

PLATE 31

- Fig. 105. Walls of intestinal coils 4 (top) and 1 (bottom). Microphotograph. Spec. III.
- Fig. 106. Wall of intestinal coil 6 showing pigment granules in the epithelial cells. Microphotograph. Spec. III.
- Fig. 107. Wall of liver lobule. The basal parts of the cells (right) are dark, the peripheral parts contain the big granules. Microphotograph. Spec. III.
- Fig. 108. Granules of the liver epithelium. Note the concentric structure. Microphotograph. Spec. III.

int. c. 1-6 = lumina of intestinal coils 1-6

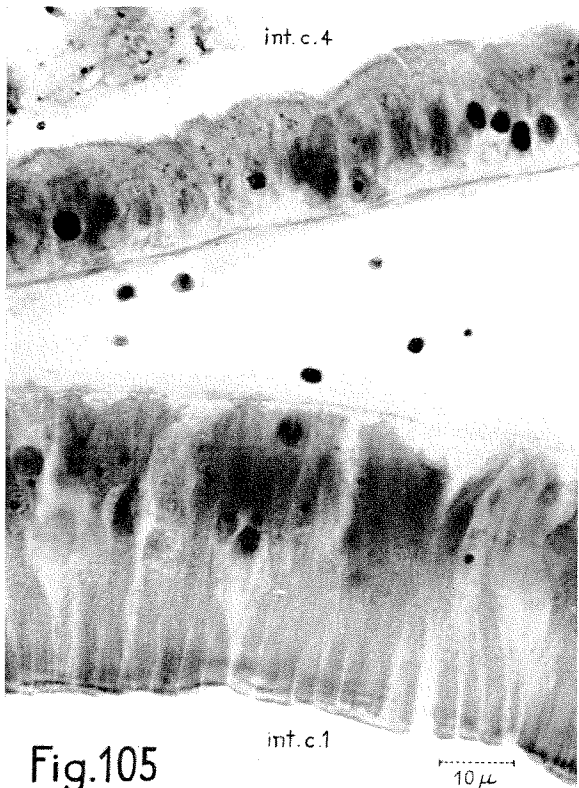


Fig.105

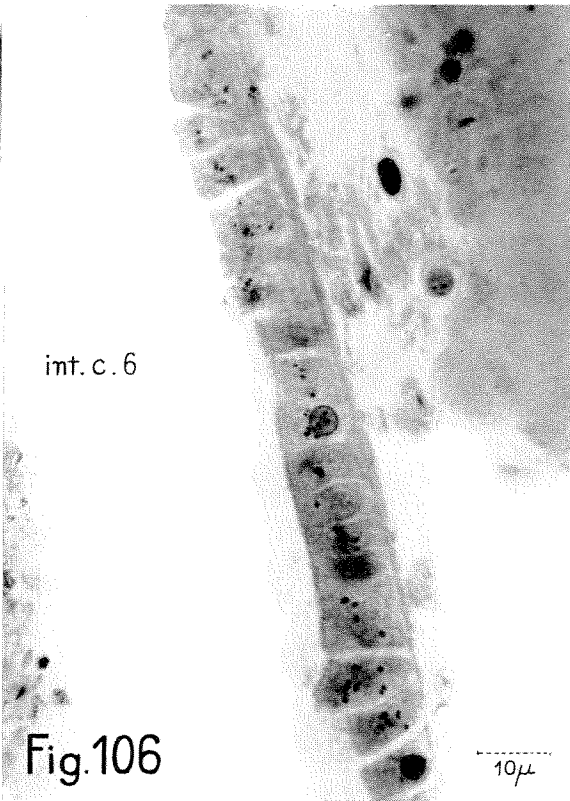


Fig.106

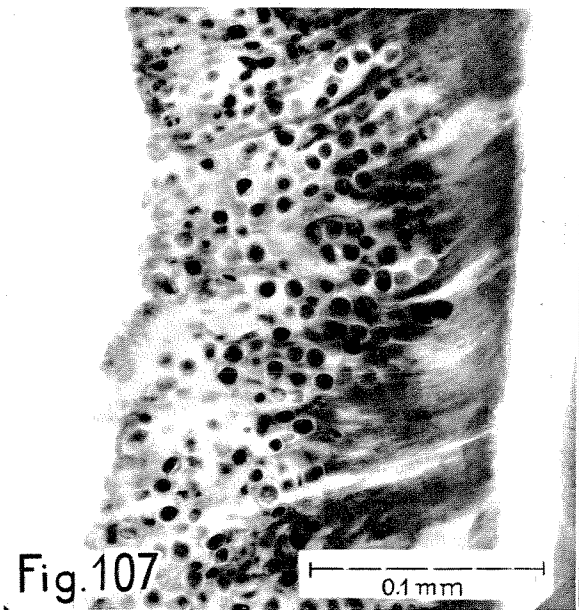


Fig.107

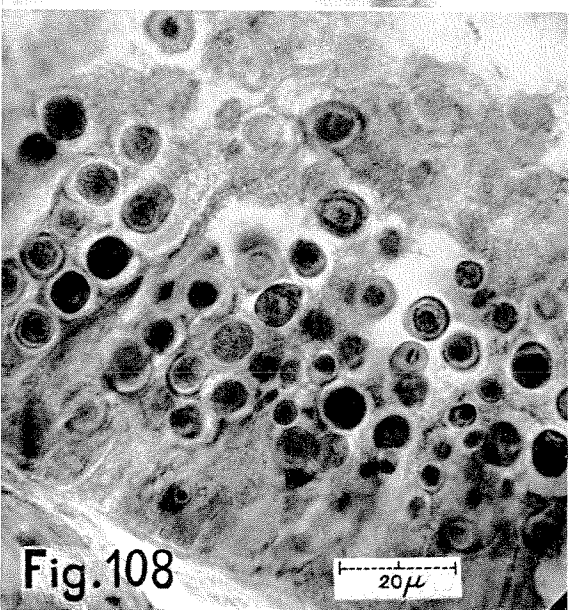


Fig.108

PLATE 32

- Fig. 108.A. Epithelium of the rectum, not far from the anus, with high, ciliated cells. Microphotograph. Spec. III.
- Fig. 109. Cross section of the anal papilla, showing the folded epithelium. Microphotograph. Spec. IV.
- Fig. 110. Detail of a transversal section showing the pedal retractor E and the adjacent muscles. Microphotograph. Spec. III.
- Fig. 111. Detail of a horizontal section, showing the insertion of the musculus protractor radulae (m. pr. ra). Note the absence of tendineous parts.
- Fig. 112. Muscle fibres of a pedal retractor sectioned longitudinally. Note the position of the nucleus on the surface of the bundle of fibrils. Microphotograph. Spec. IV.
- Fig. 113. Muscle fibres of the m. circularis intermedius. Microphotograph. Spec. IV.
- Fig. 114. The thin muscle fibres of the m. circularis pallii, seen in a longitudinal section. Microphotograph. Spec. IV.

d. coe = dorsal coelom
E₁ + E₂ = crossing of the mm. obliquii E
F₁ = m. obliquus anterior F
fi = fibrils of the muscle fibre
m. ci. int = musculus circularis intermedius
m. ci. pa = musculus circularis pallii
m. lp = musculus latero-pedalis
m. mp = musculus medio-pedalis
m. pr. ra = musculus protractor radulae
mu. a. ep = muscle attachment epithelium
na. l = nacreous layer
nu = nucleus of muscle cell
ov = ovary
per = periostracum
pr. l = prismatic layer
sar = sarcoplasm
ten = tendineous part of muscle

