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Page(s): Page 1, Page 2, Page 3, Page 4, Page 5, Page 6, Page 7, Page 8, Page 9, Page 10, Page 11, Page 12, Page 13, Page 14, Page 15, Page 16, Page 17, Page 18, Page 19, Page 20, Page 21, Page 22, Page 23, Page 24, Page 25, Page 26, Foldout, Text, Foldout, Text, Foldout, Text, Foldout, Text, Foldout, Text, Text, Text

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ART. I.—*Preliminary Notice of Victorian Earthworms,*

Part II. The genus Perichæta.

(With Plates II, III, IV, V, VI, VII.)

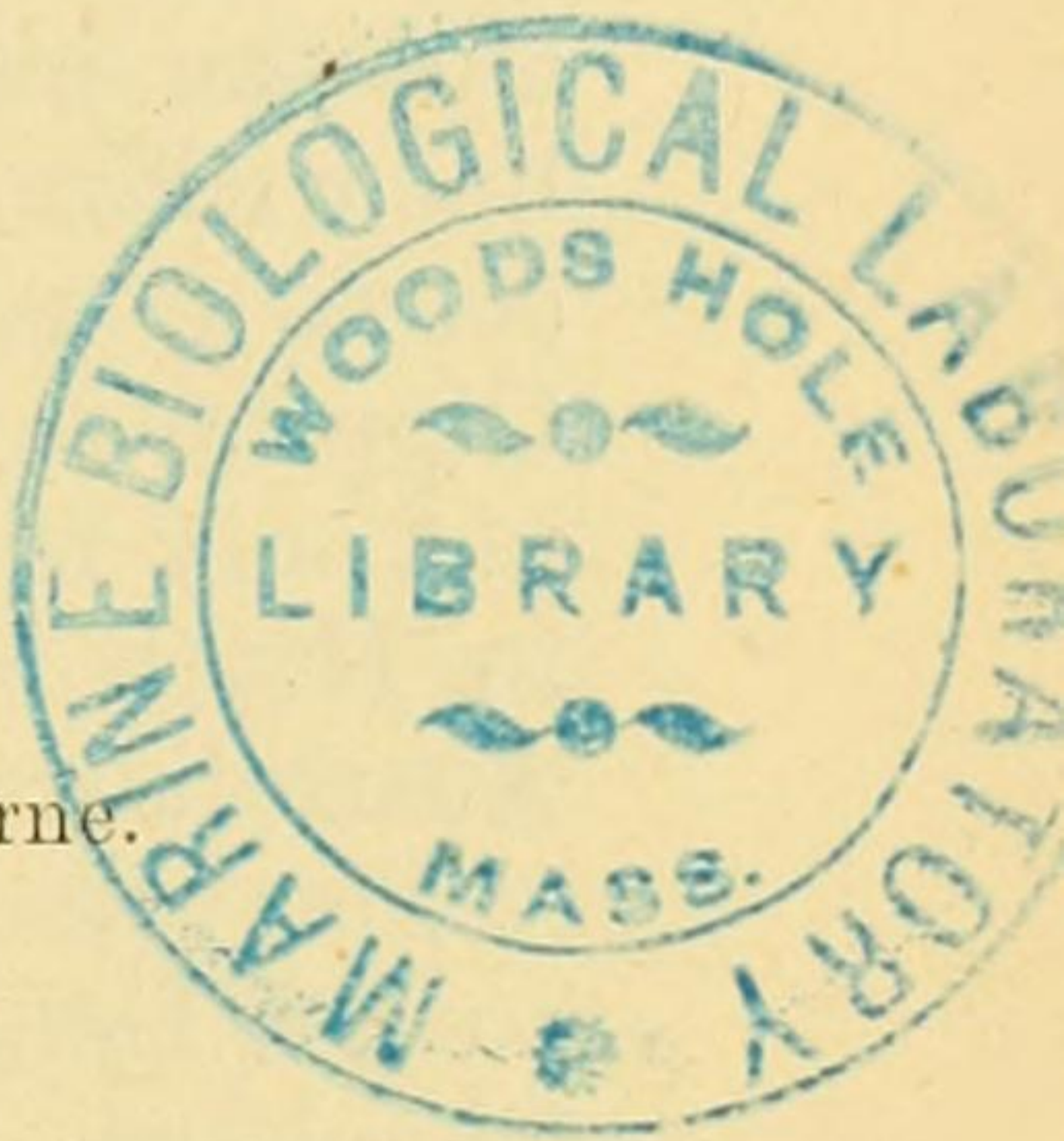
By W. BALDWIN SPENCER, M.A.

Professor of Biology in the University of Melbourne.

[Read March 10, 1892.]

This account includes the description of twenty-two species of the genus *Perichæta*, which have up to the present time been collected in Victoria. Two of these, *Perichæta dorsalis* and *bakeri*, have been previously described by Mr. J. J. Fletcher, who obtained them from Gippsland. My own collection has been made in different parts of Victoria, and especially in the South Eastern district, where Gippsland is peculiarly rich. As in the case of the genera *Cryptodrilus* and *Megascolides*, so in that of *Perichæta*, the forms described are at present, for the sake of convenience, referred to the one genus, though this will undoubtedly have to be broken up, and at the same time, certain forms provisionally as yet referred to it, may have to be placed under other existing genera. With this, Mr. Fletcher and myself will deal in our extended monograph. Sufficient details only are now given to serve for the identification of the species.

We have in Victoria only one species which is really widely distributed—this is *P. dorsalis*, which was first described by Fletcher from Warragul, Gippsland. Since then it has been obtained in West and South Gippsland, from the Otway district, from the Grampians, and from Creswick and Castlemaine. It is not only widely spread, but is also abundant in numbers, almost always forming the majority of specimens of any collection in West or South Gippsland especially. It is interesting to note that an allied form, *Perichæta stirlingi*, is apparently prevalent in South Australia.



The distribution of the former species is in marked contrast to that of most. Certain forms, such as *P. tanjilensis* and *yarraensis*, are characteristic of the Upper Yarra Valley especially. *Perichæta fielderi*, a very well marked form, has only come from Fern Tree Gully and Sassafras Gully and the hills outside Narre Warren, all of which localities lie within a small compass. *P. bakeri*, *copelandi*, and *obscura*, are characteristic of the Warragul district in Gippsland, and *P. dendyi* is an interesting form recorded as yet only from Healesville. *P. lateralis* has been found only in North West Victoria and is closely allied to the South Australian species *P. stirlingi*.

For valuable assistance in collecting, I am again indebted to Dr. Dendy, Rev. W. Fielder, and Messrs. French, Frost, Shephard, Hall, Steel, Mann, Copeland, Brittlebank, D. le Souëf, R. H. Anderson and H. Giles.

Unless otherwise stated, the description always refers to spirit specimens. Such structures as the accessory copulatory ones are only evident after preservation, and examination of numerous specimens shows that spirit exerts a uniform action upon these.

- (1) *Perichæta copelandi*, sp. n. (Figs. 52, 53, 54, 76). Length of spirit specimen 5 inches, $\frac{3}{8}$ inch broad. Number of segments about 175.

Dark purple colour dorsally, with a darker median line.

Prostomium completely dovetailed into the peristomium, and marked by a median groove.

Clitellum not strongly marked, occupying segments 13–17, but not always the anterior part of 13 or the posterior of 17.

Setæ. The first setigerous segment has 10 on each side, after this and to the posterior end of the clitellum the number varies from 15–17. Behind segment 20, it varies from 23–25. On the last 6 or 7 segments the setæ are difficult to see. Dorsal and ventral median lines free of setæ.

Male pores on papillæ in segment 18, at the level of the interval between the two inner setæ of each side.

Oviduct pores on segment 14 anterior to, and at the level of the interval between the two inner setæ of each side.

Spermathecal pores, 5 pairs placed on the line between segments 4–9, very slightly dorsal of the level of the innermost setæ.

Accessory copulatory structures. A pair of elliptical tumid patches between segments 16 and 17, at the level of the interval between the inner two setæ of each side. A pair between segments 17 and 18, at the level of the interval between the second and third setæ of each side; a pair at the same level between segments 18 and 19, and another between segments 19 and 20. The male openings lie ventral of these structures and not dorsal, as in the case of the similar ones present in *P. bakeri*. A series of pairs of small elliptical patches marked by distinct pores on the very anterior margins of segments 9-13, each one slightly dorsal of the innermost setæ of its side. These patches in segment 9 are enlarged and include the openings of the spermathecæ. An additional pair, with similar relationships, may be present on segment 8.

Dorsal pores present, the first between segments 4 and 5.

Nephridiopores not visible externally.

Alimentary canal. Gizzard present in segment 5. No true calciferous glands, but vascular swellings are present in segments 9-15. Large intestine commences in segment 17.

Circulatory system. Single dorsal vessel, with the last pair of hearts in segment 12. No supra-intestinal vessel present.

Excretory system. Meganephric.

Reproductive system. Testes, two pairs in segments 10 and 11, into which the ciliated rosettes open.

Prostates long, coiled, and tubular, occupying segments 18-22.

Sperm sacs, three pairs attached respectively to the posterior wall of segment 9 and the anterior of segments 12 and 13. Saccular in form.

Ovaries in segment 13, with oviducts opening into the same segment.

Spermathecæ, 5 pairs present in segments 5-9, each consisting of a large sac and short diverticulum.

Habitat. Warragul district. I have associated with this characteristic Gippsland perichæte the name of Mr. Hugh Copeland, to whom I am much indebted for frequent and valuable assistance in collecting.

(2) *Perichæta obscura*, sp. n. (Figs. 4, 5, 6, 70). Length of spirit specimen $2\frac{3}{4}$ inches, about $\frac{1}{8}$ inch broad. Number of segments 90-100.

Prostomium completely dovetailed into the peristomium.

Clitellum complete, and extending over segments 14-16, together with the posterior part of 13.

Setæ, from 9-11 on each side in front of the clitellum ; behind this, 10-12 each side. Dorsally and ventrally there is a median space free of setæ.

Male pores on segment 18 on papillæ, on a level with the second seta on each side.

Oviduct pores on segment 14 anterior to, and very slightly ventral of, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the second setæ of each side.

Accessory copulatory structures. A pair of elliptical tumid patches between segments 16 and 17, at the level of the interval between the two inner setæ of each side. A pair at the same level on the anterior part of segment 18, and another between segments 17 and 18, at the level of the interval between the second and third setæ of each side. A swollen tumid ridge occupies the posterior part ventrally of segment 18, and the anterior of segment 19, extending outwards as far as the level of the third seta of each side. A ridge on the posterior part of segment 19, and anterior of segment 20, extending outwards as far as the level of the second seta of each side. These structures, and especially the two on each side immediately in front of the male openings, are very characteristic.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. No true calciferous glands present, but vascular swellings in segments 12-15 ; those in 14 and 15 being especially large. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single ; last heart in segment 12. Those in segments 10, 11, 12 large ; those in segments 7, 8, 9 small. Supra-intestinal vessel in segments 9-12.

Excretory system. Meganephric.

Reproductive system. Testes, two pairs in segments 10 and 11, into which open the rosettes.

Prostates tubular, coiled, extending through segments 17, 18, and 19.

Sperm sacs, two pairs attached respectively to the anterior wall of segment 12, and the posterior of segment 9.

Ovaries in segment 13, the oviducts opening into the same segment.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a sac, with a diverticulum half the length of the sac.

Habitat. Warragul, Fern Tree Gully.

(3) *Perichæta sylvatica*, sp. n. (Figs. 34, 35, 36, 68). Length of spirit specimen 3 inches, less than $\frac{1}{8}$ inch broad. Number of segments about 100.

Prostomium not completely dovetailed into the peristomium (about three-quarters). The peristomium marked by a fairly distinct median ventral cleft.

Clitellum occupying segments 14, 15, 16, with the posterior part of 13, and the anterior of 17.

Setæ, 12 on each side, except in the first two setigerous segments, where there are 10.

Male pores on segment 18, slightly ventral of the level of the second setæ.

Oviduct pores on segment 14 ventral of, and very slightly anterior to, the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, each at the level of the innermost seta.

Accessory copulatory structures. Two pairs of faintly marked circular patches on segments 16 and 17, at the level of the interval between the two inner setæ of each side. A pair of well marked elliptical patches on segment 10, posterior to, and at the level of, the interval between the second and third setæ of each side.

Dorsal pores present, the first between segments 5 and 6.

Alimentary canal. Gizzard in segment 5. Three pairs of well marked calciferous glands present in segments 10, 11, and 12. Large intestine commencing in segment 15.

Circulatory system. Dorsal vessel single, the last heart in segment 12.

Excretory system. Plectonephric.

Reproductive system. Testes in segments 10 and 11, rosettes opening into the same segments.

Prostates small, flattened and bilobed, but with a single duct. In segment 18.

Sperm sacs, two pairs, one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9. Saccular in form.

Ovaries in segment 13, the oviducts opening into the same segment.

Spermathecæ, five pairs, in segments 5–9. Each consisting of a sac, with a diverticulum about the same length as the latter.

Habitat. Fern Tree Gully.

(4) *Perichaeta hoggii*, sp. n. (Figs. 28, 29, 30, 80). Length of spirit specimen $4\frac{1}{2}$ inches, $\frac{1}{8}$ inch broad. Number of segments about 125.

Prostomium not completely dovetailed into the peristomium (about one-half). The latter has a distinct median ventral cleft.

Clitellum occupying the posterior part of segment 13, together with the segments 14, 15, 16, and the anterior part of segment 17.

Setæ, except the first two segments, 12 on each side.

Male pores on papillæ in segment 18, at the level of the innermost seta on each side.

Oviduct pores on segment 14 ventral of, and anterior to, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 8 and 9, at the level of the innermost setæ.

Accessory copulatory structures. Paired tumid patches slightly anterior to, and at the level of, the innermost setæ in segments 20, 21 and 22. A median ventral ridge, occupying the space between the two innermost papillæ, is present on segments 17 and 19. On segments 20, 21, and 22, median ventral ridges are usually present, connecting the circular patches across the median line.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. True calciferous glands in segments 10, 11, 12. Large intestine commencing in segment 15.

Circulatory system. Single dorsal vessel. Last heart in segment 12. Small hearts in segments 6–9.

Excretory system. Plectonephric.

Reproductive system. Testes in segments 10 and 11, with rosettes opening into the same segments.

Prostates small, flattened, and bilobed with a single duct.

Sperm sacs, two pairs; one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9.

Ovaries in segment 13, oviducts opening into the same segment.

Spermathecæ, 5 pairs, in segments 5–9. Each with a sac and diverticulum more than three-quarters the length of the former.

Habitat. Mt. Macedon and Healesville (Dr. Dendy).

The first specimens were found at Mount Macedon, whilst collecting with Mr. H. R. Hogg, to whom I am indebted for valuable assistance, and whose name is associated with this form.

(5) *Perichæta hallii* (Figs. 40, 41, 42, 69). Length of spirit specimen $1\frac{2}{3}$ inches, a little more than $\frac{1}{16}$ inch broad. Number of segments about 100.

Prostomium not completely dovetailed into the peristomium (about three-quarters). The peristomium with a distinct median ventral cleft.

Clitellum not very strongly developed, lighter coloured than the surrounding parts, and occupying segments 13–17.

Setæ somewhat difficult to see. In front of clitellum, 12 or 13 on each side; behind, 12–16 on each side.

Male pores on very strongly marked papillæ on segment 18, the openings being slightly dorsal to the level of the innermost setæ. Between the papillæ is a deep depression extending on to segments 17 and 19.

Oviduct pores on segment 14.

Spermathecal pores, five pairs.

Accessory copulatory structures. Three pairs of well marked elliptical tumid patches, each with a median linear depression on the posterior portions of segments 9, 10, and 11, and extending over a space equal to that between setæ 1 and 3 on each side. A smaller patch on the anterior part of the segments 9 and 10, confluent with the larger posterior one, but not so strongly marked.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. True calciferous glands present in segments 10, 11, and 12. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single. Last heart in segment 12.

Excretory system. Plectonephric.

Reproductive system. Testes in segments 10 and 11, into which the rosettes open. The same segments are filled with sperm.

Prostates small, flattened, and bilobed, but with a single duct on each side, in segment 18.

Sperm sacs attached to the anterior wall of segment 12, and the posterior wall of segment 9, with a smaller pair attached to the anterior wall of segment 14.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, 5 pairs, in segments 5, 6, 7, 8, and 9. Each consisting of a sac, with a diverticulum more than half as long as the former.

Habitat. Castlemaine. Collected by Mr. T. S. Hall, M.A.

(6) *Perichæta rubra*, sp. n. (Figs. 25, 26, 27). Length of spirit specimen $2\frac{1}{4}$ inches, breadth about $\frac{1}{3}$ inch. Number of segments 80-90.

Prostomium not completely dovetailed into the peristomium (about $\frac{1}{2}$). The peristomium with a distinct median ventral cleft.

Clitellum distinct and complete, occupying segments 14-16.

Setæ, in front of the clitellum 10 each side, behind 12.

Male pores on distinct papillæ on segment 18, at the level of the third seta of each side.

Oviduct pores on segment 14 anterior to, and ventral of, the first setæ.

Spermathecal pores, 5 pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the second seta of each side.

Accessory copulatory structures. Median ventral ridges occupying the anterior portions of segments 17, 19, 20, 21, 22 and 23. On segment 10, two strongly marked circular patches, with central depressions, placed posterior to the setæ and at the level of the interval between the second and third setæ. On segments 6, 7, 8 and 9 in the median ventral space devoid of setæ, and anterior to the level of the latter, are pairs of closely apposed circular tumid patches, each with a central pore-like depression. On segment 5, a median ventral patch.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. True calciferous glands in segments 10, 11 and 12. Large intestine commencing in segment 15.

Circulatory system. Dorsal vessel single. Last heart in segment 12.

Excretory system. Plectonephric.

Reproductive system. Testes, two pairs in segments 10 and 11, into which the rosettes open.

Prostates small, flattened, and bilobed, but with a single duct in segment 18.

Sperm sacs attached to the posterior wall of segment 9, the anterior of segment 12, and a small pair to the anterior of segment 14.

Ovaries in segment 13, with oviducts opening into the same segment.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a large sac, with a diverticulum of about the same length as the sac.

Habitat. Tallarook, Goulburn River. Collected by Mr. A. H. S. Lucas. This is locally known as the "red worm."

(7) *Perichæta frenchii*, sp. n. (Figs. 31, 32, 33, 79). Length of spirit specimen 2-4 inches, breadth about $\frac{1}{8}$ inch. Number of segments 110.

Spirit specimens are dark purple colour in front of the clitellum, save on the mid-ventral surface; dark purple median dorsal line; the rest of the body a dirty white.

Prostomium not completely dovetailed into the peristomium (about half). The peristomium marked by a distinct median ventral cleft.

Clitellum occupying segments 13-16, together with sometimes the anterior part of 7 dorsally.

Setæ, 10 each side in front of the clitellum, behind this 12 each side.

Male pores on papillæ on segment 18, at the level of the interval between the two inner setæ of each side. A distinct depression between the two papillæ.

Oviduct pores on a small elliptical patch on segment 14, anterior to, and slightly ventral of, the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the innermost setæ on each side.

Accessory copulatory structures. Median ventral ridges, with linear depressions on the anterior parts of segments 19, 20, 21 and 22. Median ventral ridges on the posterior parts of segments 9 and 10; the anterior of the two, small.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. True calciferous glands in segments 10, 11 and 12. Large intestine commencing in segment 15.

Circulatory system. Dorsal vessel single, the last heart in segment 12.

Excretory system. Plectonephric.

Reproductive system. Testes in segments 10 and 11, rosettes in the same segments.

Prostates flattened, bilobed, one half in segment 18, the other in segment 19; each half with a short separate duct, the two uniting on each side in segment 18.

Sperm sacs attached to the posterior wall of segment 9, and the anterior of segment 12. Saccular in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a sac, with a diverticulum longer than the latter, and terminating in a slightly swollen part.

Habitat. Loch, S. Gippsland; Narre Warren, Waratah Bay (Mr. W. Mann).

Found abundantly under logs at Narre Warren by Mr. French and myself. I have much pleasure in associating with this the name of Mr. French, the Government Entomologist of Victoria, to whom I am much indebted for frequent and valuable assistance. This is one of those forms which make burrows, coming to the surface under logs and stones, in which position the burrow lies open, the upper surface being closed in by the log or stone.

(8) *Perichæta steelii*, sp. n. (Figs. 37, 38, 39). Length of spirit specimen $2\frac{1}{2}$ inches, breadth about $\frac{1}{8}$ inch. Number of segments about 120.

Prostomium incompletely dovetailed into the peristomium (about $\frac{3}{4}$). The peristomium marked by a distinct median ventral cleft.

Body dark purple-brown at the anterior end, with a dark median dorsal line along the body. Light brown behind the clitellum, except the dorsal portion close to the latter.

Setæ. The first 3 segments have 11 on each side, after this there are 12 setæ on each side.

Male pores on segment 12, at the level of the innermost setæ, but not on papillæ.

Oviduct pores on segment 14.

Spermathecal pores, 5 pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the second seta of each side.

Accessory copulatory structures not developed, except a slight median ventral ridge on segment 17.

Dorsal pores present, the first between segments 3 and 4.

Alimentary canal. Gizzard in segment 5. True calciferous glands in segments 10, 11 and 12. Large intestine commencing in segment 15.

Circulatory system. Dorsal vessel single. Hearts in segments 5-12, the last three large.

Excretory system. Plectonephric.

Reproductive system. Testes in segments 10 and 11, into which the rosettes open.

Prostates small, flattened, bilobed, but with a single duct in segment 18.

Sperm sacs attached to the anterior wall of segment 12, and the posterior of segment 9.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a sac, with a diverticulum about half the length of the former.

Habitat. Woodend. Collected by Mr. T. Steel.

(9) *Perichæta lateralis*, sp. n. (Figs. 55, 56, 57, 78). Length of spirit specimen 3-3½ inches, breadth less than ⅓ inch. Number of segments 126.

Prostomium not completely dovetailed into the peristomium (about ⅔). The prostomium marked by a median ventral cleft.

Clitellum complete, lighter coloured than the surrounding parts, occupying segments 14, 15 and 16.

Setæ in front of the clitellum, 10 or 11 each side; behind the clitellum, 10-12 each side.

Male pores on papillæ on segment 18, at the level of the interval between the second and third setæ of each side.

Oviduct pores on segment 14 placed on an elliptical patch, each opening almost at the same level as, and very slightly in front of, the innermost seta of each side.

Spermathecal pores, three pairs, between segments 6 and 7, 7 and 8, 8 and 9, at the level of the fifth seta of each side.

Accessory copulatory structures. A pair of small papillæ each immediately in front of, and confluent with, one of the papillæ bearing the male opening. In addition to these, which are very characteristic, two small pairs of tumid patches may be present at the level of the innermost setæ, one half on segments 18 and 19, the other half on segments

19 and 20, and another pair may be present at the level of the interval between the two inner rows of setæ on each side, half on segments 9 and 10.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. No true calciferous glands present, but vascular swellings present in segments 9–12. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single. Hearts in segments 6–12.

Excretory system. Plectonephric.

Reproductive system. Testes, in pairs, in segments 10 and 11, with rosettes opening into the same segments.

Prostates flattened and elongate, with a somewhat mammillate surface. Each is leaf-shaped, the single duct running up the centre in the position of a mid-rib. Extending through segments 18–21.

Sperm sacs, three pairs, one pair on the anterior wall of segments 11 and 12; another on the posterior wall of segment 9. Sac-like in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, three pairs, in segments 7, 8 and 9. Each consisting of a sac, with a long coiled tubular diverticulum.

Habitat. Castlemaine (collected by Mr. T. S. Hall). Tallarook, Goulburn Valley (collected by Mr. A. H. S. Lucas.)

(10) *Perichæta dendyi*, sp. n. (Figs. 49, 50, 51, 77). Length of spirit specimen $2\frac{1}{2}$ inches, breadth about $\frac{1}{8}$ inch. Number of segments about 160. Colour yellowish when alive.

Prostomium completely dovetailed into the peristomium, the former being distinctly wedge-shaped.

Clitellum complete, occupying segments 14–16.

Setæ, as far back as segment 19, there are 6 on each side, arranged in pairs; segment 20 has 8 each side, in pairs; behind this increased to 10 each side, and at the posterior end vary from 7–10. The inner two on each side remain regular along the whole length of the body.

Male pores on slight papillæ on segment 18, at the level of the interval between the two inner setæ of each side.

Oviduct pores on segment 14.

Spermathecal pores, four pairs, between segments 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the innermost setæ.

Accessory copulatory structures. Narrow tumid ridges placed on the mid-ventral lines between segments 17 and 18, 18 and 19, 19 and 20. The single ridge may be divided into two halves, the centre of each half corresponding with the level of one of the innermost setæ. Special small tumid patches are constantly present, surrounding the openings of the two posterior pairs of spermathecæ.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. No true calciferous glands present. Vascular swellings in segments 9-12. Large intestine commencing in segment 18.

Circulatory system. Dorsal vessel single. Hearts in segments 8-12. A supra-intestinal vessel present in segments 9-12.

Excretory system. Meganephric.

Reproductive system. Two pairs of testes in segments 10 and 11, into which open the rosettes.

Prostates, flattened bodies folded over the intestine on each side in segment 18.

Sperm sacs, two pairs, one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9. Sac-like in form.

Ovaries in segment 13, with oviducts opening into the same segments.

Spermathecæ, four pairs, in segments 6, 7, 8 and 9. Each consisting of a long sac, with a very short diverticulum at its base.

Habitat. Healesville (collected by Dr. Dendy), living in rotten logs.

I have much pleasure in associating with this the name of Dr. Dendy.

(11) *Perichaeta lochensis*, sp. n. (Figs. 1, 2, 3). Length of spirit specimen 3 inches, breadth about $\frac{1}{8}$ inch.

Prostomium not completely dovetailed into the peristomium (about $\frac{3}{4}$).

Clitellum well-marked and complete, extending over segments 14-16, and including also the posterior part of segment 13.

Setæ; the usual number on each side, as far back as the 17th segment, is 9; there may occasionally be 11; after and including the 19th segment there are 10. A small posterior

part of the body, distinct from the rest by its lighter colour and flattened shape, dorso-ventrally, has 16-19 setæ on each side.

Male pores on slight papillæ on segment 18, at the level of the interval between the two inner setæ of each side.

Female pores on segment 14 anterior to, and ventral of, the level of the two innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, difficult to see.

Accessory copulatory structures. Segments 17 and 18 have their mid-ventral parts tumid. A special swollen part lies immediately in front of the male opening on each side, and there are tumid ridges ventrally between segments 18 and 19, 19 and 20, but these are not strongly marked.

Dorsal pores present.

Alimentary canal. Gizzard in segment 5. No true calciferous glands, but vascular swellings are present in segments 12-15. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single. Hearts in segments 8-12, the first two being small.

Excretory system. Meganephric. Each nephridium has a large sac.

Reproductive system. Two pairs of testes in segments 10 and 11, into which the rosettes open.

Prostates coiled, tubular, occupying segments 18-21.

Sperm sacs, two pairs, one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9.

Ovaries in segment 13, into which the oviducts open.

Spermathecae, 5 pairs, in segments 5, 6, 7, 8, and 9, each consisting of a sac and diverticulum less than half the length of the former.

Habitat. Loch, S. Gippsland, under logs.

- (12) *Perichaeta dubia*, sp. n. (Figs. 46, 47, 48, 67). Length of spirit specimen $1\frac{3}{4}$ inches, breadth $\frac{1}{8}$ inch. Number of segments, about 100.

Prostomium completely dovetailed into the peristomium.

Clitellum extending over segments 13-17; lighter colour than the surrounding parts; not thick and glandular, and scarcely noticeable ventrally.

Setæ. The first setigerous segment has 6 on each side, the 15 following ones have 8; behind this the number varies from 9-12.

Male pores on papillæ on segment 18, at the level of the interval between the two inner setæ of each side.

Oviduct pores on segment 14 slightly anterior to, and very nearly on, the same level as the innermost setæ of each side.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the intervals between the two inner setæ of each side.

Accessory copulatory structures. These resemble somewhat those of *P. bakeri*, but the two forms may be distinguished by the position of the spermathecal pores and the form of the prostate. Between segments 17 and 18, 18 and 19, and 19 and 20, are three pairs of elliptical tumid patches, nearer to the median line than the male pores.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal. Gizzard in segment 5. No true calciferous glands, but vascular swellings in segments 9-14. Large intestine commencing in segment 18.

Circulatory system. Single dorsal blood-vessel. Hearts in segments 5-12, those in segments 5-8, small. No continuous supra-intestinal vessel, but one in each of the segments 12-8 (?), which is connected with the dorsal vessel in the posterior part of the segment, and ends blindly in the anterior part.

Excretory system. Meganephric.

Reproductive system. Two pairs of testes in segments 10 and 11, into which the rosettes open.

Prostates coiled and tubular, extending through segments 18 and 19, the blind end being in segment 18.

Sperm sacs, two pairs, one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a long sac with a short diverticulum, about $\frac{1}{3}$ the length of the former.

Habitat. S. Warragul (collected by Mr. W. Mann).

(13) *Perichæta walhallæ*, sp. n. (Figs. 43, 44, 45, 66). Length of spirit specimen 1 inch, width slightly less than $\frac{1}{8}$ inch. Number of segments 88.

The form of the body is bluntly tapering at both ends. There is a median broad dark purple-brown band starting immediately behind the clitellum, and running back half way to the posterior end. In the median third of the body

the lateral surfaces are of the same colour, but chequered with little rectangular light areas.

The prostomium is not completely dovetailed into the peristomium (about $\frac{1}{2}$).

Clitellum well marked, tumid and complete, occupying segments 14–16.

Setæ, in front of the clitellum, 10 on each side ; behind, 12.

Male pores on segment 18, at the level of the interval between the two inner setæ of each side. Between the two openings a ridge runs across the mid-ventral surface, with a depression both in front of, and behind, it.

Oviduct pores on a small elliptical patch on segment 14, anterior to the level of the setæ.

Spermathecal pores difficult to see externally.

Accessory copulatory structures. None present.

Alimentary canal. Gizzard in segment 5. No true calciferous glands. Large intestine commencing in segment 15 (?)

Circulatory system. Dorsal vessel single. Last heart in segment 12.

Excretory system. Meganephric.

Reproductive system. Two pairs of testes in segments 10 and 11 ; rosettes opening into the same segments.

Prostates small, tubular, coiled, in segment 18.

Sperm sacs, one pair, attached to the anterior wall of segment 12. Sac-like in form.

Ovaries in segment 13, with oviducts opening into the same segment.

Spermathecæ, five pairs, in segments 5–9. Each consisting of a long sac with a short diverticulum.

Habitat. Walhalla (collected by Dr. Dendy).

I have, unfortunately, only one specimen (a mature one) of this form. But the shape and colouration of the body, together with the absence of accessory copulatory structures, render it so distinct from other forms that I have ventured to distinguish it specifically.

(14) *Perichæta dicksonia*, sp. n. (Figs. 7, 8, 9). Length of spirit specimens 2 inches, width less than $\frac{1}{8}$ inch.

Prostomium completely dovetailed into the peristomium, which is marked by a median ventral cleft.

Clitellum well marked, complete, occupying segments 14–16.

Setæ, 10 on each side in front of the clitellum; 11 in the middle of the body. The rows are regularly arranged along the body.

Male pores on well marked papillæ on segment 18, at the level of the second seta of each side.

Oviduct pores on segment 14 anterior to, and slightly ventral of, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9; slightly dorsal of the level of the innermost setæ of each side.

Accessory copulatory structures. Two well marked elliptical tumid patches, one immediately in front of, and the other immediately behind, the male openings. The first half on segments 17 and 18, and the second half on segments 18 and 19.

Dorsal pores present, the first between segments 4 and 5.

Nephridiopores on the anterior margin of the segments, at the level of the sixth seta of each side, commencing on the third segment.

Alimentary canal. Gizzard in segment 5. No true calciferous glands. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single. Hearts in segments 6-12.

Excretory system. Meganephric.

Reproductive system. Testes, two pairs, in segments 10 and 11, into which the rosettes open. The testes and rosettes on each side in each segment, enclosed by a membranous bag filled with sperm.

Prostates tubular and coiled, in segments 18 and 19.

Sperm sacs, two pairs, one on the anterior wall of segment 12, the other on the posterior wall of segment 9.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a large sac and small diverticulum, not more than one-third the length of the former.

Habitat. Fern Tree Gully, under logs.

- (15) *Perichæta alsophila*, sp. n. (Figs. 10, 11, 12). Length of spirit specimen $1\frac{1}{2}$ -2 inches, breadth nearly $\frac{1}{8}$ inch. Number of segments about 104.

Prostomium not completely dovetailed into the peristomium (about half). The peristomium marked by a median ventral furrow.

Clitellum well marked, complete, occupying segments 14, 15, 16.

Setæ, in front of the clitellum, 10–11 each side; behind the clitellum, 13 each side. The rows regular.

Male pores on two fairly well marked papillæ on segment 18, at the level of the interval between the second and third setæ of each side.

Oviduct pores on segment 14 slightly anterior to, and ventral of, the level of the setæ.

Spermathecal pores, four pairs, between segments 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the innermost setæ of each side.

Accessory copulatory structures. Two ridges with swollen ends, one immediately in front of, the other immediately behind, the male openings. Both have their swollen ends at the level of the interval between the two inner setæ of each side. One is placed half on each of the segments 17 and 18, the other half on each of the segments 18 and 19. A smaller ridge with two confluent swellings, half on each of segments 16 and 17, and situated in the mid-ventral space between the innermost rows of setæ. Two elliptical tumid patches in the mid-ventral space, one on the posterior half of segment 7, the other on the posterior half of segment 8.

Dorsal pores present, the first between segments 4 and 5.

Nephridiopores very prominent, at the level of the seventh seta of each side, and placed at the anterior margin of each segment, commencing with the third. On contraction in spirit, the body wall in transverse section has the form of an upper and lower half, meeting on each side at an angle which corresponds in position to the nephridiopore.

Alimentary canal. Gizzard in segment 5. No true calciferous glands, but large vascular swellings in segments 14 and 15, and smaller ones in segments 9–13. Large intestine commencing in segment 17.

Circulatory system. Dorsal vessel single. Last heart in segment 12.

Excretory system. Meganephric.

Reproductive system. Two pairs of testes in segments 10 and 11, into which open the rosettes.

Prostates tubular, coiled, in segment 18.

Sperm sacs, two pairs, one attached to the anterior wall of segment 12, the other to the posterior wall of segment 9. Sac-like in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, four pairs, in segments 6-9. Each consisting of a large sac and short somewhat thin diverticulum.

Habitat. Fern Tree Gully, under logs.

(16) *Perichæta fielderi*, sp. n. (Figs. 19, 20, 21, 64). Length in spirits nearly 6 inches, breadth $\frac{1}{4}$ inch.

Both when alive and when in spirits, the worm has not the slightest resemblance in appearance to an ordinary perichæte form. It is only provisionally referred to this genus. The body is cream coloured, with a thick bright pink coloured clitellum, and is quite smooth, there being no indication of setæ, except in the clitellar region and perhaps an odd one here and there posteriorly; to see the setæ, it is necessary to cut sections. Its general appearance is closely similar to that of a *Megascolides*, to which genus I took it to belong when collecting it.

Prostomium possibly completely dovetailed into the peristomium, but the latter is strongly ribbed, two grooves being continuous with the edges of the prostomium, which has also a median furrow continued on to the peristomium.

Setæ, about six on each side, irregularly arranged behind the clitellum. In segments 13-16, a pair can often be seen on either side ventrally.

Clitellum well marked and thick, extending over segments 13-18; complete, save for two small depressed patches ventrally, one in the middle of segment 16, another occupying the hinder part of segment 17 ventrally, and the anterior of 18. These depressed patches may be absent, and the clitellum complete, in some specimens.

Male pores on two prominent papillæ, which may have their inner sides confluent, on segment 18. The pores at the level of the interval between the two inner setæ of each side.

Oviduct pores in a small linear depression on the anterior half of segment 14, each pore slightly ventral of the level of the innermost setæ.

Spermathecal pores, two pairs, one on the posterior margin of segment 7, another on the posterior margin of segment 8. Each pore is placed on a small, tumid, elliptical patch.

Accessory copulatory structures. An elliptical patch ventrally, half on each of segments 19 and 20, a similar one half on each of segments 20 and 21. Only one of these may be present.

Dorsal pores present.

Alimentary canal. Gizzard in segment 15. Vascular swellings in segments 11 and 12. Calciferous glands somewhat ventrally placed in segment 13. Large intestine commencing in segment 17. Prominent glandular tufts (pepto-nephridia?) attached to the pharynx.

Circulatory system. Dorsal vessel single. Hearts in segments 8-13. A continuous supra-intestinal vessel in segments 9-14. A lateral vessel in segments 7-13.

Excretory system. Plectonephric.

Reproductive system. Testes not visible, but a large membranous sac on each side in segment 11 filled with sperm, and enclosing a prominent rosette. Probably this encloses also the testes.

Prostates flattened, rather small; mammillated surface; in segment 18. A large whitish swelling close to each duct, containing penial setæ.

Sperm sacs, one pair, attached to the anterior wall of segment 12.

Ovaries in segment 13, into which the oviducts open.

Spermathecae, two pairs, in segments 8 and 9. Each consisting of a large sac and diverticulum.

Habitat. Narre Warren. Fern Tree Gully (collected by Rev. W. Fielder and Mr. Mann). Sassafras Gully (collected by Mr. Shephard). Under logs, in burrows partly exposed when the log is lifted, and partly penetrating to a depth of one or two feet beneath the surface.

