

LUMBRINERIDAE FROM NORTH EAST ATLANTIC WATERS

Eivind Oug

Prepared for the NMBAQC 2003 Benthic Invertebrate Taxonomic Workshop, Dove Marine Laboratory, Tynemouth, UK.
November 2003

Characteristics of Lumbrineridae

The lumbrinerids are generally long cylindrical worms with a rather simple external morphology. The prostomium is well-developed and is usually without appendages, but may carry small occipital antennae or nuchal papillae. There are no tentacular cirri. The parapodia are mostly uniramous, but are sub-biramous with notoaciculae and a short notopodium in some species. Ventral cirri are absent. Chaetae include simple limbates, composite spinigers, and simple and composite hooded hooks (Fig. 1). The maxillae consist of a pair of posterior carriers and four or five pairs of maxillary plates (Fig. 1). The carriers are broad, mostly short, and are attached to the most posterior pair of maxillae (mx I) by a firm 'click-joint' connection (labidognath arrangement).

A remarkably large number of species of lumbrinerids have been described (*i.e.*, more than 200) on a world-basis. Many of the descriptions, however, especially in the older literature, are short and general and do not mention characters which presently are known to be vital for species discrimination. In the most recent reviews of the family, genera and species have been separated on the structure of the maxillae, the types and shapes of the chaetae, and the presence or absence of respiratory parapodial lobes (Orensanz 1973, 1990; Frame 1992). Presently 13 genera of lumbrinerids are considered to be valid. Orensanz (1990), Frame (1992) and Hilbig (1995) have accounted for the taxonomic history of the family and have discussed the importance of the diagnostic characters.

General faunistic works treating lumbrinerids in North East Atlantic waters include Fauvel (1923), Hartmann-Schröder (1971, 1996), Miura (1980), Winsnes (1980), George & Hartmann-Schröder (1985) and Kirkegaard (1992).

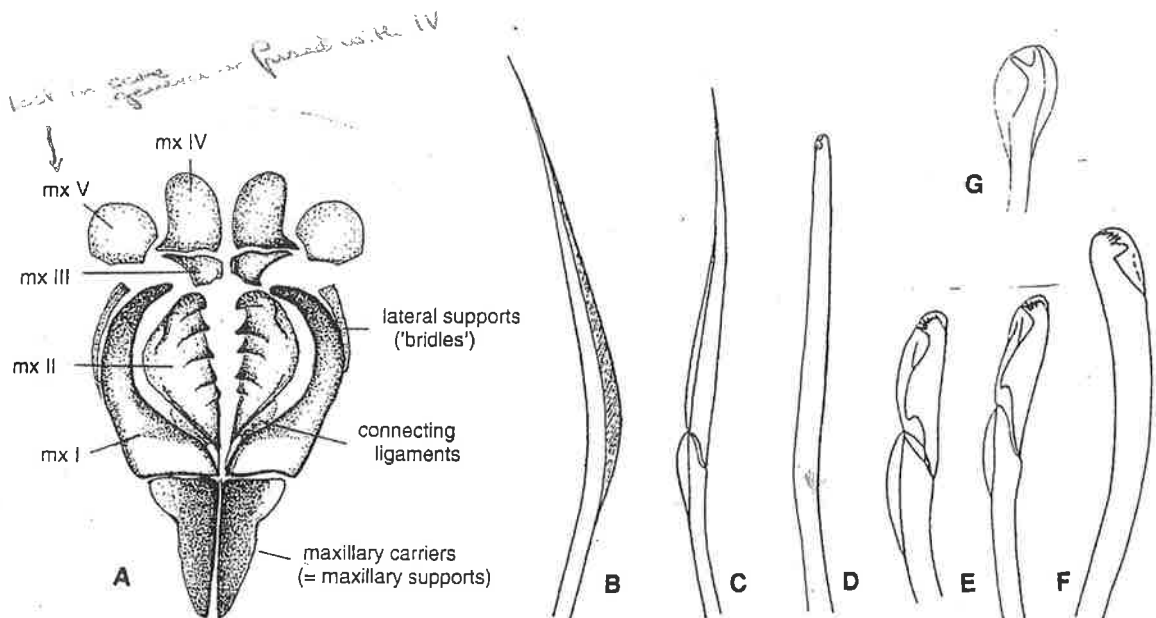


Fig. 1. Maxillary apparatus and chaetae. A maxillae; B limbate chaeta; C composite spiniger; D long-bladed simple hook (anterior body); E composite hooded hooks (anterior body); F simple hooded hook (posterior body); G bidentate hooded hook.

Key to genera of Lumbrineridae

The key is modified from Orensanz (1990) and Frame (1992). Genera not reported from the area are marked with *.

1. Parapodia with cirriform or foliaceous dorsal cirri, prostomium with three occipital antennae. 2
- Parapodia without dorsal cirri, antennae absent or reduced to small nuchal papillae 3
2. Mx I bifid, dorsal cirri foliaceous * *Lysarete*
- Mx I unidentate, falcate, dorsal cirri cirriform or papilliform * *Kuwaitia*
3. All chaetae are simple limbate capillaries, hooded hooks absent * *Arabellonereis*
- Hooded hooks present, at least in posterior setigers 4
4. Chaetae include composite spinigers, composite hooded hooks, simple hooded hooks and simple limbates..... * *Lumbricalus*
- Chaetae include hooded hooks and simple limbates, no composite spinigers 5
5. Composite or pseudocomposite hooded hooks present in anterior part of body 6
- All hooded hooks simple 7
6. Mx IV forming a squarish plate with clear central area and black margins. Nuchal papillae may be present at posterior border of prostomium. Aciculae pale to golden *Augeneria*
- Mx IV a triangular to oblong evenly black or brown plate with a marked tooth. Aciculae pale, brown or black..... *Lumbrineris*
7. Anterior or middle parapodia with postchaetal vascularised processes or branchial lobes 8
- No branchial lobes in anterior or middle parapodia 9
8. Numerous branchial lobes..... *Ninoe*
- One digitiform branchial lobe. Anterior parapodia usually with long slender hooded hooks. Aciculae black. *Cenogenus*
9. Anterior body with transitional hooded hooks, gradually developing from the shape of limbate chaetae into typical hooded hooks over a number of segments. Aciculae yellow. Mx IV and V fused *Abyssoninoe*
- Anterior body with ordinary hooded hooks or with simple limbate chaetae only 10
10. Hooded hooks bidentate 11
- Hooded hooks multidentate 12
11. Hooded hooks with a subdistal tooth or spur. Mx IV with a fringe of denticles on inner margin *Lumbrineriopsis*
- Hooded hooks without subdistal tooth. Mx IV without teeth or denticles *Lumbrinerides*
12. Mx II short, about half the length of Mx I, connected to the basal piece by a posterior additional small piece *Eranno*
- Mx II about as long as Mx 1, with 3-5 distinct teeth *Scoletoma*

Abyssoninoe Orensanz, 1990

- Descriptions of species above in text
 - Fused IV + V maxillae
 - characteristic transitional hooks - Fig 2 c

Diagnosis. Prostomium conical. Parapodia uniramous, with simple limbate setae and simple, multidentate hooded hooks. Hooded hooks may have a transitional phase evolving through anterior setigers from rounded tip limbate setae, to faintly outlined hooks, to clearly defined hooks. Aciculae yellow. Mx III unidentate. Mx IV and V completely fused, forming broad semicircular plates with a tooth protruding from inferior border (Frame 1992).

Remarks. This is a rather well-defined genus, being characterised by the specialised hooded hooks in anterior setigers which develop gradually from the shape of limbate chaetae into short hooded hooks over a number of segments, and by the shape of the fused Mx IV and V. Also, the shape of the prostomium which is conical to triangular is characteristic. The species have some resemblance to *Paraninoe*, but may be distinguished by the lack of branchial (vascularised) lobes on anterior setigers, by the shape of the maxillae and by the colour of the aciculae.

The species discrimination, however, is problematical. Characters which have been used for species separation include the most anterior position of 'normal-shaped' hooded hooks and the development of vascularised lobes in posterior segments. The number of species in the region is uncertain. Parapar et al. (1994) redescribed *A. hibernica* (McIntosh, 1903) from the southwestern coast of Ireland and considered various species hitherto reported from the north-east Atlantic region to belong to this species. This view allows for a rather large morphological variation in the species.

