

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

**Zooplankton**

Sheet 80

**OPISTHOBRANCHIA**

**ORDER: GYMNOSOMATA**

**Family: Clionidae**

(By J. E. Morton)

**1957**

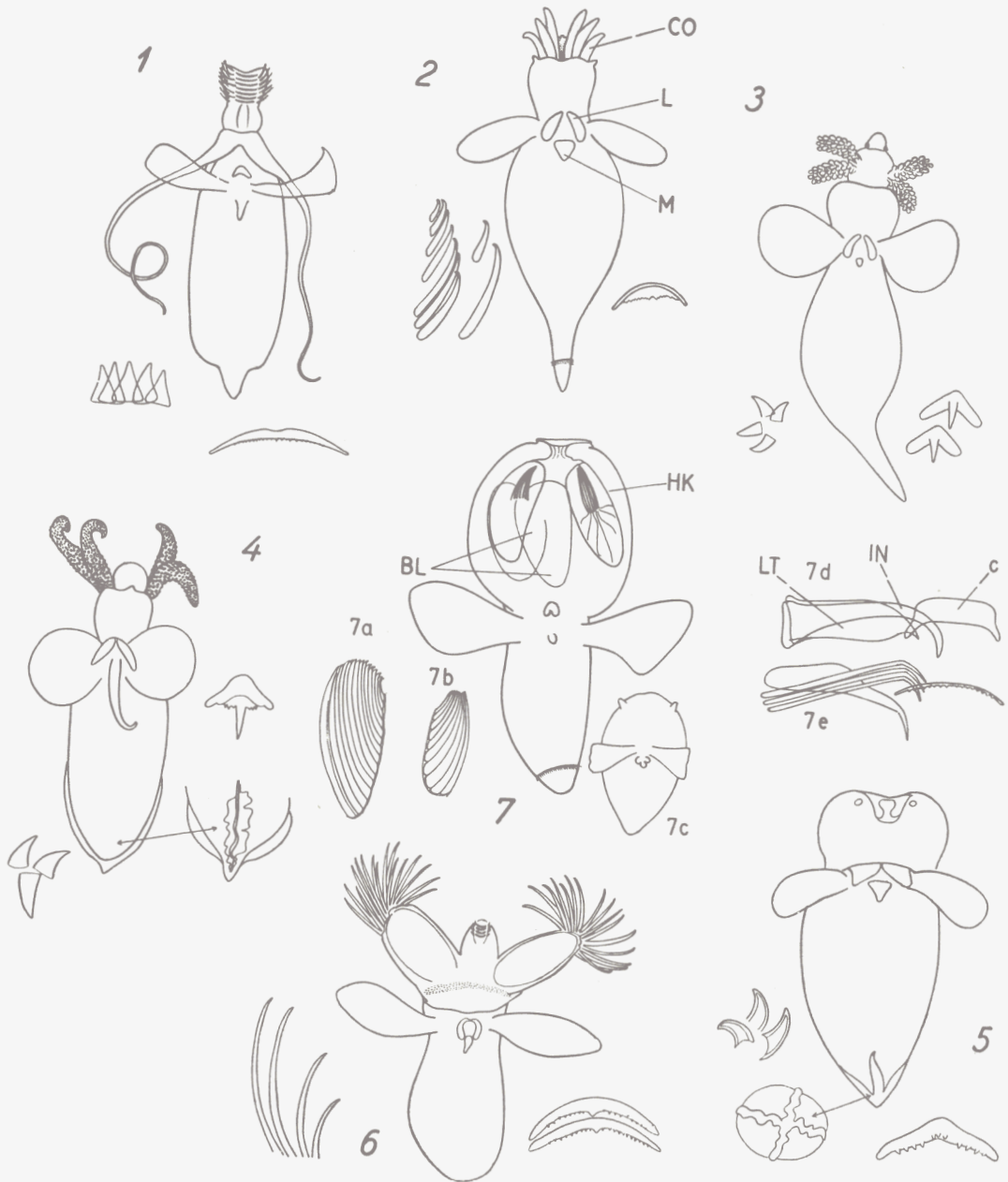


Fig. 1, *Massya longecirrata*. Fig. 2, *Clione limacina*. Fig. 3, *Paraclione longicaudata*.  
Fig. 4, *Notobranchaea macdonaldi*. Fig. 5, *Prionoglossa tetrabranchiata*. Fig. 6, *Cephalobranchia macrochaeta*.  
Fig. 7, *Thliptodon diaphanus*: 7a, hook sac of *T. rotundatus*; 7b, hook sac of *T. diaphanus*; 7c, *T. rotundatus* on smaller scale; 7d, radula of *T. diaphanus* showing one lateral tooth; 7e, radula of *T. rotundatus* showing 3 lateral teeth.