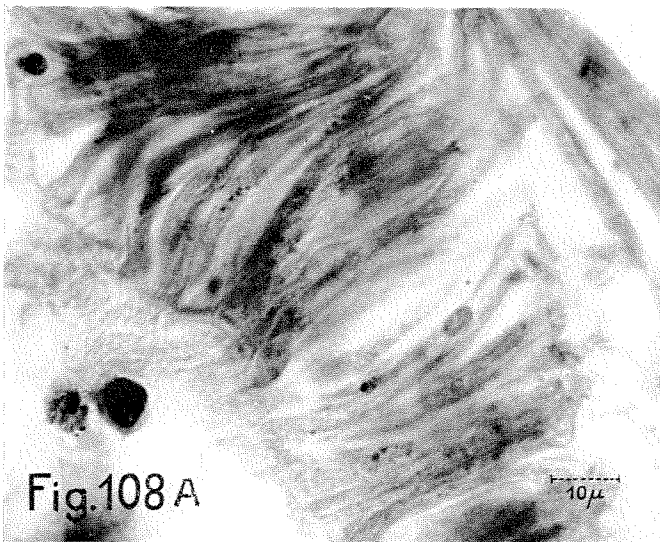


Fig.108 A

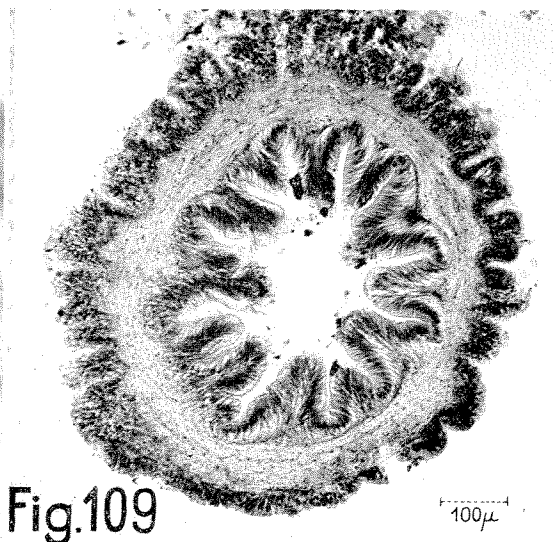


Fig.109

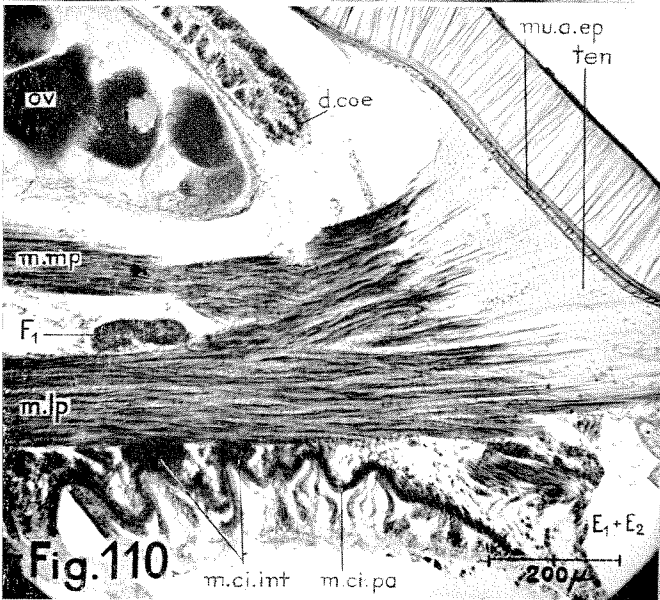


Fig.110

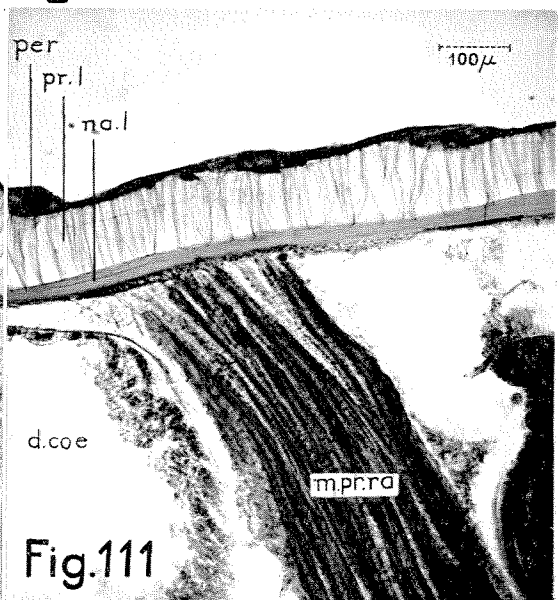


Fig.111

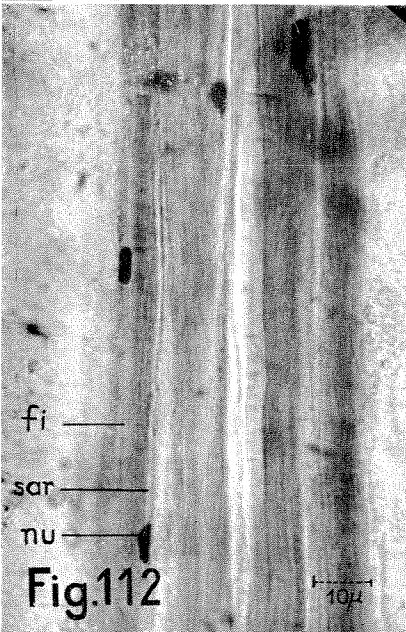


Fig.112

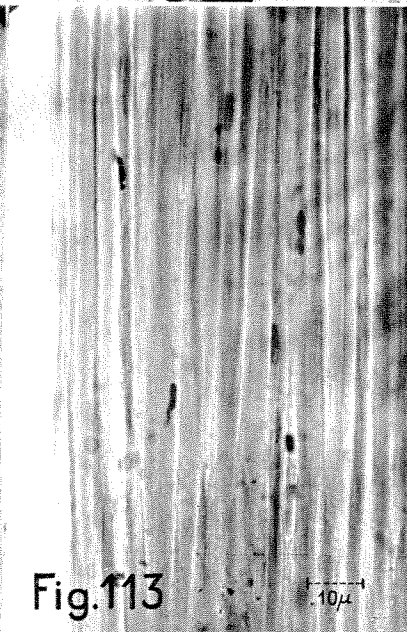


Fig.113

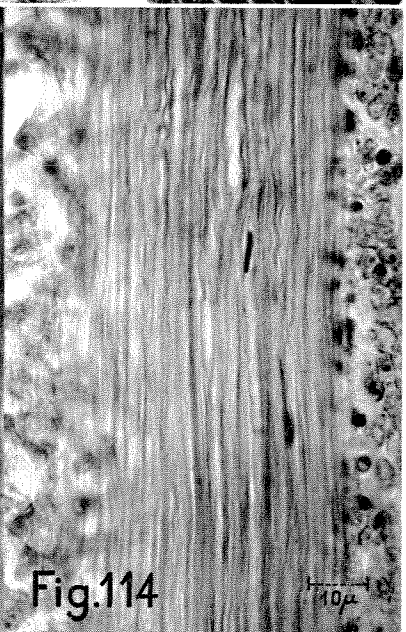


Fig.114

PLATE 33

- Fig. 115. Fibres of the m. radulae longus with abundant basophilic granules. Microphotograph. Spec. IV.
- Fig. 116. Fibres of the m. retractor radulae, showing cross striation. Microphotograph. Spec. III.
- Fig. 117. The muscle fibres of the membranous foot centre, seen in a horizontal section. Microphotograph. Spec. IV.
- Fig. 118. The central part of a gill lamella showing the crossing muscle fibres. Some ramifying fibres are visible. Microphotograph. Spec. III.