1. Transitional hooded hooks present only in most anterior chaetigers, clearly defined hooded hooks appear at chaetiger 9-12, small form (ca. 0.5 mm in width) *Abyssoninoe* sp.
Northern Norway
- Transitional hooded hooks extend at least to chaetiger 10-15 (Fig. 2 C) 2
2. Clearly defined hooded hooks appear at chaetiger 10-18 (Fig. 2 C), posterior parapodia with short rounded prechaetal and short conical postchaetal lobes
..... *Abyssoninoe abyssorum* (McIntosh, 1885)
Atlantic deep water, fjords (?)
- Transitional hooded hooks extend at least to chaetiger 15, posterior parapodia with prolonged digitiform lobes (Fig. 2 N, Q) 3
3. Clearly defined hooded hooks appear at chaetiger 15-20, posterior parapodia with prolonged digitiform prechaetal and postchaetal lobes (Fig. 2 M, N)
..... *Abyssoninoe hibernica* (McIntosh, 1903)
[=*A. scopae* *aequilobata* (Winsnes, 1981); = *A. pseudofragilis* Amoureux, 1977]. Irish Sea, North Sea, moderate depths.
- Clearly defined hooded hooks appear at chaetiger 20-25, posterior parapodia with digitiform postchaetal lobe, prechaetal lobe small (Fig 2 P, Q) *Abyssoninoe scopae* (Fauchald, 1974)
Fjords in western and northern Norway, deep water (>200 m), ?Svalbard and Barents Sea

Abyssoninoe scopae (Fauchald) was placed in synonymy with *A. hibernica* by Parapar et al. (1994). It is here considered to be a separate species

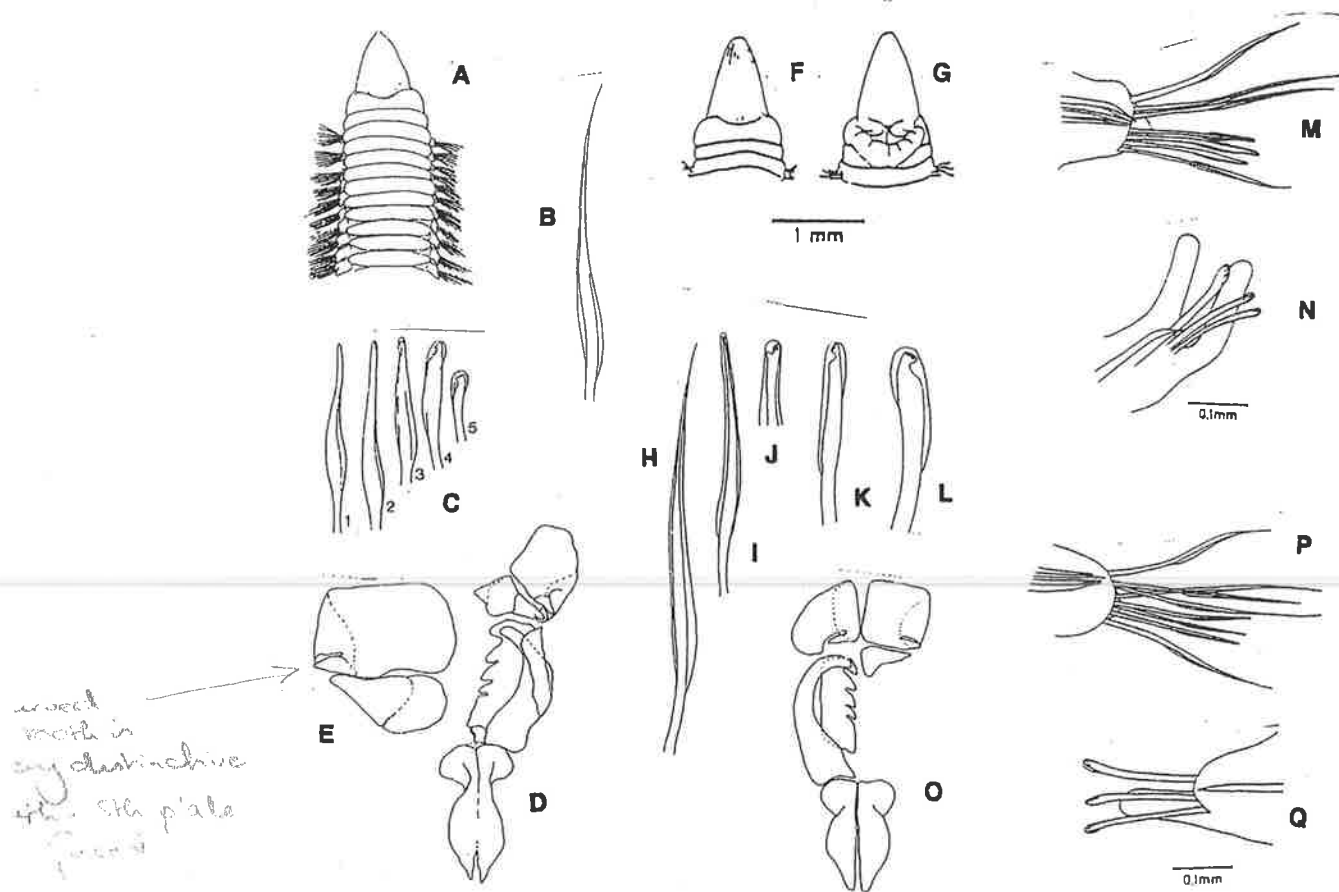


Fig. 2. *Abyssoninoe abyssorum*: A anterior end; B limbate chaeta; C (1-4) transitional hooded hooks chaetiger 3,7,8,10; C (5) posterior hooded hook; D carrier and right mx I-IV; E mx III-IV. - *Abyssoninoe hibernica*: F, G anterior end; H limbate chaeta; I transitional hooded hook chaetiger 8; J detail of (I); K hooded hook chaetiger 25; L posterior hooded hook, M parapodium 15; N posterior parapodium; O maxillary parts. - *Abyssoninoe scopae*: P parapodium 15; Q posterior parapodium. A-E from Orensanz (1990); F-G from Winsnes (1980); H-L, O from Parapar et al. (1994); M, N, P, Q from Winsnes (1981).

Augeneria Monro, 1930

- Deep water

Diagnosis. Prostomium without antennae, but small nuchal papillae may be present. Parapodia uniramous, with simple and composite multidentate hooded hooks. Mx IV shaped like broad plates with whitish central and dark peripheral areas. Mx V absent (Orensanz 1990).

At least three species are present in the area. *Augeneria algida* was redescribed by Winsnes (1987).

1. Anterior parapodia with long pseudocomposite to composite more or less twisted hooded hooks. Hooded hooks present to about chaetiger 20. Numerous chaetae. Prostomium broadly triangular (Fig 3 A-E) *Augeneria algida* (Wirén, 1901)
 Norwegian Sea, Arctic. Deep water with temperatures < 0 °C
 (may also include *Augeneria albidentata* Sadko Annenkova, 1952 from SW Spitsbergen and Kara Sea)
- Anterior parapodia with straight distinctly composite hooded hooks 2
2. Prostomium as wide as long or slightly longer (Fig 3 G) .. *Augeneria tentaculata* Monro, 1930
 N Atlantic, North Sea
- Prostomium short, wider than long, rounded, small form *Augeneria* sp.
 North Sea

Specimens assigned to *Augeneria tentaculata* Monro are somewhat variable. Most specimens have a broadly rounded prostomium, but some specimens have a conical dorsoventrally flattened prostomium. The species was described from southern Atlantic and Antarctic waters. Winsnes (1980) found that Norwegian specimens agreed in most respects with type specimens, but observed some minor differences in shape of maxillary carriers, shape of prostomium and size.

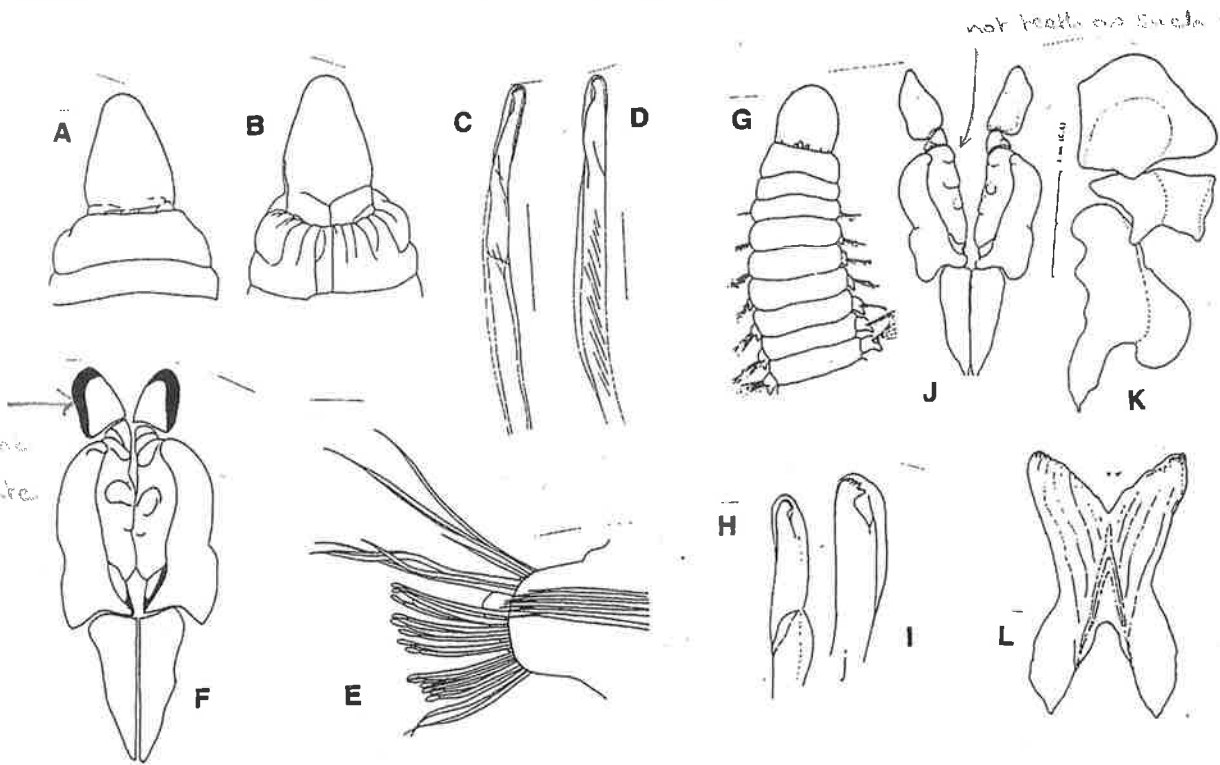


Fig. 3. *Augeneria algida*: A, B anterior end; C, D pseudocomposite hooks; E parapodium 15; F maxillae. - *Augeneria tentaculata*: G anterior end; H composite hooded hook chaetiger 5; I posterior hooded hook; J maxillae; K left maxillae II-IV; L mandibles. A-F from Winsnes (1987); G-L from Orensanz (1990).