With species 1—6 insets are shown of hooks (left) and central tooth of radula (right).

Figures adapted from original and other authors and other sources, somewhat schematic. Fig. 2 from life.

BL, gullet bladders; C, central tooth; CO, buccal cones; HK, hook sacs; IN, intermediate tooth;  
L, lateral lobe of foot; LT, lateral tooth; M, median lobe of foot.

## Family CLIONIDAE

Gymnosomata without suckers in the buccal cavity (acetabula), and without a long proboscis; without a lateral gill, and with a posterior gill only in *Notobranchaea* and *Prionoglossa*. A heterogeneous family with 7 Atlantic genera.

### Key to Genera

1. Head drawn out behind into two tentacular processes longer than the rest of the body ..... *Massya*  
Head without such processes ..... 2
2. Body prolonged behind into a short tapered "tail"; head separated by a distinct neck ..... 3  
Body rounded or bluntly pointed behind; with no distinct neck ..... 4
3. 3 pairs of buccal cones; hooks long ..... *Clione*  
2 pairs of buccal cones; hooks minute ..... *Paraclione*
4. With a posterior gill of 3 or 4 radial crests, hooks minute ..... 5  
With no posterior gill, hooks very long ..... 6
5. Posterior gill 3-radiate, 2 pairs of buccal cones ..... *Notobranchaea*  
Posterior gill 4-radiate, no buccal cones ..... *Prionoglossa*
6. Head balloon-like, much inflated by a pair of closed "gullet bladders" ..... *Thliptodon*  
Without gullet bladders ..... *Cephalobranchia*

### Characters of Genera

Genus	Hooks	Radula	Head tentacles
<i>Massya</i> Pruvot 1924	Few, minute, triangular	Very large, with an arcuate, denticulate median plate	Very long, and trailing behind

A single species — 1. *M. longecirrata* (Massy 1917), bathypelagic, 1000 m., probably cosmopolitan.

Genus	Buccal cones	Hook-sacs	Radula	Jaw	Foot
<i>Clione</i> Pallas 1774	Three pairs, more or less smooth	Long and cylindrical hooks of different lengths, all reaching to opening	Central tooth arcuate and weakly serrate	None	Median lobe triangular
<i>Paraclione</i> Tesch 1903 ( <i>Clionina</i> Pruvot-Fol 1924)	Two pairs, strongly papillose	Shallow depressions, hooks few and short	Central tooth strongly spined	Vestigial	Median lobe vestigial

Species	Average length in mm.	Remarks
2. <i>Clione limacina</i> (Phipps 1774)	10—15 (2—5)*	The large arctic-boreal form is the typical one, the "southern" form* (see Lebour, 1931) being mature at 2 mm. For synonymy, including status of <i>Clione minuta</i> Pruvot 1926, see Tesch, 1950
3. <i>Paraclione longicaudata</i> (Souleyet 1852)	3—4	With difficulty distinguished externally from small <i>Clione limacina</i> . The penis bears two clusters of small spines

Genus	Buccal cones	Hook-sacs	Posterior gill	Jaw	Radula	Foot
<i>Notobranchaea</i> Pelseneer 1886	2 pairs with papillae	Shallow; hooks triangular	3 radial crests, dorsal one fringed	A row of small spines	Central tooth with a large median spine	Median lobe long
<i>Prionoglossa</i> Tesch 1950	None	Shallow; hooks short and hollow	4 radial crests	A row of short, broad hooks	Central tooth arcuate with fine denticles	Anterior lobes very broad-based

Species	Average length in mm.	Remarks
4. <i>Notobranchaea macdonaldi</i> Pelseneer 1887	7	Distinguished by the very large and rounded wings
5. <i>Prionoglossa tetrabranchiata</i> (Bonnievie 1913)	8	—

