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ECSA SEDENT WORKSHIP 1984
SWANSEA UNIV.
Phyllis Knight-Jones

Serpuloidei Bianchi

Species of this superfamily have calcareous tubes that are not renewable, though anterior and posterior damage can be repaired. Thoracic membranes are usually well developed supporting a network of respiratory capillaries. The end of one or occasionally two radioles of the crown usually expands during development to form an operculum by which the mouth of the tube may be closed. This radiole or peduncle is usually without the pinnules found on all other radioles. The shape of the operculum is often distinctive but study of the setae particularly those of the first segment (collar setae), is usually necessary for verification of species.

Serpulidae

Tubes usually sinous but may coil. Most are wholly attached to substratum (rock, ship's hulls, debris or holdfasts of the larger algae), but some may become erect anteriorly. Some species form pseudocolonies of numerous tubes stuck together. In most the sexes are separate. The trochophore larvae of most genera are planktonic but some incubate their embryos in their tubes and others reproduce asexually by fission. The operculum may be distally flat, spherical, with branching or fused distal units, or even absent. It may occasionally bear a proximal talon extending into the peduncle. The body and the thoracic membranes are symmetrical in structure even when coiled. The faecal groove passes round the body on the right side of the thorax and the peduncle bearing the operculum usually arises on the left of the dorsal midline or alternates between left and right.

1 Tube not adhering to substratum, shaped like a tusk-shell, ~~but~~ circular in cross section. Ditrupa arietina

Tube adhering to substratum. 2

2 (1) Lateral margins of the thoracic membrane extending only as far as the second chaetigerous segment. 3

Thoracic membrane extending to the last thoracic segment. 4

3 (2) Operculum cup-shaped and generally with a branched projection in the centre ; tube with transverse rows of teeth pointing anteriorly. Where anterior portion of tube becomes erect these teeth form stacked ribbed cups. Filogranula calyculata

Operculum with a cup-shaped ampulla and a horny distal plate; tube with single ridge, subtriangular in cross section; adults may have one or more pairs of calcareous brood chambers, one each side of the median ridge of tube. Chitinopoma serrula
(= Miroserpula inflata)

4 (2) Tube translucent or vitreous with a single uneven longitudinal ridge when against substratum and triangular in cross section when tube becomes erect; First thoracic segment without chaetae but with oval patch of lenticular eyespots on both ventral and dorsal surfaces. Placostegus tridentatus

Tube opaque. 5

5 (4) Operculum present 6

Operculum and its stalk (peduncle) absent 11

6 (5) Opercular peduncle with paired pointed lateral wings. 7

peduncle without lateral wings 8

7 (6) Opercular ampulla somewhat cup-shaped and deeper than the distal calcareous cap which may be flat, seldom domed and with or without distal projections. Pomatoceros lamarcki

Ampulla a shallow dish-shape rarely as deep as distal cap which is usually domed, often conical and with or without distal projections. Pomatoceros triqueter

8 (6) Peduncle with pinnules. 9

Peduncle without pinnules 12

9 (8) Operculum a uniform sphere. Apomatus similis

Operculum cup-or bowl-shaped distally 10

10 (9) Two opercula each somewhat cup-shaped and asymmetrically positioned on each peduncle two cover the centre of the crown; tube diameter 0.5 mm. Filograna implexa

A single operculum with the sides of the distal cup ribbed, the margin appearing castellated in incident light; tube remarkably fine, diameter 0.2 mm. Josephella marenzelleri

11 (5) Radioles of crown with paired white blotches on rachis and tips often swollen; tube diameter 0.5 mm, often numerous forming rope-like twisted assemblages in shallow water. Salmacina dysteri

Radioles with paired red blotches (ocelli ?) and tapered tips; tube diameter 3-8 mm; generally solitary. Protula tubularia

12 (8) Peduncle triangular or flat in cross section. 13

Peduncle round in cross section 14

13 (12) Peduncle smooth, stiff, triangular in cross section, broad and flat in dorsal view; operculum with a distal ring of dark brown teeth. Ficopomatus enigmaticus