A tentaculata + L gracilis - mixed offshore
→ probably mostly inshore

Cenogenus Chamberlin, 1919 (=Paraninoe Levenstein, 1977)

- Big gill on anterior of parapodia
- Deep water

Diagnosis. Prostomium conical, with a nuchal papilla. Chaetae include simple limbates and simple multidentate hooded hooks. Anterior parapodia with a small postchaetal branchial lobe, extending back over a variable number of median segments. Aciculae black. Mx III and IV unidentate. Mx V lacking (Orensanz 1990, Frame 1992).

Remarks: The genus *Cenogenus* has recently been reinstated and emended by Carrera-Parra (2001). *Paraninoe* Levenstein is regarded as a junior synonym of *Cenogenus*.

- 1. Anterior parapodia with simple limbates and long-bladed slender hooks, mx II with 3 teeth (Fig 4 A-D) *Cenogenus brevipes* (McIntosh, 1903)
N Atlantic, north of Ireland, deep water to abyssal
- Anterior parapodia with simple limbates only, mx II with 2 teeth (Fig 4 G)
..... *Cenogenus fusca* (Moore, 1911)
N Atlantic, north of Ireland, deep water to abyssal

Miura (1980) assigned one species recorded north of Ireland to *Lumbrinereis minuta* Théel, 1879 from Novaya Zemlya, and transferred it to *Paraninoe*. Following this, Orensanz (1990) and Frame (1992) listed *L. minuta* Théel among species belonging to *Paraninoe*. However, *L. minuta* is indeterminate and represents a mixture of species (Oug 1998). The specimens examined and figured by Miura (1980) does not agree with specimens in the type material (see Oug 1998) and must belong to a different species.

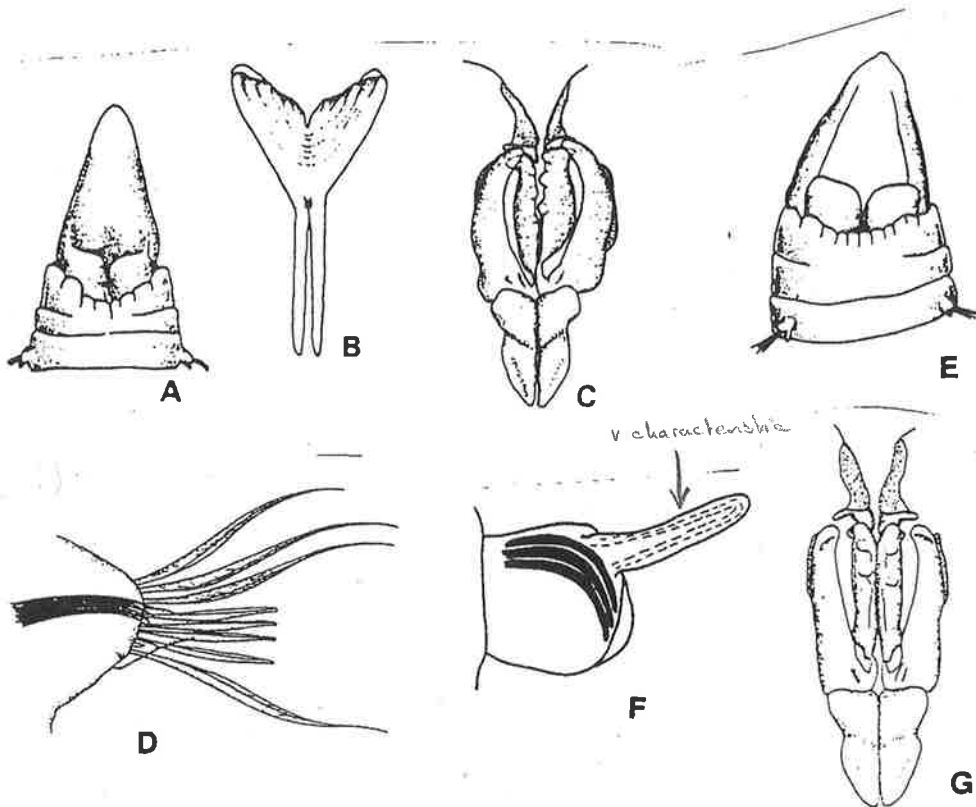


Fig. 4. *Cenogenus brevipes*: A anterior end ventral; B mandibles; C maxillae; D parapodium 5. – *Cenogenus fusca*: E anterior end ventral; F parapodium 2; G maxillae. A-C, E, G from Miura (1980); D from Frame (1992); F from Carrera-Parra (2001).

Eranno Kinberg, 1865

-Typical maxillae
-Deep water
-can be confused with *Scolotoma* sp

Diagnosis. Prostomium conical, nuchal papillae may be present. Parapodia uniramous, with simple limbate and simple multidentate hooded hooks. Mx II proportionally short, connected to base of mx I by wide sclerotized ligament or pair of additional plates. Mx V present, partially fused to mx IV or free.

One species:

Anterior parapodia with simple limbates and long-bladed hooded hooks. Aciculae yellow. Mx II half the length of mx I, mx III unidentate (Fig 5) *Eranno bifrons* Kinberg, 1865
[=*E. ehlersii* (McIntosh, 1885)]. N Atlantic, deep water.

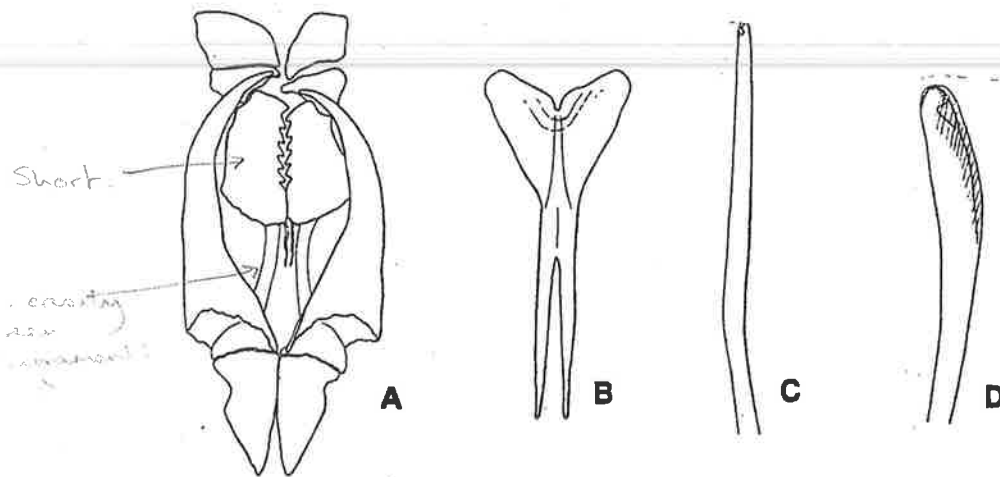


Fig. 5. *Eranno bifrons*: A maxillae; B mandibles; C long-bladed hook from anterior chaetiger; D hooded hook from posterior chaetiger.
A-D from Hartman (1948).

Lumbrinerides Orensanz, 1973 - *Bioscience Notes*
- Small

Diagnosis. Prostomium long, distally pointed. Parapodia uniramous, with simple limbate chaetae and simple bidentate hooded hooks. Aciculae yellow or black. Mx I usually with 1-2 accessory teeth on inner margin. Mx III with two aliform expansions. Mx IV without teeth. Mandibles usually fused for entire length (Miura 1980, Frame 1992).

The table is an excerpt from Miura (1980).

