

PLATE 1

1. *Vema ewingi*, specimen 2, before decalcification.

a, anus; al, anterior lip with anterior jaw along the inner side; f, foot; gl, g6, gills number one and six; pl, posterior lip; pm, pallial margin, partly detached from shell; pot, postoral tentacle tuft; prm, protractors of radula apparatus; ve, velum.

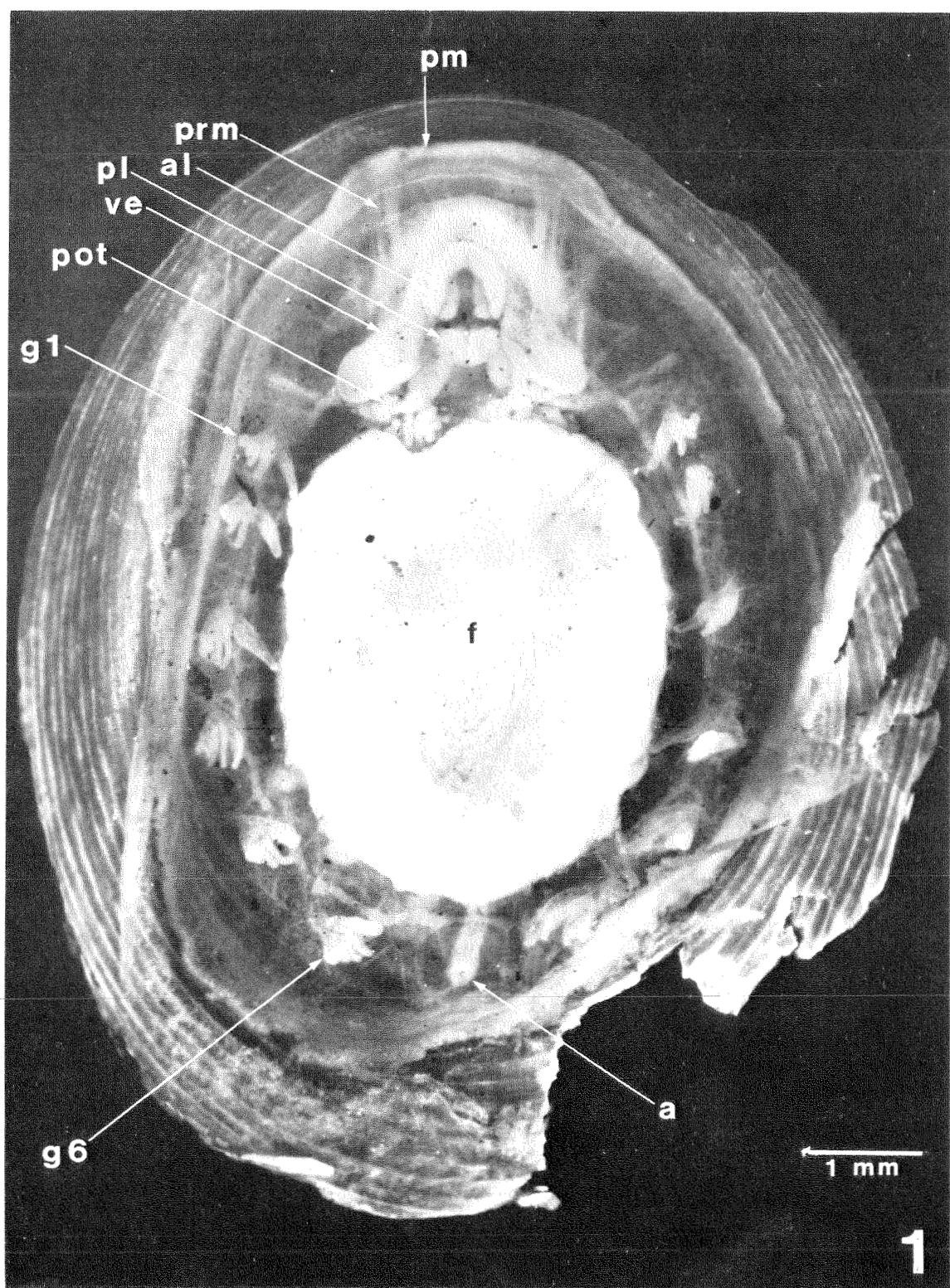


PLATE 2

2. *Neopilina galatheaee*, specimen 1, transverse celloidin section of apical shield. Arrow marks the transition to adult shell.

