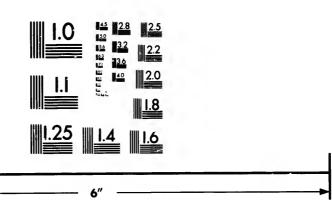


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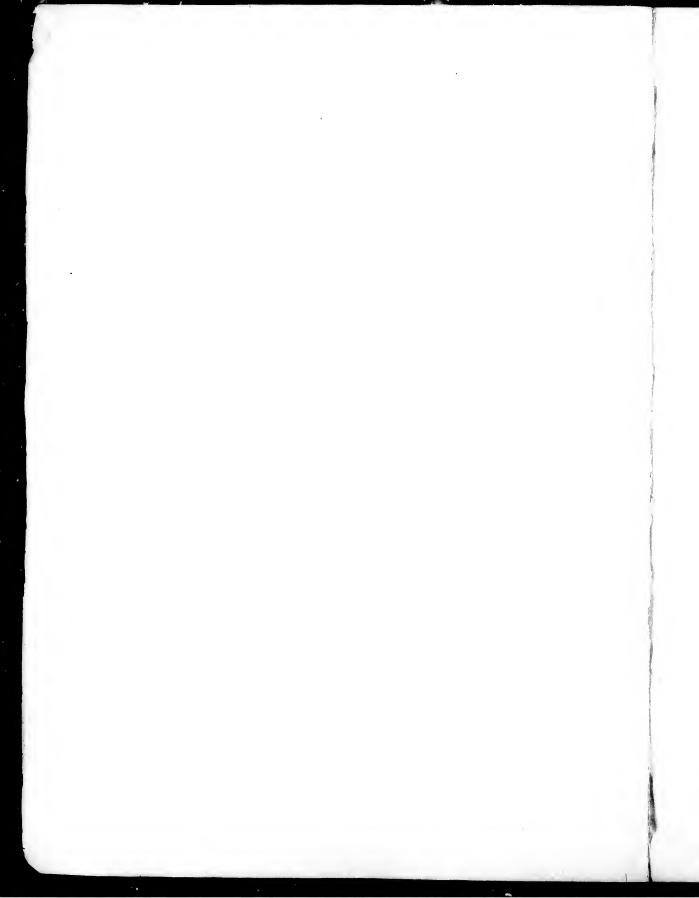
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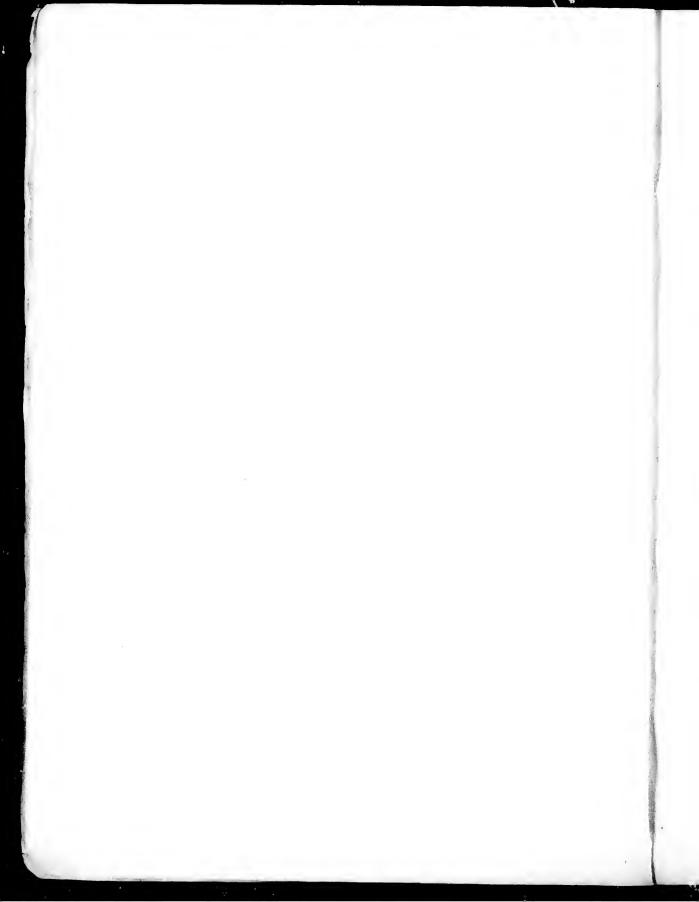


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MISCELLANEOUS

BOTANICAL WORKS

OF

ROBERT BROWN, ESQ., D.C.L., F.R.S.,

FOREIGN ASSOCIATE OF THE ACADEMY OF SCIENCES OF THE INSTITUTE OF FRANCE, ETC., ETC., ETC.

VOL. III.

ATLAS OF PLATES.

LIBRARY NEW YORK BOTANICAL GARDEN

LONDON:

PUBLISHED FOR THE RAY SOCIETY BY
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NOTICE.

(BY THE EDITOR.)

The first ten Plates, from the Appendix to Flinders's 'Narrative,' are printed from the original coppers, now in my possession; and all the remainder, with one exception (Plate XXXIII, which has been re-engraved for the present Edition), are from coppers kindly lent by the Conneil of the Linnean Society, to whom my best thanks are due for the permission to make use of them.

JOHN J. BENNETT.

DESCRIPTION OF PLATES.

PLATES I-X.

(From the Atlas to Capt. Flinders's "Voyage to Terra, Australis.")

	PLATE I.			
Windowsia A., to P. to O			Vol.	Page
Flindersia Australis, R. Br.			1.	71
	PLATE II.			
Eupomatia laurina, $R.Br.$			ib.	7:3
	PLATE III.			
Eudesmia tetragona, R Br .			ib.	75
	PLATE IV.			
Cephalotus follienlaris, Labill.			ib.	76
	PLATE V.			
Antiaris macrophylla, R. Br.			ib.	78
	PLATE VI.			
Franklandia fucifolia, R. Br.			ib.	80
	PLATE VII.			
Synaphea dilatata, R. Br.			ib.	35
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Dasypogon bronieliifolius, R. B	Pr		ib.	54
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Calectasia eyanca, R. Br.	,		ib.	85

18.

19. Seeds.

PLATE X.

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					Vol.	t'age
Corysanthera finibrinta, R. Br					I.	86
Azolla pinnata, $R.\ Br.$.					ib.	57
Fig. 1. Plant of the natural size.						
2. " magnified.						
3. Leaves, magnified.						
4. Male involucrum, containing to	wo flow	ers, magniti	ed.			
5. ,, empty.						
6. Two male flowers.						
7. A male flower divided longitud	linally.					
8. " deprived of its C	Calyptra	, 9.				
10. Lower cell of a male flower.	• •					
11 and 12. Different views of the o	ontents	of the upp	er cell.			
13. Longitudinal section of the upp	er cell.					
14. Inner female involuerum.						
15. Capsules, with their footstalks	arising	from the b	ase of the l	involueru	m.	
16. A capsule more highly magnific	ed.					
17. " opened transversely	to show	the position	on of the -	eeds.		

PLATE XI.

empty.

(From the 'Linnean Transactions,' vol. x.) See Vol. 1, p. 355.

- Fig. 1. Dawsonia polytrichoides. a. Mascula planta magnitudine naturali. b. Discus masc. auctus. c. Ejusdem flos un'eus. d. Idem absque folio perigoniali, magisque auctus. c. Anthera et filum succulentum maxime aucta. f. Feminew plantæ, magn. nat. g. Vaginula eum foliis perichætialibus auctus. h. Capsula eum enlyptra exteriori. i. Pili enlyptræ exterioris magis aucti. j. Capsula eum operenlo et calyptra interiori. k, i. Capsula deoperculata eum peristomio. m. Capsula sectio ejusdem figuram insertionenque ciliarum ostendens. o. Calyptra interior. p. Opereulum eum columellæ processu filiformi. q. Columella ciliis suis terminata. r. Semina. s. Ciliæ peristomii anetæ.
 - 2. Leptostomum inclinans, magnitudine naturali. a. Ejusdem capsula aucta cum membrana annulari. . Operculum. 7. Idem a basi visum cum annulo cohærente.

PLATE XII.

(From the 'Linnean Transactions,' vol. xii.) See Vol. I, p. 366.

- Fig. A. A branch of the paniele of Leontice thalictroides, Linn. (Cautophyllum thalictroides, Michaux), of the natural size.
 - B. The same magnified, to show at 1, the early rupture of the ovarium, the ovula as yet but little enlarged and only in part protruded; at 2, the same parts in a more advanced state; one seed being nearly ripe, supported by its elongated and thickened umbilical cord; a second ovulum considerably increased in size, but abortive; and the remains of the ruptured ovarium somewhat enlarged.
- C, D. Two longitudinal sections of the nearly ripe seed; exhibiting the vascular cord continued from the axis of the funiculus umbilicalis to the apex of the seed; the remarkable process of the inner integument at the umbilicus (of which another view is given separately at E); and the unripe embryo nearly in contact with this process, and as yet undivided.

PLATES XIII-XX.

(From the 'Linnean Transactions,' vol. xiii.) See Vol. I, p. 397.

STRUCTURE OF RAFFLESIA ARNOLDI.

PLATE XIII.

The expanded flower reduced to somewhat less than one third of its natural size; the scale given on the plate being too long by nearly one seventh.

PLATE XIV.

A flower-bud covered with its bractere, of the natural size.

PLATE XV.

The underside of the same bud; to show the root, the reticulate base with the circular elevation in which it terminates, and the origin of the outer bracter. Natural size.

PLATE XVI.

A flower-bud, of which the bractee, whose insertions are shown, are removed. Natural size.

PLATE XVII.

A different view of the bud in the same state, to show the astivation and veins of the segments of the perianthium. Natural size.

PLATE XVIII.

- Fig. 1. A vertical section of the bud deprived of its bractee: exhibiting the principal vessels of the column and perianthium, and the structure of the root, especially the change in the direction, increased ramification and termination of its vessels at the base of the parasite. Natural size.
 - One half of the vertically-divided perianthium of the same bud, in which the internal surface of the tube, corona, and segments is shown. Natural size.

PLATE XIX.

- Fig. 1. A flower-bud, its bracten and perianthium being removed, to show the column with the two annular processes at its base. Natural size.
 - 2. A portion (about one fifth) of the column, of which part of the limb is removed, to show the cavities of the neck, into which the autherse are received. Natural size.
 - The portion of the limb removed from fig. 2, with its antherce immersed in their proper cavities. Natural size.
 - 4. An anthera, magnified three diameters, as are figures 5, 6, 7 and 8.
 - 5. A transverse section of the same, above the middle.
 - 6. A transverse section of the same, below the middle.
 - 7, 8. Vertical sections of the same.
 - 9. Pollen, magnified 200 diameters.

