



HARVARD UNIVERSITY.



LIBRARY

OF THE

MUSEUM OF COMPARATIVE ZOÖLOGY.

7527

Bought

April 24 - November 4, 1899.

New Series, No. 165 (Vol. 42, Part 1).

Price 10s.

7527

FEBRUARY, 1899.

THE
QUARTERLY JOURNAL
OF
MICROSCOPICAL SCIENCE.

EDITED BY

E. RAY LANKESTER, M.A., LL.D., F.R.S.,

DIRECTOR OF THE NATURAL HISTORY DEPARTMENTS OF THE BRITISH MUSEUM; HONORARY FELLOW OF EXETER COLLEGE, OXFORD; CORRESPONDING MEMBER OF THE IMPERIAL ACADEMY OF SCIENCES OF ST. PETERSBURG, AND OF THE ACADEMY OF SCIENCES OF PHILADELPHIA; FOREIGN MEMBER OF THE ROYAL BOHEMIAN SOCIETY OF SCIENCES, AND OF THE ACADEMY OF THE LINCEI OF ROME; ASSOCIATE OF THE ROYAL ACADEMY OF BELGIUM, HONORARY MEMBER OF THE NEW YORK ACADEMY OF SCIENCES, AND OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY AND OF THE ROYAL PHYSICAL SOCIETY OF EDINBURGH; HONORARY MEMBER OF THE BIOLOGICAL SOCIETY OF PARIS; FILLERIAN PROFESSOR OF PHYSIOLOGY IN THE ROYAL INSTITUTION OF LONDON.

WITH THE CO-OPERATION OF

ADAM SEDGWICK, M.A., F.R.S.,

FELLOW AND TUTOR OF TRINITY COLLEGE, CAMBRIDGE;

AND

W. F. R. WELDON, M.A., F.R.S.,

JODRELL PROFESSOR OF ZOOLOGY AND COMPARATIVE ANATOMY IN UNIVERSITY COLLEGE, LONDON; LATE FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE.

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET.

Sm 1899.

CONTENTS OF No. 165.—New Series.

MEMOIRS:

	PAGE
Outlines of the Development of the Tuatara, <i>Sphenodon</i> (<i>Hatteria</i>) <i>punctatus</i> . By ARTHUR DENDY, D.Sc., Professor of Biology in the Canterbury College, University of New Zealand. (With Plates 1—10)	1
Abstract and Review of the Memoir by G. Hieronymus "On <i>Chla-</i> <i>mydomyxa labyrinthoides</i> , Archer." By J. W. JENKINSON, M.A., Exeter College, Oxford	89

JUL 17 1899

New Series, No. 166 (Vol. 42, Part 2).

Price 10s.

7527

MAY, 1899.

THE
QUARTERLY JOURNAL
OF
MICROSCOPICAL SCIENCE.

EDITED BY

E. RAY LANKESTER, M.A., LL.D., F.R.S.,

HONORARY FELLOW OF EXETER COLLEGE, OXFORD; CORRESPONDENT OF THE INSTITUTE OF FRANCE,
AND OF THE IMPERIAL ACADEMY OF SCIENCES OF ST. PETERSBURG, AND OF THE ACADEMY
OF SCIENCES OF PHILADELPHIA; FOREIGN MEMBER OF THE ROYAL BOHEMIAN
SOCIETY OF SCIENCES, AND OF THE ACADEMY OF THE LINGEI OF ROME;
ASSOCIATE OF THE ROYAL ACADEMY OF BELGIUM; HONORARY MEMBER
OF THE NEW YORK ACADEMY OF SCIENCES, AND OF THE
CAMBRIDGE PHILOSOPHICAL SOCIETY, AND OF THE ROYAL
PHYSICAL SOCIETY OF EDINBURGH; HONORARY
MEMBER OF THE ZOOLOGICAL SOCIETY
OF PARIS;
DIRECTOR OF THE NATURAL HISTORY DEPARTMENTS OF THE BRITISH MUSEUM; FULLERIAN PROFESSOR
OF PHYSIOLOGY IN THE ROYAL INSTITUTION OF LONDON.

WITH THE CO-OPERATION OF

ADAM SEDGWICK, M.A., F.R.S.,

FELLOW AND TUTOR OF TRINITY COLLEGE, CAMBRIDGE;

AND

W. F. R. WELDON, M.A., F.R.S.,

LINACRE PROFESSOR OF COMPARATIVE ANATOMY AND FELLOW OF MERTON COLLEGE, OXFORD;
FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE.

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET.

1899.

CONTENTS OF No. 166.—New Series.

MEMOIRS:

	PAGE
On the Development of the Parietal Eye and Adjacent Organs in <i>Sphenodon</i> (Hatteria). By ARTHUR DENDY, B.Sc., F.L.S., Professor of Biology in the Canterbury College, University of New Zealand. (With Plates 11—13)	111
The Molluscs of the Great African Lakes.—III. <i>Tanganyikia rufifilosa</i> , and the Genus <i>Spekia</i> . By J. E. S. MOORE. (With Plates 14—19)	155
The Molluscs of the Great African Lakes.—IV. <i>Nassopsis</i> and <i>Bythoceras</i> . By J. E. S. MOORE. (With Plates 20 and 21)	187
Further Study of Cytological Changes produced in <i>Drosera</i> . By LILY H. HUIE, Physiological Laboratory, Oxford. (With Plate 22)	203
Remarks on some Recent Work on the Protochorda, with a Condensed Account of some Fresh Observations on the <i>Enteropneusta</i> . By ARTHUR WILLEY, M.A., D.Sc.	223

NOV 4 1899

7527

New Series, No. 167 (Vol. 42, Part 3).

Price 10s.

AUGUST, 1899.

THE
QUARTERLY JOURNAL
OF
MICROSCOPICAL SCIENCE.

EDITED BY

E. RAY LANKESTER, M.A., LL.D., F.R.S.,

HONORARY FELLOW OF EXETER COLLEGE, OXFORD; CORRESPONDENT OF THE INSTITUTE OF FRANCE,
AND OF THE IMPERIAL ACADEMY OF SCIENCES OF ST. PETERSBURG, AND OF THE ACADEMY
OF SCIENCES OF PHILADELPHIA; FOREIGN MEMBER OF THE ROYAL ROMANIAN
SOCIETY OF SCIENCES, AND OF THE ACADEMY OF THE LINCENI OF ROME;
ASSOCIATE OF THE ROYAL ACADEMY OF BELGIUM; HONORARY MEMBER
OF THE NEW YORK ACADEMY OF SCIENCES, AND OF THE
CAMBRIDGE PHILOSOPHICAL SOCIETY, AND OF THE ROYAL
PHYSICAL SOCIETY OF EDINBURGH; HONORARY
MEMBER OF THE BIOLOGICAL SOCIETY
OF PARIS;

DIRECTOR OF THE NATURAL HISTORY DEPARTMENTS OF THE BRITISH MUSEUM; FULLERIAN PROFESSOR
OF PHYSIOLOGY IN THE ROYAL INSTITUTION OF GREAT BRITAIN.

WITH THE CO-OPERATION OF

ADAM SEDGWICK, M.A., F.R.S.,

FELLOW AND TUTOR OF TRINITY COLLEGE, CAMBRIDGE;

AND

W. F. R. WELDON, M.A., F.R.S.,

LINCOLN PROFESSOR OF COMPARATIVE ANATOMY AND FELLOW OF NERTON COLLEGE, OXFORD;
LATE FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE.

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET.

1899.

CONTENTS OF No. 167.—New Series.

MEMOIRS:

	PAGE
The Structure of <i>Xenia Hicksoni</i> , nov. sp., with some Observations on <i>Heteroxenia Elizabethæ</i> , Kölliker. By J. H. ASHWORTH, D.Sc.(Lond.), Demonstrator in Zoology, Owens College, Manchester. (With Plates 23—27)	245
Notes on the Batrachians of the Paraguayan Chaco, with Observations upon their Breeding Habits and Development, especially with regard to <i>Phyllomedusa hypochondrialis</i> , Cope. Also a Description of a New Genus. By J. S. BUDGETT, Trinity College, Cambridge. (With Plates 28—32)	305
The Development of Echinoids. Part I.—The Larvæ of <i>Echinus miliaris</i> and <i>Echinus esculentus</i> . By E. W. MACBRIDE, M.A., Professor of Zoology in McGill University, Montreal. (With Plate 33)	335
Hydroids from Wood's Holl, Mass.: <i>Hypolytus peregrinus</i> , a New Unattached Marine Hydroid; <i>Corynitis Agassizii</i> and its Medusa. By L. MURBACH. (With Plate 34)	341
Note.— <i>Arhynchus hemignathi</i> . By Arthur E. Shipley	361

New Series, No. 168 (Vol. 42, Part 4).

Price 10s.

SEPTEMBER, 1899.

THE
 QUARTERLY JOURNAL
 OF
 MICROSCOPICAL SCIENCE.

EDITED BY

E. RAY LANKESTER, M.A., LL.D., F.R.S.,

HONORARY FELLOW OF EXETER COLLEGE, OXFORD; CORRESPONDENT OF THE INSTITUTE OF FRANCE,
 AND OF THE IMPERIAL ACADEMY OF SCIENCES OF ST. PETERSBURG, AND OF THE ACADEMY
 OF SCIENCES OF PHILADELPHIA; FOREIGN MEMBER OF THE ROYAL BOHEMIAN
 SOCIETY OF SCIENCES, AND OF THE ACADEMY OF THE LINGEI OF ROME;
 ASSOCIATE OF THE ROYAL ACADEMY OF BELGIUM; HONORARY MEMBER
 OF THE NEW YORK ACADEMY OF SCIENCES, AND OF THE
 CAMBRIDGE PHILOSOPHICAL SOCIETY, AND OF THE ROYAL
 PHYSICAL SOCIETY OF EDINBURGH; HONORARY
 MEMBER OF THE BIOLOGICAL SOCIETY
 OF PARIS;

DIRECTOR OF THE NATURAL HISTORY DEPARTMENTS OF THE BRITISH MUSEUM; FULLERIAN PROFESSOR
 OF PHYSIOLOGY IN THE ROYAL INSTITUTION OF GREAT BRITAIN.

WITH THE CO-OPERATION OF

ADAM SEDGWICK, M.A., F.R.S.,

FELLOW AND TUTOR OF TRINITY COLLEGE, CAMBRIDGE;

AND

W. F. R. WELDON, M.A., F.R.S.,

LINACRE PROFESSOR OF COMPARATIVE ANATOMY AND FELLOW OF MERTON COLLEGE, OXFORD;
 LATE FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE.

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET.

1899.

CONTENTS OF No. 168.—New Series.

MEMOIRS:

	PAGE
The Structure and Metamorphosis of the Larva of <i>Spongilla laeustris</i> . By RICHARD EVANS, B.A., Jesus College, Oxford. (With Plates 35—41)	363
On the Communication between the Cœlom and the Vascular System in the Leech, <i>Hirudo medicinalis</i> . By EDWIN S. GOODRICH, B.A., Aldrichian Demonstrator of Comp. Anatomy, Oxford. (With Plates 42—44)	477
<i>Balanoglossus otagoensis</i> , n. sp. By W. BLAXLAND BENHAM, D.Sc., M.A., Professor of Biology in the University of Otago, New Zealand. (With Plate 45)	497
The Movements of Copepoda. By E. W. MACBRIDE, Professor of Zoology, McGill University, Montreal	505

Fig. 1.

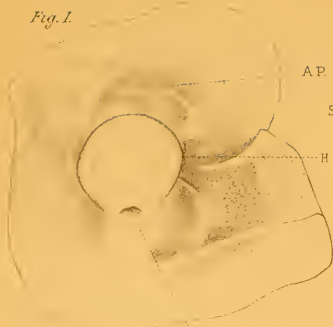


Fig. 2.



Fig. 3.



Fig. 5.

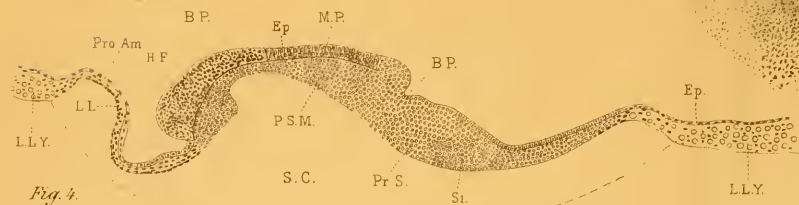
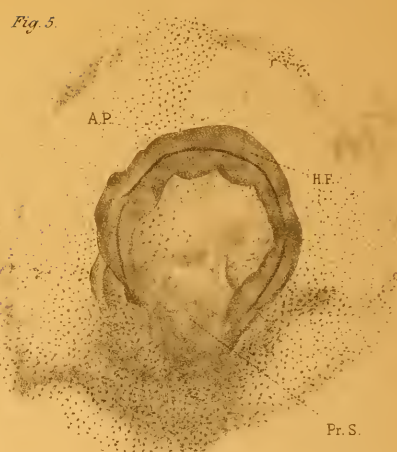


Fig. 4.

Fig. 10.

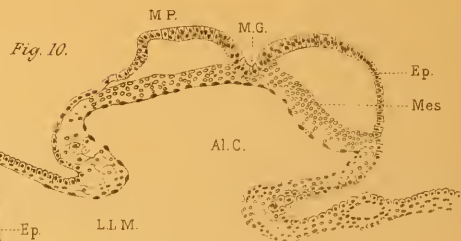


Fig. 6.

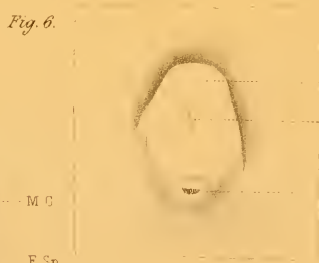


Fig. 9.

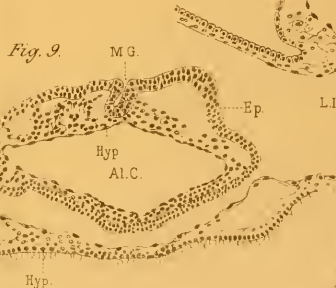


Fig. 7.

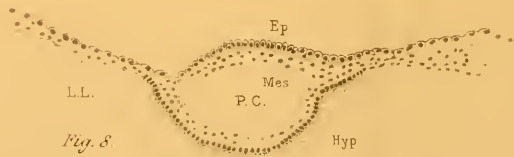
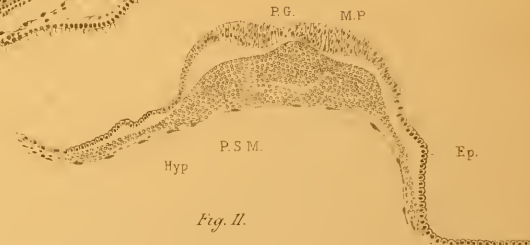


Fig. 8.

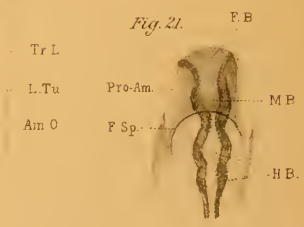
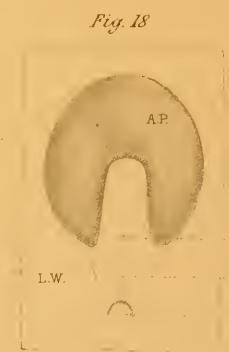
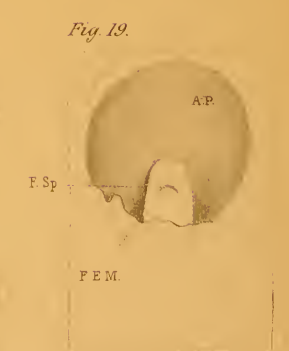
Fig. 11.



Arthur Henning del.

F. Hutch, lith. Edinb.

DEVELOPMENT OF THE TUATARA. Stages C and D.



Ambr. & Thomsen del.

W. H. & L. W. Eds.

DEVELOPMENT OF THE TUATARA. Stages D and E.



Fig. 22.

Fig. 25.

Fig. 28.

Fig. 31.

Fig. 23.

Fig. 26.

Fig. 29.

Fig. 32.

Fig. 24.

Fig. 27.

Fig. 30.

Fig. 34.

Fig. 33.

Fig. 35.

Fig. 36.

Fisher Denny del.

F. Hubb, Lith. Edin.

DEVELOPMENT OF THE TUATARA. Stages E and F.

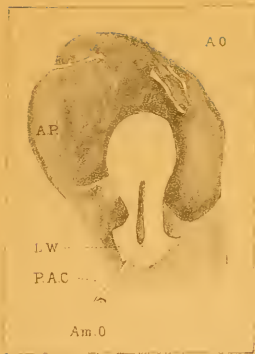


Fig. 37.

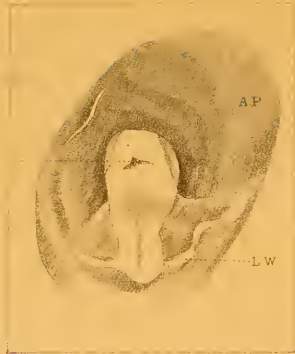


Fig. 38.

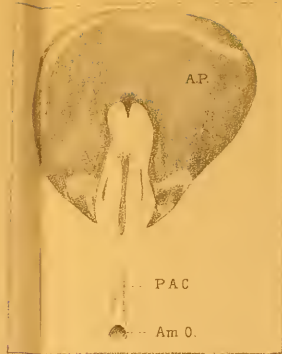


Fig. 40.



Fig. 39.

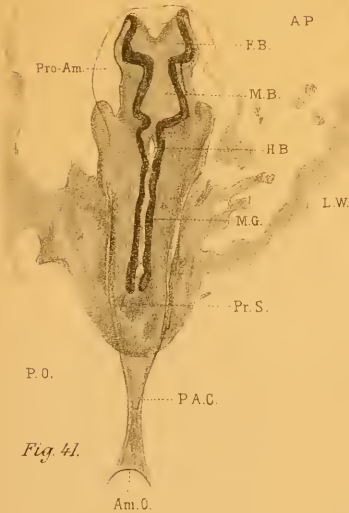


Fig. 41.