The first specimens of this were found by the Rev. W. Fielder and Mr. Shephard, and subsequently Mr. French and myself found it abundantly at Narre Warren. Its area of distribution appears to be very limited, as I have never found it elsewhere, or received it from other districts.

- (17) *Perichaeta frosti*, sp. n. (Figs. 13, 14, 15, 71). Length of spirit specimen 6 inches, breadth about $\frac{1}{4}$ inch. Number of segments about 220.

As in the case of *P. fielderi*, the worm has not the slightest resemblance in appearance to an ordinary perichaete. It resembles closely in general appearance the group of forms at present classed together under the genus *Cryptodrillus*. In spirit the body is bleached, and the clitellum of a light brown colour.

Prostomium not at all dovetailed into the peristomium.

Setæ, save an odd one here and there, are invisible.

Clitellum strongly marked, saddle-shaped, incomplete ventrally, except in the middle of segments 16 and 17, extending over segments 14-17.

Male pores on very prominent papillæ on segment 18.

Oviduct pores placed on a ridge which runs across the anterior part of segment 14.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9.

Dorsal pores present, the first between segments 3 and 4.

Alimentary canal. Gizzard in segment 6. Calciferous glands in segments 8, 9 and 10. Vascular swellings in segments 11, 12 and 13. Large intestine commencing in segment 15.

Circulatory system. Dorsal vessel single, as far back as segment 13. In segment 14 and succeeding ones to the posterior end, it is double—that is, there is a loop in each segment, the two parts uniting at the septum. Hearts in segments 6-13. A lateral vessel is present on each side in segments 8, 9 and 10.

Excretory system. Plectonephric.

Reproductive system. A single pair of testes and rosettes in segment 11.

Prostates small, flattened; bi-lobed; in segment 18.

Sperm sacs. A pair attached to the anterior wall of segment 12, and a smaller pair to the anterior wall of segment 13. Sac-like in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a short sub-spherical sac, with a blunt rounded diverticulum about quarter the size of the sac.

Habitat. Croajingolong, E. Gippsland. Collected during an expedition of the Field Naturalists' Club of Victoria to Eastern Gippsland. I have associated with this the name of Mr. Frost, to whom I am indebted for much valuable aid.

(18) *Perichæta goonmurk*, sp. n. (Figs. 16, 17, 18). Length in spirits $4\frac{1}{2}$ inches, breadth $\frac{3}{16}$ of an inch. Number of segments about 150.

The body is dark purple colour dorsally. Laterally it is dark purple, but chequered with little rectangular cream coloured areas, in the centre of each of which is a seta.

Cream white on the ventral surface. The colour is much the same in spirit-preserved animals, as in the fresh state. This form is provisionally referred to the genus *Perichæta*.

Prostomium very slightly dovetailed into the peristomium.

Clitellum well marked, complete, light grey in colour, extending over segments 13–19.

Setæ. The first setigerous segment has 4 setæ on each side. The second 5, then up to the clitellum there are 6. The 20th and remaining segments have 8. The setæ are irregularly arranged, save the inner two of each side.

Male pores on papillæ on segment 18, each slightly ventral of the level of the second setæ of each side. There is a marked depression immediately in front of, and behind, a median ventral ridge on segment 18.

Oviduct pores on segment 14 anterior to, and very slightly ventral of, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9. Each slightly ventral of the level of the innermost seta.

Dorsal pores.

Alimentary canal. Gizzard in segment 5. No true calciferous glands, but vascular swellings in segments 8–14, those in segments 13 and 14 smaller than the others. Large intestine commencing in segment 16.

Circulatory system. Dorsal vessel double as far forward as the sixth segment, where the two halves do not unite anteriorly, but pass forwards on to the surface of the gizzard. In each segment the two halves unite where they pass through the septum. In addition to the dorsal, there is a *double supra-intestinal* vessel in segments 9–12. Hearts in segments 8–11. In segment 8, the hearts arise from the dorsal vessel. In segments 9–11, they arise from the supra-intestinal.

Excretory system. Plectonephric, associated with large nephridia with internal funnels at the posterior end of the body.

Reproductive system. Two pairs of testes in segments 10 and 11. Rosettes doubtful.

Prostates flattened, somewhat fan-shaped structures in segment 18.

Sperm sacs, a single small pair attached to the anterior wall of segment 12. Sac-like in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9, gradually increasing in size from before backwards. Each consisting of a sac, with a short blunt rounded diverticulum.

Habitat. Mt. Goonmurk, Croajingolong. Whilst collecting in Croajingolong I only found this interesting form, the colouring of which renders it at once noticeable, under logs at the head of a fern gully on Mt. Goonmurk, at an elevation of about 3500 feet. Mt. Goonmurk forms part of the Dividing Range which runs from east to west across Victoria.

(19) *Perichæta yarraensis*, sp. n. (Figs. 61, 62, 63, 74).

Length of spirit specimen $5\frac{1}{2}$ inches, of living form 7 or 8 inches, breadth $\frac{1}{2}$ inch.

In life the body is of a dull purple colour, darker dorsally than ventrally. The setæ are placed on little lighter-coloured spots. The clitellum stands out very clearly in the living form, being thick and cream white in colour.

Prostomium completely dovetailed into the peristomium.

Clitellum thick and strongly-marked, and extending over segments 13-17. The ventral surface of segments 15, 16 and 17 is not always white and glandular, the clitellum here being then incomplete and saddle-shaped. In other specimens it is complete.

Setæ. The first two setigerous segments have four on each side, arranged in two couples. Back to the clitellum there are two couples on each side, and in addition a fifth one external to these. Occasionally, but rarely, an additional one may be developed, but the worm can be recognised by the presence of five setæ on each side, regularly arranged so far back as the clitellum and including, at any rate, the two first segments of this. Worms from four localities all show this feature. Behind the clitellum the number increases to 10-14 on each side, arranged, save the innermost one, very irregularly. There is left a broad very irregular dorsal space free from setæ.

Male pores on slight papillæ, from which penial setæ may be seen protruding, on segment 18, at the level of the interval between the two inner setæ of each side.

Oviduct pores on segment 14 anterior to, and ventral of, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the innermost setæ.

Accessory copulatory structures. Three pairs of elliptical tumid patches in front of the male openings, and three or four behind. One pair placed half on segment 17, and half on segment 18, at the level of the interval between the second and third seta on each side. The others placed at the level of the interval between the two inner setæ of each side, and placed respectively half on each of the following segments, 15 and 16, 16 and 17, 19 and 20, 20 and 21, 21 and 22, 22 and 23. Each is marked by a median linear depression.

Dorsal pores present, the first between segments 5 and 6.

Alimentary canal. Gizzard in segment 5. No true calciferous glands present, but vascular swellings in segments 13, 14 and 15. Large intestine in segment 17.

Circulatory system. Dorsal vessel single. A supra-intestinal vessel present in segments 10-13. The last heart in segment 12.

Excretory system. Meganephric.

Reproductive system. Two pairs of testes in segments 10 and 11, into which the rosettes open. These segments are filled with masses of sperm, but these are not enclosed in sacs.

Prostates coiled, tubular, occupying segments 18, 19 and 20.

Sperm sacs, three pairs. Two large ones attached to the anterior walls of segments 12 and 13, a smaller pair attached to the posterior wall of segment 9. Sac-like in form.

Ovaries in segment 13, into which the oviducts open.

Spermathecæ, five pairs, in segments 5-9. Each consisting of a long sac, with a short diverticulum about one-fifth the length of the former.

Habitat. Tanjil Track, near Wood's Point. Warragul. Warburton.

(20) *Perichæta tanjilensis*. Length of spirit specimen $3\frac{1}{2}$ inches, breadth $\frac{3}{8}$ inch. The worm contracts very much in spirits. When alive, it has a dull grey purple colour.

Prostomium completely dovetailed into the peristomium, and marked by a median groove continuous with one which runs along the mid-dorsal line of the body.

Clitellum not strongly marked, occupying segments 14–17, and slightly darker than the surrounding parts.

Setæ. The number and arrangement varies slightly, but the following description of a particular specimen may be taken as fairly representative:—The first six setigerous segments have four on each side, arranged in couples. The seventh has four on one side and five on the other. The eighth, four on each side; and the ninth, four on one side and six on the other. The tenth, six on each side. The eleventh, four on one side and six on the other. The twelfth, four on one side and seven on the other. The thirteenth, five on each side. The fourteenth, six on each side. The fifteenth and sixteenth, five on one side and six on the other. The seventeenth, six on each side. The eighteenth, nineteenth, twentieth, twenty-first, and twenty-second segments have eight on each side, except on the right of the twentieth, where there are six. Behind this, the number varies from 6–10 on each side. The two inner rows on each side are regularly arranged, except during the posterior third of the body. The dorsal interval free from setæ is broad and irregular.

Male pores not on papillæ, at the level of the interval between the two inner setæ of each side, on segment 18.

Oviduct pores on segment 14 anterior to, and slightly ventral of, the level of the innermost setæ.

Spermathecal pores, five pairs, between segments 4 and 5, 5 and 6, 6 and 7, 7 and 8, 8 and 9, at the level of the innermost setæ.

Accessory copulatory structures. The whole of the ventral surface of segments 16–21 is deeply depressed in spirit specimens. Four pairs of small elliptical tumid patches are present, each at the level of the second seta. The first are placed half on segment 16, half on segment 17, and the remaining three respectively, half on segments 17 and 18, 19 and 20, 20 and 21.

Dorsal pores present, the first between segments 4 and 5.

Alimentary canal, Circulatory system, Excretory system and Reproductive organs similar to those of *P. yarraensis*.

This form is closely allied to the latter, but the presence in *P. yarraensis* of 5 setæ regularly arranged on each side in front of the clitellum, renders it distinct and easy to recognise.

Habitat. Gembrook (Mr. D. le Souëf), Warburton, Tanjil Track (near Wood's Point), Fern Tree Gully, and Dandenong.

(21) *Perichæta bakeri** (Fletcher). (Figs. 22, 23, 24, 75).

This form was first obtained by Mr. Fletcher from Warragul. It is very abundant there under logs, and is a characteristic Gippsland form. I have since collected it in abundance at Warragul, and the surrounding district, Fern Tree Gully and Narre Warren, and have received it from Gembrook (Mr. D. le Souëf), and Healesville (Dr. Dendy).

(22) *Perichæta dorsalis*† (Fletcher). (Figs. 58, 59, 60).

This form was first obtained by Mr. Fletcher from Warragul. It is present in a much greater proportion than any other single species, and has come to me from very many parts of the colony. We did not however secure it in Croajingolong, and it does not appear to extend into the east and north-east parts of the colony.

Specimens have been secured at Warragul, Fern Tree Gully, Gembrook (Mr. D. le Souëf), Narre Warren, Dandenong, Creswick (Mr. J. Fiddian), Castlemaine (Mr. T. S. Hall), Myrniong (Mr. C. Brittlebank), Grampians (Mr. C. Frost), Gerangamete (Mr. R. L. Anderson), and Walhalla (Mr. H. R. Hogg).

DESCRIPTION OF PLATES II, III, IV, V, VI & VII.

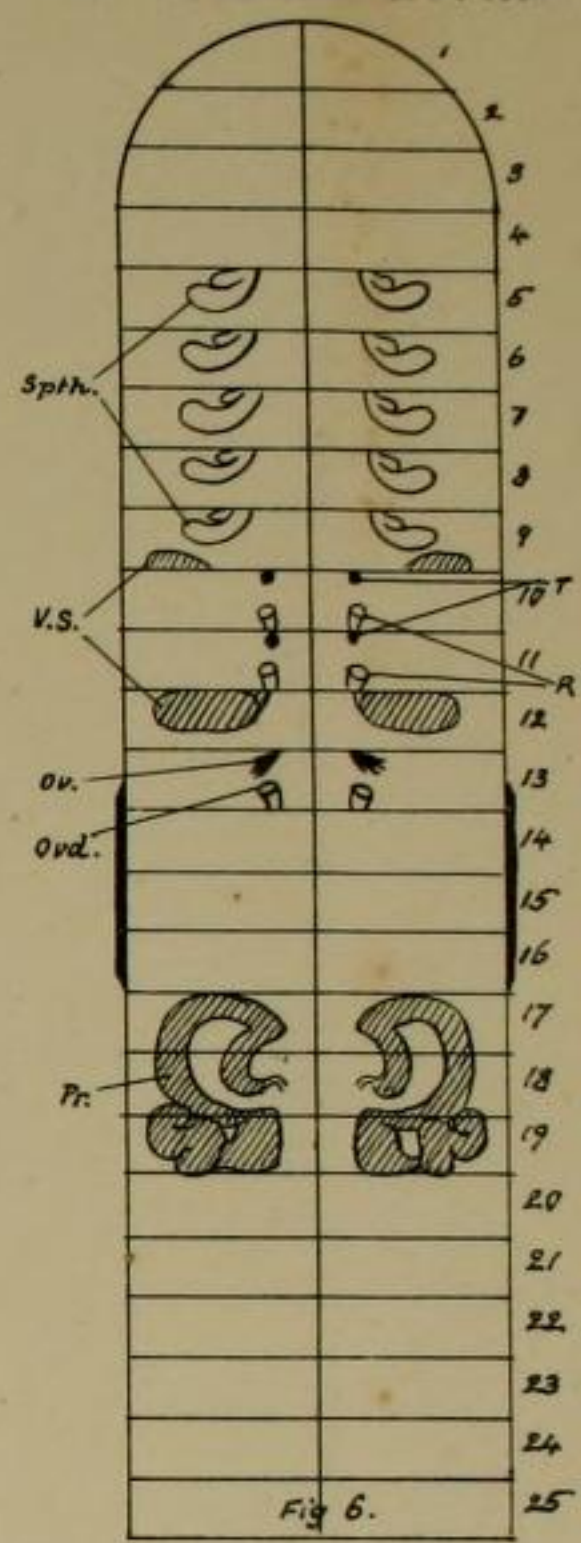
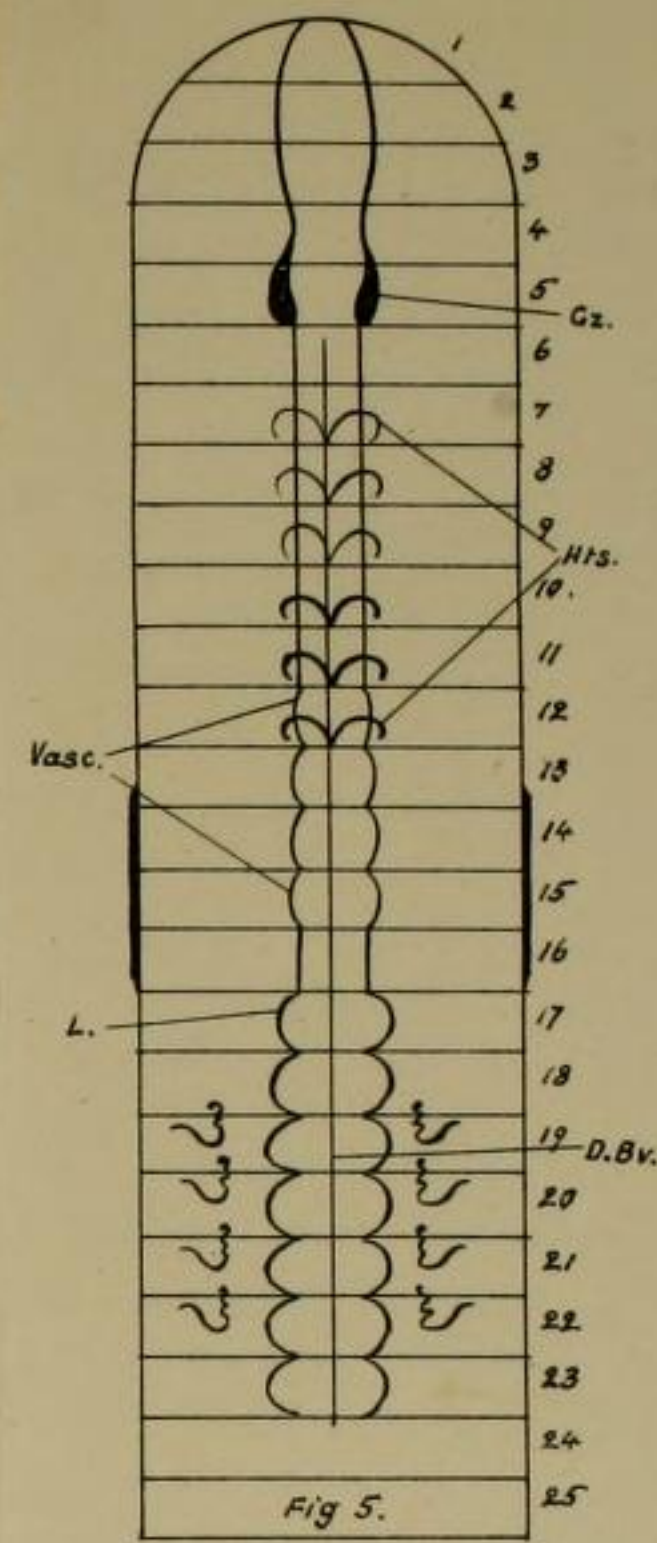
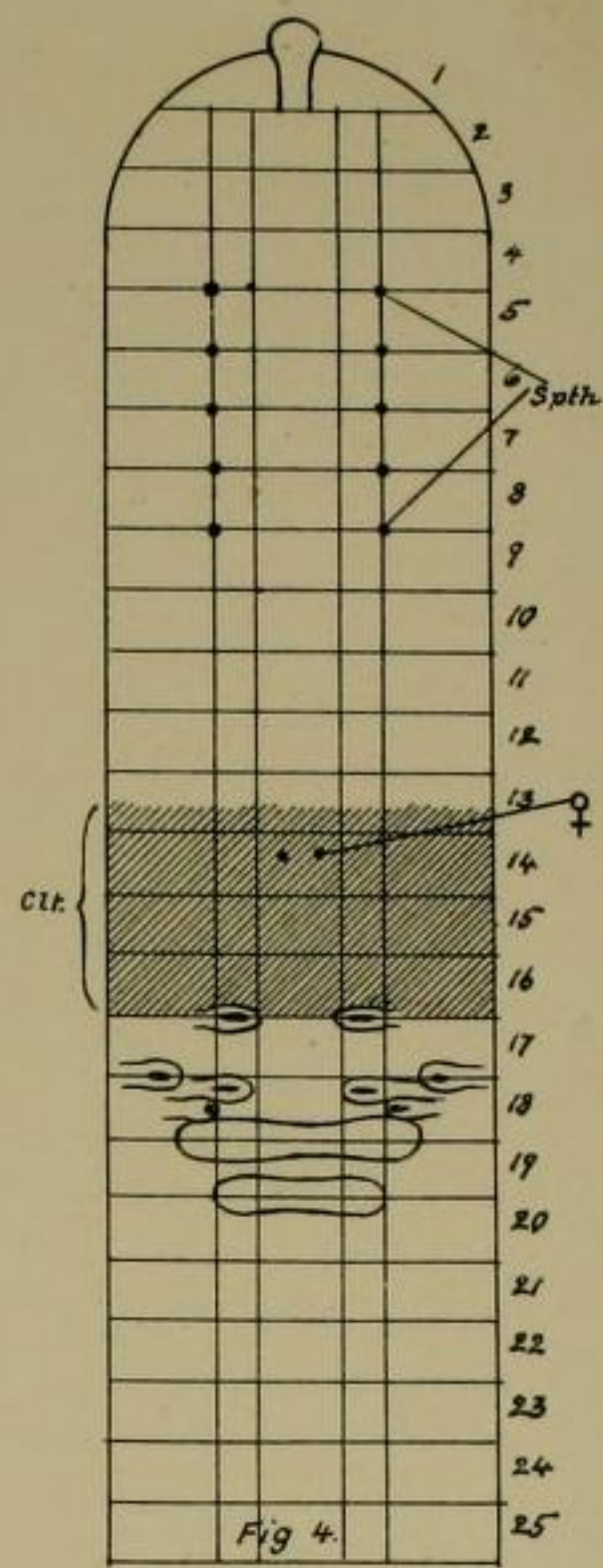
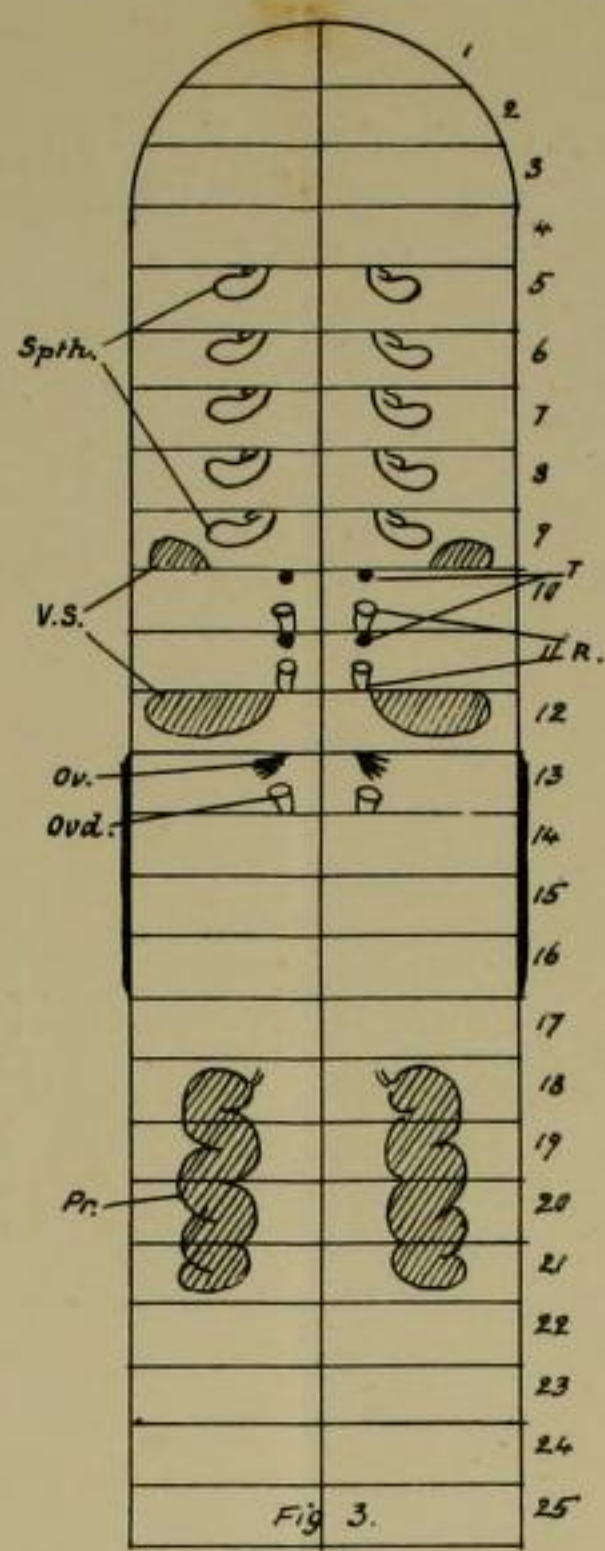
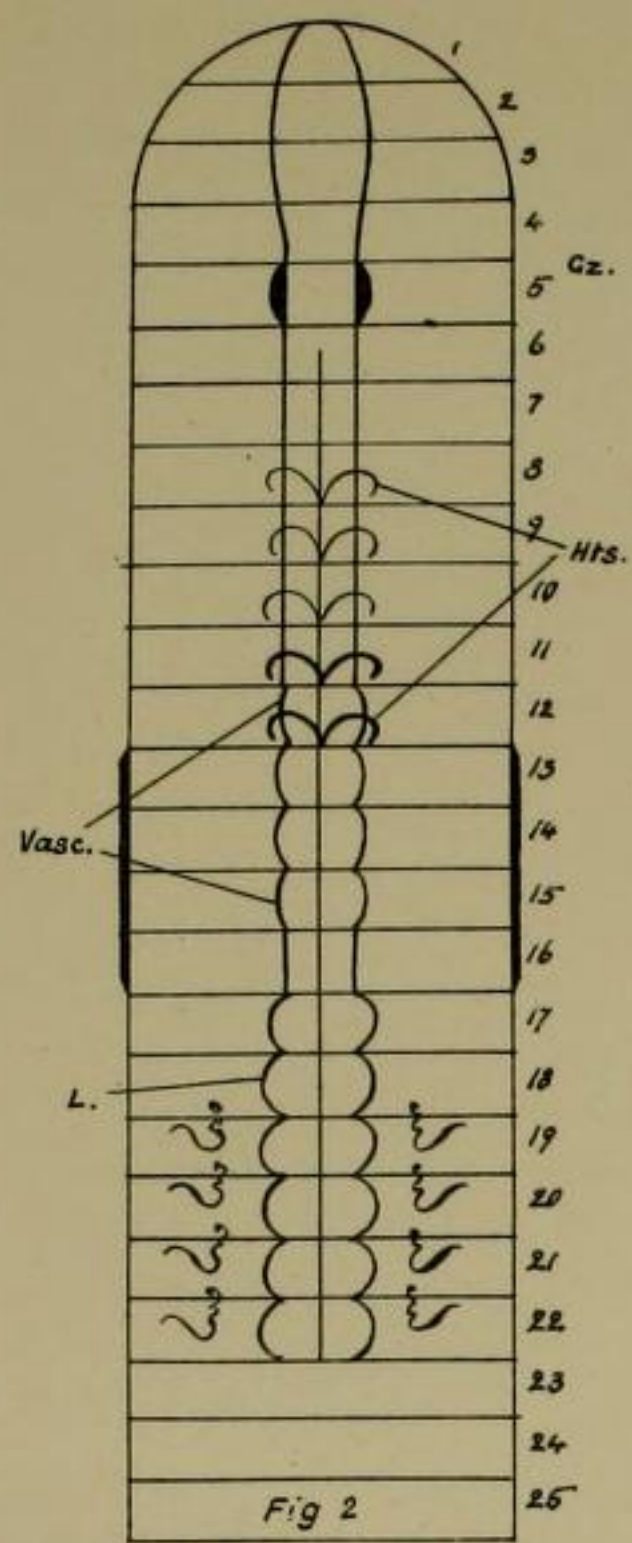
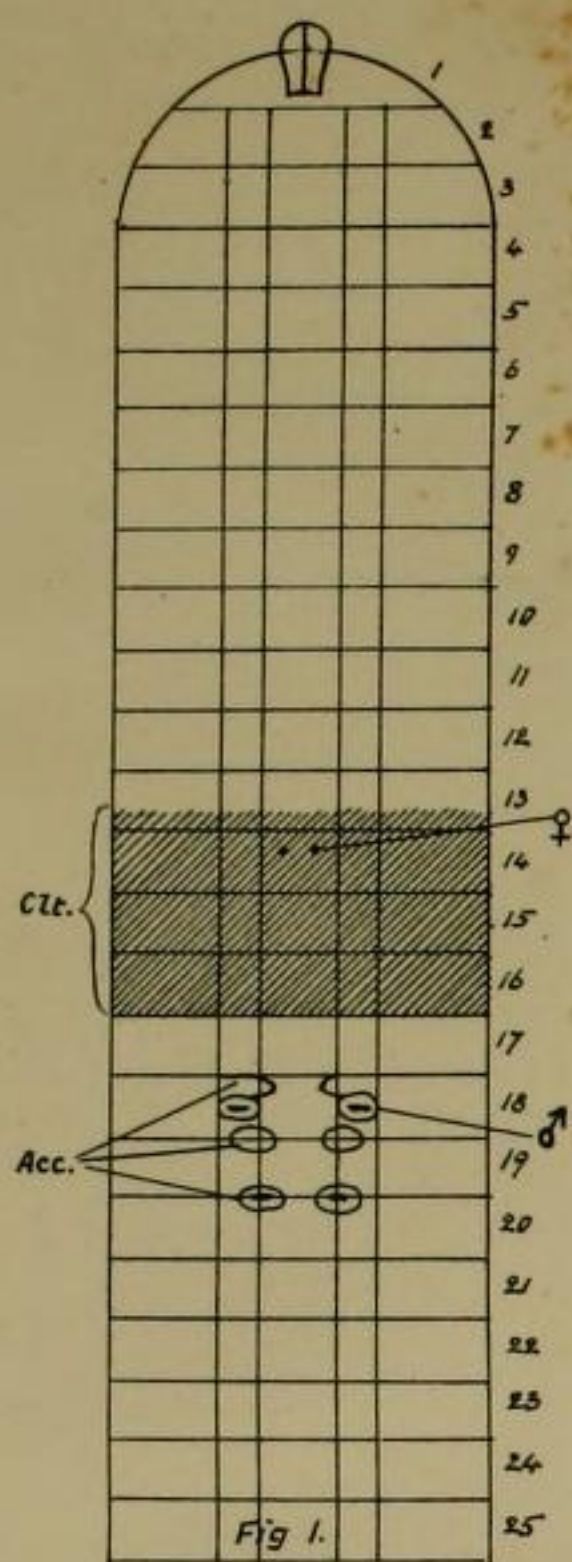
In the case of each species one drawing represents the external anatomy, a second the alimentary canal, circulatory system and disposition of nephridia, and a third the reproductive system. On Plate VII the spermathecæ are drawn in outline (under the camera lucida $\times 4$). Lines represent the position of the two inner rows of setæ on each side.

REFERENCE LETTERS.

<i>Acc.</i>	Accessory copulatory structures.	<i>Ovd.</i>	Oviduct.
<i>Calc.</i>	Calciferous glands.	<i>Pr.</i>	Prostate gland.
<i>Cl.</i>	Clitellum.	<i>R.</i>	Sperm rosette.
<i>D.Bv.</i>	Dorsal blood-vessel.	<i>Spth.</i>	Spermathecæ.
<i>Gz.</i>	Gizzard.	<i>T.</i>	Testis.
<i>Hts.</i>	Hearts.	<i>Vasc.</i>	Vascular swellings on œsophagus.
<i>L.</i>	Intestine.	<i>V.S.</i>	Sperm sacs.
<i>Ov.</i>	Ovary.		