PLATE XX.

- Fig. 1. A vertical section of part of the base of the smaller flower-bad, showing the vessels of the root, some of which appear to penetrate the substance of the parasite. Natural size.
 - 2, 3. Portions of the column of the expanded flower, nearly corresponding with those of the bud in Plate XIX, figs. 2 and 3. Natural size.
 - 4. Anthera of expanded flower, magnified 3 diameters, as are figures 5 and 6.
 - 5. Transverse section of the same, below the middle.
 - 6. Vertical section of the same.
 - 7. Pollen of the expanded flower, magnified 200 diameters.
 - 8. A transverse section of the root, magnified 3 diameters.

PLATES XXI-XXIX.

(From the 'Linnean Transactions,' vol. xix.)

PLATES XXI-XXV.

STRUCTURE OF RAFFLESIA ARNOLDI—See Vol. I, p. 419.

PLATE XXI.

- Fig. 1. A female flower-bud, with the roots of the Vitis (or Cissus) vertically divided, which shows the numerous irregular cavities of the ovarium chiefly if not entirely above the insertion of bractere and callyx, and the vascular lines continued from the walls of the cavities through the upper solid part of the column into the axes of the style-like processes. Natural size.
 - A female flower-bud in the same stage of development, the bracten and calyx entirely removed, to show its outward resemblance to the male flower-bud (figured in Pl. XIX). Natural size.

PLATE XXII.

- Fig. 1. A small segment of the column, of which part of the elevated undivided limb is removed, to show the narrow furrows of the sides of the column corresponding in number with the rudiments of antheræ, seen in
 - 2, which is the portion of the limb removed from fig. 1. Natural size.
 - The upper half of one of the styles of the disc, with its terminating hairs. Magnified 10 diameters.
 - 4. A portion of fig. 3, somewhat more highly magnified (20 diameters), vertically divided.
 - 5, 6, 7. Some of the hairs still more highly magnified, which, according to Mr. Bauer, have a secreting surface seen in fig. 7, and which in figs. 5 and 6 is covered with the secretion, consisting of spherical particles enveloped in mucus at fig. 8. Magnified 100 diameters (but see observations respecting them in page 405-6).
 - 9, 10. Longitudinal and transverse sections of a style. Magnified 50 diameters.
 - 11. A transverse section of half the ovarium, to show the numerous irregularly ramified cavities, and the arrangement of vascular cords belonging to the bracteæ and onlyx. Natural size.
 - 12. A small portion of the ovarium, with the ovula covering the surface of the cavities, and the vascular lines passing through the axes of the parietes. Magnified 20 diameters.
 - 13—18. Ovula in various stages (the carliest observed are not represented). Magnified 100 diameters.

PLATE XXIII.

- Fig. 1. A ripe pericarpium, of the natural size, the calyx, bracteze and apex of the column being deciduous.
 - 2. The same divided vertically, and showing the thickness of the densely fleshy and deeply furrowed covering, and also that the whole of the ovarial cavity is above the insertion of bractea and ealyx.

PLATE XXIV.

- Fig. 1. A small portion of the wall of two adjoining cavities, the surfaces covered with numerous seeds, all of equal size. Magnified 20 diameters.
 - A seed with its funiculus, of which the lower erect portion is filiform, the recurved upper half being of the same texture, colour, and surface with the seed, which it somewhat exceeds in thickness. Magnified 100 diameters.
 - The same divided longitudinally, to show the structure of the seed (according to Mr. Bauer), and that the enlarged apex of the funiculus is solid. Magnified 100 diameters.
 - 4. The nucleus of the seed taken out of its thick nut-like outer covering. Magnified 100 diameters.
 - The same nucleus, whose membranous coat is separated by pressure, to show the albumen. Magnified 100 diameters.
 - 6. The denuded loosely-cellular albumen.

- Fig. 7. A portion of the albumen, exhibiting the embryo, its surface and lateral origin, according to Mr. Bauer. Magnified 100 diameters.
- Fig. R. Br. is a longitudinal section of the albumen, exhibiting R. Brown's view of the origin, form, and surface of the embryo.

PLATE XXV.

- Fig. 1. A branch of the Vitis, on which are four very young buds of Rufflesia Arnoldi. Natural size. Of these—
- a. (not separately figured) is merely a very slight swelling, caused by the nascent parasite, but before its parts are distinguishable,
- Λ. (separately figured, vertically divided, and moderately magnified), the youngest parasite whose parts are distinguishable, deeply seated, entirely enclosed, and before its cortical covering corresponds with it in form.
- B. (in like manner separately figured, divided and magnified), in which the parasite is entirely enclosed in its reticular covering.
- C. (in like manner separately figured), in which the reticular covering has burst, vertically divided and magnified.

PLATES XXVI-XXIX.

STRUCTURE OF HYDNORA AFRICANA.

PLATE XXVI.

- Fig. 1. A flower of Hydnora Africana, with its very short base.
 - 2. The same longitudinally divided. Both of the natural size.

PLATE XXVII.

- Fig. 1. Transverse section of a part of the tube of the perianthium, to show the three-lobed columna staminea. Moderately magnified.
 - 2. The inner surface of one of the three lobes of the column or antheral annulus.
 - 3. Onter surface of the same. Both magnified in the same degree with fig. 1.
 - Vertical section of a portion of one of the lobes of the columna staminea, to show the thickness and texture of the common connective.
 - Transverse section of the same, which shows the original bilocularity of each anthera. Both more highly magnified.
 - 6. Grains of pollen, still more highly magnified.
 - 7. Transverse section of the flower, to show the form and surface of the stigma (of which the three primary divisions are opposite to the lobes of the columna staminea). Magnified in the same degree with fig. 1.
 - 8. A portion of the stigma, which shows its composition.
 - A transverse section about the middle of the same. Both magnified somewhat more than figs. 2 and 3.

- Fig. 10. A vertical section of the stigma, showing that the divisions of its surface extend quite through to the cavity of the ovarium, separating it into an equal number of lamellae, from the inner terminations of which the placentae are pendulous. More highly magnified than the preceding figures.
 - 11. A small portion of the same, still more highly magnified.
 - 12. A transverse section, more highly magnified than fig. 11, with its densely erowded ovula arising from every part of its surface.
 - 13. Three ovula more highly magnified than fig. 12, to show the pedicellus or attenuated base and depressed or perforated apex.

PLATE XXVIII.

A ripe fruit (fig. 1), with the stock (the root of the supposed *Euphorbia*, fig. 3) and the decumbent angular-branched stems of the parasite, from the thickened trank of which the ripe fruit originates at fig. 2, and from a branch of which a very young flower-bud proceeds. Natural size.

PLATE XXIX.

- Fig. 1. The same ripe fruit vertically divided, with the prostrate thickened stem of the parasite and the root of the supposed *Euphorbia*, whose woody fibres and vessels appear to penetrate deeply into the substance of the thickened stem. Natural size.
 - 2. A portion of the fruit transversely divided.
 - 3. A transverse section of one of the placentæ, with the ripe seeds. Slightly magnified.
 - 4. Two seeds, more highly magnified than fig. 3.
 - 5. A seed, magnified in the same degree as fig. 4, and vertically divided, which exhibits the albumen more distinctly radiating than I have ever found it.
 - 6. A seed deprived of its outer coat.
 - 7. The same transversely divided, which, as well as fig. 5, shows the central globular embryo-

PLATES XXX-XXXII.

(From the 'Linnean Transactions,' vol. xvi.) See Vol. I, p. 534, &c.

FECUNDATION OF ASCLEPIADEE.

PLATE XXX.

ASCLEPIAS PURPURASCENS.

- Fig. 1. A branch in flower. Natural size.
 - An expanded flower, of which two of the foliola coronæ and one of the antheræ are removed. Moderately magnified.
 - 3. A front or inner view of an anthera, to show the extent of bursting, particularly with remain to the pollen mass, of which the greater part is included in the non-dehiscent portion. Magnified as fig. 2.

- Fig. 4. A pollen mass, more highly magnified, separated from its gland and arm, and divided transversely, to show its cellular structure (first discovered in Asclepias curassavica in 1805 by Mr. Bauer), with grains of pollen, their granules, and some drops of an oily fluid.
 - A pollen mass entire, with a small portion of the arm adhering to its apex. Magnified as fig. 4.
 - 6. A transverse section of a poller mass, still more highly magnified, in one of the cells of which is seen the single grain (or inner membrane), also separately exhibited to show that it is simple and slightly angular.
 - 7. The pistillum with pollen masses, that have burst and protruded their tubes, applied to the base of the stigma, the glands and their arms being removed. The cords formed by the pollen tubes have passed along the corresponding sides of the conical base of the stigma, and have reached the tops of the styles.
 - S. A longitudinal section (more highly magnified) of the conical base of the stigma with the two styles, to show more distinctly the course of the pollen tubes.
 - A pollen mass after bursting, with its cord formed of the pollen tubes, entering the apex of the style, which is there lacerated.
 - 10. The two ovaria with their styles, one being somewhat enlarged in consequence of impregnation, and opened longitudinally; exhibiting pollen tubes extending from the apex of the style to the commencement of the placenta.
 - 11. The same two ovaria and styles, both opened, to show that in one (the left), which is somewhat smaller, no pollen tubes are contained; the other (the right), which is impregnated, shows the tubes reaching the ovula, but not extending further.
 - 12. Two grains of pollen (or rather grains deprived of their outer membranes), with portions of their tubes and contained spheroidal granules; proving that the tubes are extensions of this (the inner) membrane. Very highly magnified.

PLATE XXXI.

ASCLEPIAS PHYTOLACCOIDES.

- Fig. 1. An expanded flower (magnified), from which two of the foliola coronæ and one anthera been removed.
 - The complete pistillum, and on one side two of the anthere, the membrane formed by the united filaments being cut off a little below the stigma; on the other side, a naked pollen mass applied to the stigma, with its gland and arm adhering.
 - 3. A longitudinal section of fig. 2, to show on the left side a pollen mass, with a small portion only of the arm adhering, applied to the base of the stigma, and which, having burst, shows the protrusion of the cord formed by the pollen tubes.
 - 4. A longitudinal section of one half of the stigma and the corresponding style transversely ent near the base, showing more distinctly the position of the pollen mass with the protrusion and course of the tubes.
 - 5. The style of fig. 4 laid open lengthways, exhibiting within its cavity and beyond it the pollen tubes reaching the apex of the placenta, a reflected portion of which, with three of its ovula, is also shown.

