

QUA 6204

207.8

1449 VOL-36

1-21

Library of the Museum

OF

COMPARATIVE ZOÖLOGY,

AT HARVARD COLLEGE, CAMBRIDGE, MASS.

Founded by private subscription, in 1861.



Deposited by ALEX. AGASSIZ.

No. 7527.

June 7 - Oct. 4, 1894

New Series, No. 141 (Vol. 36, Part 1).

Price 10s.

APRIL, 1894.

7524

1779

1-21

THE

QUARTERLY JOURNAL

OF

MICROSCOPICAL SCIENCE.

Special Complimentary Number

DEDICATED BY HIS COLLEAGUES

TO

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

In Celebration of the Completion of Twenty-five Years
of Editorship.

EDITED BY

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

Fellow and Lecturer 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;
Fellow of St. John's College, Cambridge.*

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

1894.

CONTENTS OF No. 141.—New Series.

MEMOIRS :

	PAGE
A Contribution to the Morphology of Bacteria. By E. KLEIN, M.D., F.R.S., Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital Medical School. (With Plate 1) . . .	1
On Certain Points in the Development and Anatomy of some Earthworms. By ALFRED GIBBS BOURNE, D.Sc., Professor of Biology in the Presidency College, Madras. (With Plates 2—5) . . .	11
On the Law of Development commonly known as von Baer's Law ; and on the Significance of Ancestral Rudiments in Embryonic Development. By ADAM SEDGWICK, M.A., F.R.S. . . .	35
A Contribution to our Knowledge of the Annelida.—On some Points in the Structure of Euphrosyne. On Certain Young Stages in Magelona, and on Claparède's unknown Larval Spio. By W. C. McINTOSH, Marine Laboratory, St. Andrew's. (With Plates 6—8)	53
Spolia Nemoris. By A. A. W. HUBRECHT, LL.D., C.M.Z.S., Professor of Zoology in the University of Utrecht. (With Plates 9—12)	77

2

265.8

New Series, No. 142 (Vol. 36, Part 2).

1449
1-21

Price 10s.

7527

JUNE, 1894.

AUG 24 1894

THE
 QUARTERLY JOURNAL
 OF
 MICROSCOPICAL SCIENCE.

EDITED BY

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

*Linacre Professor of Comparative Anatomy, Fellow of Merton College, and Honorary
Fellow of Exeter College, Oxford.*

WITH THE CO-OPERATION OF

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

Fellow and Lecturer 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;
Fellow of St. John's College, Cambridge.*

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON:

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

1894.



CONTENTS OF No. 142.—New Series.

MEMOIRS:

	PAGE
Studies on the Comparative Anatomy of Sponges. VI.—On the Anatomy and Relationships of <i>Lelapia australis</i> , a Living Representative of the Fossil Pharetrones. By ARTHUR DENDY, D.Sc. (With Plate 13)	127
The Structure of the Bill and Hairs of <i>Ornithorhynchus paradoxus</i> ; with a Discussion of the Homologies and Origin of Mammalian Hair. By EDWARD B. POULTON, M.A., F.R.S., &c., Hope Professor of Zoology in the University of Oxford. (With Plates 14, 15, and 15A)	143
A Contribution to our Knowledge of the Oligochæta of Tropical Eastern Africa. By FRANK E. BEDDARD, M.A., F.R.S., Prosector to the Zoological Society of London. (With Plates 16 and 17)	201
A Further Contribution to the Anatomy of <i>Limnocnida tanyicæ</i> . By R. T. GÜNTHER, B.A., Lecturer of Magdalen College, Oxford. (With Plates 18 and 19)	271
Notes on the Minute Structure of <i>Pelomyxa palustris</i> (Greeff). By LILIAN J. GOULD, Hall Scholar, Somerville Hall, Oxford. (With Plates 20 and 21)	295

3
905.2
4527
New Series, No. 143 (Vol. 36, Part 3).

Price 10s.

JULY, 1894.

THE
QUARTERLY JOURNAL
OF
MICROSCOPICAL SCIENCE.

EDITED BY

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

*Linacre Professor of Comparative Anatomy, Fellow of Merton College, and Honorary
Fellow of Exeter College, Oxford.*

WITH THE CO-OPERATION OF

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

Fellow and Lecturer 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;
Fellow of St. John's College, Cambridge.*

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON :

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

1894.

CONTENTS OF No. 143.—New Series.

MEMOIRS:

	PAGE
On <i>Moniligaster grandis</i> , A. G. B., from the Nilgiris, S. India ; together with Descriptions of other Species of the Genus <i>Monili-</i> <i>gaster</i> . By ALFRED GIBBS BOURNE, D.Sc.Lond., Professor of Biology in the Presidency College, Madras. (With Plates 22—28)	307
A Review of Professor Spengel's Monograph on <i>Balanoglossus</i> . By E. W. MACBRIDE, B.A., Fellow of St. John's College, Demon- strator in Animal Morphology to the University of Cambridge. (With Plates 29 and 30)	385
Notes on a Gragarine of the Earthworm (<i>Lumbricus herculeus</i>) By WM. CECIL BOSANQUET, M.A., Fellow of New College, Oxford. (With Plate 31)	421

4

265.3

4527
1

New Series, No. 144 (Vol. 36, Part 4).

Price 10s.

AUGUST, 1894.

THE
 QUARTERLY JOURNAL
 OF
 MICROSCOPICAL SCIENCE.

EDITED BY

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

*Linacre Professor of Comparative Anatomy, Fellow of Merton College, and Honorary
Fellow of Exeter College, Oxford.*

WITH THE CO-OPERATION OF

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

Fellow and Lecturer 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;
Fellow of St. John's College, Cambridge.*

WITH LITHOGRAPHIC PLATES AND ENGRAVINGS ON WOOD.



LONDON :

J. & A. CHURCHILL, 11, NEW BURLINGTON STREET.

1894.

CONTENTS OF No. 144.—New Series.

MEMOIRS:

	PAGE
Some Abnormal Annelids. By E. A. ANDREWS. (With Plates 32—34)	435
Studies on the Nervous System of Crustacea. By EDGAR J. ALLEN, B.Sc.Lond. I.—Some Nerve-elements of the Embryonic Lobster. (With Plates 35 and 36)	461
Studies on the Nervous System of Crustacea. By EDGAR J. ALLEN, B.Sc.Lond. II.—The Stomatogastric System of Astacus and Homarus. III.—On the Beading of Nerve-fibres and on End Swellings. (With Plates 37 and 38)	483
The Sensory Canal System of Fishes. Part I.—Ganoidei. By WALTER EDWARD COLLINGE, Demonstrator of Zoology and Comparative Anatomy, Mason College, Birmingham. (With Plates 39 and 40) .	499
INDEX	-539

Fig. 1.

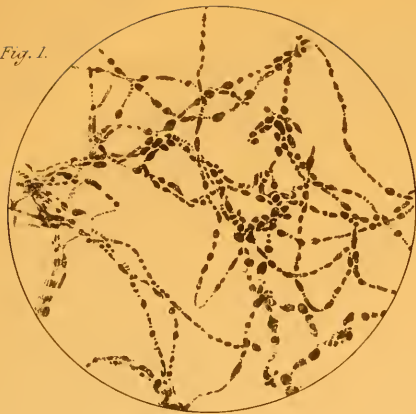


Fig. 2.

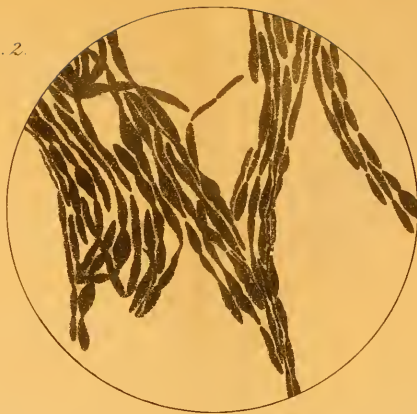


Fig. 3.



Fig. 4.

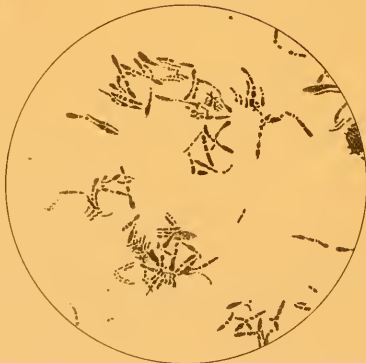


Fig. 5.

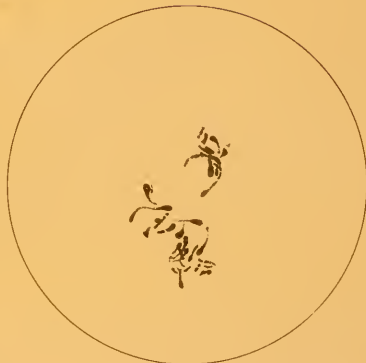


Fig. 6.



Fig. 7.

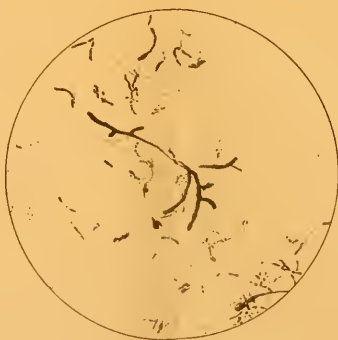
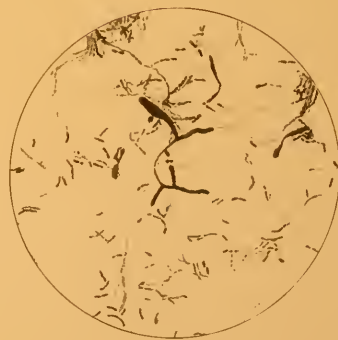


Fig. 8.



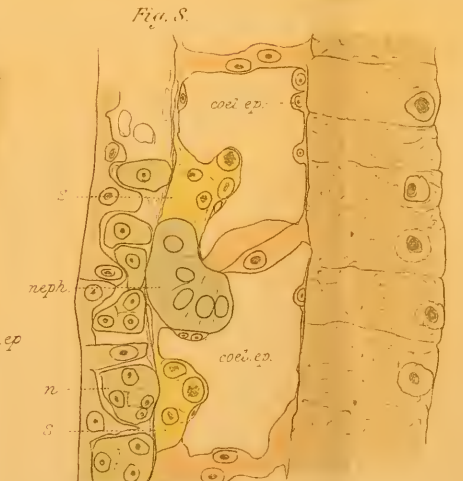
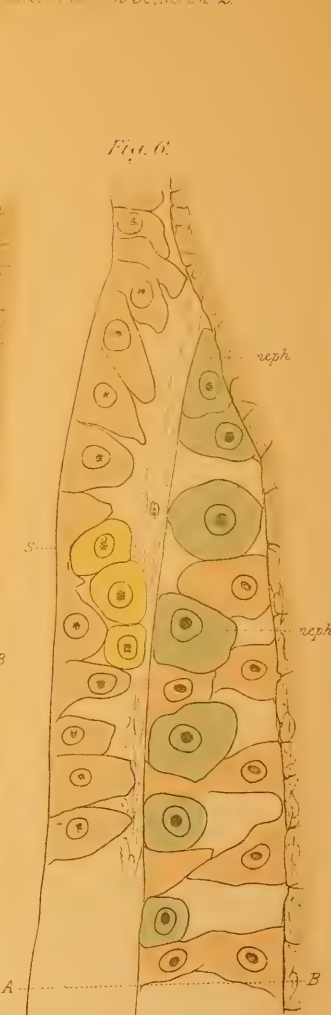
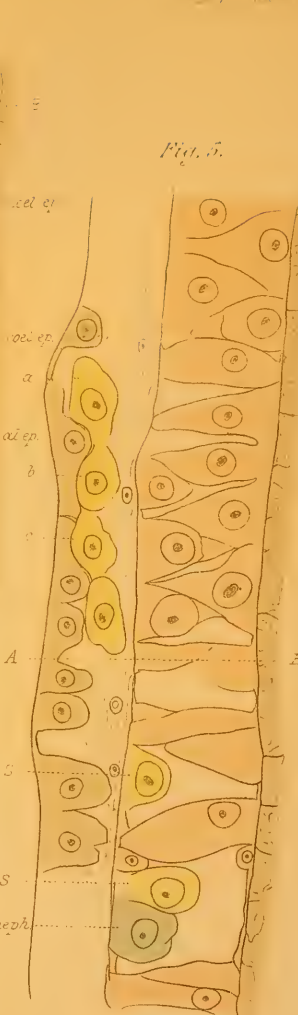
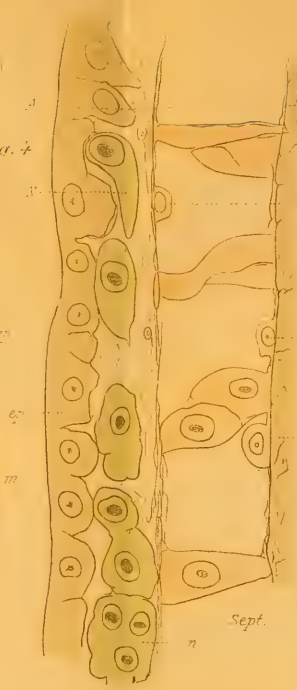
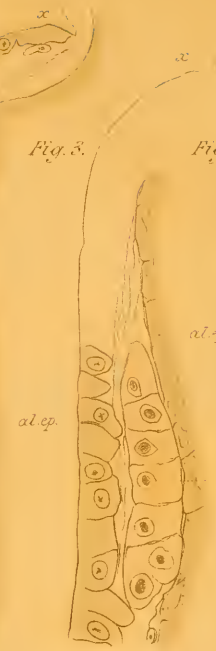
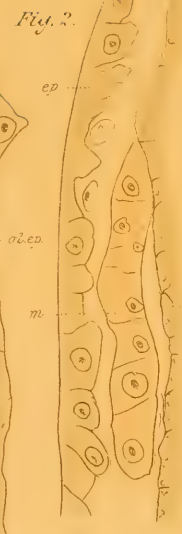
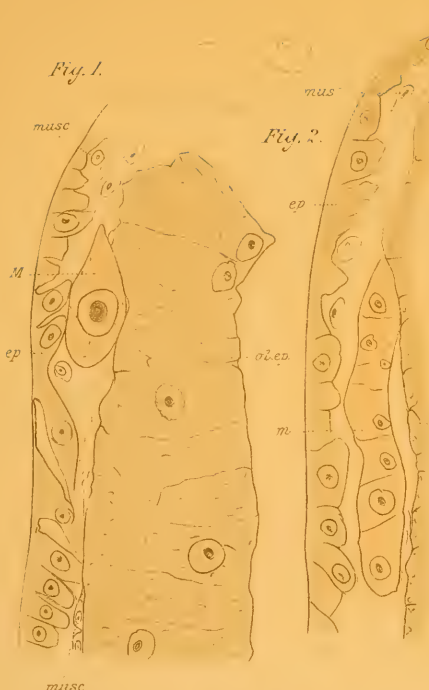


Fig. 9.

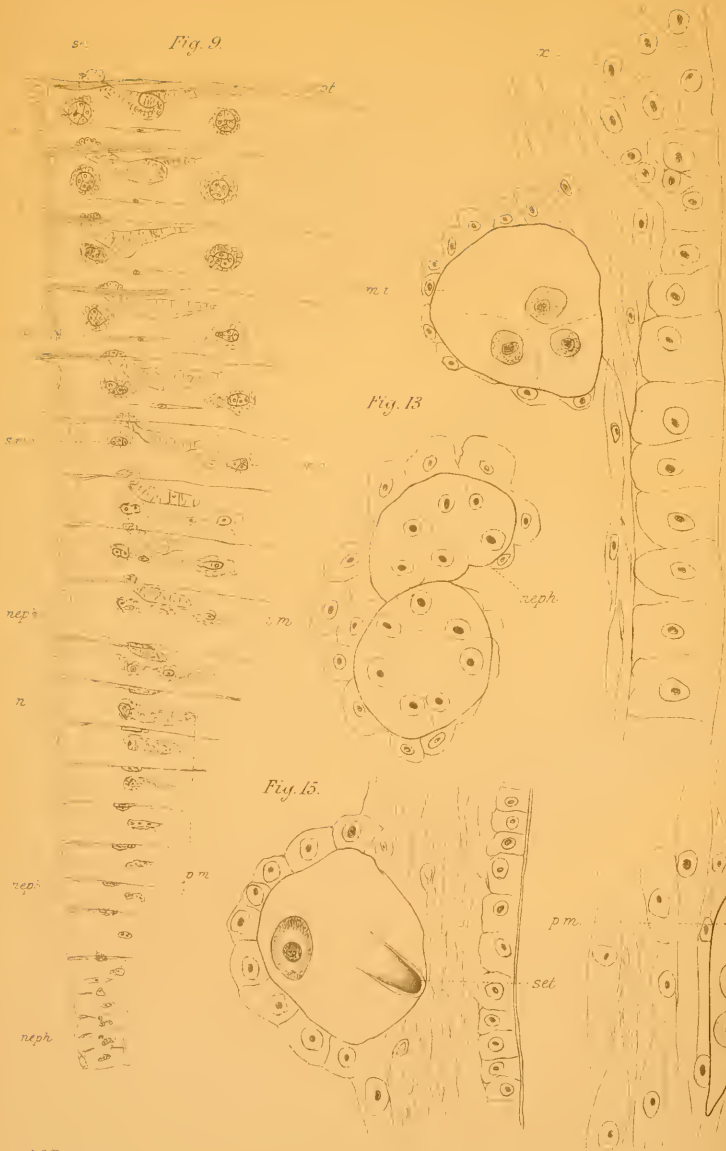


Fig. 11.