Peduncle annulated flattened and flexible (ribbon-like); operculum spherical with distal hemisphere brown; tube with 5-7 longitudinal ridges. Metavermilia multicristata

14 (12) Operculum asymmetrically domed or conical. Vermiliopsis striaticeps

Operculum concave or nearly flat distally. 15

15 (14) Operculum a single straight-sided funnel with numerous (26-72) radiating grooves separating rounded teeth at the margin. Serpula vermicularis

Operculum a double funnel, the basal one Serpula-like and the distal one arising from its centre in the form of spiny projections. 16

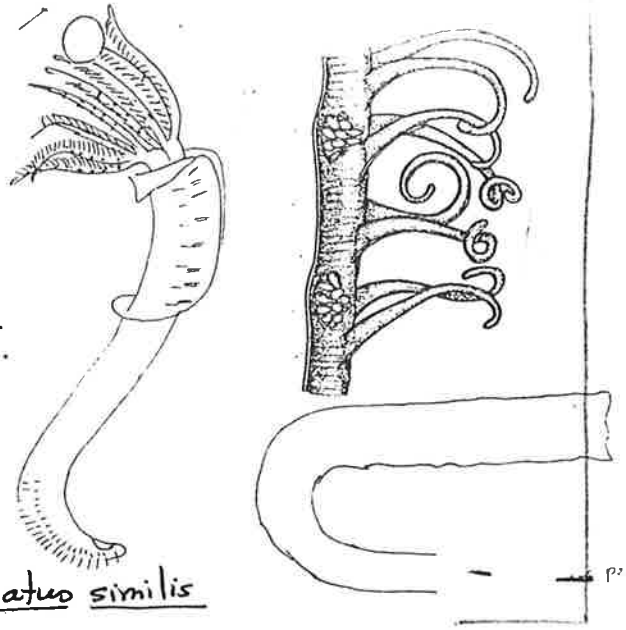
16 (15) Spines of the flared distal crown fused for three quarters of length with small teeth on their inner surface and none laterally on free part of spine. Hydroides ezoensis

Spines of distal crown with lateral teeth 17

17 (16) Distal crown or funnel with a small central projection ; collar setae with a finely toothed boss. Hydroides elegans

Distal funnel without central projection; collar setae bearing (one or) two large teeth. Hydroides norvegica

P.K-J.



Apomatus similis

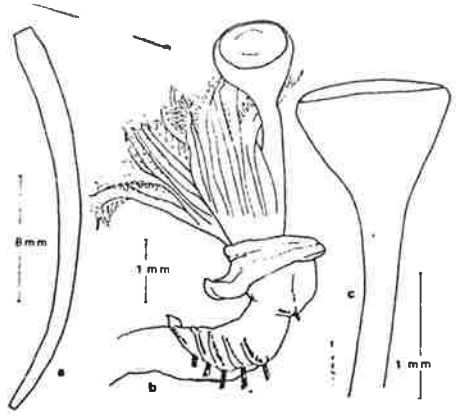


Fig. 47 - *Ditrupa arietina* (O.F. Müller)
a) tubo; b) parte anteriore dell'animale; c) opercolo.

Ditrupa arietina

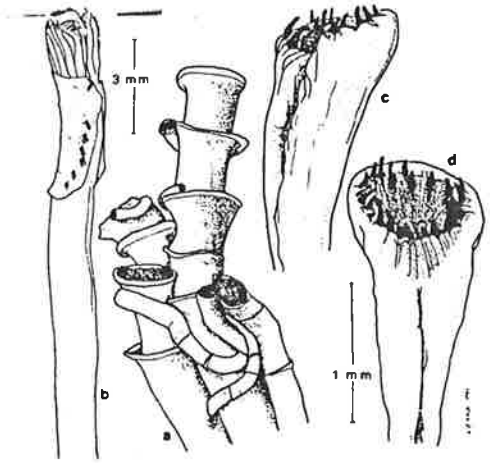
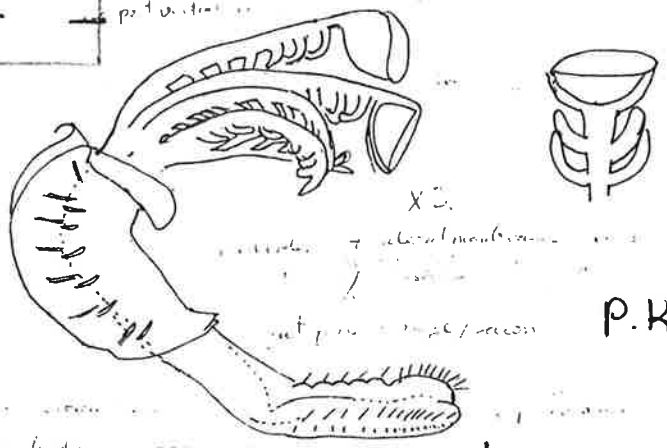


