I has a large, strongly recurved main fang; it has seven short teeth basally. The second maxilla is nearly as long as the first one; it has five teeth of which the last is strongly recurved and twice as long as the other teeth. Maxillae III-V have one tooth each. The paired maxillary carriers (Fig. 2 F) are long and slender and are fused only for one-tenth of their length. The unpaired carrier is a paddle-shaped and has the wide end anteriorly.

Setae include three-four limbate setae and one large, straight smooth spine in each parapodium. Each parapodium has two or three slender, pointed acicula.

D. brattstroemi belongs to species-group IB (for a definition of the groups, see FAUCHALD 1970, p. 134) and resembles *D. mexicana* FAUCHALD (1970, pp. 138-140, pl. 23, figs. a-c) closely.

D. brattstroemi differs from all other species in this group in that the distal tooth on the second maxilla is longer than all other teeth and strongly recurved.

The unpaired maxilla is widest anteriorly in *D. brattstroemi* and widest near the posterior end in *D. mexicana*.

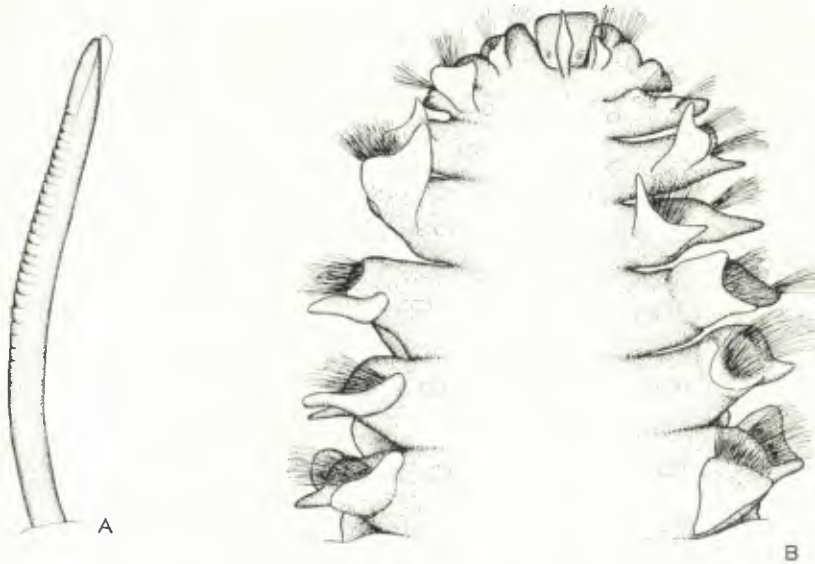


Fig. 3. *Phylo norvegicus* (SARS). A. Neuropodial uncinus, second thoracic setiger, 950 \times . *Laonice appelloefi* SÖDERSTRÖM. B. Anterior end, dorsal view, 25 \times .

The species concept implied by the description of *D. filum* CLAPAREDE (1868) given by FAUVEL (1923, p. 436) is very wide and can include all species presently described in the genus. It appears that the concept in fact covers several distinct species, one of which is named above.

The species is named for my former teacher, professor Hans O. Brattström of the Biological Station, Espesgrend with thanks for all his help and encouragement.

Material examined: S3 (1, holotype, Zoological Museum, University of Bergen, Norway, number 52 204).

F a m i l y Orbiniidae

Phylo norvegicus (M. SARS, 1873)

Fig. 3A

Aricia norvegica BIDENKAP 1894, p. 100; FAUVEL 1927, pp. 17–18, fig. 5m–p.
Phylo norvegicus BRATTEGARD 1967, p. 302.

P. norvegicus is characterized by a combination of several characters. It has large, lanceolate spines in the posterior thoracal segments, but lacks intermedian cirri and ventral papillae which are common in species of *Phylo*. The number of thoracal segments appears to vary somewhat. In the present material there is a direct relationship between the total number of thoracal setigers and the number of thoracal setigers with lanceolate spines. Thus, there are always eleven thoracal setigers without lanceolate spines; the number of setigers with lanceolated spines

varies between three and five, so the total number of thoracal setigers varies between fourteen and sixteen.

The thoracal uncini are hooded (Fig. 3 A) and have rows of spines as usual in members of this genus.

Material examined: S1 (2); S2 (8); S3 (2); S7 (5).