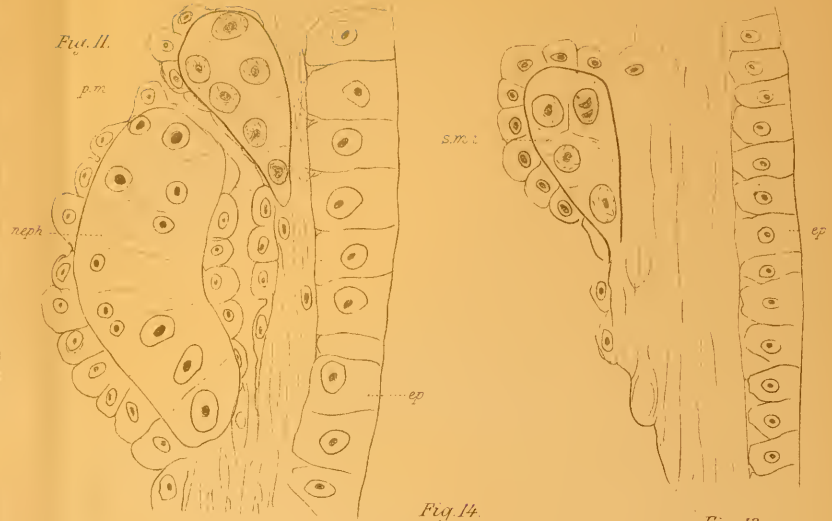


Fig. 13.

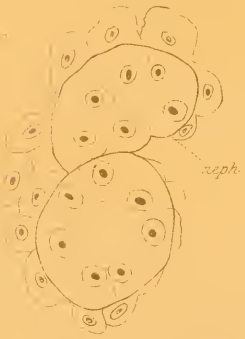


Fig. 14.

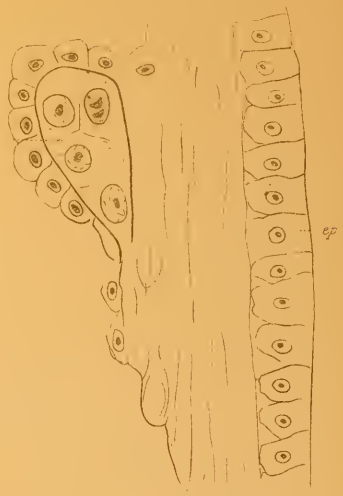


Fig. 10.

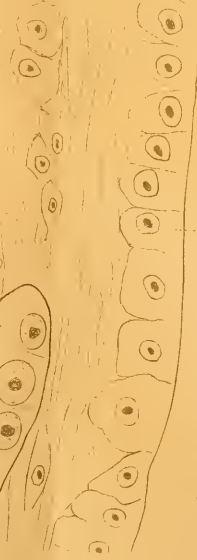


Fig. 12.

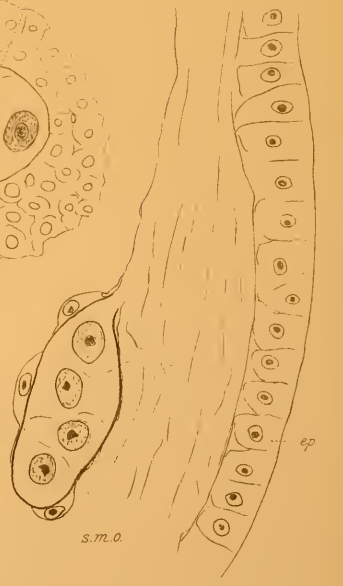


Fig. 15.

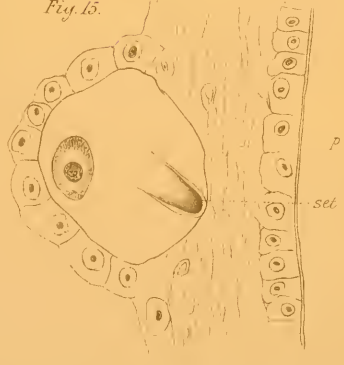
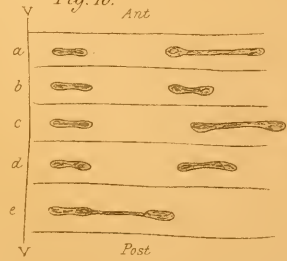
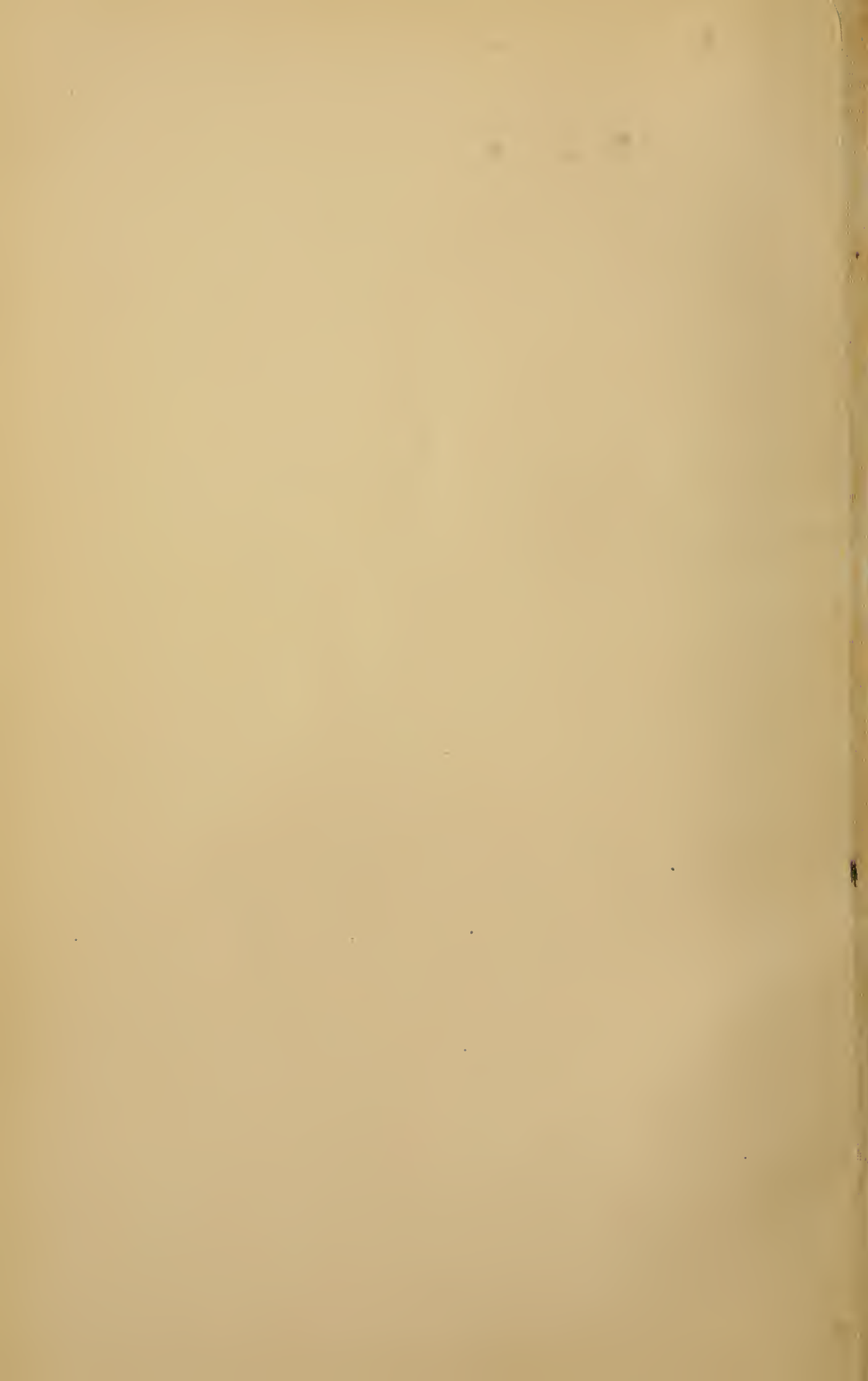


Fig. 16.





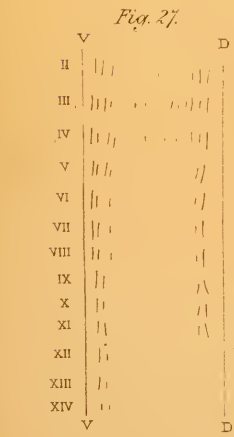
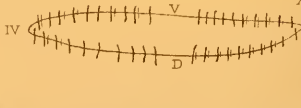
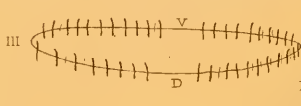
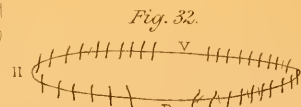
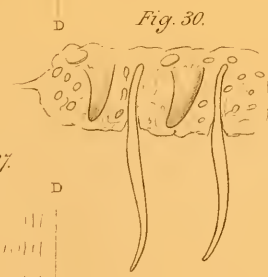
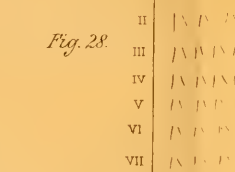
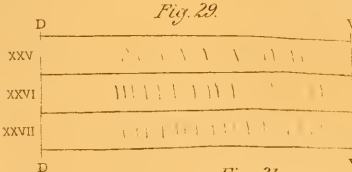
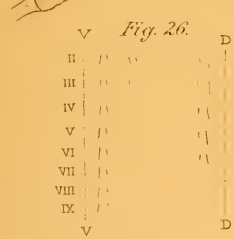
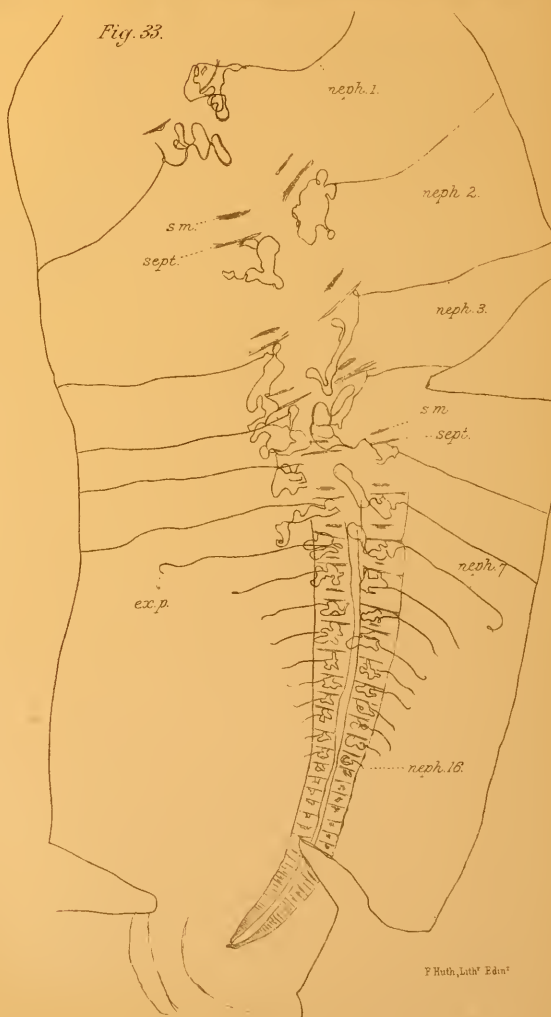
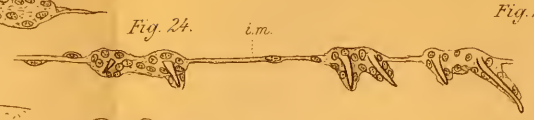
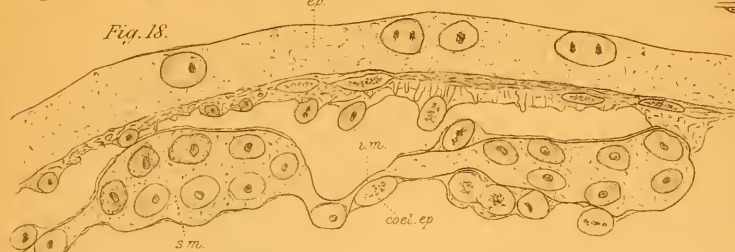
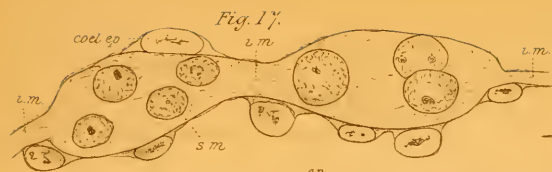




Fig. 35.

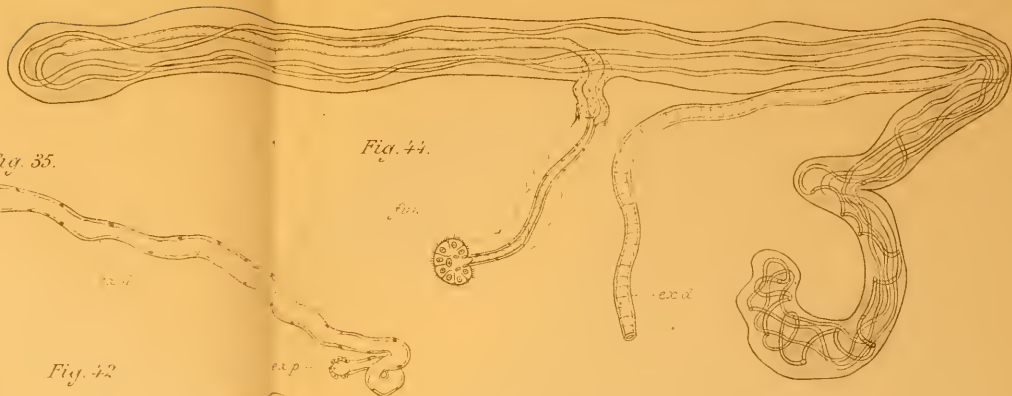


Fig. 41.

Fig. 34.

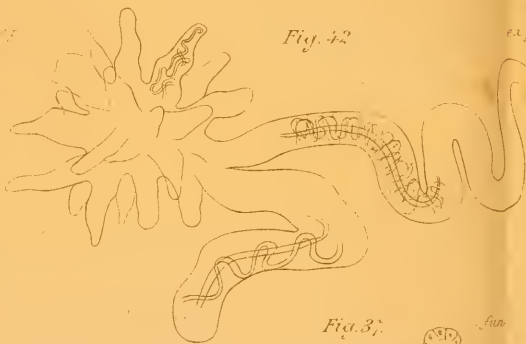


Fig. 42.

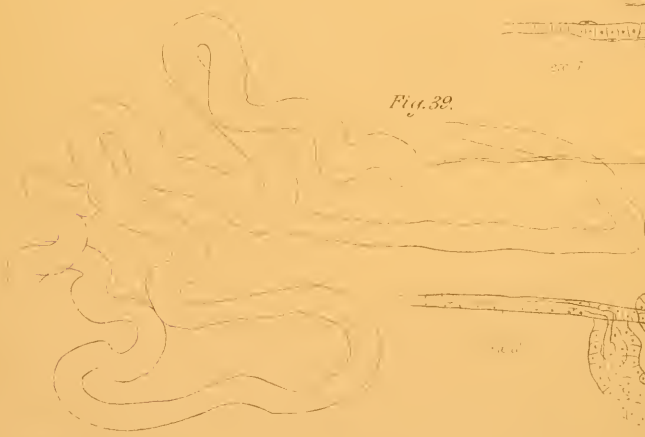


Fig. 39.

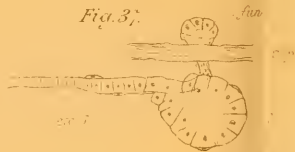


Fig. 37.

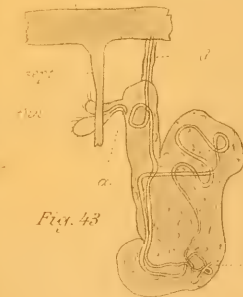


Fig. 43.

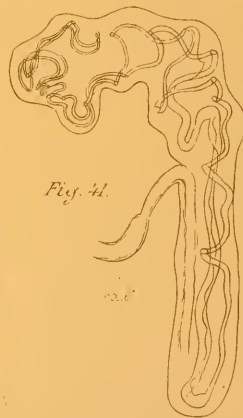


Fig. 44.

Fig. 36.

