CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

Zooplankton
Sheet 79

OPISTHOBRANCHIA
ORDER: GYMNOSOMATA
Families: Pneumodermatidae
Cliopsidae

(By J. E. Morton)

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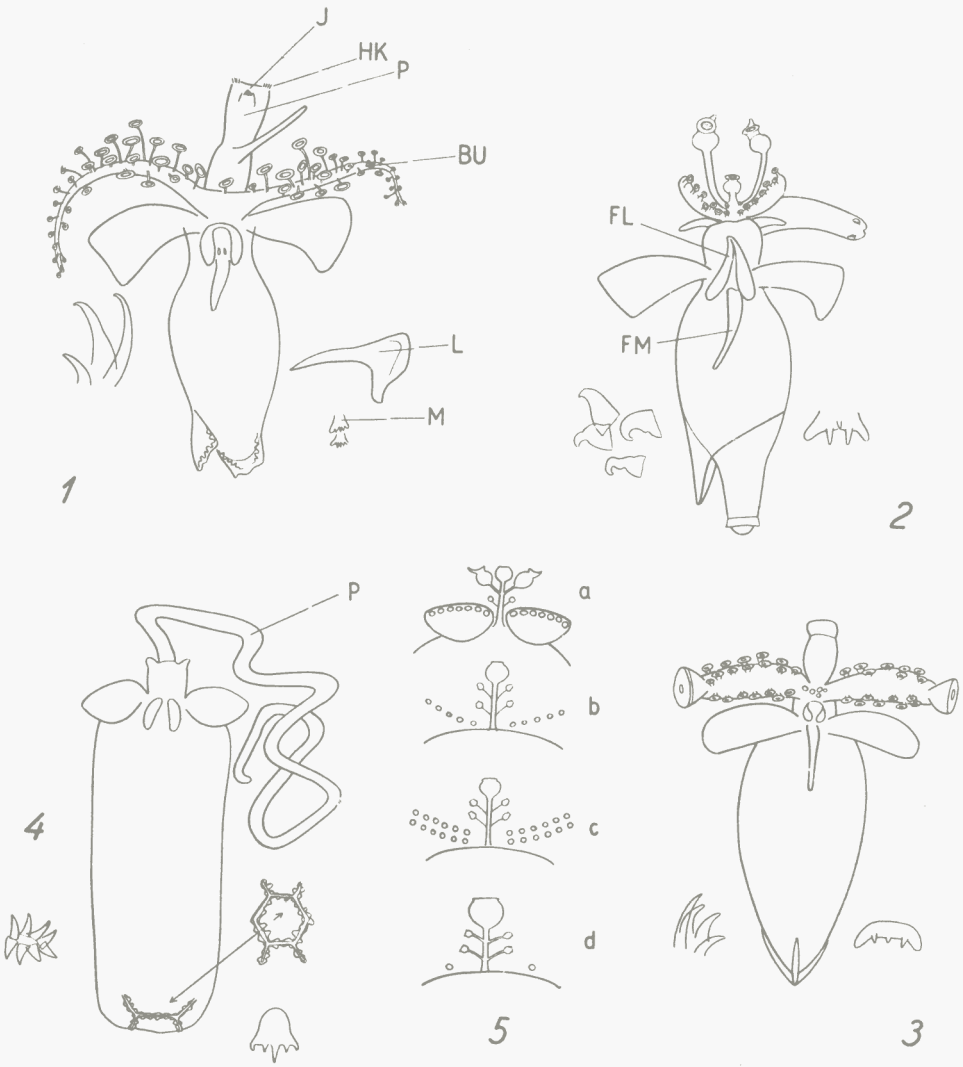

Fig. 1, *Pneumoderma atlanticum*. Fig. 2, *Pneumodermopsis ciliata*. Fig. 3, *Crucibranchaea macrochira*. Fig. 4, *Cliopsis krohni*. Fig. 5, Diagrams of sucker arrangement in species of *Pneumodermopsis*: (a) *P. ciliata*, (b) *P. paucidens*, (c) *P. polycotyla*, (d) *P. canephora*.

Details include hooks (left of each figure) and central tooth (right).
BU, everted buccal tentacles with suckers; FL, lateral lobe of foot; FM, median lobe of foot; HK, hook sac; J, jaw; L, lateral tooth of radula; M, median tooth; P, everted proboscis.

(Figures of animals based on original or other authors; generalized and somewhat schematic).

Order GYMNOSOMATA

Shell-less pelagic opisthobranchs with a fusiform or cylindrical body, tapered or rounded behind; the small ventral foot produced into flap-like parapodia or swimming wings; with external gills posteriorly and/or on the right side, or lacking; the buccal armature complex, consisting of a pair of eversible hook-sacs, and either adhesive conical tentacles (cephaloconi) or branched tentacles bearing suckers.