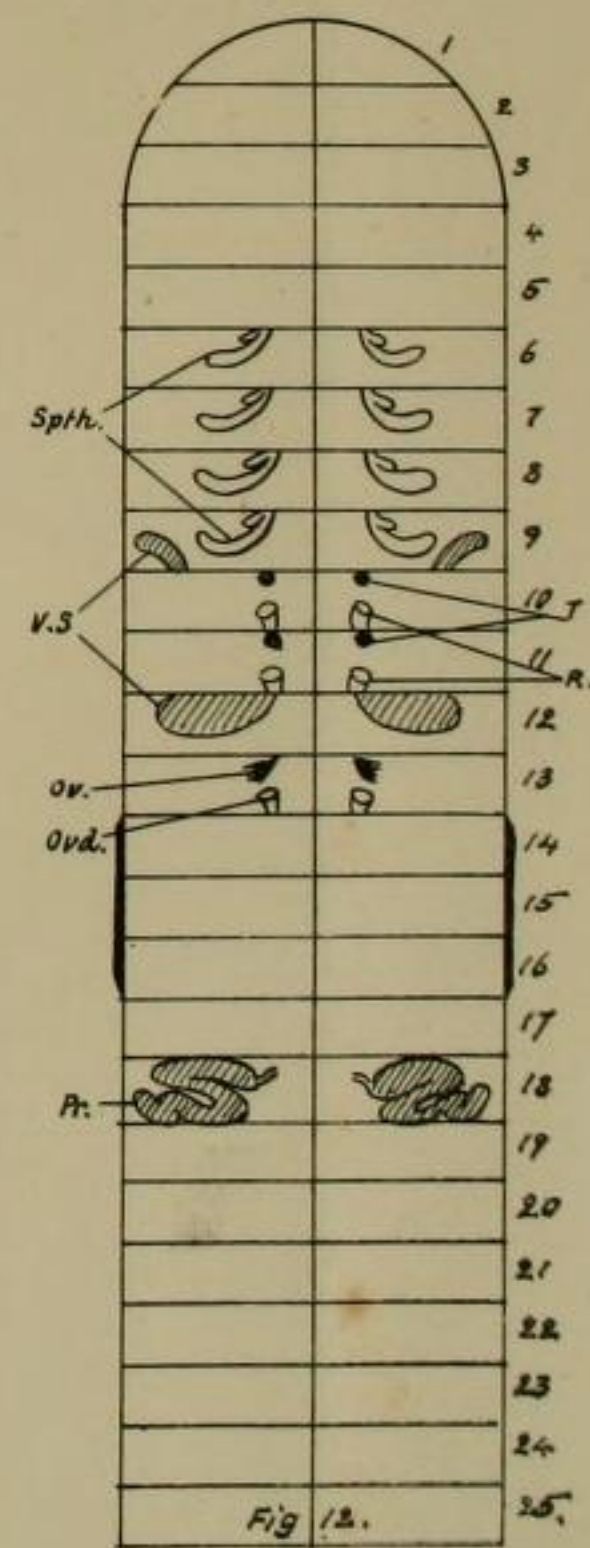
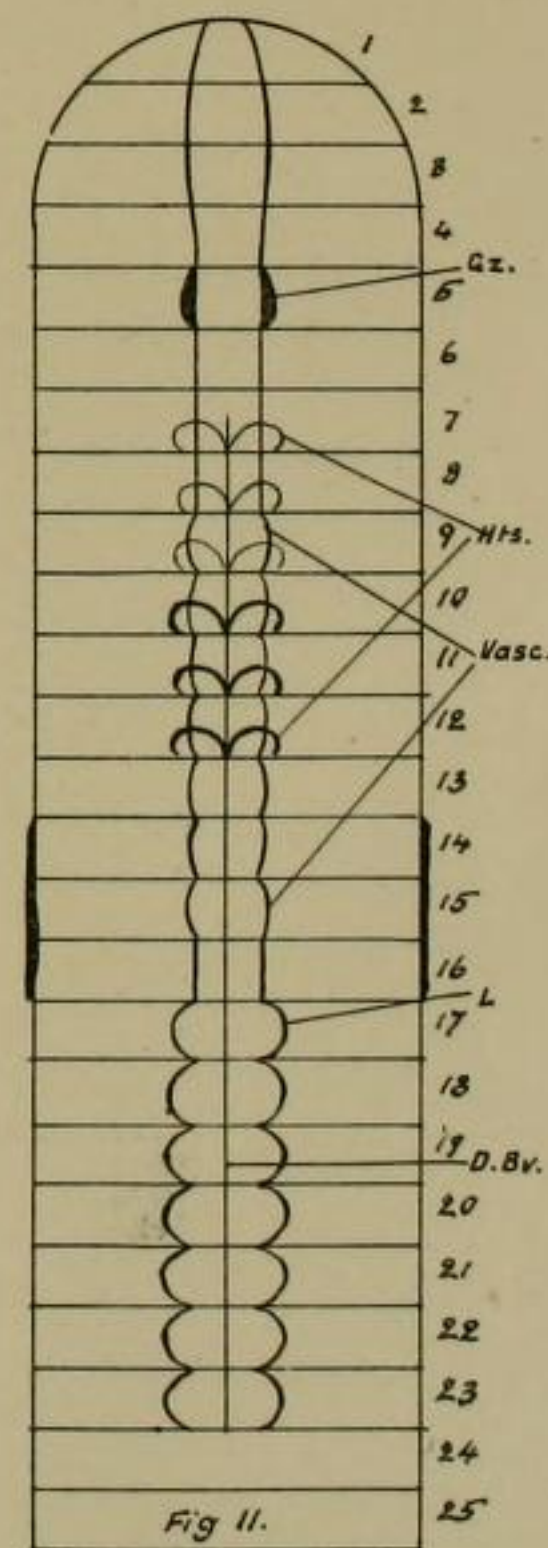
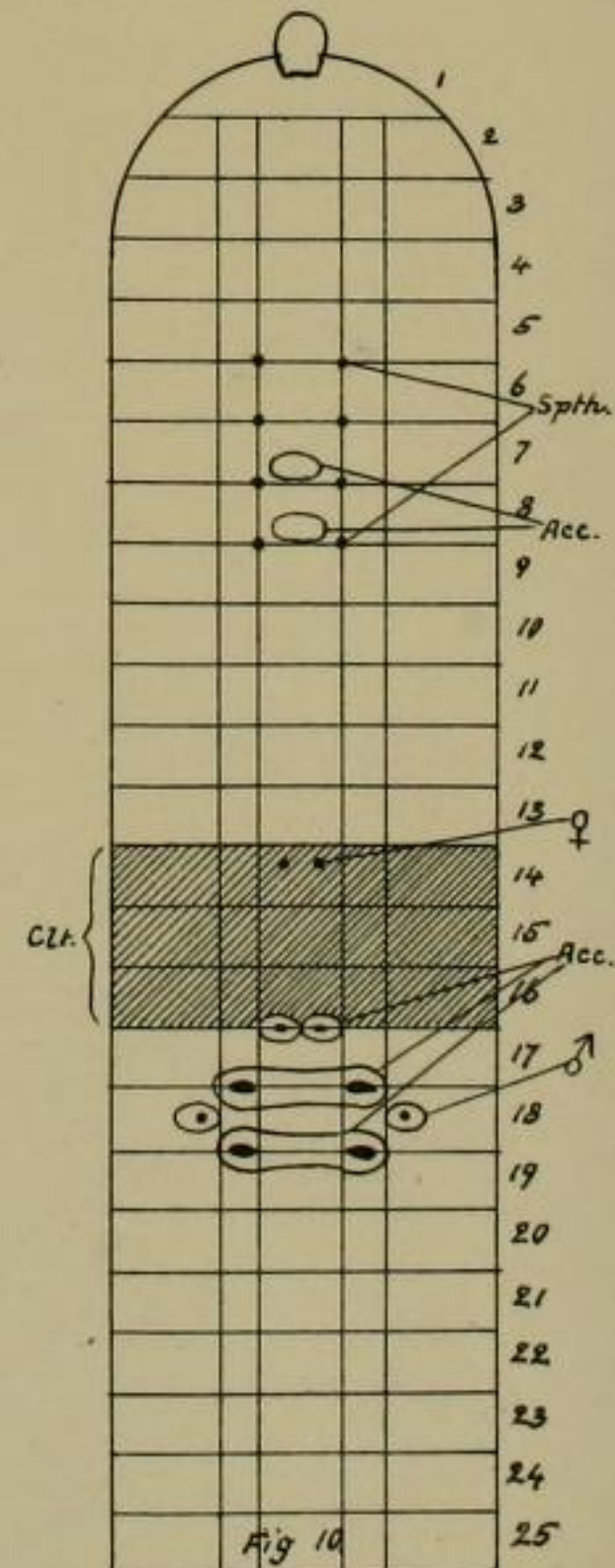
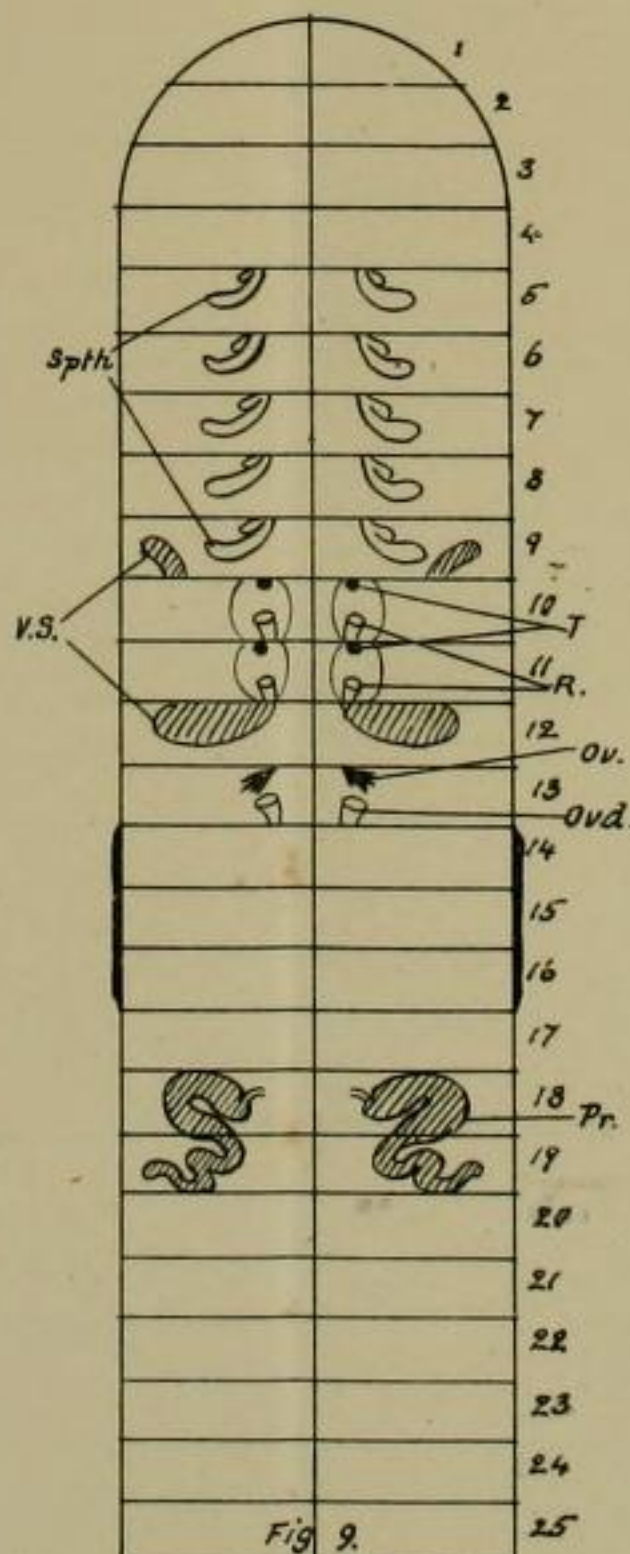
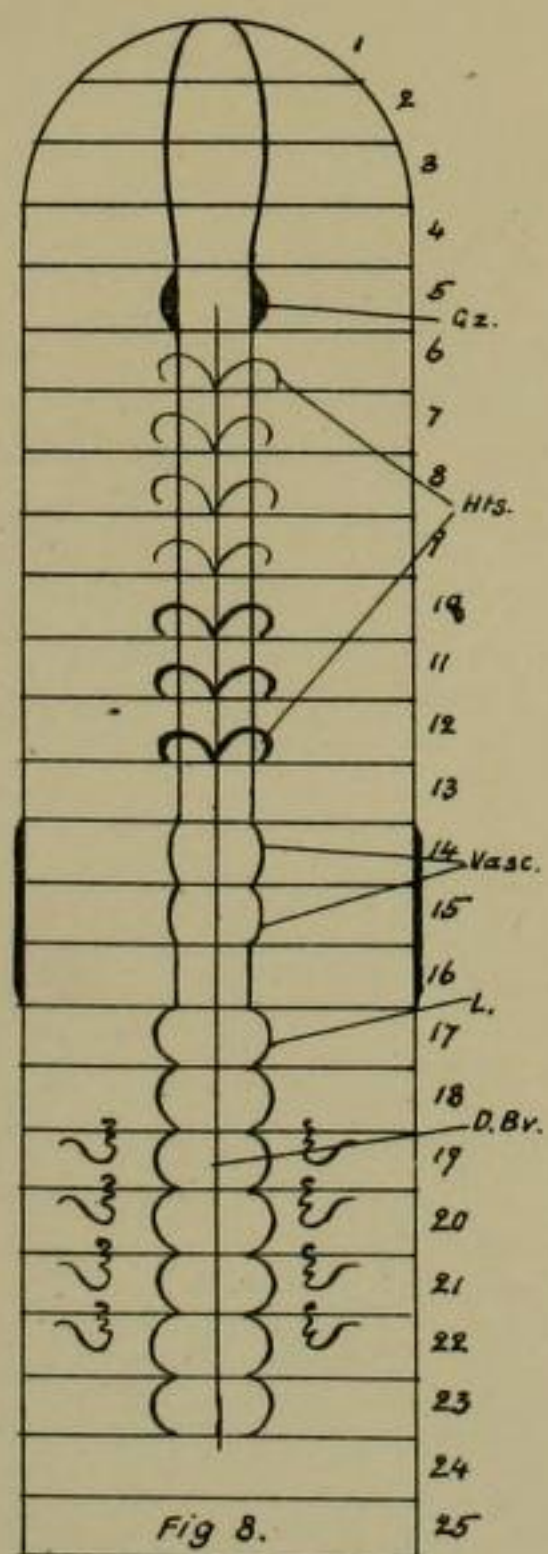
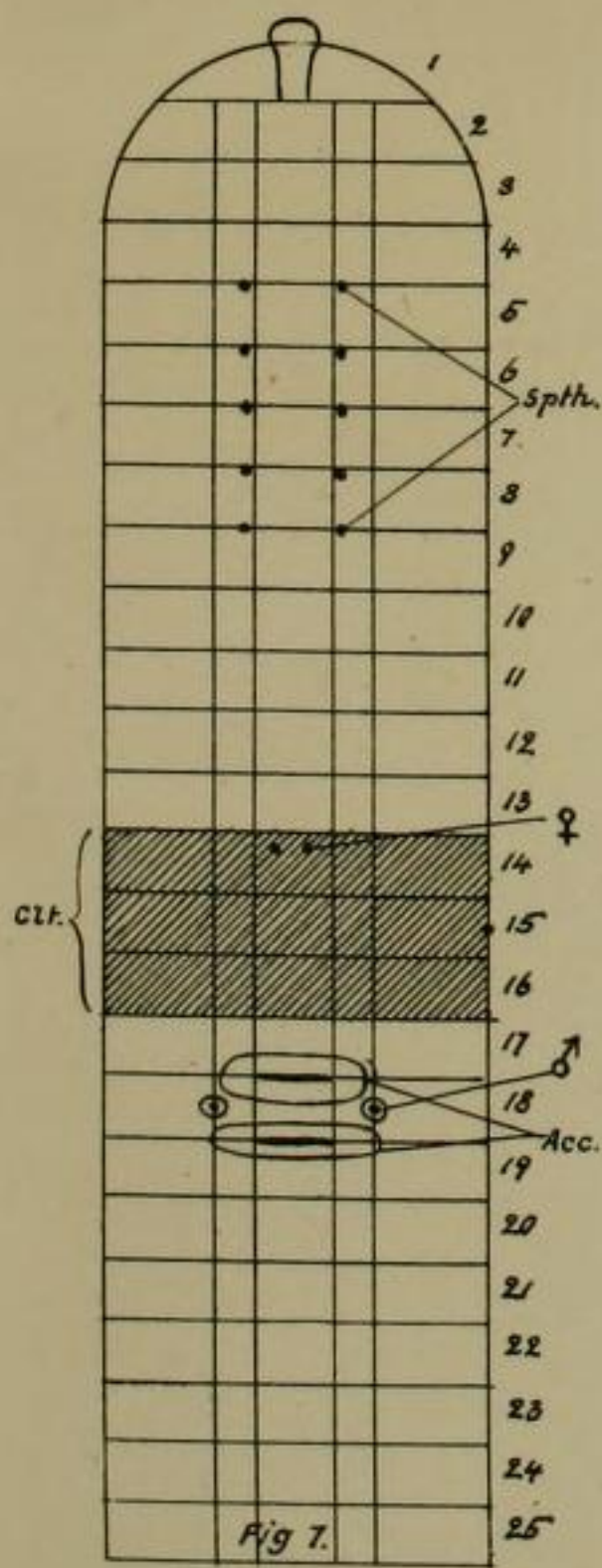
* Proc. Linn. Soc., N.S.W., Vol. II (Series 2nd), September 28, 1887, p. 616.

† Proc. Linn. Soc., N.S.W., Vol. II (Series 2nd), September 28, 1887, p. 618.



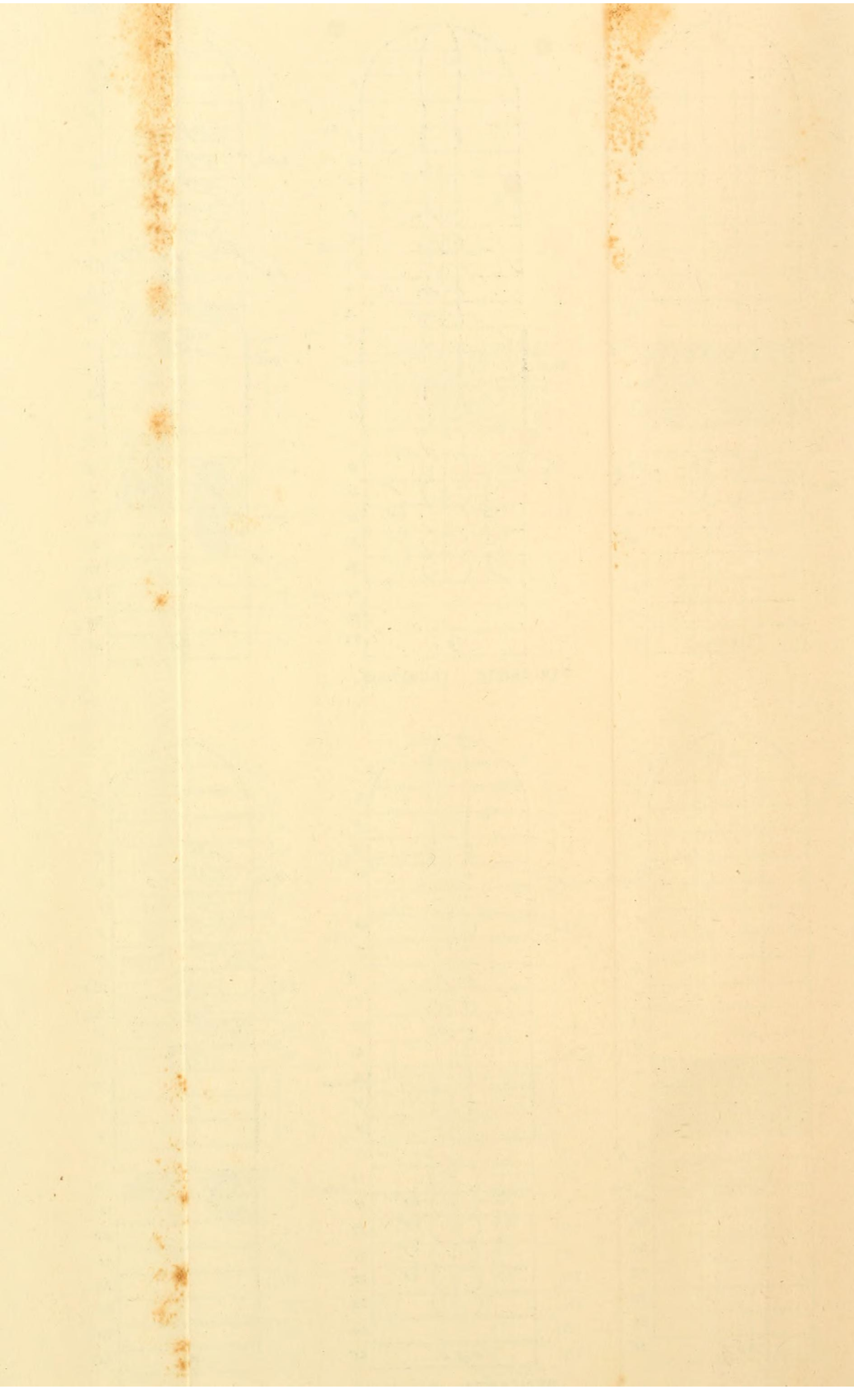
PERICHÆTA LOCHENSIS.