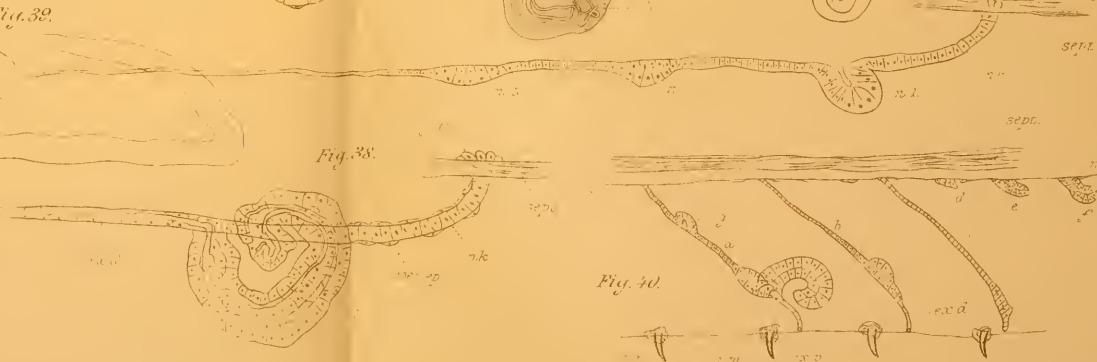
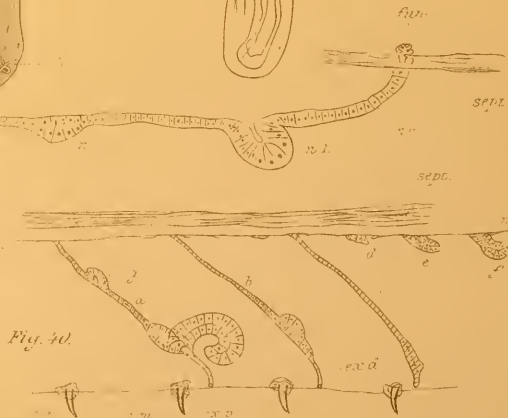
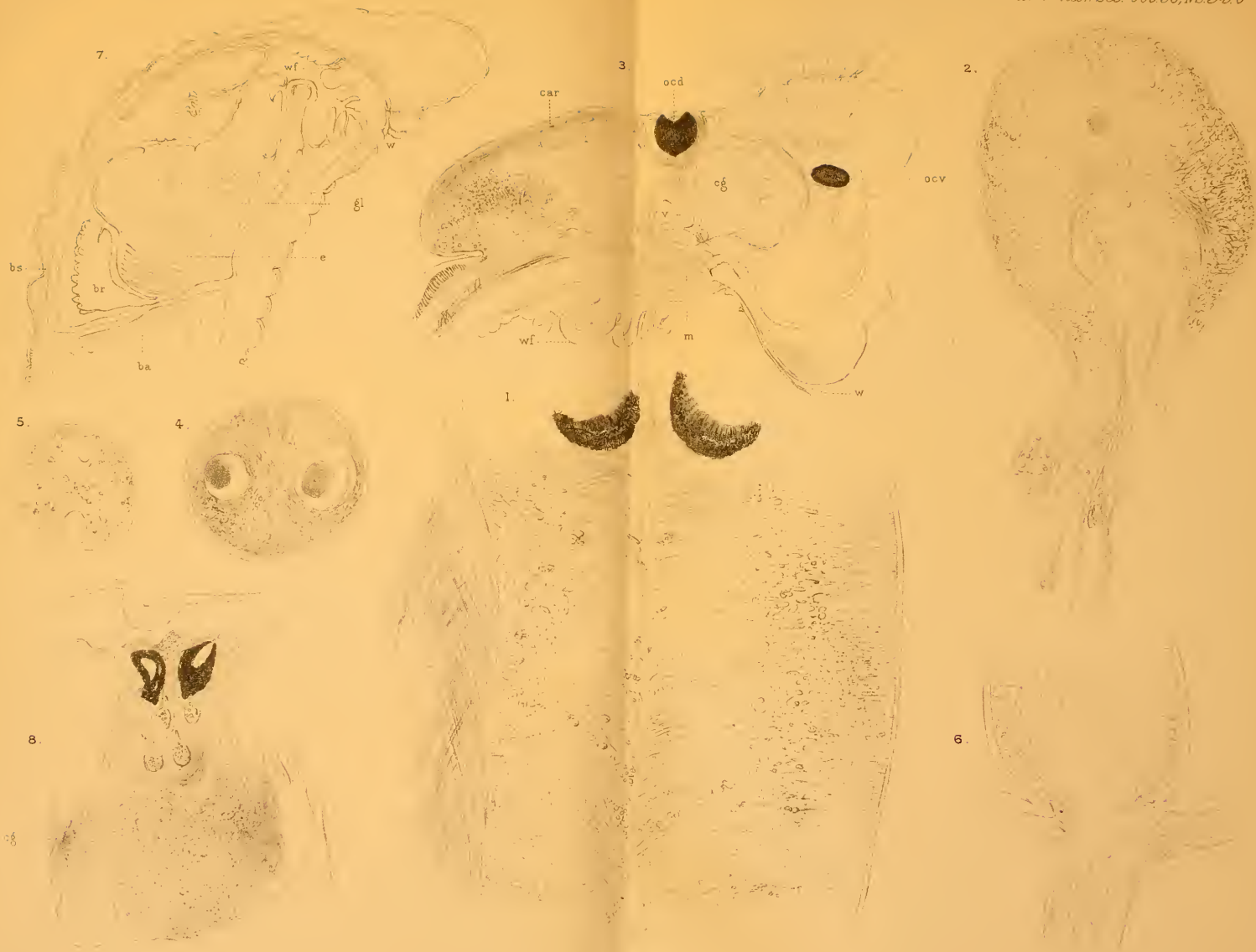
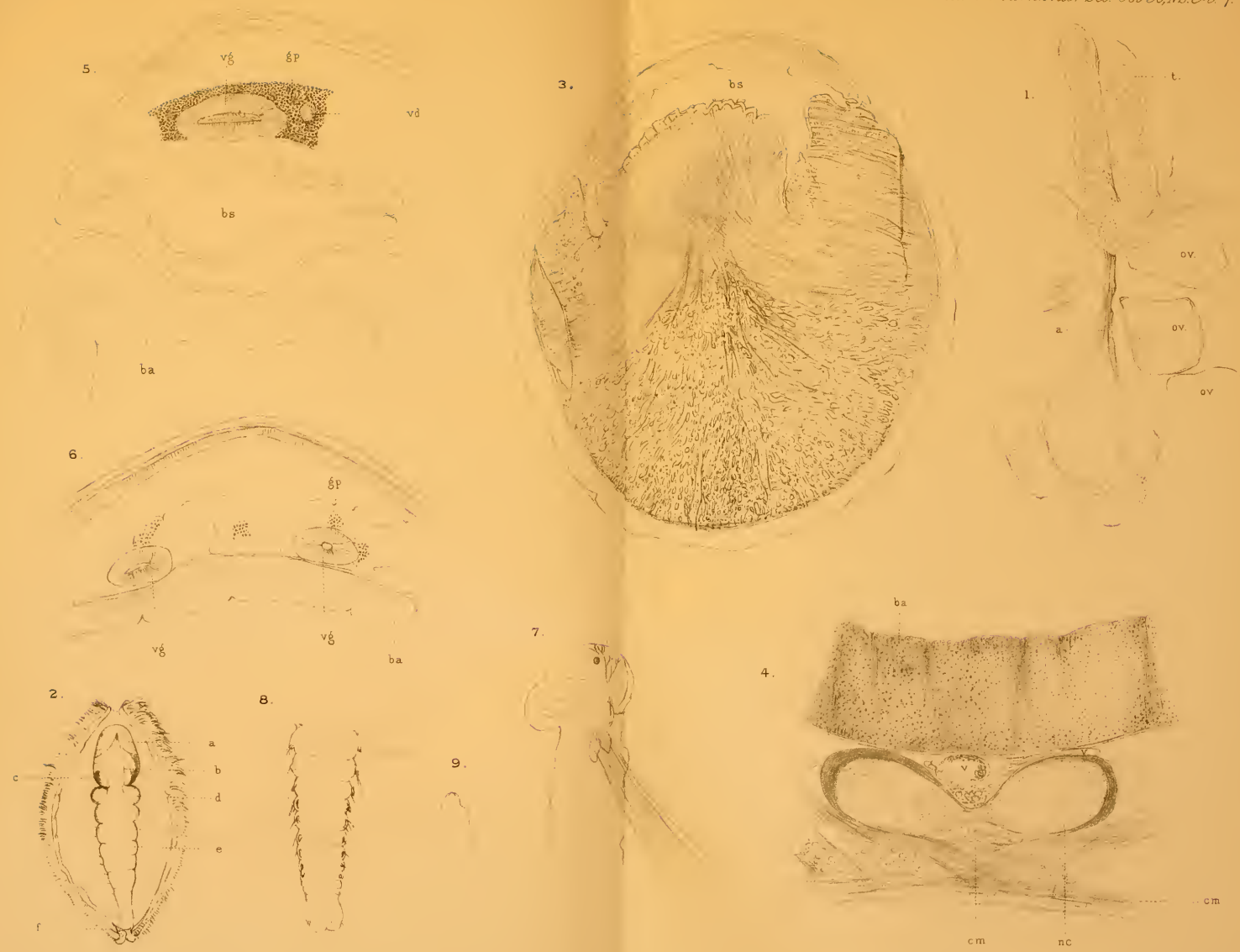


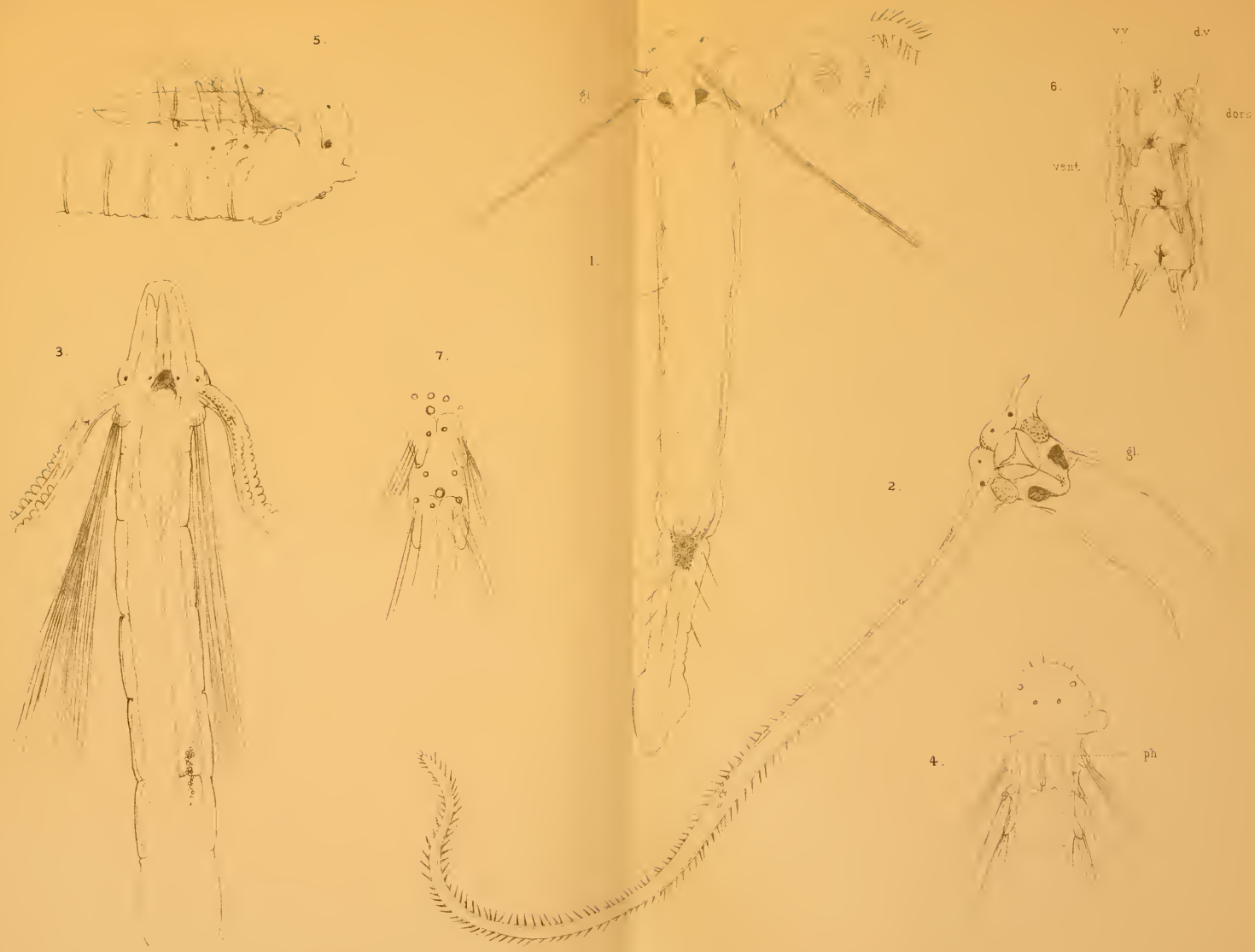
Fig. 38.

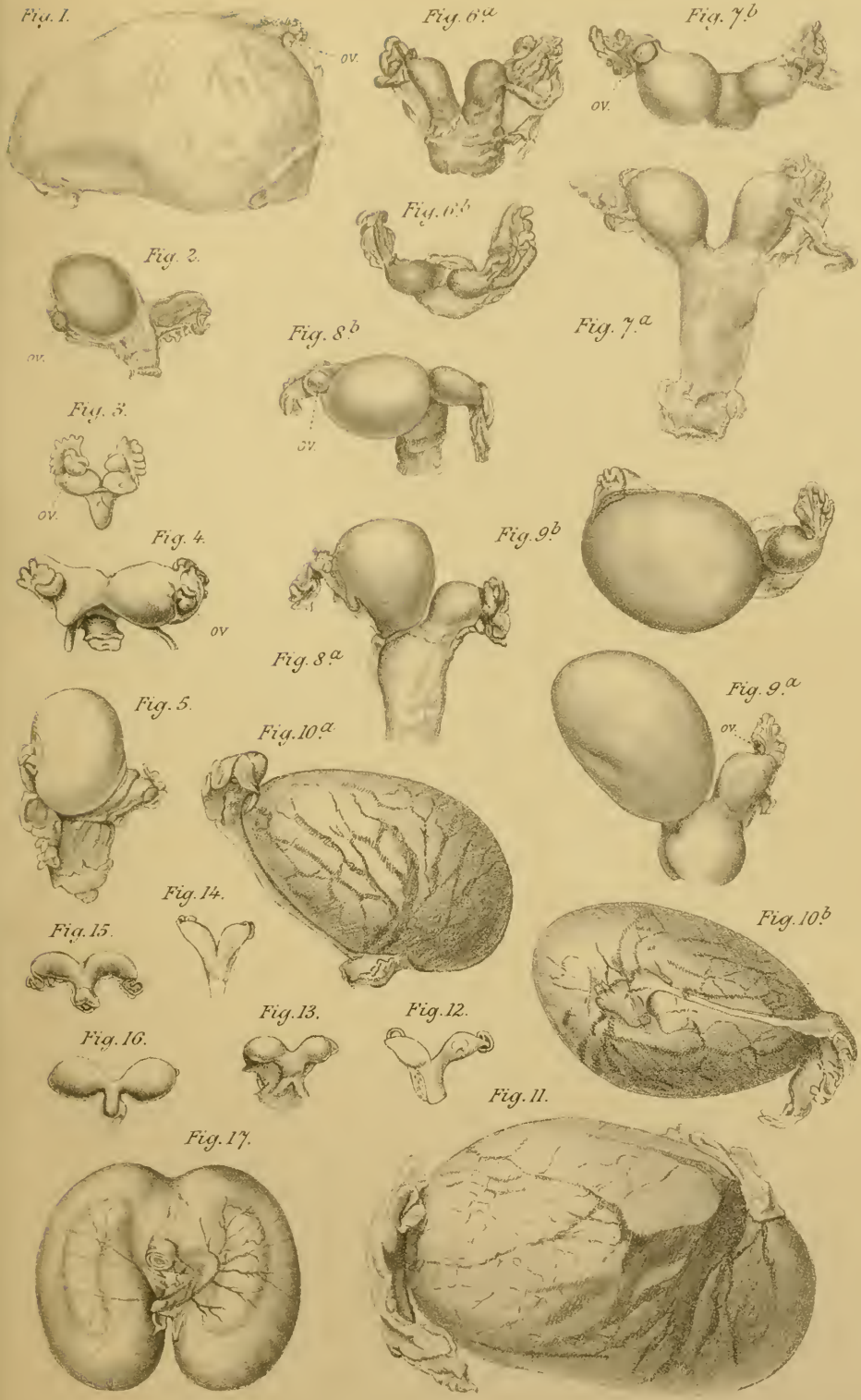
Fig. 40.