nl, nacreous lamellae, tangential to the surface; pe, periostracum; st, radial striation, restricted to the apical shield.

3. *Vema ewingi*, specimen 2, transverse section at the level of the mouth (see Fig. 11).

al, anterior lip; cg, cerebral ganglion; ph, pharynx, communicating laterally with pharyngeal diverticula; rs, radula sheath; rv, radula vesicles; sr, terminal extremity of subradular membrane; ve, velum.

I and II, pharyngeal sacs I and II.

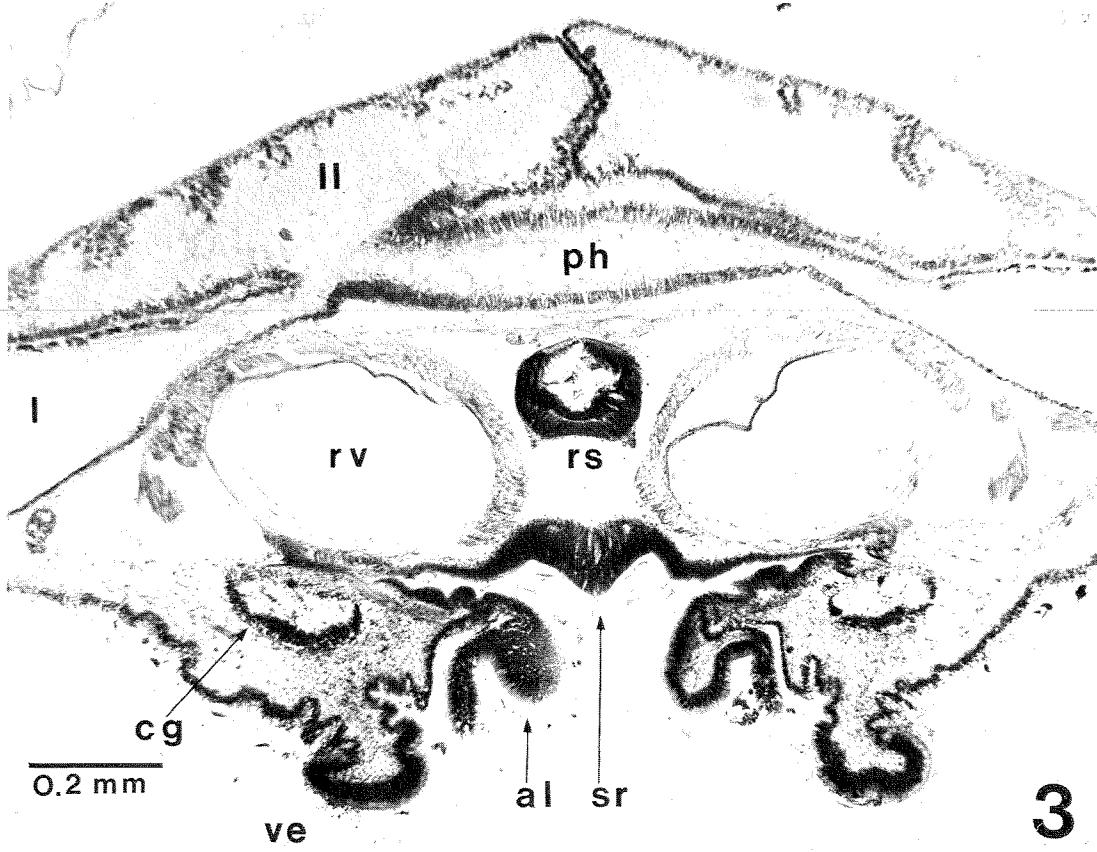
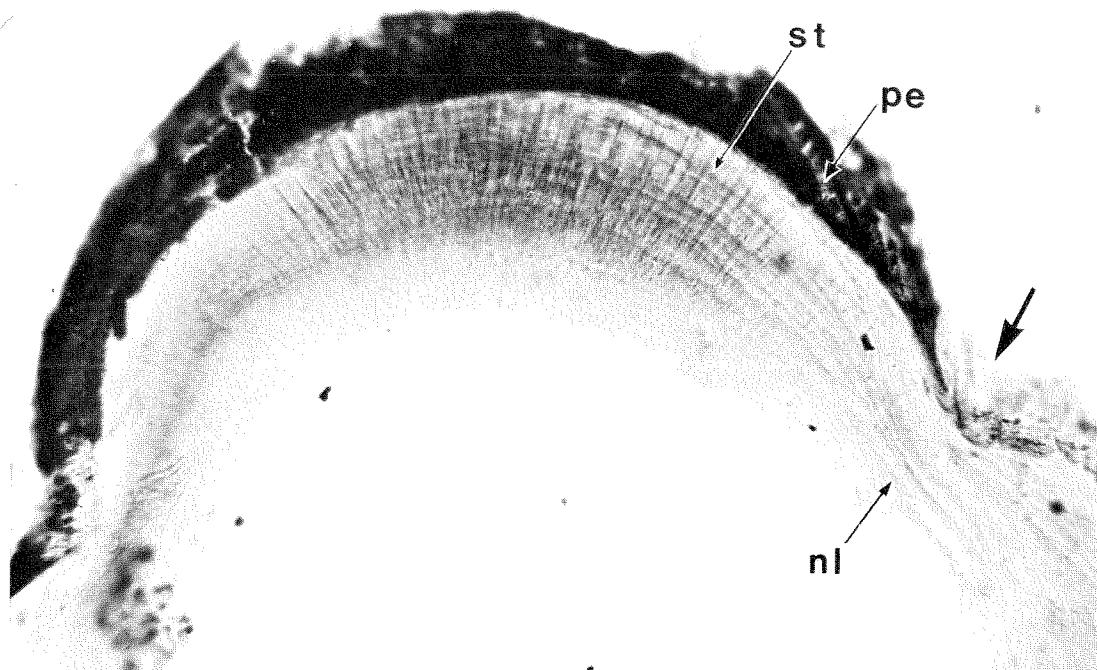