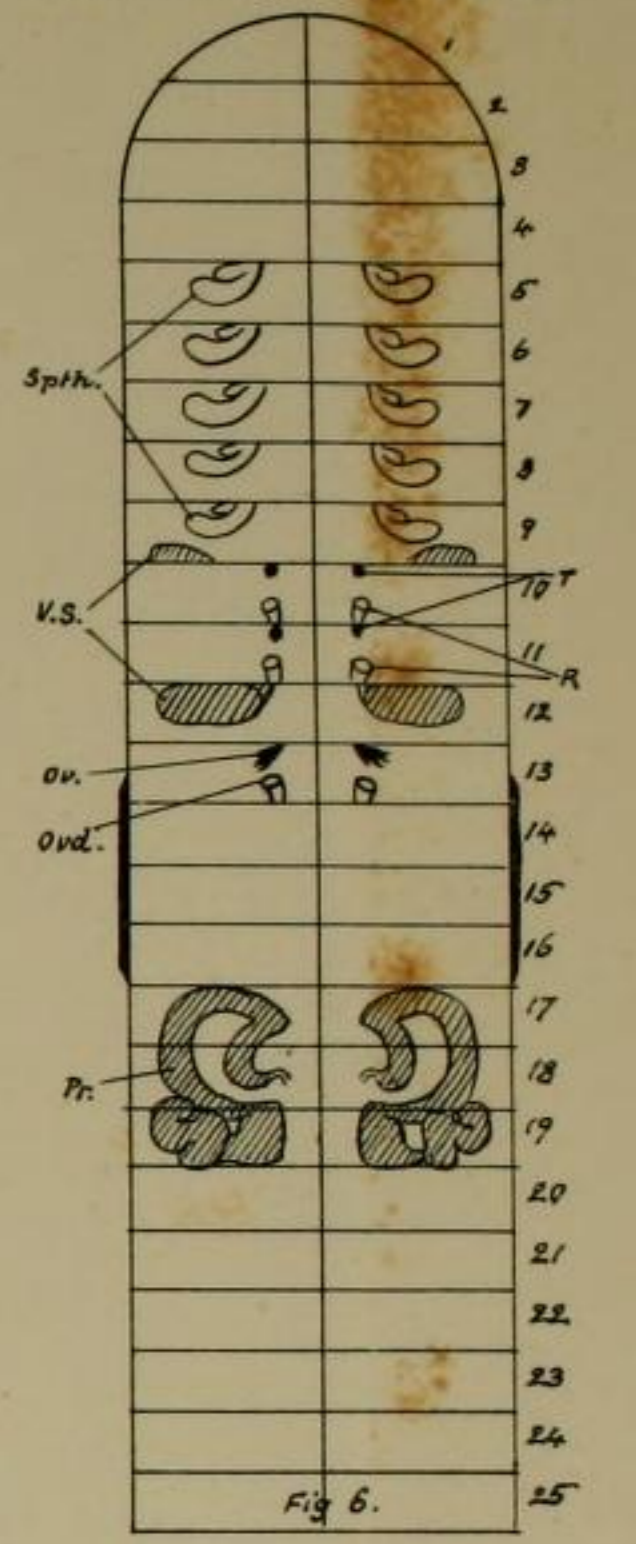
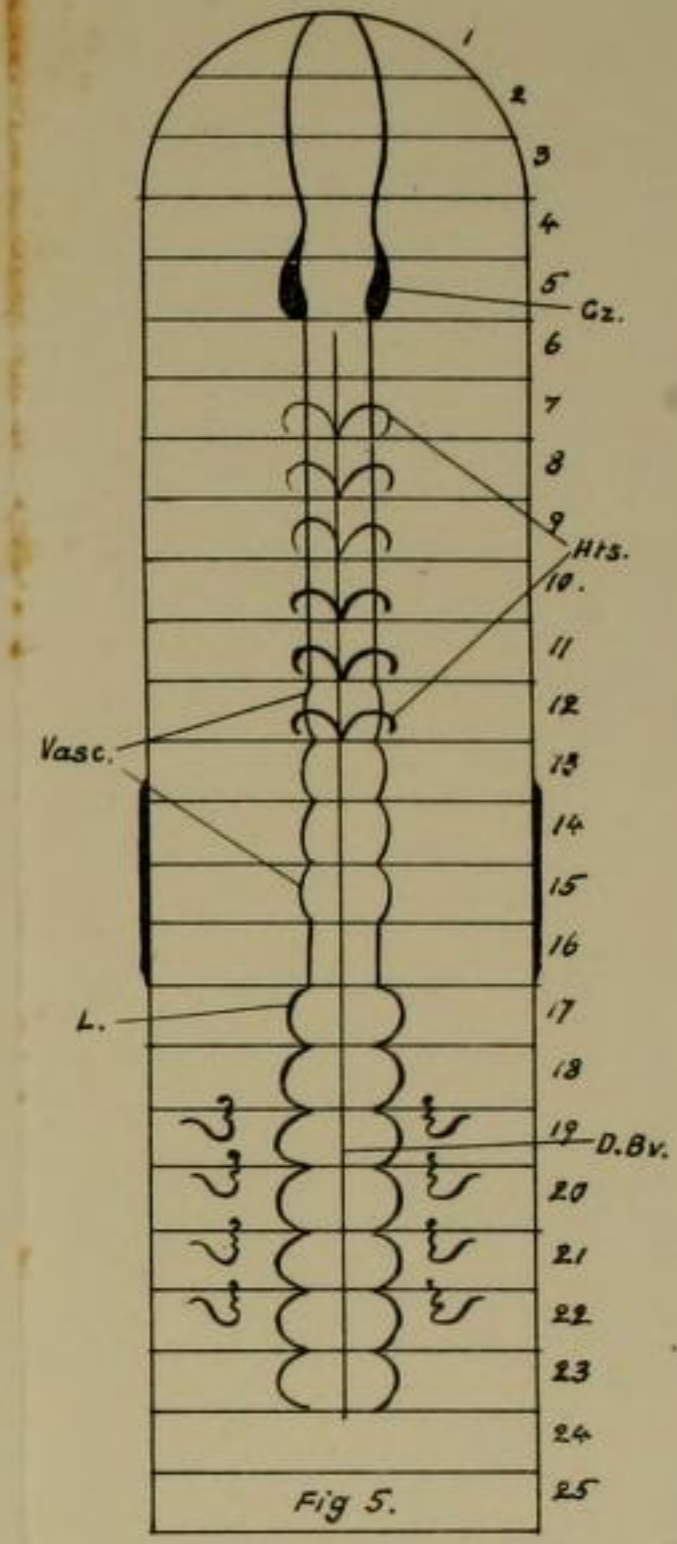
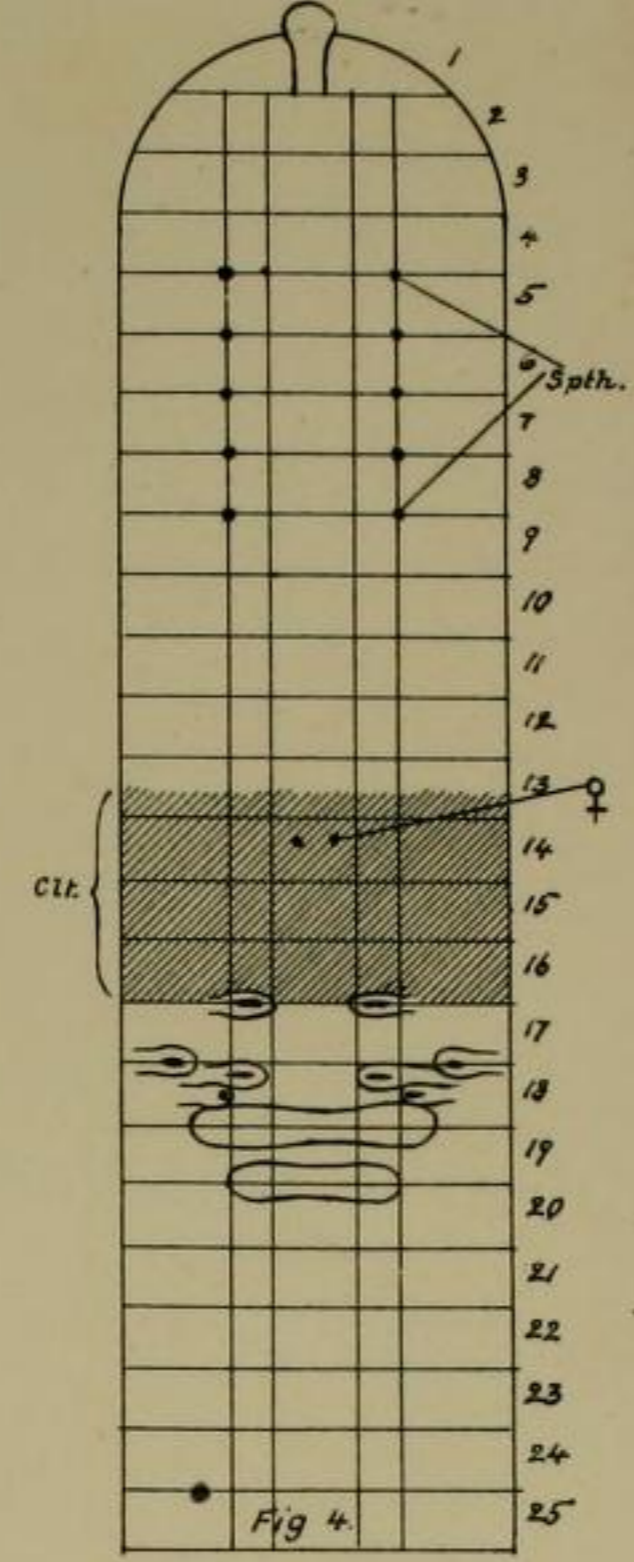
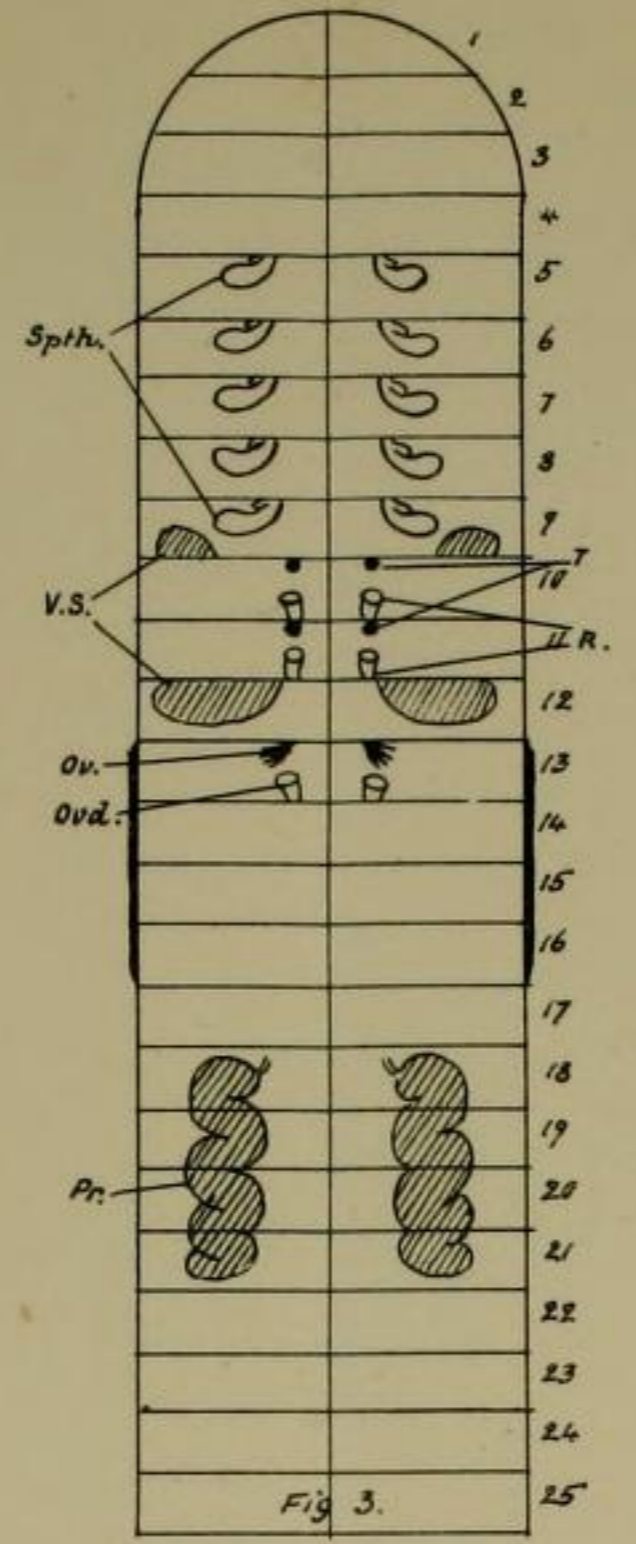
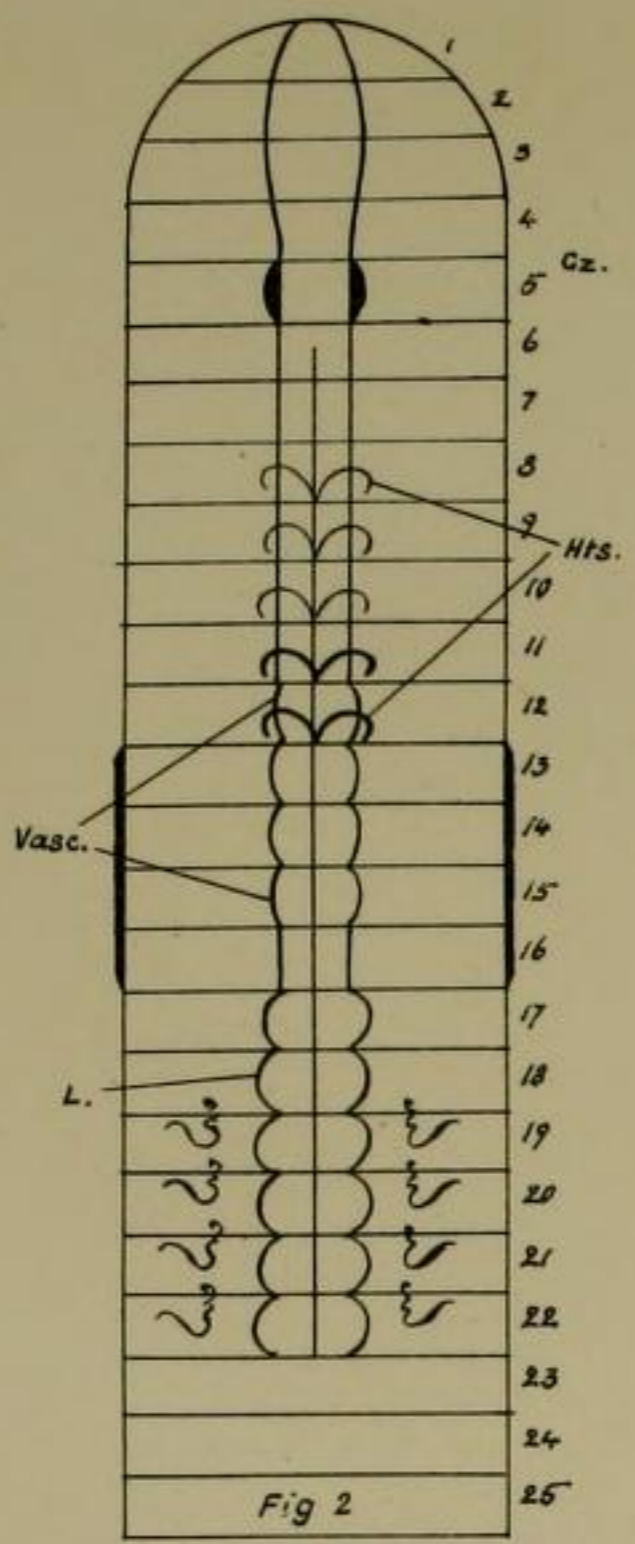
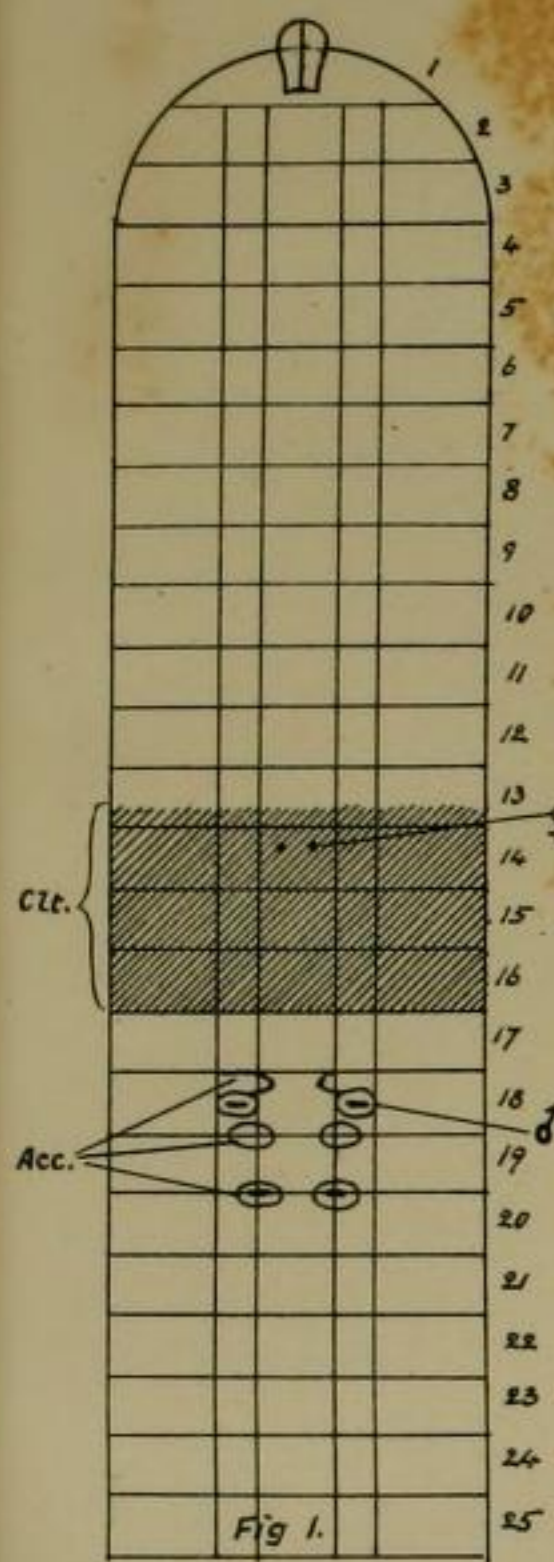
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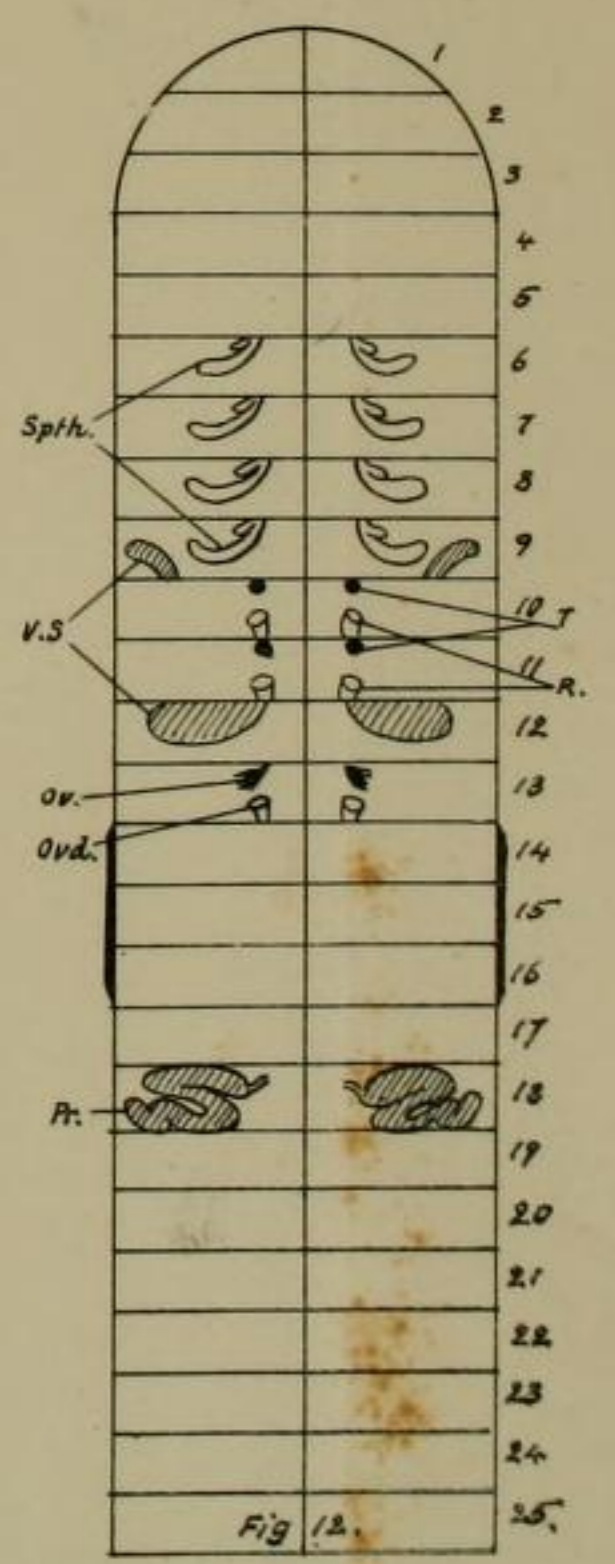
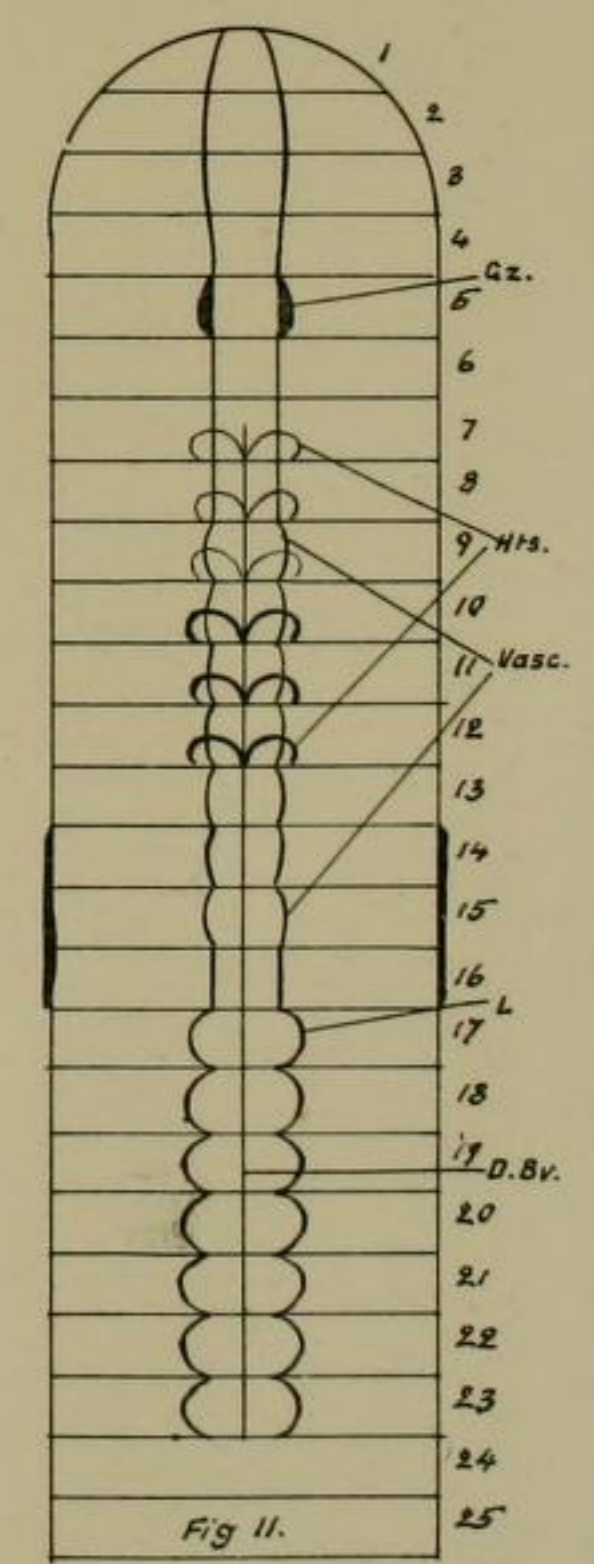
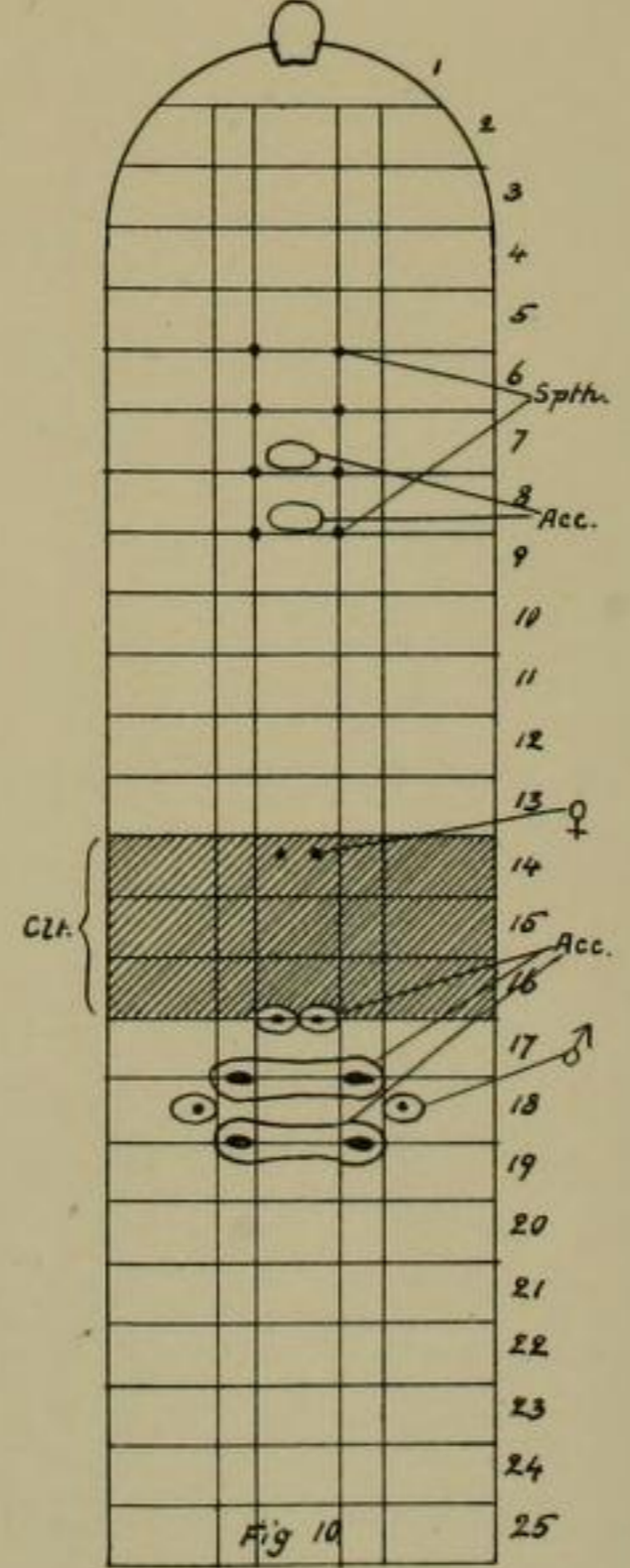
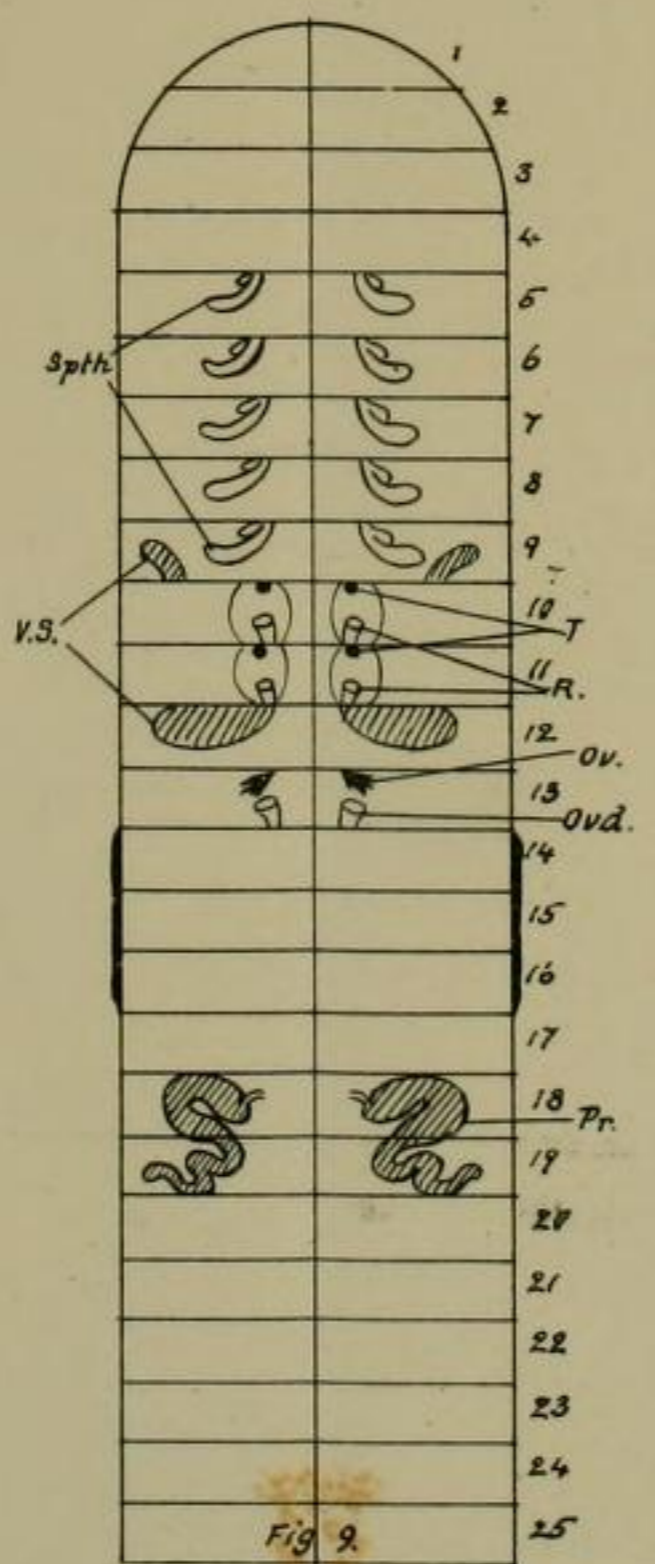
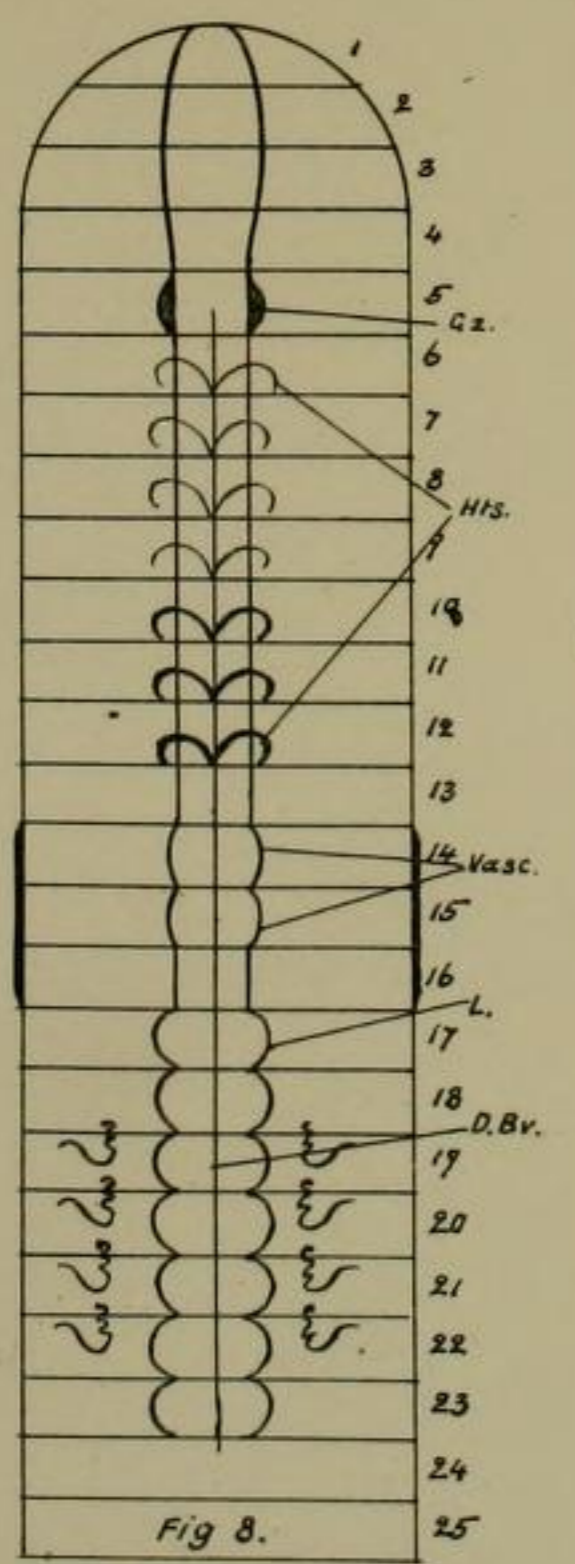
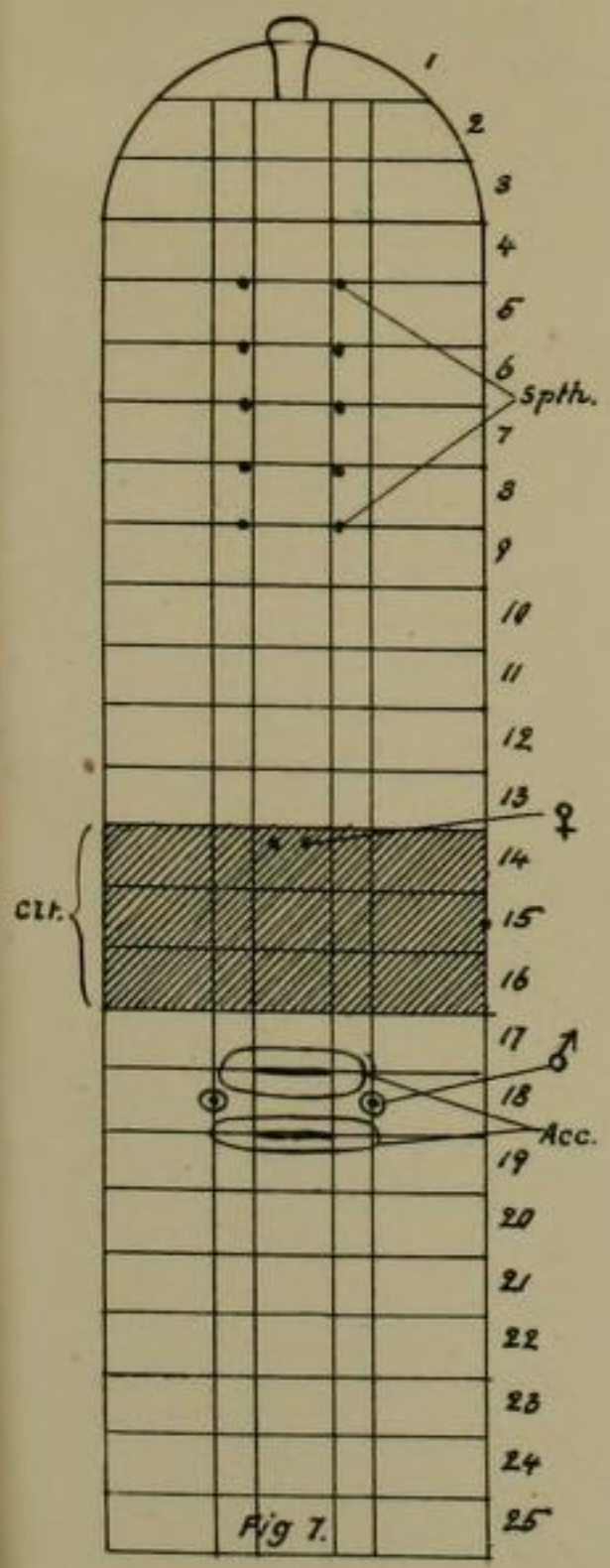
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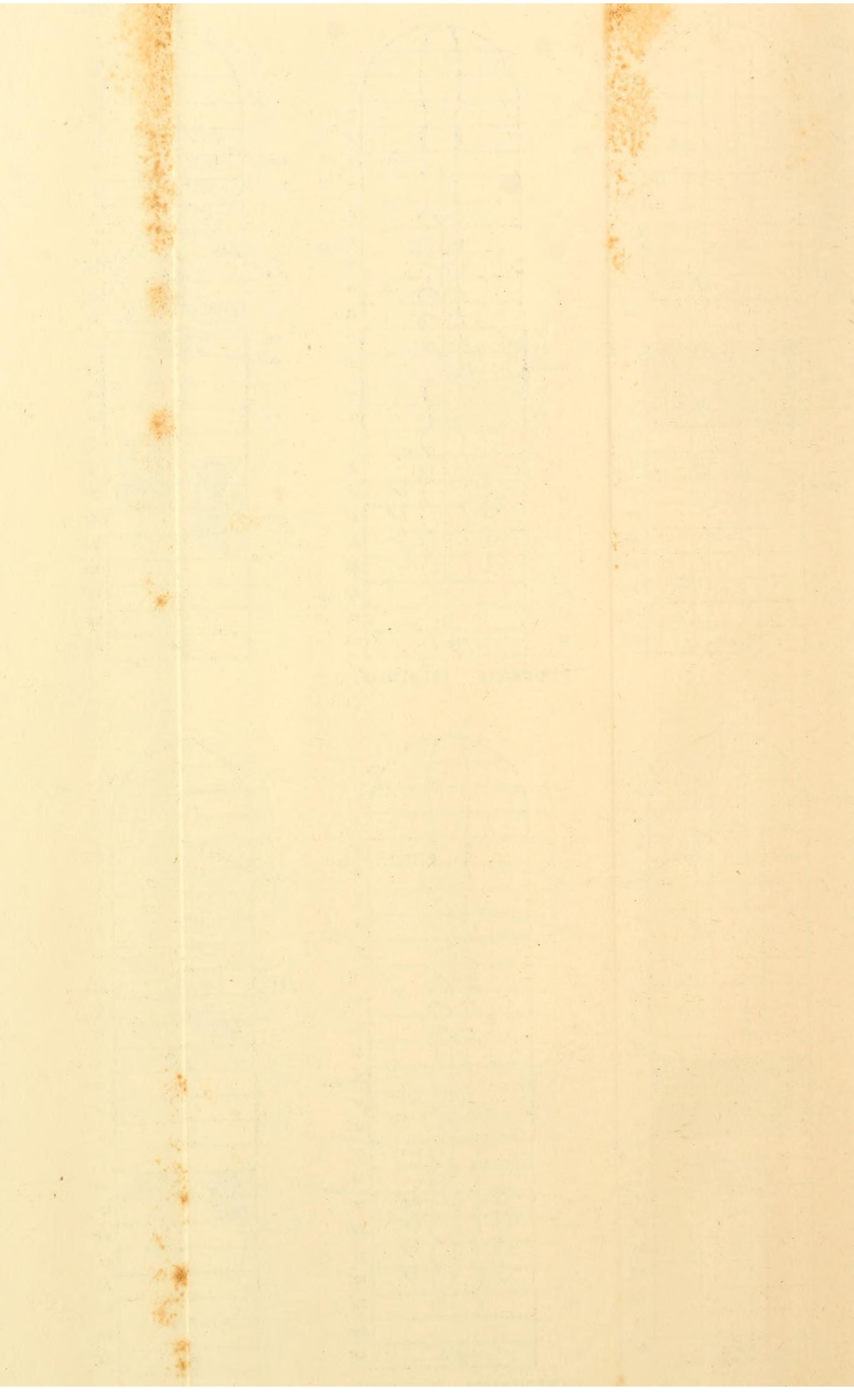
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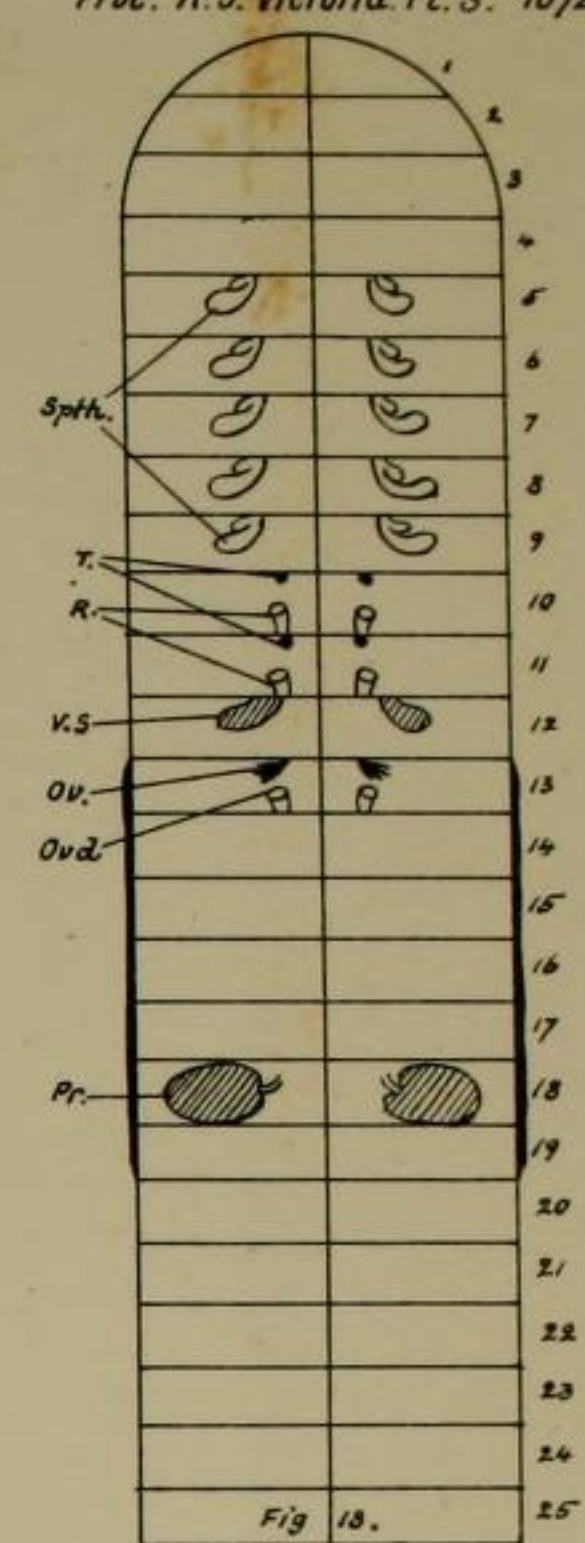
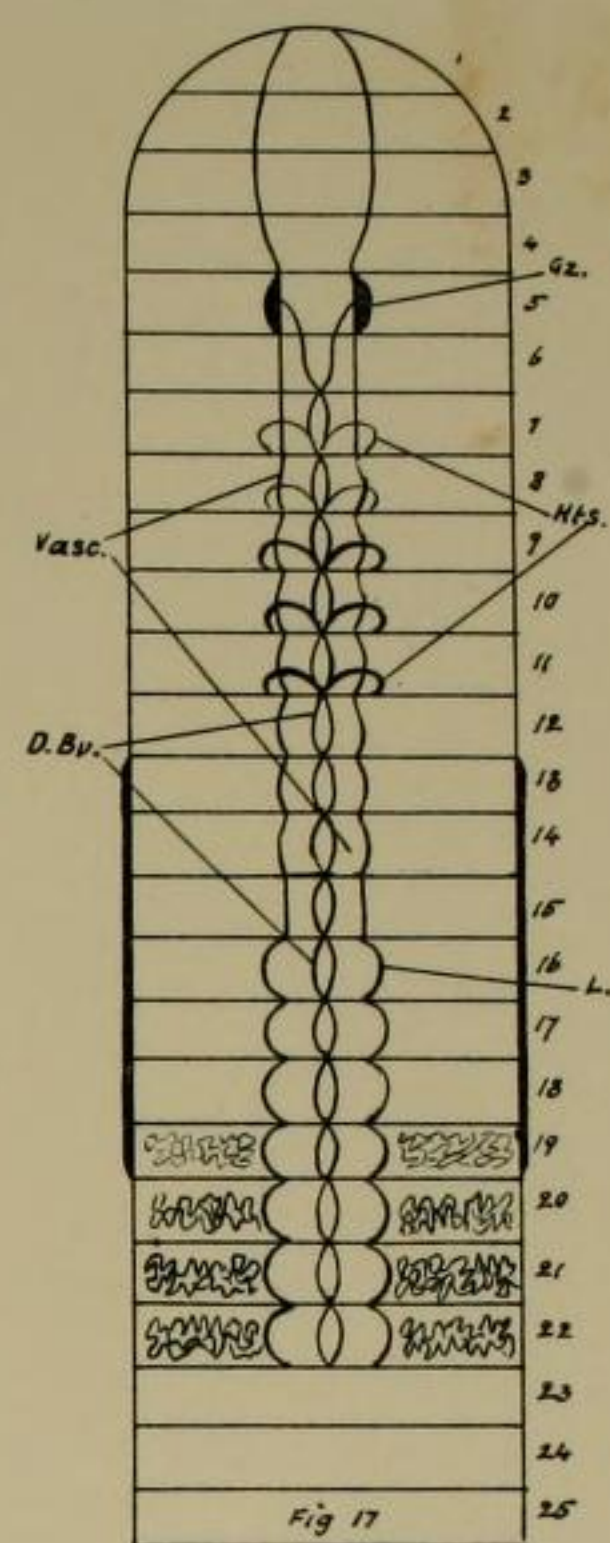
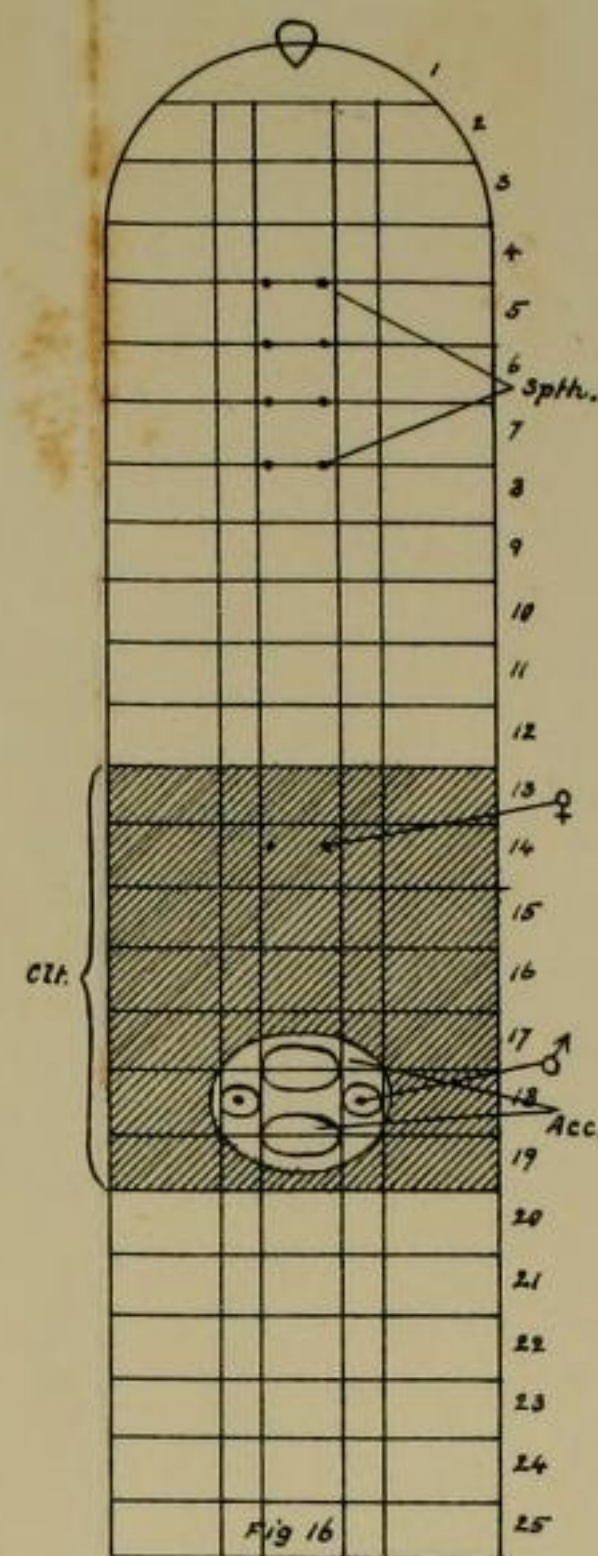
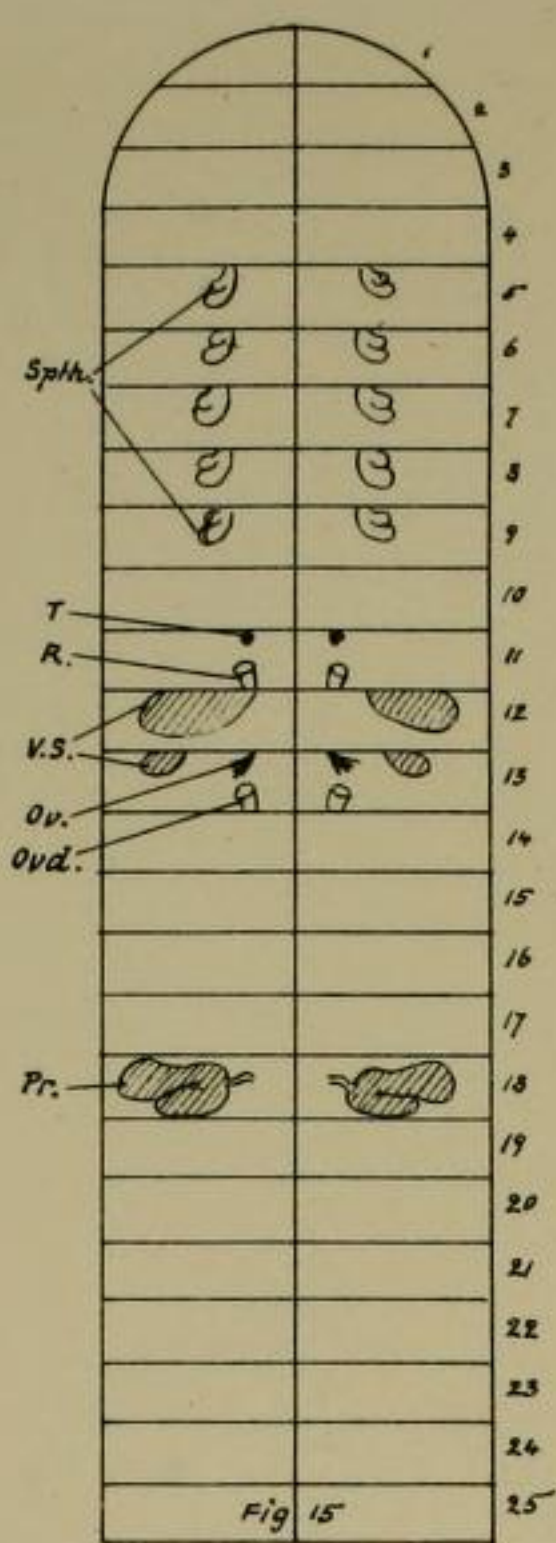
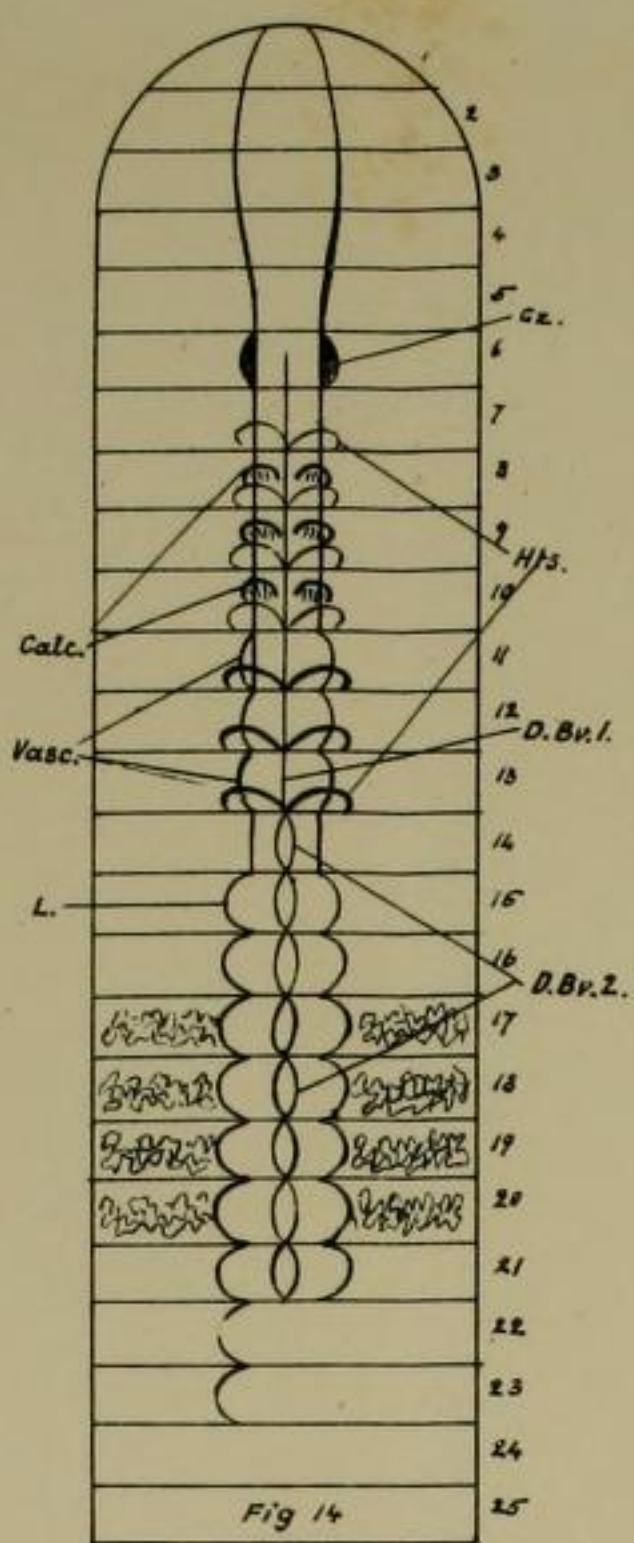
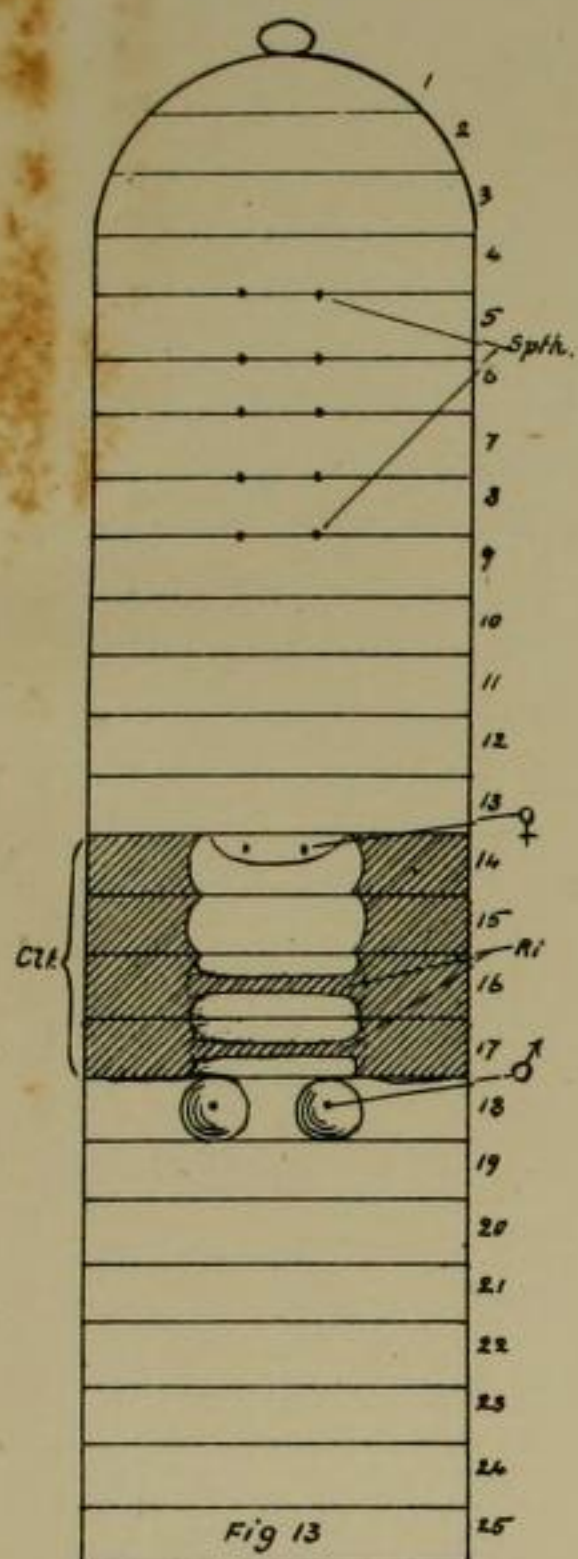