bl. v = blood vessel

ep = epithelium of gill lamella

nu = nucleus of muscle cell

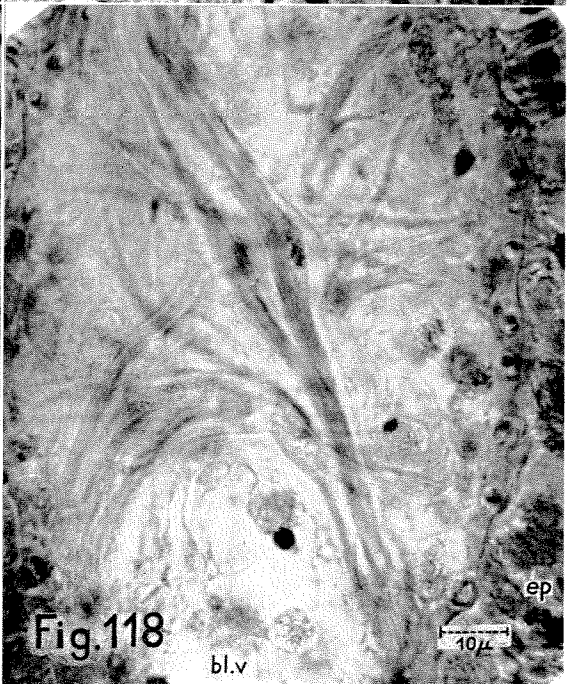
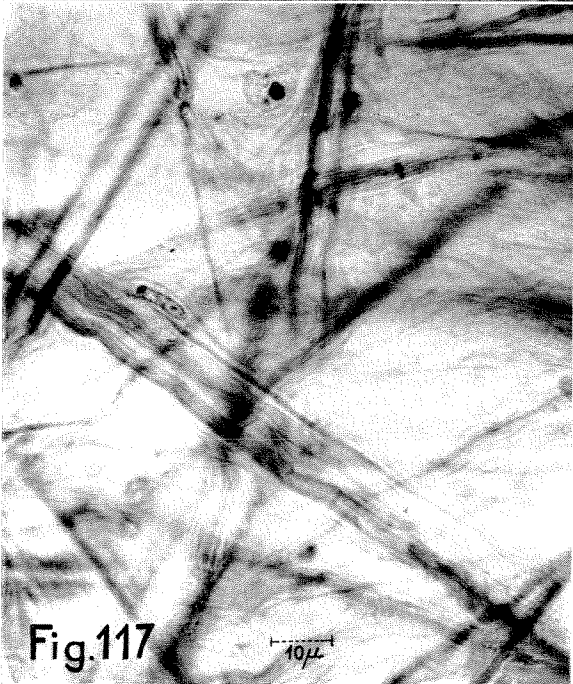
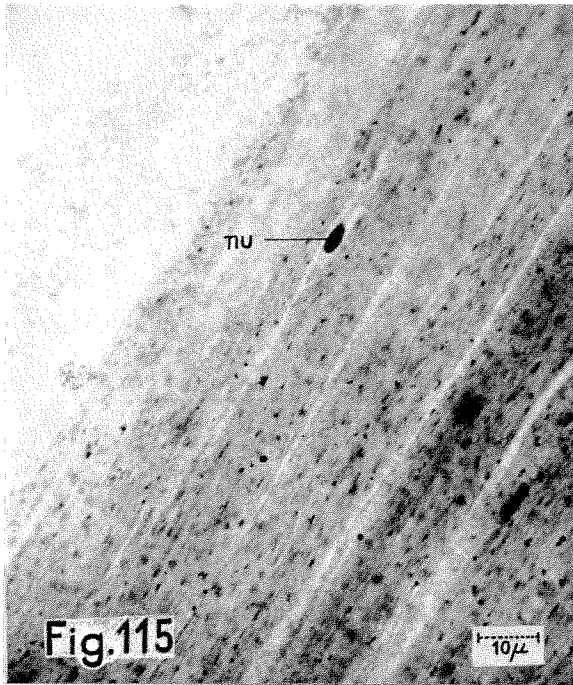


PLATE 34

Fig. 119. Camera lucida drawing of a transversal section through the body, at the level of the pedal retractor E. Only the left side is shown.

Fig. 120. Diagrammatical drawing, showing the origin and distribution of the fibres of the mm. medio-pedales (left) and the mm. latero-pedales (right). The insertion area within the big, complex scar is indicated by short streaks.

- A-H = pedal retractors A to H
- an = anus
- art. pa. s = arterial pallial sinus
- d. coe = dorsal coelom
- f. c = foot centre
- f. m = foot margin
- int = intestine
- la. n. c = lateral nerve cord
- m = mouth
- m. br. e₃ = musculus branchialis externus of 3rd gill
- m. ci. int = musculus circularis intermedius
- m. ci. pa = musculus circularis pallii
- m. ci. pe = musculus circularis pedis
- m. lp. E = musculus latero-pedalis E
- m. mp. E = musculus medio-pedalis E
- m. obl. a. F = musculus obliquus anterior F
- m. or. po = musculus oralis posterior
- m. re. te A = tentacle retractor from A
- m. tr. A = musculus transversalis A
- mm. obl. E = crossing of the mm. obliquii E
- ne = nephridia
- ov = ovary
- pe. n. c = pedal nerve cord
- ve. bl. s = venous pallial sinus