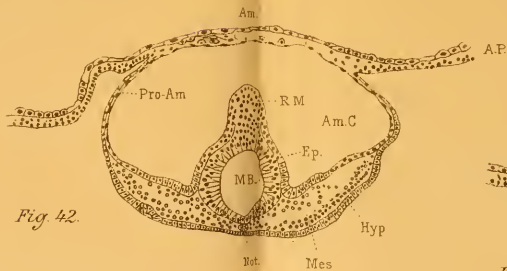


Fig. 42.

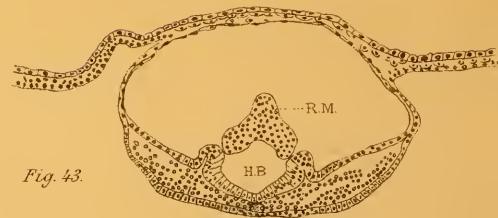


Fig. 43.

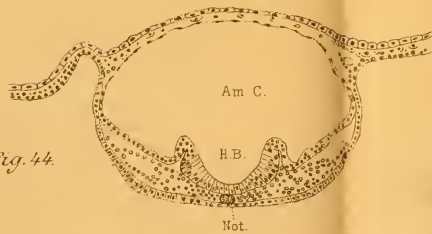


Fig. 44.



Fig. 46.



Fig. 45.

Fig. 47.



Fig. 48.

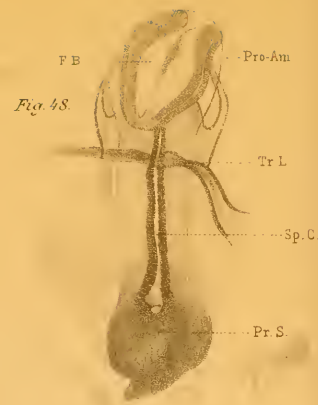


Fig. 49.



Fig. 53.

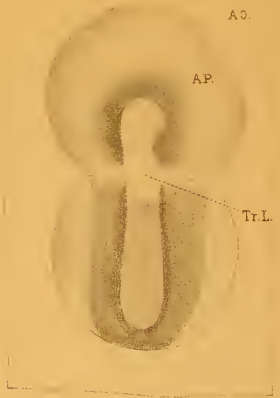


Fig. 50.

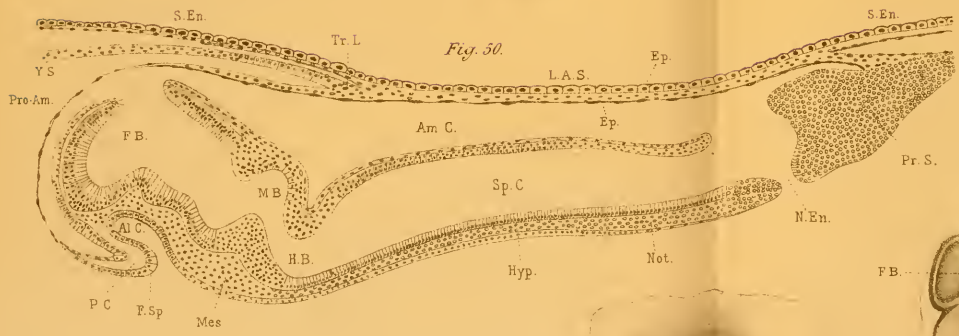


Fig. 54.

Fig. 52.

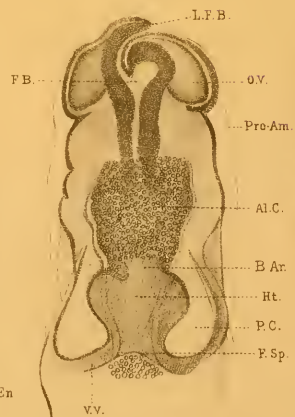


Fig. 51.

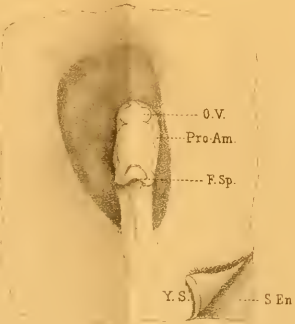
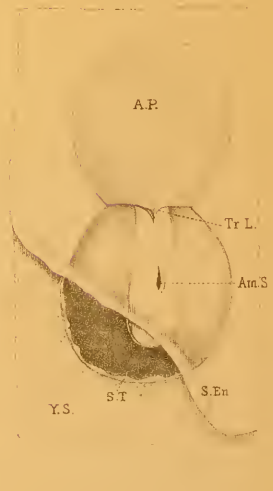
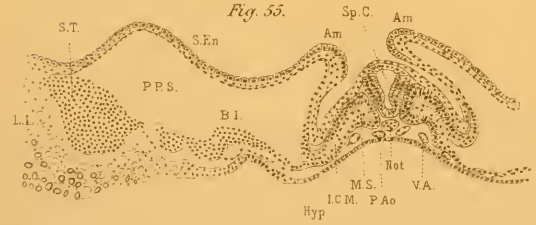


Fig. 55.



Arthur Dendy del.

F. Huth, Lith. Edin.



Fig. 56.

Fig. 57.



Fig. 58.

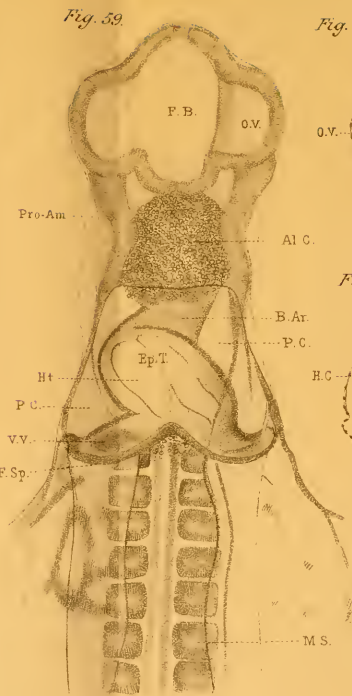


Fig. 59.

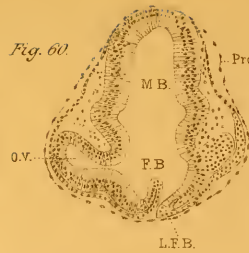


Fig. 60.

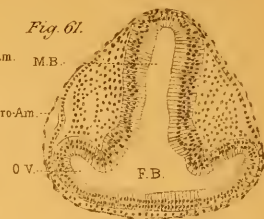


Fig. 61.

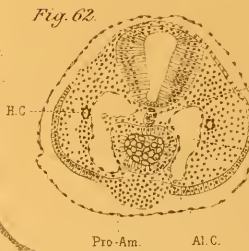


Fig. 62.

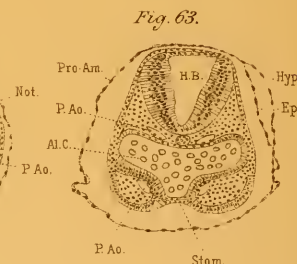


Fig. 63.

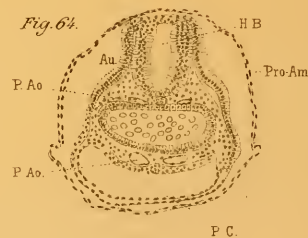


Fig. 64.

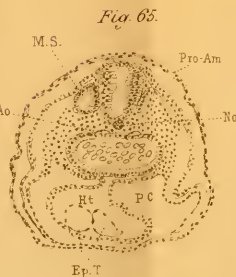


Fig. 65.

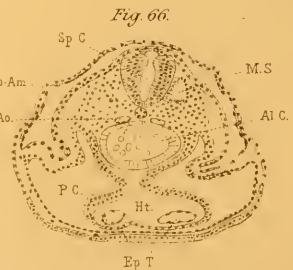


Fig. 66.

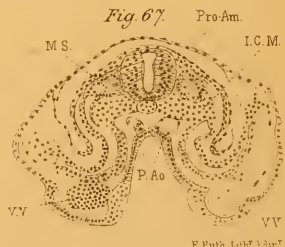
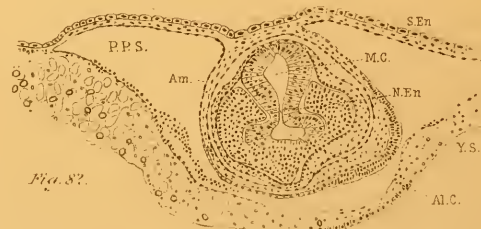
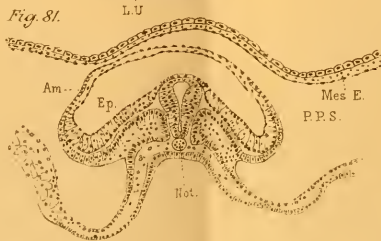
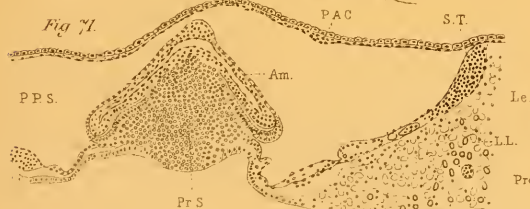
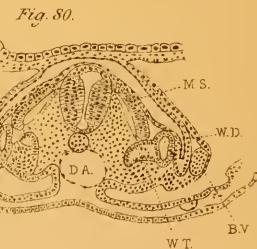
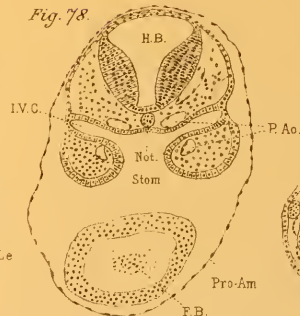
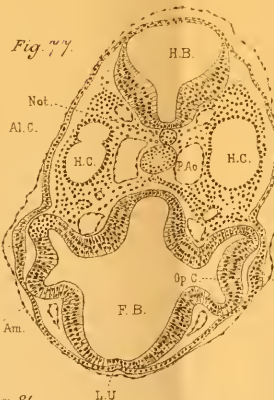
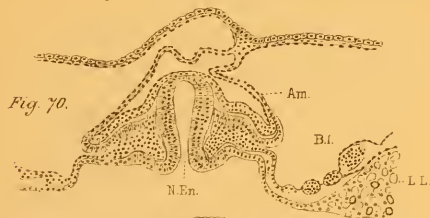
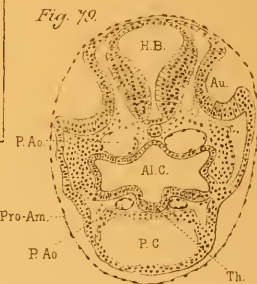
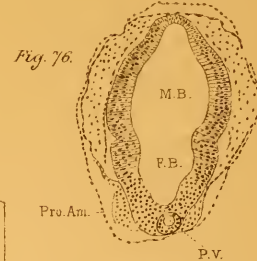
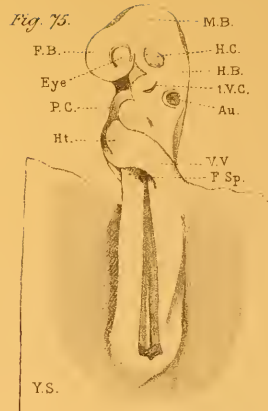
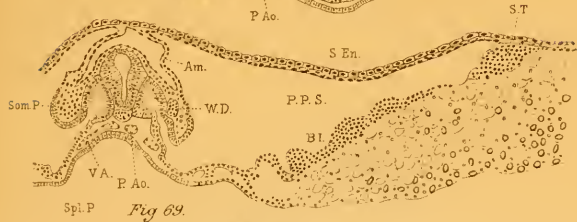
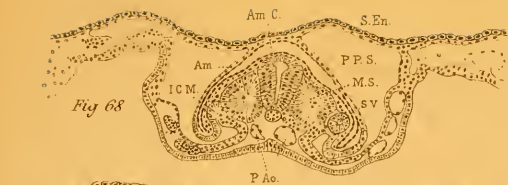


Fig. 67.



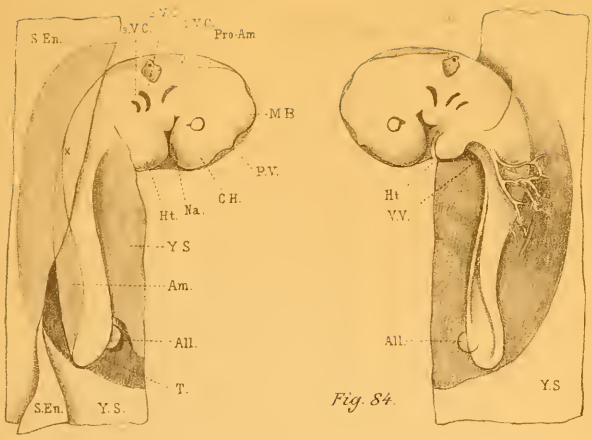


Fig. 83.

Fig. 84.

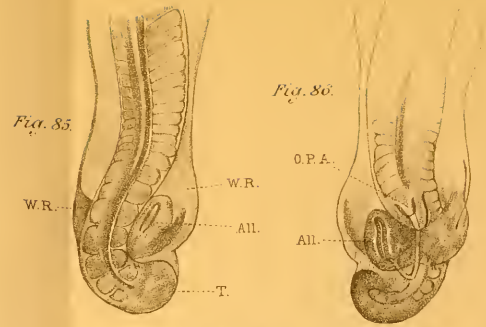


Fig. 85.

Fig. 86.

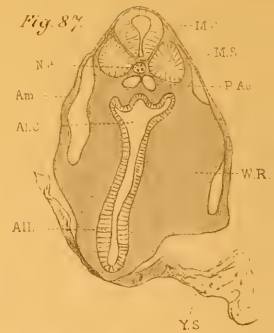


Fig. 87.

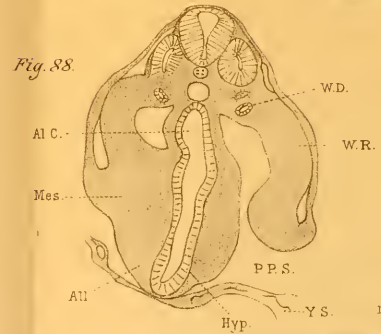


Fig. 88.

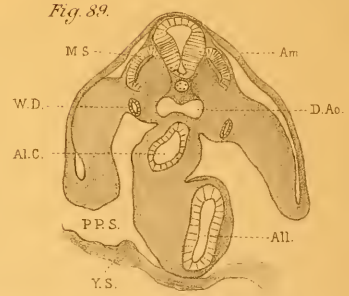


Fig. 89.

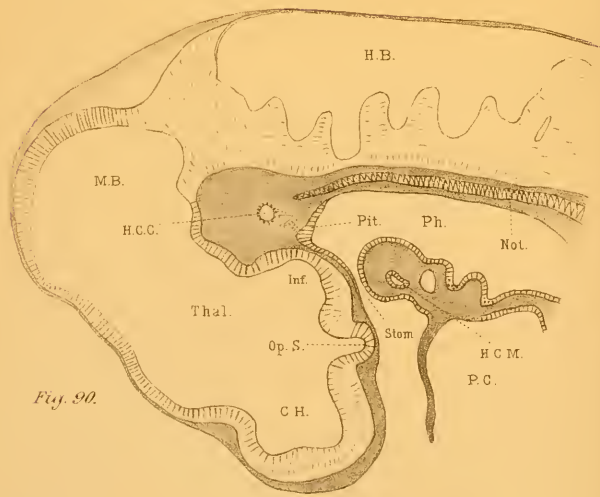


Fig. 90.



Fig. 91.

Fig. 92.

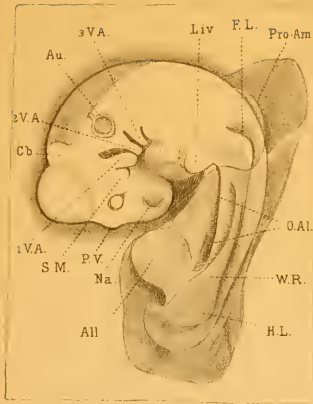


Fig. 93.



Fig. 95.



Fig. 94.

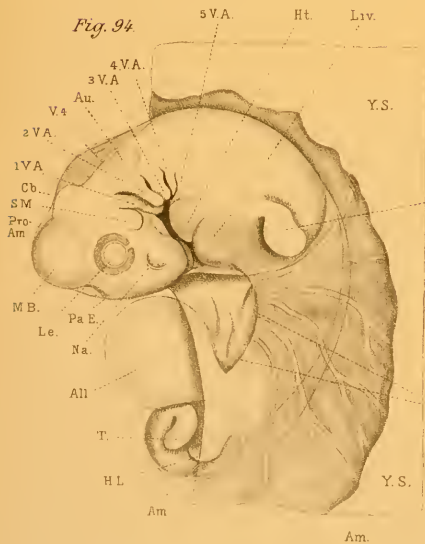


Fig. 97.

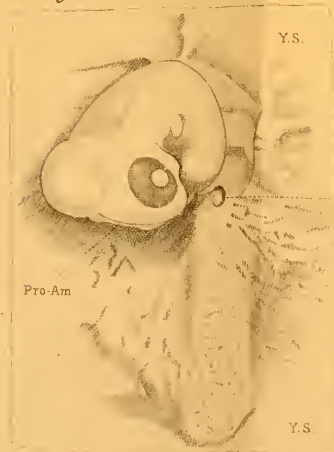


Fig. 96.

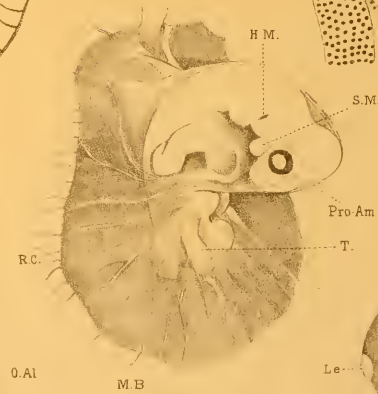


Fig. 99.

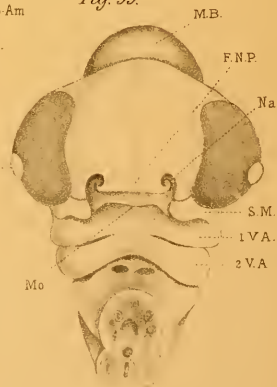
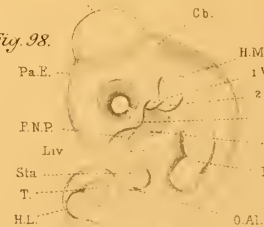


Fig. 98.



Arthur Dendy del.