Preserved gymnosomes are difficult to determine without practice, their bodies often being mutilated and mis-shapen. Where possible select good specimens, with their smooth natural shape, or better still with hook-sacs, suckers or buccal cones everted. First examine the outward shape and such features as the foot, and gills if present. Secondly, clear in glycerine or xylol, or gently warm in caustic potash solution, but never so much as to macerate the animal. Details of the proboscis, and size and arrangement of un-extended mouthparts may then be seen as the tissues become transparent. Finally, where necessary, macerate or dissect, and mount radula, hooks and jaw.

Families of GYMNOSOMATA

1. With suckers and posterior and/or lateral external gills. Body narrowed but not sharply tapered behind ..... PNEUMODERMATIDAE
2. Without suckers, proboscis long muscular and protrusible, body jelly-like and translucent, with viscera in a small "nucleus" ..... CLIOPSIDAE
3. Without suckers or long proboscis; buccal cones and external gills sometimes present ..... CLIONIDAE (see Sheet 80)

Family PNEUMODERMATIDAE

Genus	Suckers	Right lateral gill	Posterior gill	Hook-sacs	Central radular tooth
Pneumoderma Peron & Lesueur 1810	2 lateral arms with av. 40 suckers each	Fringed triangular flap	Membranous ring with 4 radial crests	Shallow, hooks minute	Small (Fig. 1) or lacking with age
Pneumodermopsis Bronn 1862	A median arm with terminal and large lateral suckers; suckers on side arms	Triangular flap	None (a persistent ciliary circlet)	Shallow, hooks minute	3-cusped
Crucibranchaea Meisenheimer 1905	2 thick lateral arms with large terminal and many small suckers	Absent	Cruciform, with 4 radial crests	Shallow, hooks minute	3-cusped

Species	Average length in mm. to	Remarks
1. *Pneumoderma atlanticum* (Oken, 1816)	10—15	Suckers increase in size and number with age (14—100).
2. *Pneumodermopsis ciliata* (Gegenbaur, 1855)	5	Determined by number and arrangement of suckers. *P. ciliata* is the commonest and widest distributed (see Fig. 5).
3. *Pneumodermopsis paucidens* (Boas, 1886)	5	
4. *Pneumodermopsis polycotyla* (Boas, 1886)	5	
5. *Pneumodermopsis canephora* (Pruvot-Fol, 1924)	—	
6. *Crucibranchaea macrochira* (Meisenheimer, 1905)	7	—

Family CLIOPSIDAE

Cliopsis Troschel 1854. Cylindrical, jelly-like body with small visceral "nucleus" and proboscis 3 times body length; posterior gill hexagonal with 4 rays, no lateral gill; no posterior foot lobe.

1 species, (7), *C. krohni* Troschel 1854. Up to 30 mm. long. A patch of 60 small hooks in either sac. Body with small spots due to fatty glands.

Further Information on Identification and Biology

1. *Pneumoderma atlanticum:* Oken, 1815; Pruvot-Fol, 1924, pp. 385—90, Pl. XV, Figs. 1—9; Pruvot-Fol, 1942, pp. 38—40, Fig. 58; Tesch, 1950, pp. 33—35, Figs. 20—35; Pruvot-Fol, 1954, p. 134, Figs. 40, 41.
2. *Pneumodermopsis ciliata:* Gegenbaur, 1855; Pruvot-Fol, 1932, pp. 524—28, Figs. 12—18; Tesch, 1950, p. 32.
3. *Pneumodermopsis paucidens:* Boas, 1886, p. 160, Pl. VII, Figs. 105—06; Pruvot-Fol, 1926, p. 12, Pl. 1, Figs. 36—37; Morton, 1954, pp. 178—181, Figs. 5—7.
4. *Pneumodermopsis polycotyla:* Boas, 1886; Tesch, 1950, pp. 32, 50, Fig. 19.
5. *Pneumodermopsis canephora:* Pruvot-Fol, 1924, pp. 370—80, Figs. 18—25, Pl. XV, Figs. 18—20, Pl. XVI, Figs. 1—10.
6. *Crucibranchaea macrochira:* Meisenheimer, 1905, p. 47; Bonnevie, 1913, pp. 52—55, Figs. 39—41, Pl. V, Figs. 35—44; Pruvot-Fol, 1942; Tesch, 1950, p. 30, Figs. 17, 33.
7. *Cliopsis krohni:* Troschel, 1854; Meisenheimer, 1905, p. 223, Pl. XVI, Figs. 3, 27; Pruvot-Fol, 1942, pp. 13—16, Figs. 4—10; Tesch, 1950, pp. 10—11, 43, Figs. 2, 27; Pruvot-Fol, 1954, p. 146, Figs. 48—49.

Distribution	Species (Species in brackets occur only exceptionally)
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.)	—
Bristol Channel and Irish Sea	—
South and West Ireland and Atlantic north of 40°	2, 3, 4, (6)
North Atlantic south of 40°	1, 2, 3, 4, 5, 6, 7
Mediterranean Sea	1, 2, 4, 5, 6
Faroe—Shetland Area	2
Faroe—Iceland Area	2
Norwegian Sea	—
Barents Sea	—

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