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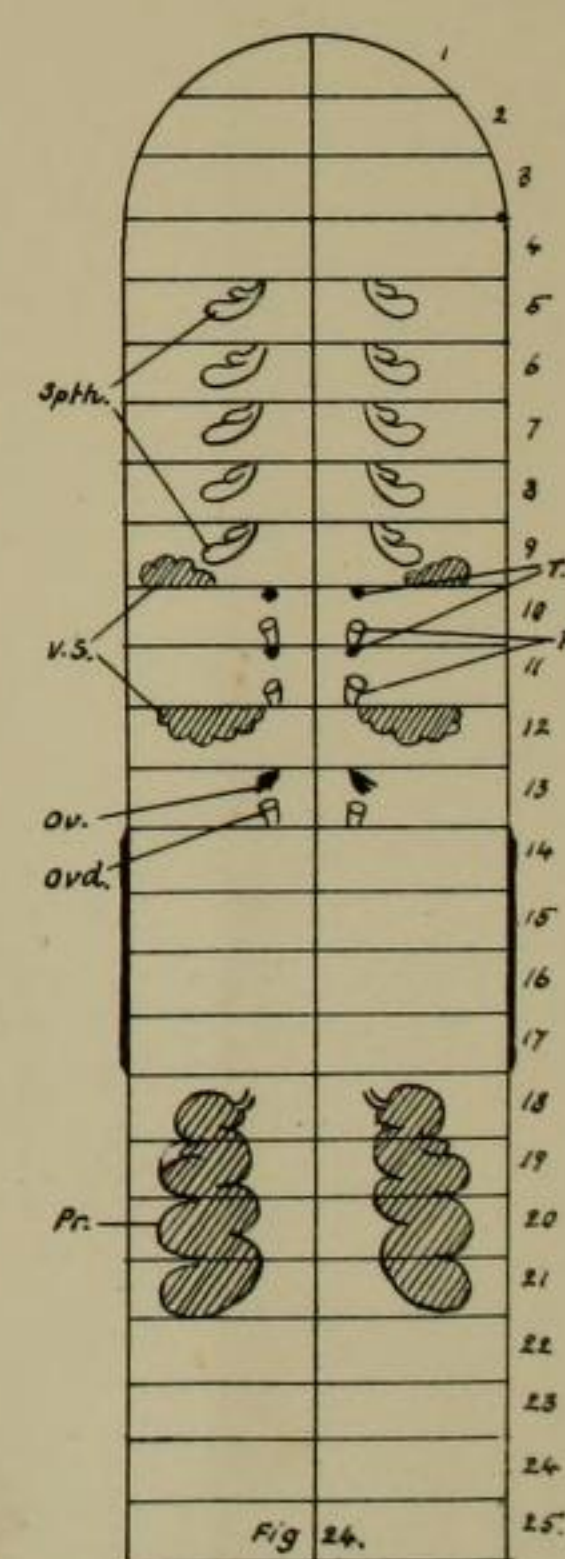
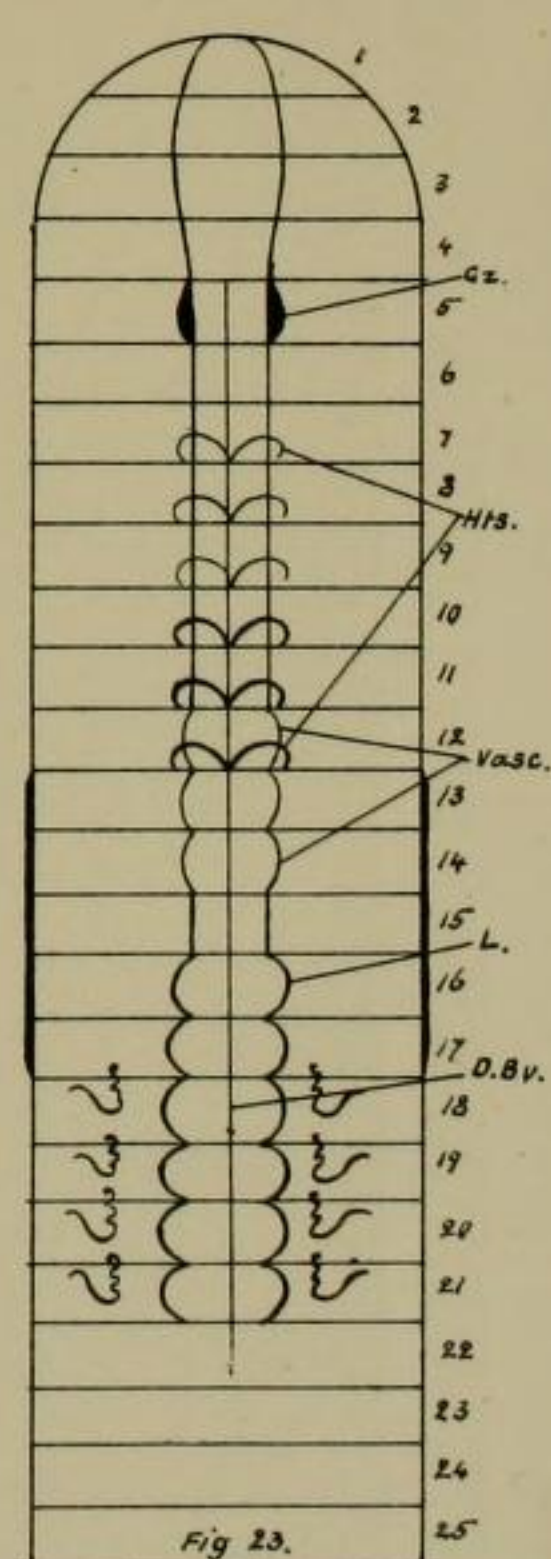
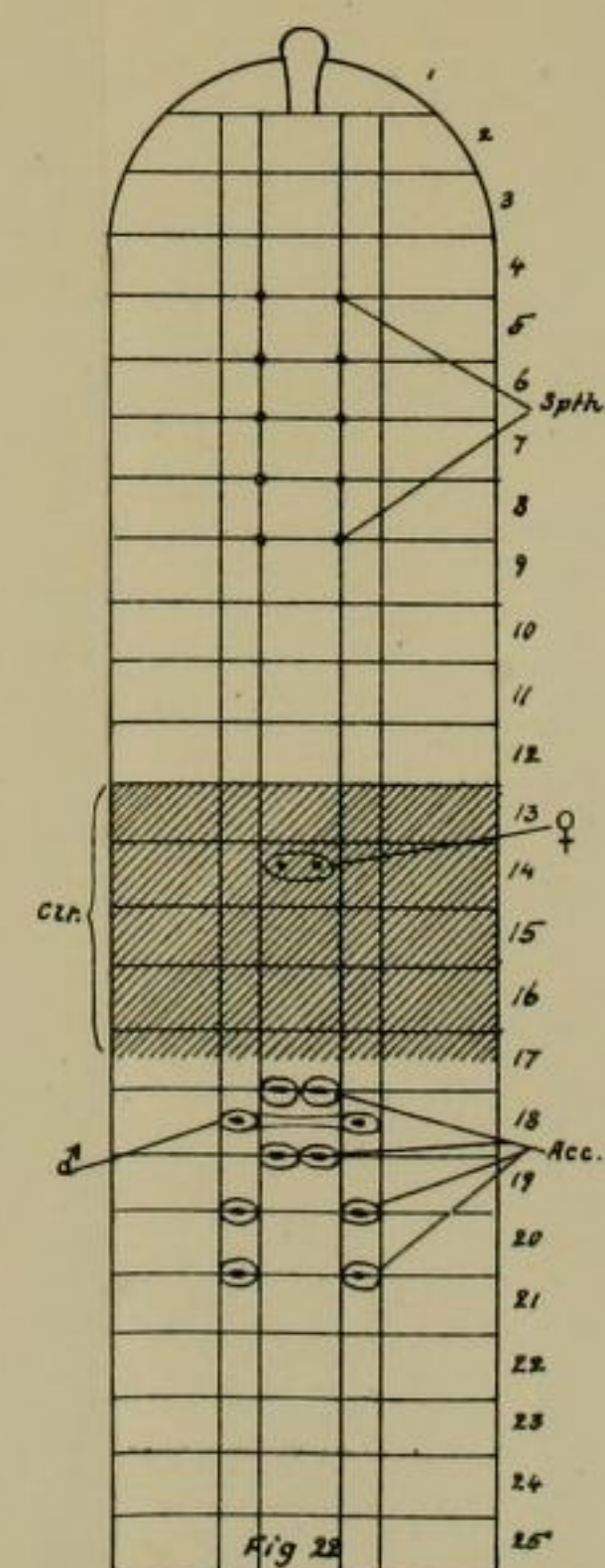
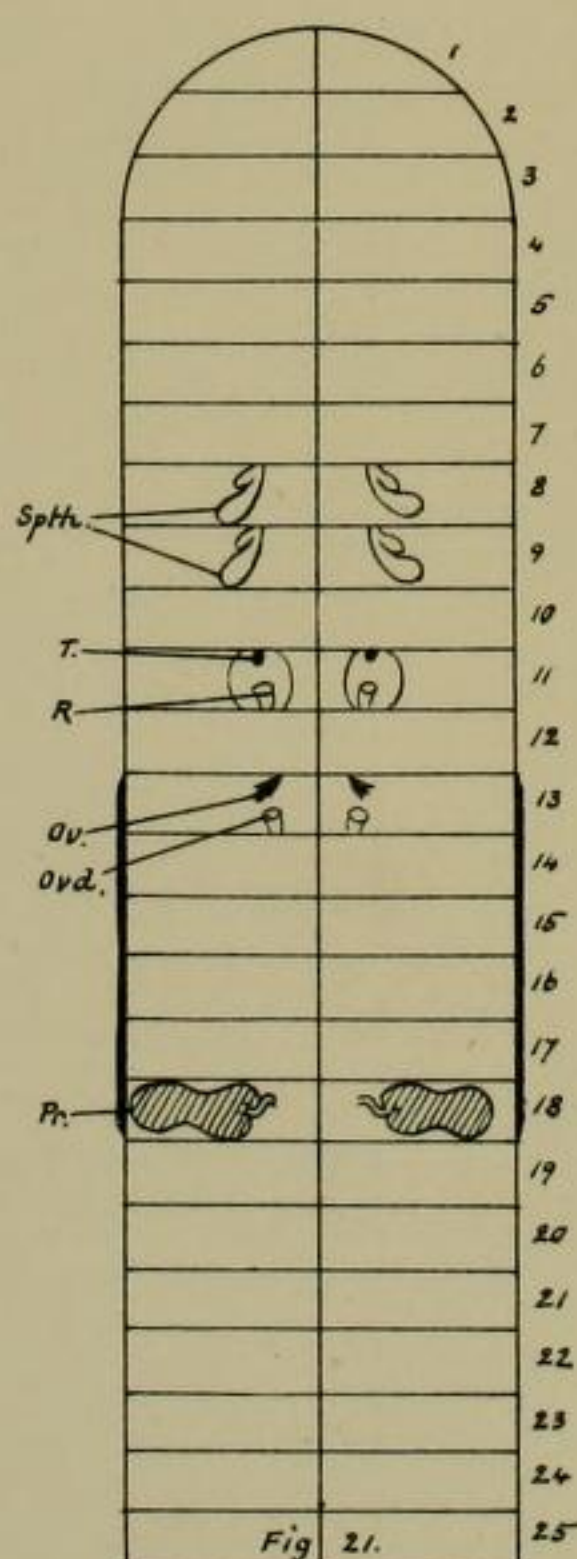
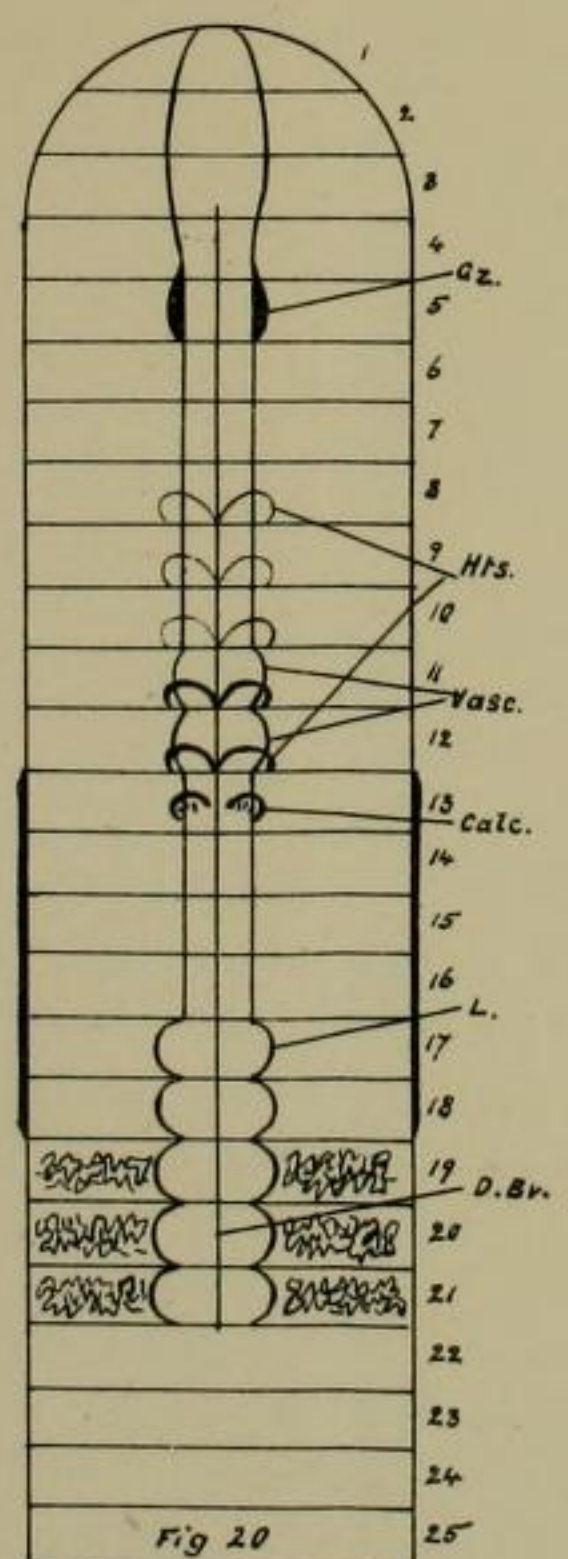
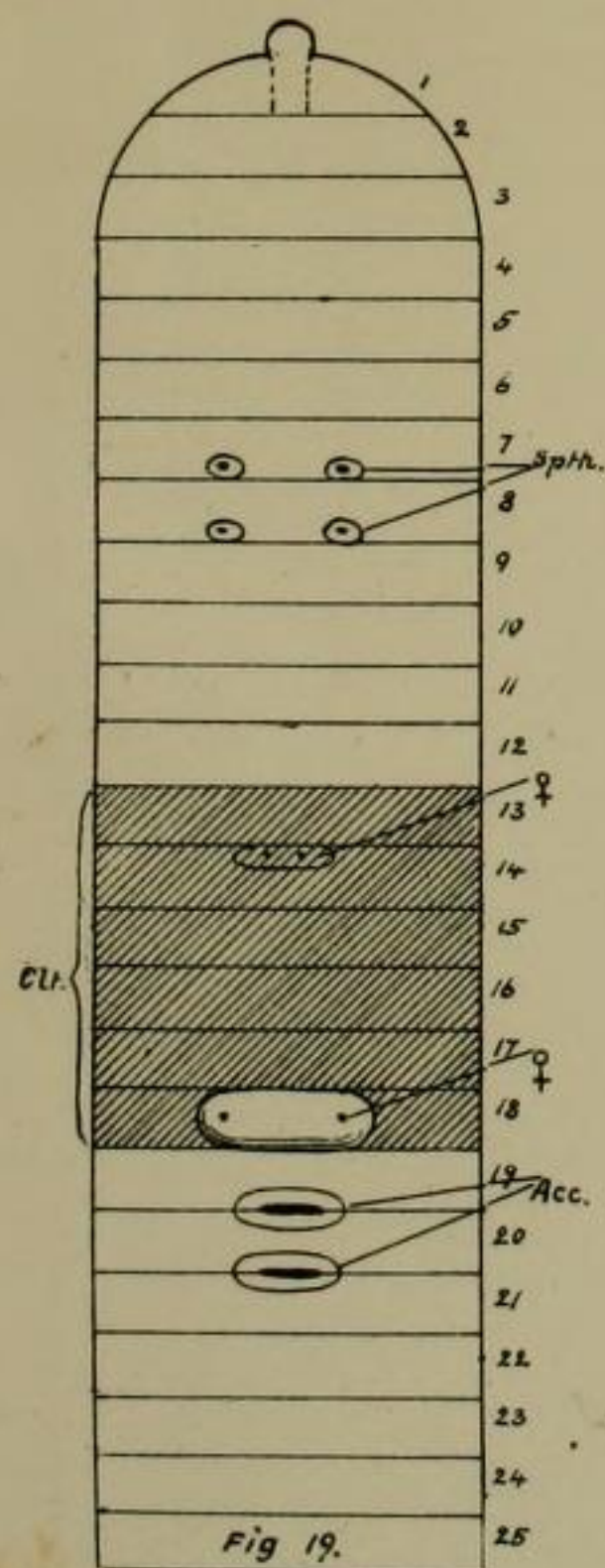
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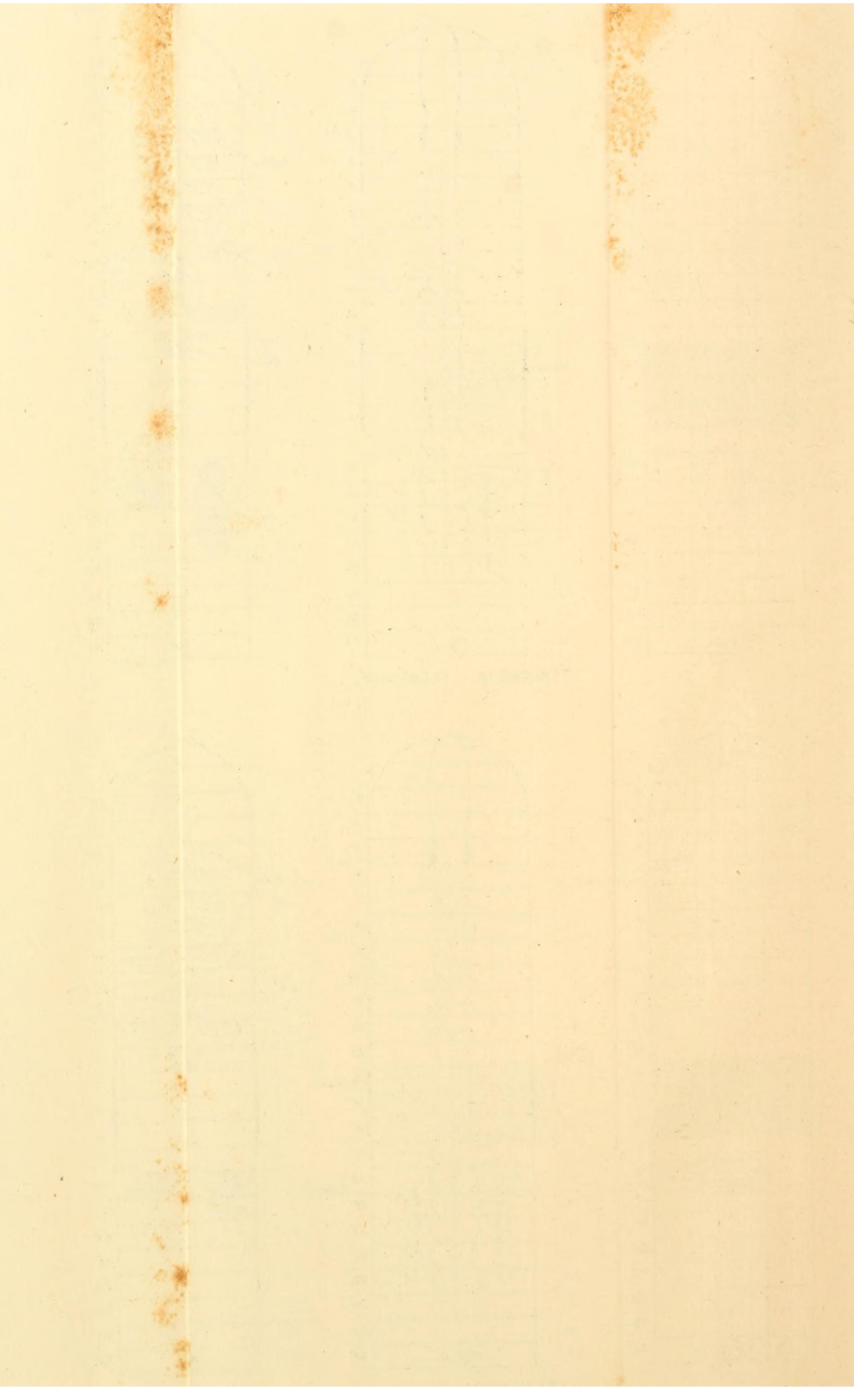
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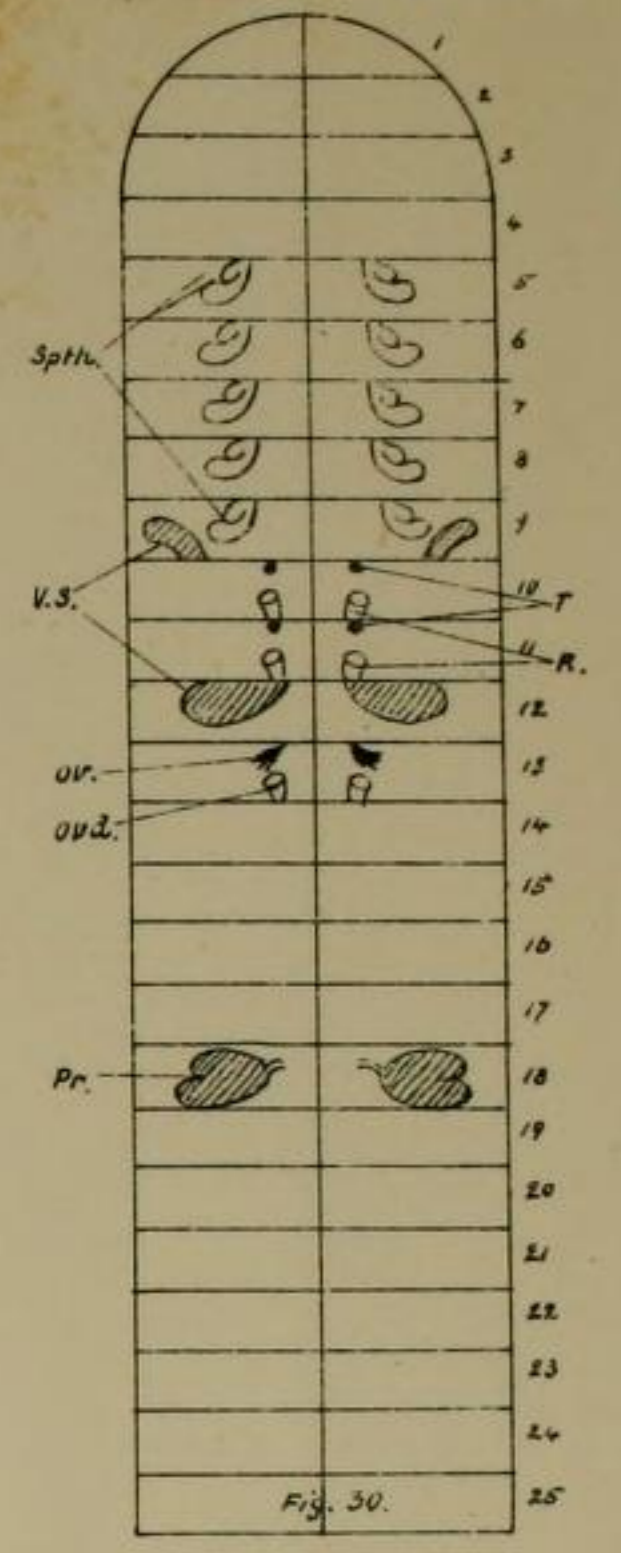
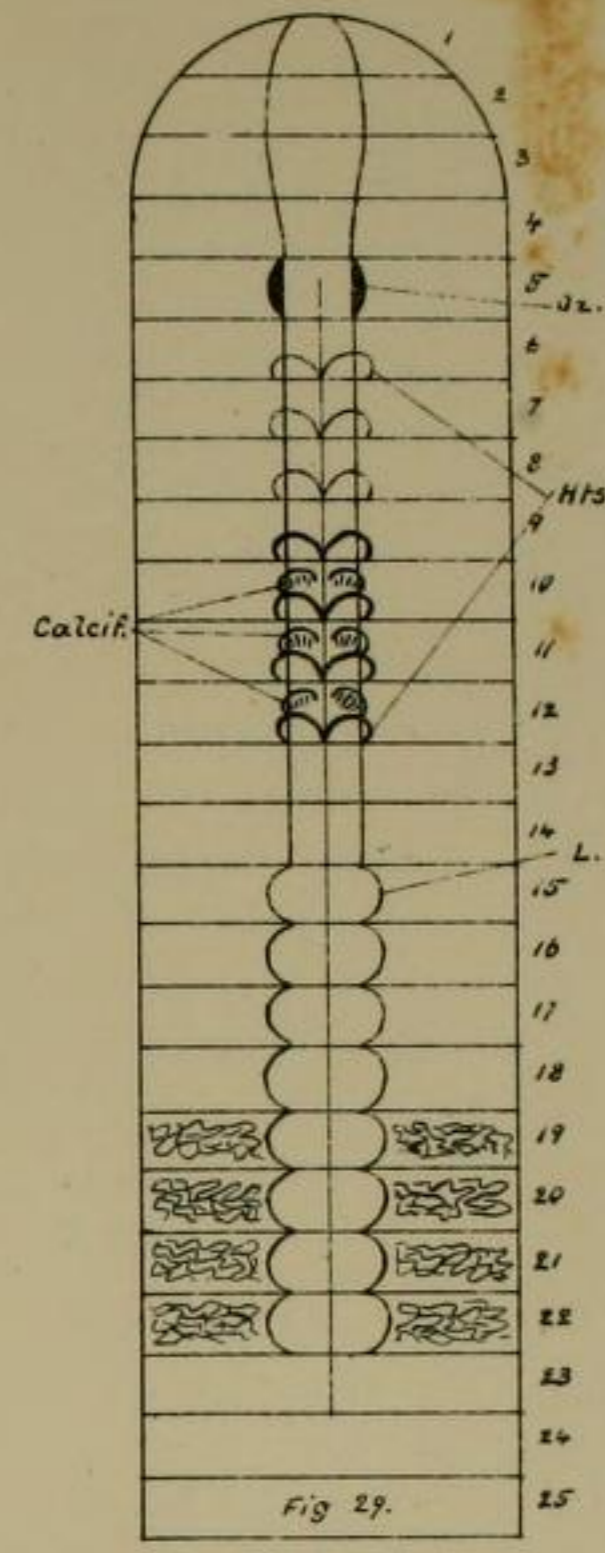
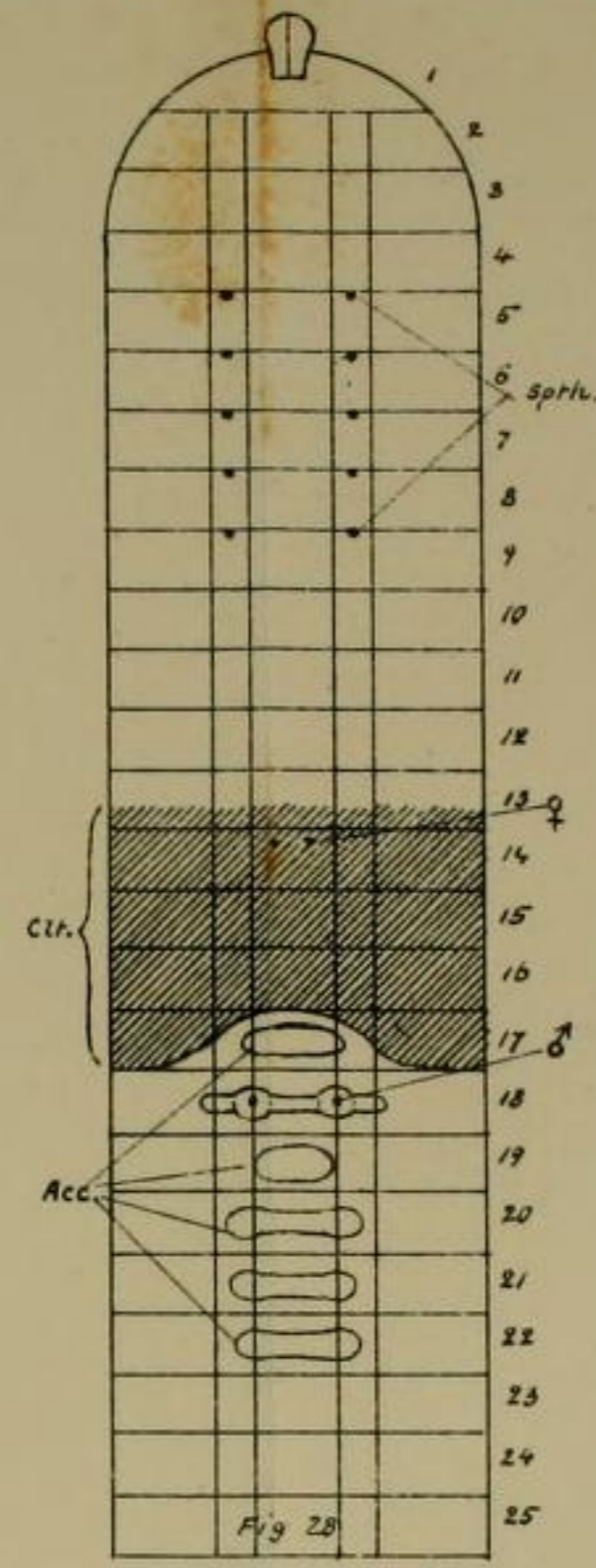
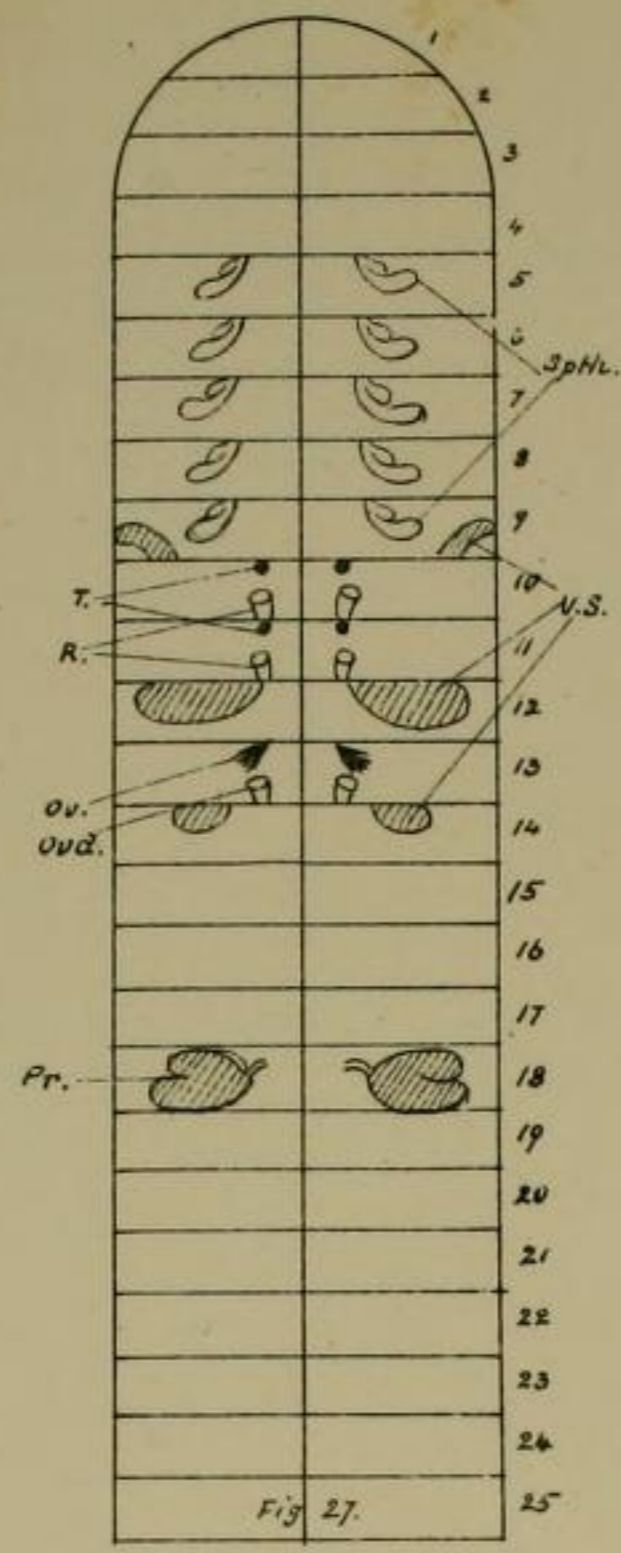
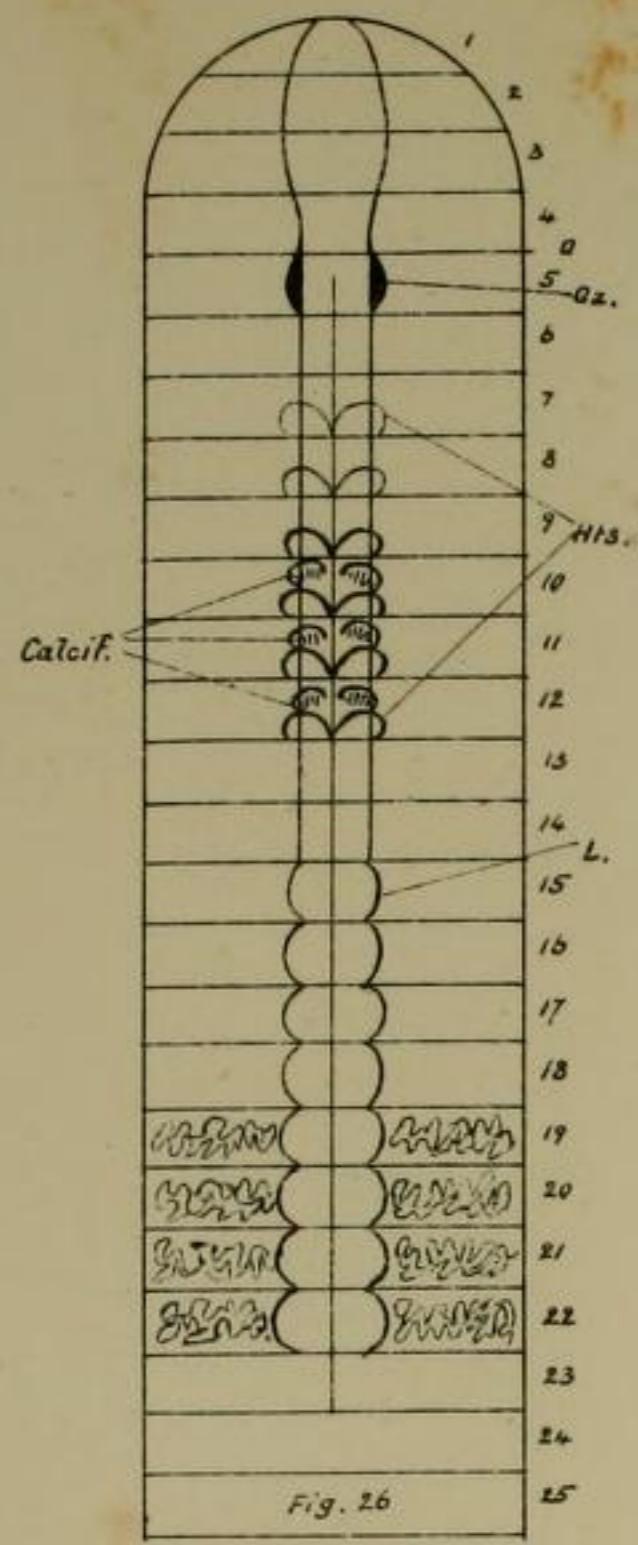
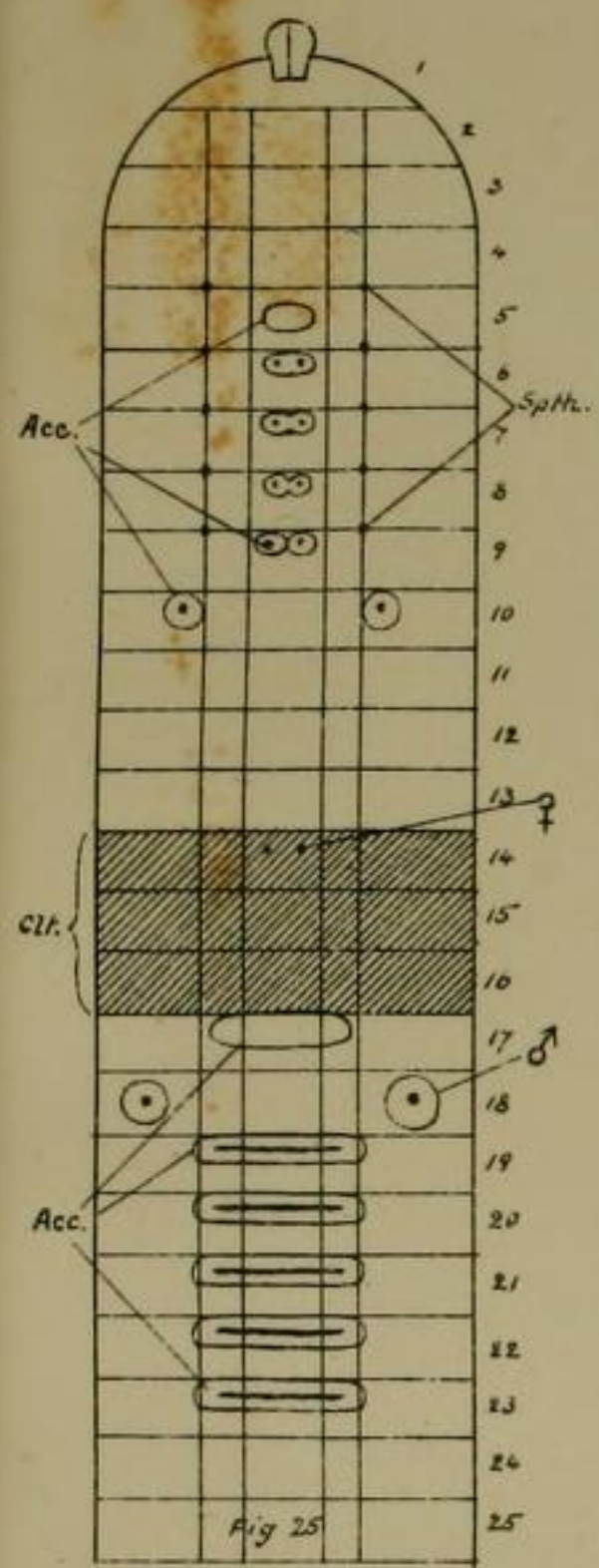
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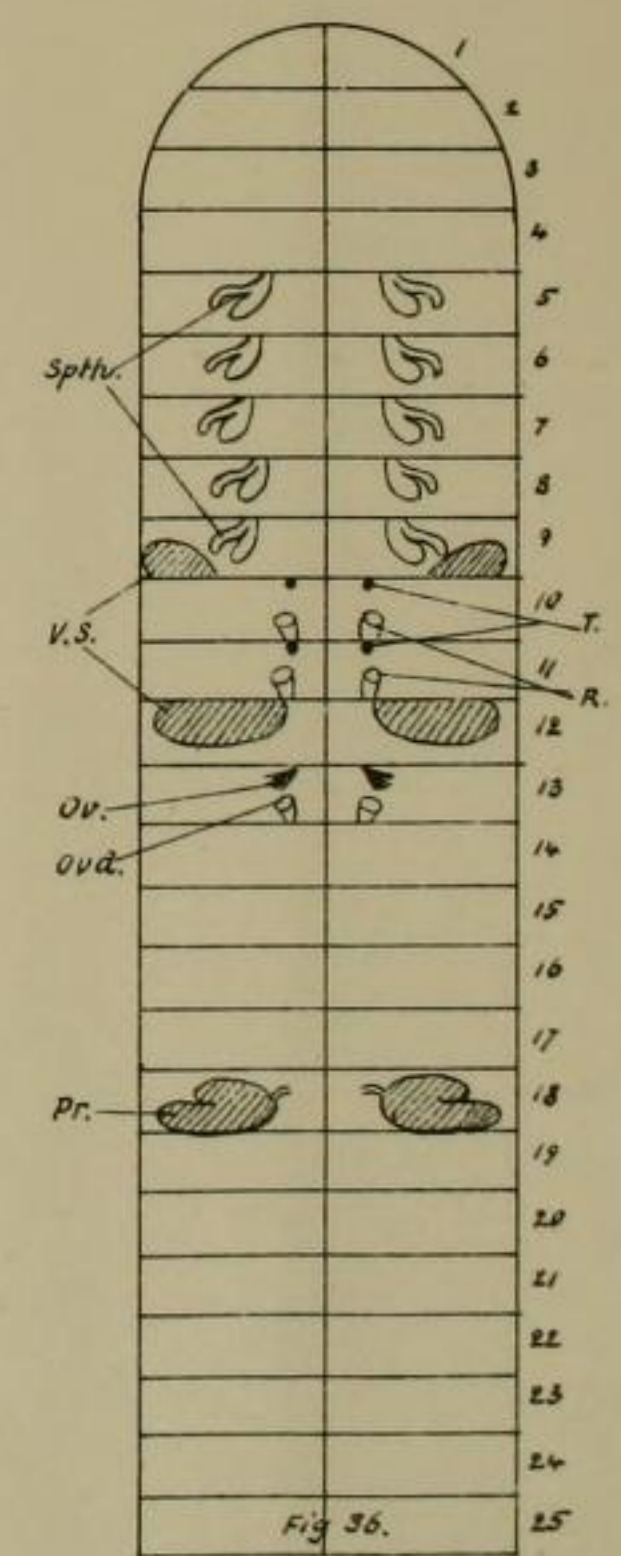
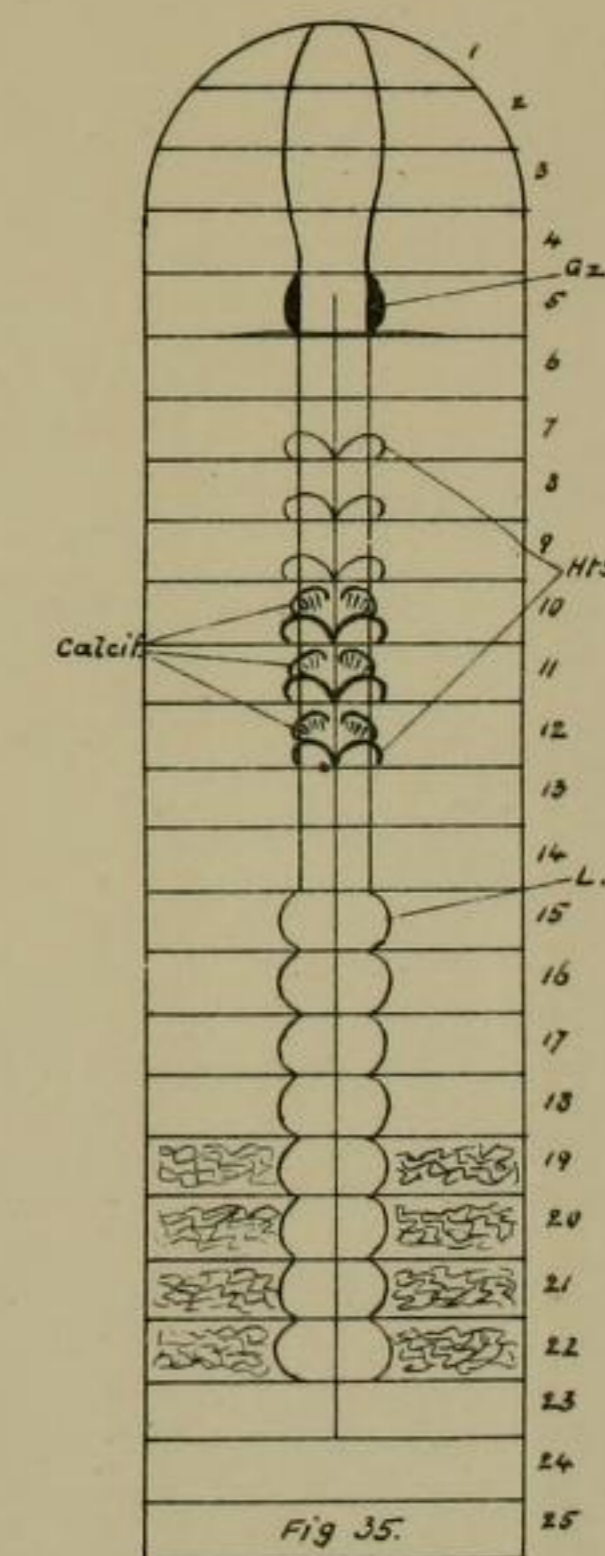
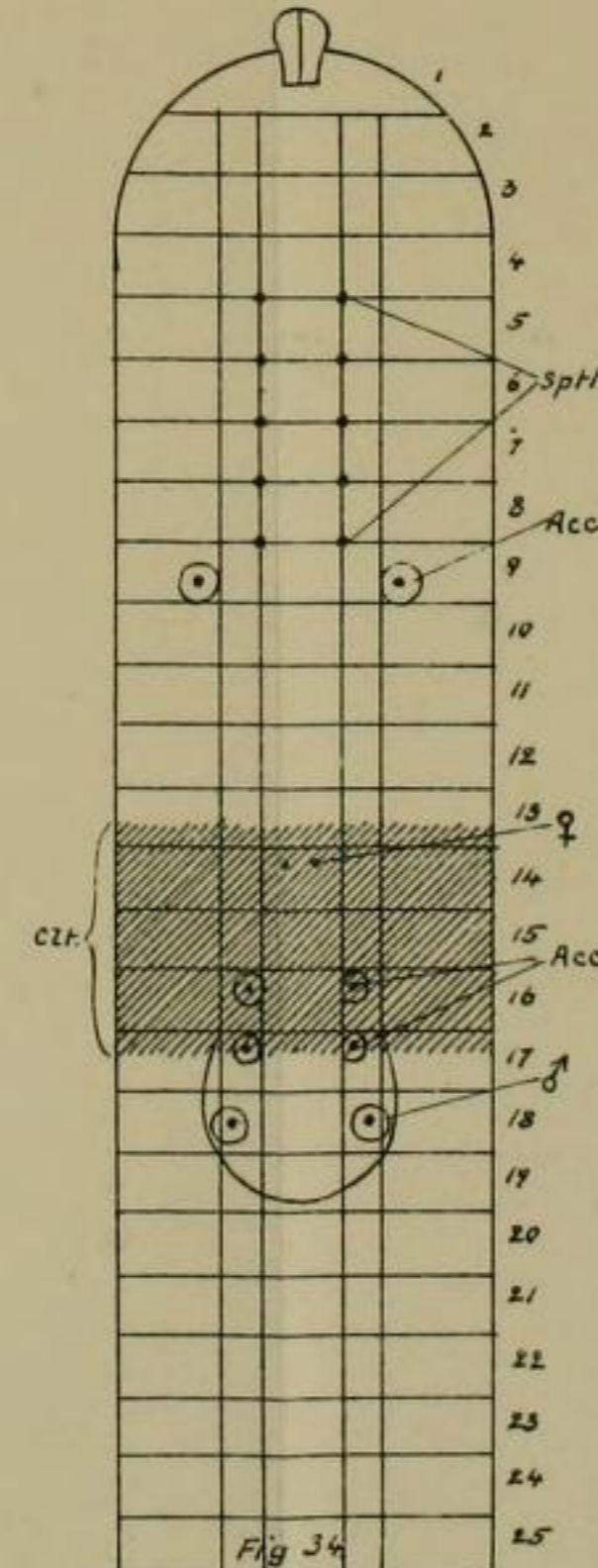
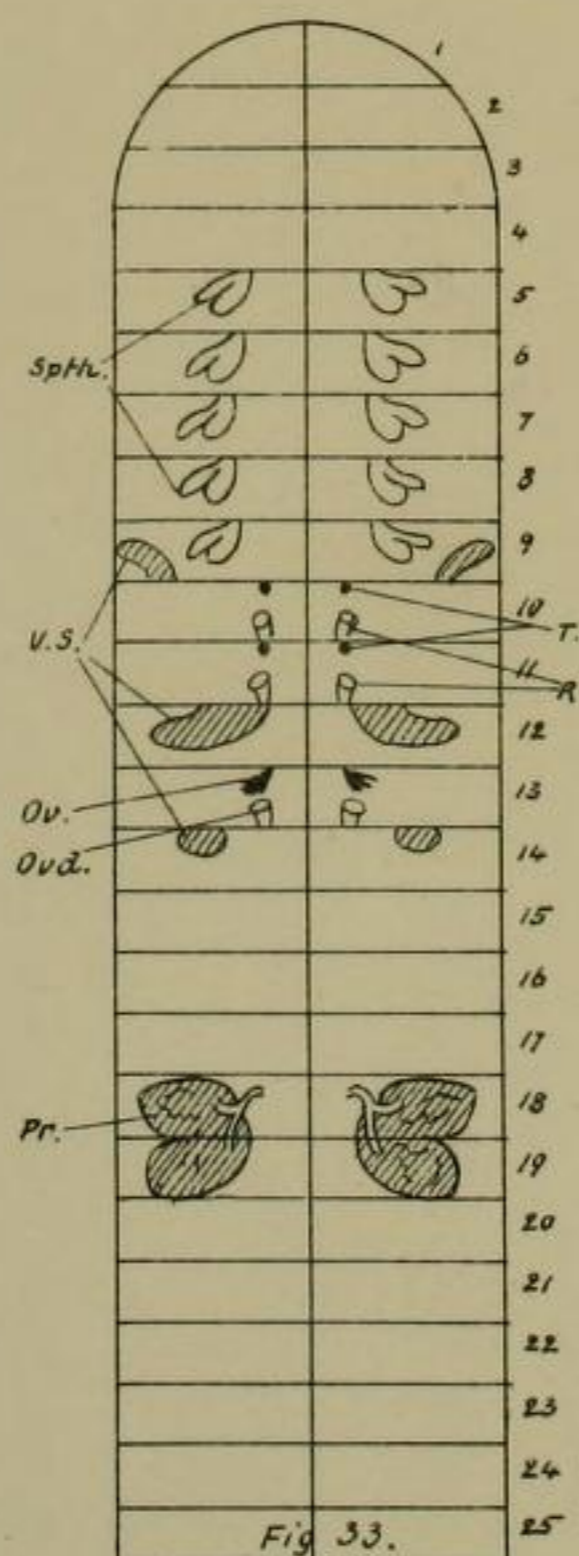