PLATE 3

4. *Vema ewingi*, specimen 2. The five anterior gills of right side, lying in pallial groove of the intact specimen. Composite photograph.
f, foot; gn, anterior gill nerve of 5th gill; gl, g5, first and 5th gill; il, inner filament of 3rd gill; lc, lateral nerve cord; lpc, lateropedal connective.
5. *Neopilina galathea*e, old specimen IV, horizontal section of animal, showing cross section of preoral tentacle.
6. *Neopilina galathea*e, old specimen III, transverse section of animal, showing longitudinal section of preoral tentacle.
pt, preoral tentacle.

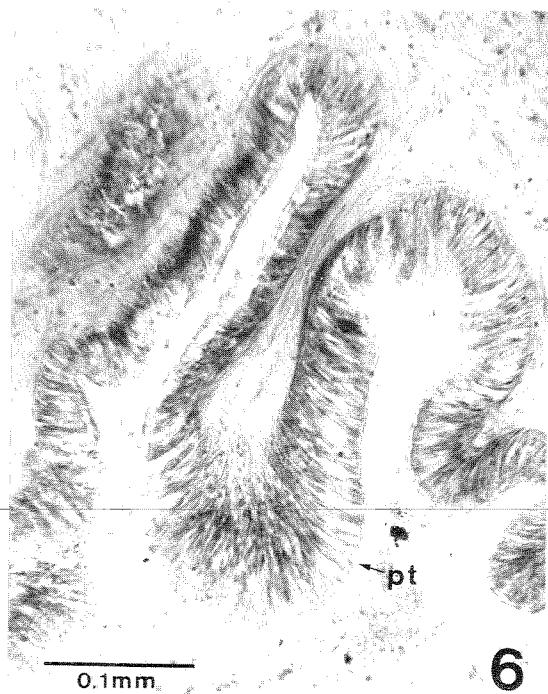
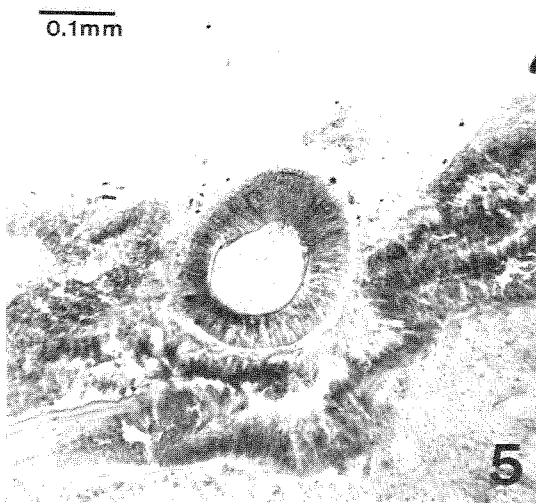
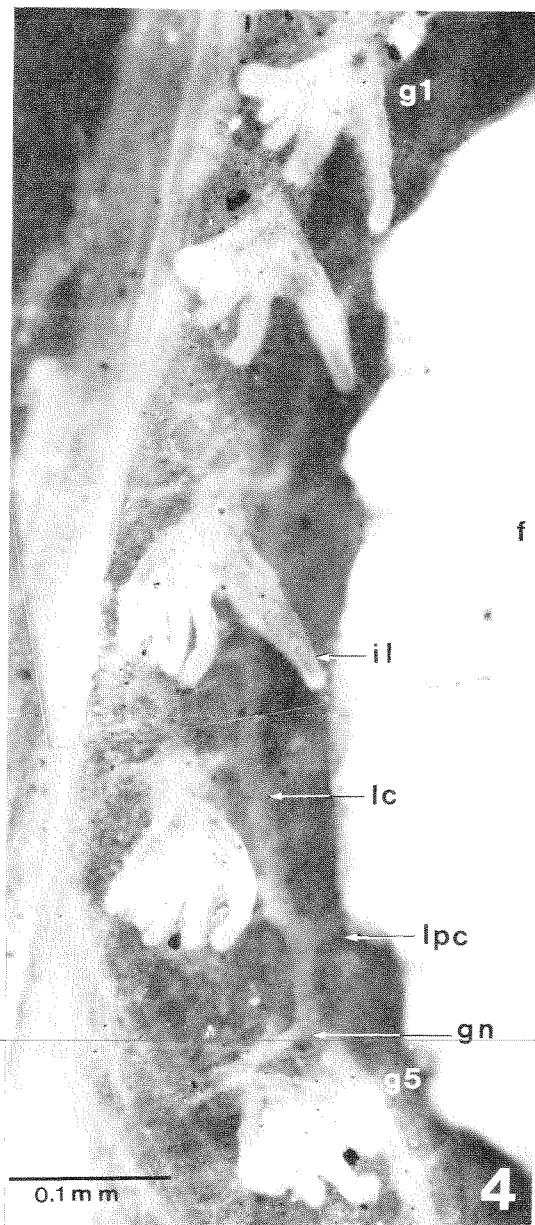


PLATE 4

7. *Vema ewingi*, specimen 2. Transverse section of oral region showing preoral tentacle of right side.

cg, cerebral ganglion; pt, preoral tentacle; ve, velum.