- | | | |
|----|--|---|
| 1. | Mx I without accessory teeth | 2 |
| - | Mx I with one accessory tooth on inner border. Prostomium long (Fig. 6 A, B). Simple hooded hooks from chaetiger 6 | <i>Lumbrinerides crassicephala</i> (Hartman, 1965)
North Atlantic, Faroe Islands, deep water |
| 2. | Prostomium very long, about three times as long as wide (Fig 6 D, E), 3-5 anterior parapodia reduced, bidentate hooks from chaetiger 1 | <i>Lumbrinerides laubieri</i> Miura, 1980
Bay of Biscay, deep water |
| - | Prostomium about twice as long as wide (Fig. 6 F), 7-9 anterior parapodia reduced, bidentate hooks from chaetiger 2-6 | <i>Lumbrinerides amoureuxi</i> Miura, 1980
Bay of Biscay, shallow water |

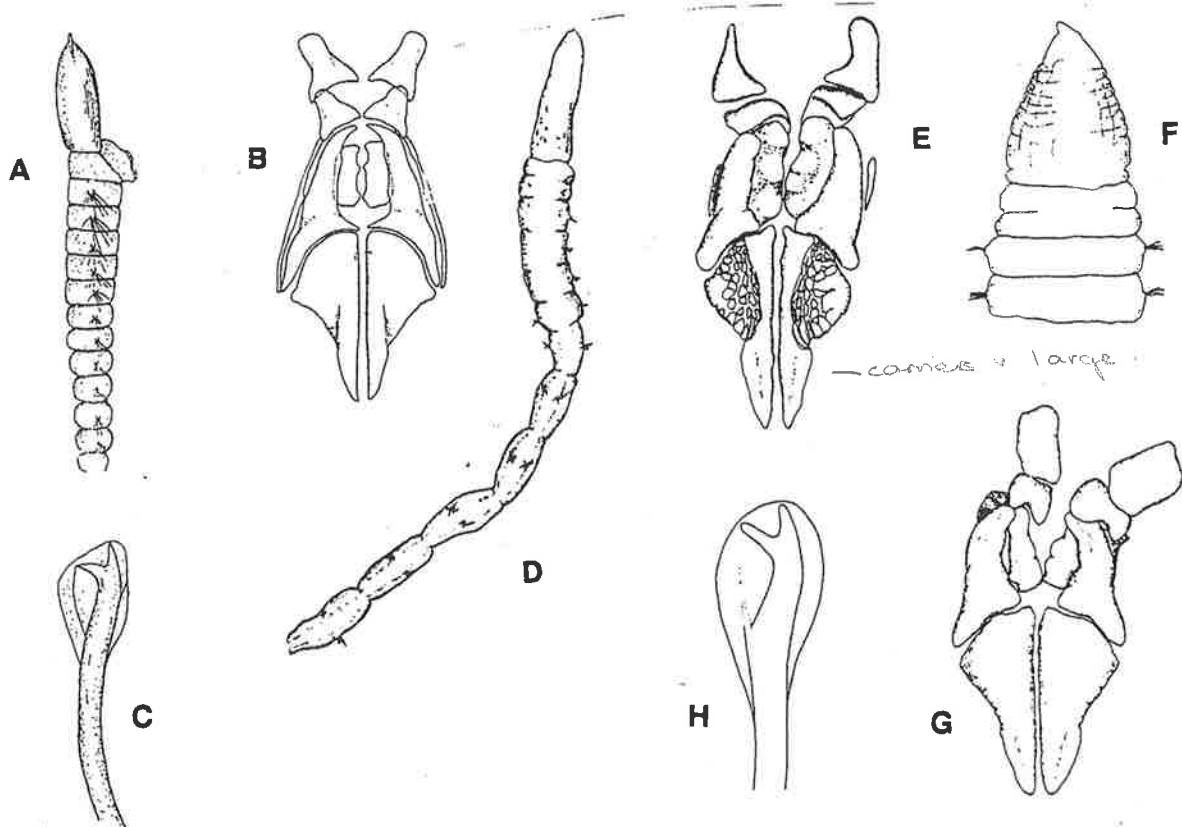


Fig. 6. *Lumbrinerides crassicephala*: A anterior end, pharynx slightly everted; B maxillae; C bidentate hook. - *Lumbrinerides laubieri*: D anterior end; E maxillae. - *Lumbrinerides amoureuxi*: F anterior end; G maxillae; H bidentate hook.

A-C from Hartman (1965); D-H from Miura (1980).

Lumbrineriopsis Orensanz, 1973 - ~~BIDENTATE CHAETAE~~
- Small

Diagnosis. Parapodia uniramous, with simple limbate chaetae and simple bidentate hooded hooks. Mx III with two aliform expansions. Mx IV finely denticulate. Pygidium discoidal (Miura 1980).

The table is from Miura (1980).

1.	Yellow aciculae	2
-	Black aciculae	3
2.	Prostomium prolonged (Fig. 7 A)	<i>Lumbrineriopsis paradoxa</i> (Saint-Joseph, 1888)
		France, English Channel, shallow water
-	Prostomium short, slightly longer than wide	
	<i>Lumbrineriopsis</i> sp. (= <i>L. paradoxa</i> sensu Fauvel 1923)
		France, English Channel, shallow water
3.	Hooded hooks with 2-5 needle-shaped denticles between the two main teeth (Fig 7 I, J)	
	<i>Lumbrineriopsis tsushimaensis</i> Imajima & Higuchi, 1975
		North Sea
-	Hooded hooks with an open space between the two main teeth (Fig 7 G)	
	<i>Lumbrineriopsis gasconiensis</i> Miura, 1980
		Bay of Biscay, deep water

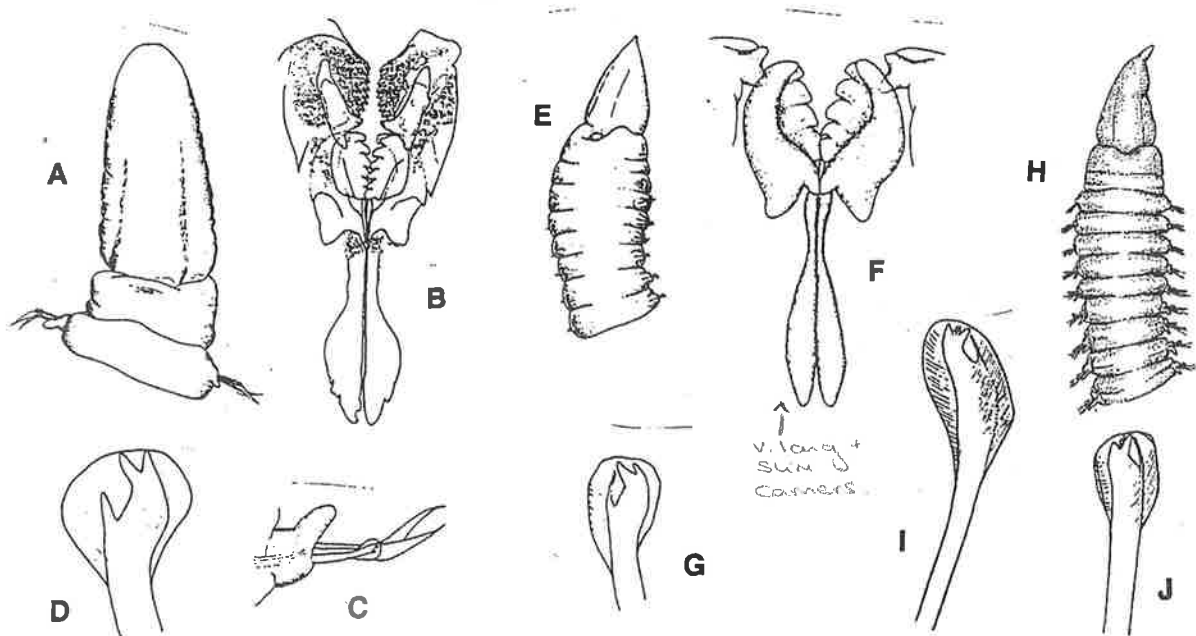


Fig. 7. *Lumbrineriopsis paradoxa*: A anterior end; B maxillae; C parapodium from middle body; D bidentate hook. - *Lumbrineriopsis gasconiensis*: E anterior end; F maxillae; G bidentate hook. - *Lumbrineriopsis tsushimaensis*: H anterior end; I bidentate hook chaetiger 8; J bidentate hook posterior chaetiger. A-G from Miura (1980); H-J from Imajima & Higuchi (1975).

Lumbrineris Blainville, 1828 - *Black aciculae, composite hooded hooks*

Diagnosis. Prostomium conical or globular, without antennae but occasionally with a single papilla in nuchal fold. Parapodia uniramous, with composite multidentate hooded hooks in the anterior parapodia, simple limbate setae and simple multidentate hooded hooks. Aciculae yellow or black. Mx III unidentate or bidentate. Mx V free standing, displaced outward to Mx IV (Frame 1992).

Remarks. The genus *Lumbrineris* was previously (e.g. Fauvel 1923) rather widely defined, but has gradually become more restricted as new genera have been erected for species with particular characteristics. The present definition was given by Frame (1992) who restricted the genus to species with multidentate simple and composite hooded hooks and simple limbate chaetae. Consequently, many species which previously were referred *Lumbrineris*, have been transferred to other genera.