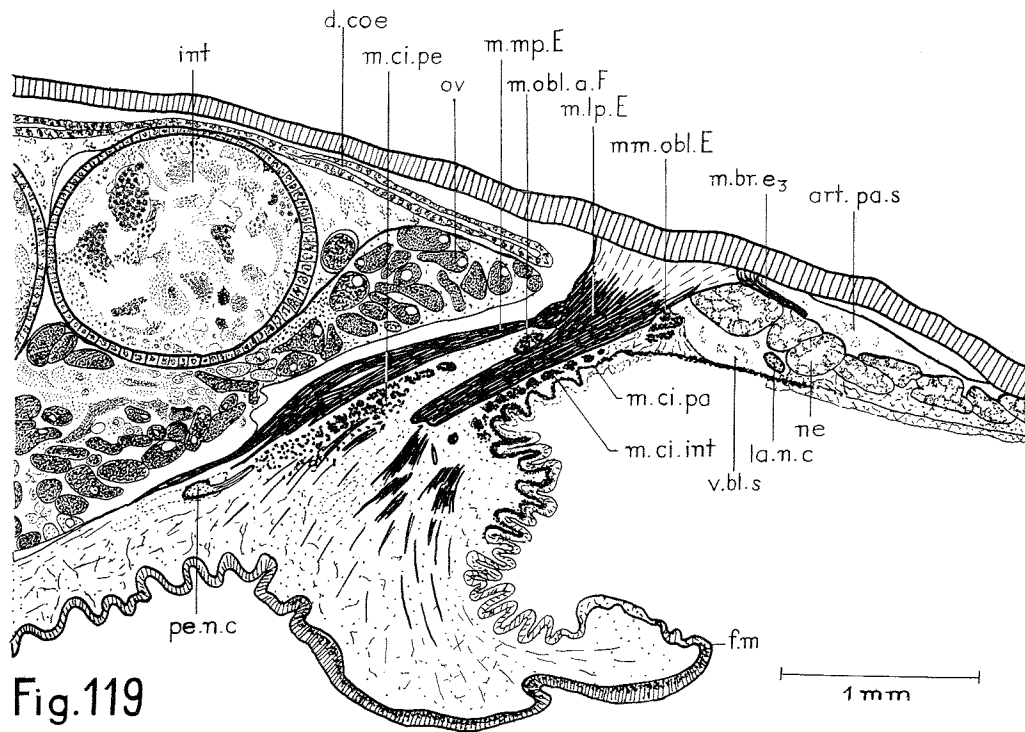


Fig.119

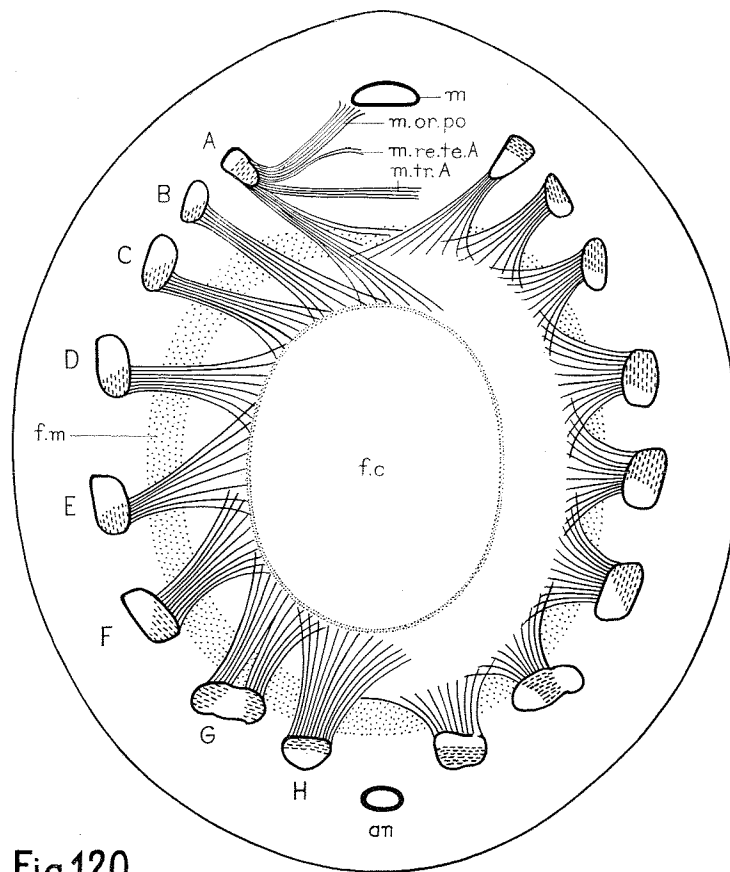


Fig.120

PLATE 35

Fig. 121. Graphic reconstruction of the body musculature of *Neopilina*, dorsal view. On the right side the circular systems only are drawn. Some critical points were confirmed by studies of wax models and by dissection of Spec. X.

- A-H = pedal retractors A to H
- A₁-H₁ = musculus obliquii anteriores A to H
- E₂-F₂ = musculus obliquii posteriores E to F
- C₃-G₃ = musculus branchiales interni C to G
- C₄-G₄ = musculus branchiales externi C to G
- Y₁ = the muscle "Y₁"
- an = anus
- m. ci. int = musculus circularis intermedius
- m. ci. pa = musculus circularis pallii
- m. ci. pe = musculus circularis pedis
- m. cru = musculus cruciatus
- m. lp = musculus latero-pedalis
- m. mp = musculus medio-pedalis
- m. or. a = musculus oralis anterior
- m. or. p = musculus oralis posterior
- m. pa = pallial muscles
- m. pro = musculus praeoralis

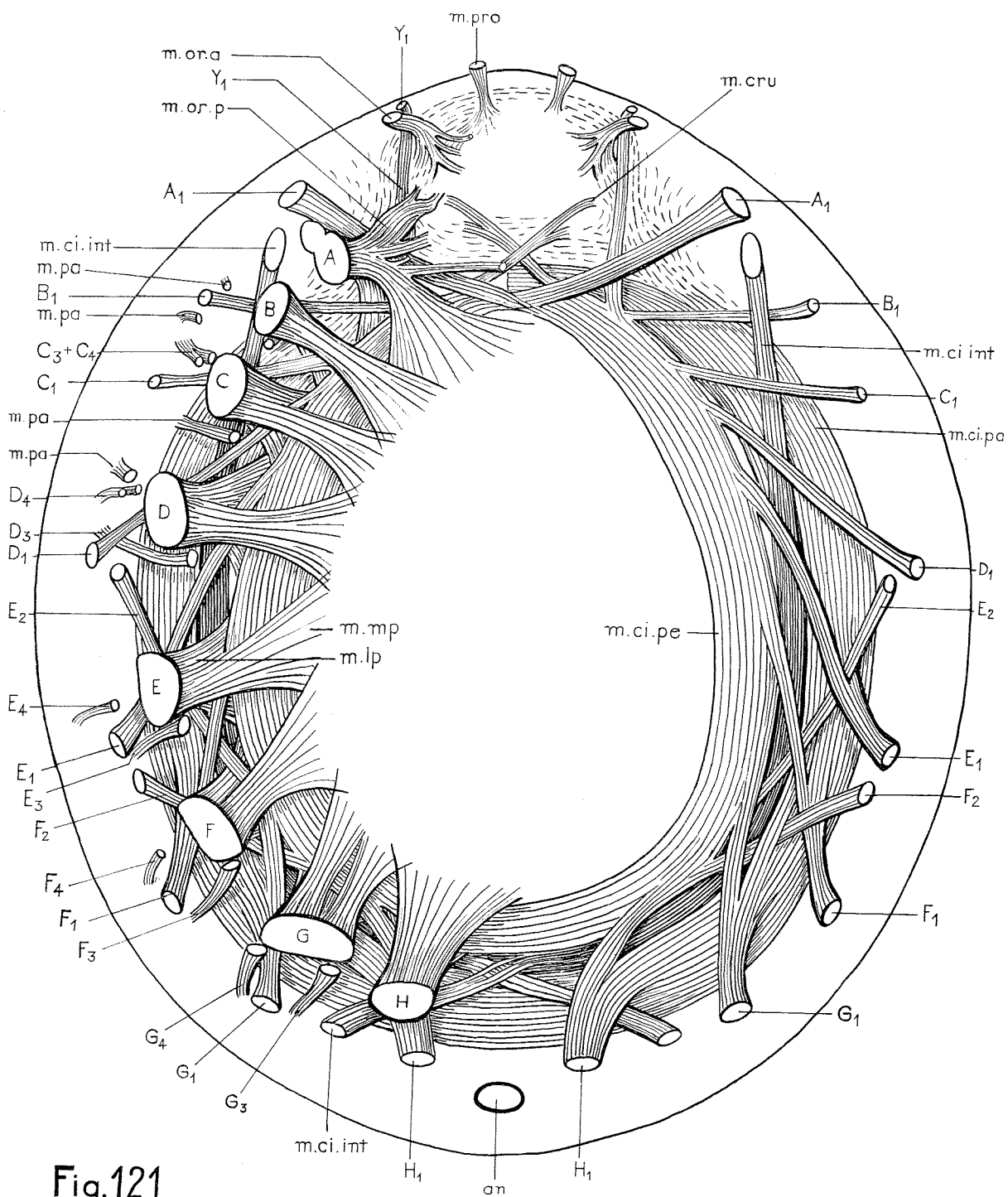


Fig.121

PLATE 36

Fig. 122. Transversal section through the middle body region at the level of the pedal retractor E. Microphotograph. Spec. III.