Distribution: *P. norvegicus* is apparently present on both sides of the Atlantic Ocean south to the Mediterranean and New York. Records from other areas of the world are due to mis-identifications.

F a m i l y Paraonidae

Paraonis gracilis (TAUBER, 1879)

Aonides gracilis TAUBER 1879, p. 179.

Paraonis gracilis ELIASON 1920, pp. 55–56, fig. 16a–e; HARTMAN 1969, pp. 75–76, 3 figs.

P. gracilis was redescribed in considerable detail by ELIASON (1920); the present specimens fit very well with his description. All three are rather small and the modified setae are slightly less curved than as described.

Material examined: S1 (1); S2 (1); S3 (1).

Distribution: *P. gracilis* has been reported from world-wide areas in all depths. Some of the records may refer to similar, but distinct species.

F a m i l y Spionidae

Laonice appelloefi SÖDERSTRÖM, 1920

Fig. 3B.

Laonice appelloefi SÖDERSTRÖM 1920, pp. 225–227, figs. 131–132.

Laonice cirrata FAUVEL 1927, p. 38, fig. 12a–e, partim (not Sars 1861, p. 64).

SÖDERSTRÖM (1920) defined a series of species of *Laonice* from Nordic waters. These included the well-known *L. cirrata* (SARS, 1861) and three new species named *L. bahusiensis*, *L. sarsi*, and *L. appelloefi*. The four species were separated on a set of characters including the length of the ciliated dorsal organ, the numbers of pairs of branchiae, the first occurrence of neuropodial hooks, genital spines (called neuropodial capillaries by SÖDERSTRÖM) and genital pouches, and the presence or absence of eyes and notopodial hooks. There are overlaps in the numerical characters between the different species described by SÖDERSTRÖM so most authors have been inclined to disregard the three new species and call all specimens of *Laonice* from European waters by the oldest available name, *L. cirrata*.

The material from Sognefjorden contains sixteen specimens of a species of *Laonice* that fit very well with the species described as *L. appelloefi* by SÖDERSTRÖM, in that they have short dorsal organs reaching setigers 14–16; the number of bran-

chiaec in those specimens where it could be counted is approximately 25; neuropodial hooks are present from setigers 17–20, genital spines are present from setigers 10–12, and genital pouches are first present between setigers 6 and 7. The specimens further agree with *L. appelloefi* in that the anterior setae are present in several rows (Fig. 3 B); in other species of *Laonice*, the setae are present in maximally two rows in each ramus.

The characters were compared with the similar sets of characters on *Laonice cirrata* from California; there is no overlap in characters between similarly sized specimens and *L. appelloefi* is here considered distinct.

The present specimens from Sognefjorden differ from *L. appelloefi* as originally described in that a pair of vaguely defined eyes are present on the prostomium.

The question of the validity of the two other species described by SÖDERSTRÖM, *L. bahusiensis* and *L. sarsi*, cannot be decided based on the present material. HANNERZ (1956, p. 23) indicated that only one kind of *Laonice* larva is present in the type-area for *L. bahusiensis*; this may indicate that at least these two should be considered synonymous.

Material examined: S1 (1); S2 (8); S3 (3); S7 (4).

Distribution: *L. appelloefi* is known from one record in Hjeltefjorden, off Bergen; SÖDERSTRÖM (1920, p. 227) indicated that it may also be present in deep water off Ireland based on some notes on specimens reported by McINTOSH (1915). The present records are from deep water in Sognefjorden, western Norway.

Spiophanes kroeyeri GRUBE, 1860

Fig. 4 C–D

Spiophanes kroeyeri BIDENKAP 1894, p. 94; SÖDERSTRÖM 1920, pp. 240–243, figs. 150–152; HARTMAN 1965, p. 153.

S. kroeyeri has strong, recurved hooks in the first setiger; the neuropodial hooks (Fig. 4 C) are tridentate and lack hoods; branchiae are absent.

The present specimens (Fig. 4 D) are small and delicate compared to most specimens taken elsewhere. The four first dorsal cirri are longer than those further back, but there is no striking change in the length of the dorsal cirri between setigers four and five as indicated by HARTMAN (1965).

Material examined: S1 (14); S2 (7); S3 (8); S7 (2).

Distribution: *S. kroeyeri* appears to be common in cold water areas in the whole northern Atlantic Ocean. Records from other areas may be due to mis-identifications.