1. Yellow or brown aciculae, mx III unidentate or bidentate 2
- Black aciculae, mx III bidentate. Composite hooded hooks with long blades on chaetiger 1-20(23) (Fig. 8 A, D) *Lumbrineris agastos* Fauchald, 1974
North Sea, Norway, Faroe Islands
(may also include *L. futilis* Kinberg, 1865 from southern North Sea)
2. Mx III bidentate (Fig 8 G) 3
- Mx III unidentate (Fig 8 J, N) 5
3. Anterior parapodia (chaetiger 4-9) with both simple and composite hooded hooks. Inner front border of mandibles with numerous fine teeth (Fig 8 E, F)
..... *Lumbrineris labrofimbriata* (Saint-Joseph, 1888)
France, English Channel
- All hooded hooks in anterior parapodia composite, inner front border of mandibles even 4
4. Prostomium conical. Composite hooded hooks on chaetigers 1-20(24), with long blades in anterior setigers (Fig 8 H) *Lumbrineris latreilli* Audouin & Milne-Edwards, 1834
North Atlantic, widely distributed
- Prostomium round, globular. Blades of composite hooded hooks short, of similar length throughout *Lumbrineris coccinea* (Renier, 1804)
France, English channel
5. Anterior parapodia (chaetiger 1-10) with both simple and composite hooded hooks, occurrence of composite hooks irregular; medioventral cutting edge of mx III with a moderately developed medial expansion (Fig. 8 J, K) *Lumbrineris mixochaeta* Oug, 1998
Northern Norway, Barents Sea
- All anterior hooded hooks composite; medioventral cutting edge of mx III with a well developed medial expansion approaching the shape of a tooth (giving the impression of a plate with two widely separated teeth) (Fig 8 N) 6
6. Posterior hooded hooks with one strong tooth and 4-5 small teeth (Fig 8 O, P).....
.....(?) *Lumbrineris gracilis* (Ehlers, 1868)
North Atlantic
(very close to *L. cingulata* (Ehlers, 1897))
- Posterior hooded hooks with a moderately developed main tooth and 8-10 progressively decreasing small teeth (Fig 8 Q, R) *Lumbrineris aniara* Fauchald, 1974
Southern and western Norway

Many species of *Lumbrineris* are imperfectly diagnosed. The original description of *Lumbrineris latreilli* Audouin & Milne-Edwards, 1834 is very poor, and present descriptions may seem to represent a species complex. The species was described from the Mediterranean Sea, but has later been reported from world-wide areas. It seems that most recent reports from North Atlantic areas have been based on the descriptions given by Hartmann-Schröder (1971, 1996). Ramos (1976) suggested that the species is polymorph in the Mediterranean and that the smaller forms tend towards *L. gracilis* and *L. coccinea*.

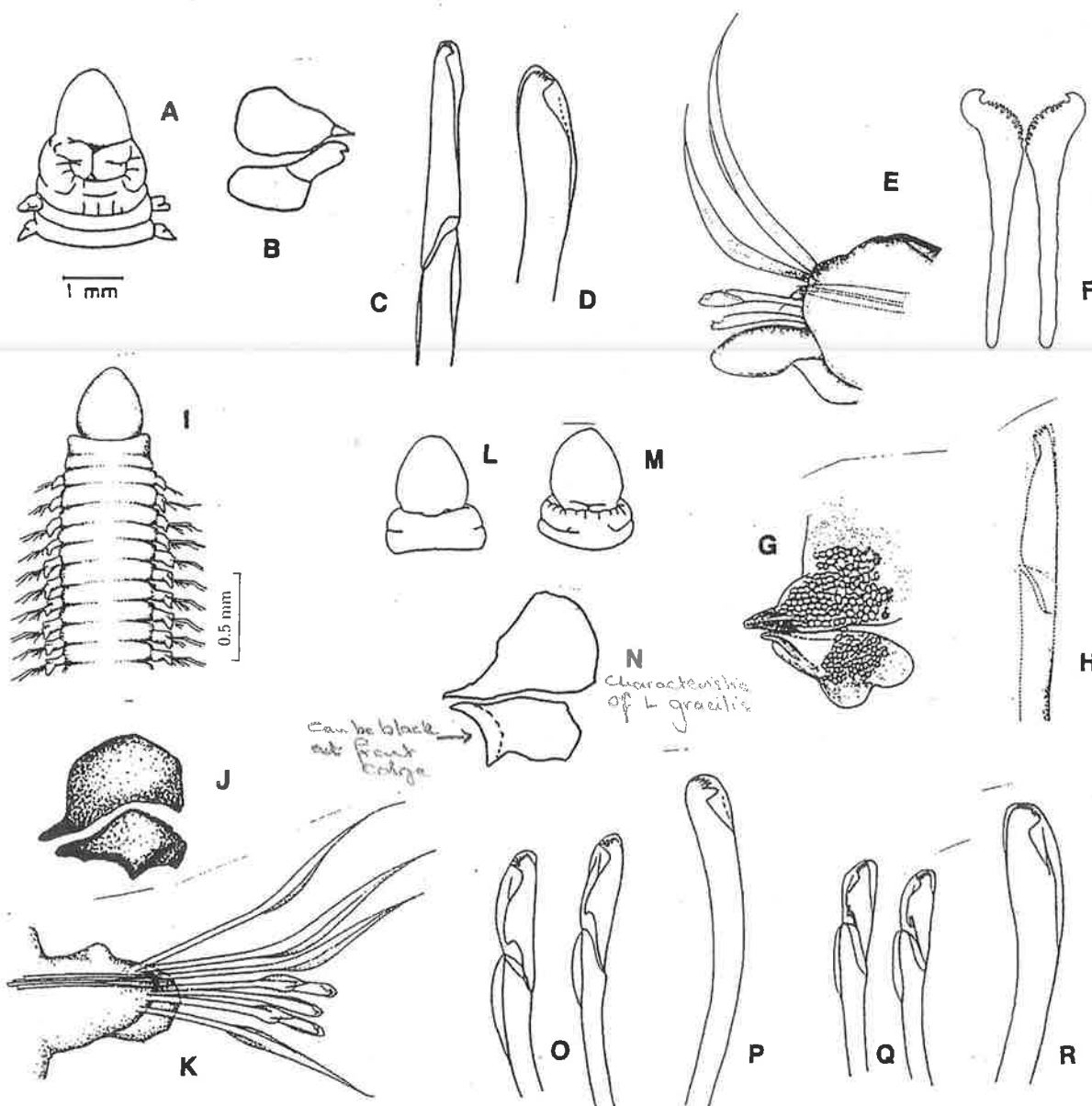


Fig. 8. *Lumbrineris agastos*: A anterior end ventral; B maxillae III-IV; C composite hooded hook chaetiger 9; D posterior hooded hook. – *Lumbrineris labrofimbriata*: E anterior parapodium; F medial part of mandibles. – *Lumbrineris latreilli*: G mx III-IV; H composite hooded hook anterior chaetiger. – *Lumbrineris mixochaeta*: I anterior body; J mx III-IV; K parapodium 5. – *Lumbrineris gracilis*: L, M anterior end; N mx III-IV; O composite hooded hooks chaetiger 4; P simple hook chaetiger 15. – *Lumbrineris aniara*: Q composite hooded hooks chaetiger 7; posterior hooded hook. A-D, L, M, O-R from Winsnes (1980); E, G-H from Ramos (1976); F from Laubier (1959); I-K from Oug (1998).

Lumbrineris gracilis in northern Europe may be confounded or misinterpreted. Ramos (1976) described a pair of accessory plates lying beneath mx II in specimens of *L. gracilis* from the Mediterranean Sea, which are not seen in specimens from northern Europe. Essentially the specimens from northern waters are more similar to *L. cingulata* from the South Atlantic. *L. cingulata* has been reported from the North Atlantic by Miura (1980) and Frame (1992).

The distinction between *L. gracilis* (in the present sense) and *L. aniara* Fauchald, 1974 is vague. The two species may be separated on the number of small teeth on the hooded hooks, but it is not clear whether this is a stable character.

Lumbrineris agastos is close to *L. futilis* Kinberg, 1865 which was described from one specimen collected in the southern North Sea. Winsnes (1980) examined the specimen, which is not complete, and observed that there were some minor differences in the maxillary structures. She concluded to keep the species separate, but did not describe the differences further.

Occasionally specimens resembling *L. agastos* with both simple and composite hooded hooks have been found in the North Sea. It is not clear whether these specimens show a morphological variation in *L. agastos* or belong to a separate species.

Ninoe Kinberg, 1865

Diagnosis. Prostomium conical, with a pair of dorsal slit-like organs. Parapodia uniramous, with simple limbate chaetae and simple multidentate hooded hooks. Anterior parapodia with a number of digitiform postchaetal branchial lobes. Mx IV or mx III and IV with denticulate incisive edges.