- art. p. s = arterial pallial sinus
- d. coe = dorsal coelom
- f. c = membraneous foot centre
- f. m = foot margin
- la. n. c = lateral nerve cord
- m. ci. pa = musculus circularis pallii
- m. ci. pe = musculus circularis pedis
- m. lp. E = musculus latero-pedalis E
- m. mp. E = musculus medio-pedalis E
- m. obl. a. F = musculus obliquus anterior F
- m. br. e = musculus branchialis externus
- mm. obl. E = crossing of the mm. obliquii E
- ne = nephridia
- ov = ovary
- pa. m = pallial margin
- pe. c = pedal nerve cord
- per. bl. s = peri-intestinal blood sinus
- ve. p. s = venous pallial sinus

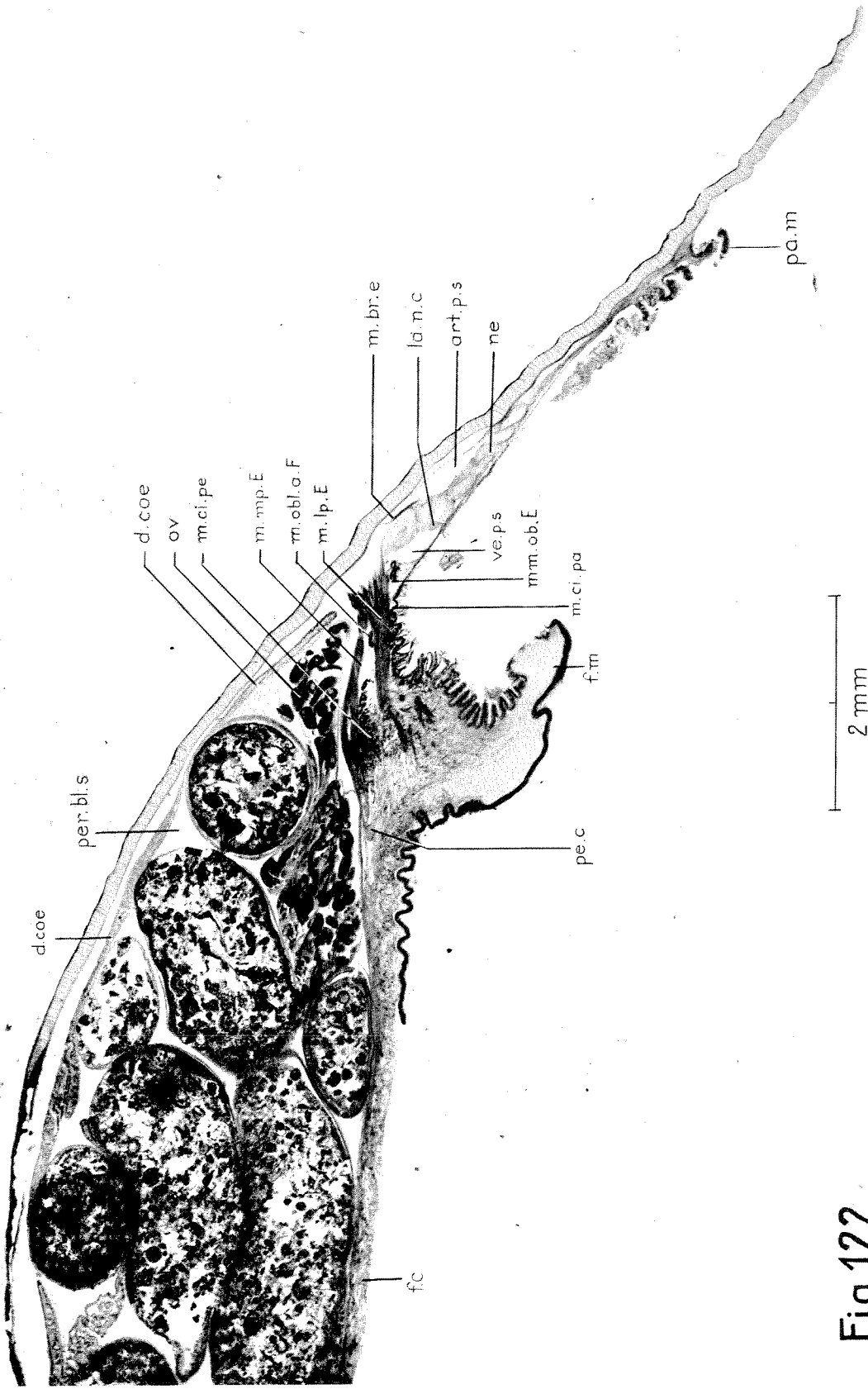


Fig.122

PLATE 37

Fig. 123. Horizontal section through the body at the level of the muscle insertions.
Posterior part of left side shown. Microphotograph. Spec. IV.

- at₂ = left posterior atrium
- cl. te = cleft between the two testes
- D-H = foot retractors D-H
- f. m = foot margin with ramifications of the
mm. latero-pedales
- m. br. i₃₋₅ = mm. branchiales interni of 3rd to 5th gill
- m. ci. pa = musculus circularis pallii (visible at several places)
- mm. br₁ = mm. branchiales of 1st gill
- ne = nephridia
- ne. sp = nephridia with sperm
- re = rectum
- te₁, te₂ = anterior and posterior left testes