8. *Vema ewingi*, specimen 2. Transverse section showing pallial organs of left side, at the level of gill E.

bs, blood sinus; f, foot; gE, gill of sector E; lc, lateral nerve cord; np, nephridiopore of sector E; pd, lateral margin of pharyngeal diverticulum V with bladder-like protrusion.

9. *Neopilina galathea*, specimen 1. Transverse section of left pallial fold, showing close relations between pharyngeal diverticulum, pd, and nephridial lobules, nl. level of statocyst. lc, lateral nerve cord.

10. *Vema ewingi*, specimen 2. Transverse section through 1st gill of left side to show the situation of the nephridiopores A and B.

gB, gill B; npA, nephridiopore A; npB, nephridiopore B (only tangentially cut, open on adjacent section, ns, nephridial sacs).

11. *Vema ewingi*, specimen 2. Transverse section of right pallial fold, level of nephridium E, to show lateral margin of pharyngeal diverticulum V, with a probably artificial, vesicle-like bulge (arrow).

pd, pharyngeal diverticulum V; x, probably artificial bulge, formed by bursting of the wall of the diverticulum.

12. *Vema ewingi*, specimen 2. Transverse section through right side of animal with immature gonoduct, where it ramifies into the gonad. Sector E.

i, intestinal loops, lc, lateral nerve cord, gd, branches of gonoduct, pd, pharyngeal diverticulum V, with marginal pouches, probably in part artificial (see text).