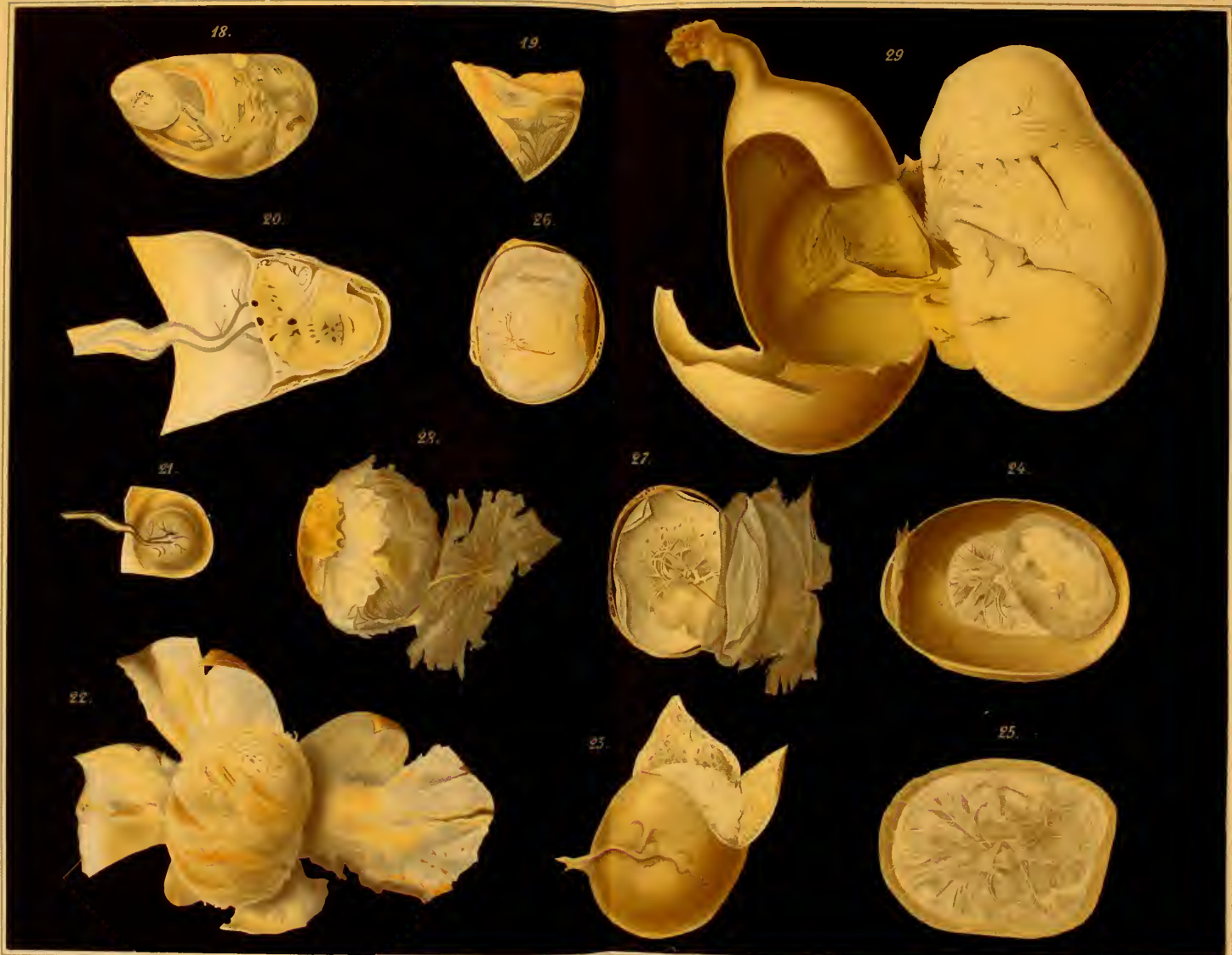


Fig. 30.



Fig. 37.



Fig. 38.

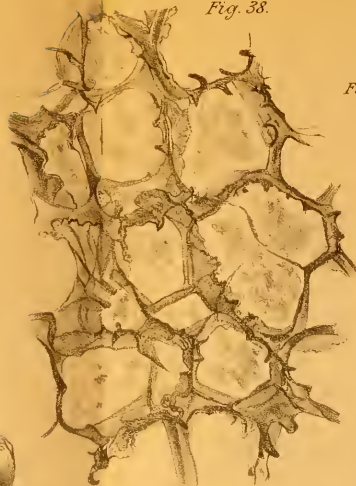


Fig. 36.



Fig. 39.



Fig. 40.

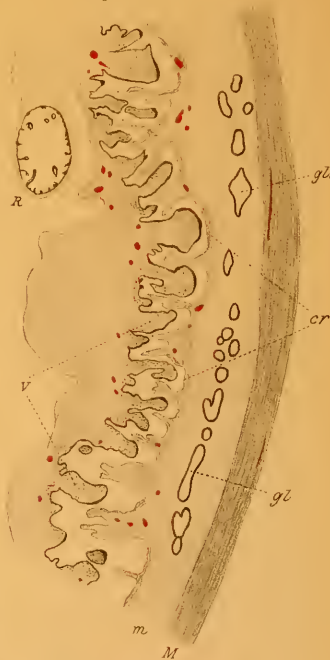


Fig. 31.



Fig. 35.

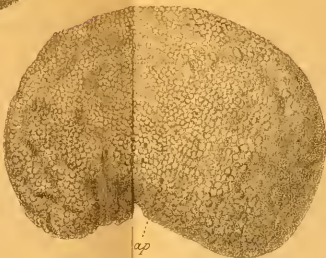


Fig. 32.

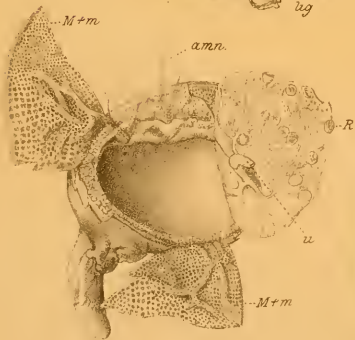


Fig. 33.



Fig. 34.



Fig. 41.



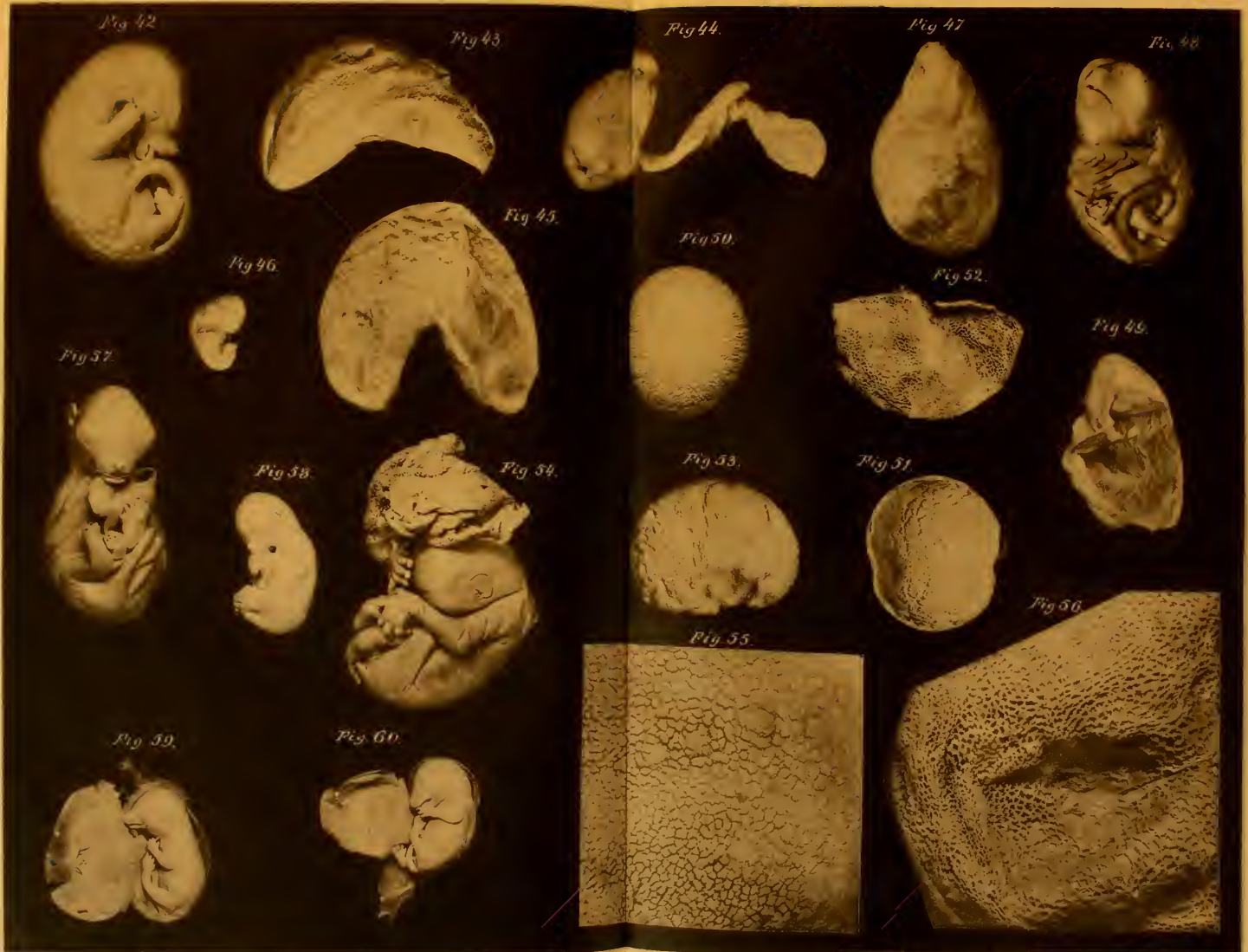


Fig 3

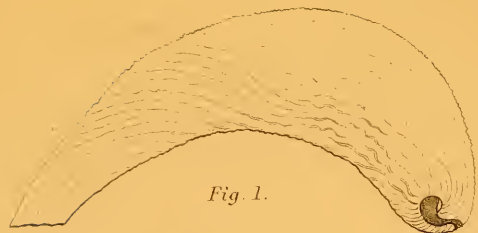


Fig. 1.

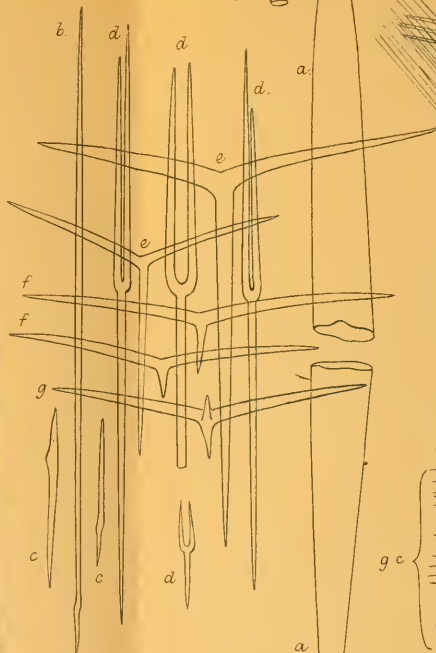


Fig. 2.



Fig. 4.

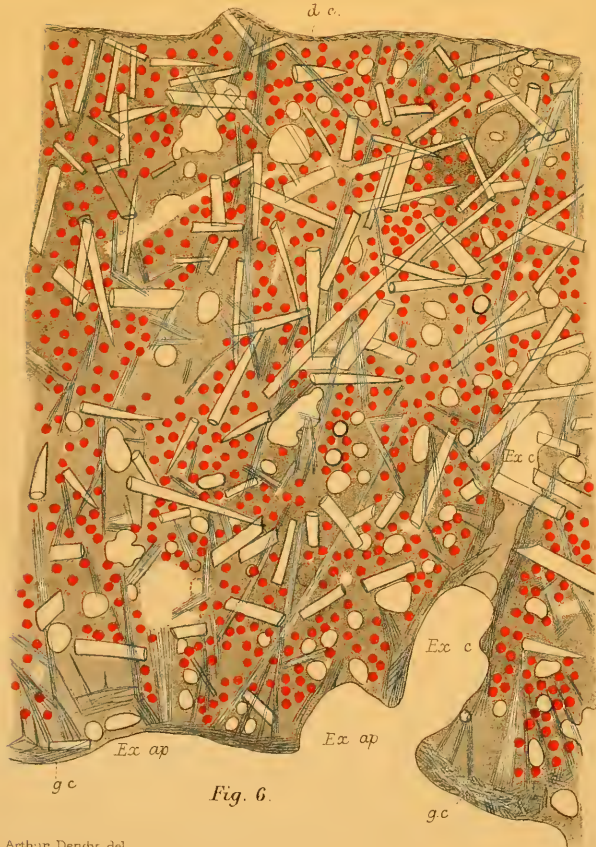


Fig. 6.

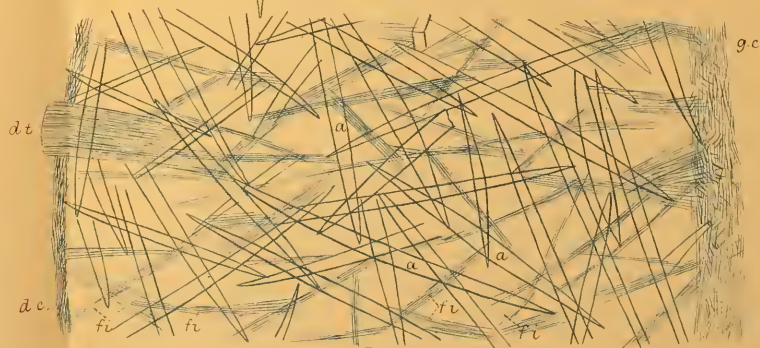


Fig. 3.

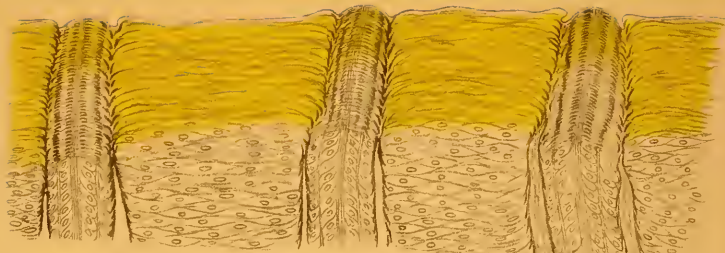


Fig. 1.



Fig. 2.

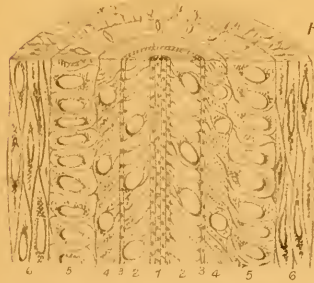


Fig. 4.

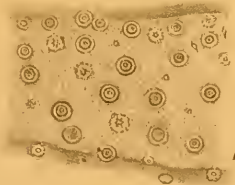


Fig. 5.

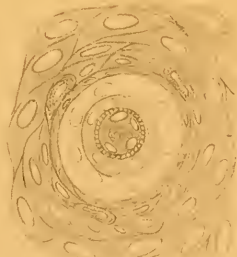


Fig. 3.

Fig. 6.



E. B. Poulton del.



Fig. 13.



Fig. 7.



Fig. 14.

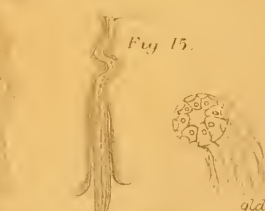


Fig. 15.



Fig. 12.

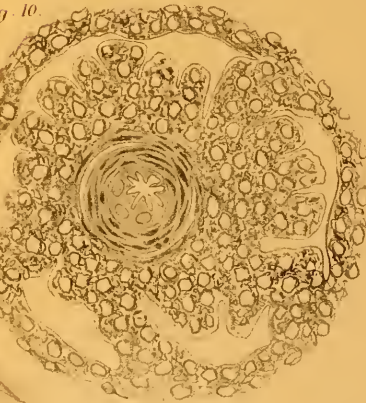


Fig. 10.

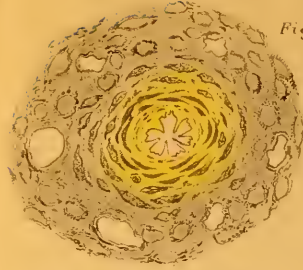
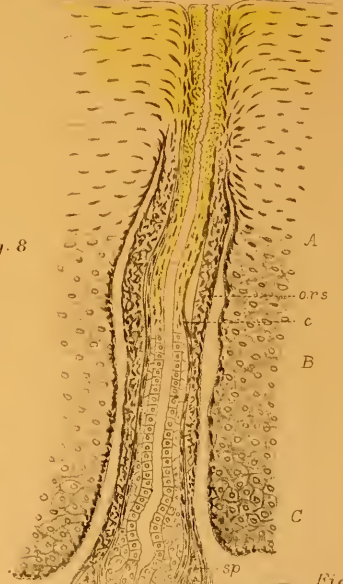


Fig. 9.

Fig. 8.



A

ors

c

B

C

D

sp

ors

c

d

d

ors

c

d

ors

c

d

ors

c

d

ors

c

d

ors

c

d

Mintern Bros lith. London.



Fig. 17.



Fig. 25.

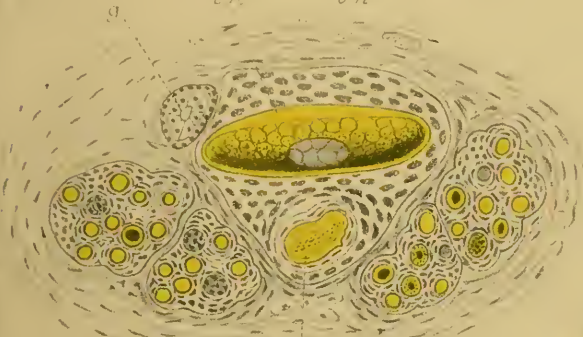


Fig. 18.



Fig. 19.

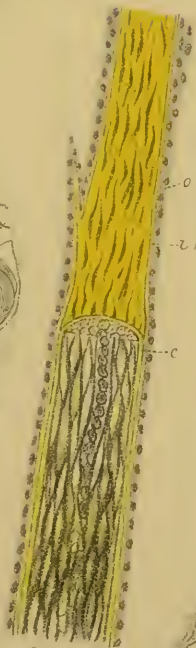


Fig. 24.

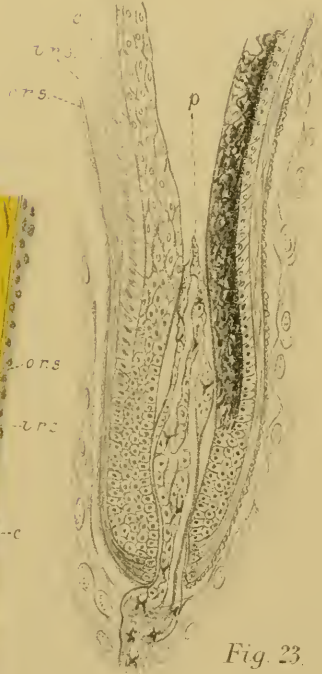


Fig. 23.