One species:

Branchiae from chaetiger 5-6 to 31-39, up to five filaments from chaetiger 20, simple hooded hooks from chaetiger 7-15, mx III bidentate, mx IV with 7-8 fine teeth (Fig 9)
 *Ninoe armoricana* Glemarec, 1968
 N Atlantic, Bay of Biscay, moderate depth

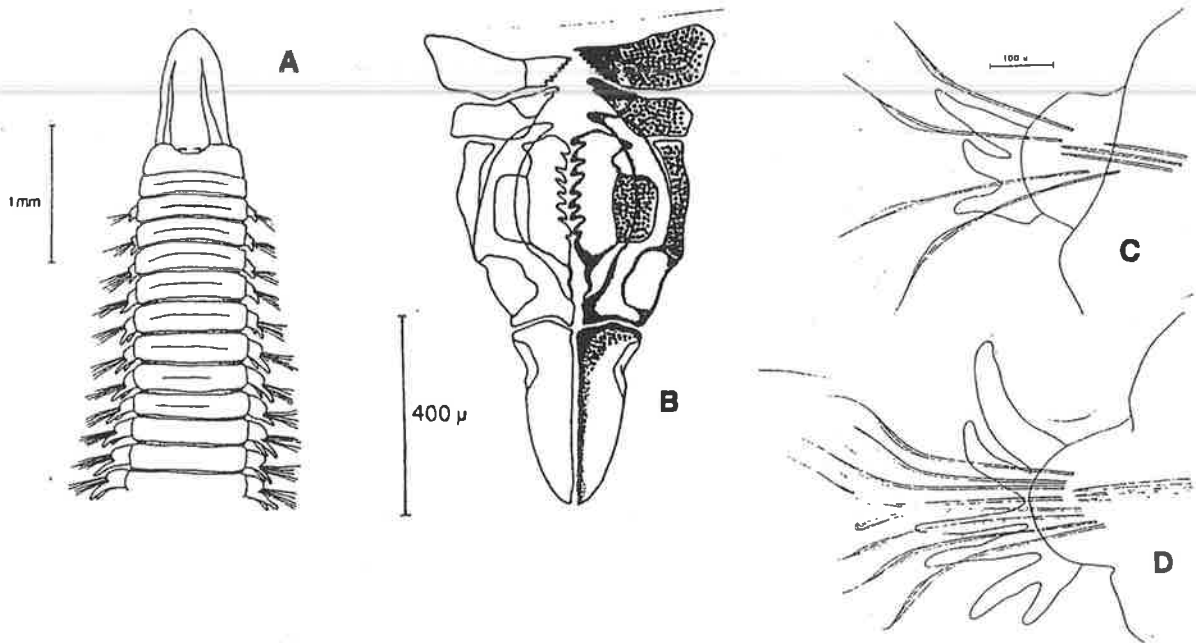


Fig. 9. *Ninoe armoricana*: A anterior end; B maxillae; C parapodium 10; D parapodium 24. A-D from Glémarec (1968).

Scoletoma Blainville, 1828 - Simple hooded hooks

Diagnosis. Prostomium conical or globular, without antennae but occasionally with a single papilla in nuchal fold. Parapodia uniramous, with simple limbate setae and simple multidentate hooded hooks. Aciculae yellow or black. Mx III unidentate or bidentate. Mx V free standing, displaced outward to Mx IV (Frame 1992).

Remarks: Frame (1992) resurrected *Scoletoma* as a valid genus to encompass species with simple hooded hooks and simple limbate chaetae, which previously had been referred to *Lumbrineris*. As currently defined, *Scoletoma* and *Lumbrineris* are rather close, and are essentially distinguished only by the lack and presence of composite hooded hooks, respectively. The presence of species with both composite and simple hooded hooks in anterior chaetigers, however, invalidates to some degree the distinction between the genera. Yet, it is currently considered justified to keep the genera separate and include species with occurrence of composite hooded hooks in *Lumbrineris* (Oug 1998).

- | | | |
|----|--|---|
| 1. | Yellow or golden aciculae, mx III bidentate | 2 |
| - | Black or dark brown aciculae, mx III uni- or bidentate | 3 |
| 2. | Capillary chaetae extending backwards to chaetiger 50-60 (Fig 10 A-E) | |
| | <i>Scoletoma impatiens</i> (Claparède, 1868) | |
| | North Atlantic, widely distributed | |
| | (= <i>Lumbrineris tetraura</i> : Hartmann-Schröder 1996, non Schmarda, 1861) | |
| - | Capillary chaetae limited to the first 12-20 chaetigers | |
| | <i>Scoletoma funchalensis</i> (Kinberg, 1865) | |
| | English channel | |
| 3. | Mx III unidentate (Fig 10 H) | <i>Scoletoma fragilis</i> (O.F. Müller, 1776) |
| | North Atlantic, Arctic | |
| - | Mx III bidentate (Fig 10 L) | 4 |
| 4. | Anterior parapodia (chaetiger 1- ca.25) with usually one, occasionally no hooded hooks (Fig. 10 M) | <i>Scoletoma magnidentata</i> (Winsnes, 1981) |
| | North Sea, Faroe Islands | |
| | (very close to <i>S. acicularum</i> (Webster & Benedict, 1887) from NW Atlantic) | |
| - | Anterior parapodia with 3-6 hooded hooks | <i>Scoletoma</i> sp. |
| | North Sea | |

Scoletoma impatiens (Claparède) has been synonymised with *Lumbrineris tetraura* (Schmarda) by various authors. Winsnes (1980) and Orensanz (1990), however, have clearly indicated that the two species are different. Winsnes (1980) noted that the description of *L. tetraura* given by Hartmann-Schröder (1971, 1996) agrees closely with specimens from Napoli collected close to the type locality of *S. impatiens*. Her description also agrees with the original description of *S. impatiens*.

Note: Specimens of *Lumbrineris mixochaeta* may lack composite hooded hooks altogether and key out as *Scoletoma* in the main key. The species has yellow to golden brown aciculae and unidentate mx III. The specimens may resemble juvenile specimens of *S. fragilis* (which may have brown aciculae), but may be distinguished by having more hooded hooks (2-4 vs 0-2) and fewer ventral limbate chaetae (1 vs 2-3) in anterior setigers (Oug 1998).

Be aware of *S. fragilis* / *S. magnidentata* - may be mixed up v easily.

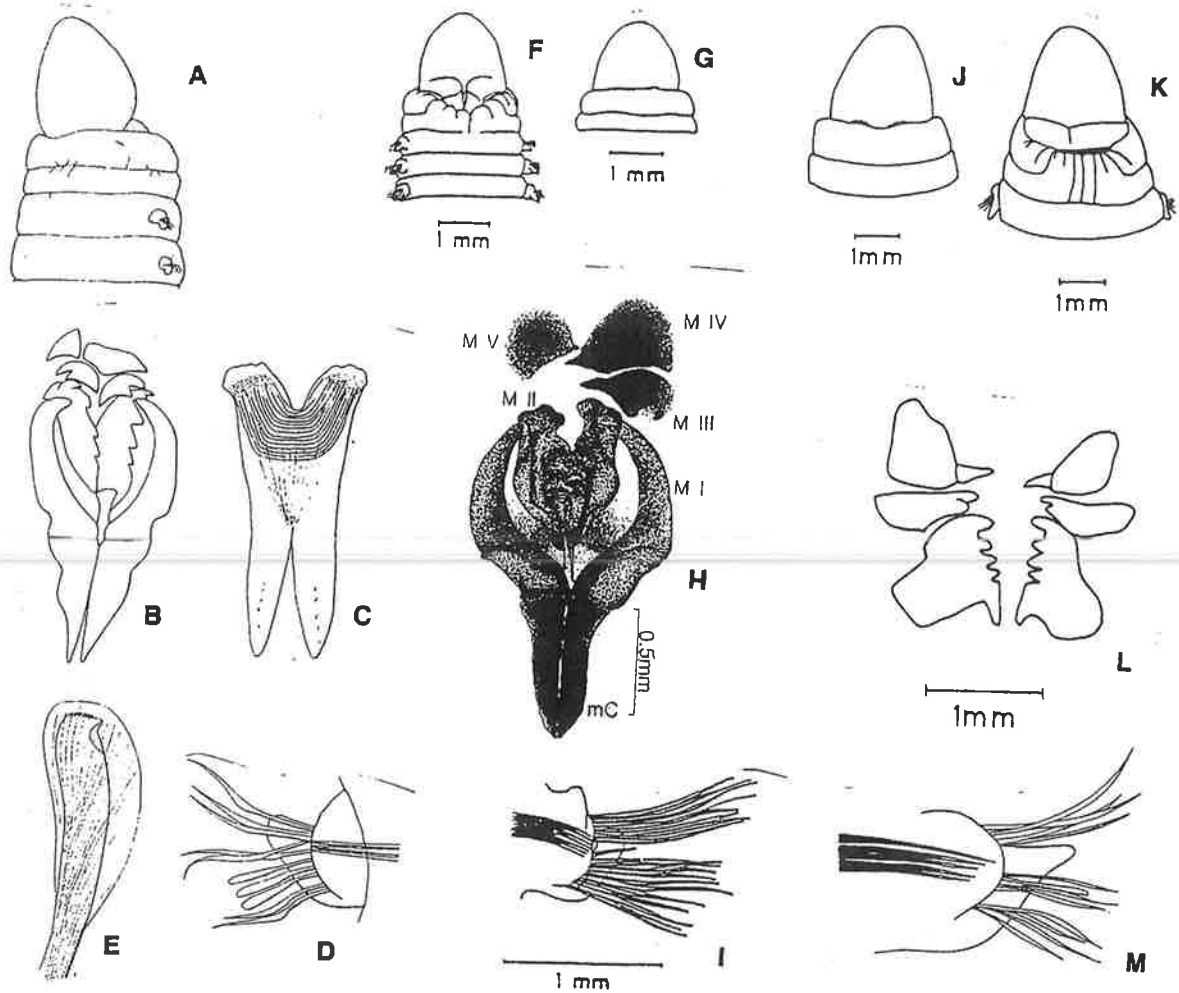


Fig. 10. *Scoletoma impatiens*: A anterior end; B maxillae; C mandibles; D parapodium 18; E posterior hooded hook. – *Scoletoma fragilis*: F, G anterior end; H maxillae, left mx III-V omitted; I parapodium 8. – *Scoletoma magnidentata*: J, K anterior end, L mx II-IV; M parapodium 25.