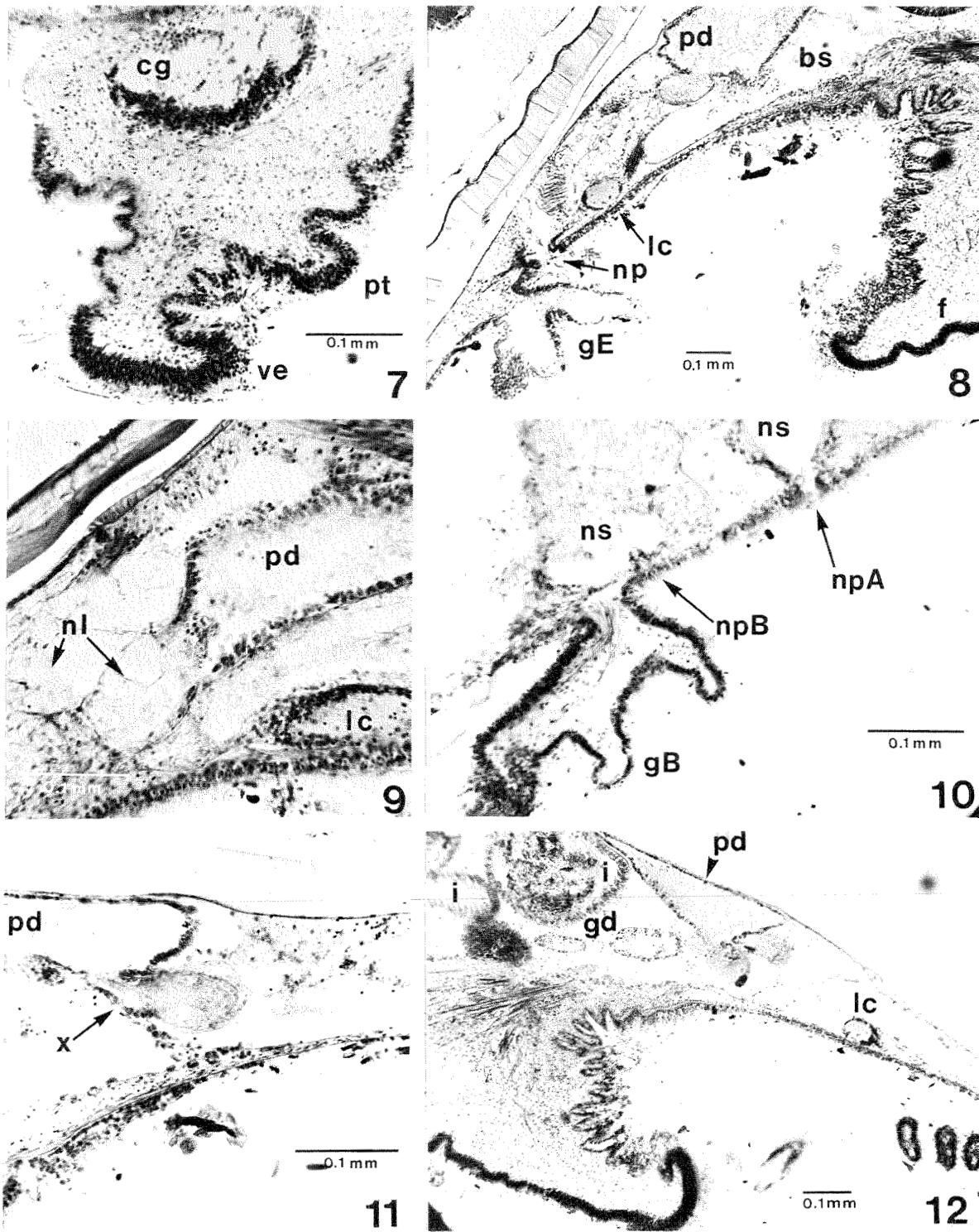


PLATE 5

13. *Vema ewingi*, specimen 2. Transverse section through the mouth, just behind the radula diverticula, showing communication between the pharynx, ph, and the pharyngeal diverticula I and II (see Fig. 11).

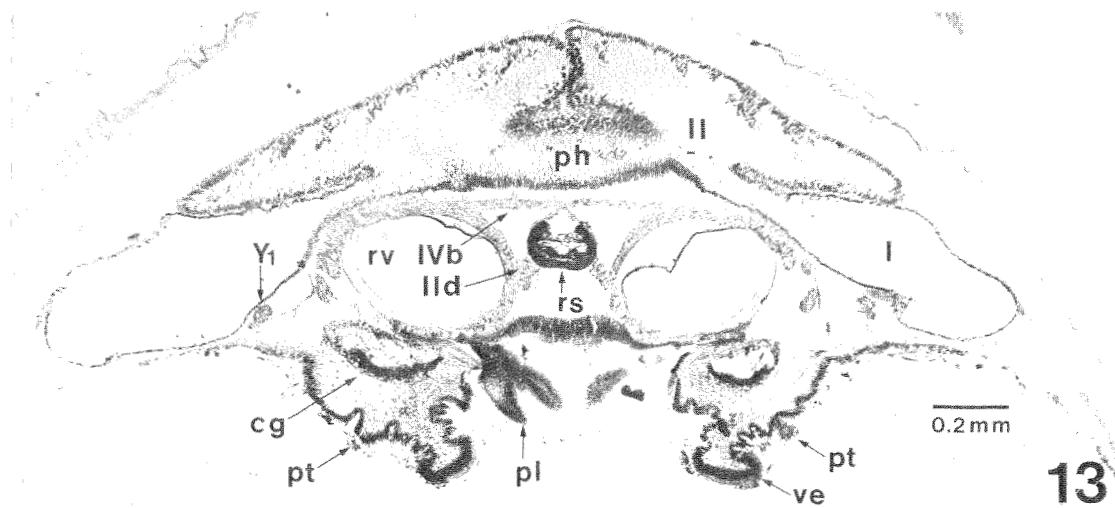
14. *Vema ewingi*, specimen 2. Transverse section 150 μm in front of that shown in fig. 13. The base of the right radula diverticulum is just visible as a process from the radula sheath.

al, anterior lip; cg, cerebral ganglion; f, marginal furrow in oval roof; ph, pharynx; pl, posterior lip; pt, preoral tentacle; rs, radula sheath; rv, radula vesicle; sr, subradular membrane, where it ends in the roof of the oral cavity; ve, velum; I and II, pharyngeal sacs I and II.