F Hutch, Lith' Edin'

Fig. 100.



Fig. 101.

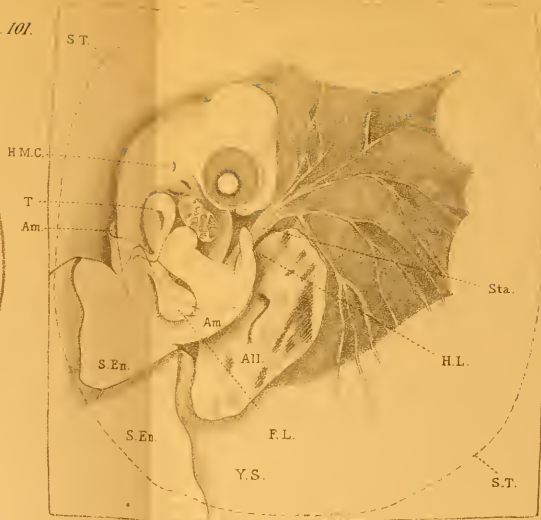


Fig. 102.



Fig. 103.



Fig. 104.

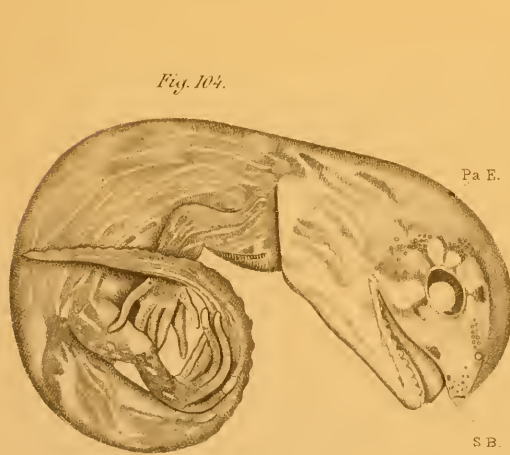


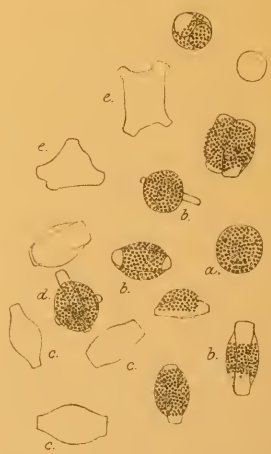
Fig. 105.



Fig. 106.



Fig. 107.



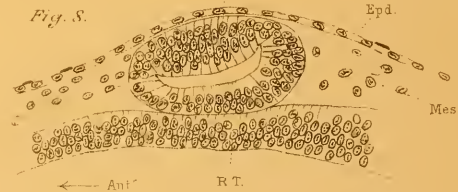
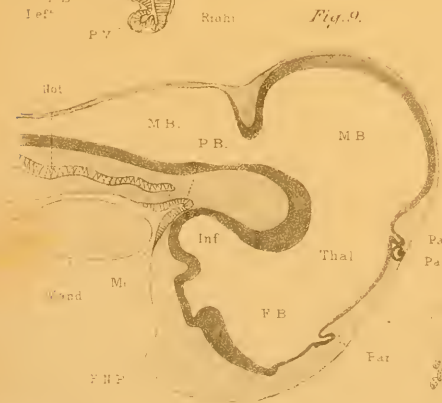
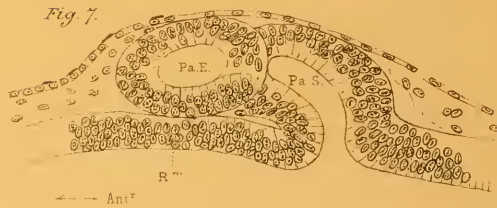
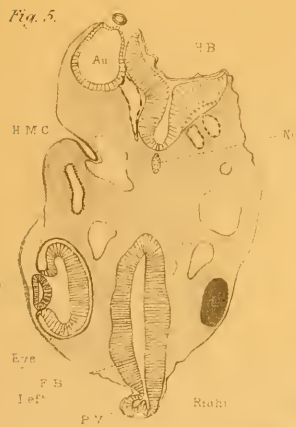
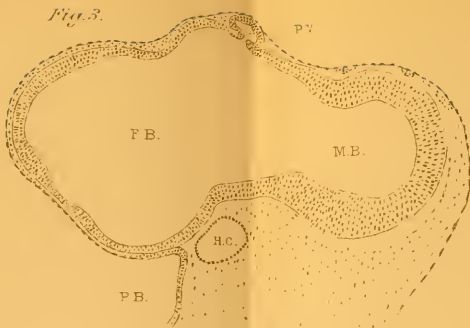
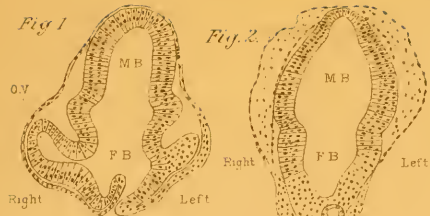


Fig. 12

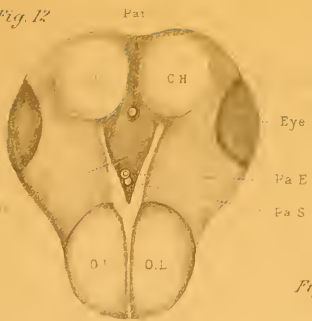


Fig. 19.

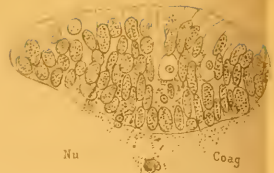


Fig. 20.



Fig. 18



Fig. 13

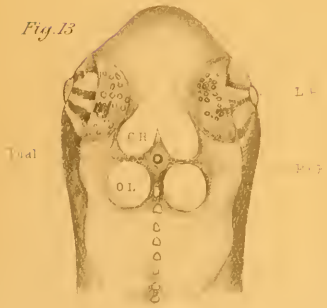


Fig. 17

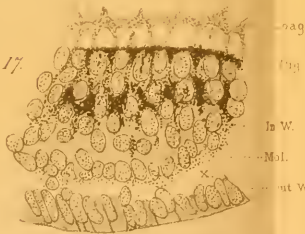


Fig. 14

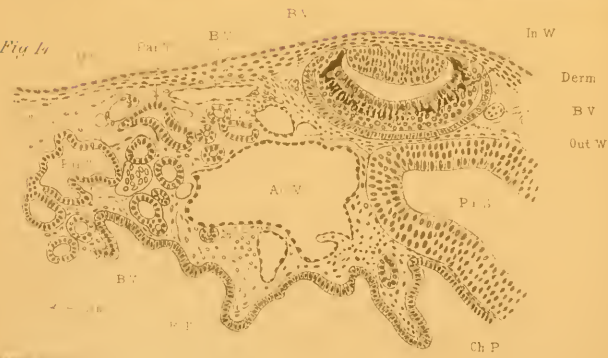


Fig. 15.



Fig. 16.



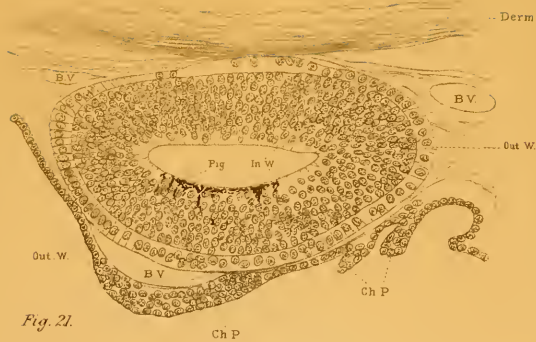


Fig. 21.

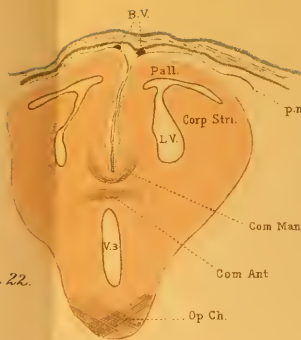


Fig. 22.

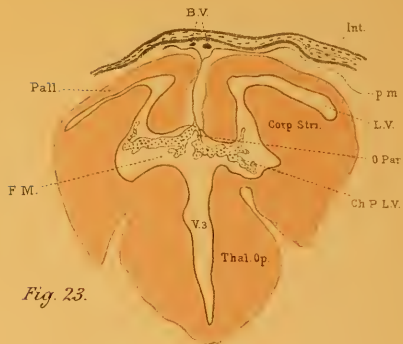


Fig. 23.

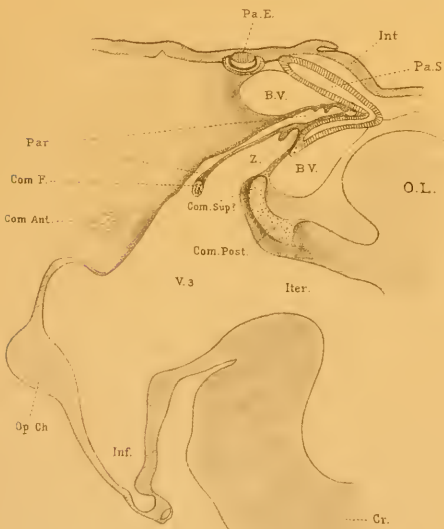


Fig. 24.

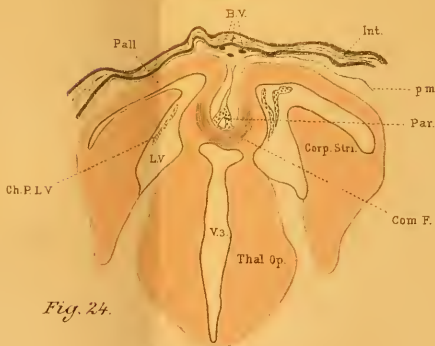


Fig. 25.

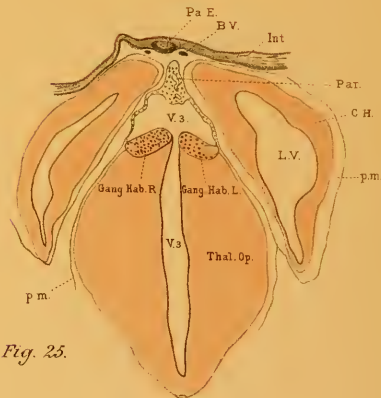


Fig. 26.

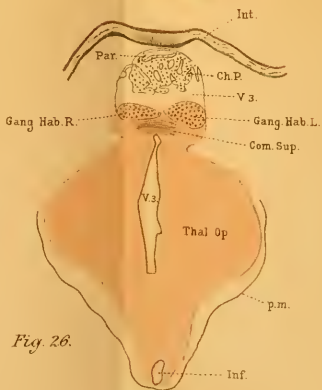


Fig. 27.

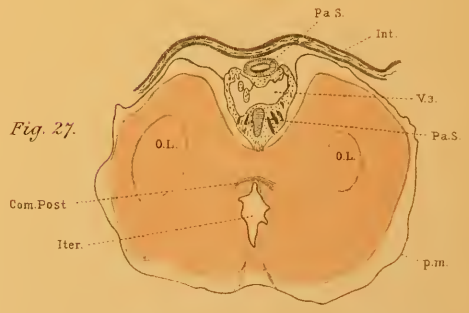
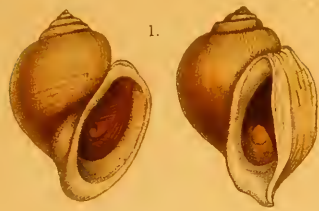
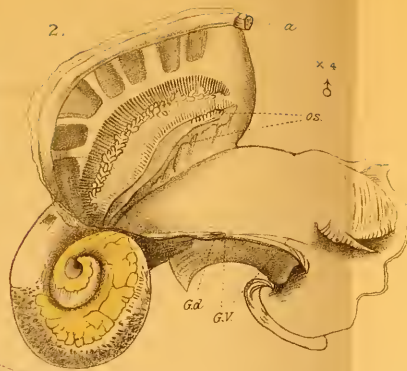


Fig. 28.



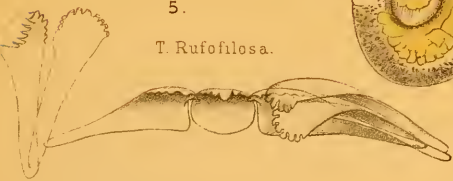
1.



2.

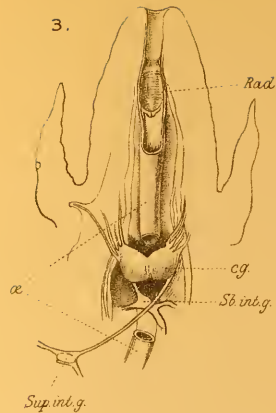
x 4

♂

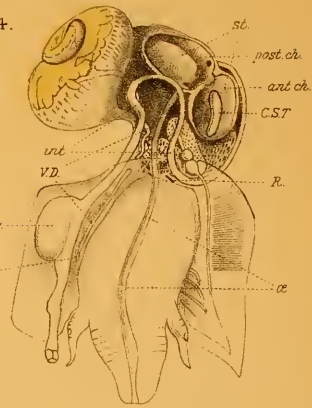


5.

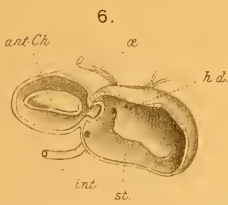
T. Rufofilosa.



3.

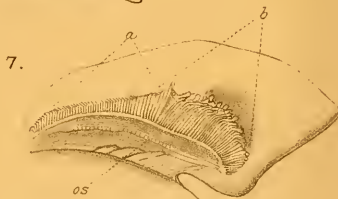


4.



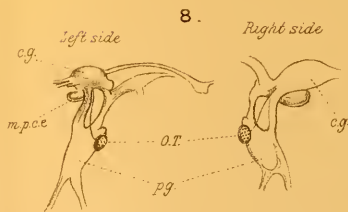
6.

ant. Ch. a h. d. int. sc.



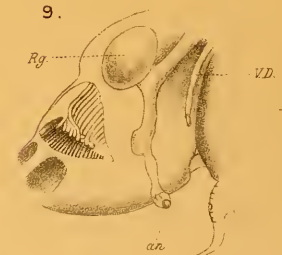
7.

M. Episcopalis.



8.

Left side Right side
c.g. m.p.c. o.t. p.g. c.g.



9.



10.

G.G. G.d. G.V. c.



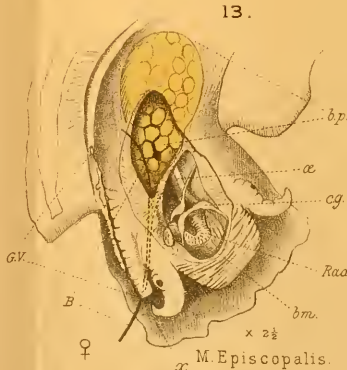
11.

au. v. b.p.



12.

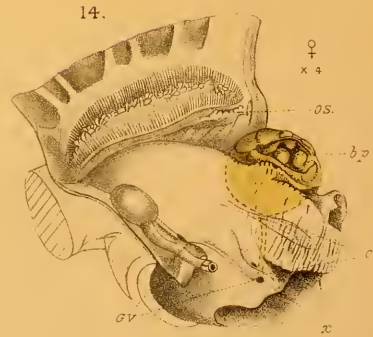
M. Episcopalis ♂



13.

b.p. a. c.g. Rad. dm. x 2 1/2 ♀

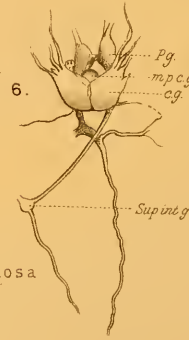
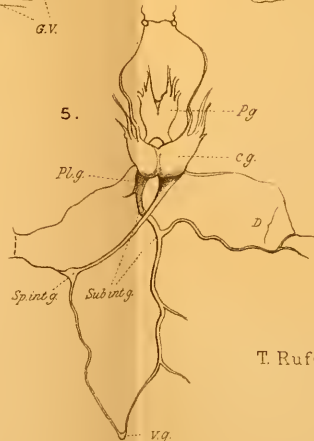
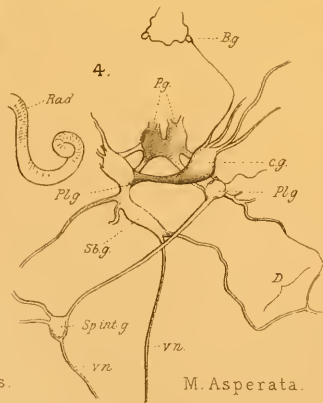
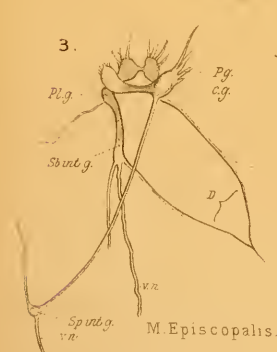
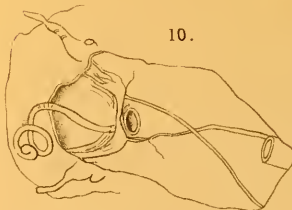
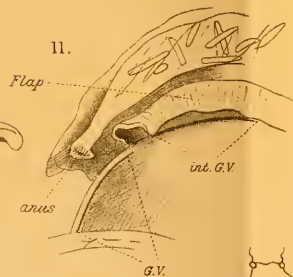
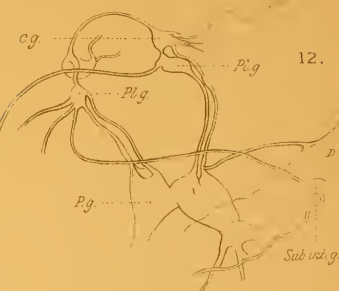
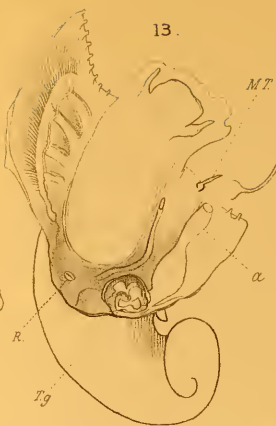
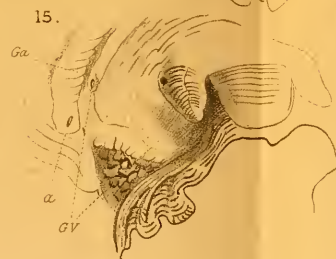
M. Episcopalis.