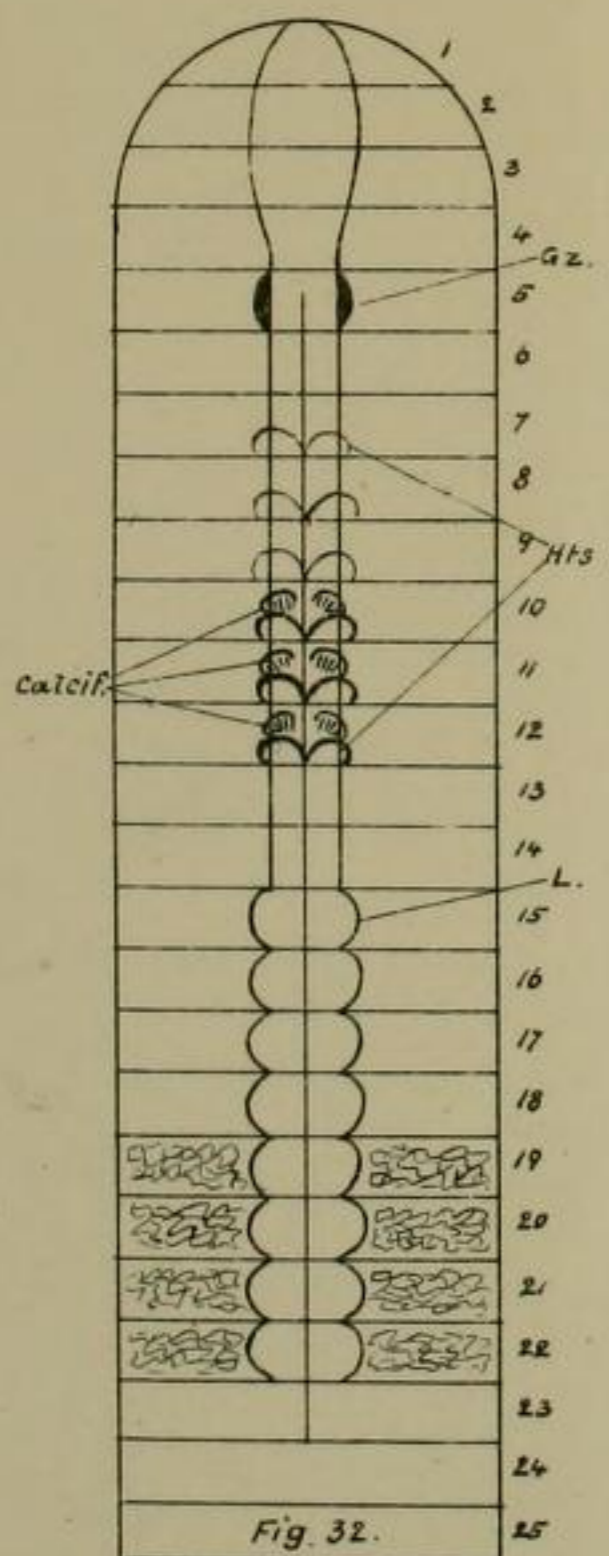
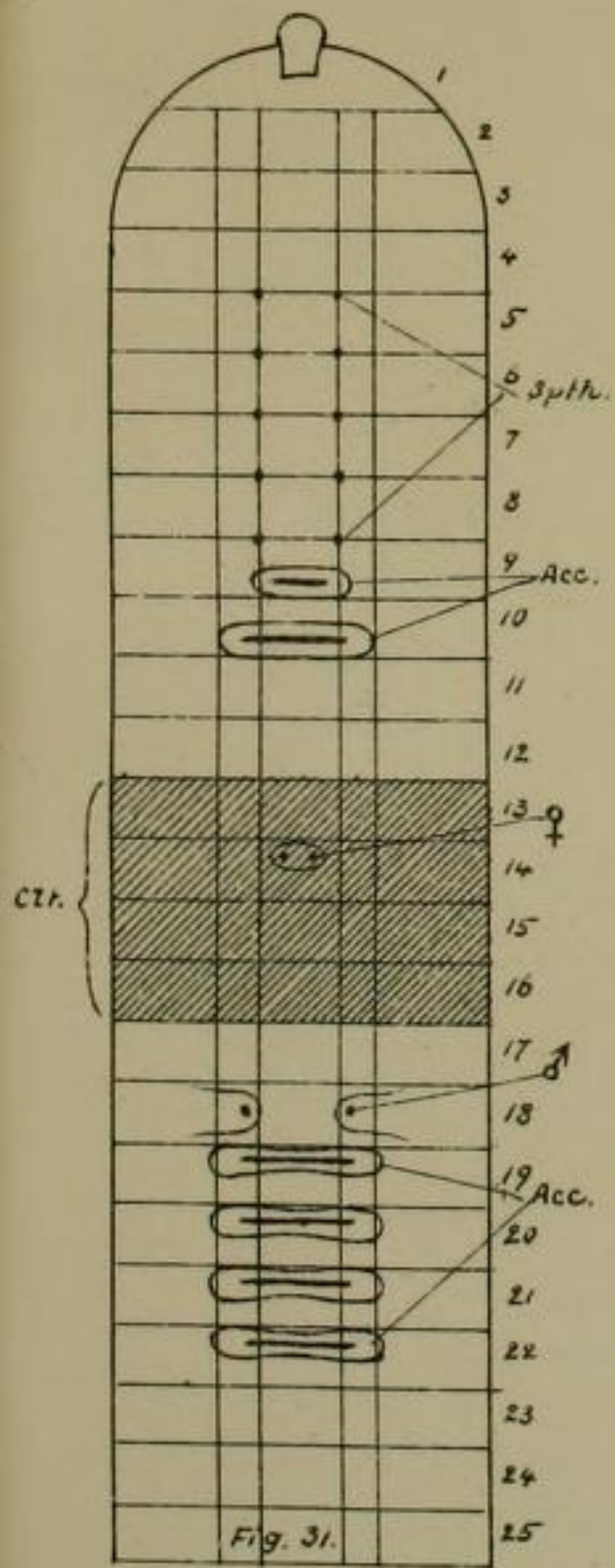
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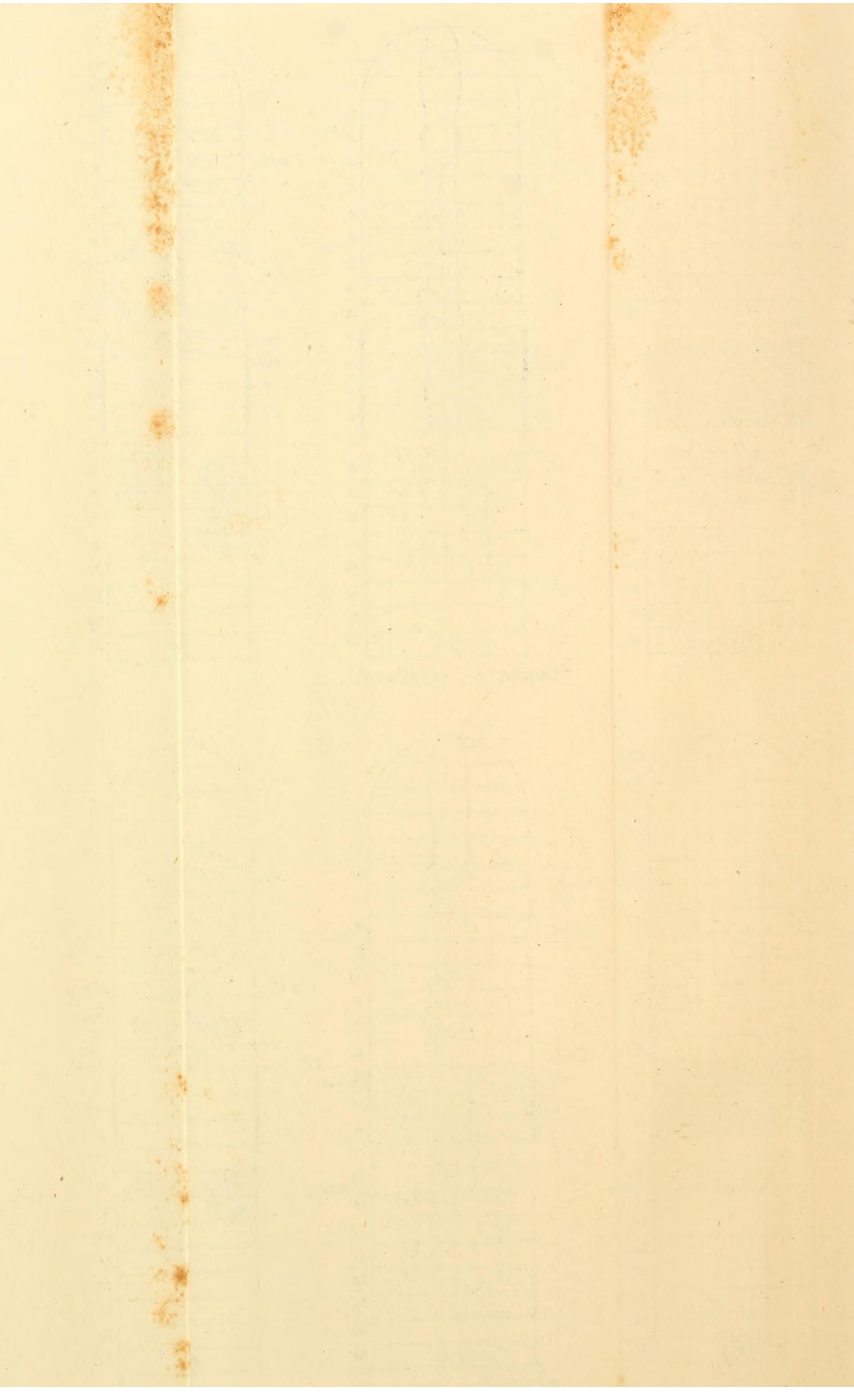
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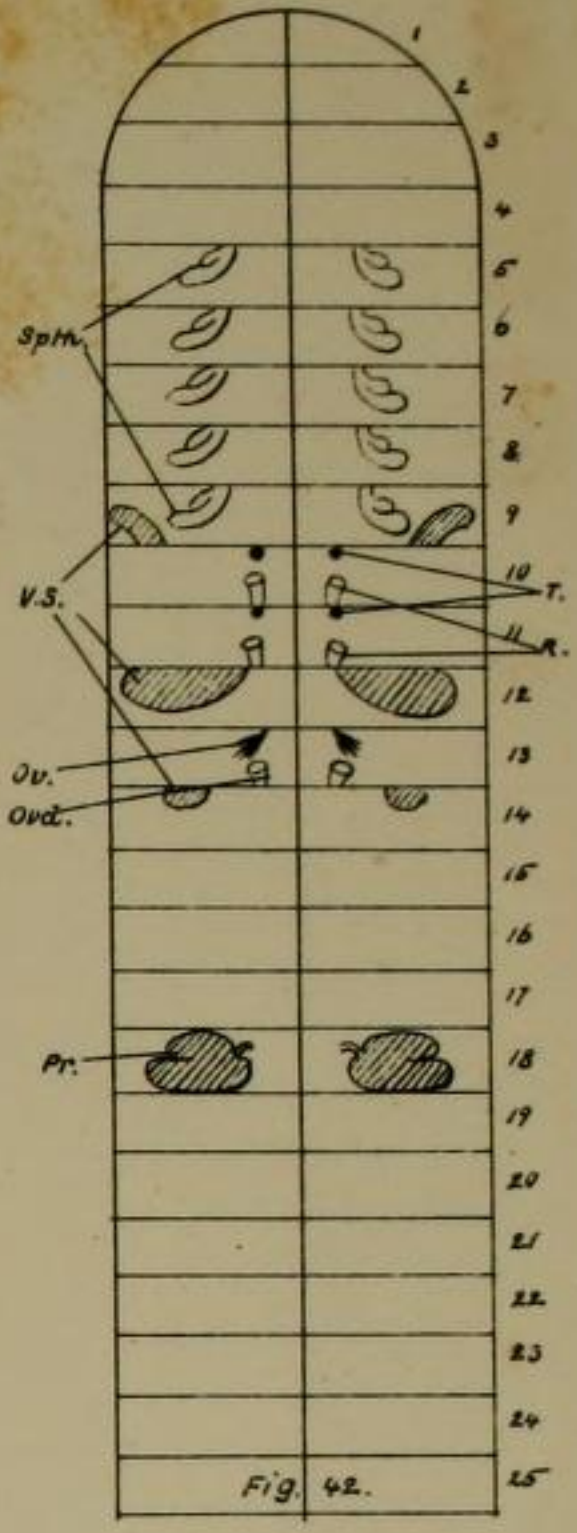
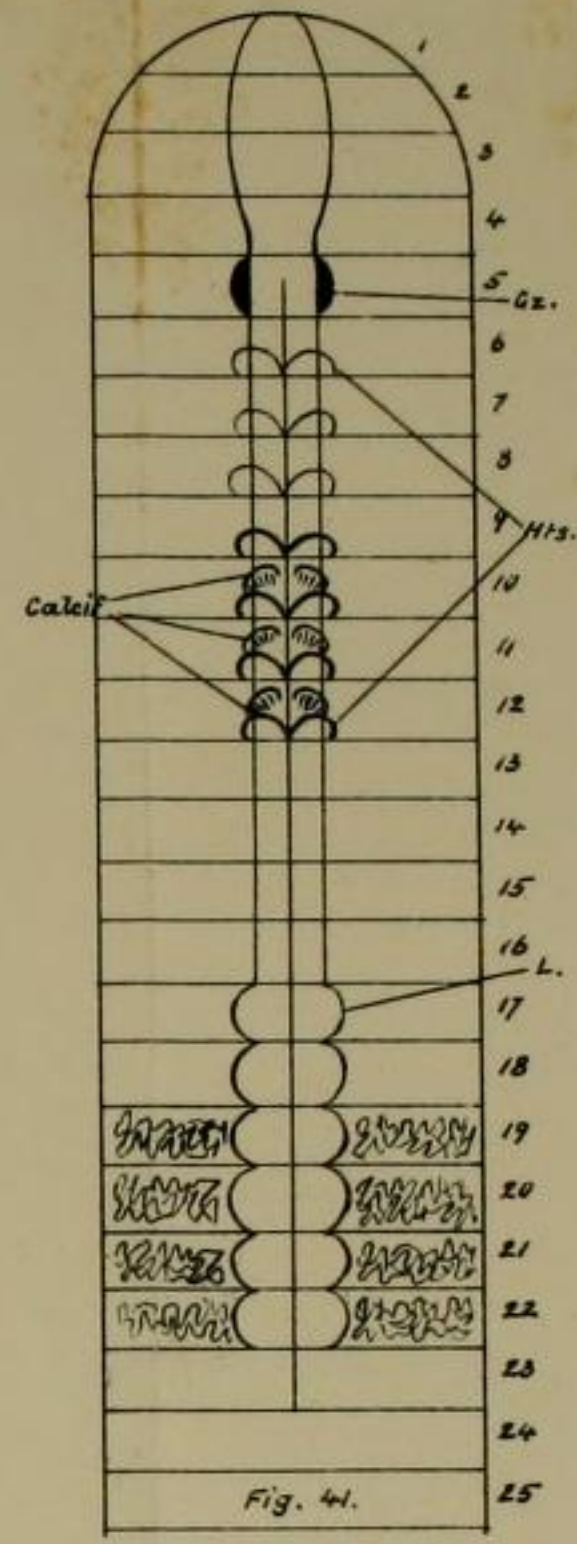
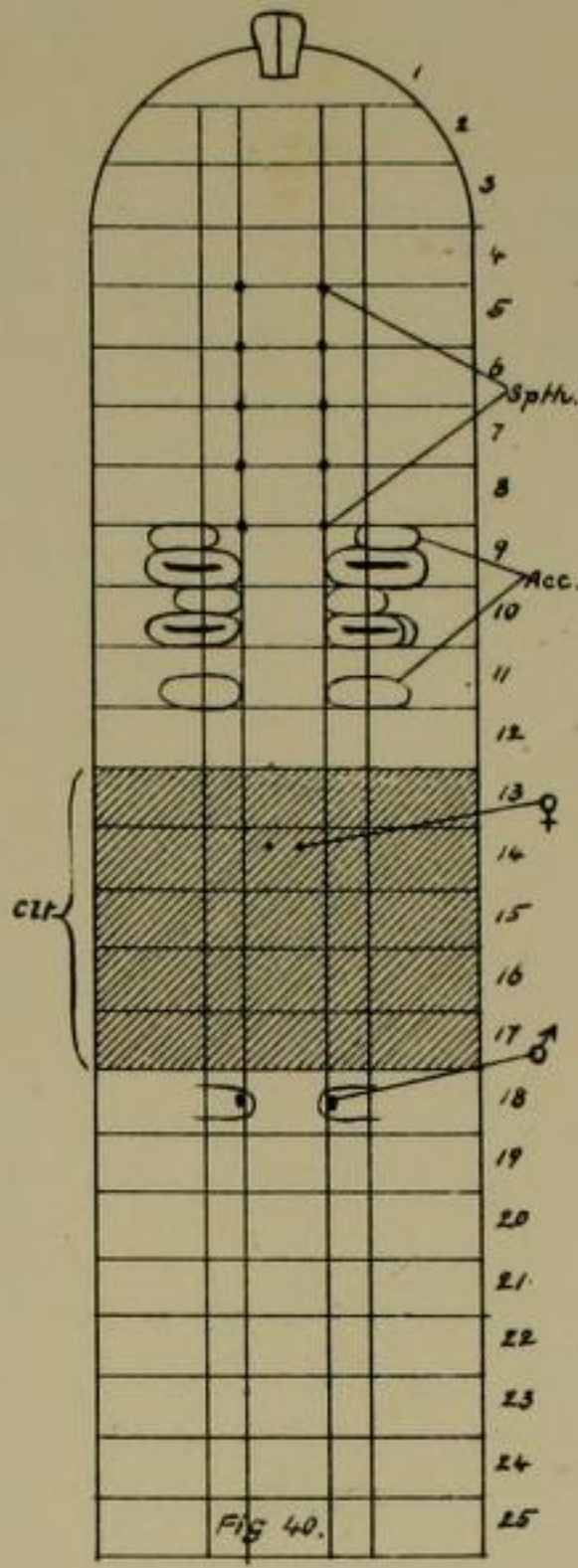
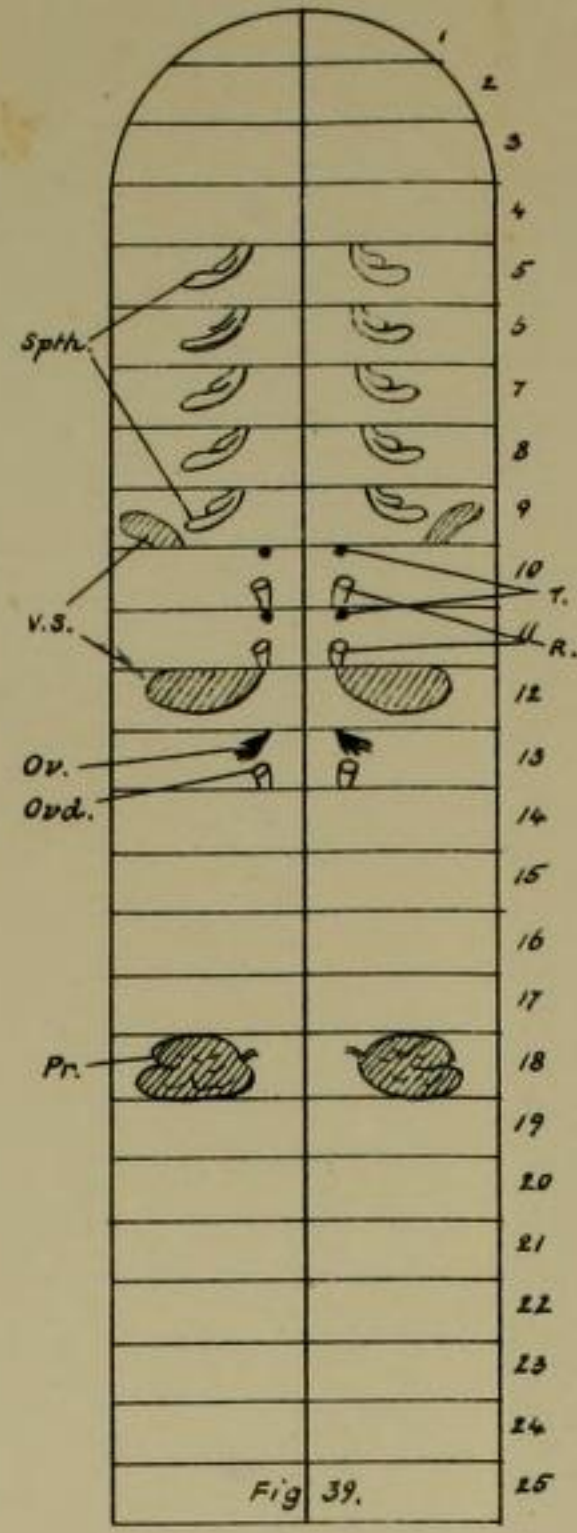
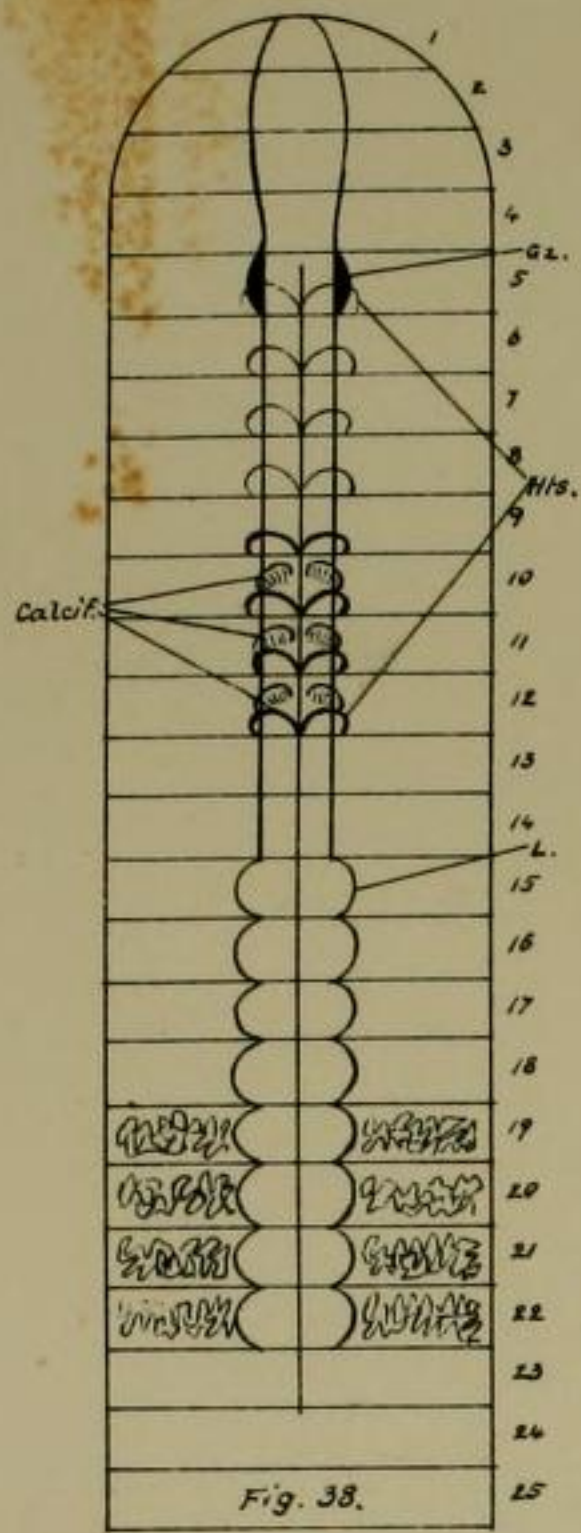
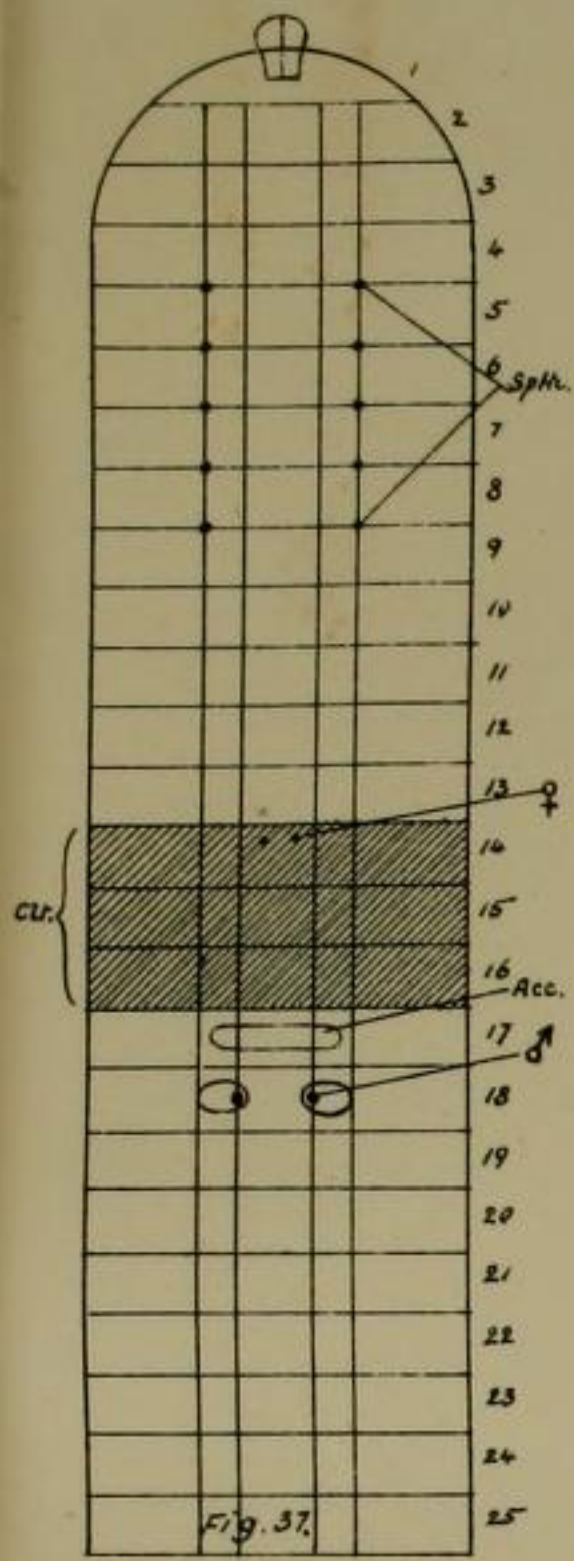
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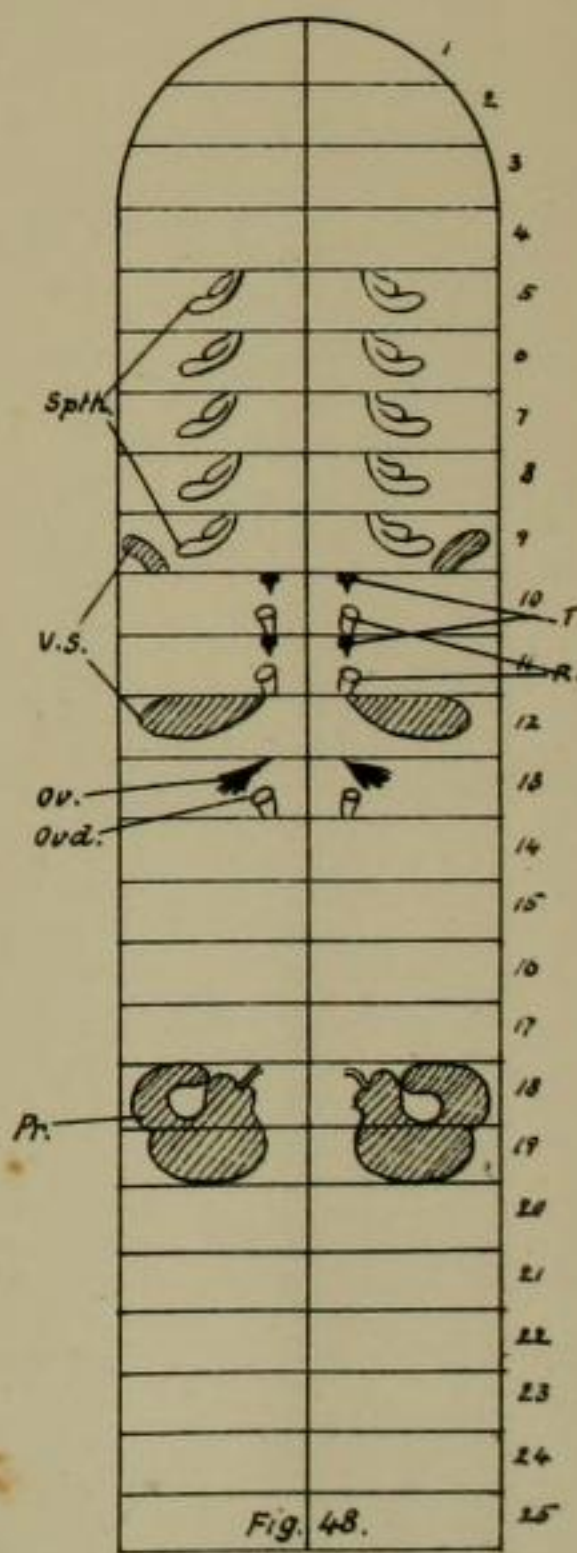
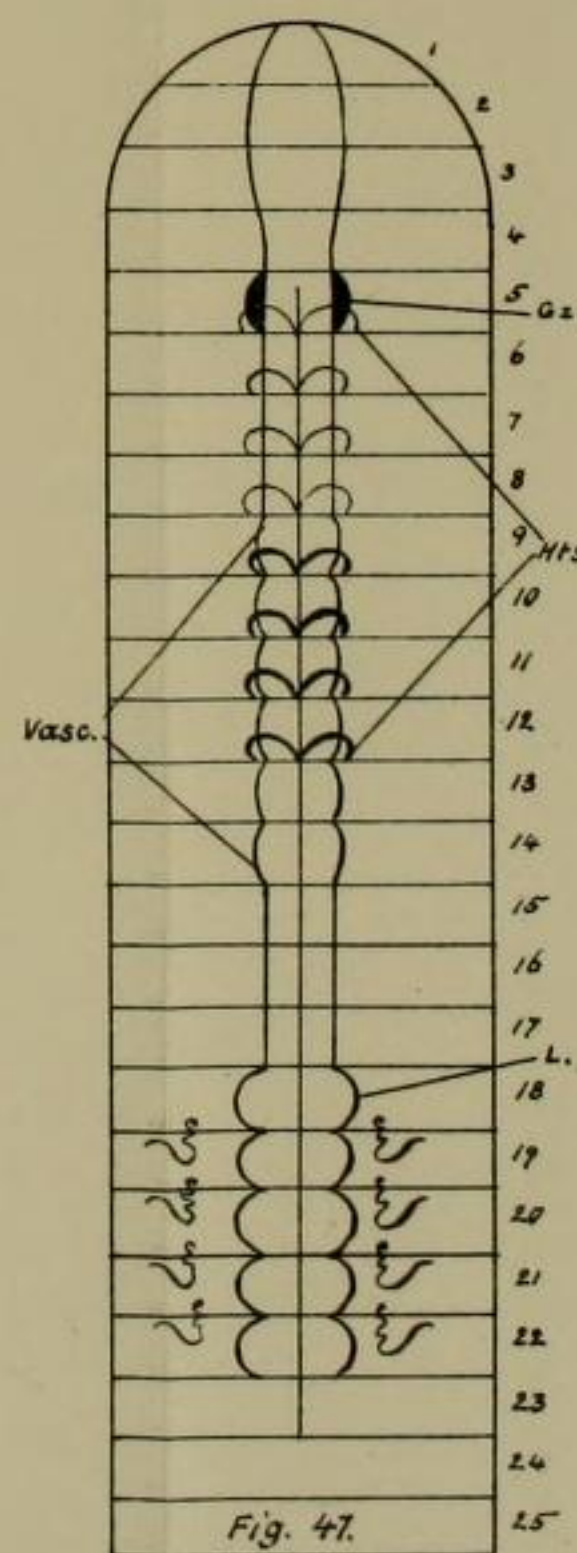
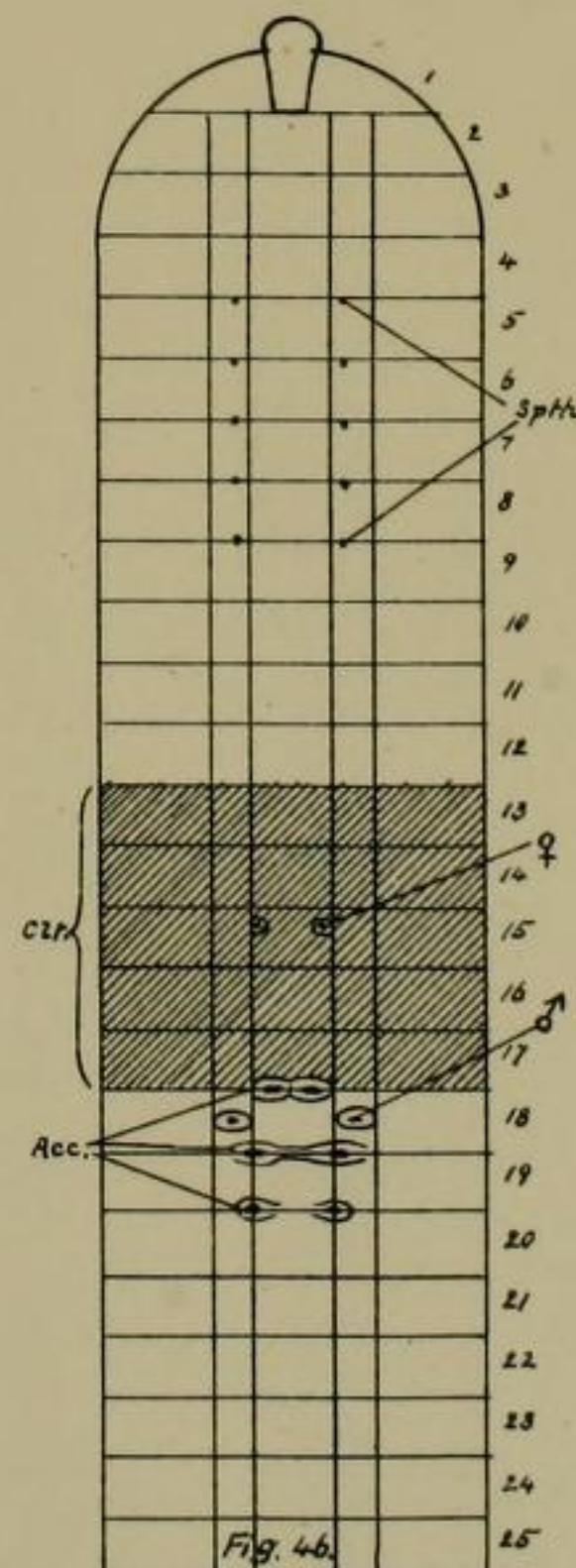
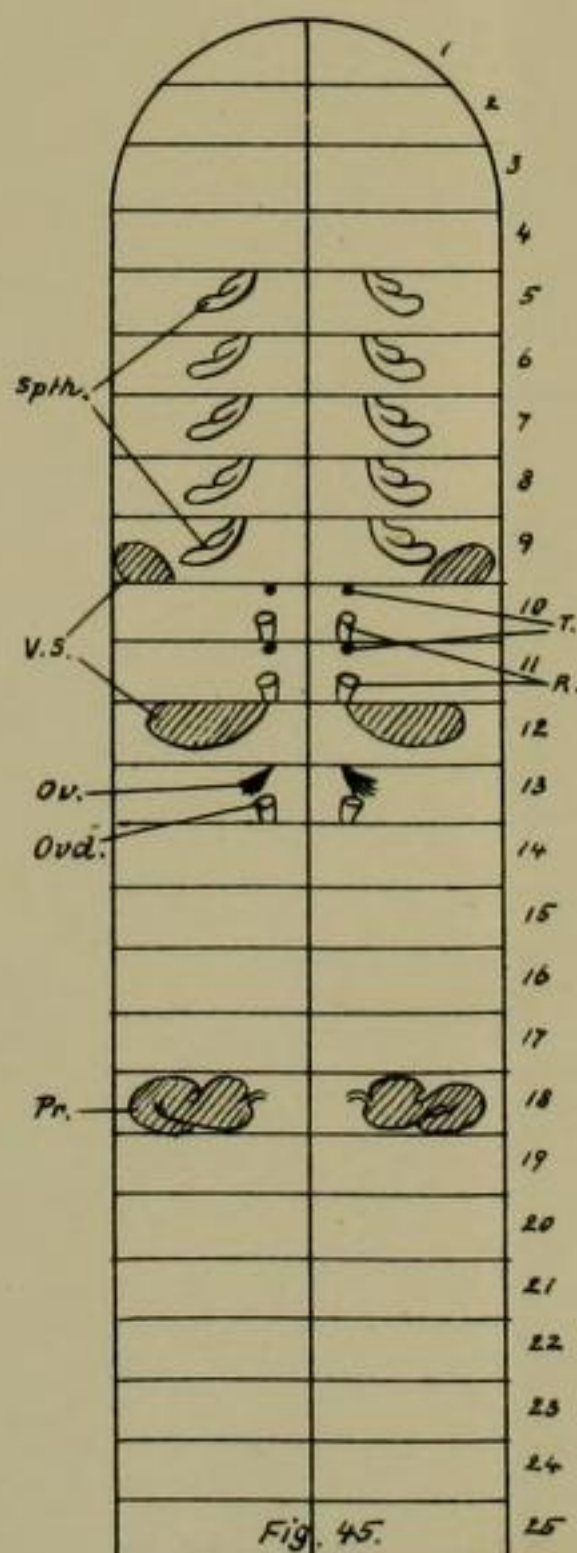
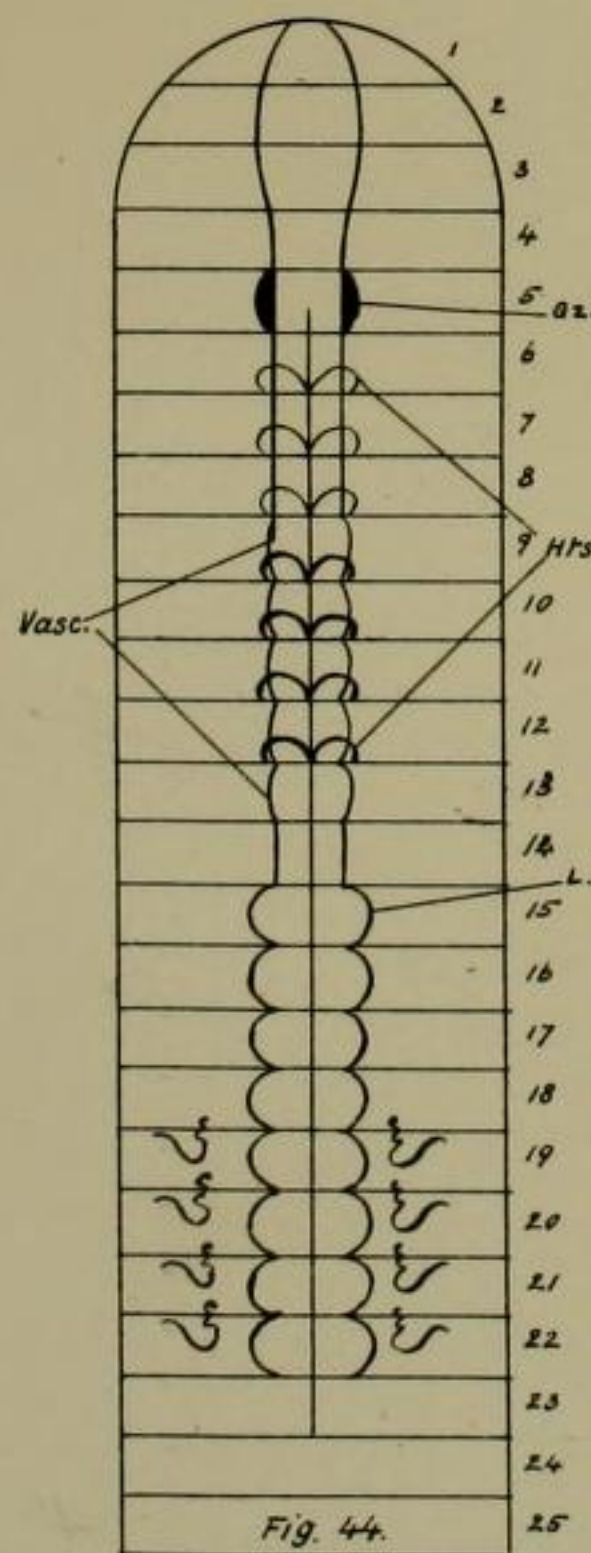
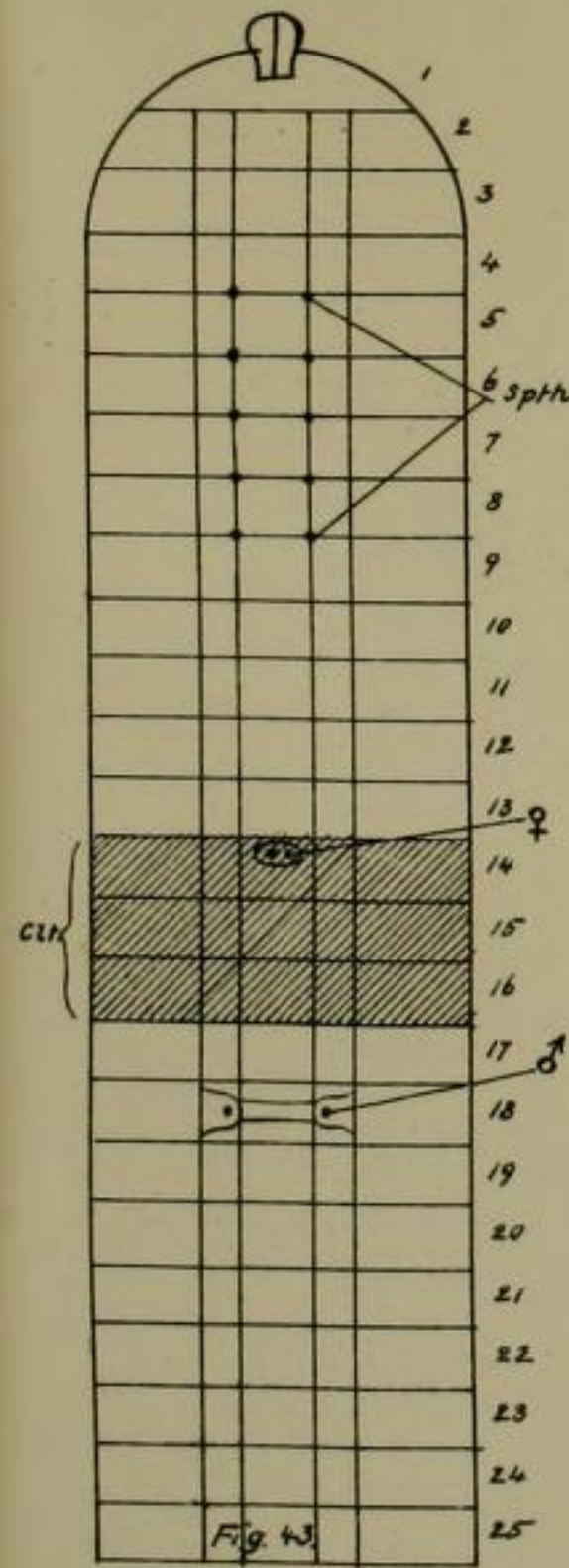
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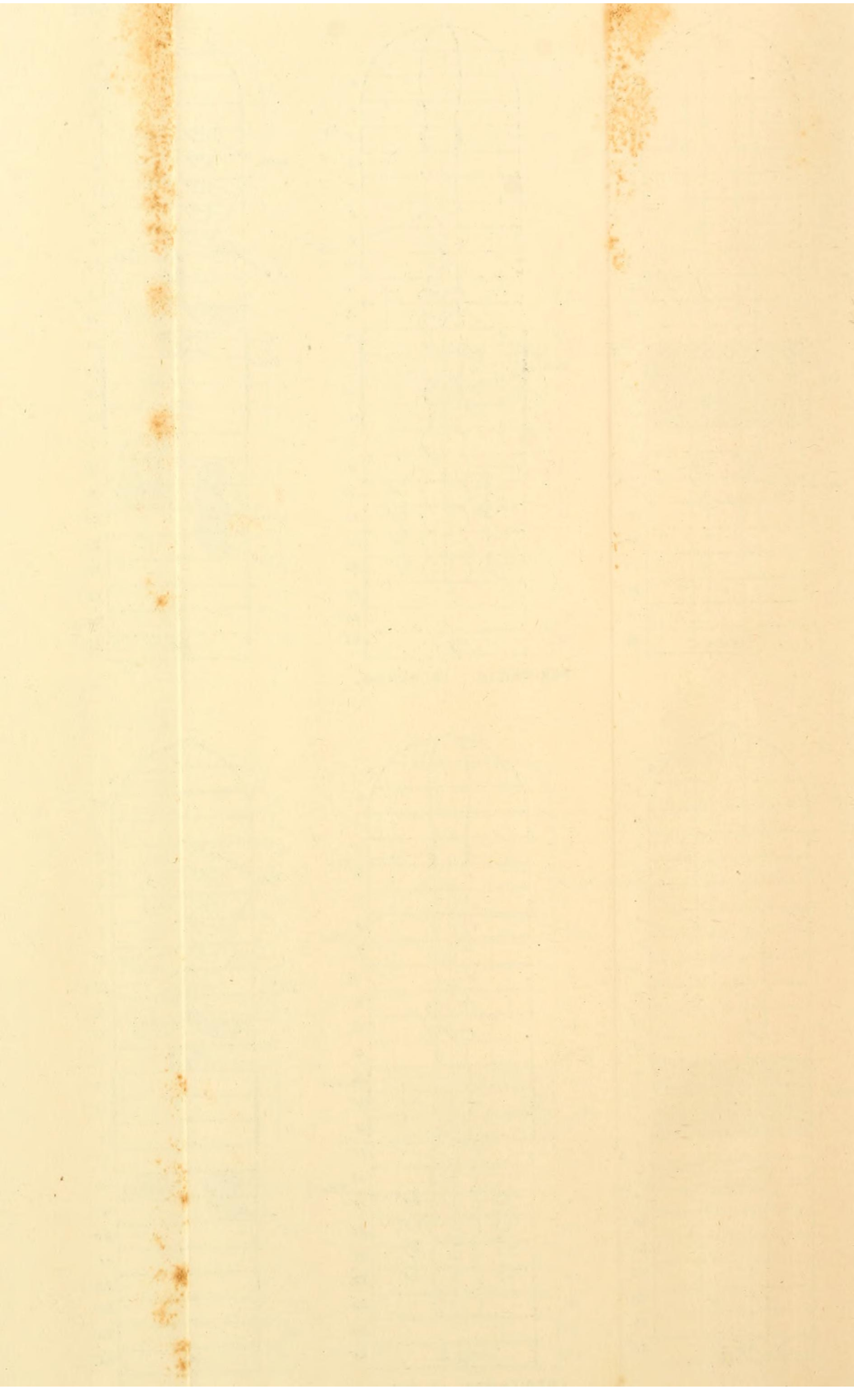
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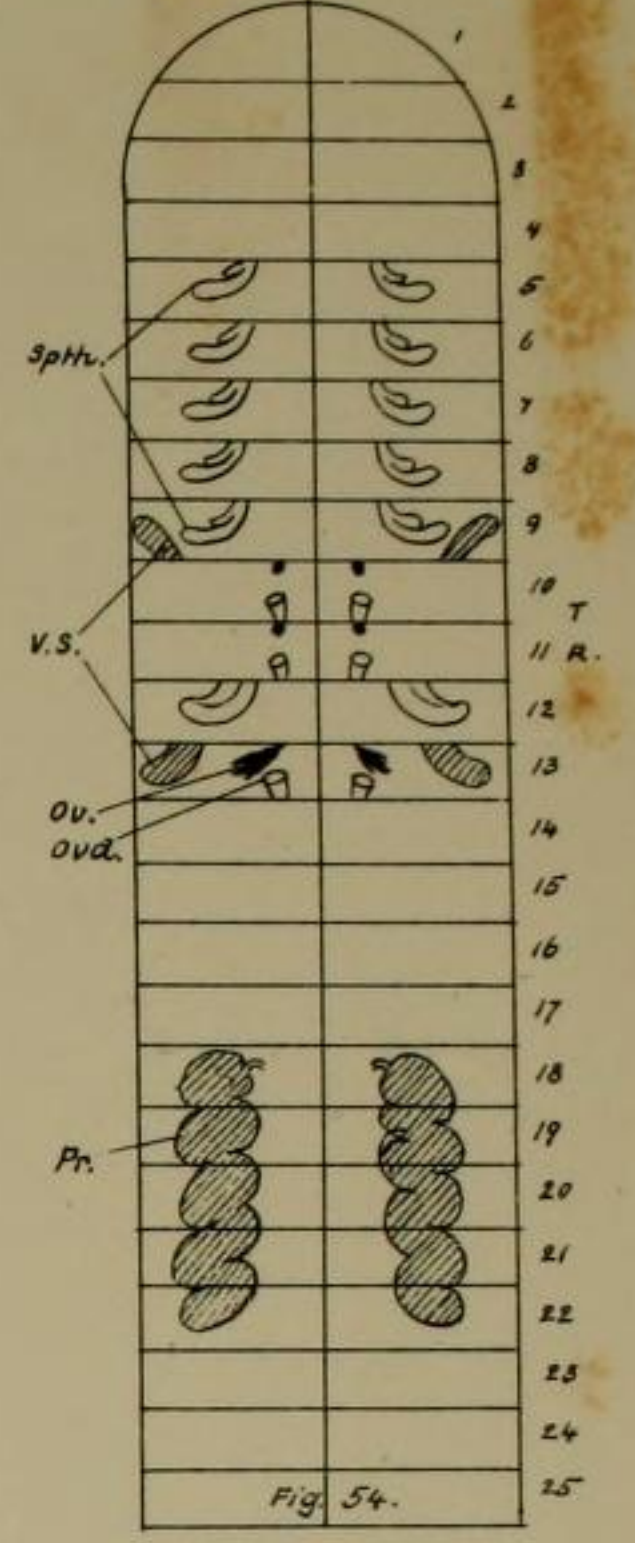