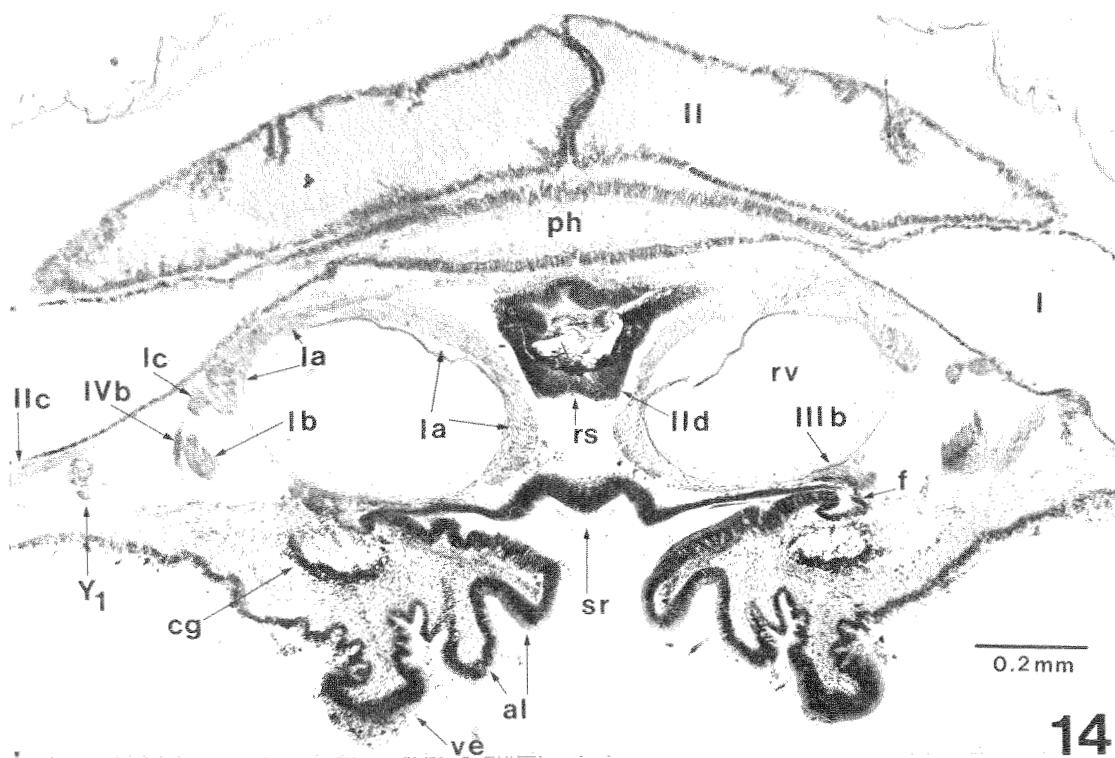
Muscles: Ia, m. retractor radulae; Ib, m. protractor vesicae major; Ic, m. protractor vesicae minor; IIc, m. tensor radulae; IId, m. radulae longus, pars dorsalis attaching to the radula sheath in Fig. 14, situated below the sheath in Fig. 13; IIIb, m. protractor cartilaginis profundus, attaching to the radula vesicle in Fig. 14; IVb, m. transversalis anterior; Y₁, the muscle Y₁, see chapter 4.2.

15. *Vema ewingi*, specimen 2. Transverse section of animal, level of stomach and pedal retractor E (see Fig. 11).