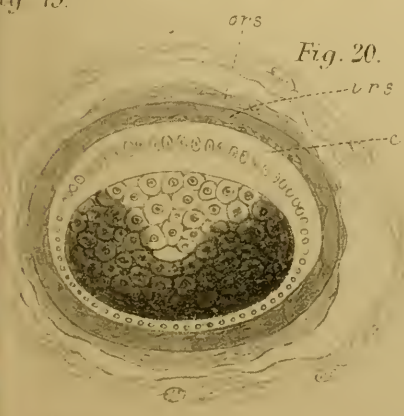


Fig. 20.

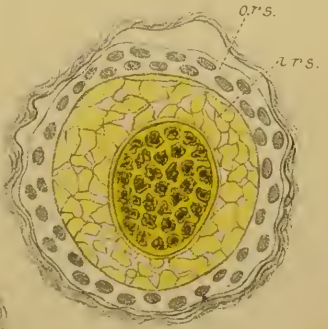


Fig. 21.



Fig. 22.

Fig. 1.



Fig. 2.



YOUNG ORNITHORHYNCHUS PARADOXUS.



Fig. 1.



va

ss

Fig. 2.



va

ss

Fig. 3.

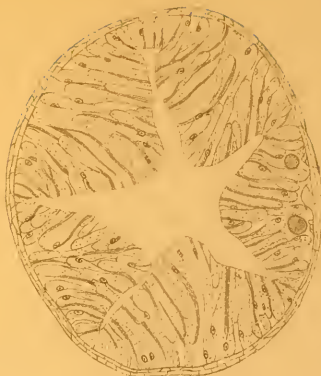


Fig. 6.



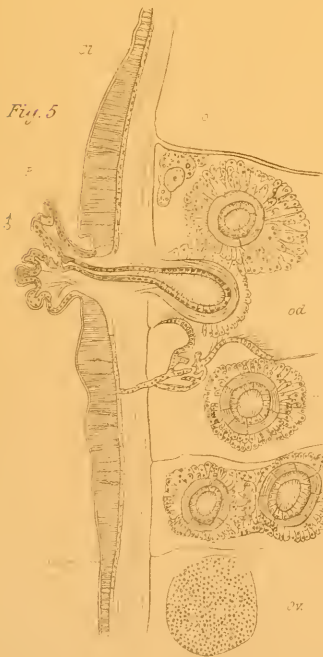
Fig. 4.



Fig. 10.



Fig. 5.



XII

XIII

XIV

XV

XVI

Fig. 9.

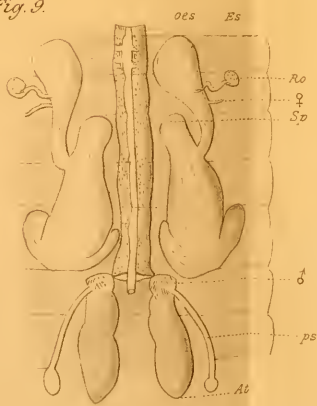


Fig. 8.

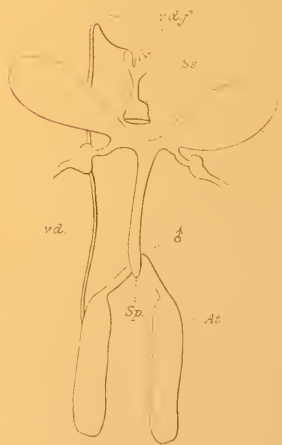


Fig. 7.

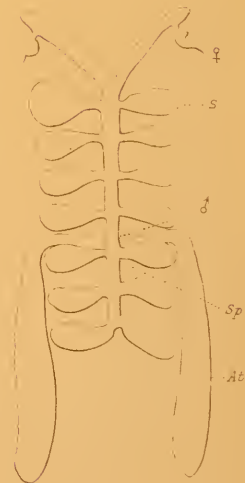


Fig. 11.



Fig. 12.

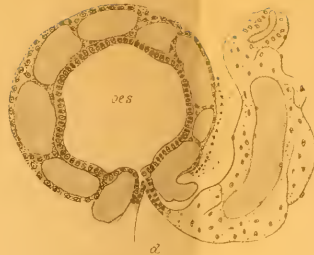


Fig. 13.



Fig. 14.



Fig. 16.

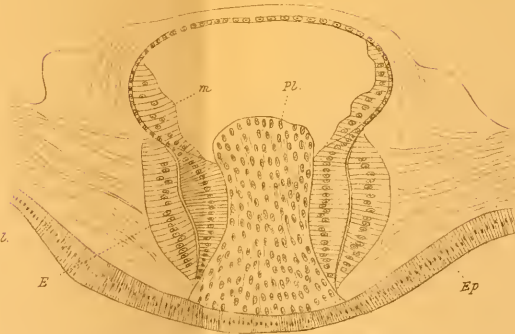


Fig. 15.



Fig. 18.

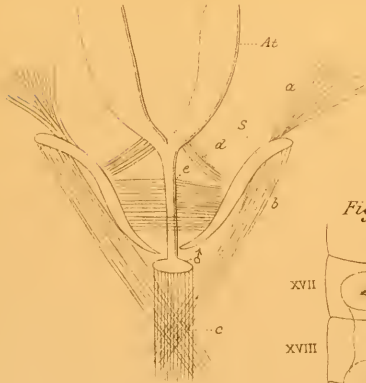


Fig. 19.



Fig. 17.

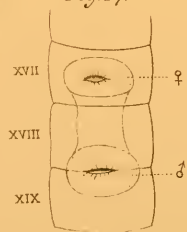


Fig. 20.



Fig. 21.



Fig. 22.



Fig. 23.



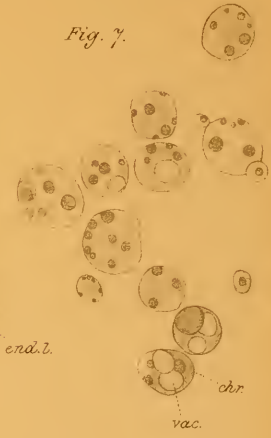


Fig. 5.

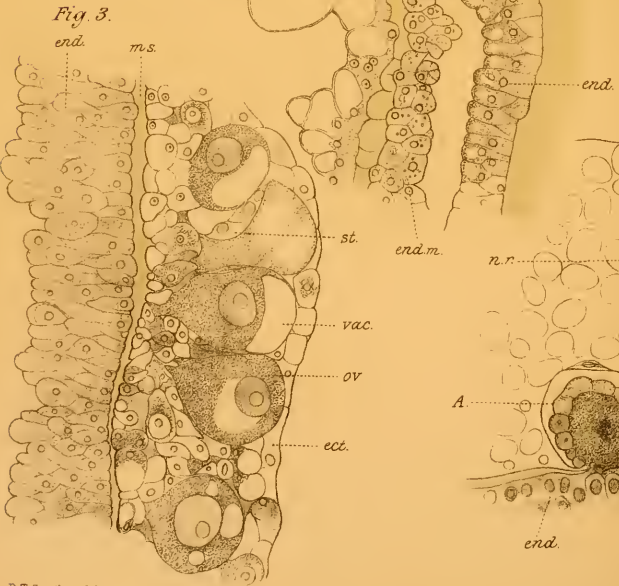


Fig. 2.

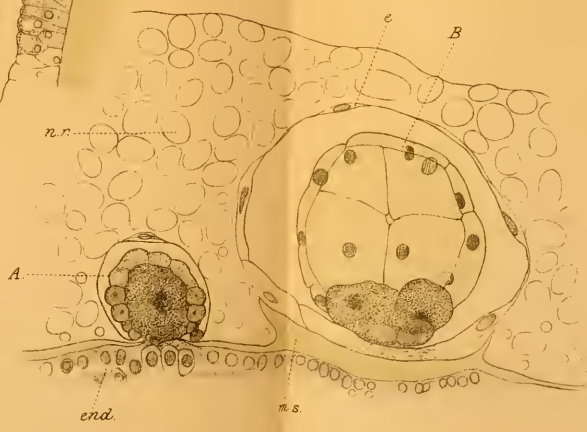


Fig. 4.



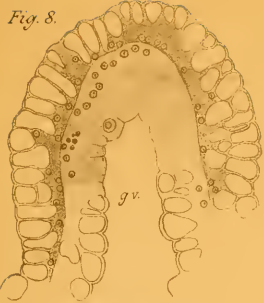


Fig. 8.



Fig. 9.



Fig. 12.

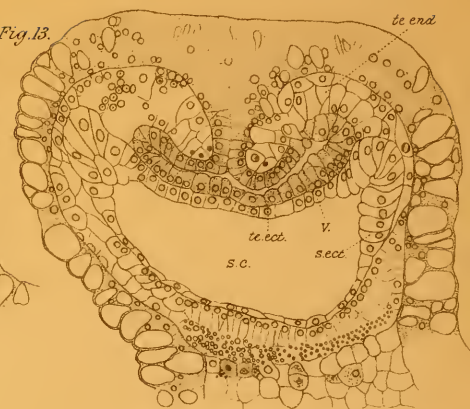


Fig. 13.



Fig. 10.

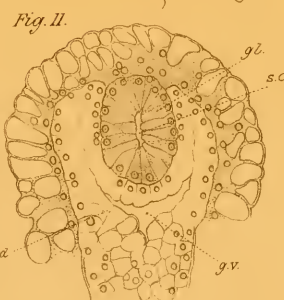


Fig. 11.

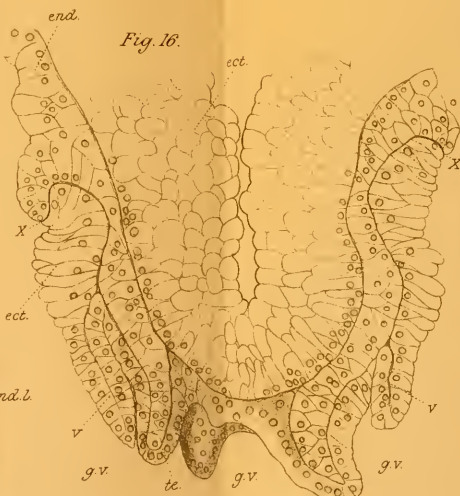


Fig. 16.

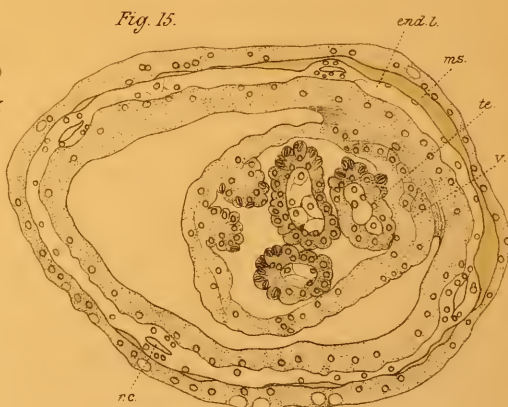


Fig. 15.

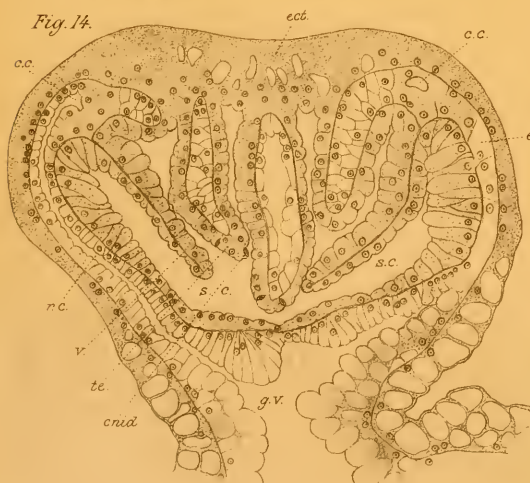


Fig. 14.

Fig. 8^a

Fig. 9^a

Fig. 11^a

Fig. 12^a

Fig. 13^a

Fig. 14^a





Fig. 1.



Fig. 2.

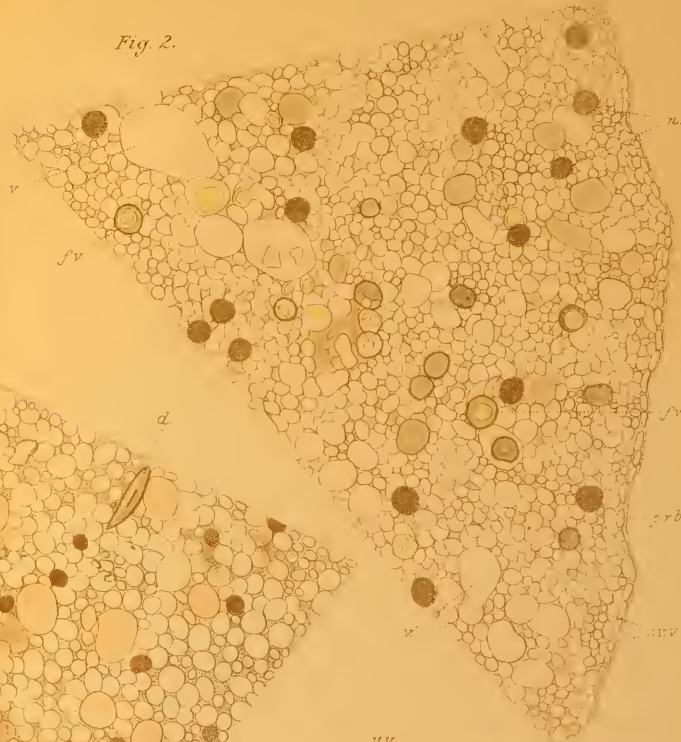


Fig. 3.

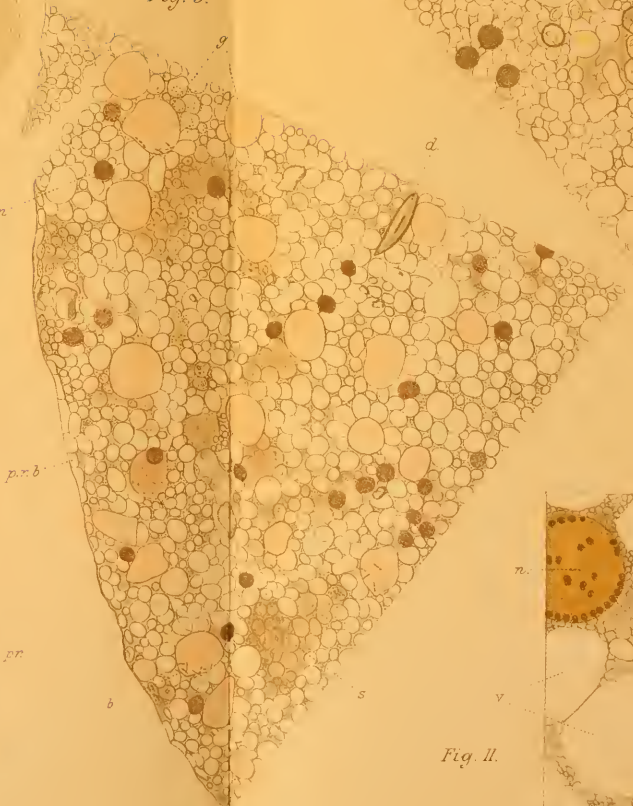


Fig. 4.

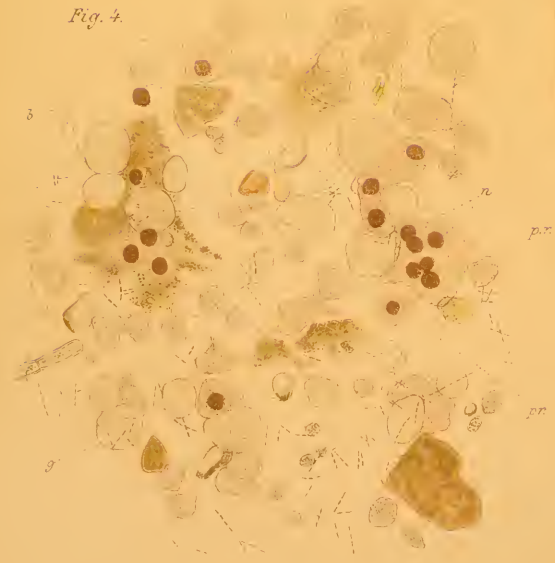


Fig. 11.

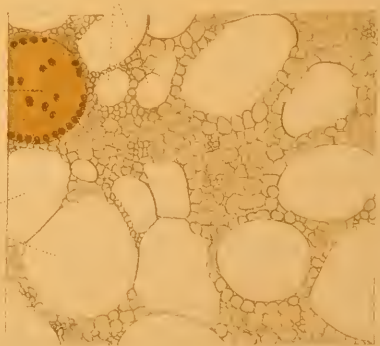


Fig. 5.



Fig. 6.



Fig. 9B

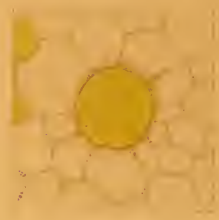


Fig. 7.

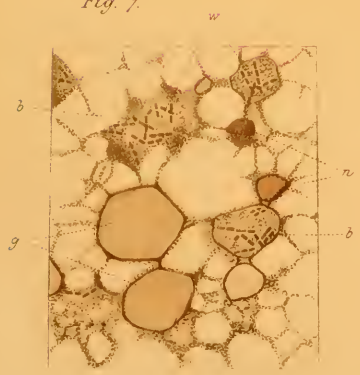


Fig. 8.