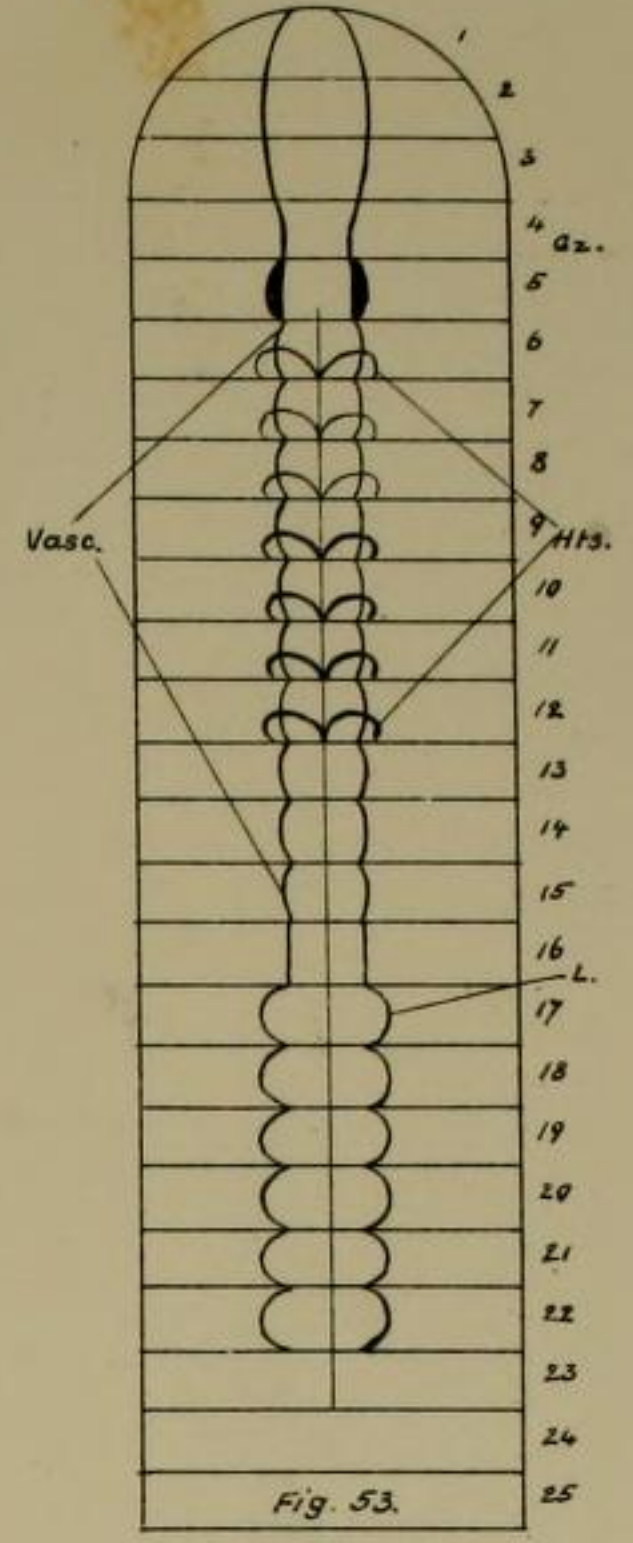
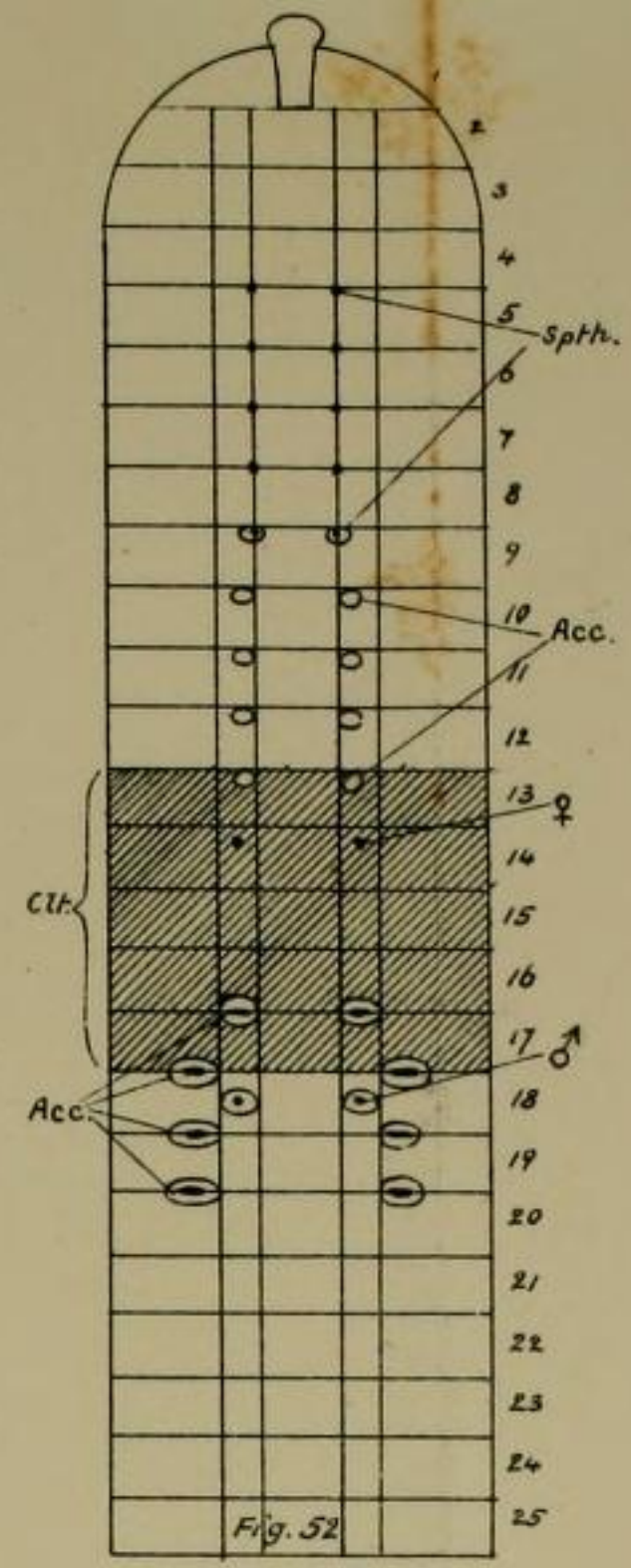
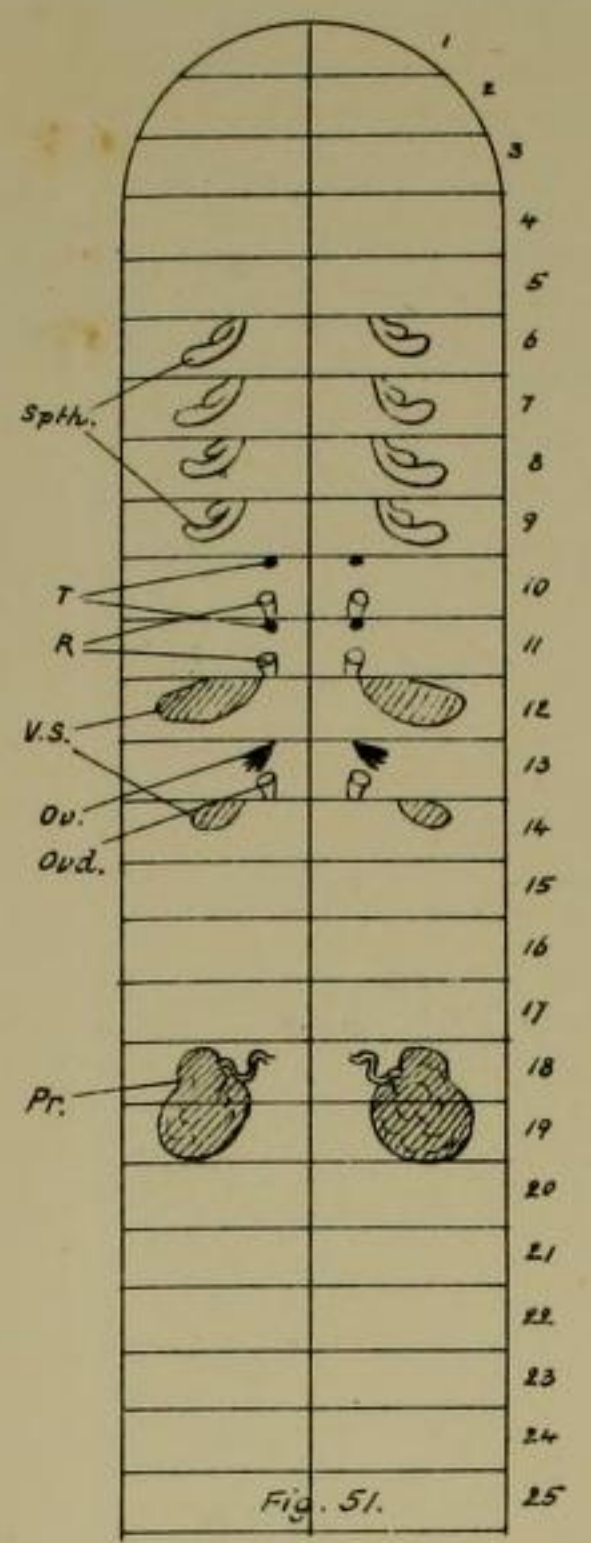
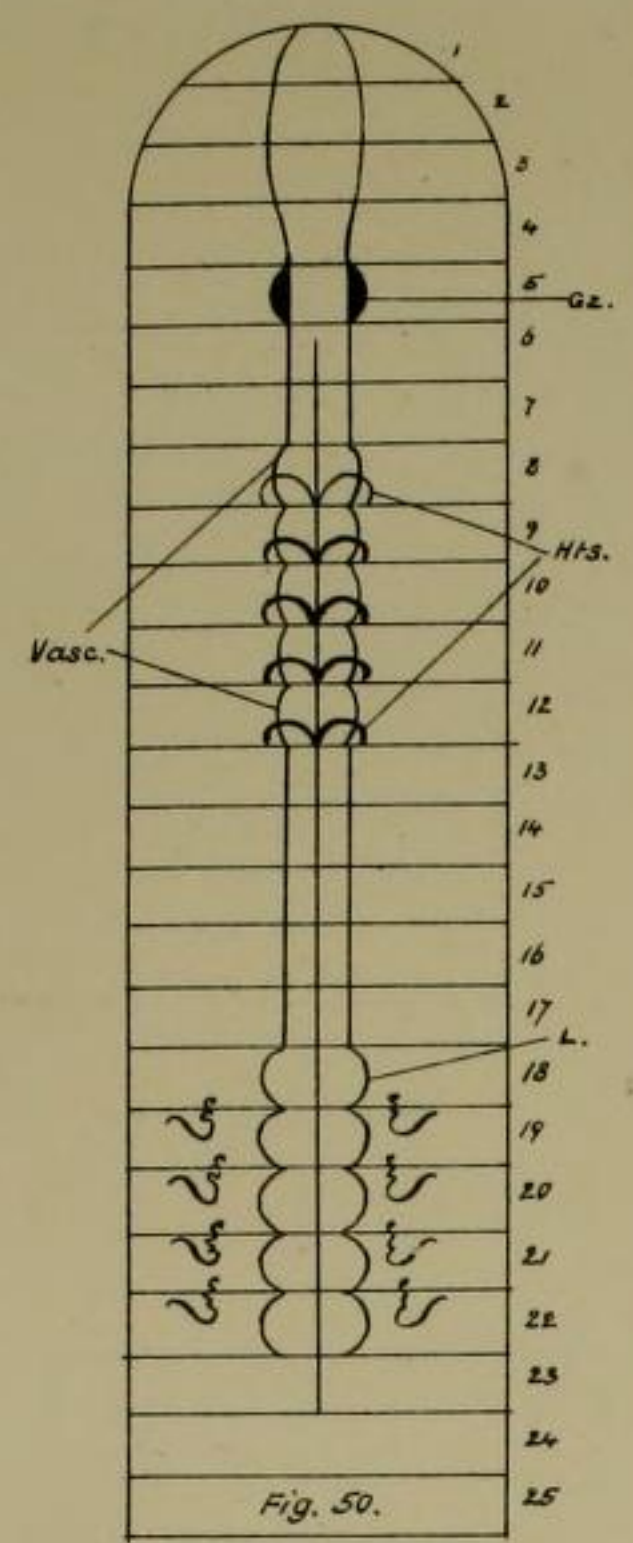
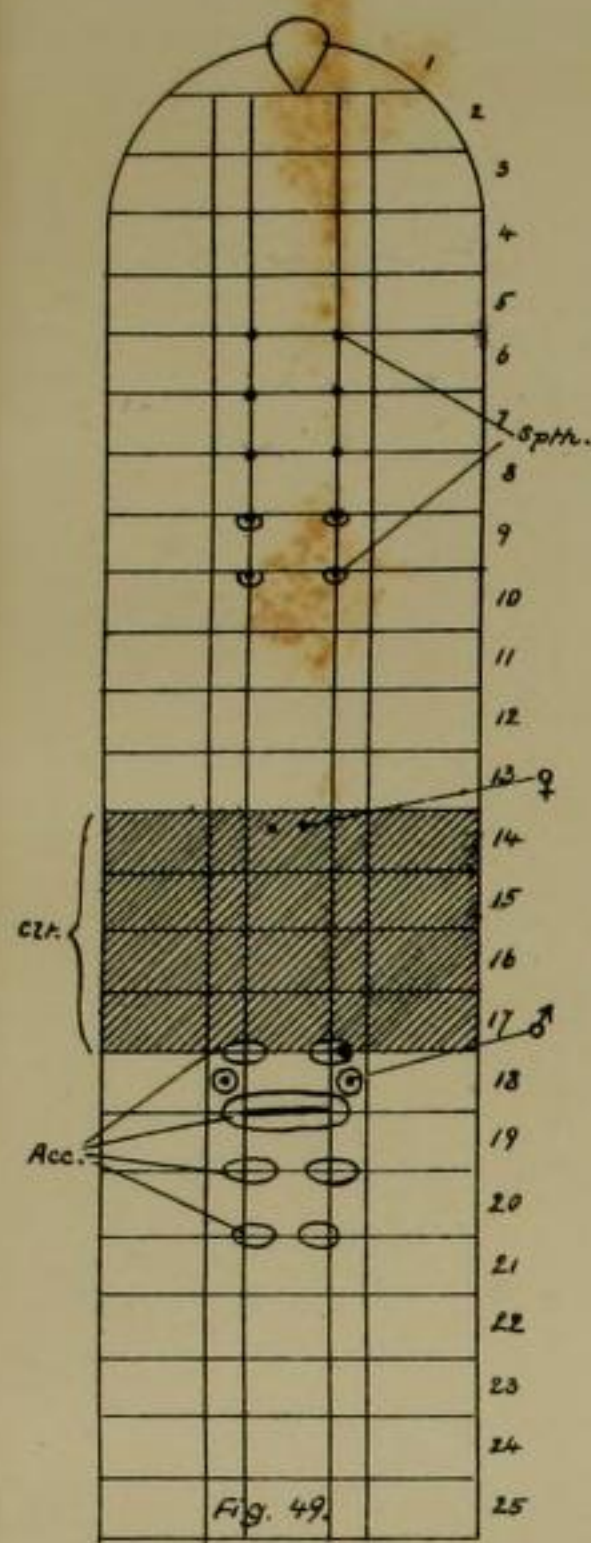
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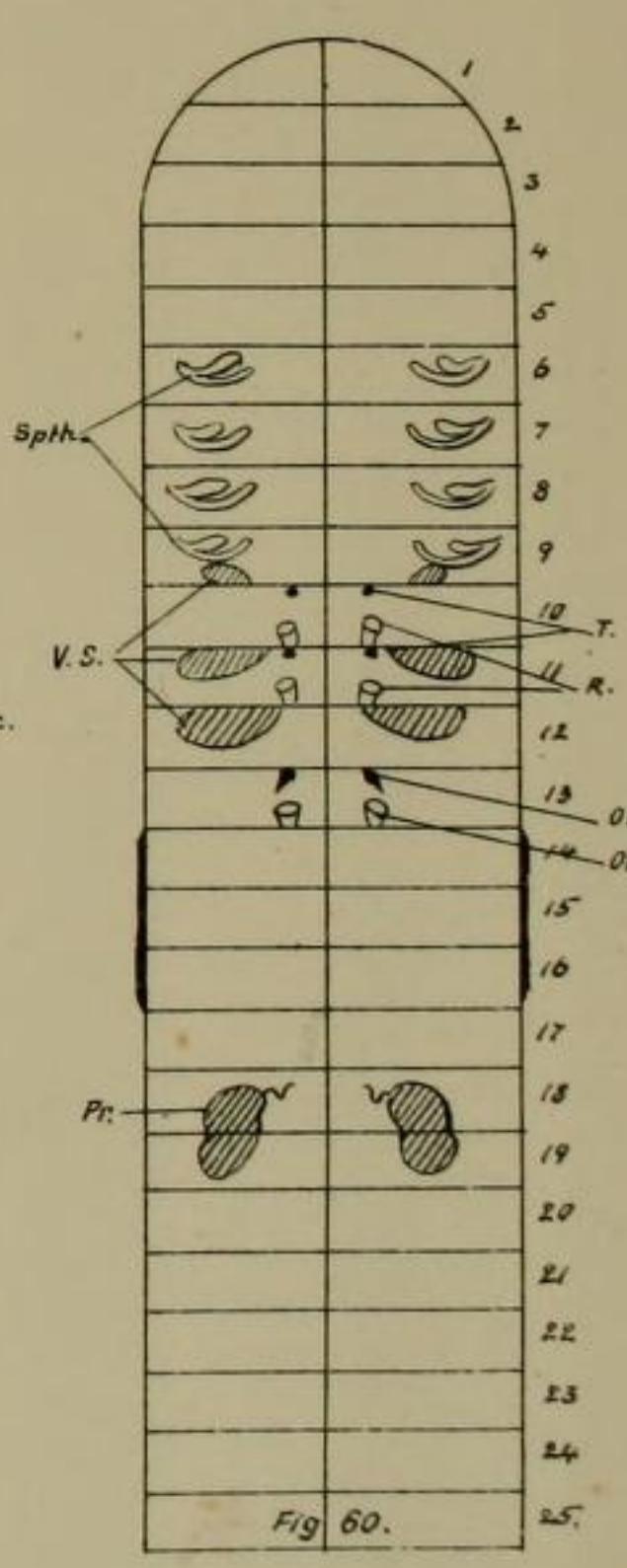
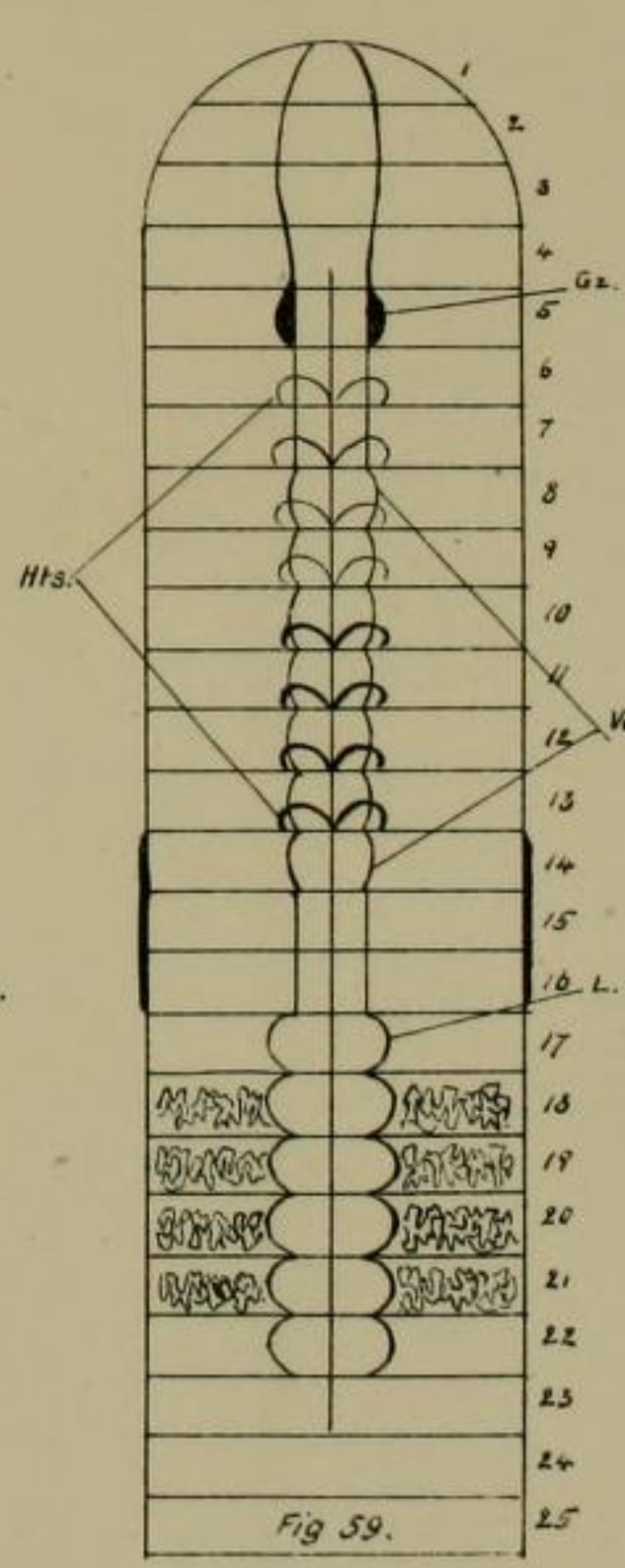
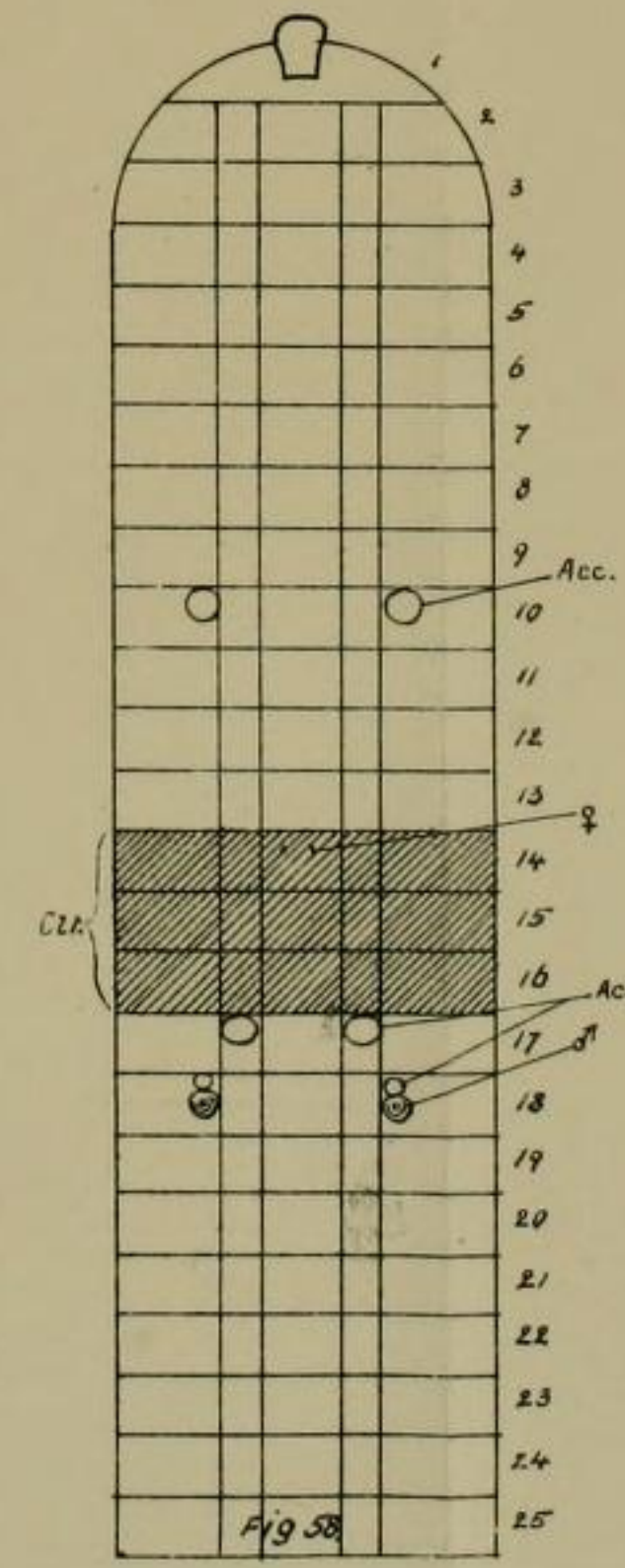
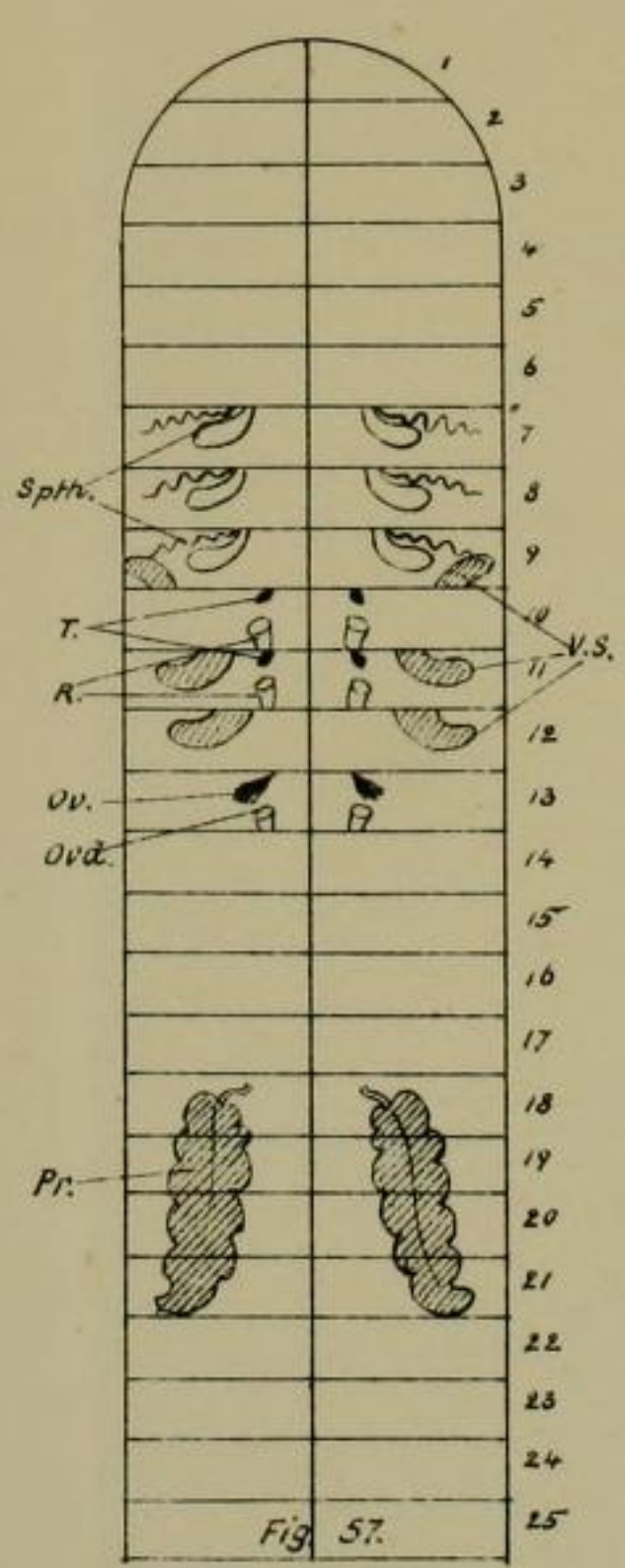
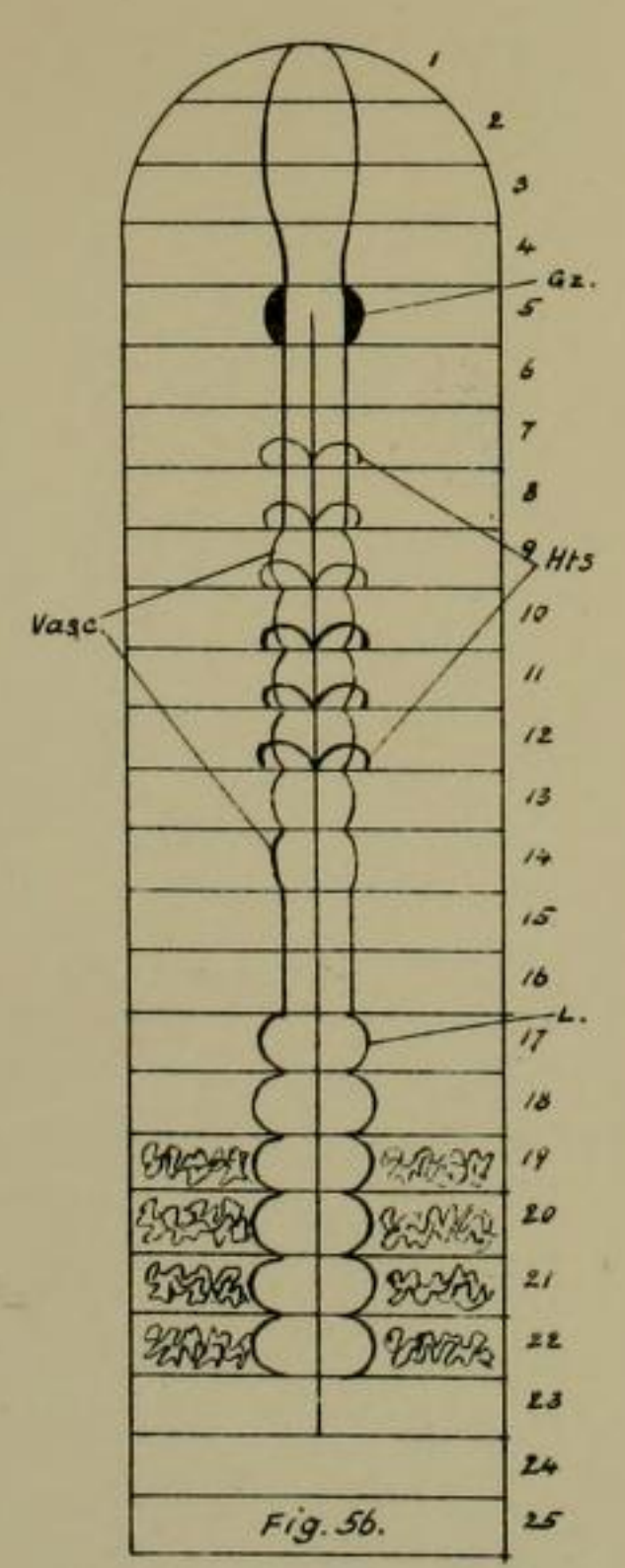
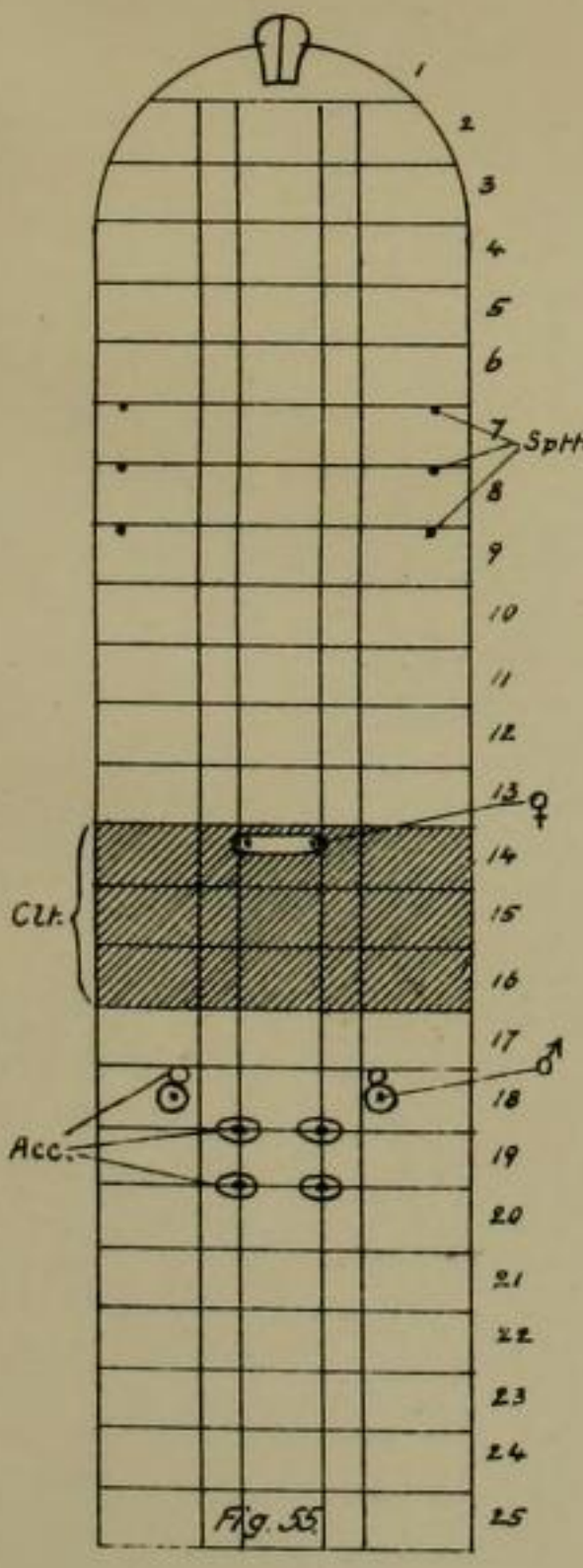
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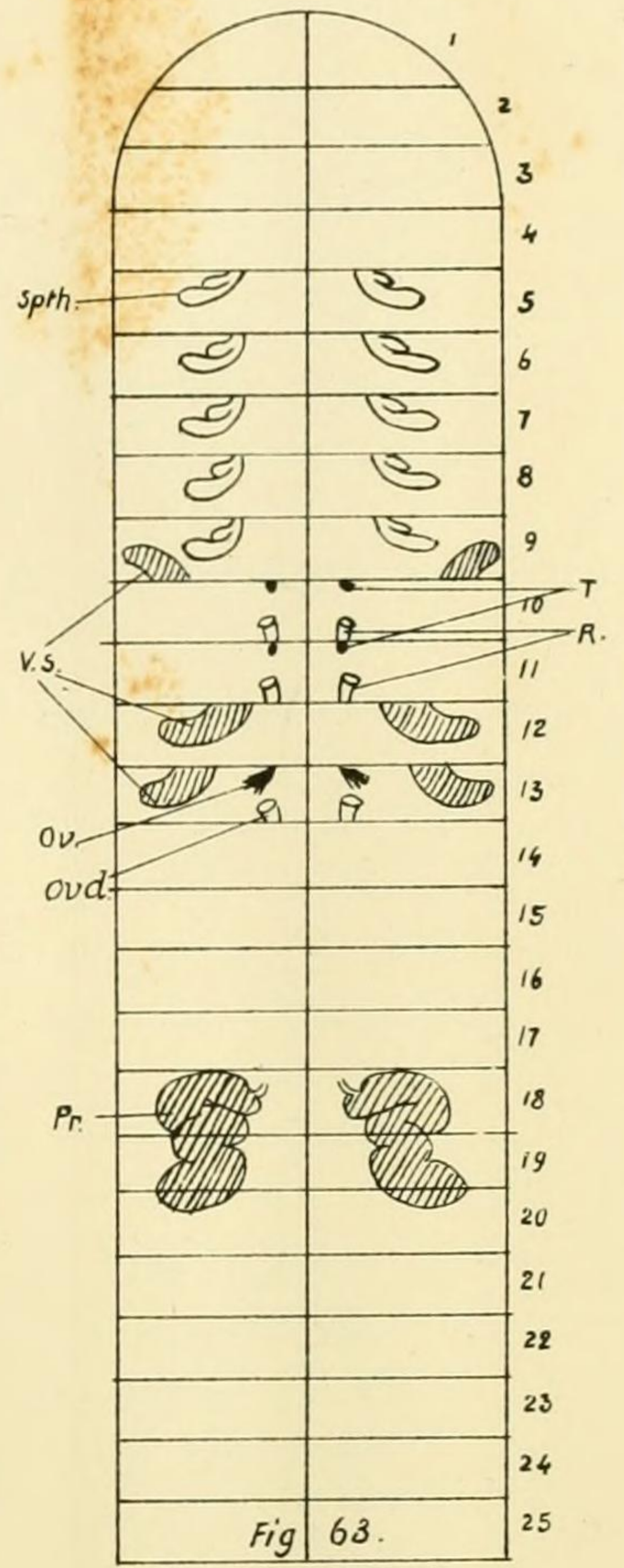
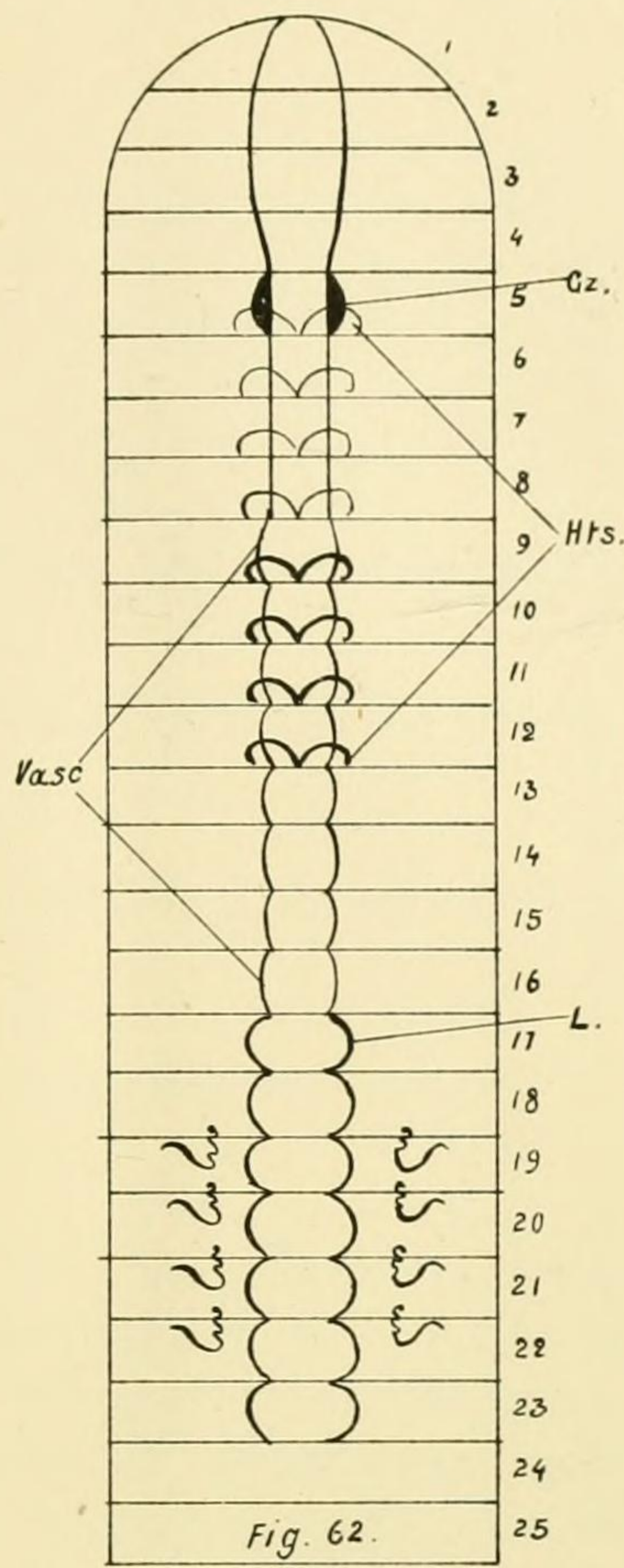
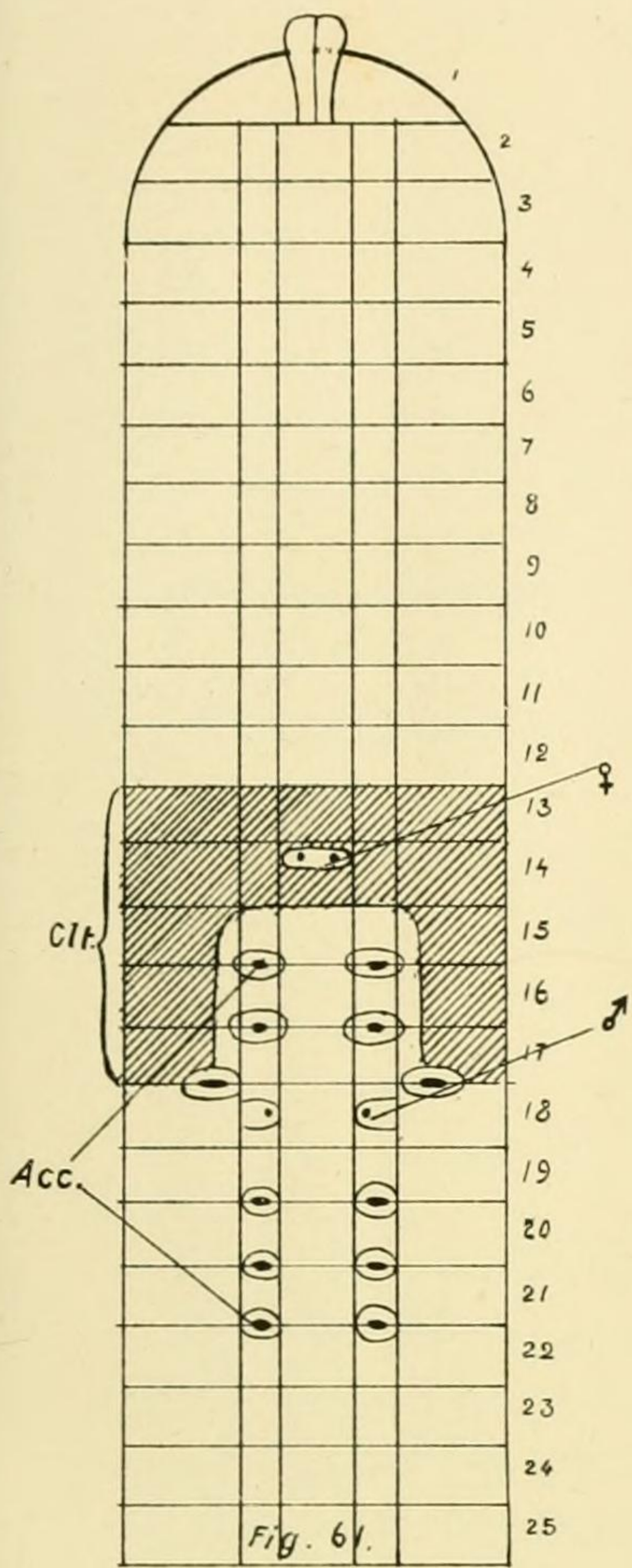
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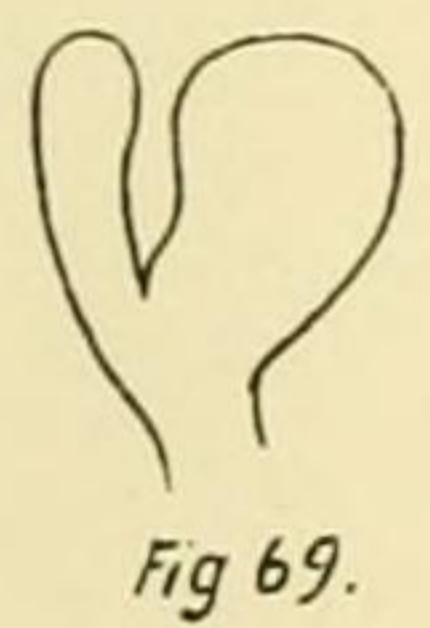
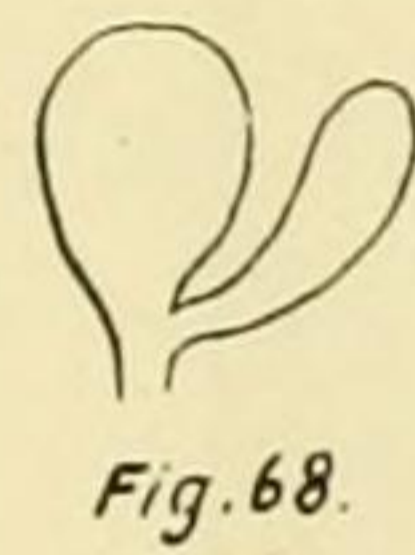
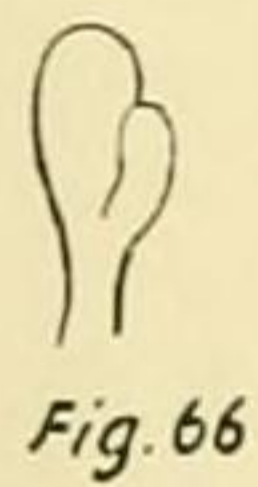
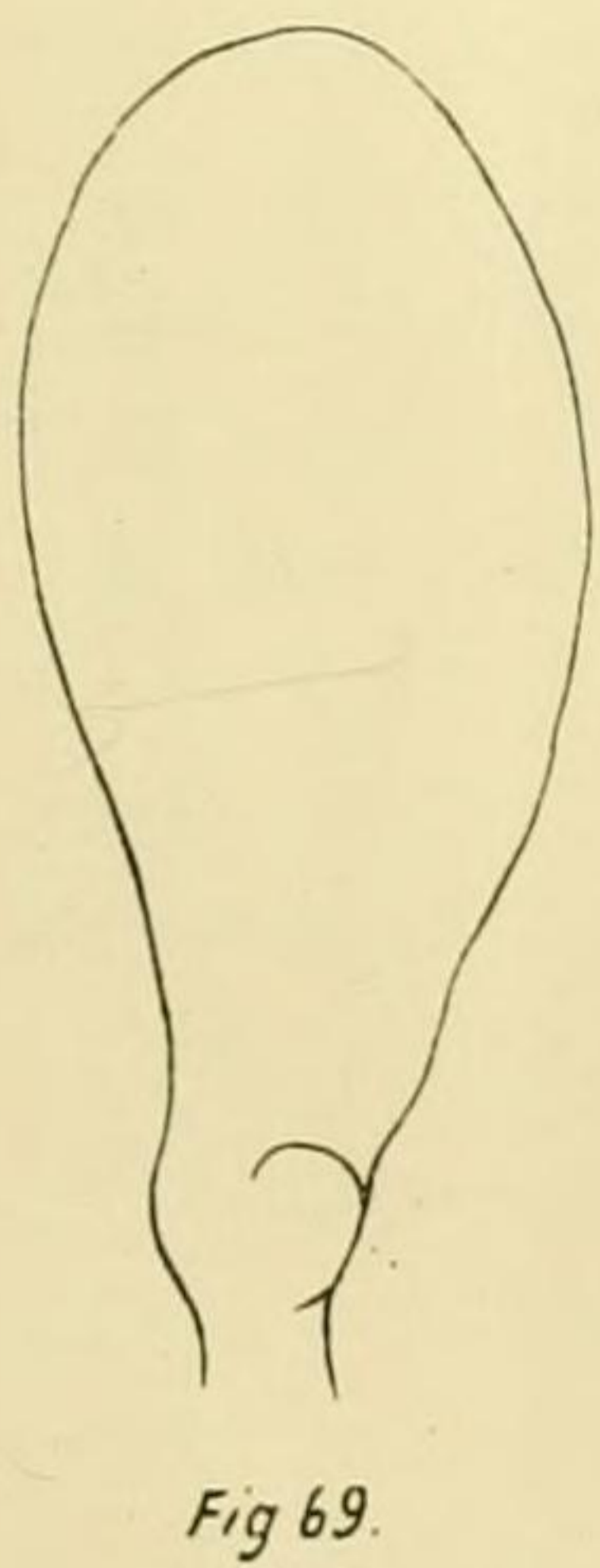


