

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton.

Sheet 65.

ELLOBIOPSIDAE

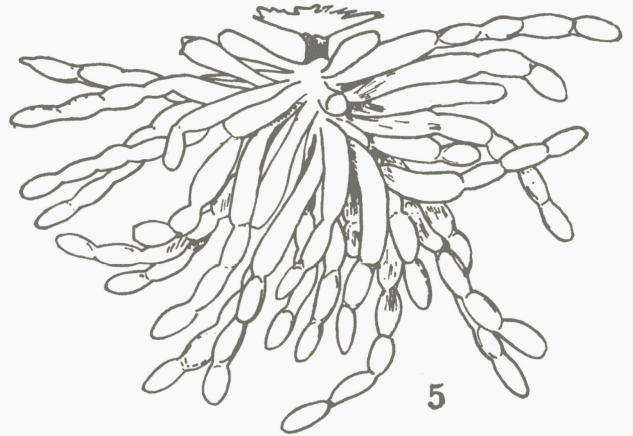
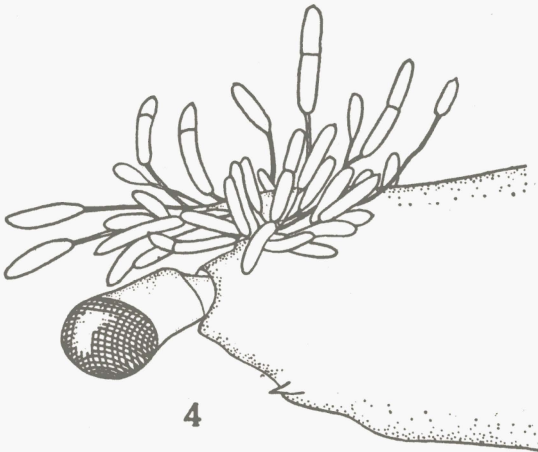
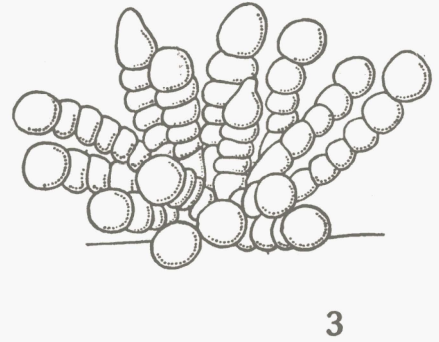
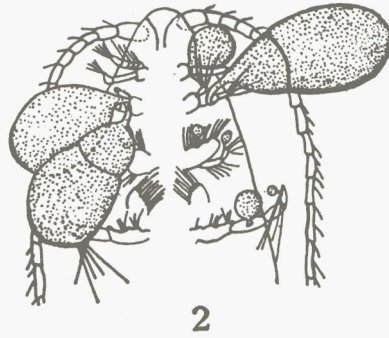
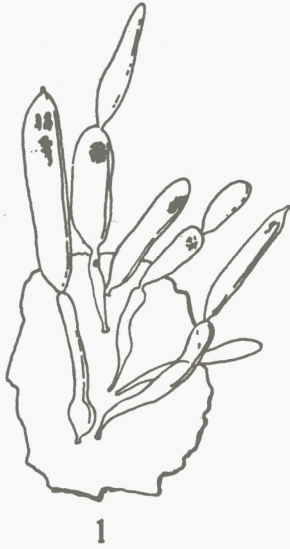
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1956

ISBN 978-87-7482-815-0

<https://doi.org/10.17895/ices.pub.4991>

ISSN 2707-675X



1, *Ellobiocystis catenatus*, $\times 50$. 2, *Ellobiopsis chattoni*, $\times 30$. 3, *Amallocystis fagei*, $\times 18$.
4, *Amallocystis capillosus*, $\times 6.5$. 5, *Amallocystis racemosus*, $\times 14$.
(1 and 5, after Coutière; 2, after Caullery; 3, after Boschma; 4, after Fage).