A-E from Hartmann-Schröder (1996) (as *L. impatiens*); F, G, I from Winsnes (1980); H from Frame (1992); J-M from Winsnes (1981).

Species of uncertain position:*'Lumbrineris' cluthensis* (Clark, 1953)

With limbate chaetae and blunt spine-like hooks in all chaetigers. Hooded hooks absent. Aciculae black (Fig. 11).
Scotland.

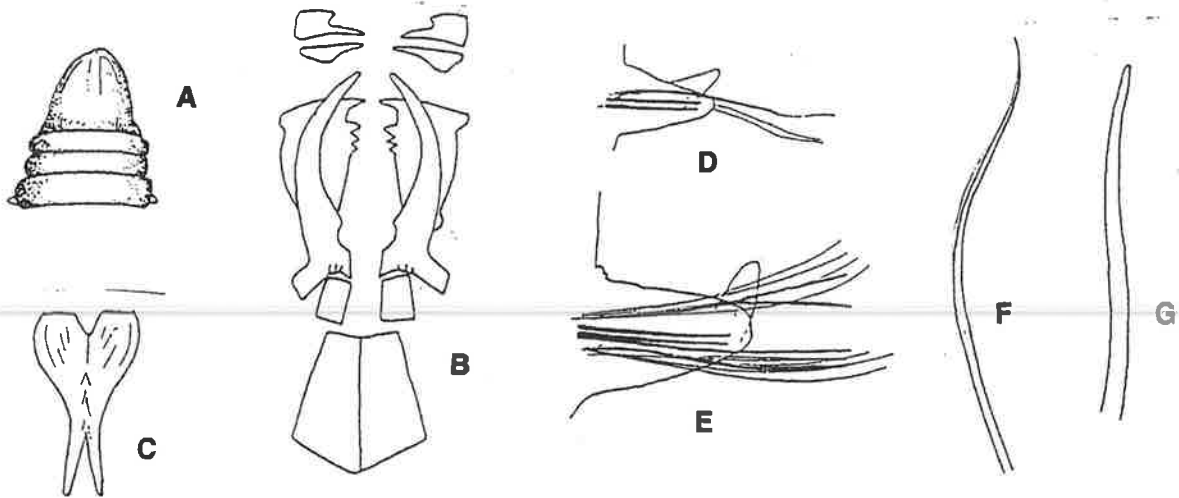
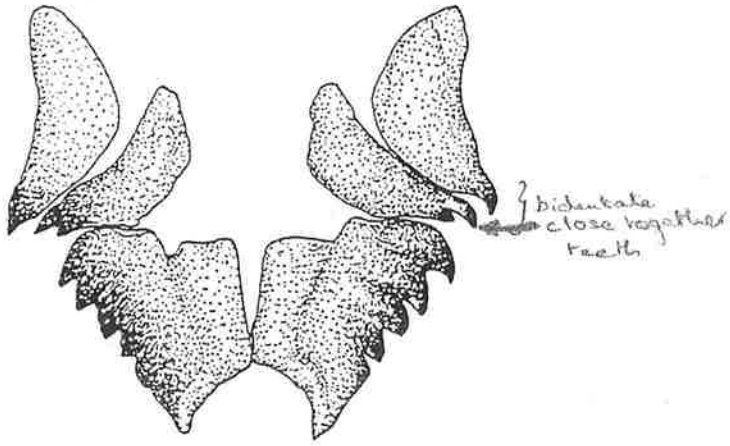


Fig. 11. *'Lumbrineris' cluthensis*: A anterior end; B maxillae; C mandibles; D anterior parapodium; E posterior parapodium; F limbate chaeta; G spine-like hook. A-G from Clark (1953).

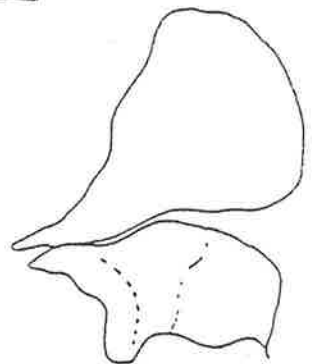
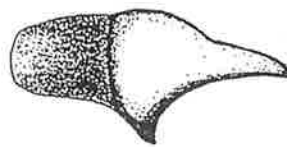
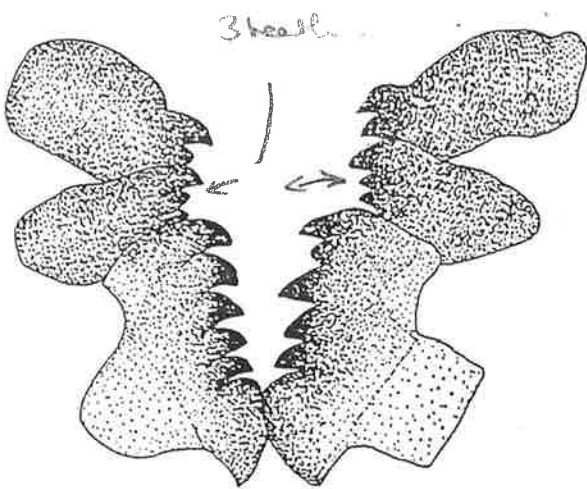
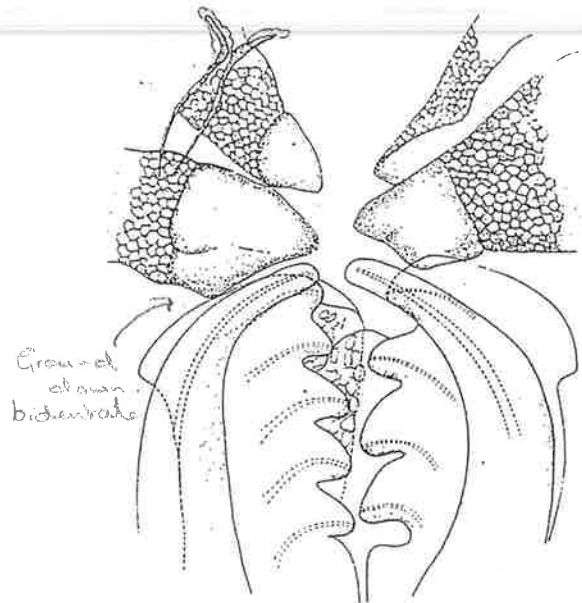
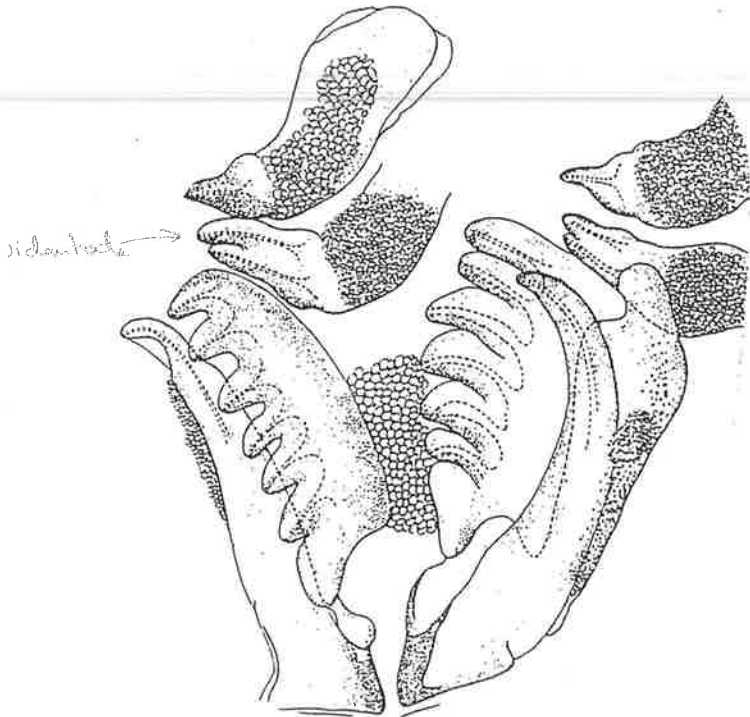
REFERENCES