Spionidae, indeterminable

The specimen is a median fragment that cannot be identified.

Material examined: S3 (1 fragment).

F a m i l y Chaetopteridae
Telepsavus costarum CLAPAREDE, 1868

Telepsavus costarum FAUVEL 1927, p. 82, fig. 28a-h; HARTMAN 1969, pp. 219-220, 5 figs.

The present specimens agree with *T. costarum* except that the tubes are slightly less articulated than usual in this species.

The distinction between species of *Phyllochaetopterus* and *Telepsavus* may be difficult in imperfectly preserved material, since the small antennae present in *Phyllochaetopterus* may be difficult to detect. The regionation into two or three body-regions usually referred to in generic keys (FAUVEL 1927, p. 77) is very difficult to see except in perfectly preserved materials.

The modified setae of the fourth setiger are distally smooth in *Telepsavus* and are distally rugose or slightly dentate in *Phyllochaetopterus*.

M a t e r i a l e x a m i n e d : S1 (3); S3 (2); S7 (1); in addition numerous empty tubes were present in all three stations.

D i s t r i b u t i o n : *T. costarum* is known from shelf and slope depths in world-wide areas.

F a m i l y Cirratulidae
Cirratulus cirratus (O. F. MÜLLER, 1776)

Cirratulus cirratus HANSEN 1882, p. 6; BIDENKAP 1894, p. 98; FAUVEL 1927, p. 94, fig. 33a-g.

M a t e r i a l e x a m i n e d : S1 (3); S2 (8); S3 (5); S7 (1).

D i s t r i b u t i o n : *C. cirratus* has been reported from world-wide areas in all depths.

Dodecaceria concharum ØRSTED, 1843

Dodecaceria concharum FAUVEL 1927, pp. 102-102, fig. 36a-m.

The present specimen is a juvenile with distally serrated setae similar to those illustrated by FAUVEL (1927, fig. 361). The specimen is in two fragments, it is greenish black and has brass-colored setae. Tubes are absent.

M a t e r i a l e x a m i n e d : S1 (2 fragments).

D i s t r i b u t i o n : *D. concharum* has been reported from world-wide areas; it is primarily an intertidal species. It is possible that the specimen was fished pelagically while the trawl was going up or down.

Tharyx marionii (SAINT-JOSEPH, 1894)

Tharyx marionii FAUVEL 1927, p. 100, fig. 35a-b.

Species of *Tharyx* are very difficult to separate; the present identifications follow the pattern so far set in retaining a relatively wide species-concept in this

genus. There are indications, however, that each of the several species named in the genus and later synonymized, may have to be recognized when the biology of members of this genus becomes better known. It seems presently impossible to separate the species on morphological criteria alone.

Material examined: S1 (1); S3 (2); S7 (3).

Distribution: *T. marionii* is known from the Atlantic coasts of France and from England; it is considered a shelf-species.

Cirratulidae, indeterminable

The present specimens are fragments that cannot be further identified.

Material examined: S7 (two fragments).

F a m i l y Flabelligeridae

Fauveliopsis brattegardi, new species

Fig. 4 A-B

The holotype (Fig. 4 B) is a complete specimen with sixteen setigers that is 2.1 mm long and 0.4 mm wide without setae. The body is fusiform and slightly thicker in the posterior than in the anterior end; both ends are bluntly rounded. The anterior part of the body is transversly wrinkled; the median and posterior parts are slightly irregularly wrinkled and very finely papillated.

The prostomial features were not seen. All setigers have biramous parapodia (Fig. 4 A); each ramus is a low, blunt boss from which the setae emerge. A single, large papilla is between the rami near the base of the notopodial ramus.

Two kinds of setae are present. Each ramus has two short, wide-bladed setae and two slender, cylindrical setae. The neuropodial wide-bladed setae are nearly twice as wide as the notopodial ones, but are similar in structure.

The present record is the first of a member of the genus *Fauveliopsis* from the northern Atlantic Ocean. Other members of this genus includes the genotype *F. challengeriae* McINTOSH (1922, pp. 5-7, pl. 2, figs. 1-8, pl. 3, fig. 2), *F. glabra* (HARTMAN 1960, pp. 129-130, pl. 14, figs. 1-2), *F. brevis* HARTMAN (1967, p. 123, pl. 37, figs. a-b,) and *F. hartmani* LEVENSTEIN (1970, p. 229, fig. 2a-b).