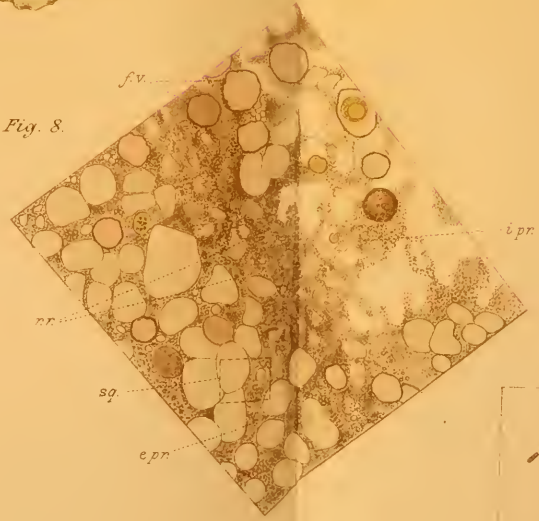


Fig. 10.

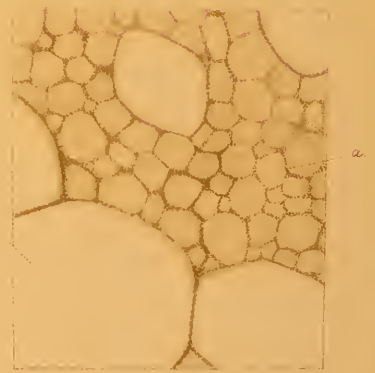
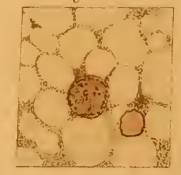
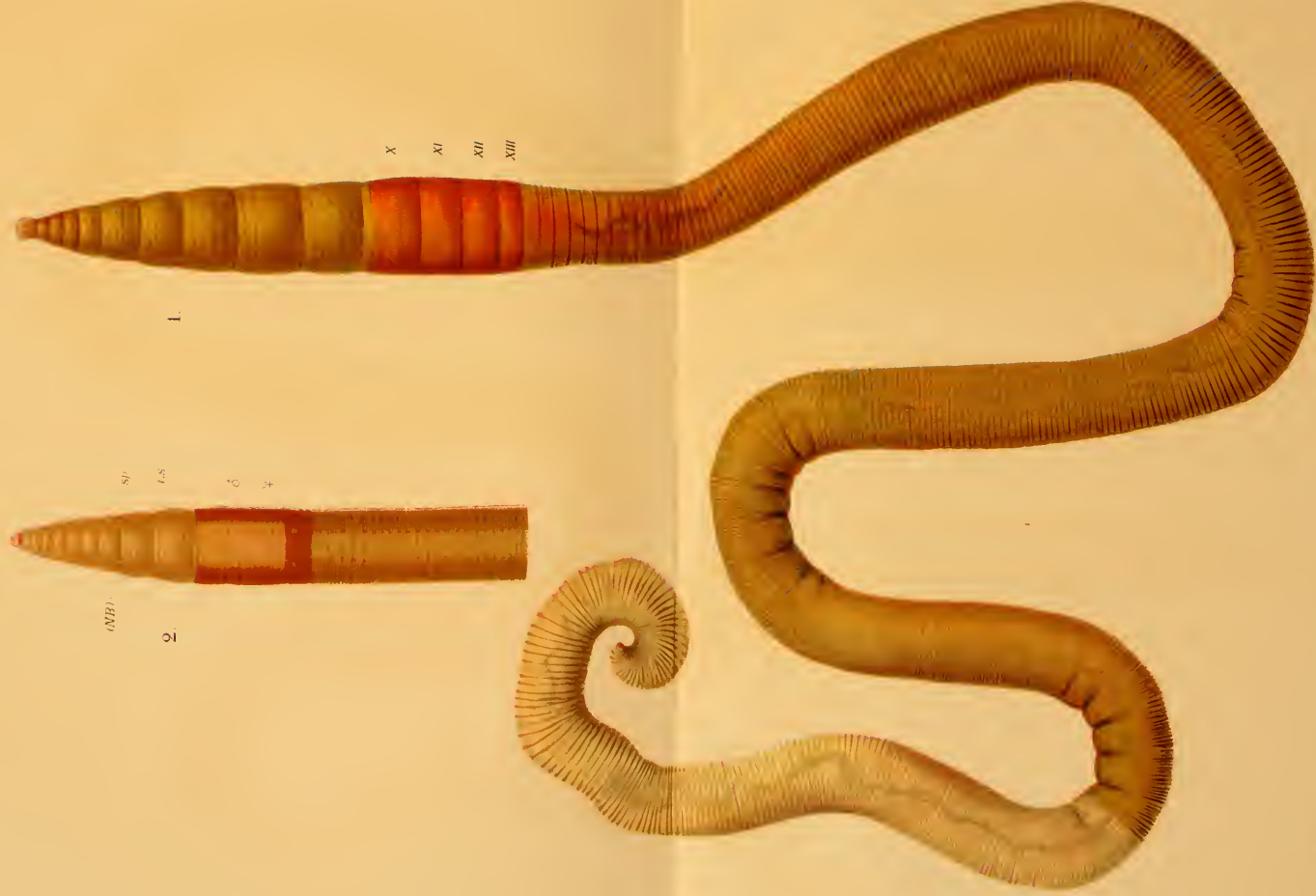


Fig. 12.



Fig. 9A







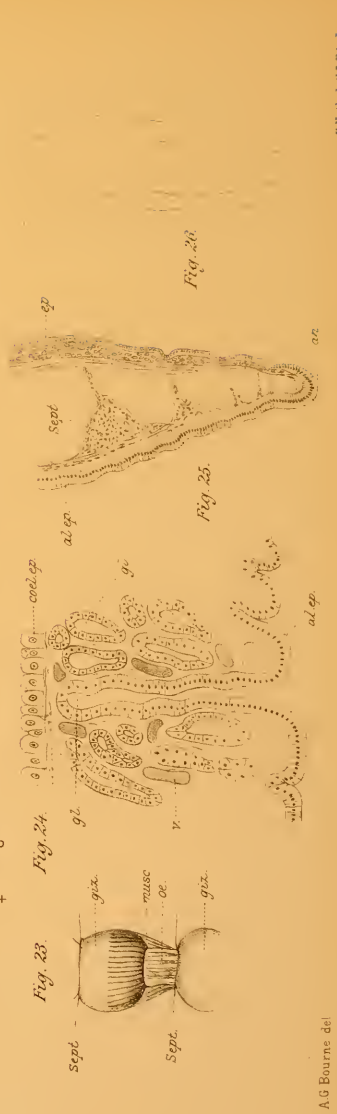
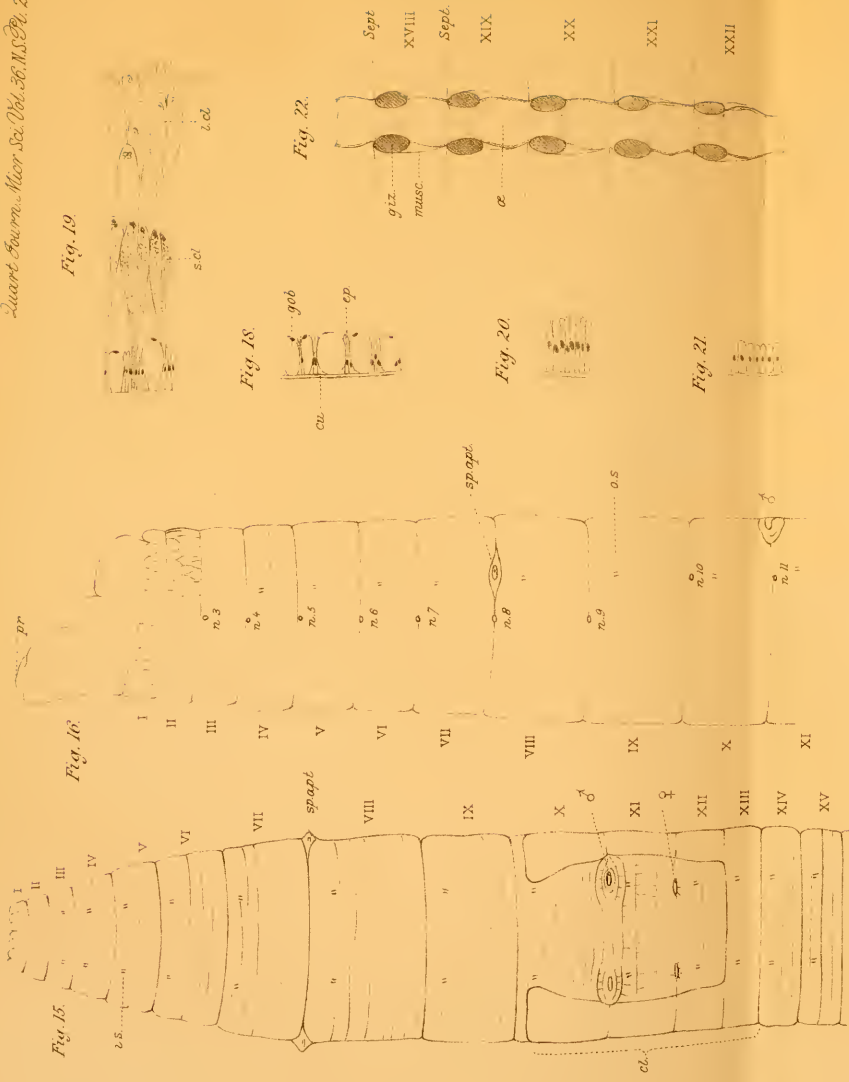


Fig. 31.

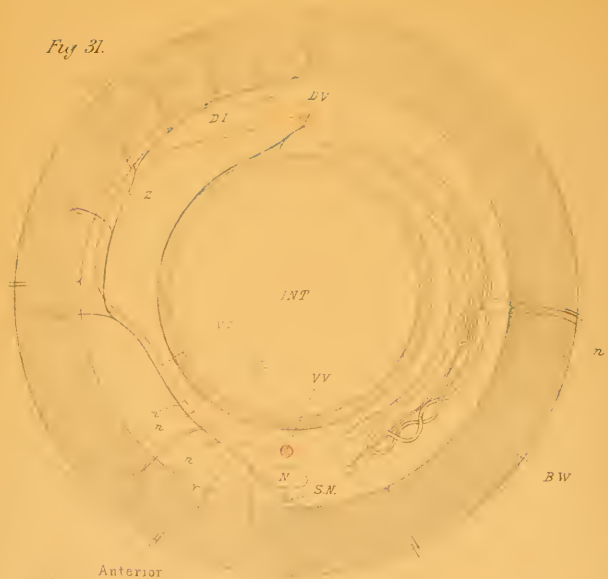


Fig. 32.

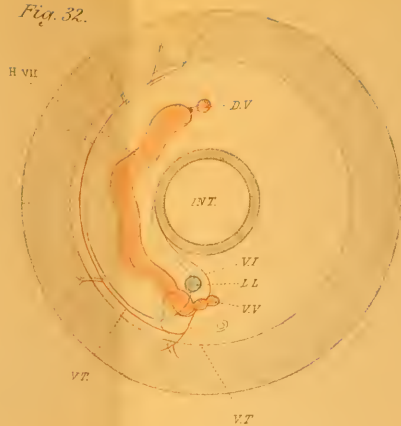
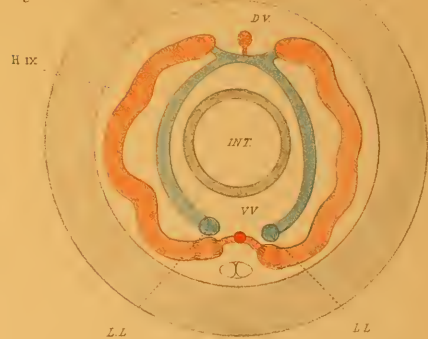


Fig. 33.



Anterior

Fig. 36.

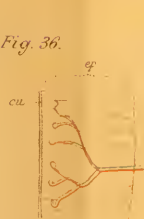


Fig. 38.



Fig. 40.

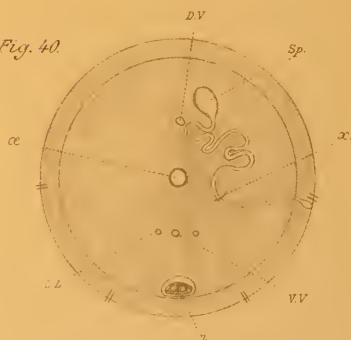


Fig. 35.

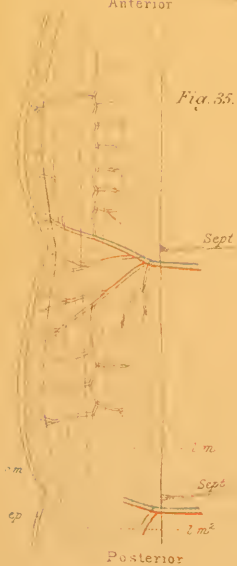


Fig. 34.



Fig. 37.



Fig. 39.

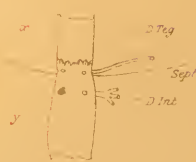
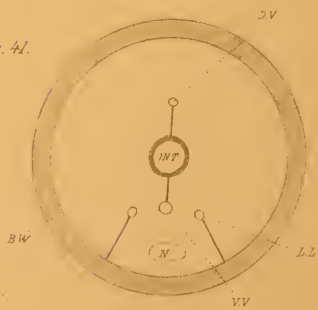


Fig. 41.



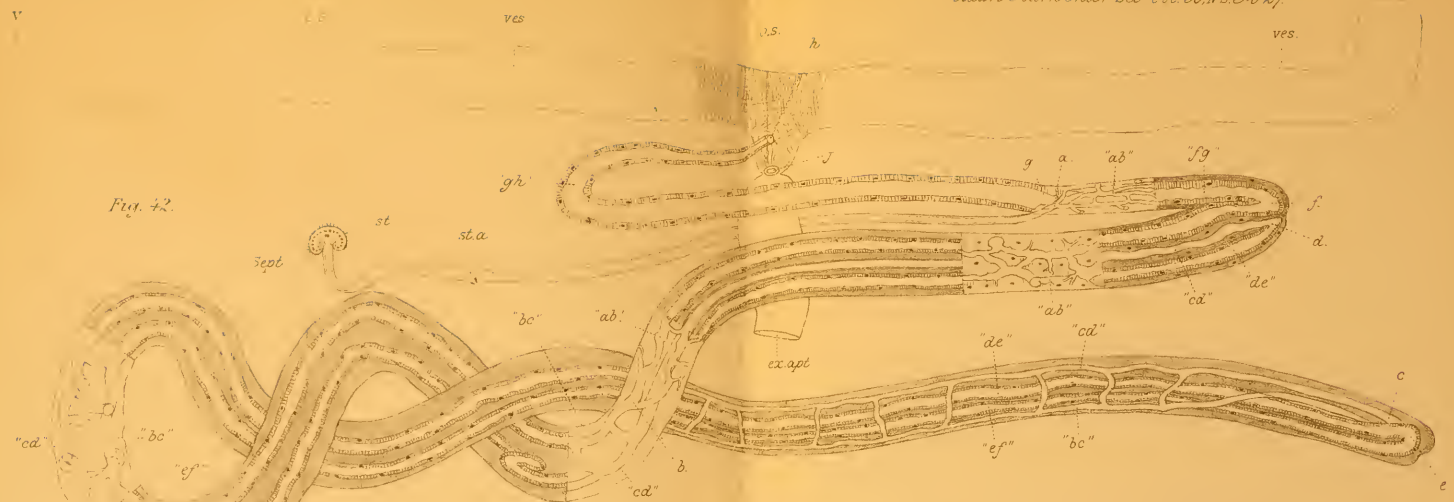


Fig. 42.

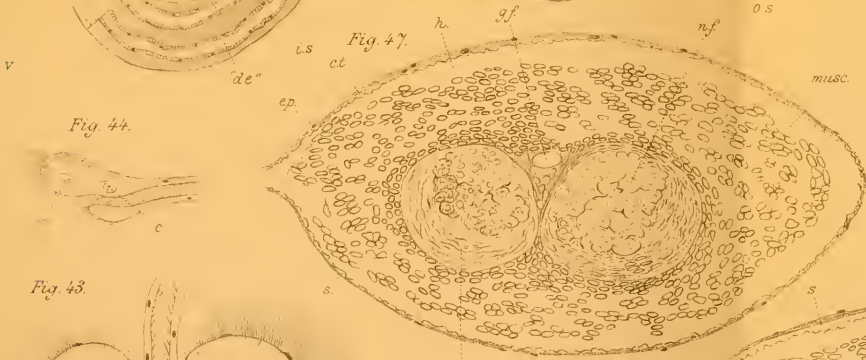


Fig. 44.

Fig. 43.

Fig. 47.