14.

♂ x 4 os. b.p. c. G.V. x

M. Episcopalis



M. Episcopalis.



T. Rufofilosa



DIAGRAM I.

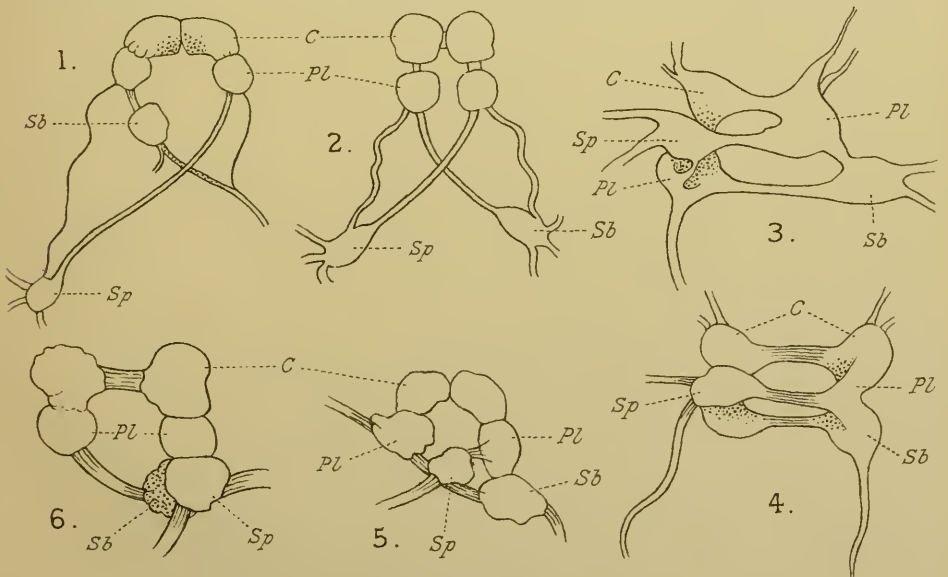
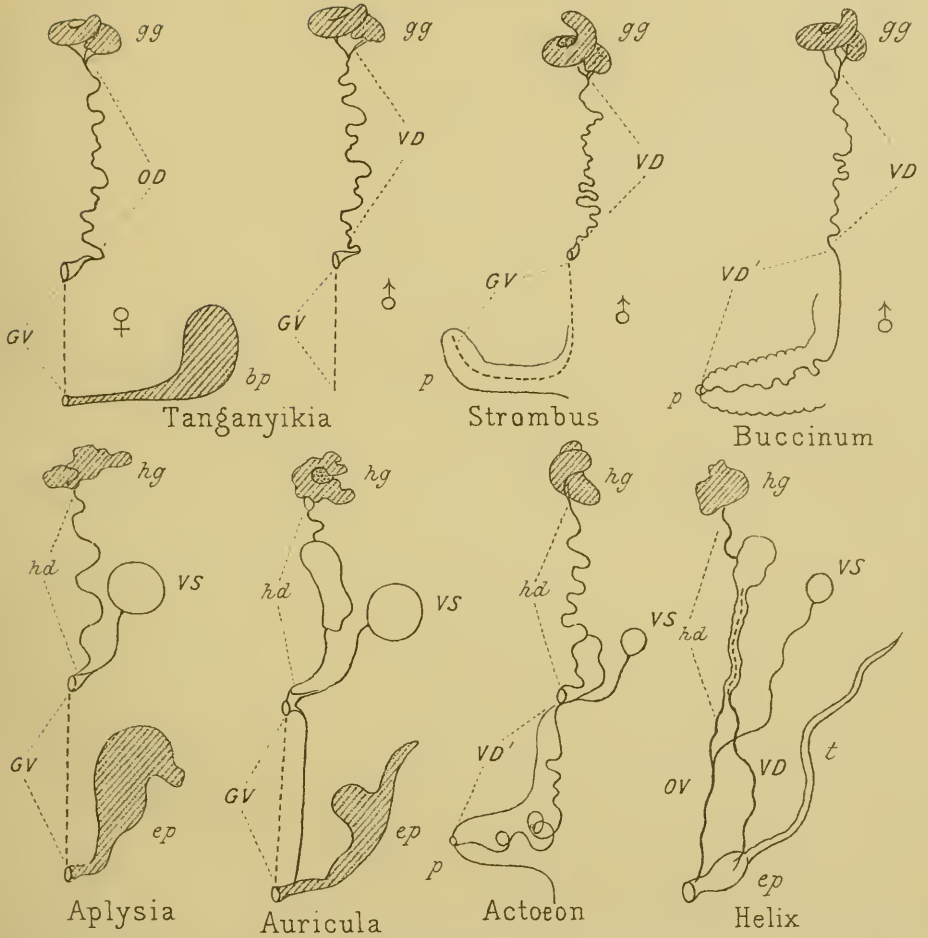
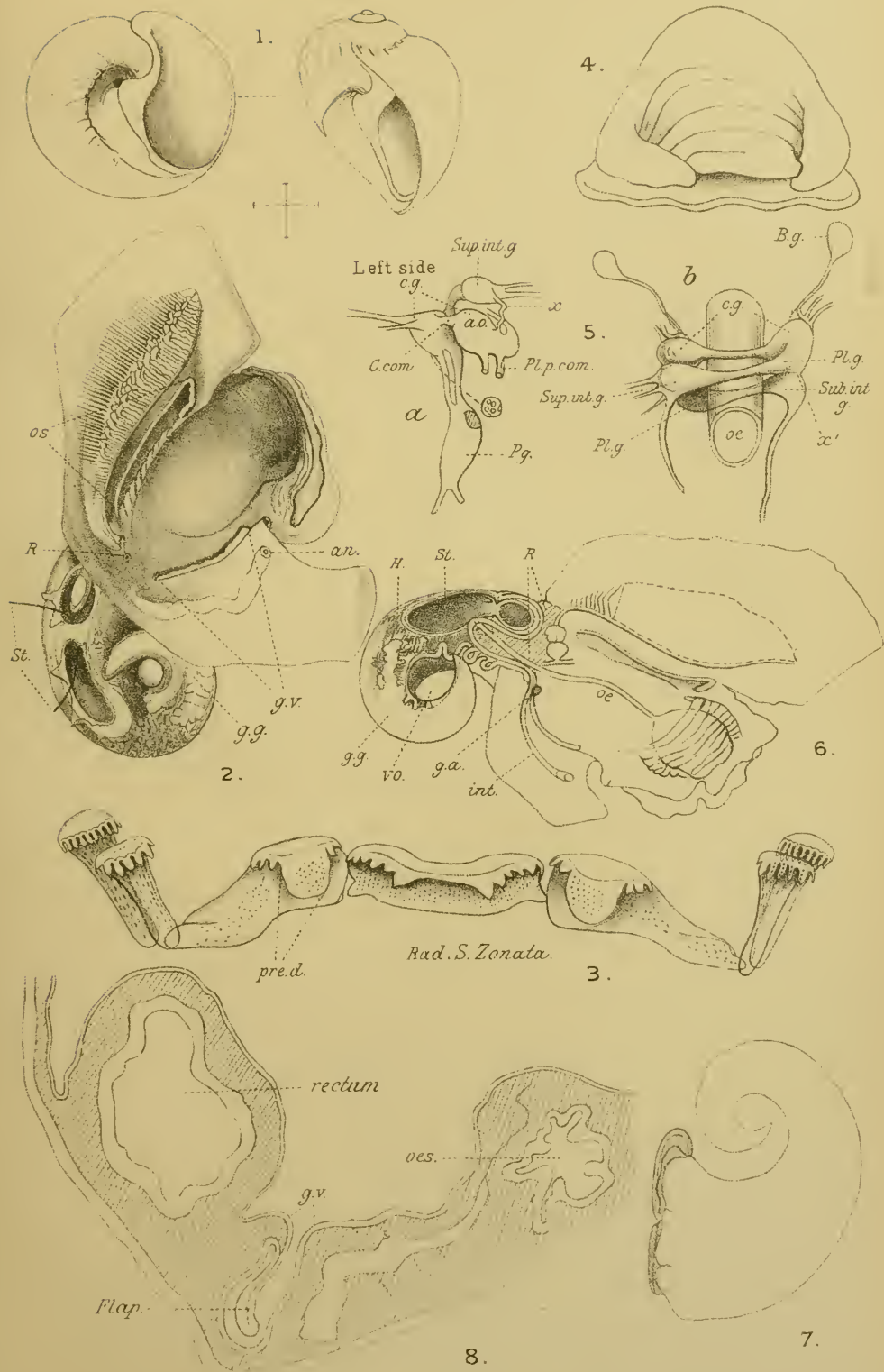
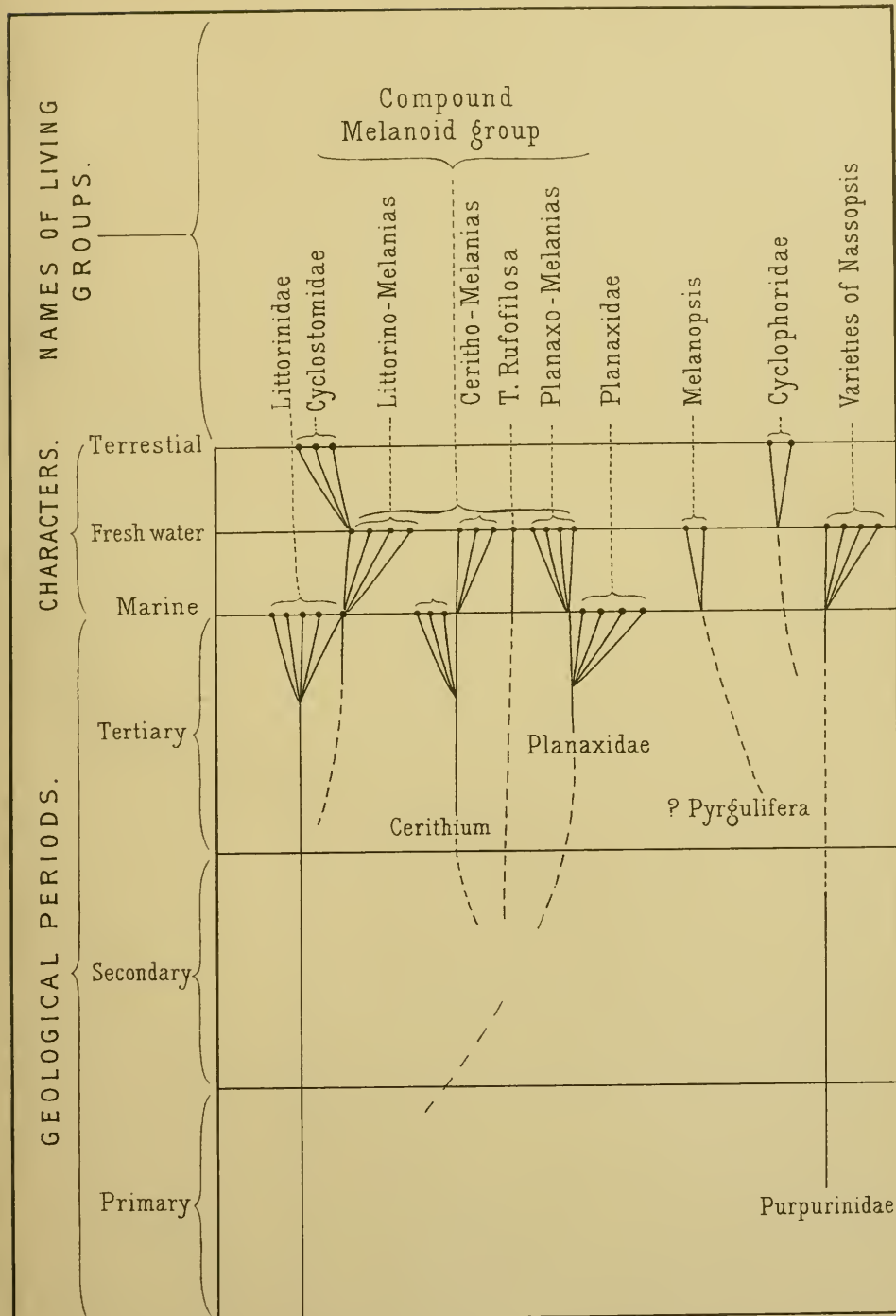
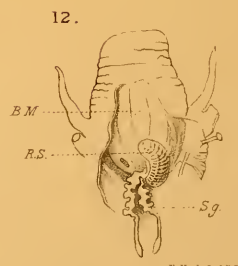
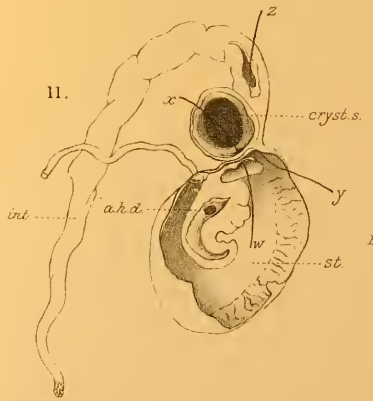
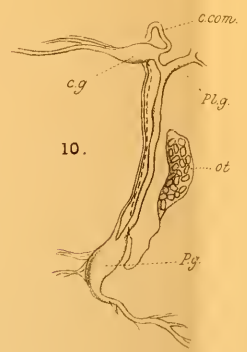
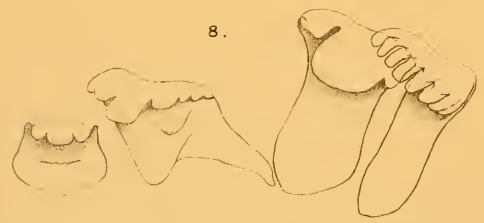
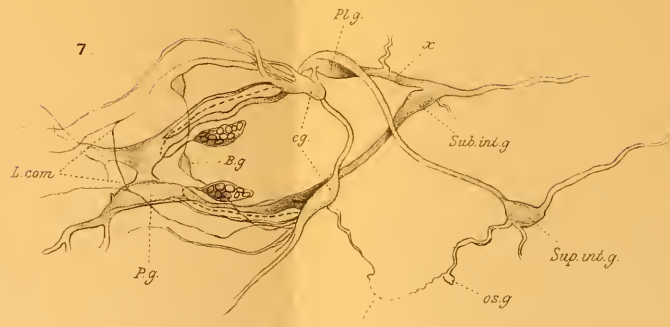
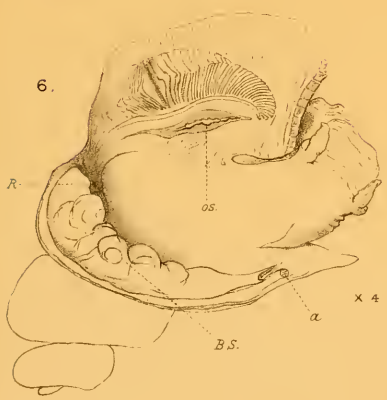
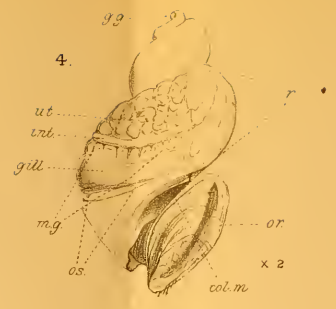
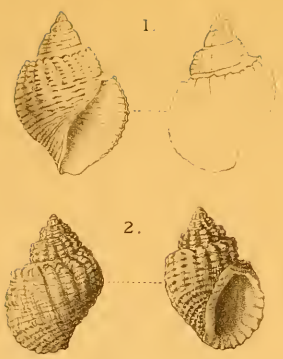


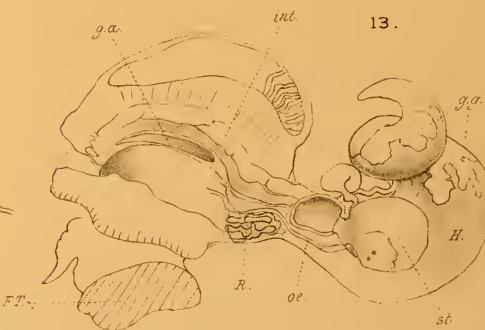
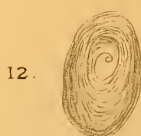
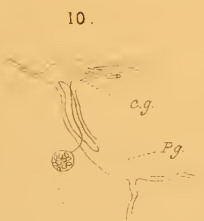
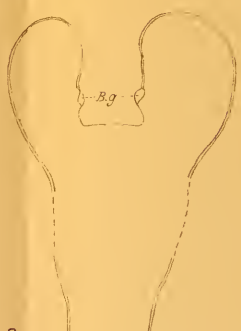
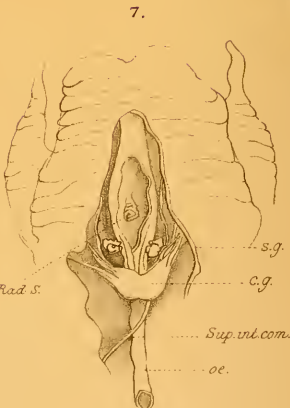
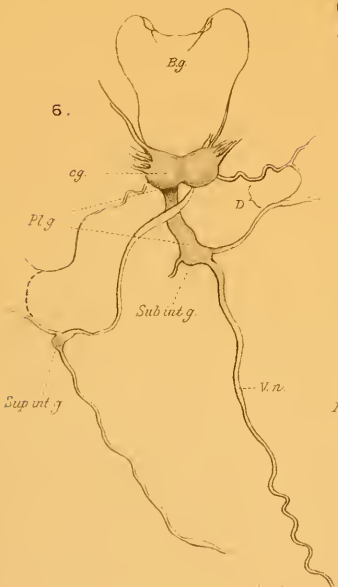
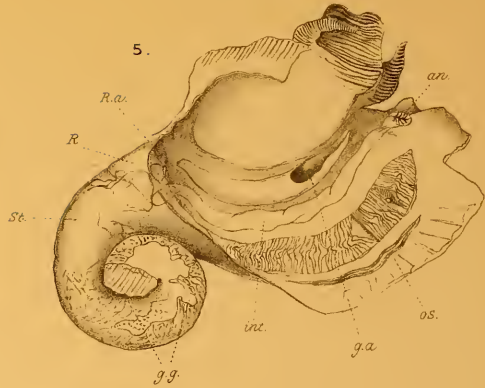
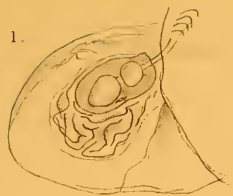
DIAGRAM II.