- Fig. 6. An impregnated pistillum, of which the style is laid open longitudinally, and the placenta, thickly covered with ovula, exposed, to show the descent and course of the pollen tubes.
 - 7. ollen mass, to the apex of which the base of the arm adheres, with pollen tubes protrading from the point of dehiscence. More highly magnified.
 - 8. A transverse section of a pollen mass, showing an arrangement of the cells somewhat different from that of A. purpurascens, there being here amiddle irregular series, the cells of which in some cases appear to separate and cover the grains after the production of the tubes.
 - Two grains of pollen with portions of their tubes, very highly magnified, the grain to the left having its onter covering or membrane, which is removed from the grain to the right, and shown separately further to the left.
 - 10. A pollen mass which has burst and protruded its tubes, exhibited as entering the cavity of the style, which is laid open to show the commencement of their descent.
 - 11. Two pollen masses (with their arms and gland), which have burst and protruded their tubes while still inclosed in the cells of the antheræ; this happening in A. phytolaccoides in that particular kind of decay mentioned in p. 529 of the text.

PLATE XXXII.

- Fig. 1. Two pollen masses of Asclepias purpurascens with protruded tubes; the only instance met with in which both cords are introduced into the same style.
 - 2. A grain of pollen, of the same species, with a portion of its tube; the unusual form probably caused by the pressure of other grains and their tubes.
 - A grain of pollen of Aselepias purpurascens containing numerous minate granules and two larger drops or globules of an oily fluid.
 - 4, 5, and 6. Various combinations of pollen masses of Asclepias purparascens. In these it is supposed that the insect having removed and applied to the stigma some of the masses, has extracted, by means of the arms still adhering to it, other masses with their glands and arms.
 - A combination of the same kind, different from and more remarkable than any of these, but perhaps not very accurately represented, is given, in his 'Microscop. Entdeck.,' tab. xxvi, fig. 8, by Gleichen, who appears (op. cit., p. 81) to have also met with other combinations, without suspecting in any case the real cause of such apparently anomalous structures.
 - 7. A flower-bud of Asclepias curassavica in the earliest stage in which I was able to distinguish its parts; the unopened corolla in its place with one of the sepala, the other four being exhibited separately. Ilighly magnified.
 - 8. The corolla of fig. 7 opened and in part removed, to show the state of the contained organs: the figure exhibiting two petals hardly cohering at base; within these, two distinct petallike bodies, alternating with them, and which are the antheræ; and two other smaller bodies, which are the pistilla as yet unconnected.

- Fig. 9. An anthera taken from fig. 8, and more highly magnified, to show that in this early stage it is entirely petal-like, there being no indication of the two cells, of which the first appearance in a somewhat more advanced stage is given at fig. 10.
 - 11. A petal of fig. 8 more highly magnified.
 - 12. The pistilla of fig. S, as yet distinct, scarcely at all angular, and with no manifest cavities; so that these two bodies may be regarded as chiefly or entirely the component parts of the stigma.
 - Two grains of pollen taken from the pollen mass of the expanded flower of Asclepias curassavica.

PLATE XXXIII.

DEVELOPMENT OF THE EMBRYO IN THE SEEDS OF CONFERE. See Vol. I, p. 575-6.

Fig. 1. A scale of the cone of *Pinus sylvestris*, with its winged seeds, one of which is abortive. Natural size.

N.B. The remaining figures are more or less magnified.

- 2. An unripe seed, of which the testa, in this state cartilaginous, is cut open, partly removed and thrown back to show the included body, which is the half-ripe original nucleus with its sphacelated apex and the free portion of the inner coat, extending from the apex to about one third of the length of the nucleus, below which it is intimately connected with and inseparable from the outer coat.
- 3. The ammios or albumen, with the coats opened and had back. a. The body of the albumen, with its slightly concave upper extremity; in this stage separated from b, the apex, which is conical above, below cylindrical, and which was suspended from the top of the original nucleus.
- 4. A plan rather than actual representation of a longitudinal section of any one seed examined, but the parts accurately copied from the calyptracform membranes, the funiculi or suspensors, and the nascent embryos of Pinus sylvestris.

In this stage the funiculi are distinct from the callyptræform membranes within which they originated.

- 5 is also a plan of the slightly concave apex of the ammios or albumen, with its semitransparent points or pores circularly arranged; in this species (*Pinus sylvestris*) seldom exceeding five, and not unfrequently being only four or even three.
- 6. One of the funiculi or suspensors, with its dilated upper extremity, to which the lacerated remains of a thin transparent membrane adhere; the funiculus itself ramified, each of the two lateral branches consisting of a single elongated tube or cell terminating in a rudimentary embryo; the truck of the funiculus composed of several (apparently four) tubes or cells terminated by a single embryo, which is already slightly divided, the divisions being the commencement of its cotyledons.
- 7, 8. Two other funiculi belonging to the same seed less advanced, but both ramified.

- Fig. 9. A funiculus of *Pinus pinuster*, with its thickened head, in which the nuclei of its component elongated cells or tubes, and its adhering lacerated membrane, are visible. The figure is given particularly to show that in this (the only one observed) there is no opake granular portion of the compound funiculus; in other words, no indication of a nascent embryo.
 - 10. A funiculus of Pinus Abics, Linn., with its rudimentary embryo and thickened head, still partly inclosed in the calyptracform membrane.

PLATES XXXIV, XXXV.

(From the 'Linnean Transactions,' vol. xx.) See Vol. I, p. 591.

STRUCTURE OF TRIPLOSPORITE.

PLATE XXXIV.

The figures A, B, C, and D are of the natural size.

- Fig. A. A portion of the surface of the Strobilus, showing the hexagonal areolæ.
 - B, C. Transverse sections, exhibiting different appearances of the bracteæ and sporangia.
 - D. A vertical section of fig. A.

The remaining figures, E, F, G and H, are all more or less magnified.

- E. A transverse section of the axis.
- F. A more highly magnified drawing of a portion of fig. T, to show the arrangement and proportion of the vascular and cellular tissues.
- G. A horizontal section of a sporangium, made probably near its origin.
- H. A portion of the outer wall of a sporangium or bractea,

PLATE XXXV.

All the figures magnified.

- Fig. A. A vertical section of the axis, near, but not exactly in the centre, showing the ramifications of the central cord of the axis going to the circumference of the axis, and connected or supported by a loose cellular tissue at a a.
 - B. A small portion of the axis, from which proceeds a bractea cut vertically through its centre, showing its vascular cord, and bearing on its lower and horizontal half a vertical section of an aduate sporangium, of which the base is cellular, rising irregularly and without spores,—probably a rare occurrence.
 - C. A small portion of the axis, to show the scalariform vessels with the slightly elongated surrounding cells.
 - D. A similar portion, from the central axis of the bractea of fig. B.
 - E. A similar portion, from the line of union between the bractea and sporangium of fig. B.

- Fig. F. A small portion of a sporangium, sufficiently magnified to show the arrangement and composition of sporules.
 - G. Several sporules, both in their compound and simple state, still more highly magnified with the minute granular matter which usually accompanies them.

PLATES XXXVI, XXXVII.

(From the 'Linnean Transactions,' vol. x.) See Vol. II, p. 192.

PLATE XXXVI.

KNIGHTIA EXCELSA.

- Fig. 1. Flos expansus, parim auctus.
 - 2. Idem longitudinaliter apertus, magnitudine naturali.
 - 3. Ejusdem basis eum glandulis hypogynis.
 - 4. Pistillum auctum, ovario longitudinaliter secto ovulis quatuor.
 - 5. Ovulorum insertiones et relativas positiones ostendens.
 - 6. Ovulum paulò magis auctum.
 - 7. Pollen plurimum auctura.

PLATE XXXVII.

DRYANDRA FORMOSA.

- Fig. 1. Ramus magnitudine naturali.
 - 2. Flos magnitudine naturali.
 - 3. Idem anctus.
 - 4. Receptaculum commune magnitudine naturali et auctum.
 - 5. Idem verticaliter sectum.
 - 6. Palere receptaculi.
 - 7. Folliculus.
 - 8. Dissepimentum cum seminibus.
 - 9. Semina.
 - 10. Dissepimentum.
 - 11. Pollen ad lentem anetum.

PLATE XXXVIII.

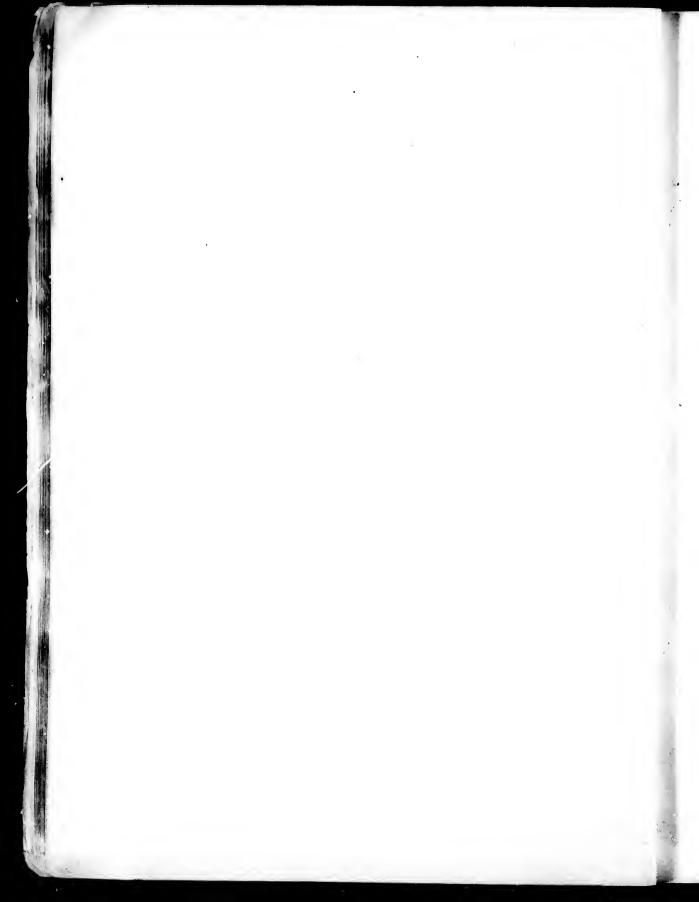
(From the 'Linnean Transactions,' vol. xi.) See Vol. II, p. 255.

Woodsia Hyperborea.