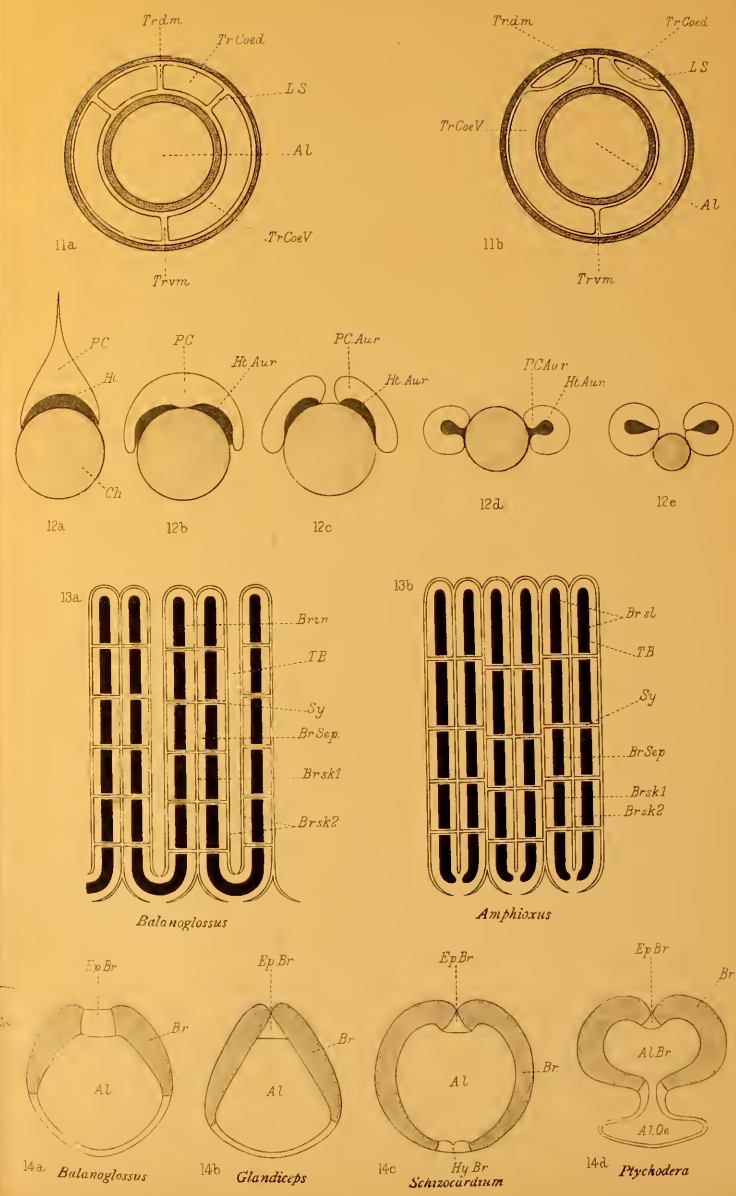
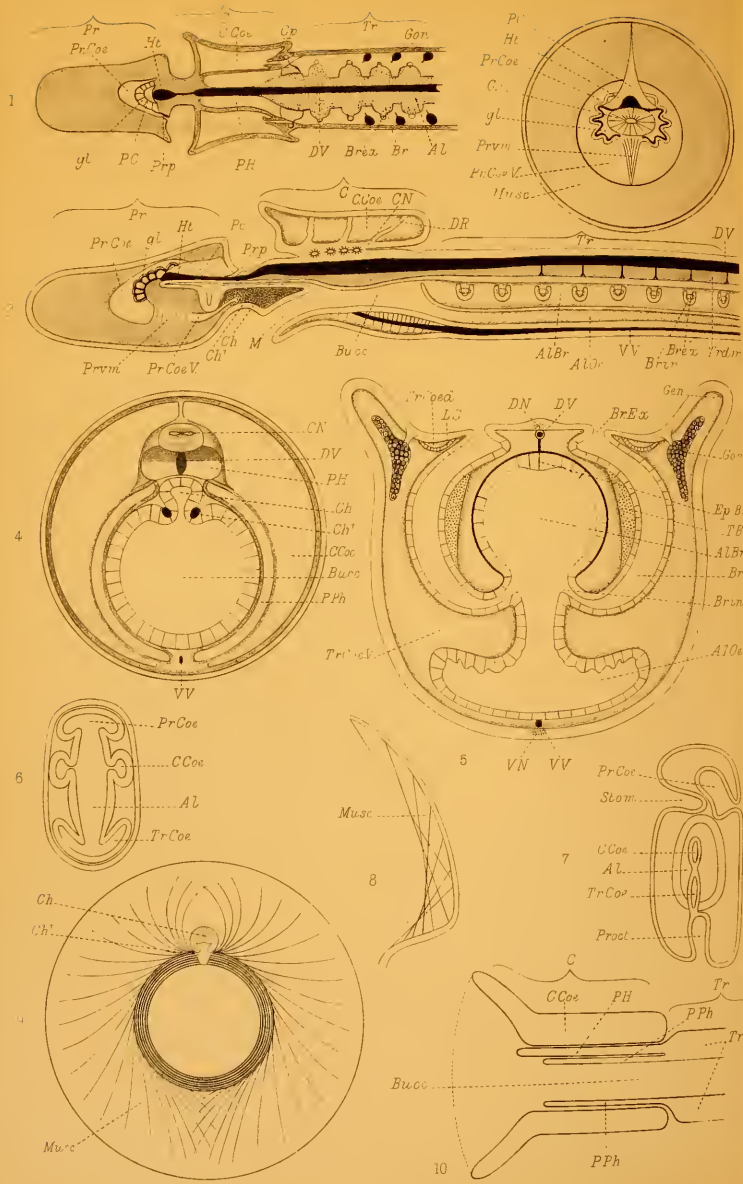
Fig. 45.



Fig. 46.



Fig. 48.

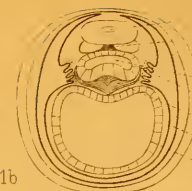






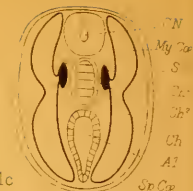
CN
My Coe
Musc
Sel
Ch
Ch'
Ch''
Coe
Sp Coe
A1

Amphioxus



CN
DV
PH
Ch
Ch'
Ch''
Coe
A1

Balanoglossus



CN
My Coe
S
Ch
Ch'
Ch''
Coe
Sp Coe

Scyllium



Ptychodera minula



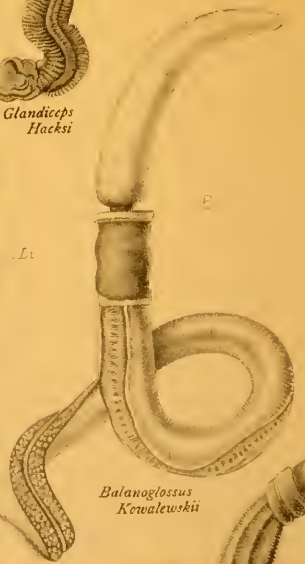
Ptychodera erythraea



Glandiceps Hacksi



Schizocardium brasiliense



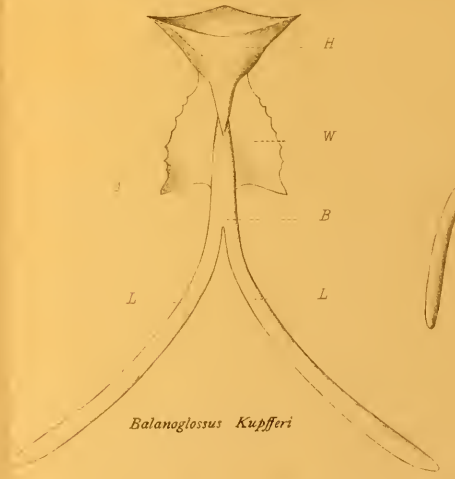
Balanoglossus Kowalewskii



Balanoglossus Kupfferi



Ptychodera minula



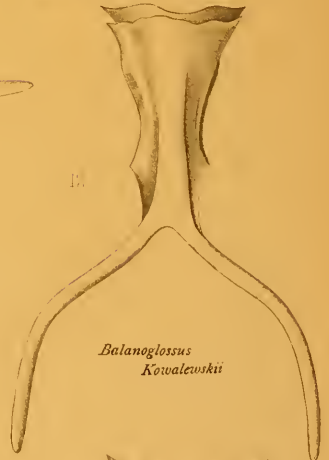
Balanoglossus Kupfferi



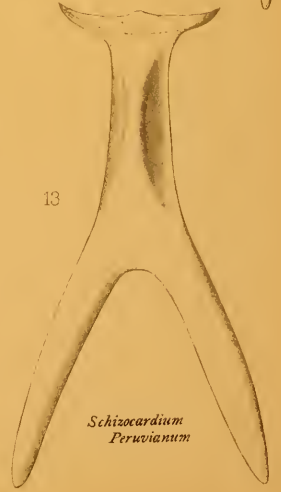
Ptychodera aurantiaca



Schizocardium brasiliense



Balanoglossus Kowalewskii



Schizocardium Peruvianum

Fig. 1.

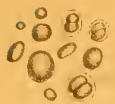


Fig. 2^a



Fig. 2^b

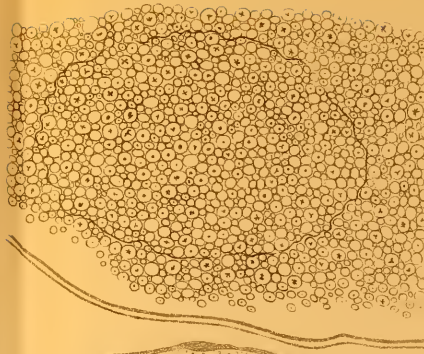


Fig. 9.

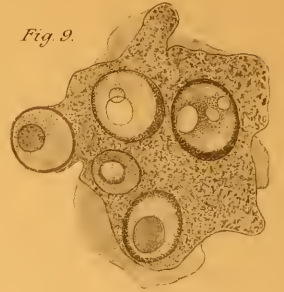


Fig. 4.



Fig. 3.



Fig. 7.

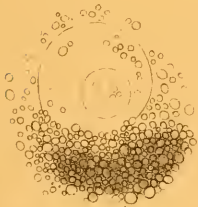


Fig. 6.

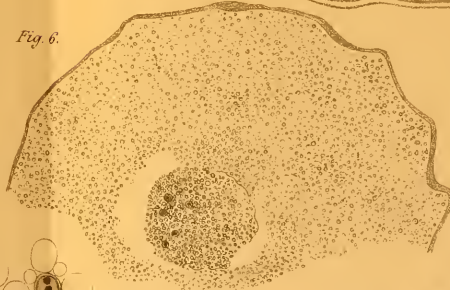


Fig. 10.

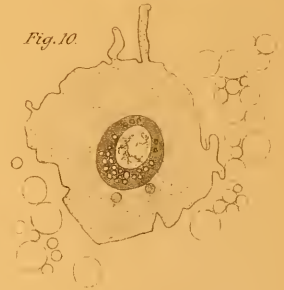


Fig. 5.



Fig. 8.



Fig. 12.



Fig. 13^b

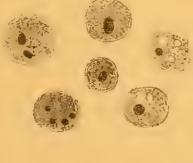


Fig. 13^a



Fig. 14.



Fig. 16.

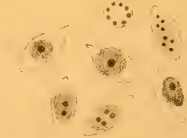


Fig. 15.



Fig. 20.



Fig. 11.



Fig. 17.

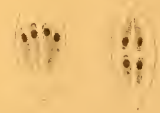


Fig. 22.



Fig. 18.

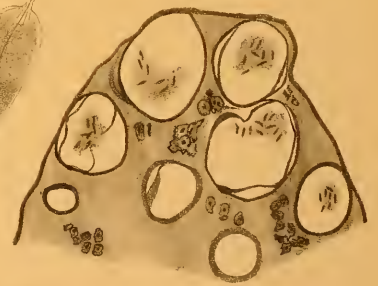


Fig. 19.



Fig. 21.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 5.

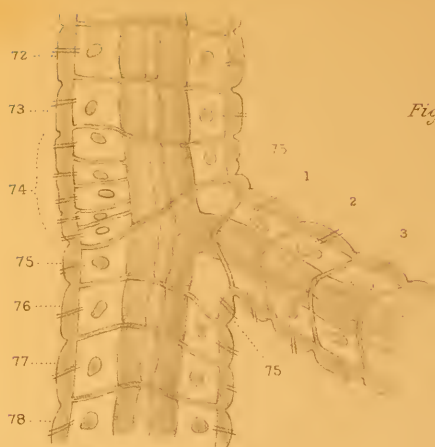


Fig. 6.



Fig. 7.



Fig. 4.

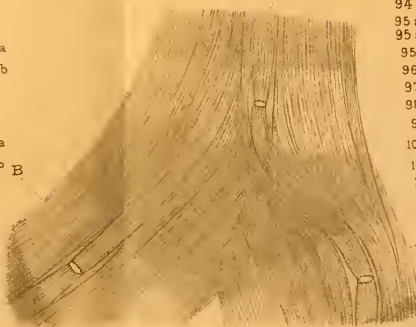


Fig. 8.



Fig. 9.



Fig. 11.



Fig. 12.

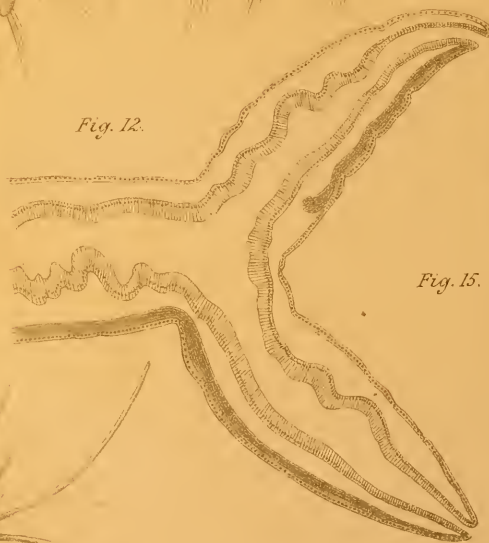


Fig. 15.



Fig. 14.

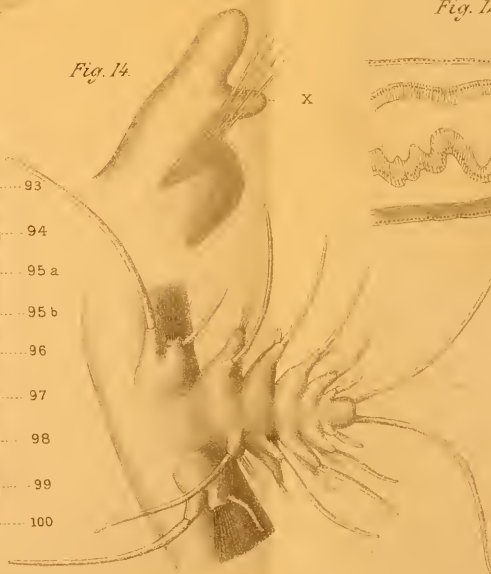


Fig. 13.

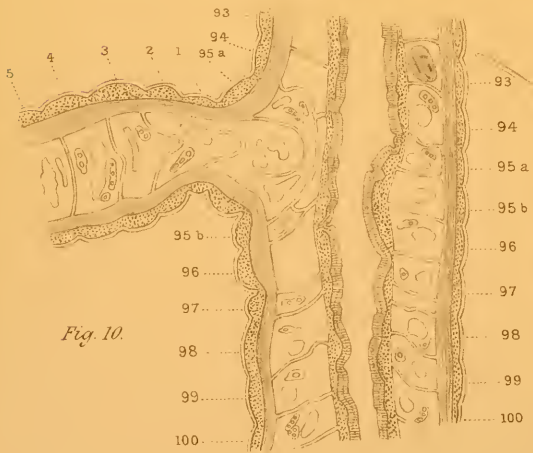


Fig. 10.

Fig. 16.



Fig. 1.

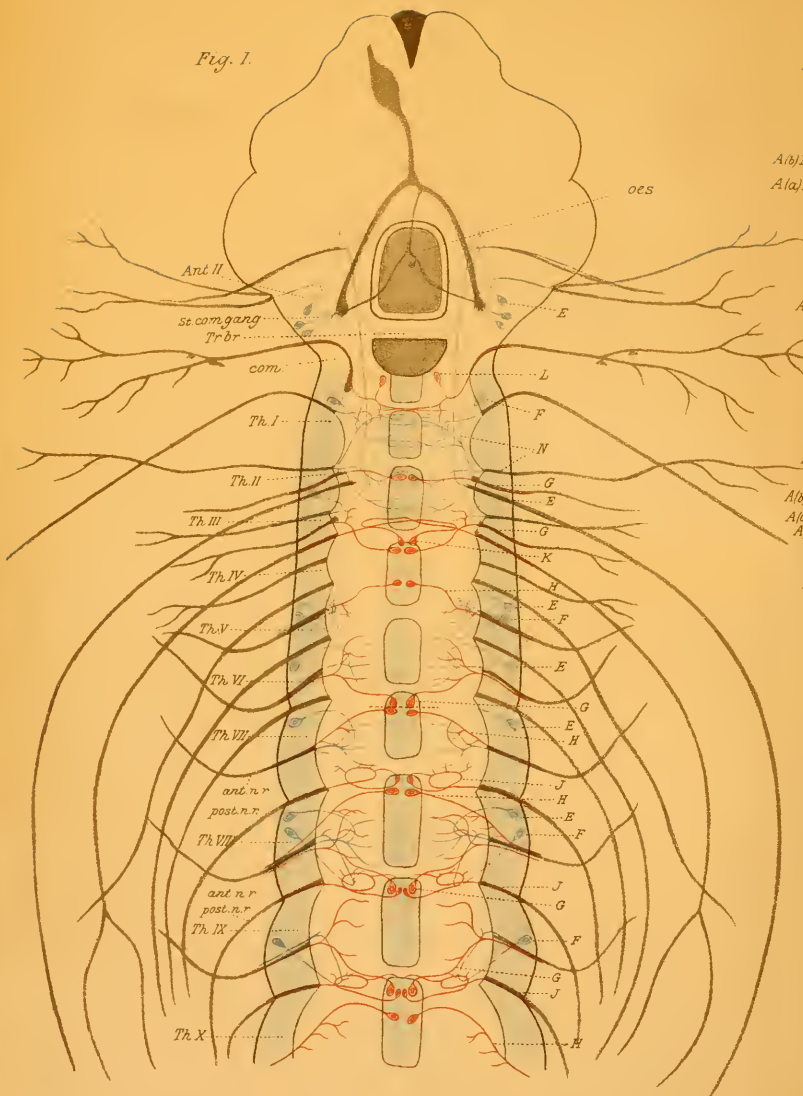


Fig. 2.