F. challengeriae and *F. glabra* have approximately thirty-three setigers, *F. brevis* has twenty-eight setigers. Both *F. hartmani* and *F. brattegardi* have sixteen setigers.

F. brattegardi has a large papilla between the rami of each parapodium, such papillae are absent in *F. hartmani*.

The species is named for my friend cand. real. Torleiv Brattegard who collected this interesting material.

Material examined: S1 (1, holotype, Zoological Museum, University of Bergen, Norway, number 52 205).

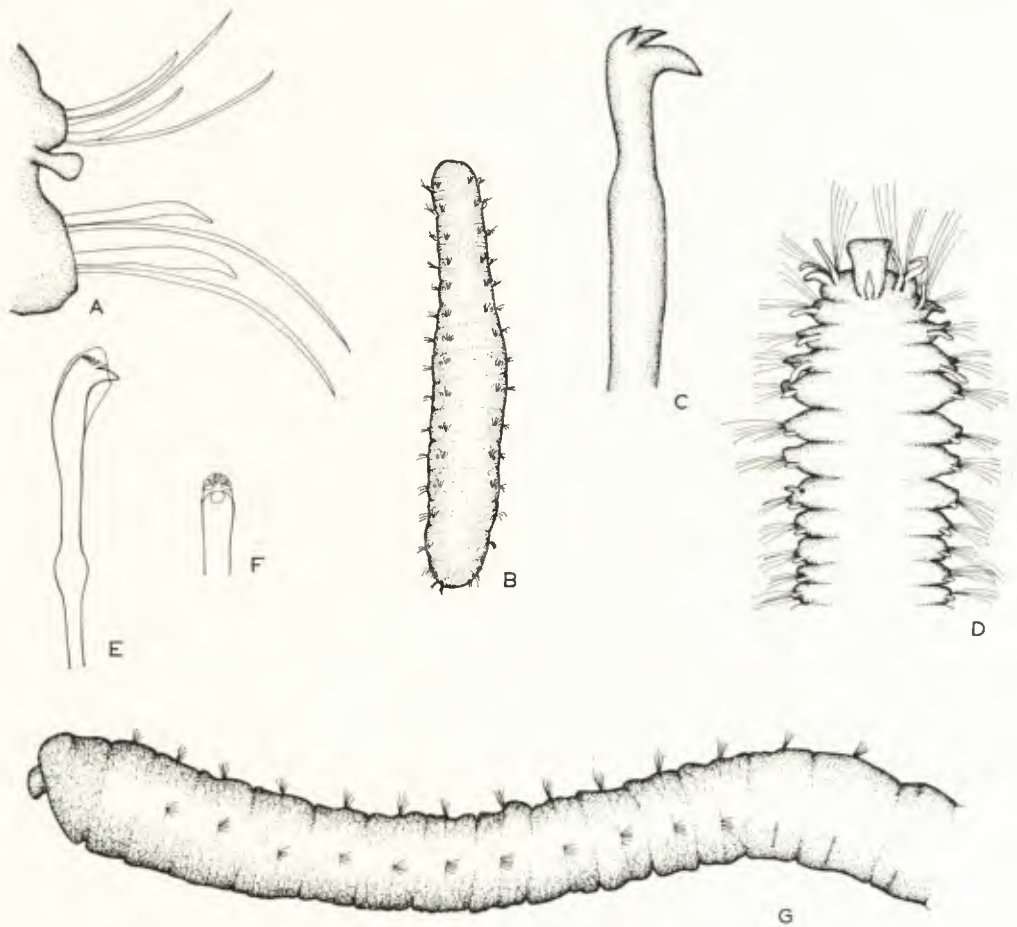


Fig. 4. *Fauveliopsis brattegardi*, new species. A. Median parapodium, 160 \times . B. Holotype, dorsal view, 25 \times . *Spiophanes kroeyeri* GRUBE. C. Neuropodial uncinus, median setiger, 950 \times . D. Anterior end, dorsal view, 25 \times . *Leiochrides norvegicus*, new species. E. Abdominal uncinus, lateral view, 950 \times . F. Tip of abdominal uncinus, frontal view, 950 \times . G. Anterior end, lateral view, 25 \times .

Flabelligeridae, indeterminable

The present specimen is a median fragment; the setae resemble the setae of species of *Pherusa*, but the specimen cannot be further identified.