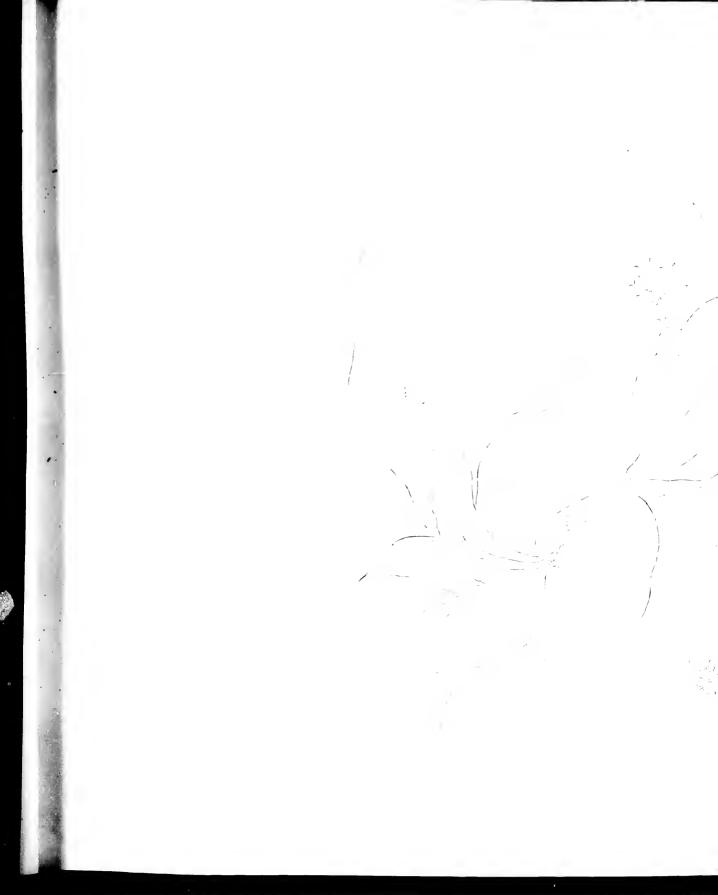
- Fig. 1. A native specimen of Woodsia hyperborea. Natural size.
 - 2. The stipes and lower part of the frond of the same plant. Magnified 3 times in diameter.
 - 3. A pinna of the same plant. Magnified 10 diameters.
 - A pinna from another specimen, in which the clusters of capsules (sori) are more numerous and confluent. 10 diameters.
 - A single cluster of capsules within their involuerum, the membranaccous base of which they entirely conecal. Magnified 50 diameters (2500 times in superficies).
 - 6. The involucrum spread open, with only one capsule left in it. Magnified 50 diameters.
 - 7. An unripe capsule.
 - 8, 9. Side and back views of a ripe capsule.

Magnified 50 diameters.

- 10, 11. Capsule opening and entirely burst, shedding its seeds.
- 12. A seed magnified 200 diameters.
- 13. A frond of a cultivated plant of the same species. Natural size.













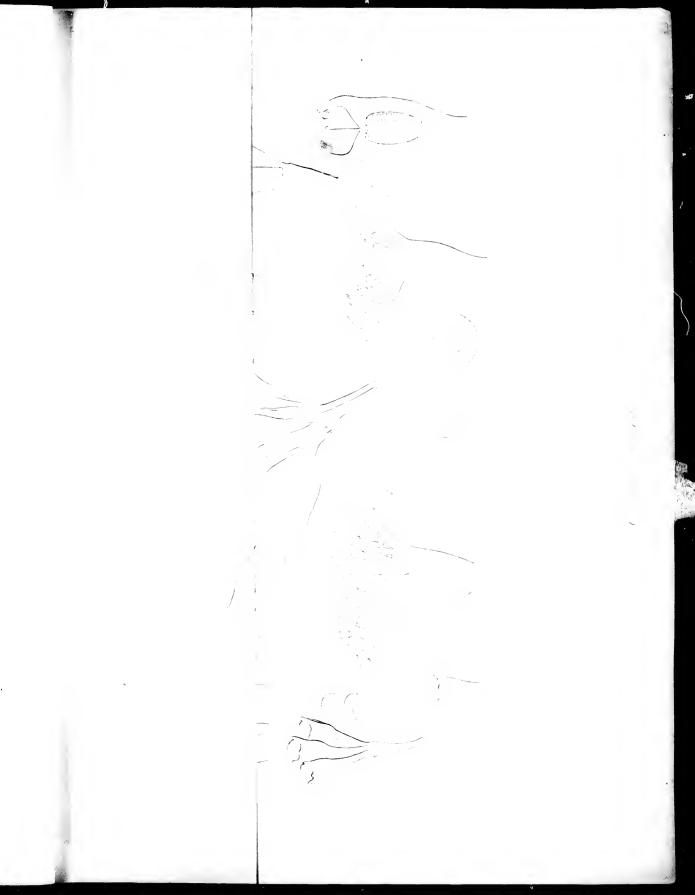
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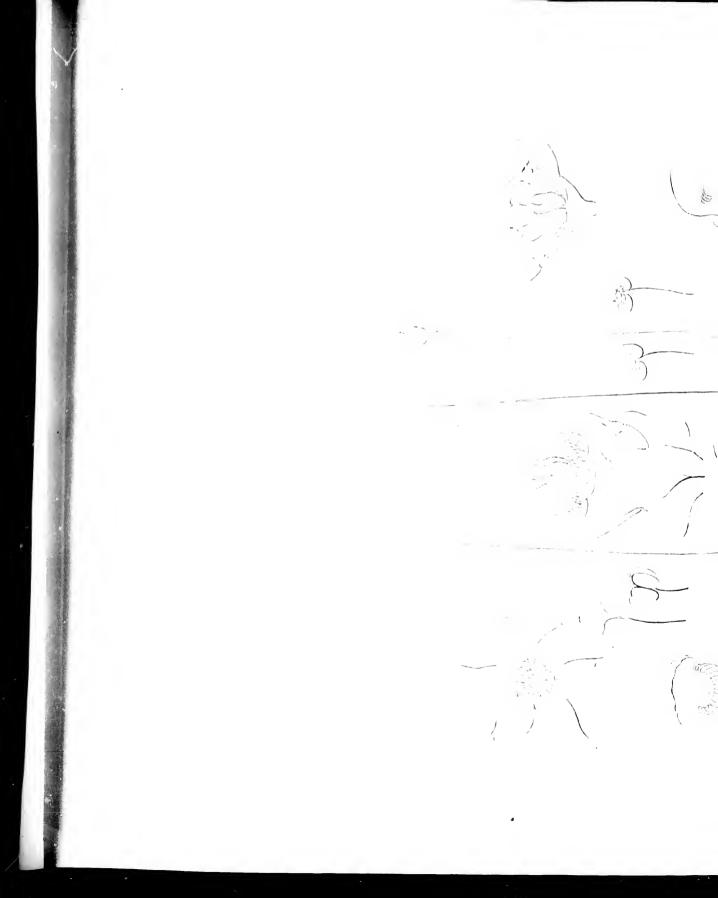