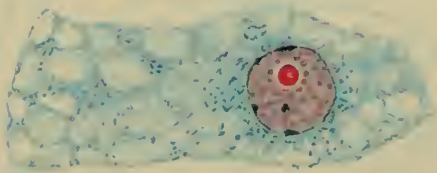


Scheme shewing the apparent phylogenetic origin of some existing fresh-water groups.

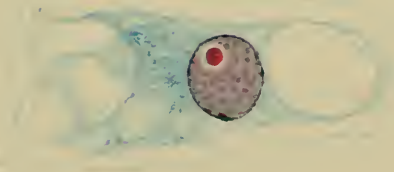




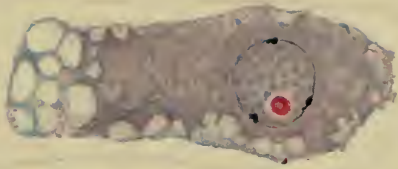
1.



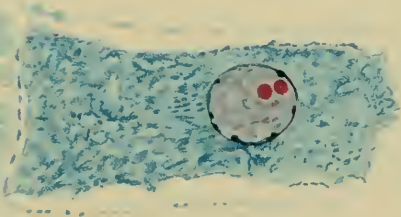
2.



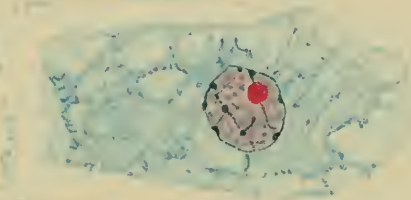
3.



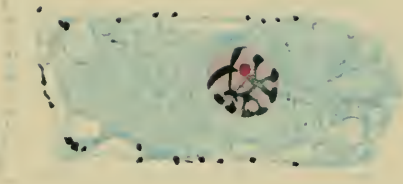
4.



5.



6.



7.



8.



9.



10^a.



10^b.



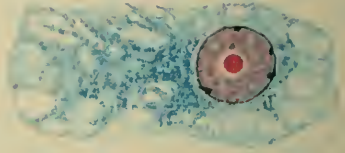
11.



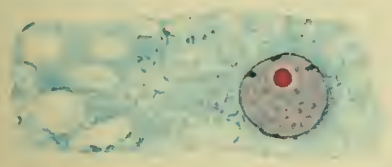
12.



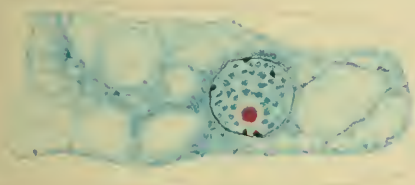
15.



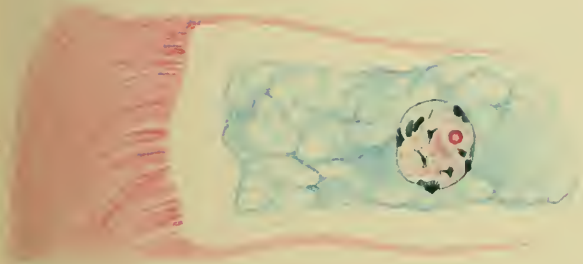
19.



18.



17.



16.



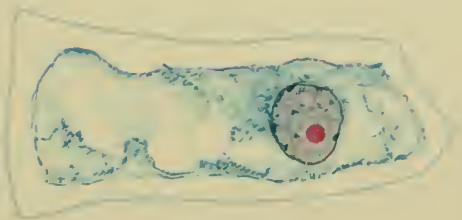
15.



14.



20.



21.



22a



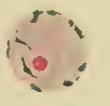
22b



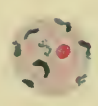
25.



24.



25.



26.



27.



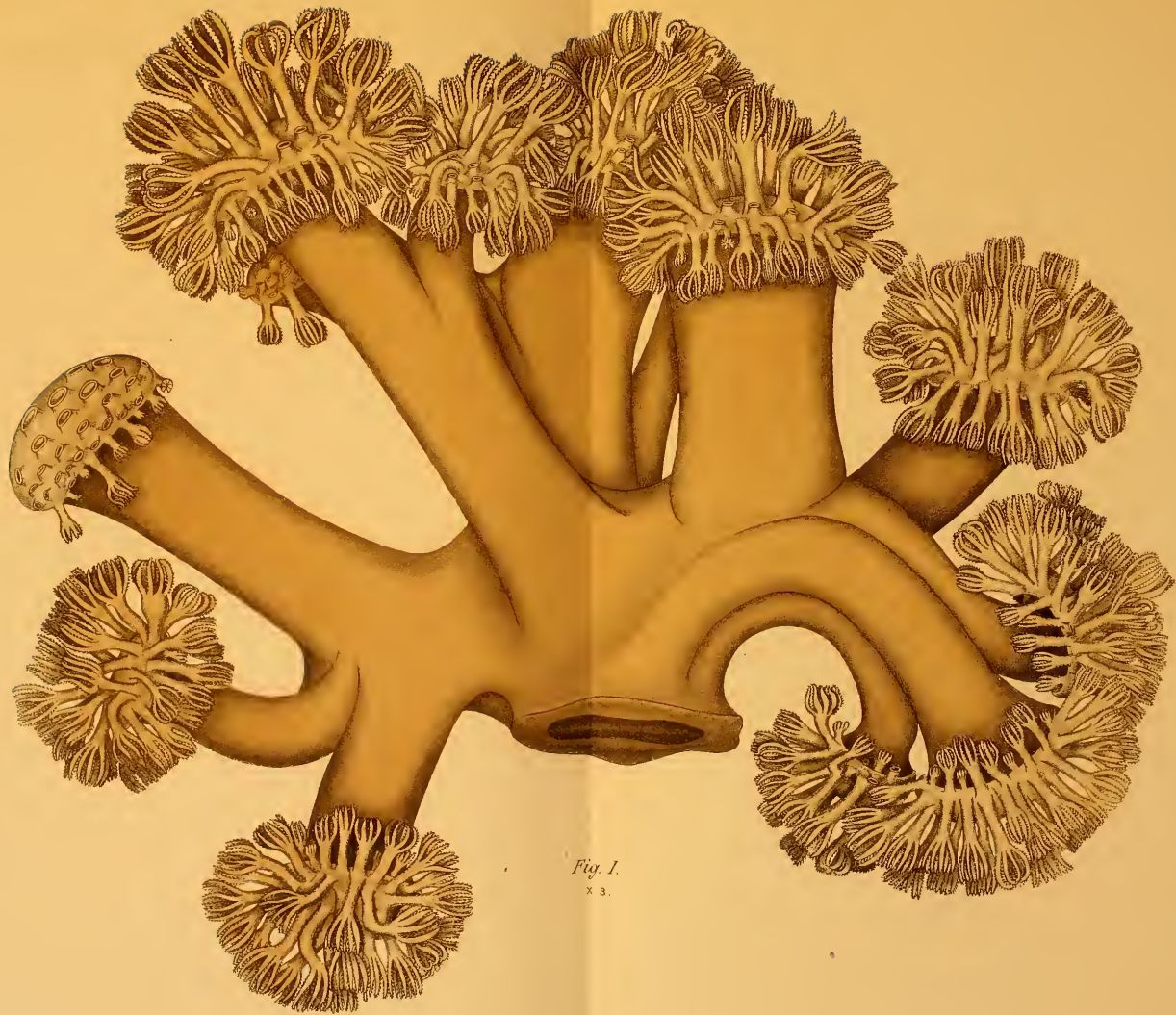


Fig. 1.
x 3.



Fig. 2.



B



A



D



C

Fig. 3.



Fig. 5.



Fig. 7. A



Fig. 7.

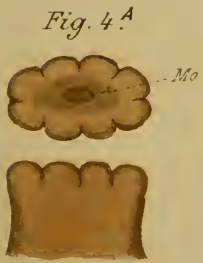


Fig. 4. A



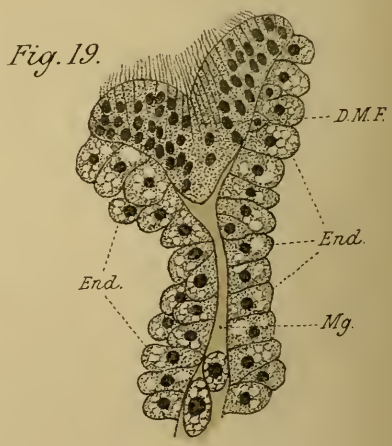
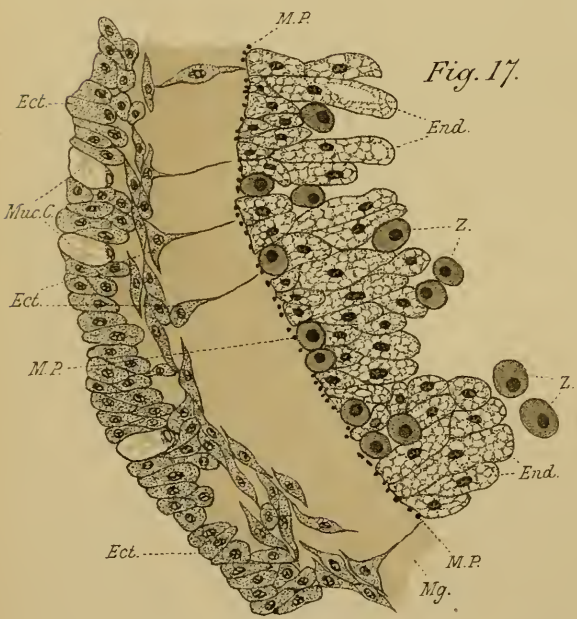
Fig. 4.

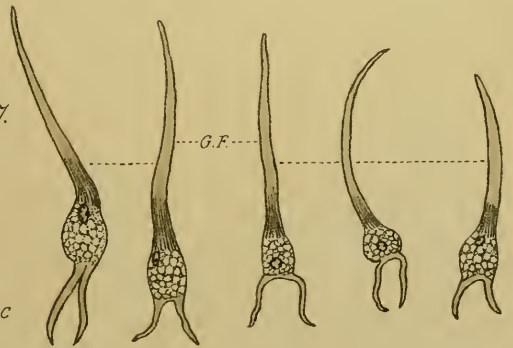
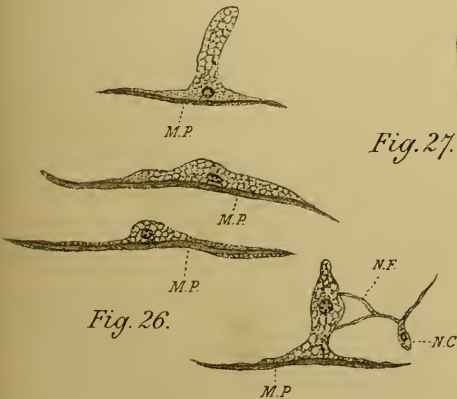
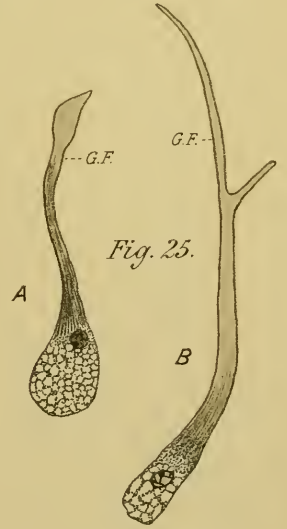
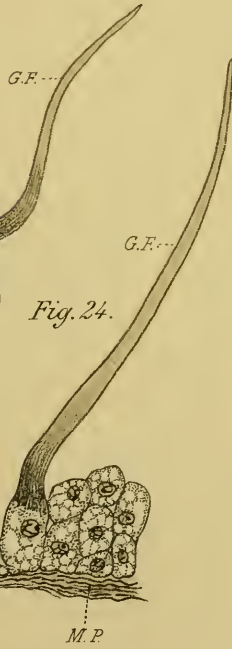
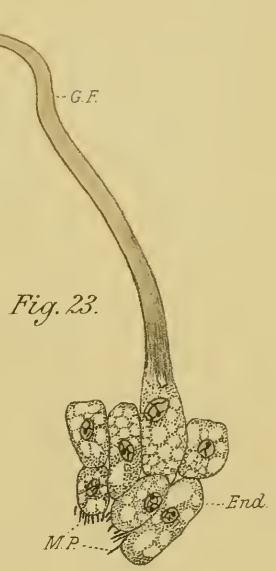
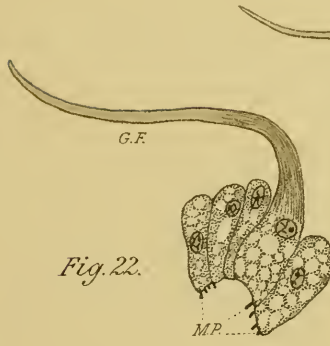


Fig. 6.



Fig. 6. A





27.



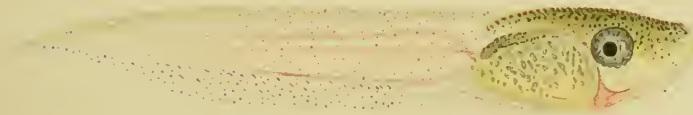
28.



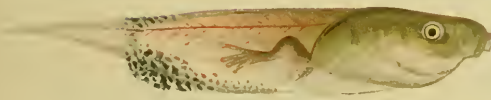
29.



30.



31.



35.



32.



33.



34.

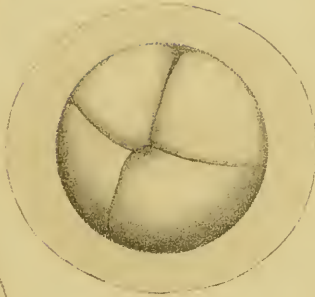




1.



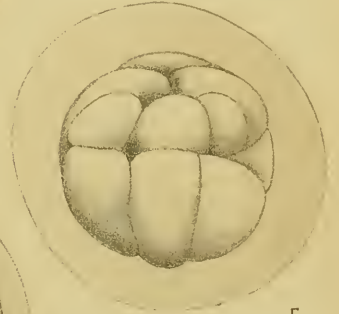
3.



2.



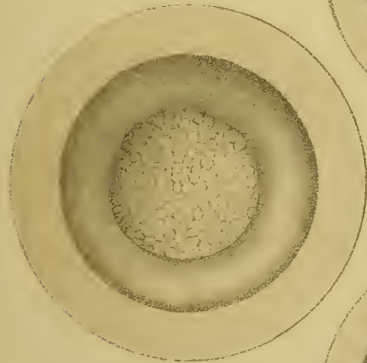
4.



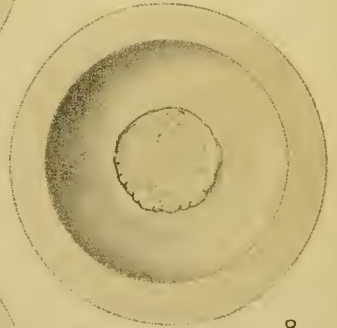
5.



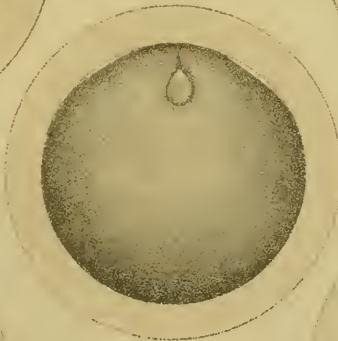
6.



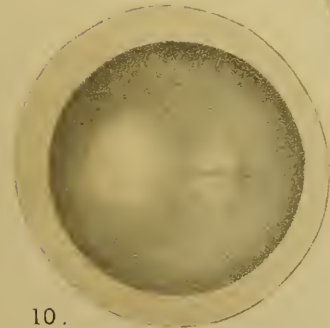
7.



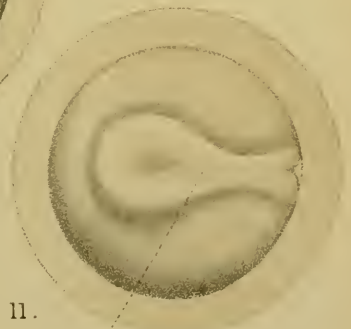
8.



9.



10.



11.

prim. stk.



12.



13.



14.

3rd Brf
p.n.
mes. s. m.



15.



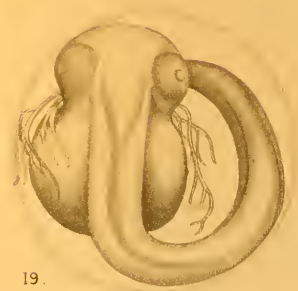
16.



17.



18.



19.



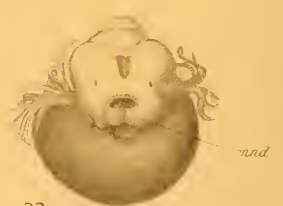
Stem.

20.



21.

mnd
td



22.

mnd



23.



24.

ht



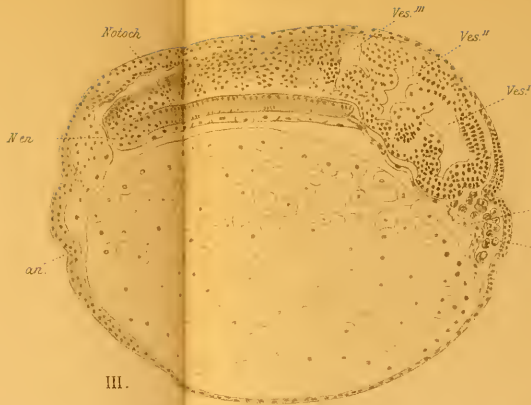
25.



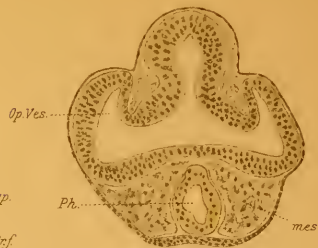
26.



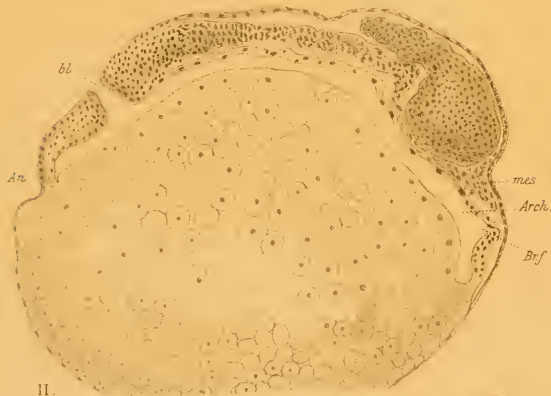
I.