Genus	Hook-sacs	Head	Jaw	Radula	Foot
<i>Thliptodon</i> Boas 1886	Large; hooks long	Balloon-like, much expanded by a pair of closed "gullet bladders"	Absent	An extra (intermediate) plate between central and laterals	small and often buried in skin
<i>Cephalobrachia</i> Bonnievie 1913	Very large; hooks long, golden, all reaching mouth of sac	No gullet bladders	Absent		Small

Species	Average length in mm.	Remarks
6. <i>Cephalobrachia macrochaeta</i> Bonnievie 1913	5—10	Viscera reach posterior end. A glandular lip at base of proboscis. A widely distributed bathypelagic species, usually over 1000 m.
7. <i>Thliptodon diaphanus</i> (Meisenheimer 1903)	5	Head very swollen, 1 foot-lobe remote
8. <i>Thliptodon rotundatus</i> (Massy 1917)	3—4	Round or ovoid bodied, 3 foot-lobes united

For distinctive features in hooks and radulae, see Figs. 7a—e, and literature [see also *Th. gegenbaui* (Boas 1887)]

#### Further Information on Identification and Biology

1. *Massya longecirrata*: Massy, 1917, p. 235, Pl. I, Fig. 3; Pruvot-Fol, 1924, pp. 361—62; Tesch, 1950, pp. 19—21, Fig. 9; Pruvot-Fol, 1954, p. 160, Figs. 59, 60.
2. *Clione limacina*: Phipps, 1774; McIntosh, 1898; Bonnievie, 1913, p. 59, Figs. 50—51; Pruvot-Fol, 1926, pp. 21—23, Pl. II, Figs. 55—65, Pl. III, Fig. 86; Lebour, 1931, pp. 785—92, Pl. I, II; Pruvot-Fol, 1942, pp. 19—20; Tesch, 1950, pp. 13—14; Morton, 1958, pp. 287—97, Figs. 1—3.
3. *Paraclione longicaudata*: Souleyet, 1852; Pruvot-Fol, 1924, pp. 364—70, Figs. 14—17, Pl. XV, Figs. 15—17; Tesch, 1950, pp. 15—16, Figs. 6, 7, 28; Pruvot-Fol, 1954, p. 150, Fig. 52.
4. *Notobranchaea macdonaldi*: Pelseener, 1887, pp. 39—40, Pl. III, Figs. 3, 4; Pruvot-Fol, 1942, pp. 33—37, Figs. 38—57.
5. *Prionoglossa tetrabranchiata*: Bonnievie, 1913, p. 76, Figs. 53—55, Pl. VIII; Pruvot-Fol, 1926, p. 33, Pl. I, Figs. 14—15; Pruvot-Fol, 1942, p. 30, Fig. 32; Tesch, 1950, pp. 27—29, Figs. 15, 16, 31.
6. *Cephalobrachia macrochaeta*: Bonnievie, 1913, p. 73, Pl. VII, Figs. 53—58; Pruvot-Fol, 1926, p. 30, Pl. I, Fig. 34, Pl. III, Fig. 91.
7. *Thliptodon diaphanus*: Meisenheimer, 1903; Pruvot-Fol, 1942, pp. 23—24, Figs. 21—25; Tesch, 1950, pp. 22—23, Figs. 10, 11, 30; Pruvot-Fol, 1954, p. 161, Figs. 61, 62; Morton, 1954, p. 177, Fig. 4.
8. *Thliptodon rotundatus*: Massy, 1917; Pruvot-Fol, 1942, p. 25, Fig. 31; Tesch, 1950, p. 23, Fig. 12.

#### Distribution

Distribution	Species
Gulf of Bothnia .....	—
Gulf of Finland .....	—
Baltic proper .....	—
Belt Sea .....	—
Kattegat .....	—
Skagerak .....	—
Northern North Sea .....	2
Southern North Sea .....	—
English Channel (E.) .....	—
English Channel (W.) .....	2
Bristol Channel and Irish Sea .....	2
South and West Ireland and Atlantic north of 40° .....	1, 2, 3, 5, 6, 7, 8
North Atlantic south of 40° .....	1, 2, 3, 4, 5, 6, 7, 8
Mediterranean Sea .....	—
Faroe—Shetland Area .....	2
Faroe—Iceland Area .....	1, 2, 16
Norwegian Sea .....	2
Barents Sea .....	2

#### References

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