Material examined: S7 (1, fragment).

Family Capitellidae

Heteromastus filiformis (CLAPAREDE, 1864)

Heteromastus filiformis FAUVEL 1927, pp. 150–152, fig. 53a–j; HARTMAN 1947, pp. 427–428, pl. 52, figs. 1–4; HARTMAN 1969, pp. 377–378, 5 figs.

H. filiformis has eleven thoracic setigers of which the first five have pointed setae in both noto- and neuropodia; the six last setigers have long-handled uncini in both rami.

Material examined: S1 (1); S3 (1).

Distribution: *H. filiformis* is known from both sides of the Atlantic Ocean and from Californian coasts in the eastern Pacific Ocean. It appears to be most common in shallow water in sandy or muddy bottoms. The present records, are, as far as known, the deepest of this species.

Leiochrides norvegicus, new species

Fig. 4E-G

The holotype is a complete specimen with approximately seventy setigers that is 30 mm long and 0.75 mm wide. It is white and lacks color patterns. The thorax (Fig. 4G) consists of twelve setigers; the anterior part of the thorax is slightly areolated, the remainder of the body is smooth.

The prostomium is a short, blunt cone; the two peristomial segments are smooth, wide rings. The first setiger is uniramous with only notopodia present. All other setigers are bi-ramous. Thoracic parapodia are blunt, short cones or the setae emerge flush with the body-surface in some setigers. Abdominal parapodia are slightly better developed and may appear as raised ridges or low welts in the posteriormost setigers.

Filiform branchiae are present dorsally in far posterior setigers.

Four short anal cirri surround the terminal anus.

All thoracic setigers have pointed setae only. The two first abdominal setigers have pointed setae in the notopodia and long-handled uncini in the neuropodia. All other abdominal setigers have long-handled uncini only. Posterior notopodia are reduced and setae may be absent in some of the last notopodia. Each uncinus (Figs. 4E-F) has a large main fang surmounted by a crest consisting of two larger and several smaller teeth. The hood is distally rounded and its margin is smooth.

The genus *Leiochrides* was described by AUGENER (1914, p. 60) for *L. australis* from southwest Australia. Other species in the genus are *L. africanus* AUGENER (1918, pp. 472-474, pl. 7, figs. 199-200, textfig. 74) from western Africa, *L. pallidior* (CHAMBERLIN, 1918), originally named in *Notomastus* and referred by HARTMAN (1947, p. 429) to this genus, from California, and *L. hemipodus* HARTMAN (1960, p. 136, emended HARTMAN 1969, pp. 381-382, 2 figs).

L. norvegicus agrees with all species named in the genus in that it has twelve thoracic setigers all of which have exclusively pointed setae; it differs from all species listed in that the two first abdominal notopodia have pointed setae; in all the other species these notopodia have long-handled uncini.

Material examined: S3 (1, holotype, Zoological Museum, University of Bergen, Norway, number 52 206).

Capitellidae, indeterminable

The present specimen is a median fragment that cannot be further identified.

M a t e r i a l e x a m i n e d : S7 (1).

F a m i l y Maldanidae

Microclymene tricirrata ARWIDSSON, 1970

Microclymene tricirrata ARWIDSSON 1907, pp. 172–174, pl. 4, fig. 135a–g, pl. 9, fig. 293, pl. 11, figs. 357–358, pl. 12, figs. 359–360.

M. tricirrata resembles closely species described in *Praxillella* (*P. trifila*, HARTMAN 1960, *inter alia*). The major differences between the genera *Microclymene* and *Praxillella* according to ARWIDSSON (1907, p. 165 and pp. 174–175) are in the number and arrangement of anal cirri. *Praxillella* should have numerous anal cirri and *Microclymene* should have a few or none. The ventral anal cirrus should be longer than all other anal cirri in *Praxillella*; all anal cirri should be of the same size in *Microclymene*. It is thus possible that some species with few anal cirri described in *Praxillella* should go to *Microclymene*, or that the two genera should be considered synonymous. Such changes must await studies on larger material than is presently available.

The present specimen agrees closely with the description given by ARWIDSSON.

M a t e r i a l e x a m i n e d : S7 (1).

D i s t r i b u t i o n : *M. tricirrata* is known from Trondheimsfjorden; the present record from Sognefjorden is the only other record of this species.