III.



V.



II.



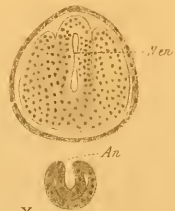
IV.



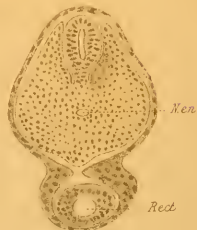
VI.



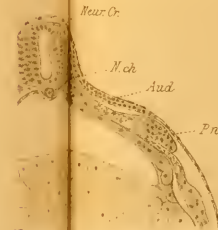
XI.



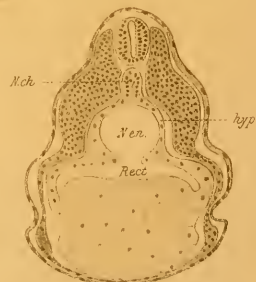
X.



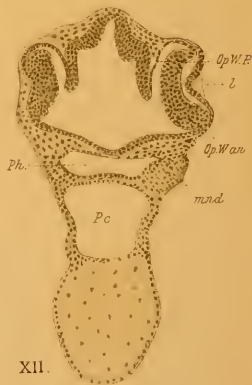
IX.



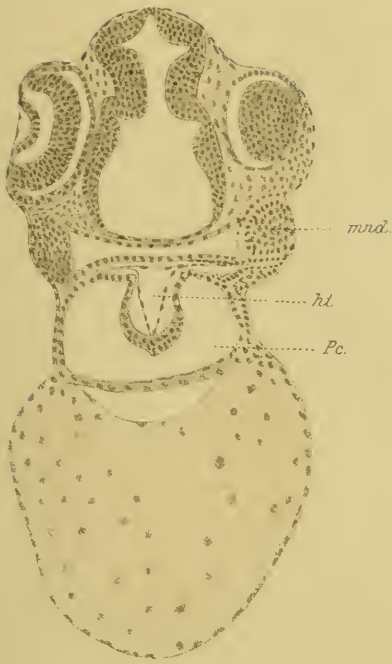
VII.



VIII.



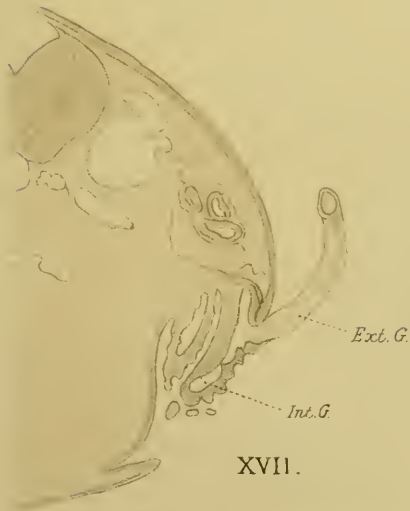
XII.



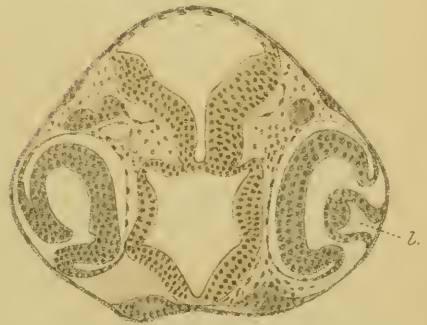
XIII.



XIV.



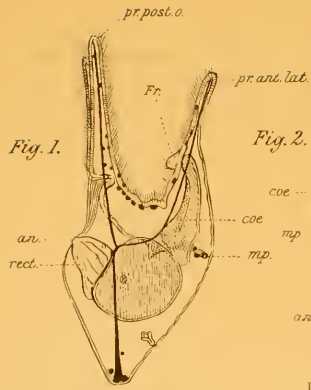
XVII.



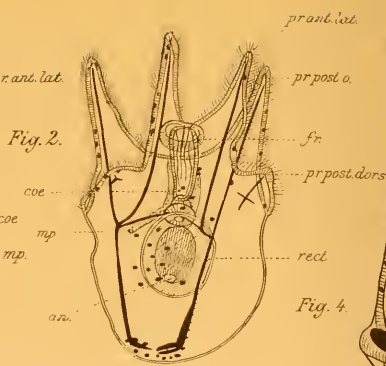
XV.



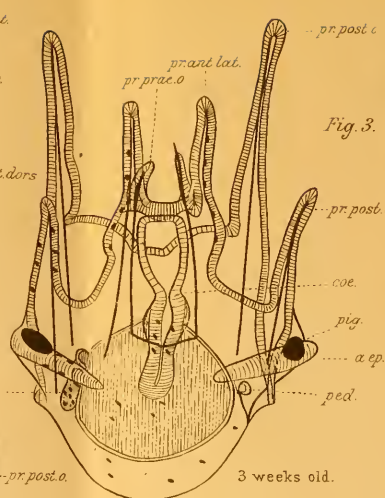
XVI.



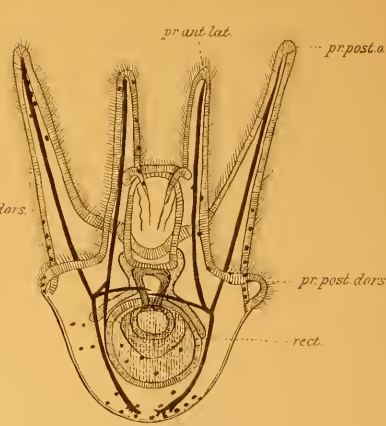
Larva of *Echinus miliaris*
6 days old.



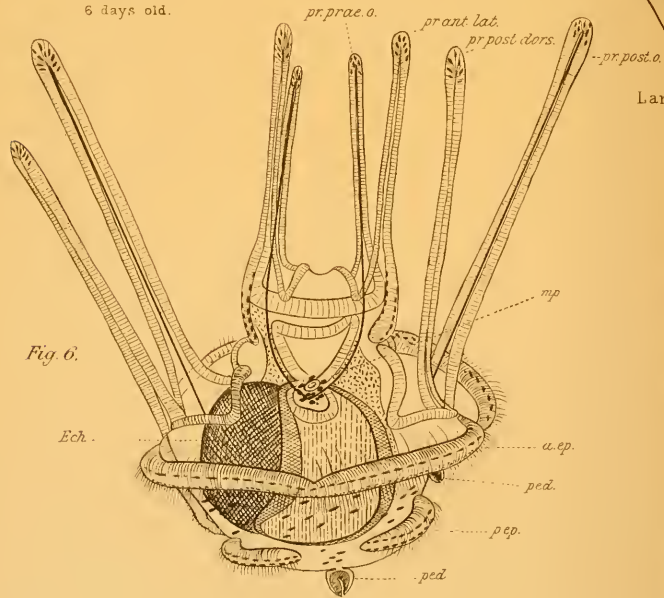
Larva of *Echinus miliaris*
in the 2nd week



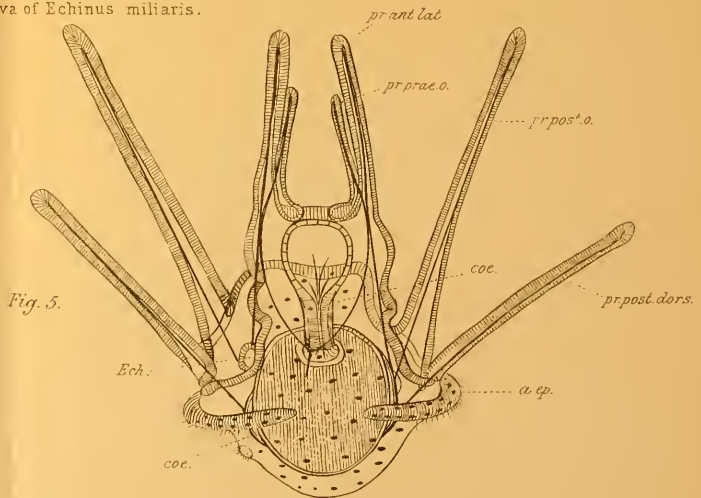
Larva of *Echinus miliaris*.



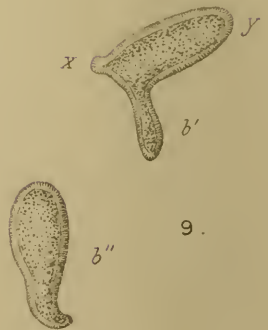
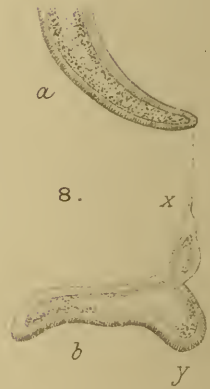
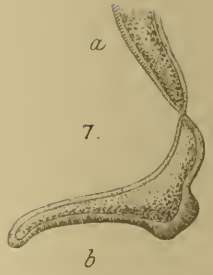
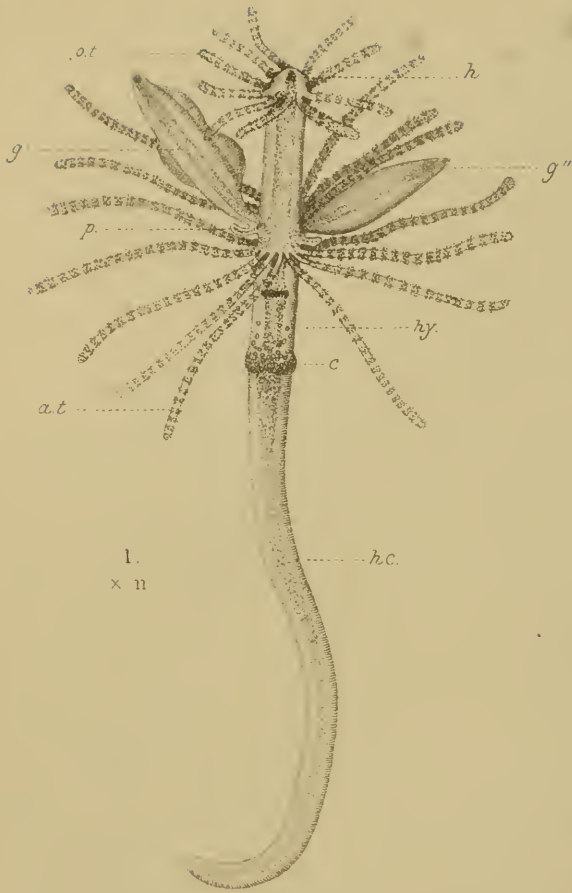
Larva of *Echinus esculentus*
7 days old.

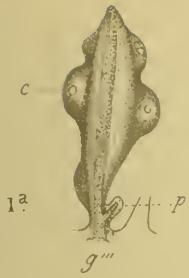


Larva of *Echinus esculentus*
4 weeks old.

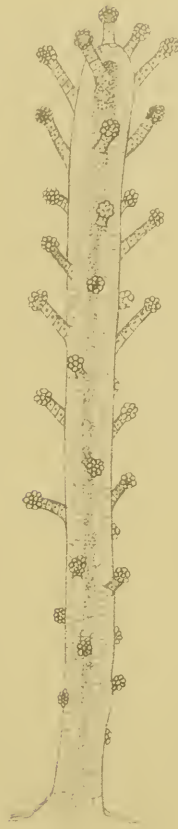


Larva of *Echinus esculentus*
3 weeks old.

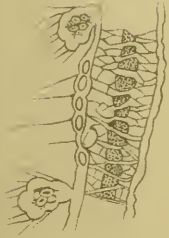




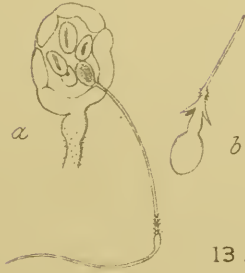
10.



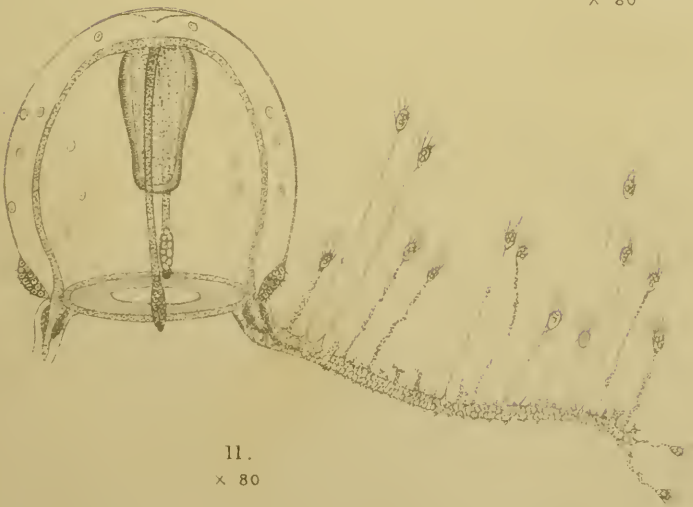
12.
X 80



14.
X 256

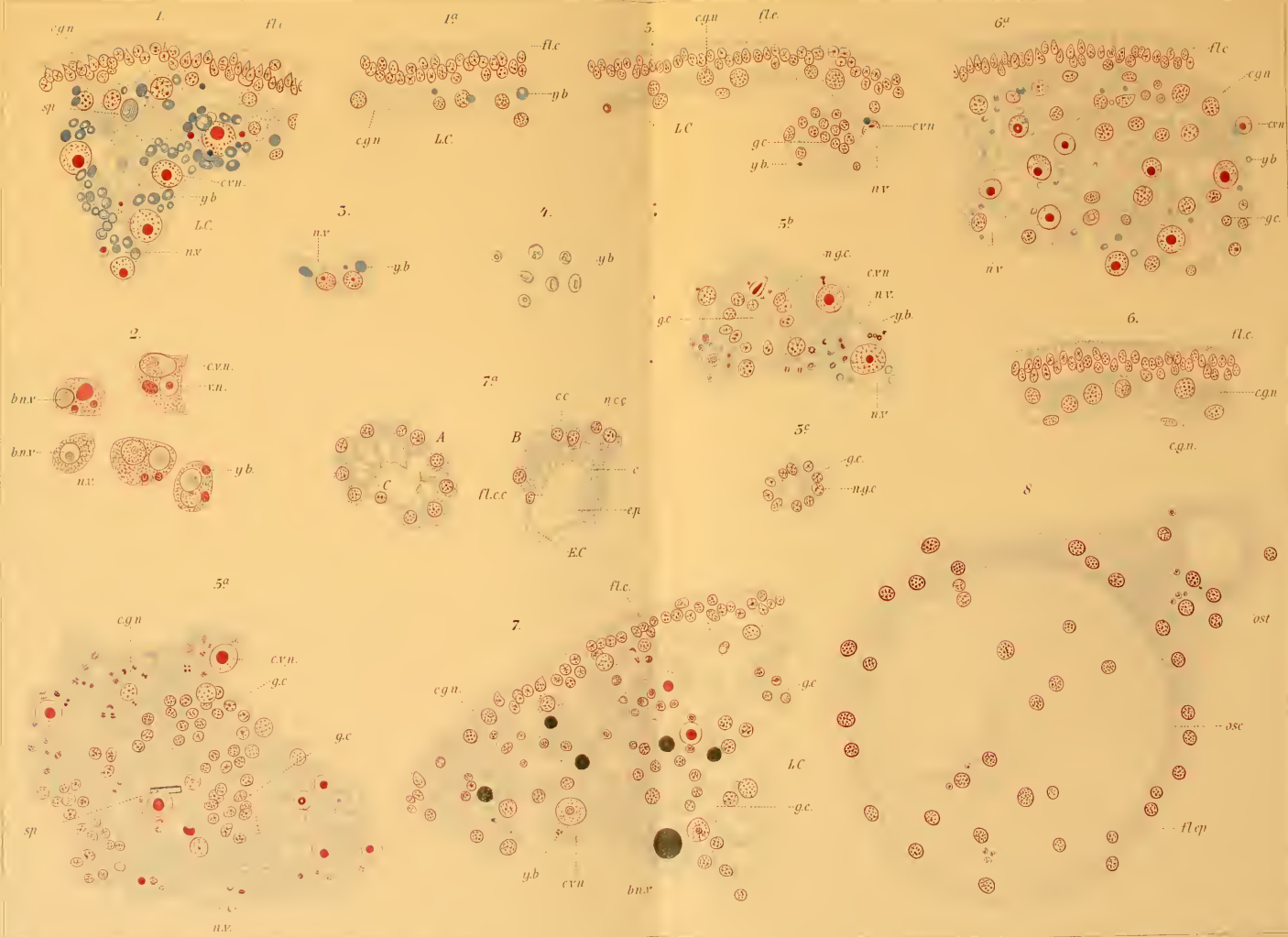


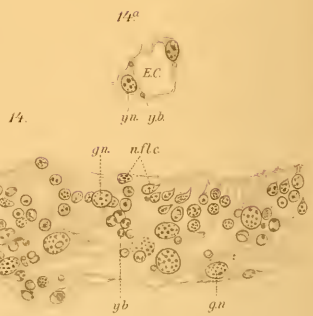
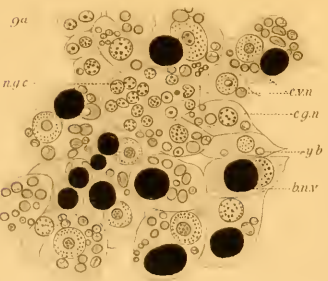
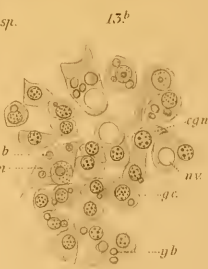
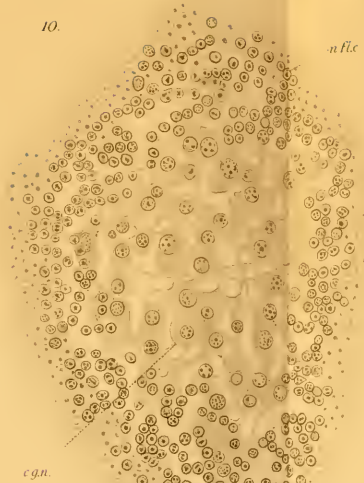
13.
X 450