- Carrera-Parra, L.F. 2001. Recognition of *Cenogenus* Chamberlin, 1919 (Polychaeta: Lumbrineridae) based on type material. *Proc. Biol. Soc. Wash.* 114: 720-724.
- Clark, R.B. 1953. *Lumbrinereis cluthensis*, n.sp. (Eunicidae), a new polychete from the Firth of Clyde. *Ann. Mag. Nat. Hist.* 12 (6): 945-949.
- Fauchald, K. 1974. Deep-water errant polychaetes from Hardangerfjorden, western Norway. *Sarsia* 57: 1-32.
- Fauvel, P. 1923. Polychètes errantes. *Faune Fr.* 5: 1-488.
- Frame, A.B. 1992. The lumbrinerids (Annelida: Polychaeta) collected in two northwestern Atlantic surveys with descriptions of a new genus and two new species. *Proc. Biol. Soc. Wash.* 105: 185-218.
- George, J.D. & G. Hartmann-Schröder 1985. Polychaetes: British Amphinomida, Spintherida and Eunicida. *Synopsis of the British Fauna* 32: 1-221.
- Glémarec, M. 1968. *Ninoe armoricana* n.sp. Polychète Lumbrineridae de la 'Grand Vasière' (Golfe de Cascoigne). *Vie Milieu* 19(2A): 315-322.
- Hartman, O. 1948. The marine annelids erected by Kinberg with notes on some other types in the Swedish State Museum. *Arkiv Zoologi* 42A (1): 1-137, 18 pls.
- Hartman, O. 1965. Deep water benthic polychaetous annelids off New England to Bermuda and other North Atlantic areas. *Allan Hancock Occ. Pap.* 28: 1-378.
- Hartmann-Schröder, G. 1971. Annelida, Borstenwürmer, Polychaeta. *Die Tierwelt Deutschlands* 58: 1-594.
- Hartmann-Schröder, G. 1996. Annelida, Borstenwürmer, Polychaeta. 2nd edition. *Die Tierwelt Deutschlands* 58: 1-648.
- Hilbig, B. 1995. Family Lumbrineridae Malmgren, 1867, emended Orensanz, 1990. Pp. 279-313 in: Blake J.A., B. Hilbig & P.H. Scott (eds.). Taxonomic atlas of the benthic fauna of the Santa Maria Basin and the Western Santa Barbara Channel. Vol 5. The Annelida Part 2 - Polychaeta: Phyllodocida (Syllidae and scale-bearing families), Amphinomida, and Eunicida. Santa Barbara Museum of Natural History, California.
- Imajima, M. & M. Higuchi 1975. Lumbrineridae of polychaetous annelids from Japan, with description of six new species. *Bull. Natn. Sci. Mus. Ser. A.* 1: 5-37.
- Kirkegaard, J.B. 1992. Havbørsteorme. I. Errantia. *Danmarks Fauna* 83: 1-416.
- Laubier, L. 1959. Sur le *Lumbriconereis labrofimbriata* Saint-Joseph, 1888. *Vie Milieu* 9: 126-128.
- Miura, T. 1980. Lumbrineridae (Annélides Polychètes) abyssaux récoltés au cours de campagnes du Centre Océanologique de Bretagne dans l'Atlantique et la Méditerranée. *Bull. Mus. natn. Hist. nat.* Paris Ser 2: 1019-1057.
- Orensanz, J.M. 1973. Los anélidos poliquetos de la Provincia Biogeográfica Argentina. IV. Lumbrineridae. *Physis Secc. A Océanos Org.* 32(85): 325-342.
- Orensanz, J.M. 1990. The eunicemorph polychaete annelids from Antarctic and subantarctic seas. With addenda to the Eunicemorpha of Argentina, Chile, New Zealand, Australia, and the southern Indian Ocean. *Antarctic Research Series* 52: 1-183.
- Oug, E. 1998. A new small species of *Lumbrineris* from northern Norway and Arctic waters, with comments on *L. minuta* (Théel, 1879) and *L. vanhoeffeni* (Michaelsen, 1898) (Polychaeta: Lumbrineridae). *Ophelia* 49: 147-162.

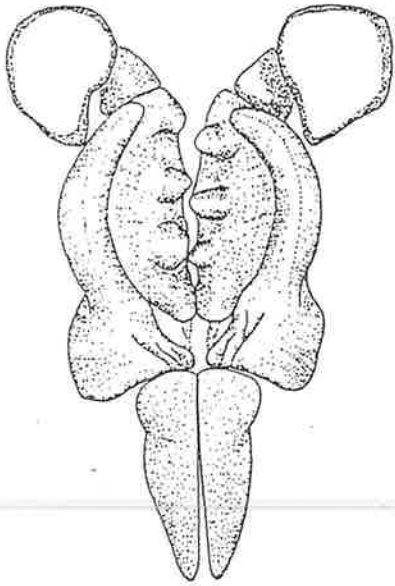
-
- Parapar, J., B. O'Connor, C. Besteiro & V. Urgan 1994. *Abyssoninoe hibernica* (McIntosh) (Polychaeta: Lumbrineridae) a valid species from the Northeast Atlantic. *Sarsia* 79: 157-162.
- Ramos, J.M. 1976. Lumbrineridae (Polychètes errantes) de Méditerranée. *Ann. Inst. Océanogr. Paris* 52: 103-137.
- Winsnes, I.M. 1980. En systematisk og dyregeografisk undersøkelse over familiene Eunicidae og Lumbrineridae (Polychaeta) fra Norge. Cand. real. thesis, University of Oslo. 184 pp. [In Norwegian].
- Winsnes, I.M. 1981. A new species of *Lumbrineris* (Polychaeta) and a new subspecies of *Lumbrineris scopu* Fauchald from the coast of Norway. *Zoologica Scripta* 10: 91-94.
- Winsnes, I.M. 1987. *Augeneria algida* (Wirén) comb.n., a deep-sea lumbrinerid from Spitzbergen with aberrant setae (Annelida, Polychaeta): redescription of holotype. *Zoologica Scripta* 16: 39-45.



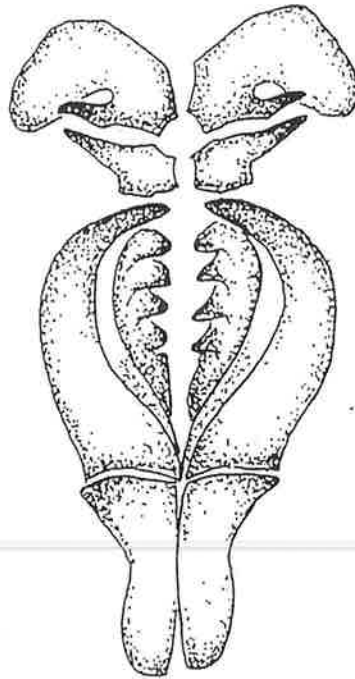
humboldtiana
- bidentate



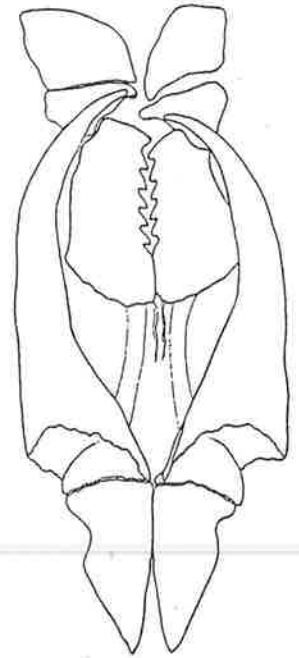
Limb grac
- arched cutting edge
- leading edge - has an
almost ventral tooth
- Not bidentate.



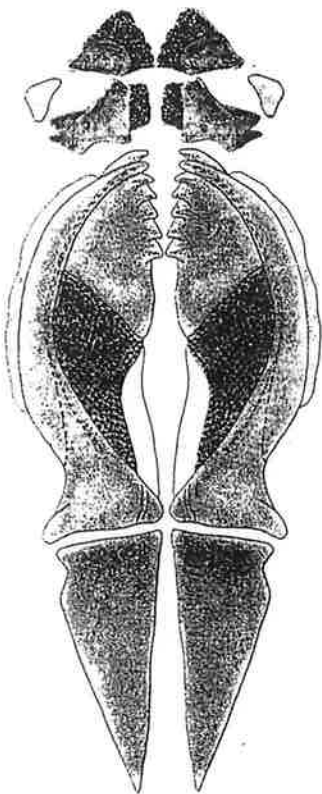
Augeneria



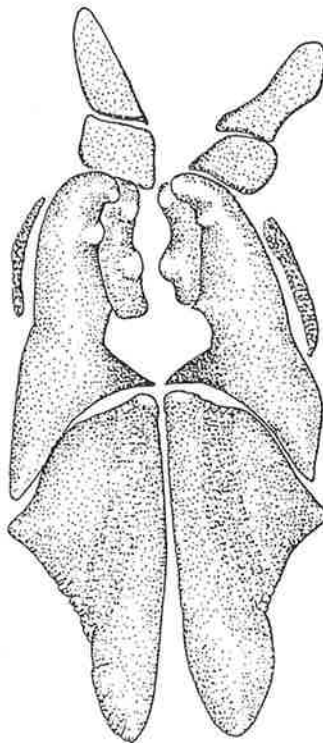
Abyssoninoe



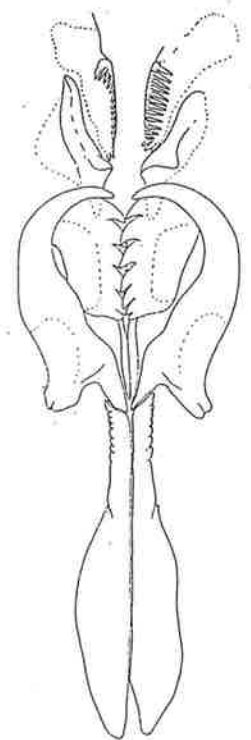
Eranno



Kuwaita



Lumbrinerides



Lumbrineriopsis