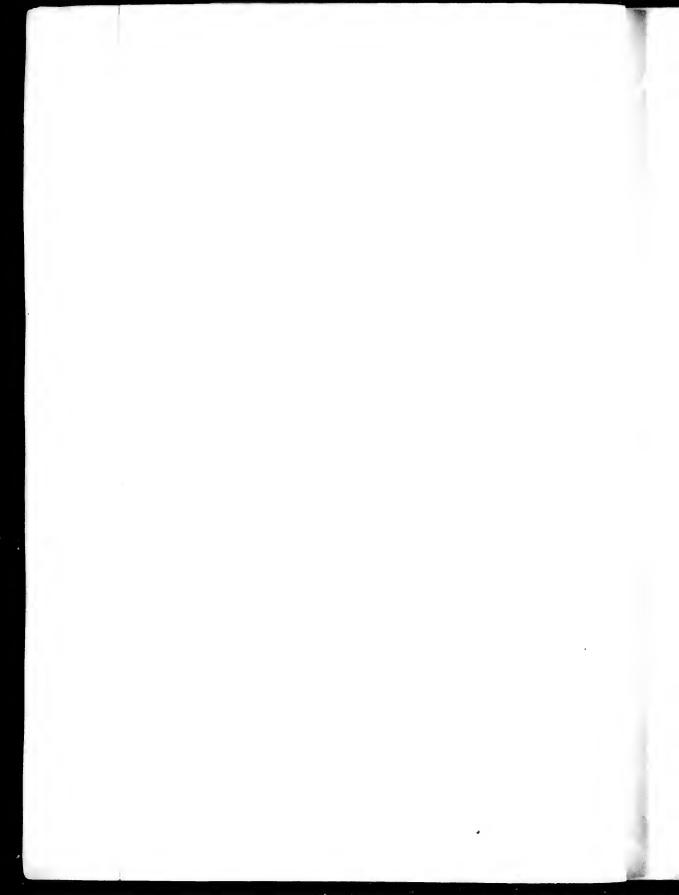


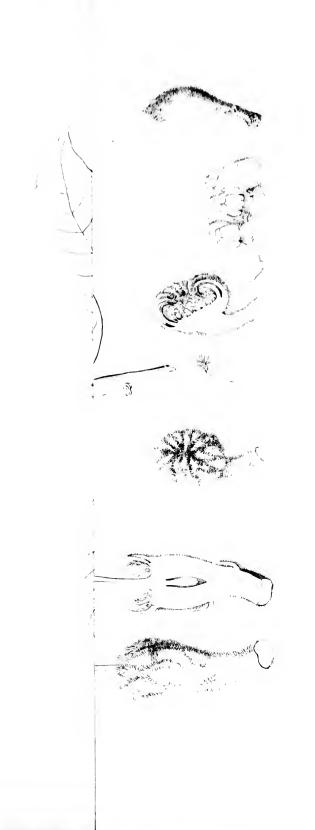




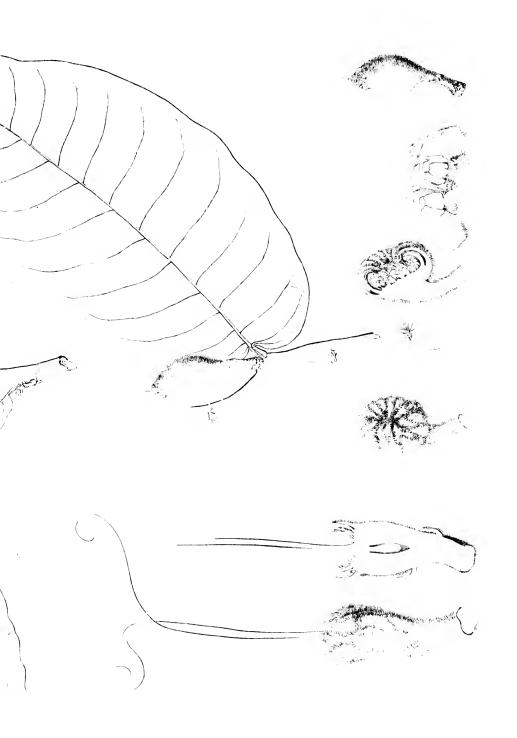




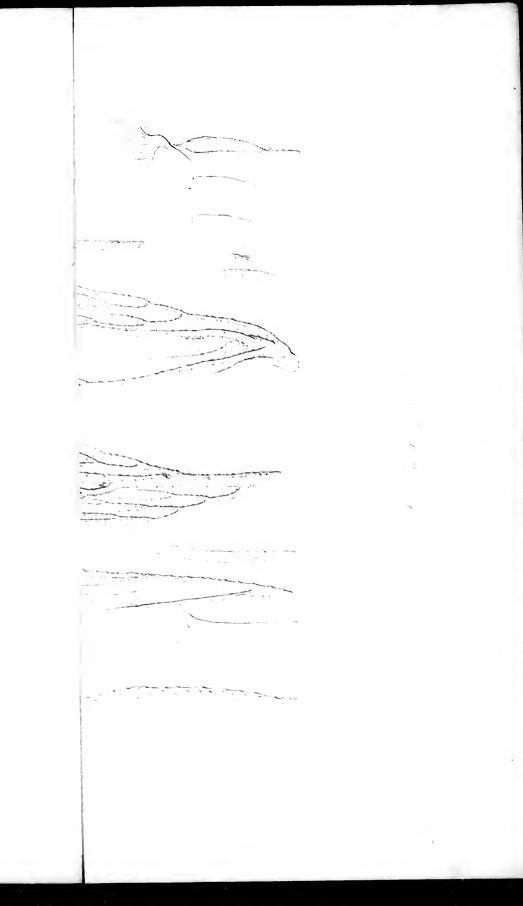


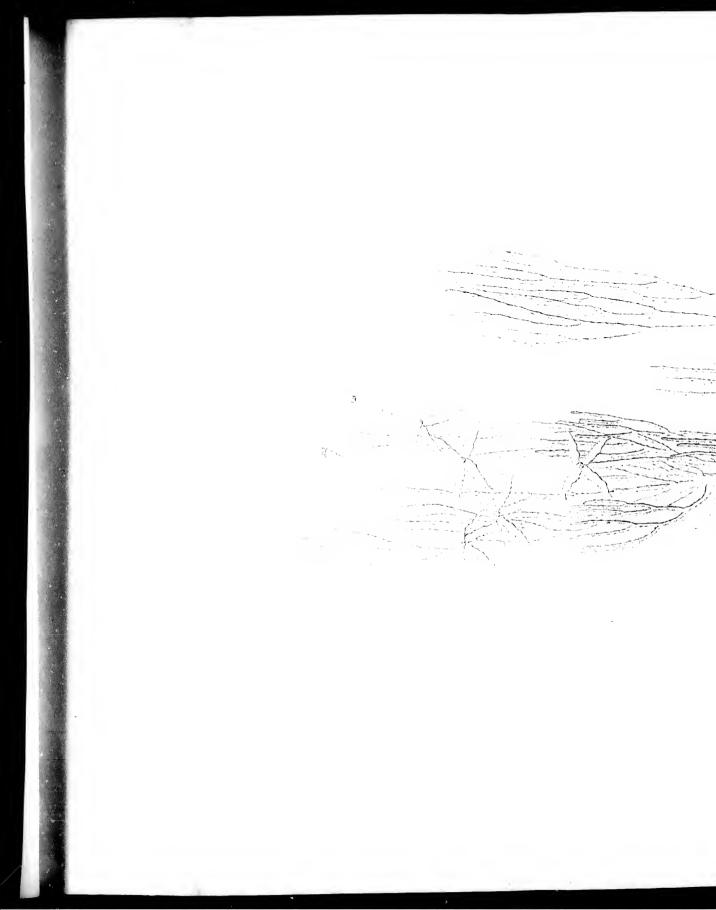


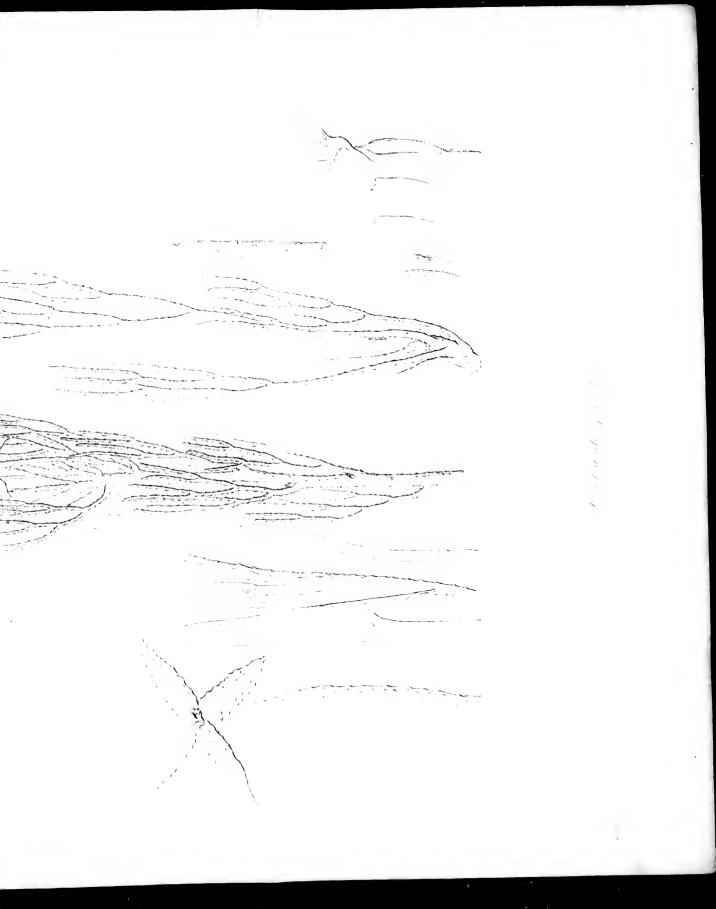




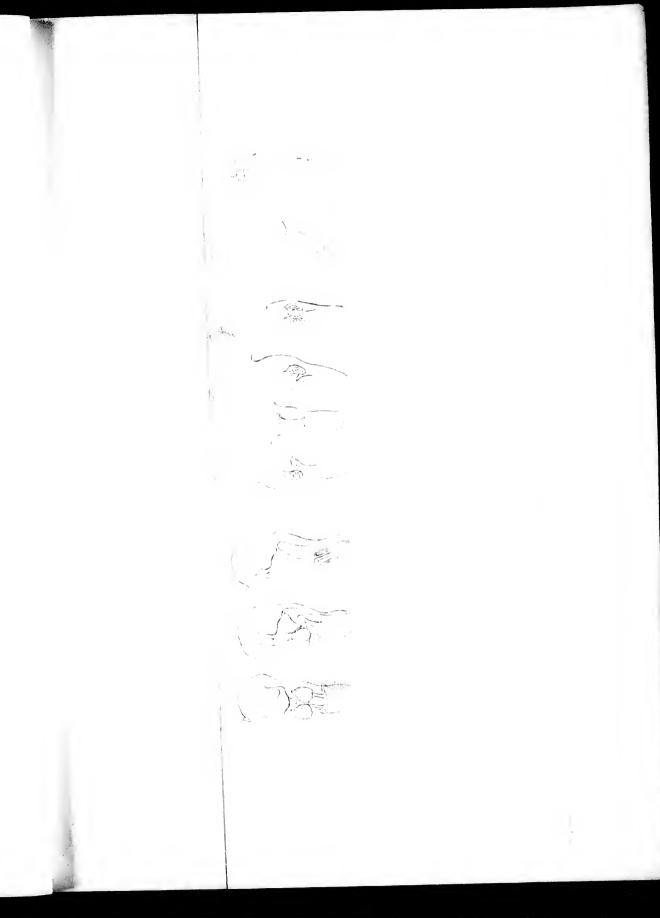