Maldanidae, indeterminable

The present fragments appear to be mostly of species of the sub-family Euclymeninae, but cannot be further identified.

M a t e r i a l e x a m i n e d : S1 (3 anterior fragment); S7 (one anterior and one posterior fragment from different grab-hauls).

F a m i l y Trichobranchidae

Terebellides stroemi M. SARS, 1835

Terebellides stroemi M. SARS 1835, pp. 48–50, pl. 13, fig. 31; WOLLEBAEK 1912, pp. 78–79, pl. 18, figs. 1–9.

T. stroemi has been recorded from world-wide areas in all depths and latitudes (HARTMAN 1969, p. 653).

The number of thoracic setigers varies somewhat: some specimens have eighteen, others have sixteen or seventeen. The shape of the prostomium also varies. None of these variations appear related to the distribution of the species, geographically or with depth, and the species is presently considered cosmopolitan.

M a t e r i a l e x a m i n e d : S2 (2); S7 (1); S1 (42).

REFERENCES

- ARWIDSSON, IVAR, 1907. Studien über die skandinavischen und arktischen Maldaniden nebst Zusammenstellung der übrigen bisher bekannten Arten dieser Familie. *Zool. Jb. Suppl.* **9**: 1-308.
- AUDOUIN, J. V. & H. MILNE EDWARDS, 1834. Recherches pour servir a l'histoire naturelle du littoral de la France **2**, Annelides, 1 pt. Paris .290 pp.
- AUGENER, H., 1914. Polychacta Sedentaria. *Fauna Südwest-Aust.* **5**: 1-170.
 — 1918. Polychacta. *Beitr. Kennt. Meeresfauna Westaf.* **2**: 67-625.
 — 1928. Ergänzung zu den Polychacten von Spitzbergen. *Fauna arct.* **5**: 647-834.
- BIDENKAP, O., 1894. Systematisk oversigt over Norges Annulata Polychaeta. *Forh. VidenskSelsk. Krist.* 1894 (10): 1-142.
- BRATTEGARD, T., 1967. Pogonophora and associated fauna in the deep basin of Sognefjorden. *Sarsia* **29**: 299-306.
- CHAMBERLIN, R. V., 1918. Polychaetes from Monterey Bay. *Proc. biol. Soc. Wash.* **31**: 173-180.
- CLAPARÈDE, E., 1864. Glanures zootomiques parmi les Annelides de Port-Vendres (Pyrenées Orientales). *Mém. Soc. Phys. Hist. nat. Genève* **17**: 463-600.
 — 1868. Les Annelides Chetopodes du Golfe de Naples. *Ibid.* **19**: 313-584.
- DITLEVSEN, H., 1917. Annelids. *Dan. Ingolf-Exped.* **4**(4): 1-71.
- ELIASON, A., 1920. Polychacta. Biologisch-faunistische Untersuchungen aus dem Öresund. *Acta Univ. Lund. Avd. 2*, **16**(6): 1-103.
- FAUCHALD, K., 1963. Nephthyidae (Polychaeta) from Norwegian waters. *Sarsia* **13**: 1-32.
 — 1970. Polychaetous annelids of the families Eunicidae, Lumbrineridae, Iphitimidae, Arabelidae, Lysaretidae and Dorvilleidae from western Mexico. *Allan Hancock Monogr. mar. biol.* **5**: 1-335.
- FAUVEL P., 1923. Polychètes errantes. *Faune Fr.* **5**: 1-488.
 — 1927. Polychètes sédentaires. Addenda aux Errantes, Archiannelides, Myzostomaires. *Ibid.* **16**: 1-494.
- GRUBE, A.E., 1860. Beschreibung neuer oder wenig bekannter Anneliden. Zahlreiche Gattungen. *Arch. Naturgesch.* **26**: 71-118.
- HANNERZ, L., 1956. Larval development of the polychaete families Spionidae Sars, Disomidae Mesnil and Poccilochaetidae n. fam. in the Gullinar Fjord (Sweden). *Zool. Bidr. Upps.* **31**: 1-204.
- HANSEN, G. ARMAUER, 1882. Annelida. *The Norwegian North-Atlantic Expedition* **3**(7): 1-53.
- HARTMAN, O., 1944. Polychaetous annelids. 6. Eunicca. *Allan Hancock Pacif. Exped.* **10**(1): 1-238.
 — 1947. Polychaetous annelids. 7. Capitellidae. *Ibid.* **10**(4): 391-481.
 — 1960. Systematic account of some marine invertebrate animals from the deep basins off southern California. *Ibid.* **22**: 69-216.
 — 1965. Deep-water benthic polychaetous annelids off New England to Bermuda and other North Atlantic areas. *Occ. Pap. Allan Hancock Fdn.* **28**: 1-378.
 — 1967. Polychaetous annelids collected by the USNS ELTANIN and STATEN ISLAND cruises, chiefly from Antarctic seas. *Allan Hancock Monogr. mar. biol.* **2**: 1-387.
 — 1969. *Atlas of sedentariate polychaetous annelids from California*. Allan Hancock Foundation, Univ. of S. Calif. 812 pp.
 — & K. FAUCHALD, 1971. Deep-water benthic polychaetous annelids off New England to Bermuda and other North Atlantic areas **2**. *Allan Hancock Monogr. mar. biol.* **6**: 1-327.
- KNOX, G. A., 1960. Biological results of the Chatman Islands 1954 Expedition **3**. Polychaeta Errantia. *Mem. N. Z. oceanogr. Inst.* **6**: 77-143.
- LEVENSTEIN, R. J., 1970. New and rare species of the abyssal genus *Fauveliopsis* McIntosh (Polychaeta, Annelida) and the peculiarities of its distribution. *Trudy Inst. Okeanol.* **88**: 227-235, 3 figs.