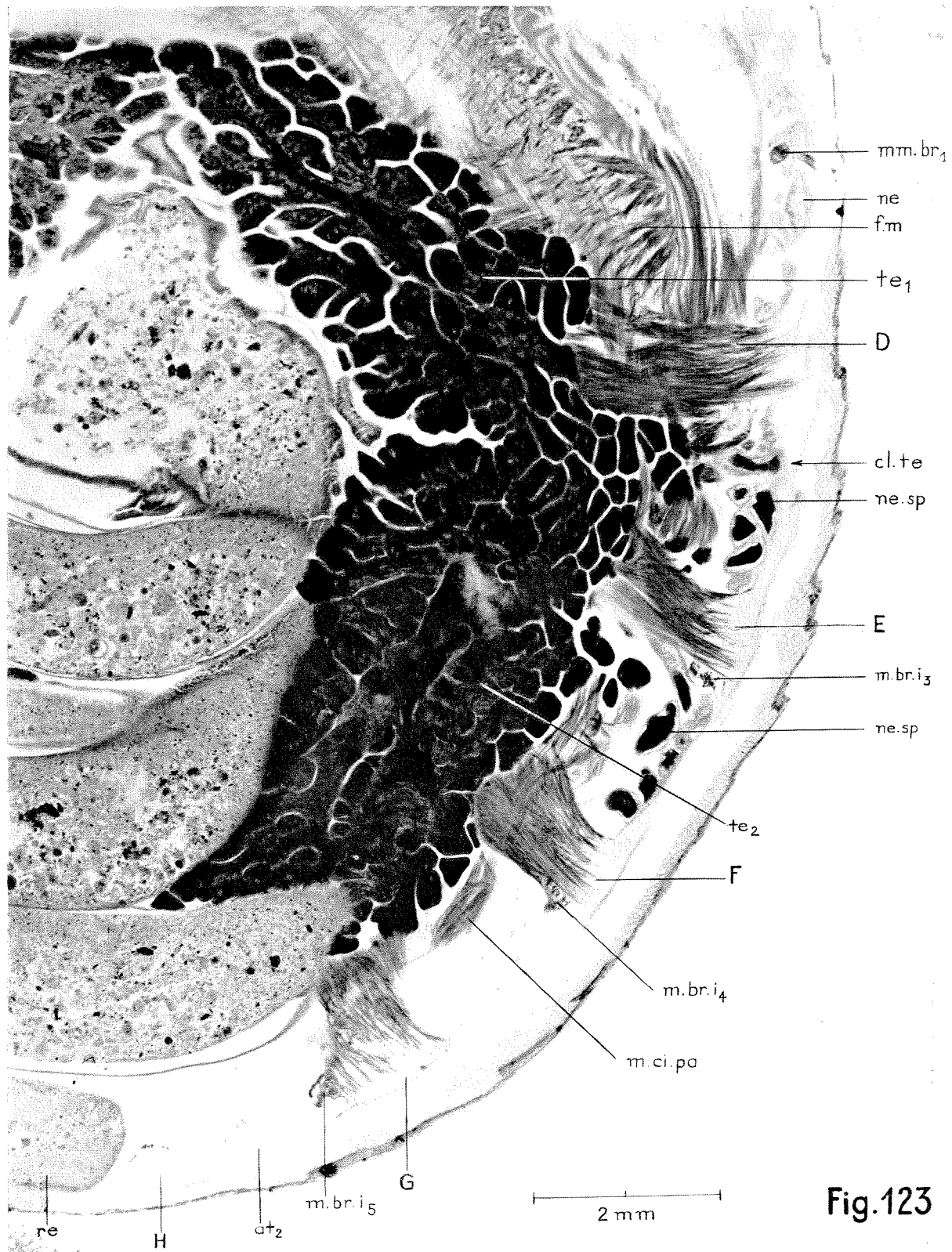


Fig.123

PLATE 38

- Fig. 124. Horizontal section through the anterior end with the salivary gland and the muscles lying in the anterior pallial fold. Microphotograph. Spec. IV.
 Fig. 125. Transversal section through the region of the 1st gill showing the internal gill retractor. Microphotograph. Spec. III.
 Fig. 126. The inner side of the ventral body wall of the dissected Spec. X, showing the m. circularis pedis and the foot retractors. Photograph.

- ant. l = anterior lip
 a. pa. s = arterial pallial sinus
 a. ve. ri = anterior velar ridge
 bl. s = blood sinus, lodging the muscles
 D-F = pedal retractors D-F
 E₁-F₁ = mm. obliqui anteriores E and F
 gi = gill
 m. br. i = musculus branchialis internus
 m. ci. pe = musculus circularis pedis
 m. pro = musculus praeoralis
 m. pr. ca. p = musculus protractor cartilaginis profundus
 m. pr. di = musculus protractor diverticulorum dorsalis
 m. pr. ve. ma = musculus protractor vesicae major
 m. te. me. a = musculus tensor membranae anterior
 ne = nephridia
 pe. n. c = pedal nerve cord
 pr. l = prismatic layer of shell
 sal. g = salivary gland

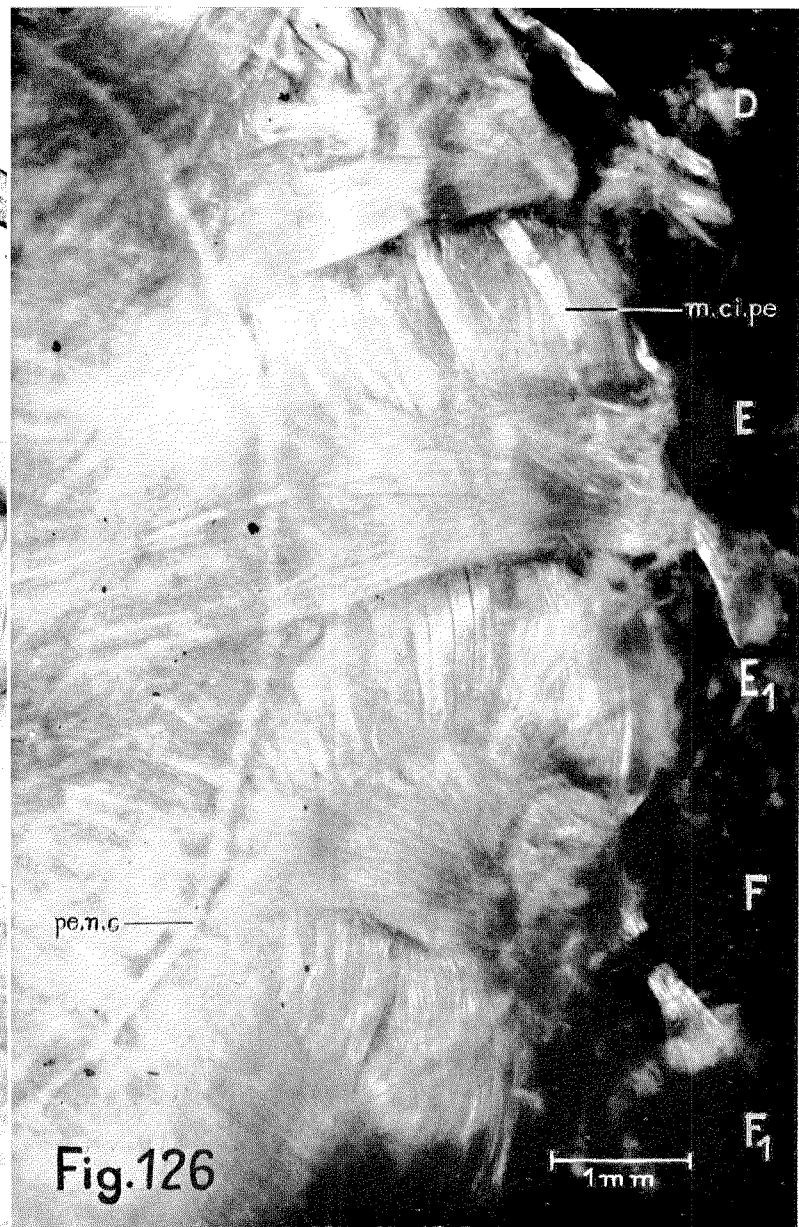
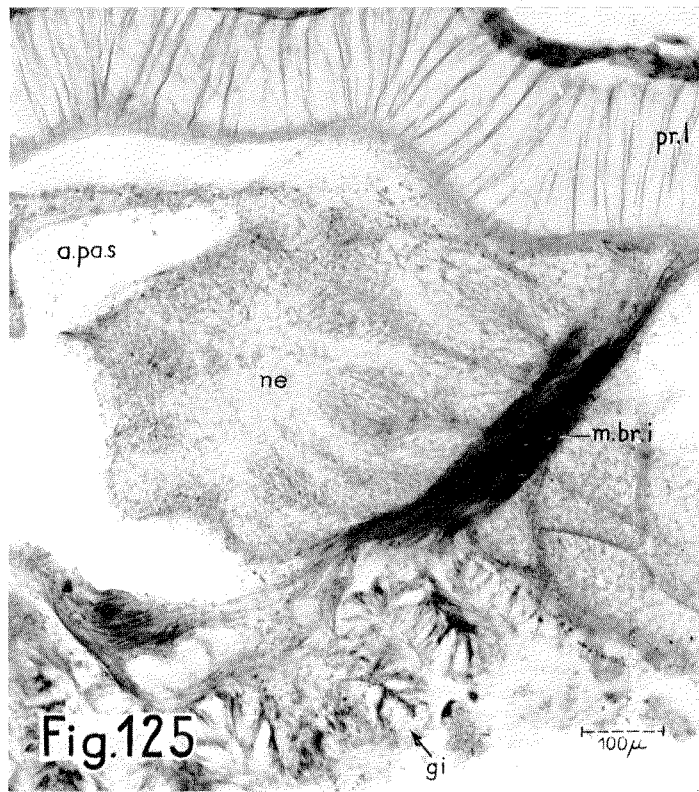
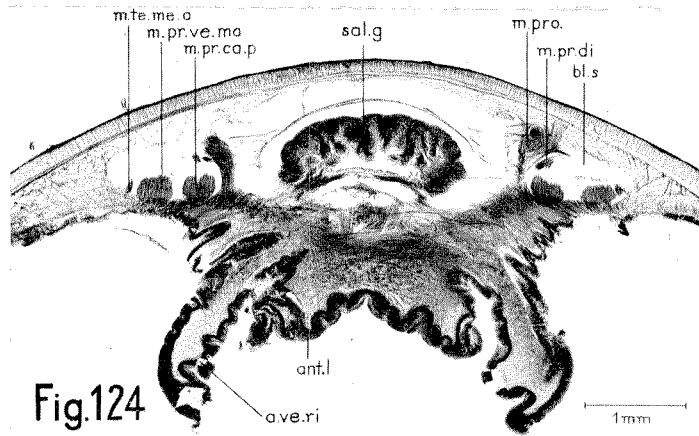