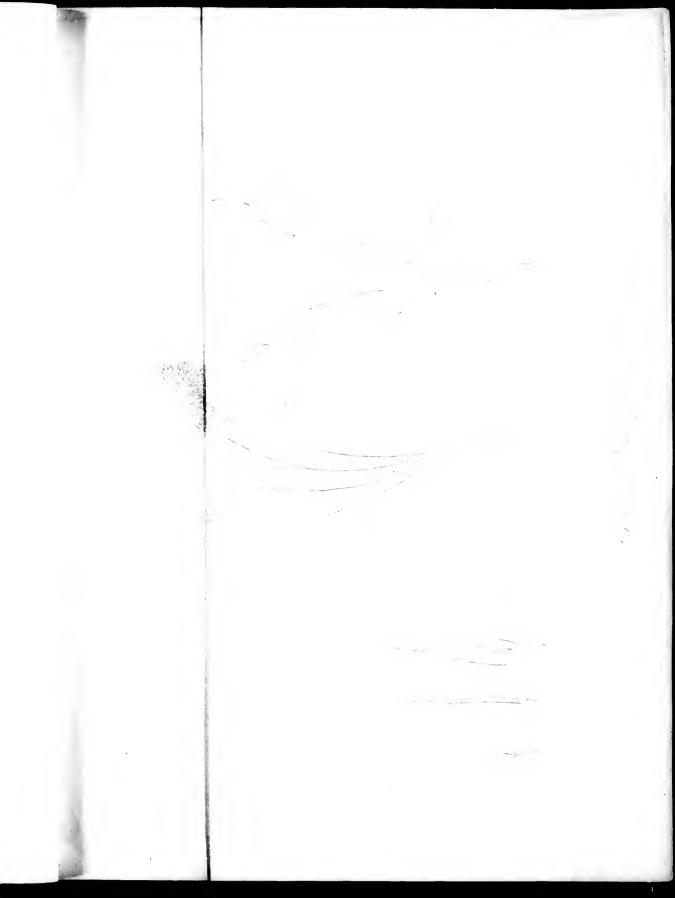




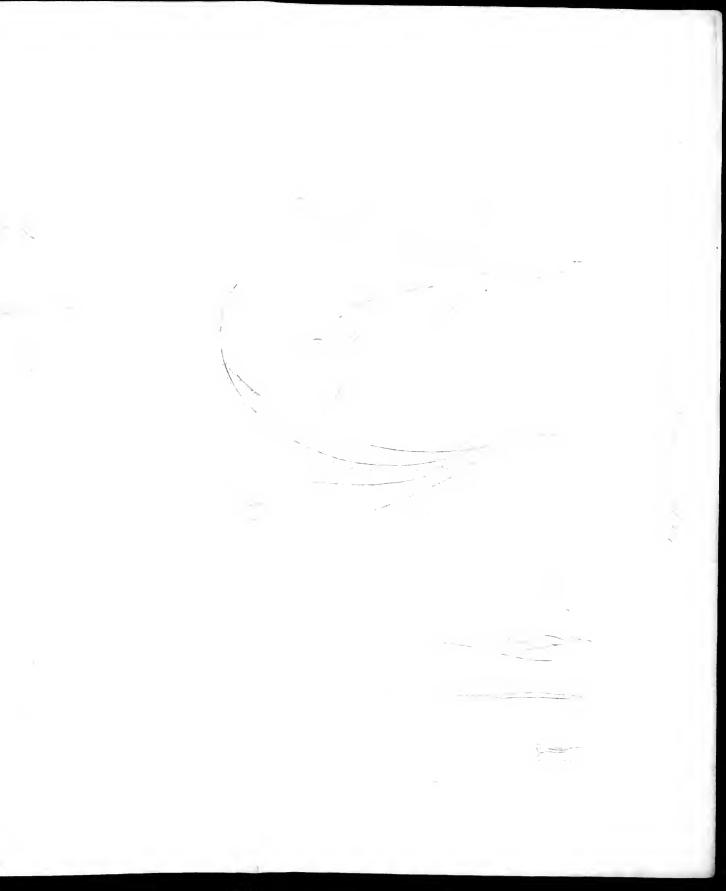




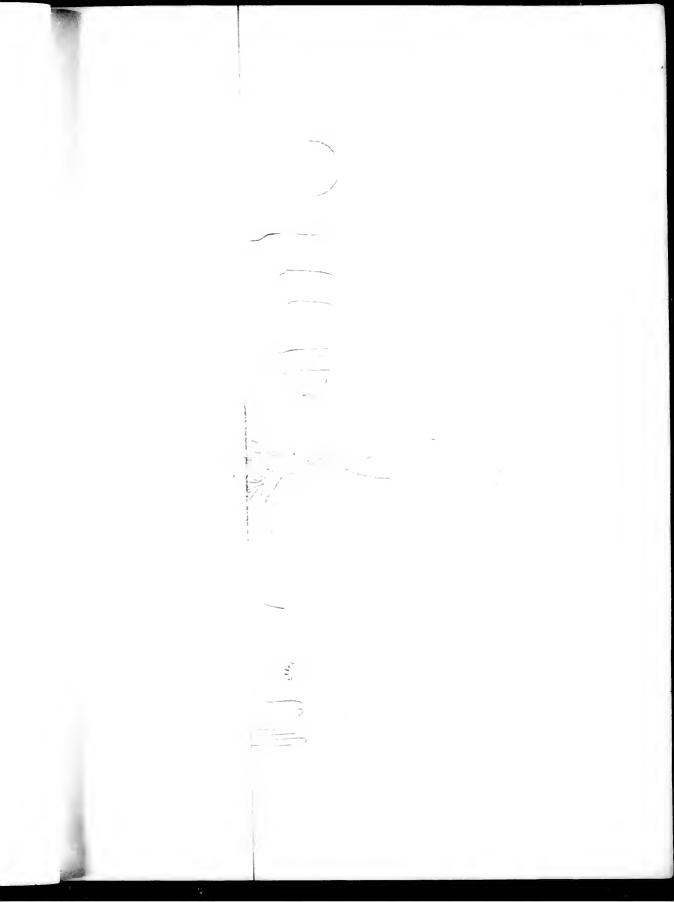


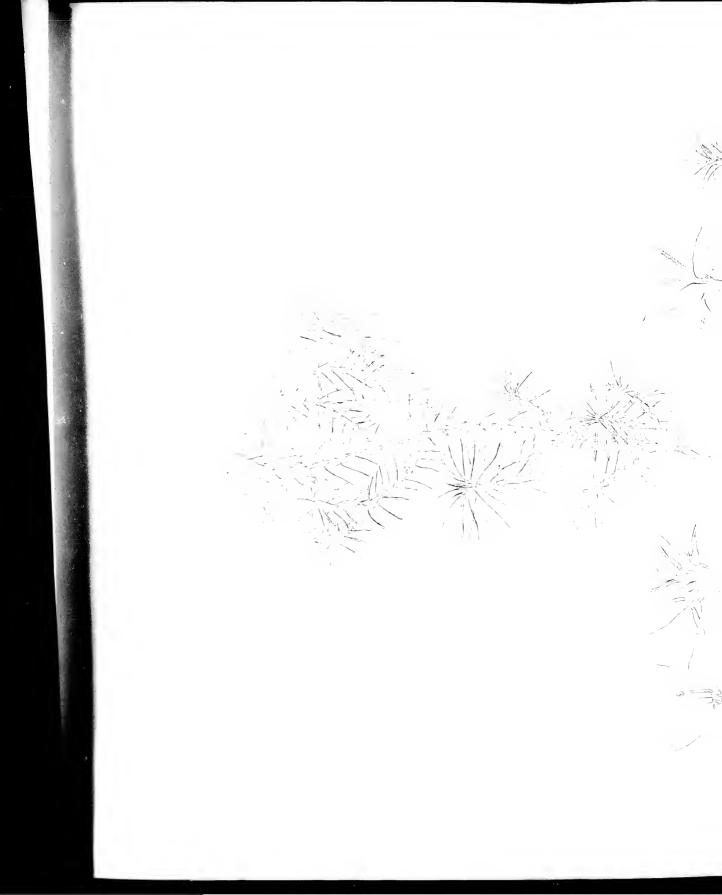


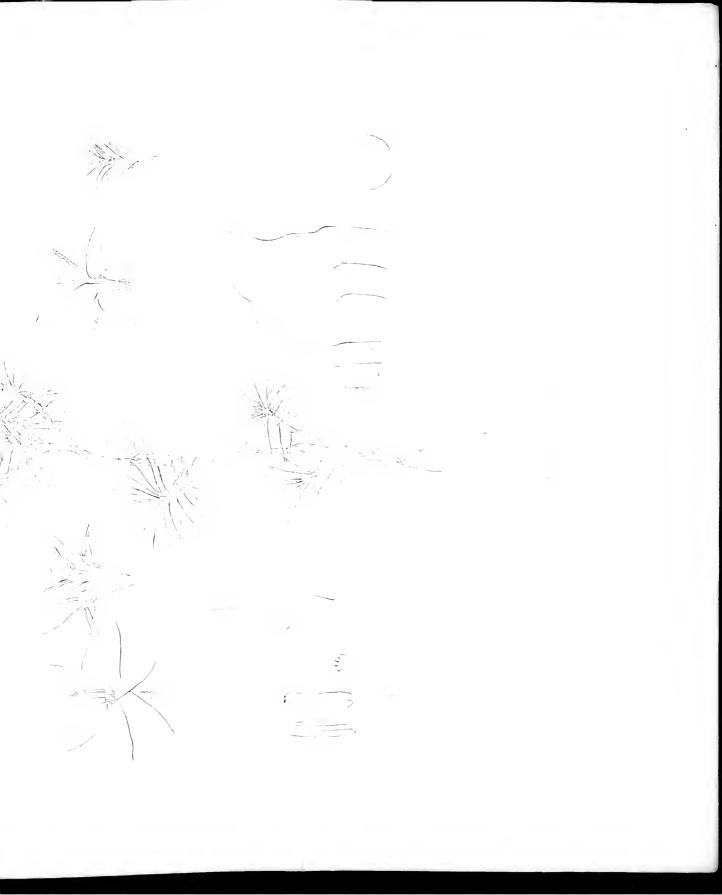


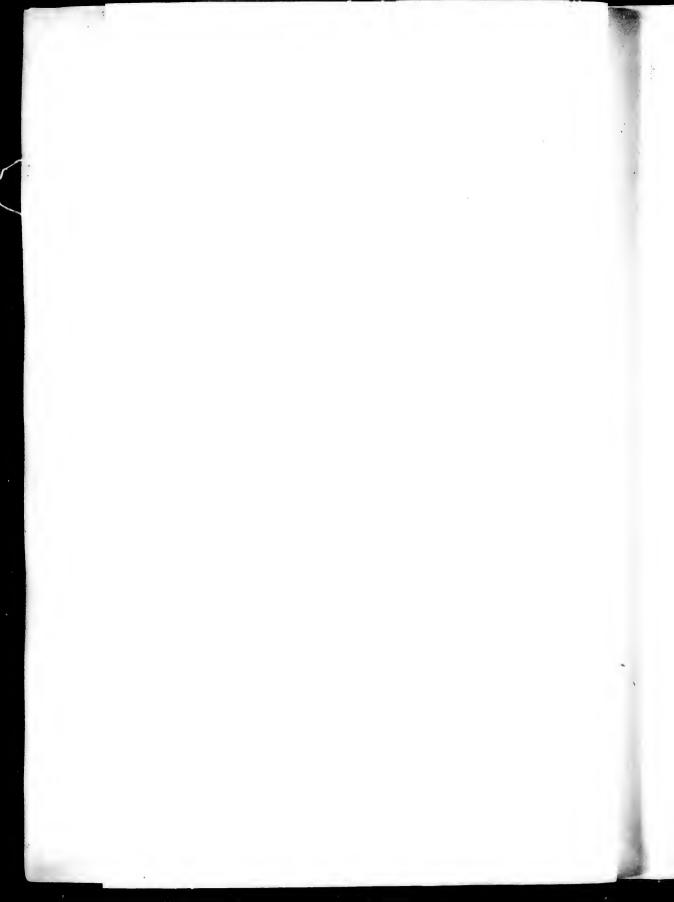








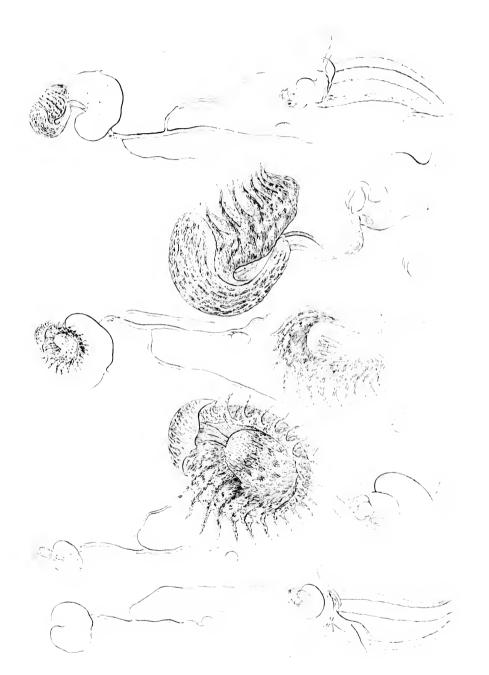