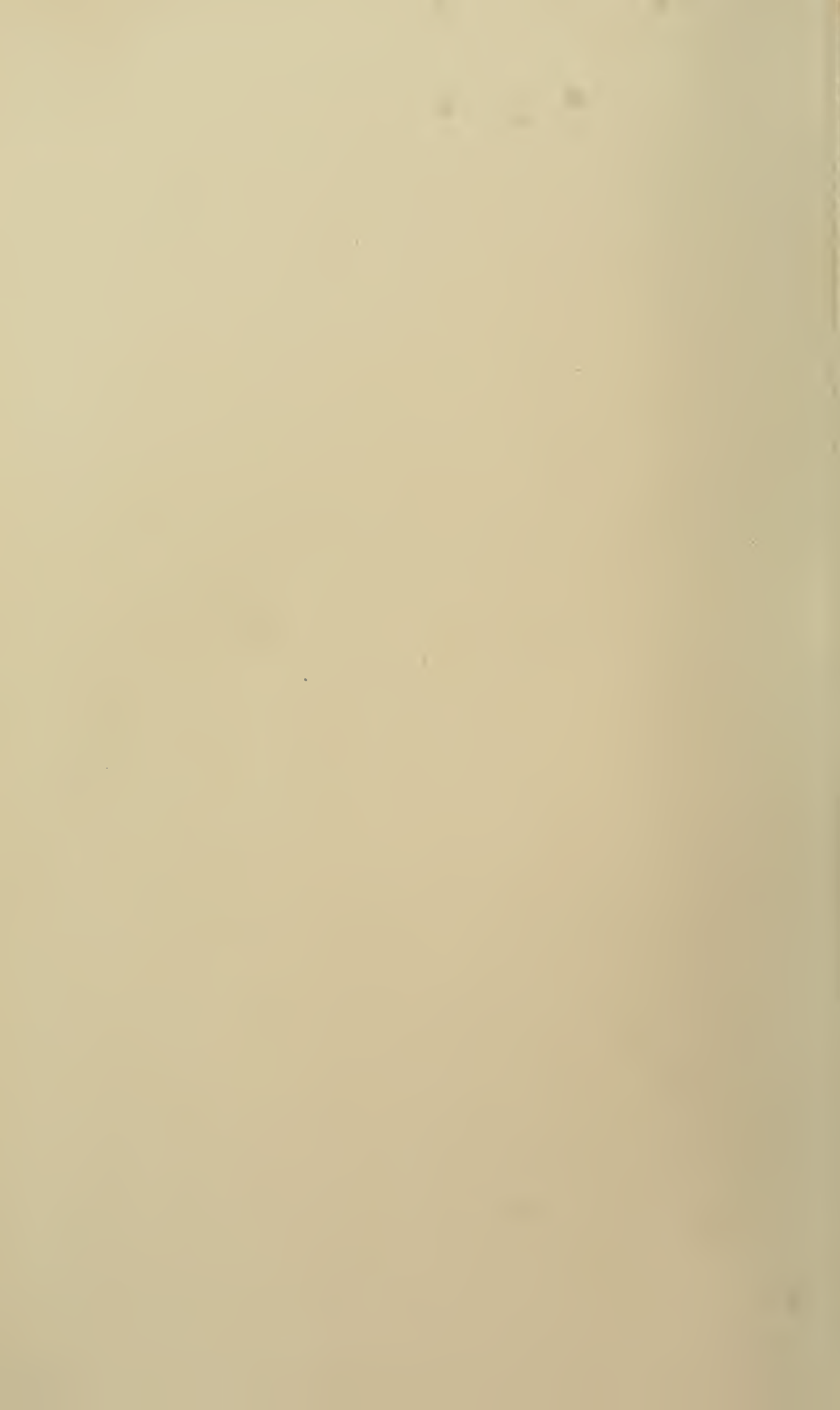


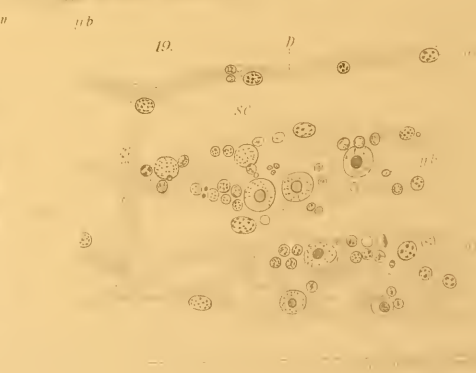
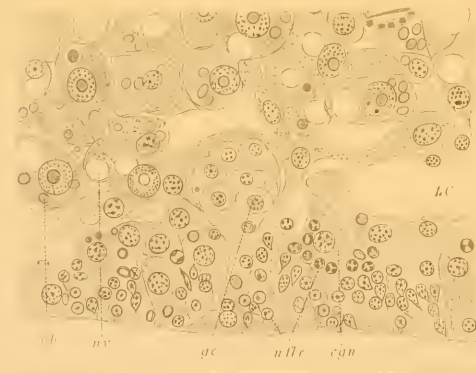
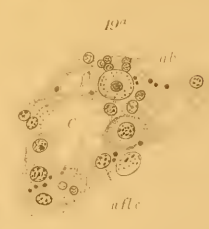
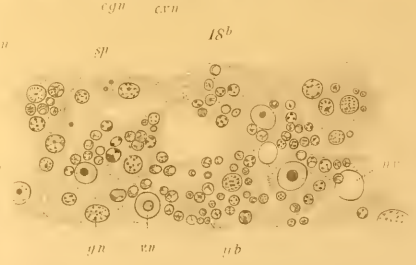
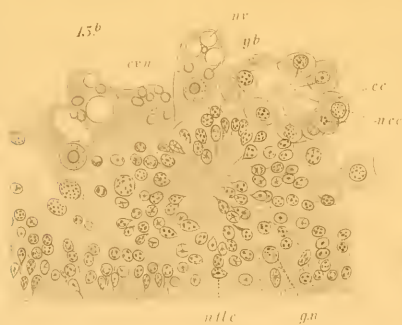
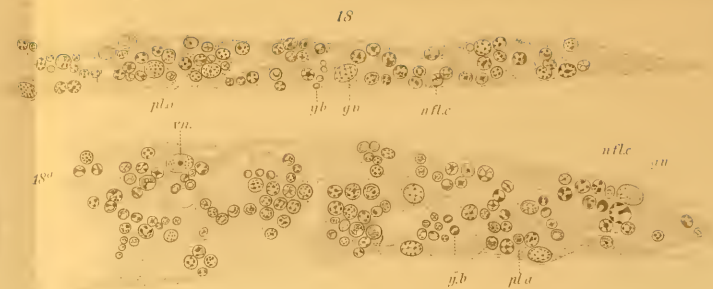
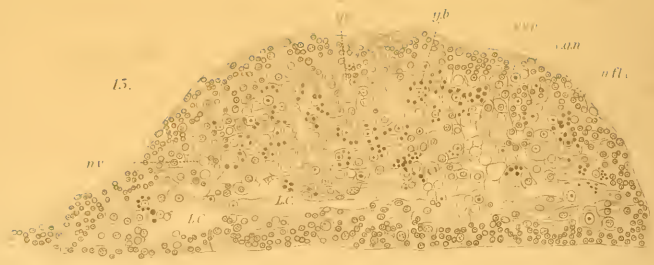
11.
X 80





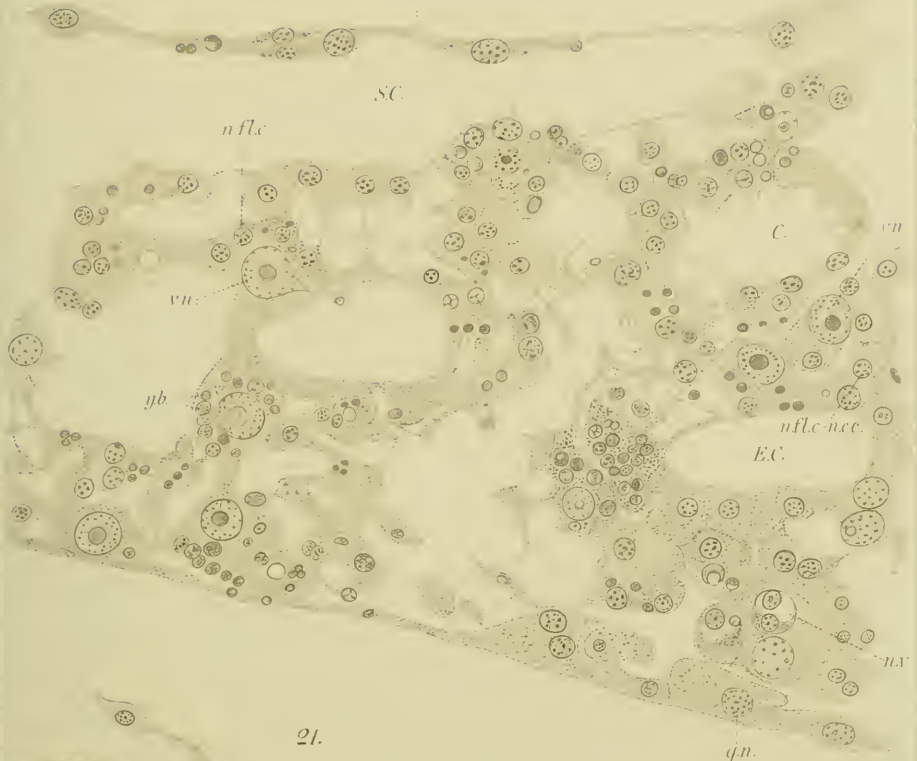




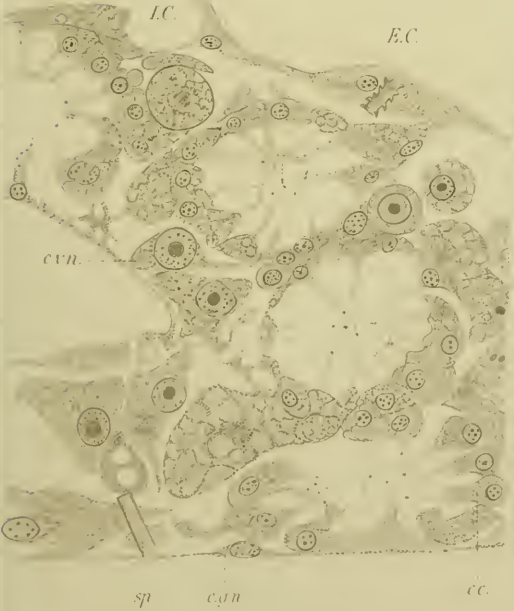


20.

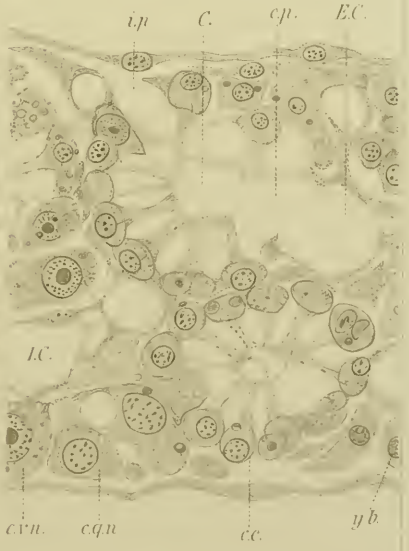
D



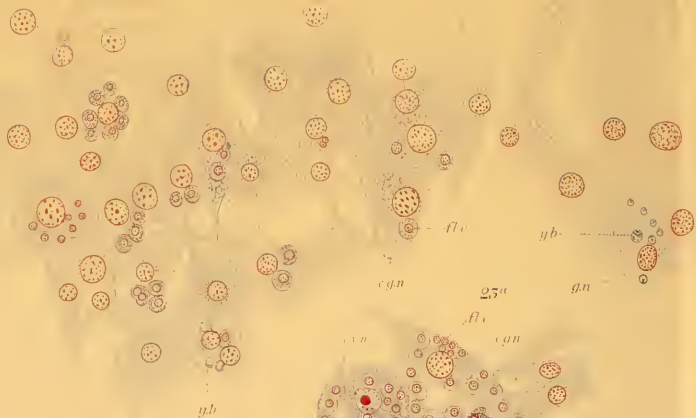
21.



22.

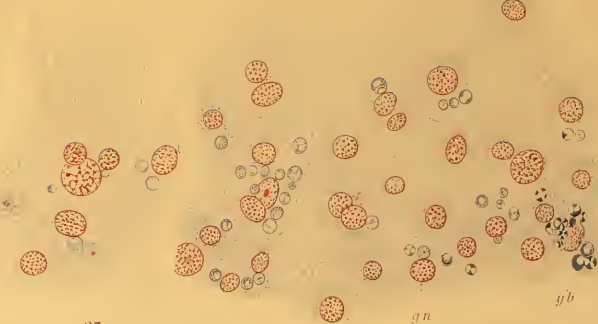


25



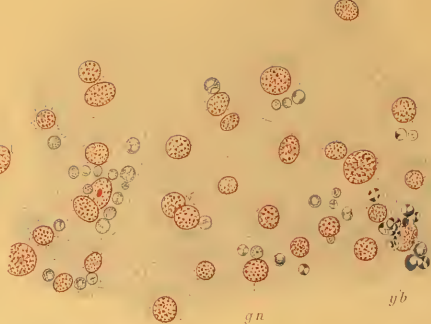
24

M

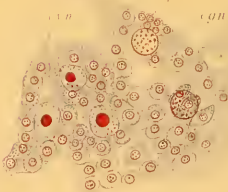


24'

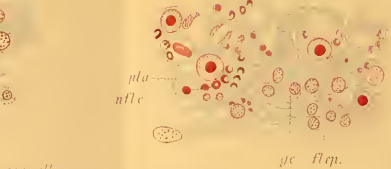
M



28.

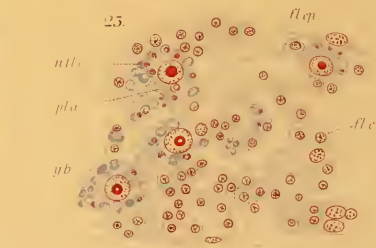
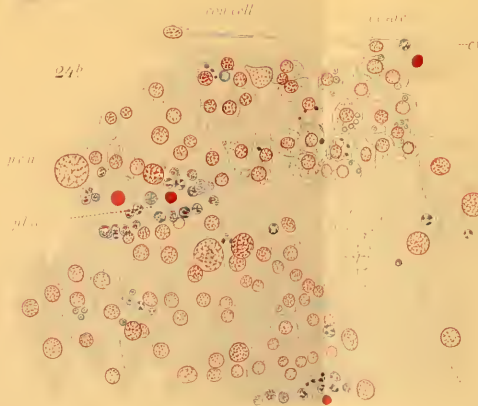


25a



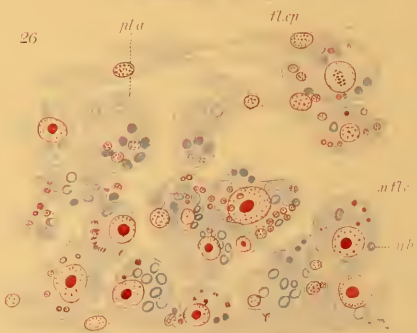
27.

24b

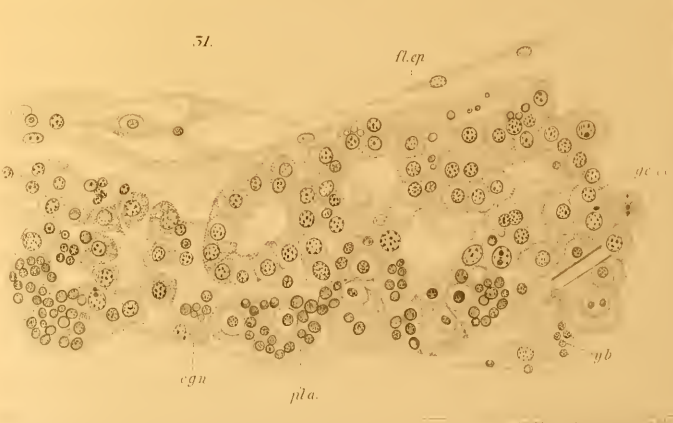
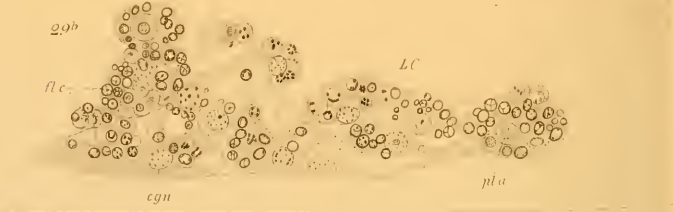
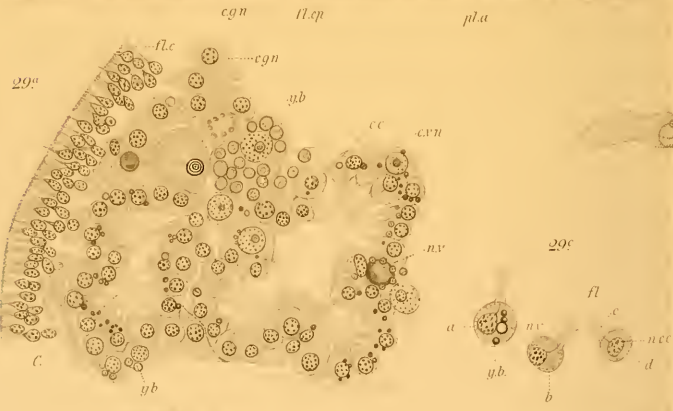
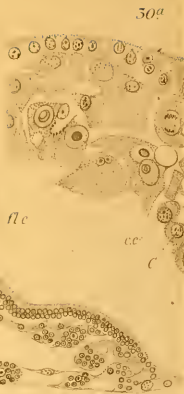
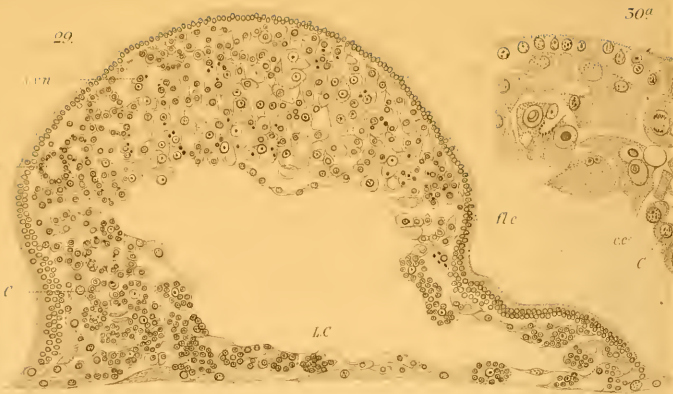


25.