Family ELLOBIOPSIDAE Coutière, 1911c

Protista of uncertain position, showing a superficial likeness to peridinians, while in some respects presenting characters pointing to an affinity with flagellates; on the other hand a possible affinity with Fungi (e.g., Saprolegniaceae) is not out of the question¹). The family consists of heterogeneous elements: the species of the genus *Ellobiocystis* are epibiotic, those of the other genera are parasitic; the species of some genera (*Ellobiocystis*, *Parallobiopsis*) do not have an internal stage, those of other genera (*Ellobiopsis*, *Amallocystis*) in all probability are internal parasites before reaching their full development. Ellobiopsidae are known as epibionts or parasites of pelagic Crustacea of various groups, and (genus *Rhizellobiopsis*) as parasites of non-pelagic Polychaeta.

Genus ELLOBIOCYSTIS Coutière, 1911c:

Elliptical to elongate-cylindrical, rarely more or less spherical bodies, attached with short, thin stalks, rarely with broader base, to mouthparts of Caridea (*Acantheephyra*, *Pasiphaea*, *Systellaspis*), Mysidacea (*Antarctomysis*), and (?) Copepoda (cf. With, 1915). Total length generally not exceeding 1 mm., as a rule undivided, sometimes with one or more transverse septa dividing the body into a trophomere and one or more gonomeres. The collective species *Ellobiocystis caridarum* (Coutière, 1911b) and the several other described species (Coutière, 1911c) all are only known from the region south of the north-eastern Atlantic; one record from Oslo Fjord (Sars, 1868) probably refers to one of these species. Superficially similar unnamed epibionts of various Copepoda (With, 1915) occur in the north-eastern Atlantic.

1. Epibionts on the third maxillipes of *Pasiphaea multidentata* Esmark from Oslo Fjord (Sars, 1868) are here tentatively identified with *Ellobiocystis catenatus* Coutière, 1911c; they are of elongate-cylindrical shape, the body being divided into a trophomere and a gonomere.

1a. Epibionts occurring on the mouthparts of various copepoda from the north-eastern Atlantic (*Pseudaeideus armatus* (Boeck), *Gaidius tenuispinus* G. O. Sars, *G. brevispinus* G. O. Sars, *Gaetanus kruppii* Giesbrecht, *G. pileatus* Farran, *G. latifrons* G. O. Sars, and *Pseudochirella notacantha* (G. O. Sars)), mentioned and figured by With (1915), show a superficial resemblance to *Ellobiocystis caridarum* (Coutière, 1911b). Because the hosts belong to an entirely different group the identity of the epibionts remains altogether uncertain.

Genus ELLOBIOPSIS Caullery, 1910:

Body pear-shaped to cylindrical, consisting of a stalk penetrating into the body of the host, a trophomere, and one or two gonomeres. Parasitic on Copepoda.

2. *Ellobiopsis chattoni* Caullery, 1910.

Body pear-shaped, length about 0.7 mm., greatest thickness about 0.35 mm., the single gonomere larger than the trophomere. Parasitic on *Calanus helgolandicus* Claus, *C. finmarchicus* (Gunnerus), *Pseudocalanus minutus* (Kröyer), and *Acartia clausii* Giesbrecht.

Genus AMALLOCYSTIS Fage, 1936:

Body outside the host consisting of one or two tufts of stalked trophomeres, each with a number of gonomeres; inside the host an organ of fixation with roots penetrating into the soft parts of the host. Parasitic on Caridea, Mysidacea, and Euphausiacea.

3. *Amallocystis fagei* Boschma, 1948.

Number of trophomeres 10 to 50, number of gonomeres on each trophomere up to 9 (generally 4 to 6); gonomeres spherical to short-elliptical, transverse diameter 0.1—0.33 mm. In centre of dorsal surface of carapace of host. On Euphausiacea, hosts (in north-eastern Atlantic): *Thysanoessa inermis* (Kröyer), *Th. raschii* (M. Sars), and *Meganctiphanes norvegica* (M. Sars).

4. *Amallocystis capillosus* Fage, 1938.

Trophomeres in two tufts, one at each side of the rostrum of the host (each tuft may consist of two separate parts); number of trophomeres on each side of the rostrum of the host about 30 to 100. One, more rarely two, gonomeres on each trophomere; gonomeres elongate-elliptical to cylindrical, about twice as long as broad, length 0.6—1.0 mm., diameter 0.15—0.4 mm. On Caridea; hosts (in north-eastern Atlantic): *Pasiphaea tarda* Kröyer and *P. multidentata* Esmark.