PLATE 39

Fig. 127. Muscles associated with the ventral body wall of the anterior body region. Dorsal view. The bases of the anterior lip (ba. a. l), the velum (ba. ve), and the tentacle ridge (ba. te. ri) are indicated by stippling. Graphic reconstruction from Spec. III.

Fig. 128. The muscles of the radula apparatus, dorsal view. Graphic reconstruction from Spec. III.

- | | |
|--|---|
| A-C = pedal retractors A to C | m. ra. l = musculus radulae longus |
| A ₁ -D ₁ = mm. obliqui anteriores A to C | m. ra. mi = musculus radulae minor |
| ba. a. l = base of anterior lip | m. re. ra = musculus retractor radulae |
| ba. ve = base of velum | m. re. ve = musculus retractor veli |
| ba. te. ri = base of tentacle ridge | m. sep = subepithelial muscle membrane |
| m. ca. a-l = musculus cartilaginis antero-lateralis | m. te. m. a = musculus tensor membranae anterior |
| m. ca. a-m = musculus cartilaginis antero-medialis | m. te. m. l = musculus tensor membranae lateralis |
| m. ca. p-l = musculus cartilaginis postero-lateralis | m. te. tr = musculus tentacularis transversus |
| m. ca. p-m = musculus cartilaginis postero-medialis | m. te. ra = musculus tensor radulae |
| m. ca. v = musculus cartilaginis ventralis | m. tr. A = musculus transversalis A |
| m. ci. int = musculus circularis intermedius | m. tr. a = musculus transversalis anterior |
| m. ci. pa = musculus circularis pallii | m. tr. p = musculus transversalis posterior |
| m. ci. pe = musculus circularis pedis | m. ve. a-l = musculus vesicae antero-lateralis |
| m. cru = musculus cruciatus | m. ve. a-m = musculus vesicae antero-medialis |
| m. or. ant = musculus oralis anterior | m. ve. p-l = musculus vesicae postero-lateralis |
| m. or. po = musculus oralis posterior | m. ve. p-m = musculus vesicae postero-medialis |
| m. pha = pharyngeal muscles | m. ve. v = musculus vesicae ventralis |
| m. pr. ca. d = musculus protractor cartilaginis dorsalis | me. lat = membrana lateralis |
| m. pr. ca. d' = small dorsal head of same | ph = pharynx |
| m. pr. ca. p = musculus protractor cartilaginis profundus | p. d = pars dorsalis of the m. radulae longus |
| m. pr. di = musculus protractor diverticulorum dorsalis | p. v = pars ventralis of the m. radulae longus |
| m. pr. ra = musculus protractor radulae | ra = radula |
| m. pr. ve. ma = musculus protractor vesicae major | ra. div = radula diverticula |
| m. pr. ve. mi = musculus protractor vesicae minor | ra. sh = radula sheath |
| m. pro = musculus praeoralis | ra. ve = radula vesicle |
| | sal. g = "anterior salivary gland" |
| | Y ₁ = the muscle Y ₁ |