26



D



56^d



57^b



56^c



57^a



56^b



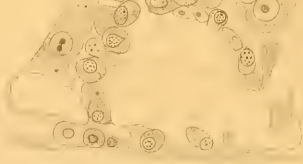
56^a



52^(c)



52^(d)



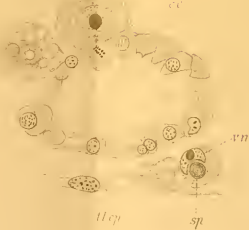
52^(b)



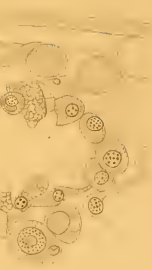
52^(a)



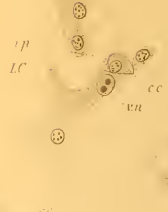
55



55



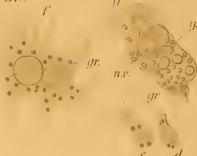
54



55



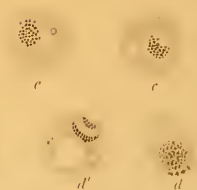
58



59



50



51



52



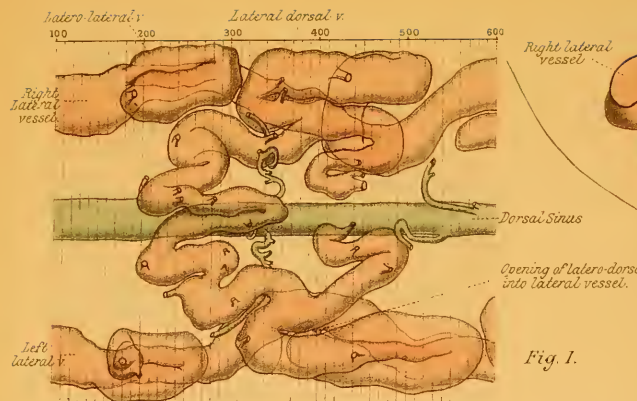


Fig. 1.



Fig. 2.

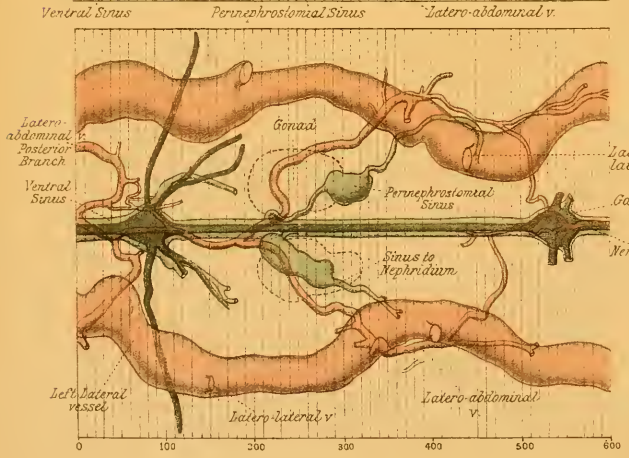


Fig. 3.

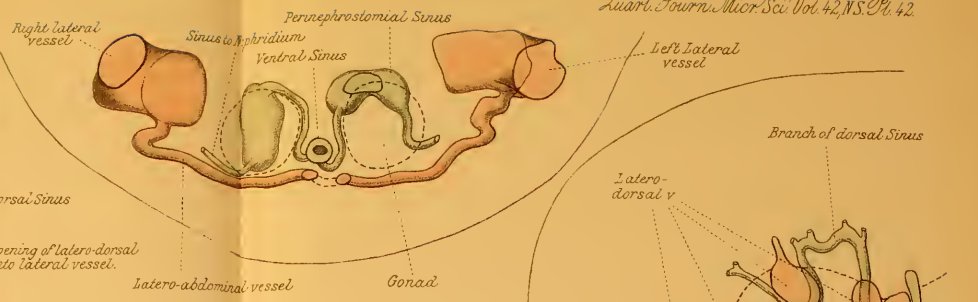


Fig. 5.

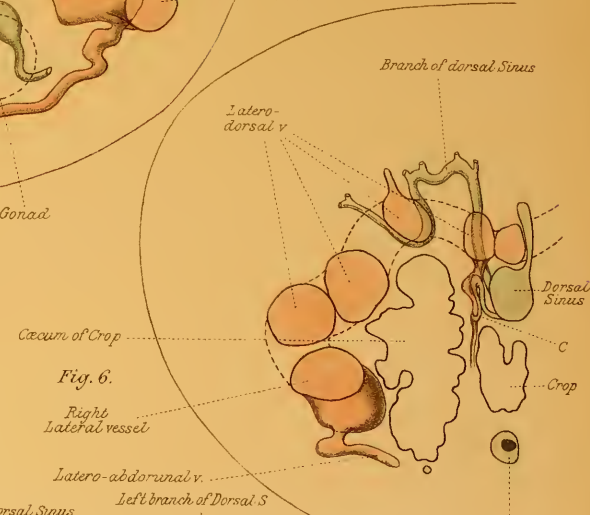


Fig. 6.

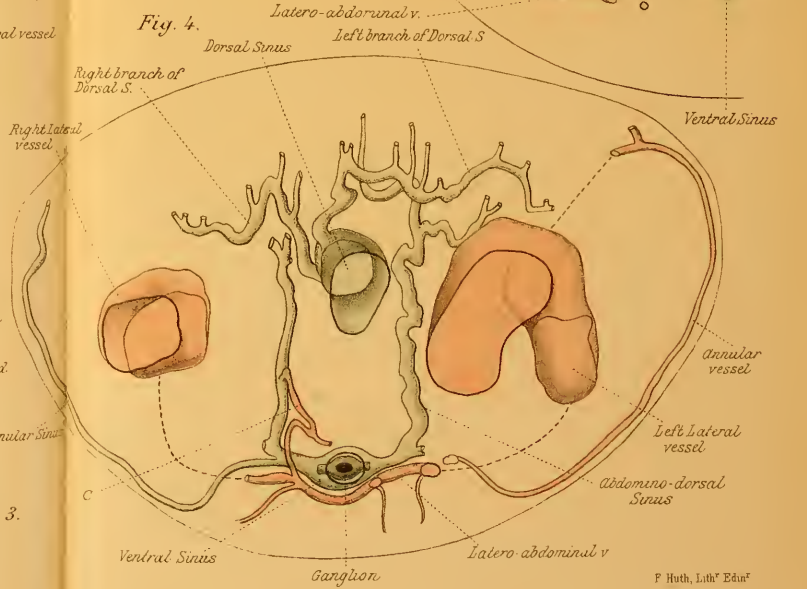


Fig. 4.

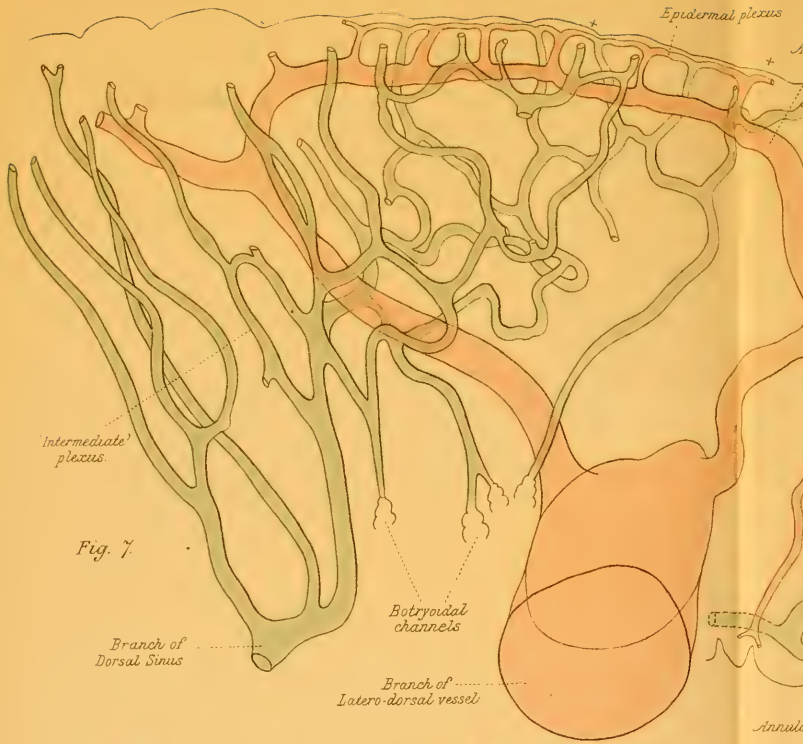


Fig. 7.

Fig. 8.



Fig. 9.



Fig. 12.

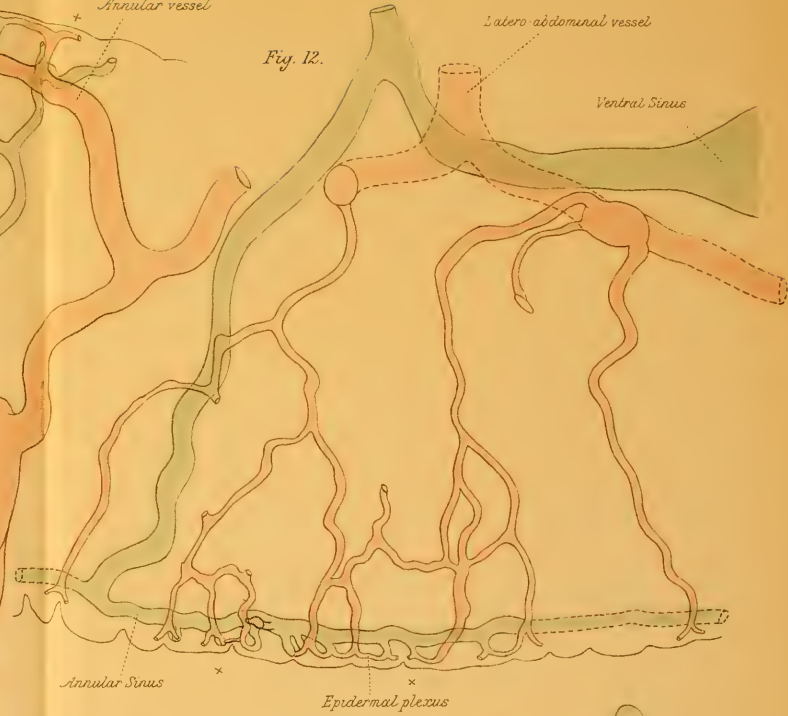


Fig. 10.



Fig. 11.



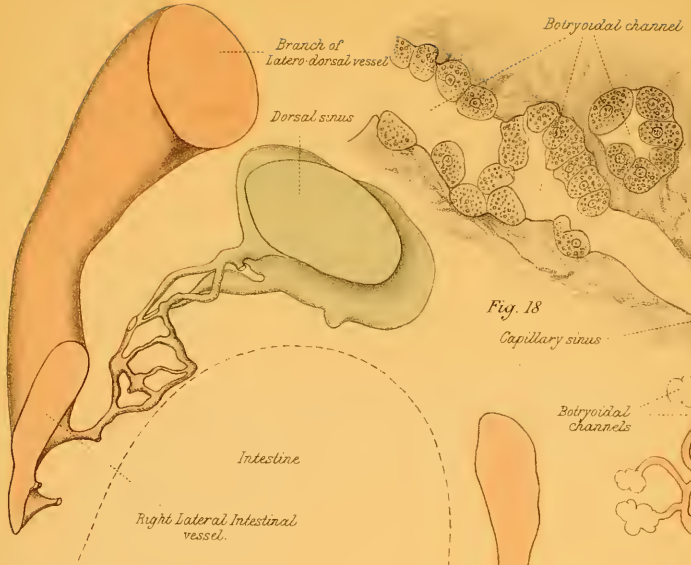


Fig. 15.

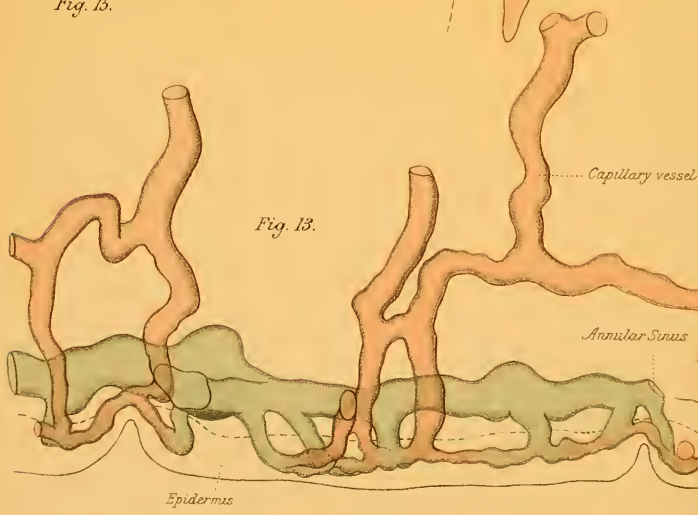


Fig. 13.

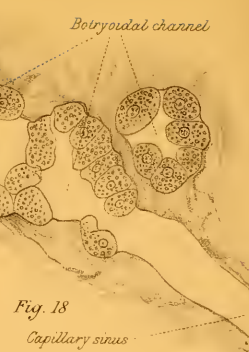


Fig. 18

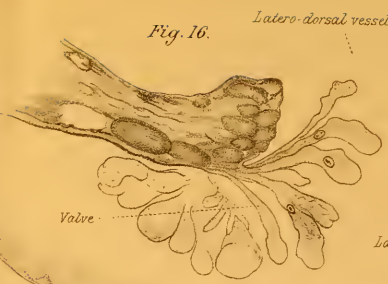


Fig. 16.

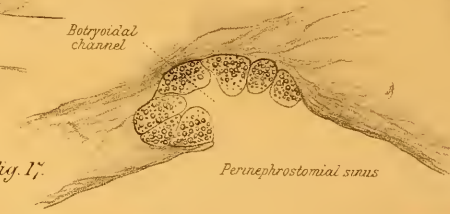


Fig. 17.

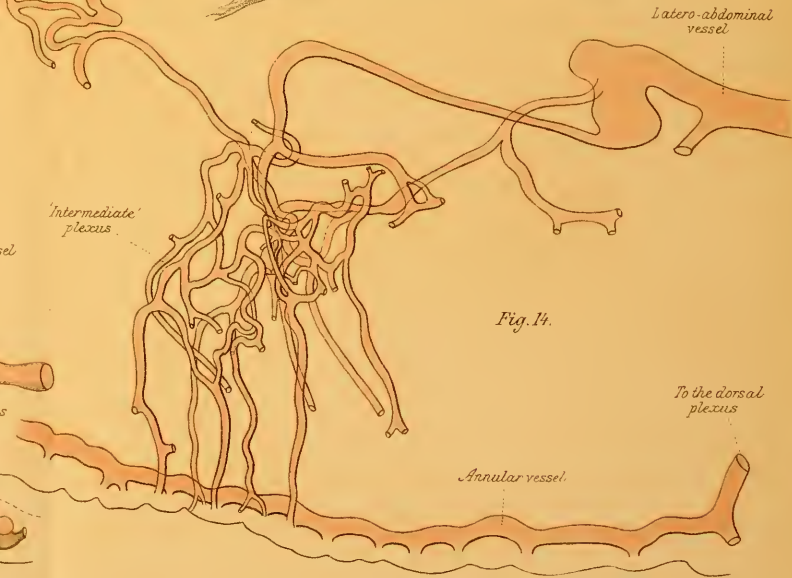


Fig. 14.



Fig. 1.



Fig. 2.

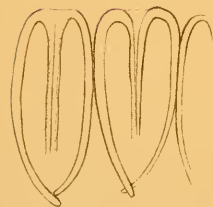


Fig. 3.

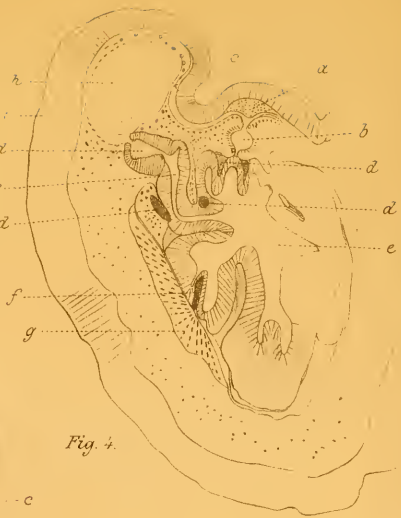


Fig. 4.



Fig. 7.



Fig. 5.



Fig. 8.

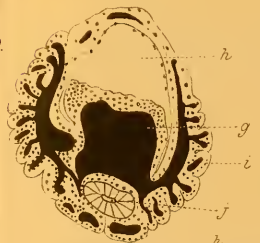


Fig. 9.

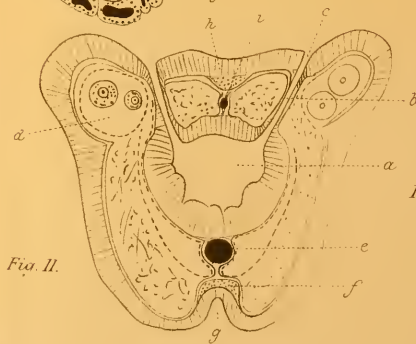


Fig. 11.



Fig. 6.



Fig. 10.

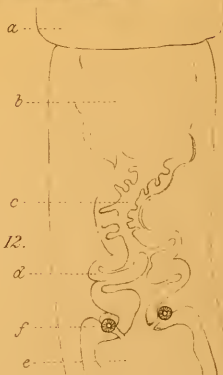
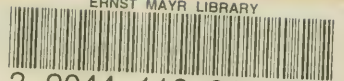


Fig. 12.

ERNST MAYR LIBRARY



3 2044 110 319 860

Date Due

~~AUG 01 1984~~