5. *Amallocystis racemosus* (Coutière, 1911b).

Number of trophomeres 50 to 300, number of gonomeres on each trophomere 1 to 7 (as a rule 4 or 3); gonomeres elliptical, nearly twice as long as broad, length 0.25—0.5 mm., diameter 0.15—0.3 mm. On ventral surface of proximal half of abdomen of Caridea; hosts (in north-eastern Atlantic): *Pasiphaea tarda* Kröyer and *Hymenodora glacialis* Buchholz.

¹) Niezabitowski (1913) founded the genus *Thalassomyces* on specimens of *Amallocystis*.

References to Descriptions and Figures

1. *Ellobiocystis catenatus*: (?) Sars, 1868, Pl. 4, Fig. 73; Coutière, 1911c, Fig. VI B; Chatton, 1920, Fig. 152 D; Coutière, 1940b, Pl. 1, Fig. 45 B.
- 1a. *Ellobiocystis caridarum*: Coutière, 1911c, Figs. II—IV, Pl. 8, Figs. 11—36, 38; (?) With, 1915, Figs. 17e, 23; Chatton, 1920, Figs. 150, 151; Coutière, 1940b, Pl. 1, Figs. 11—36, 38, 41—43; Grassé, 1952, Fig. 823.
2. *Ellobiopsis chattoni*: Scott, 1897, Pl. 3, Fig. 22; Caullery, 1910, Figs. A—C, Pl. 5; Apstein, 1911, Fig. 19; Chatton, 1920, Figs. 145bis, 146, 147; Reichenow, 1930, Fig. 3; Jepps, 1937, Figs. 21—25; Grassé, 1952, Fig. 824.
3. *Amallocystis fagei*: Macdonald, 1927 (as *Staphylocystis racemosus*); Einarsson, 1945, Figs. 81, 83; Boschma, 1948, Figs. 1, 2; Boschma, 1949, Figs. 1—5, Pls. 38—40; Glover, 1952; Grassé, 1952, Figs. 826, 828; Bergan, 1953, Pl. 2, Fig. 12.
4. *Amallocystis capillosus*: Stephensen, 1910 ("duskformet Snylter"); Sund, 1913, Fig. 9a—f; Fage, 1938, Figs. 1—4; Boschma, 1949, Figs. 12—16, Pl. 41, Figs. 3, 4; Dahl, 1951, Figs. 1—3; Bergan, 1953, Figs. 1, 2, Pl. 1, Figs. 1—9, Pl. 2, Figs. 10, 11; Sivertsen and Holthuis, 1956, Figs. 17g—m, 20a, b.
5. *Amallocystis racemosus*: (?) Bate, 1880, Pl. 140, Figs. 3 and 3'; Coutière, 1911c, Fig. I, Pl. 8, Figs. 1—6 (as *Staphylocystis racemosus*); (?) Niezabitowski, 1913, Figs. 2—5(6) (as *Thalassomyces spiczakowii* and *Th. batei*); Chatton, 1920, Figs. 148, 149; Coutière, 1940b, Pl. 1, Figs. 1—6, 40; Bergan, 1953, Pl. 2, Figs. 13—16.

Distribution

Species

Gulf of Bothnia	—
Gulf of Finland	—
Baltic proper	2
Kattegat	2
Skagerak	1, 4
Northern North Sea	2, 3
Southern North Sea	—
English Channel	—
Bristol Channel and Irish Sea	—
Clyde Sea Area	2, 3
South and West Ireland	1a, 4
North-eastern Atlantic	1a, 3, 4, 5
Faroe Shetland Area	4
Faroe Iceland Area	1a, 3, 5
Norwegian Sea	4
Barents Sea	2

References to Work on Biology

Caullery (1910) stages of growth, 2; Sund (1913) effect of parasite on host, 4; Chatton (1920) general biology of group; Jepps (1937) stages of growth and sporulation, 2; Einarsson (1945) root system, 3; Boschma (1948, 1949) root system, 3, 4; Grassé (1952) general biology of group; Sivertsen and Holthuis (1956) effect of parasite on host, 4.

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