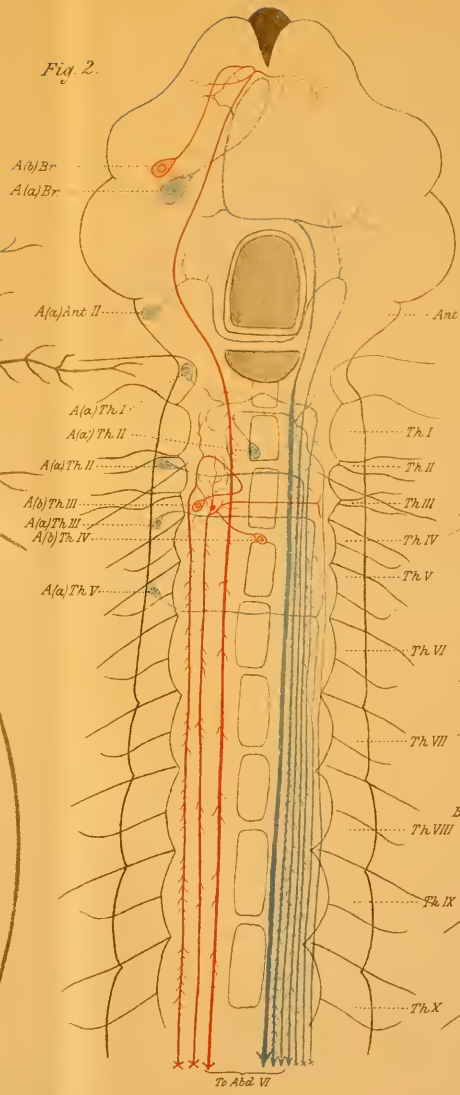


Fig. 3.

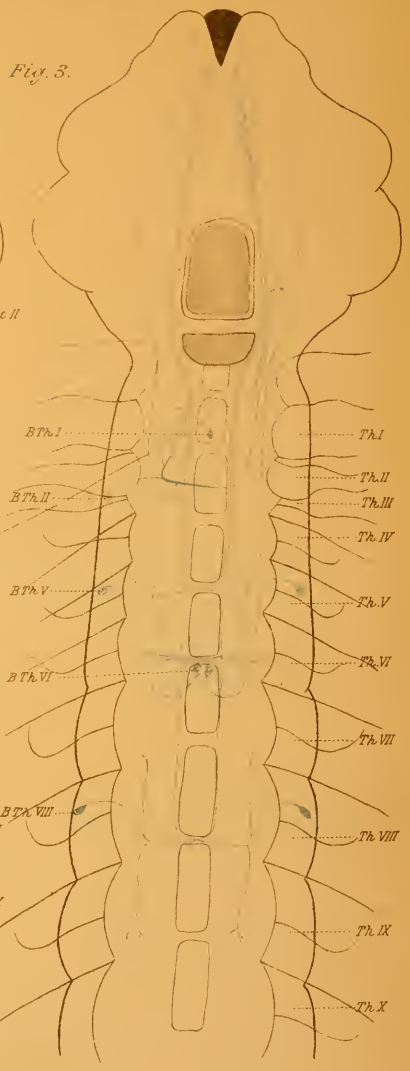


Fig. 4.

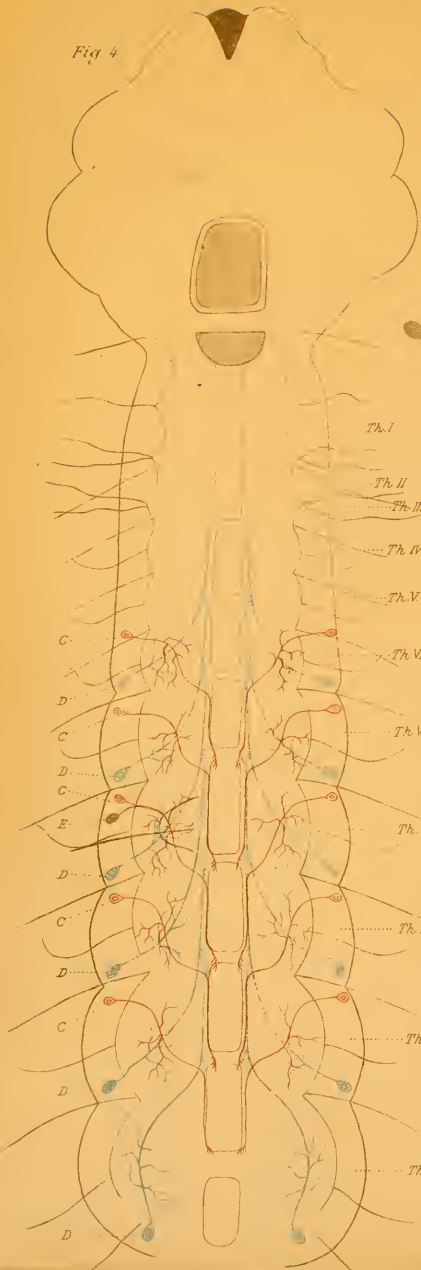


Fig. 5.

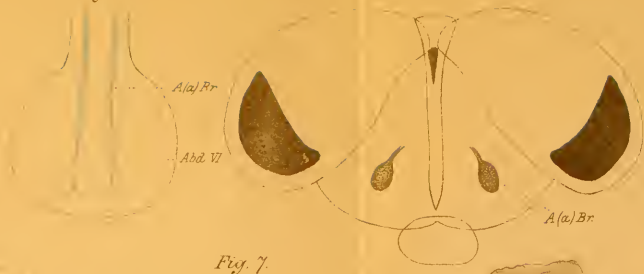


Fig. 6.

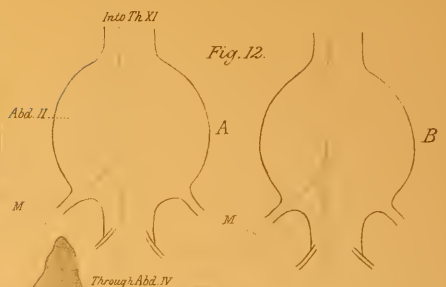


Fig. 7.



Fig. 8.

Fig. 11.



Fig. 12.

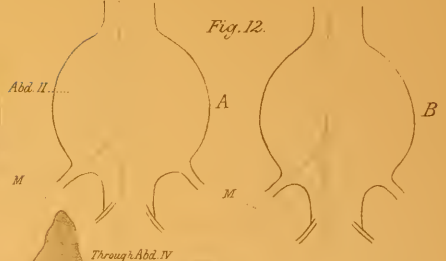


Fig. 13.



Fig. 10.



Fig. 9.



E. J. Allen del.

F. Huth, Lith. Edin.



Fig. 4.

Fig. 6.

Fig. 9.

Fig. 8.

Fig. 12.

Fig. 11.

Fig. 5.

Fig. 10.

Fig. 7.

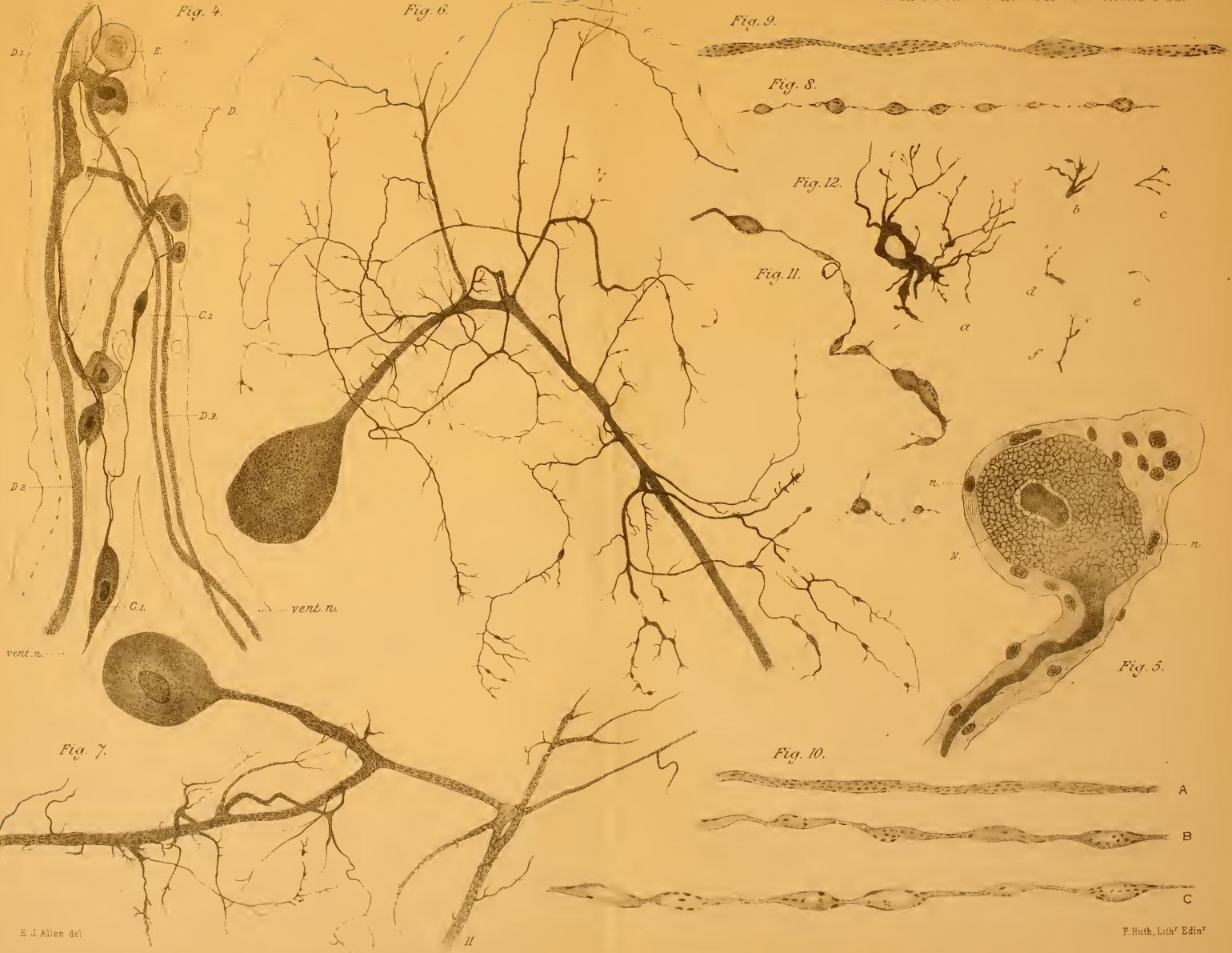


Fig. 1.

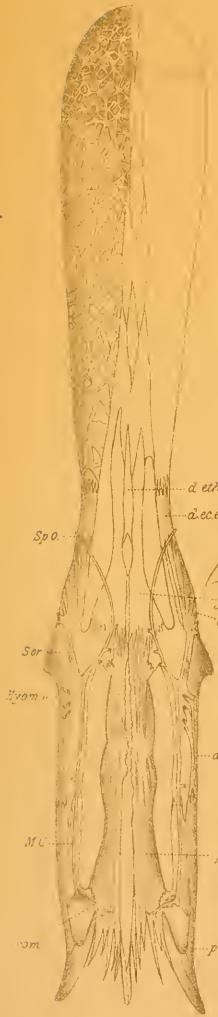


Fig. 2.



Fig. 3.



Fig. 4.

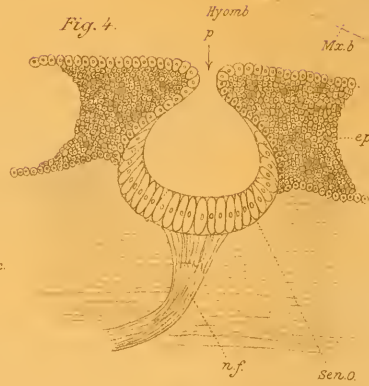


Fig. 5.

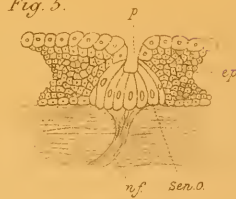


Fig. 6.

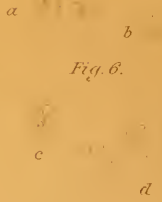


Fig. 7.

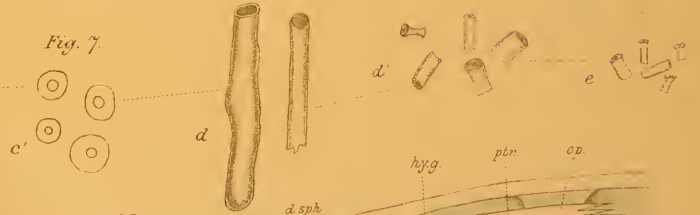
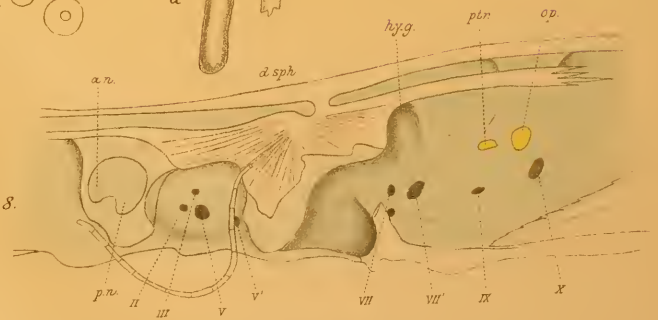
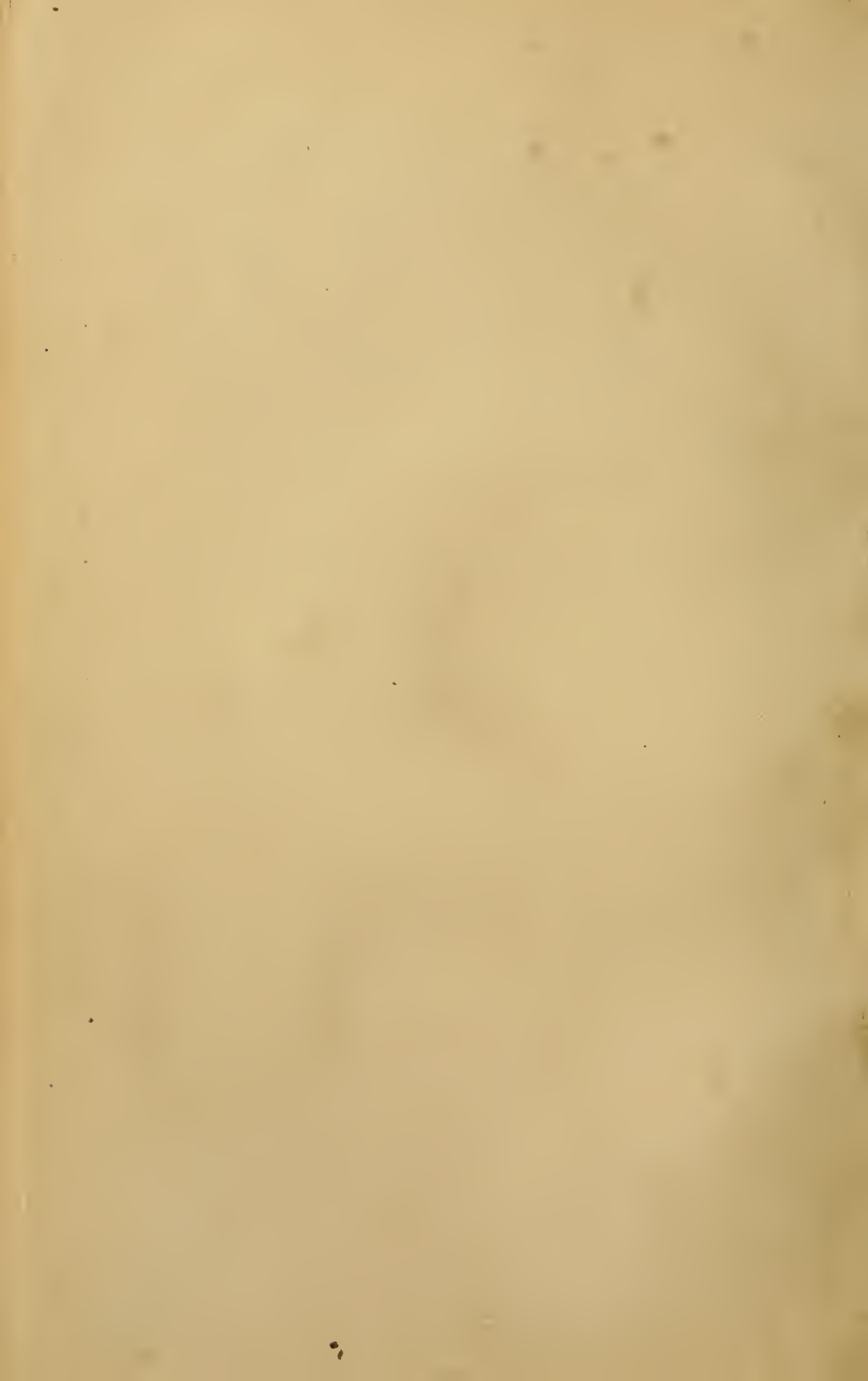


Fig. 8.





ERNST MAYR LIBRARY



3 2044 110 319 803