Fig 69.

Fig 70.

Fig. 71.

Fig. 72.

Fig. 73.

Fig. 74.

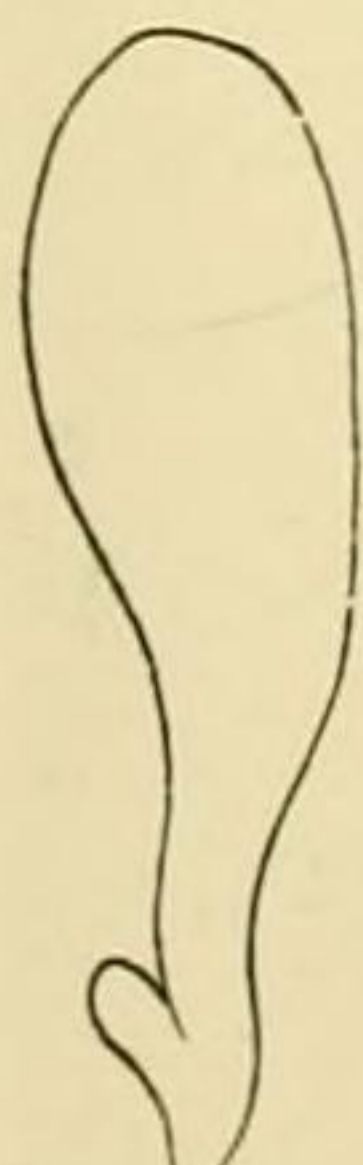
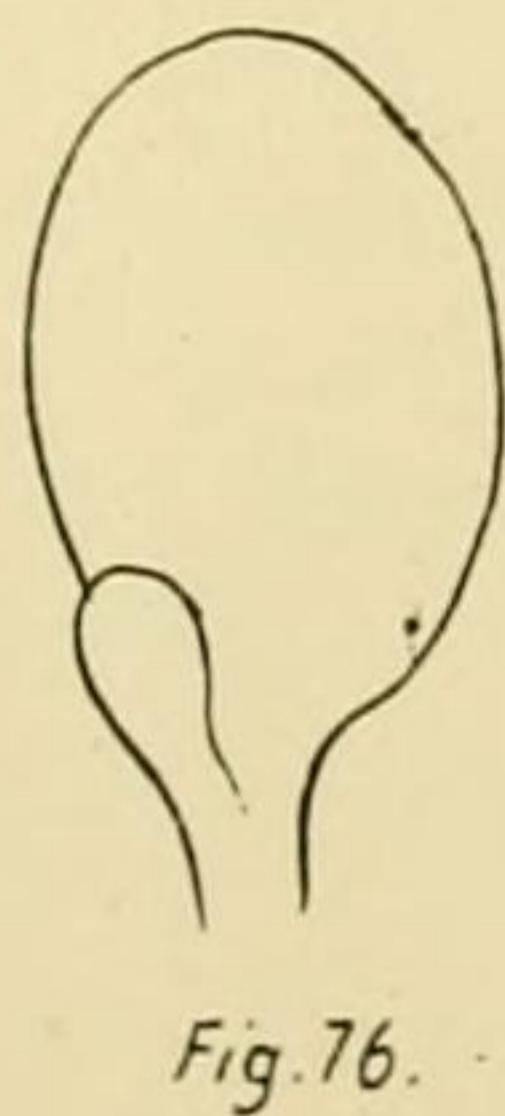


Fig 75.

Fig. 76.

Fig. 77.

Fig. 78.

Fig. 79.

Fig. 80.