Fig. 49 - *Ficopomatus* (= *Mercierella*) *enigmaticus* (Fauvel)
a) gruppo di tubi; b) parte anteriore dell'animale; c,d) opercoli.

Ficopomatus enigmaticus



Filograna implexa

P.K-J.

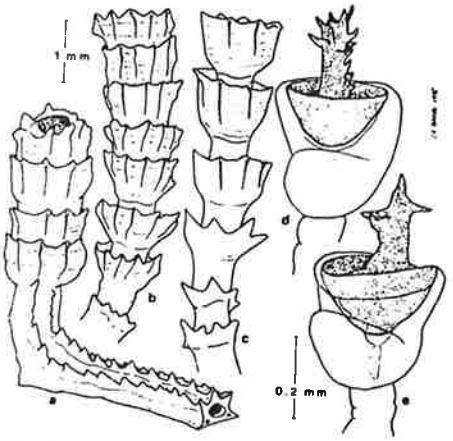


Fig. 36 - *Filogranula calyculata* (O.G. Costa)
a) tubo (da Zibrowius, ridis.); b,c) tubi, parte eretta (da Zibrowius, ridis.); d,e) opercoli.

Filogranula calyculata

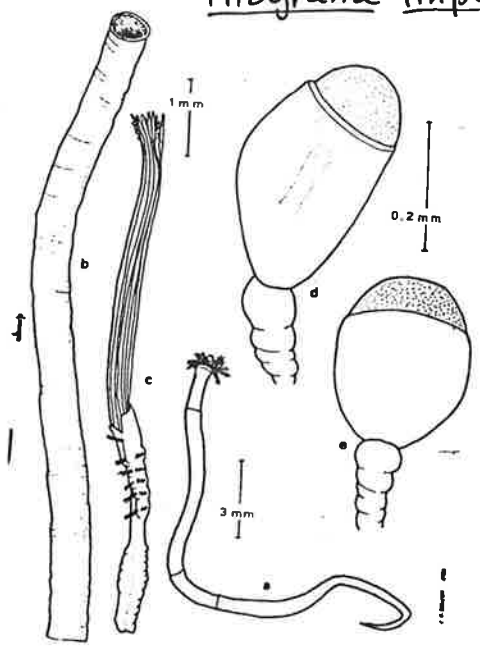


Fig. 46 - *Hyalopomatus marenzelleri* Langerhans
a) tubo (da Southward, ridis.); b) estremità anteriore del tubo; c) animale intero; d,e) opercoli (esemplari atlantici).

Hyalopomatus marenzelleri

Offprints Bianchi, 1981.

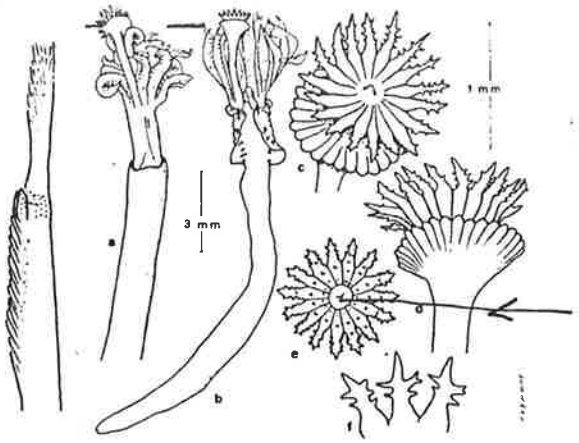


Fig. 16 - *Hydroides elegans* (Haswell)
a) estremità terminale del tubo; b) animale intero; c,d) opercoli; e) verticillo dall'alto (da Zibrowius, ridis.); f) spine del verticillo (da Zibrowius, ridis.