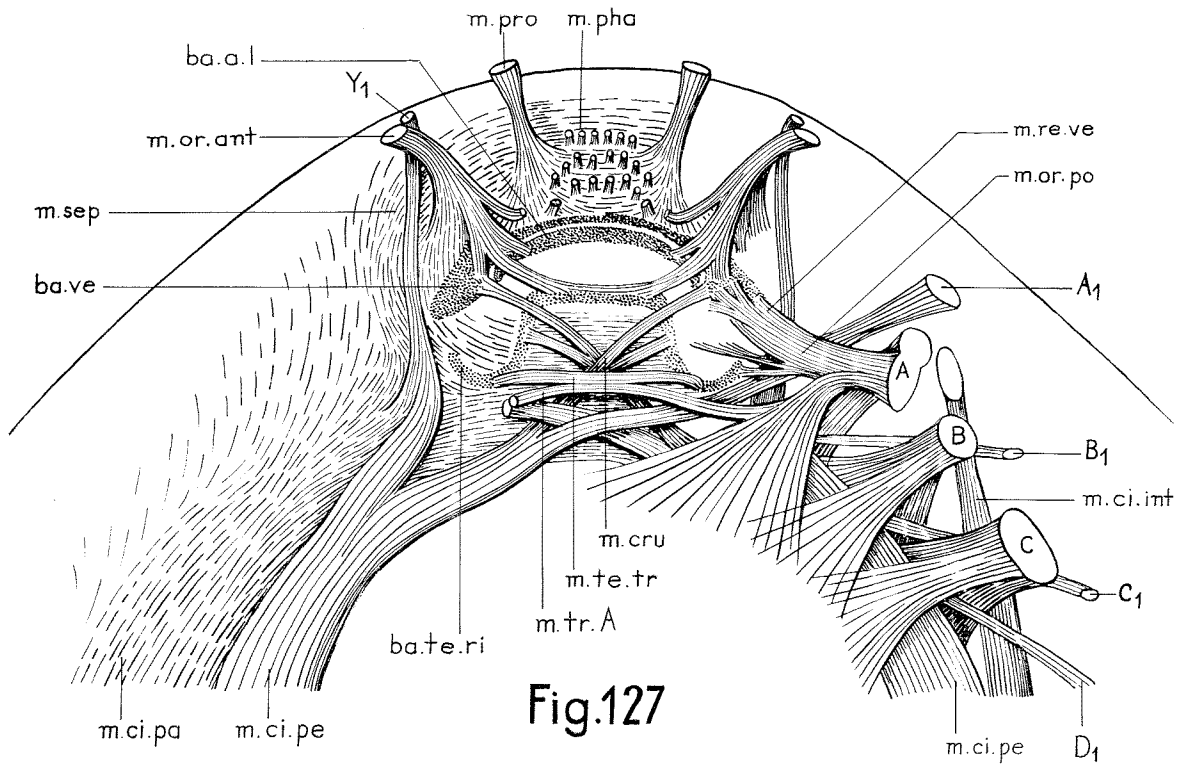


Fig.127

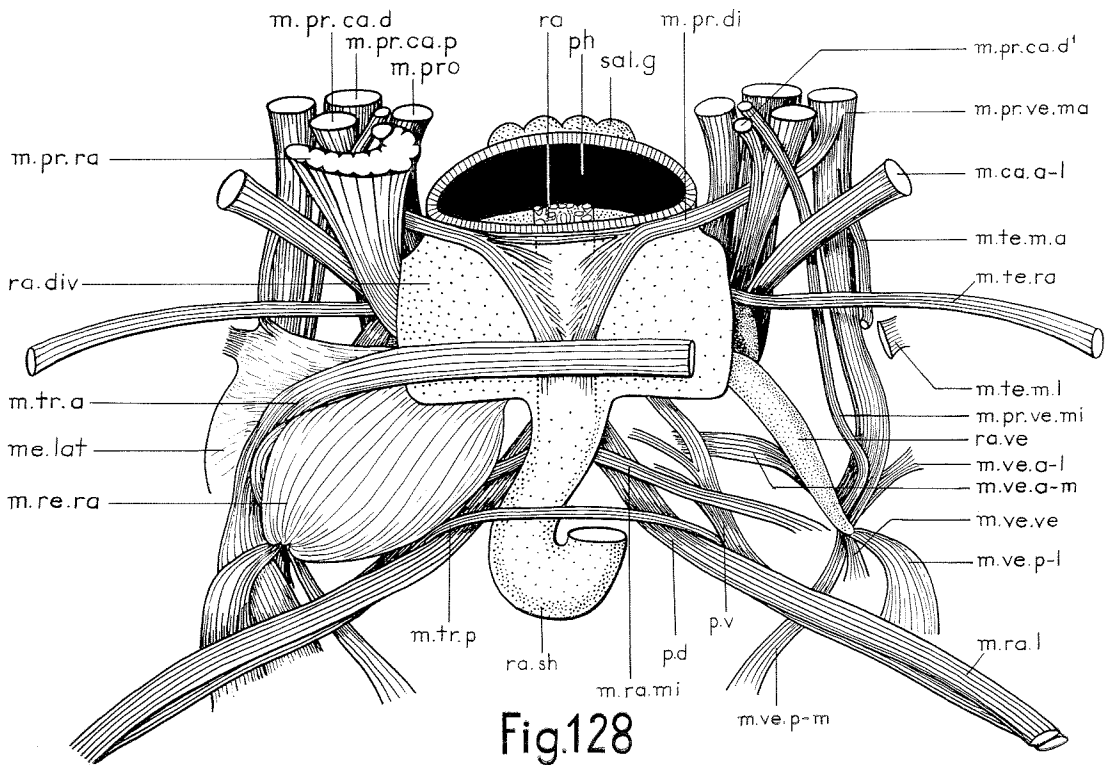


Fig.128

PLATE 40

Fig. 129. Horizontal section through the anterior body region at a level just touching the pallial groove (pa. g). Microphotograph. Spec. IV.

- d. coe = dorsal coelom
- d. coe' = pre-pharyngeal diverticula of dorsal coelom
- m. lp = musculus latero-pedalis
- m. obl. A = musculus obliquus anterior A
- m. or. p = musculus oralis posterior
- m. pr. ra = musculus protractor radulae
- m. ra. l = musculus radulae longus
- m. re. ra = musculus retractor radulae
- m. te. tr = musculus tentacularis transversus
- m. tr. a = musculus transversalis anterior
- m. ve. p-l = musculus vesicae postero-lateralis
- ne = nephridia
- pa. g = pallial groove
- ph = pharynx
- ph. d = pharyngeal diverticulum (visible on the right side)
- ra. sh = radula sheath
- ra. ve = radula vesicle
- sr. o = subradular organ
- st = statocyst
- te = testis

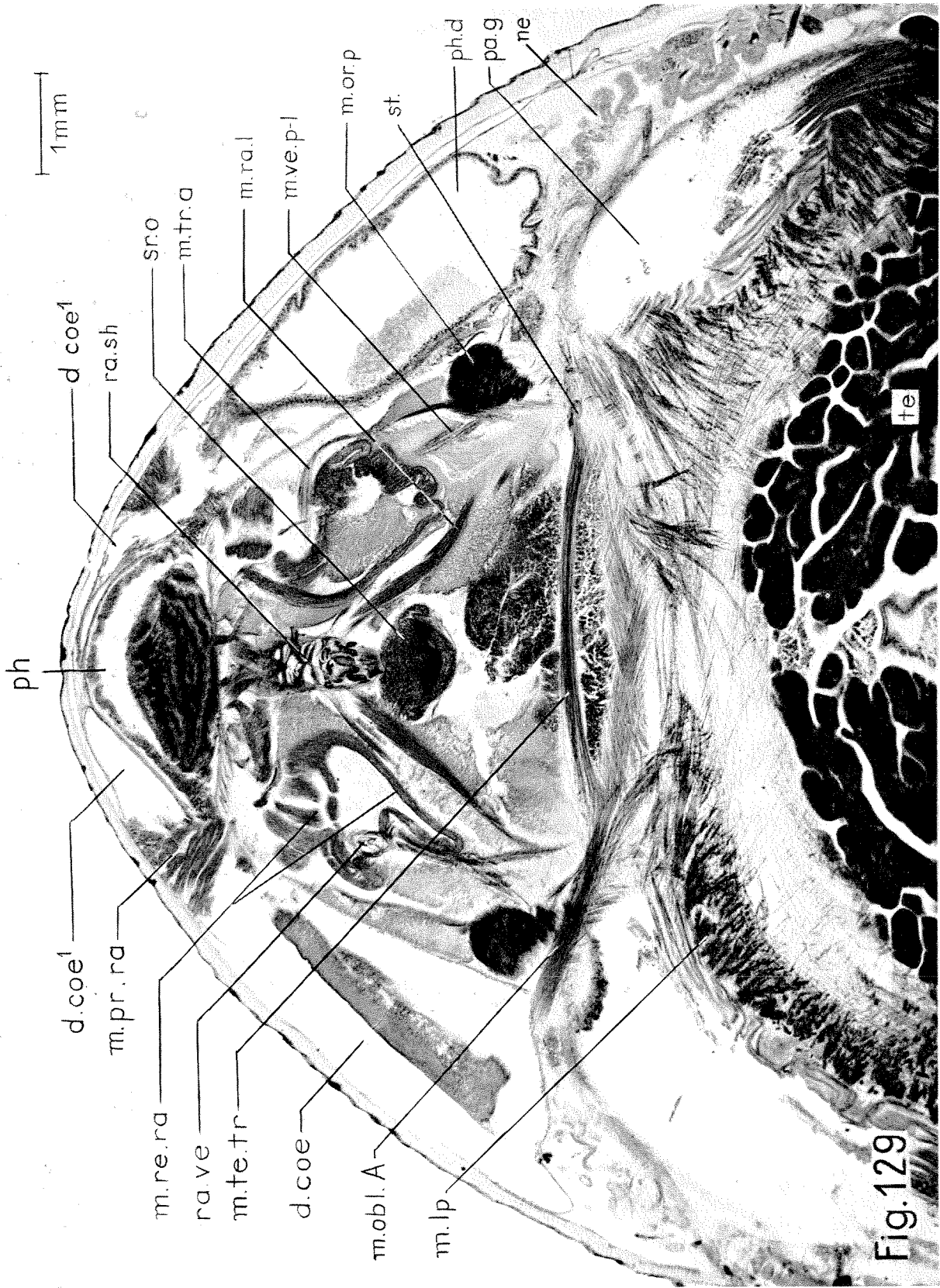


Fig.129