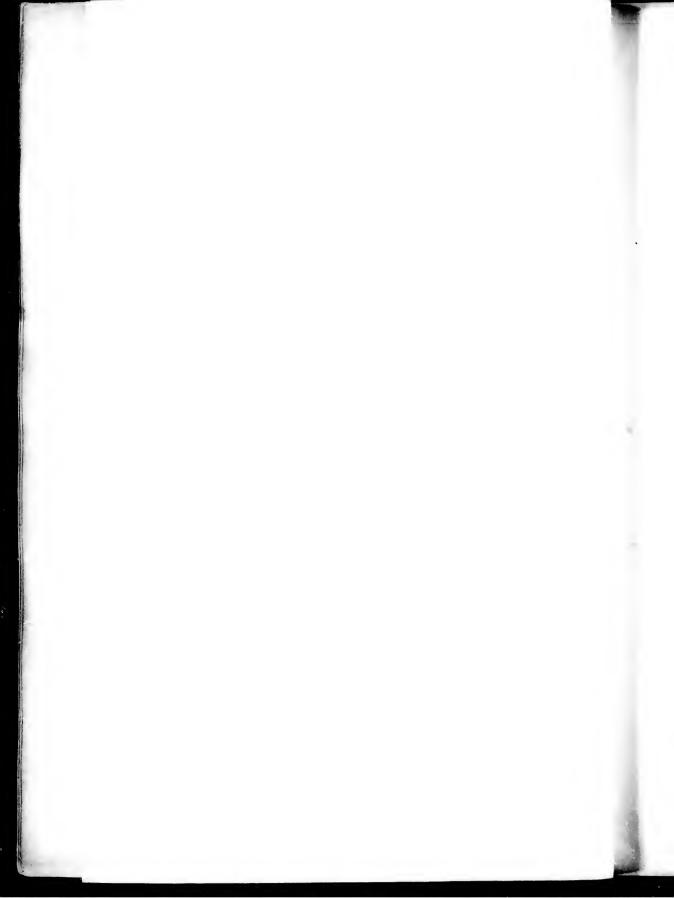
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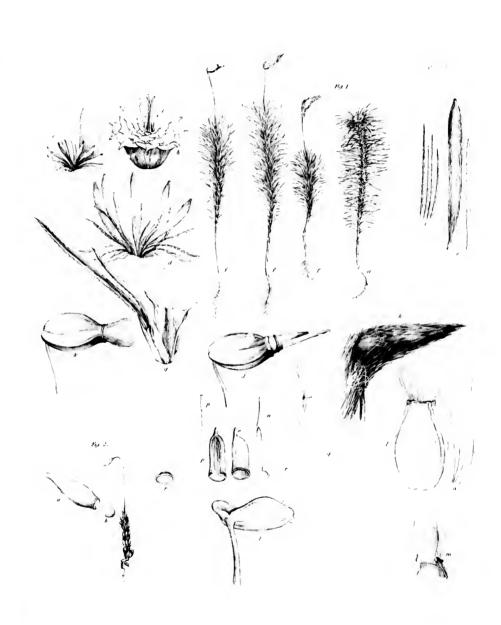


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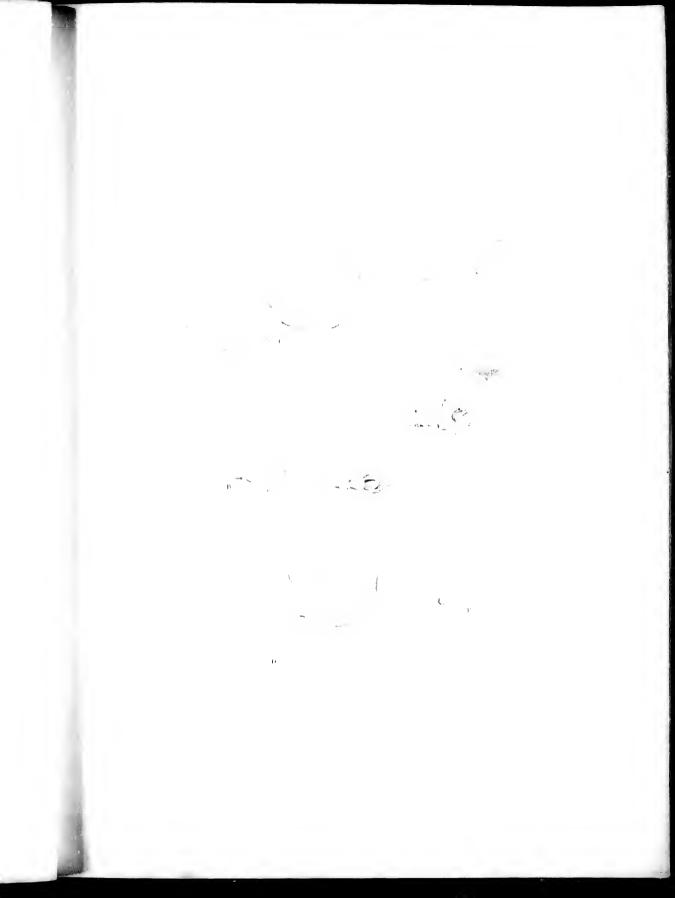


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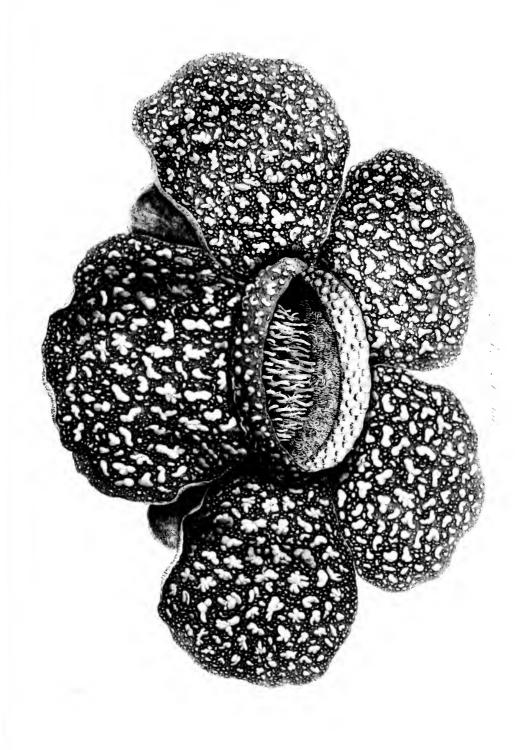