DIMENSIONI

Lunghezza fino a 20-25 mm.

Hydroides elegans

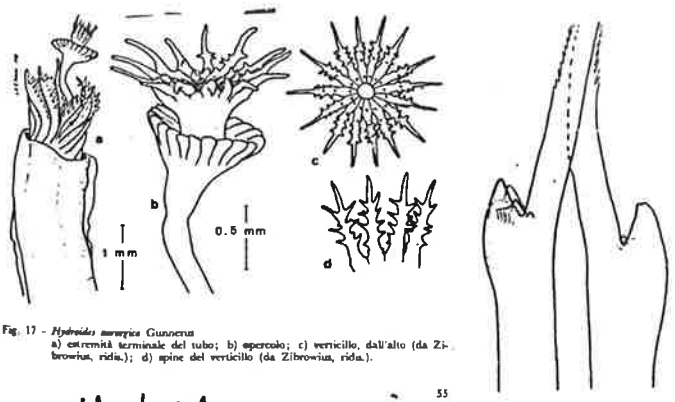


Fig. 17 - *Hydroides norvegica* Gunnerus
a) estremità terminale del tubo; b) opercolo; c) verticillo, dall'alto (da Zibrowius, ridis.); d) spine del verticillo (da Zibrowius, ridis.).

Hydroides norvegica [55]

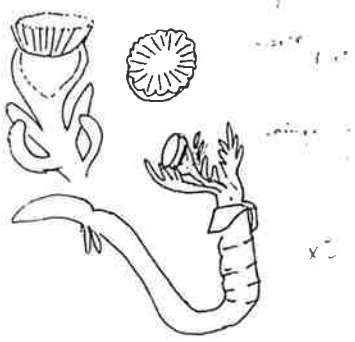
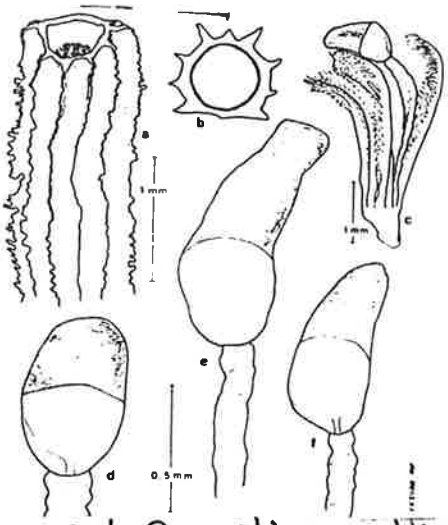


Fig. 20 - *Josephella marenzelleri* (Caullery e Mesnil)
a) tubo; b) opercolo

Josephella marenzelleri



Metavermilia multicristata

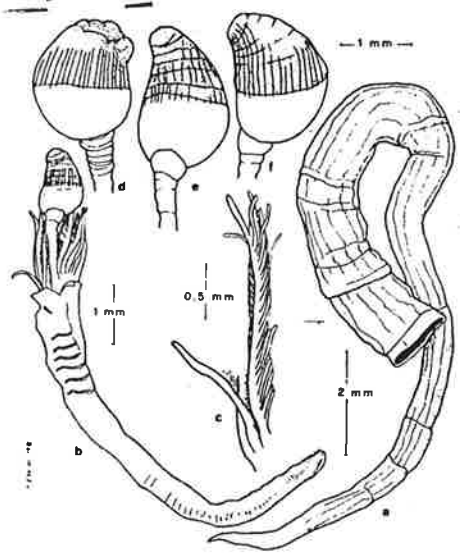


Fig. 26 - *Vermiliopsis striaticeps* (Grube)
a) tubo; b) animale intero; c) « pseudopercolo »; d-f) opercoli