- McINTOSH, W. C., 1915. Notes from the Gatty Marine Laboratory, St. Andrews. (37)1. Additions to and remarks on the British Spionidae *Ann. Mag. nat. Hist.*, ser. 8, **15**: 1-58.
- 1922. Notes from the Gatty Marine Laboratory, St. Andrews (44)1. On new and rare Polychaeta from various regions. . . . *Ibid.* ser. 9, **9**: 1-30.
- MALMGREN, A. J., 1865. Nordiska Hafs-Annulater. *Öfvers. K. Vetensk.Akad. Förh.* **21**: 51-110.
- 1867. Annulata Polychaeta Spetsbergiae, Groenlandiae, Islandiae et Scandinaviae hactenus cognita. *Ibid.* **24**: 127-255.
- MONRO, C. C. A., 1937. Polychaeta. *Scient. Rep. John Murray Exped.* **8**(8): 243-321.
- MÜLLER, O. F., 1776. *Zoologica Danicae Prodromus*. . . . Havniae. XXXII and 274 pp.
- 1788. *Zoologica Danica seu Animalium*. . . . **1**. Havniae. 52 pp.
- ÖRSTED, A. S., 1843. Annulorum danicorum conspectus, fasc 1, Maricolae, Havniae. 52 pp.
- 1845. Fortegnelse over Dyr, samlede i Christianiafjord ved Dröbak fra 21-24 Juli, 1844. *Naturh. Tidsskr., København*, ser. 2, **1**: 400-427.
- SAINT-JOSEPH, A. DE., 1894. Les Annelides polychetes des côtes de Dinard 3. *Annl. Sci. nat.*, Ser. 7, **17**: 1-395.
- SARS, M., 1835. *Beskrivelser og Jagttagelser over nogle mærkelige eller nye i Havet ved den Bergenske Kyst levende Dyr*. . . . Bergen. XII and 81 pp.
- 1861. Om Annelideslægten *Nerine* og dens norske Arter. *Forh. VidenskSelsk. Krist.* 1861: 59-67.
- 1873. Bidrag til Kundskaben om Norges Annulater. *Ibid.* 1873.: 71 pp. (Issued by G. O. Sars).
- SÖDERSTRÖM, A., 1920. *Studien über die Polychaetenfamilie Spionidae*. Diss. Uppsala. 286 pp.
- STÖP-BOWITZ, C., 1941. Les Glyceriens de Norvège. *Nyt. Mag Naturvid.* **82**: 181-250.
- TAUBER, P., 1879. *Annulata Danica. En kritisk Revision* Reitzel, København, 144 pp.
- WOLLEBÆK, A., 1912. Nordeuropæiske Annulata Polychaeta I. Ammocharidae, Amphictenidae, Terebellidae og Serpulidae. *Skr. VidenskAkad. Kristiania, Math.-Nat. Kl.* 1911 (2): 1-144.

Received 21 June 1971

Printed 28 April 1972