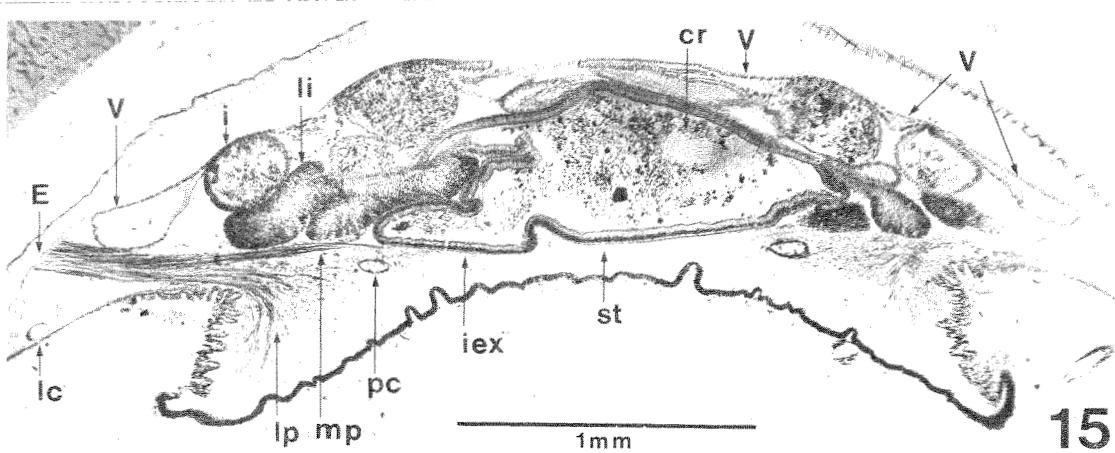
cr, crystalline style; E, pedal retractor E; i, intestinal loops; iex, exit of intestine from stomach; lc, lateral nerve cord; li, liver; lp, lateropedal portion of foot retractor; mp, mediopedal portion of foot retractor; pc, pedal nerve cord; st, stomach; V, parts of pharyngeal sac V.



13



14



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PLATE 6

16. *Vema ewingi*, specimen 2. Transverse section of left side showing interrelations of organs, particularly pharyngeal diverticula, intestine, liver and pedal retractor. Level of sector E.

17. *Neopilina galatheae*, specimen 1. Transverse section at the anterior margin of mouth, through the pharynx, the preoral cuticular plate, radula vesicles, and pharyngeal sacs II.

18. *Vema ewingi*, specimen 2. Transverse section through the subradular sac, showing cuticular plate and glandular epithelium at the floor. Arrow indicates median plane.

19. *Neopilina galatheae*, specimen 1. Transverse section through the mouth, showing the anterior jaw (aj).

20. *Vema ewingi*, the small specimen 3. Transverse section just in front of the mouth, showing preoral cuticular plate (cph) and poor differentiation of medial cartilage (mc).

21. *Vema ewingi*, specimen 2. Transverse section through mouth, showing the small cartilaginous nodules (x) detached from medial radula cartilage (mc) and anterior jaw (aj).

aj, anterior jaws; al, anterior lip; cph, cuticle of ventral pharyngeal wall; csr, curricular plate of subradular sac; ep, epithelium below subradular membrane (detached artificially in Fig. 20); f, marginal furrow of oral roof with thin walls, following lateral margins of subradular membrane; gl, high, glandular epithelium covering lateral parts of the floor of subradular sac; i, intestine; lc, lateral cartilage; li, liver; lp, lateropedal portion of pedal retractor; m, m. radulae impar; mc, medial cartilage; mp, mediopedal portion of pedal retractor; pc, pedal nerve cord; ph, pharynx, above the radula sheath; phd, pharyngeal diverticula; r, radula ribbon; rv, radula vesicles; rd, radula diverticula; sr, subradular membrane; sro, subradular organ, in part protracted into the roof of the mouth in Fig. 19; ve, velum; x, partly detached cartilaginous nodule; II, pharyngeal sac II.