Vermiliopsis striaticeps [75]

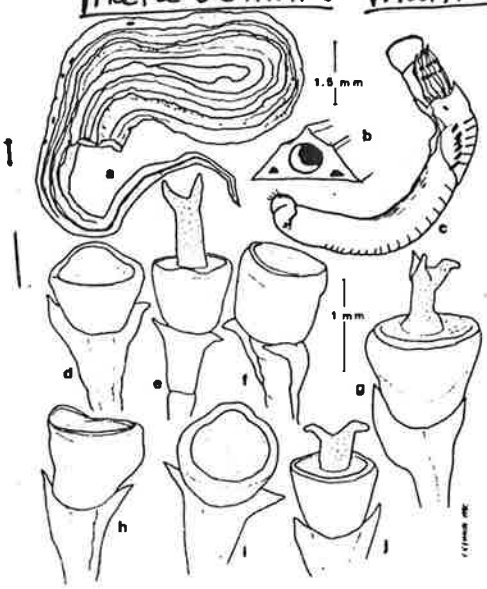


Fig. 41 - *Pomatoceros lamarcki* (Quatrefages)
a) tubo; b) schema del tubo; c) animale intero; d-j) opercoli.

[114] Pomatoceros lamarcki

Oggi pinto Bianchi, 1981

" " ten Hove, 1974

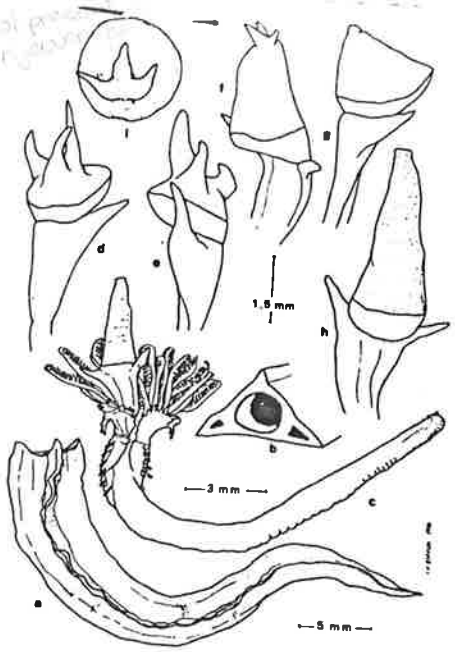
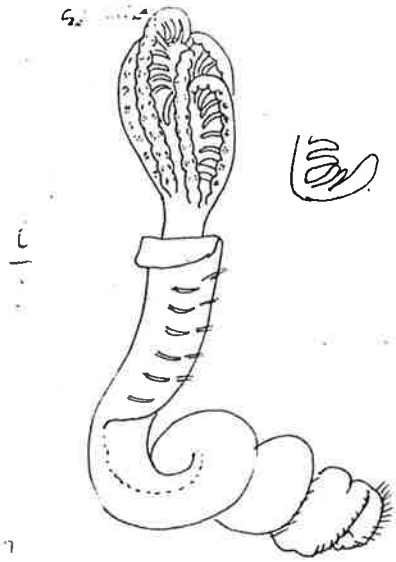


Fig. 42 - *Pomatoceros triqueter* (L.)
a) tubi; b) schema del tubo; c) animale intero; d-h) opercoli; i) placca opercolare (forma tridentata), dall'alto.

Pomatoceros triqueter



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Salmacina dysteri

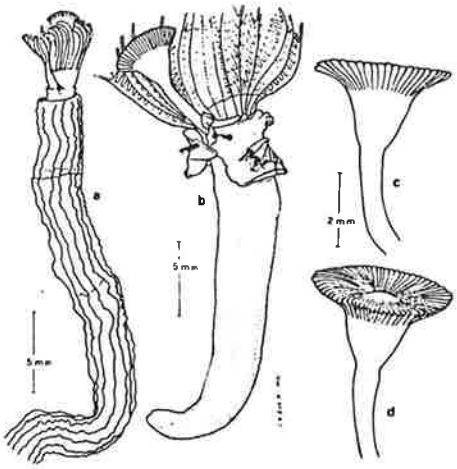
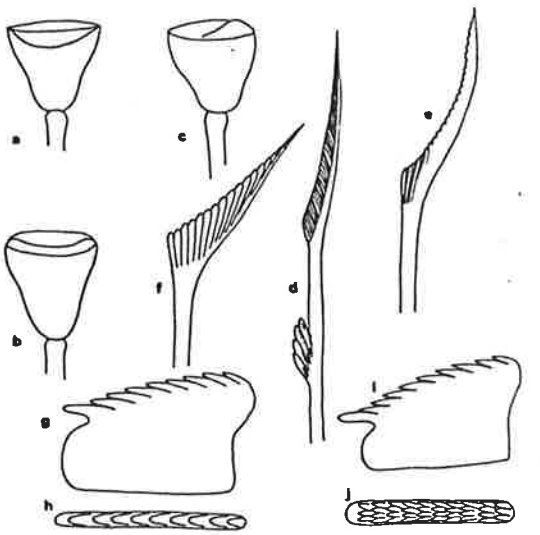


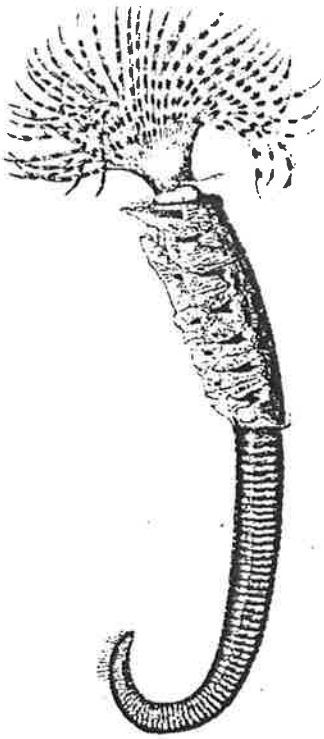
Fig. 13 - *Serpula vermicularis* L.
a) tubo; b) animale intero; c,d) opercolo.

Serpula vermicularis

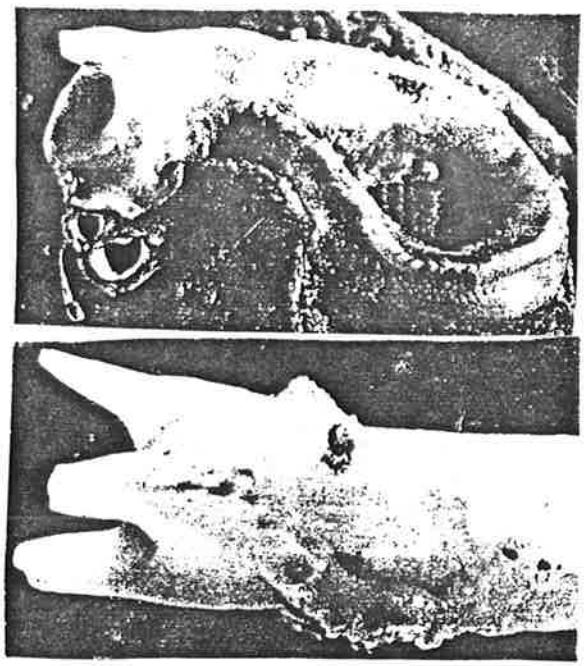
OSS printo Bianchi, 1981.

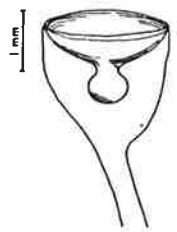


Chitinopoma serrula

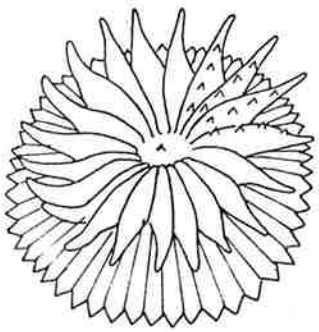


Protula tubularia





Placostegus tridentatus



Hydroides ezoensis