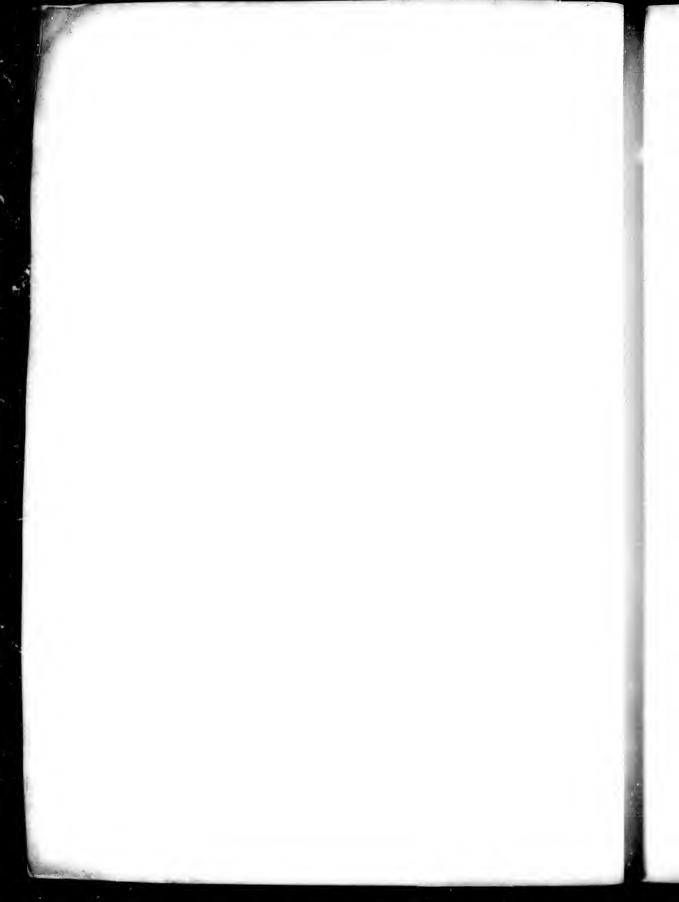


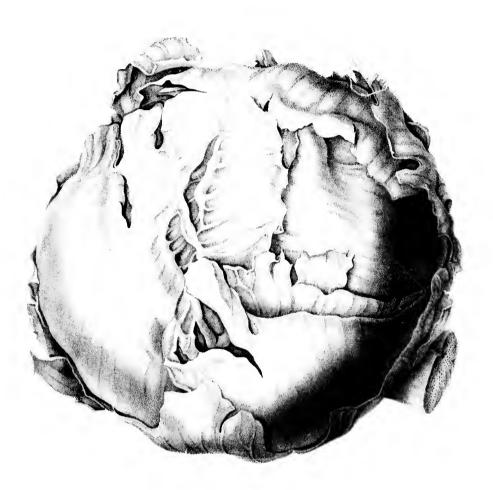




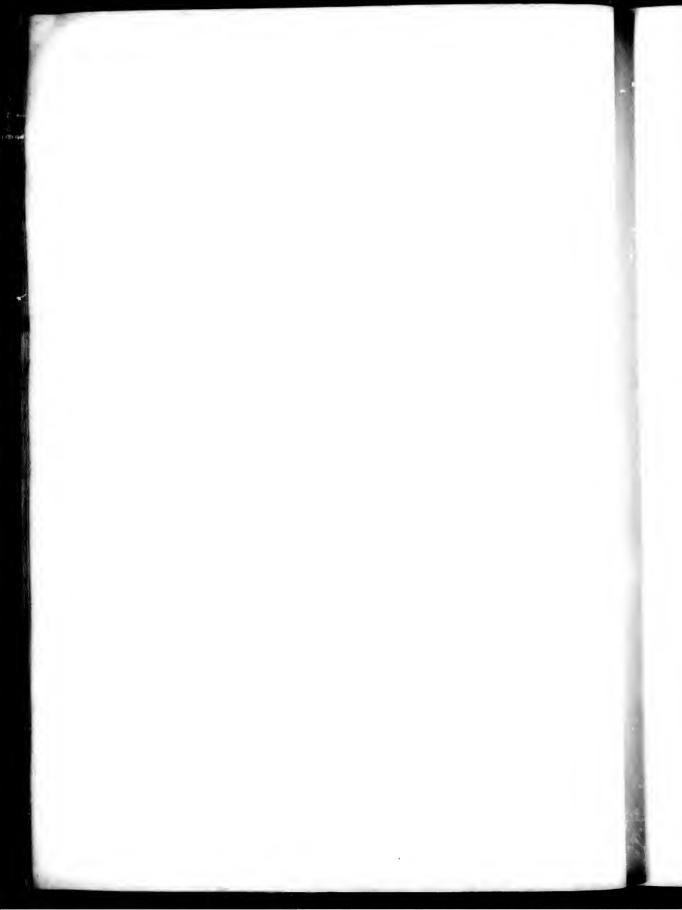


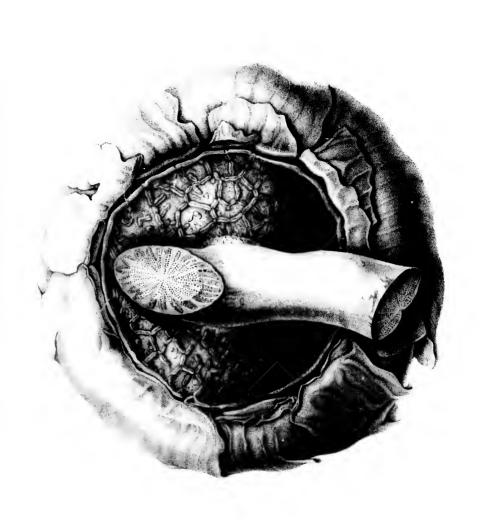


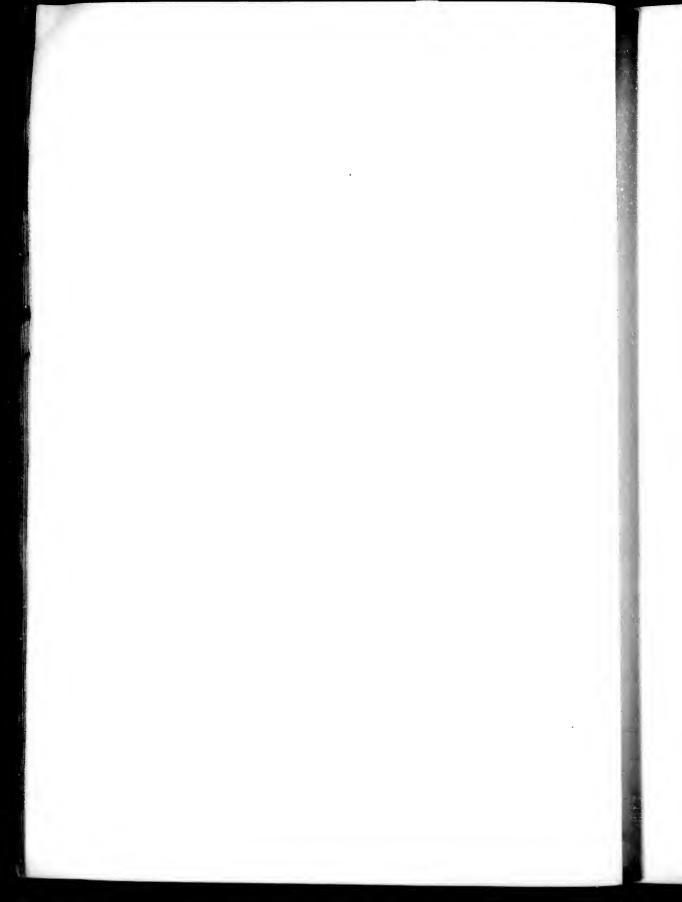




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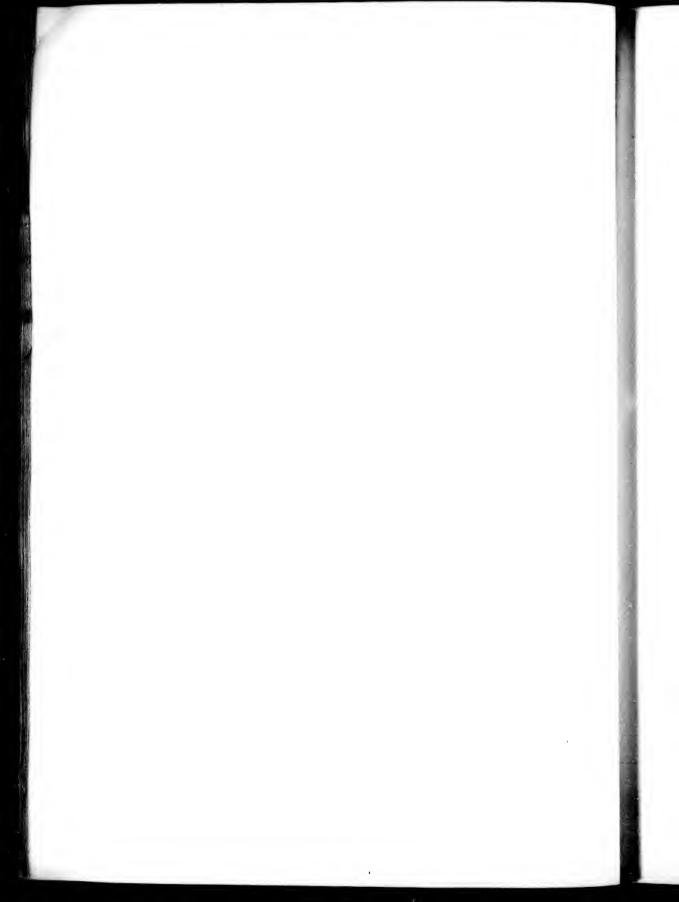


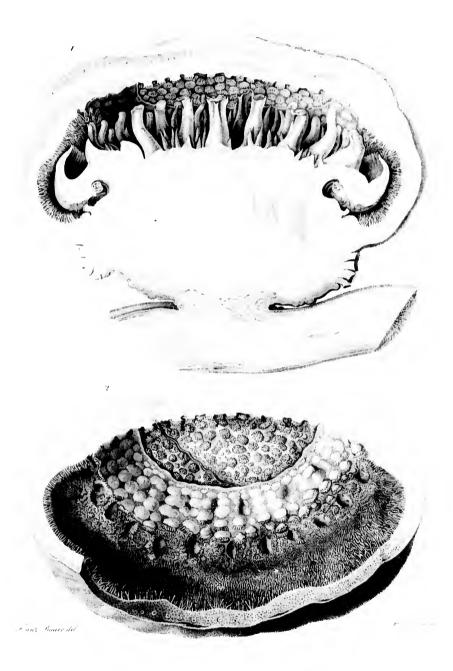




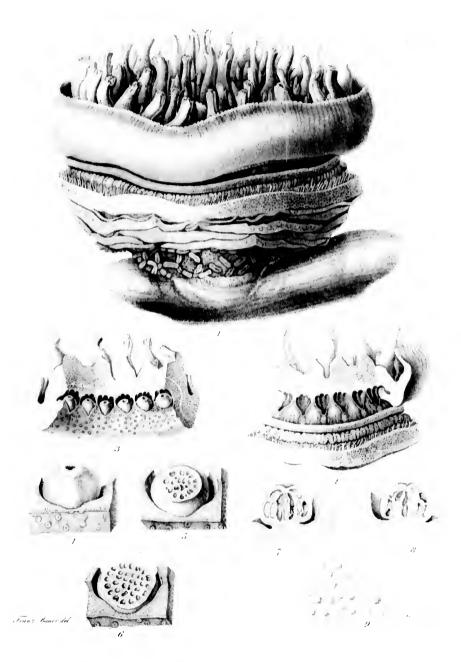


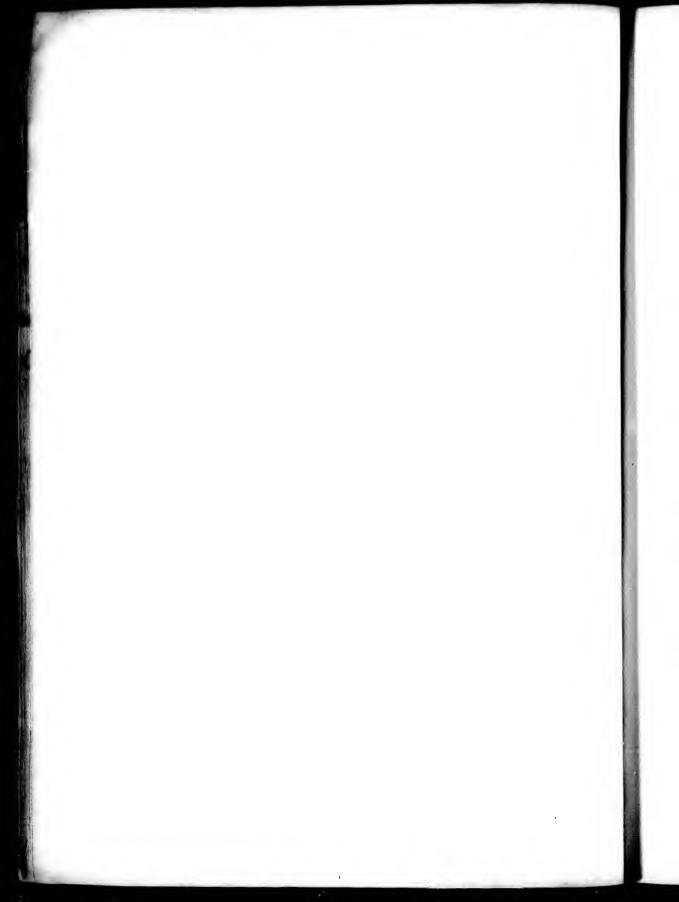
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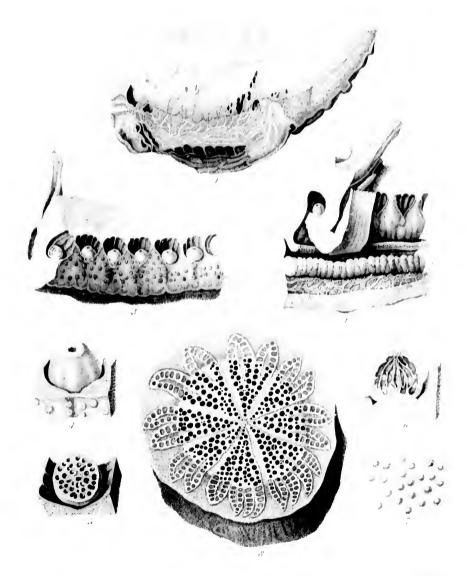




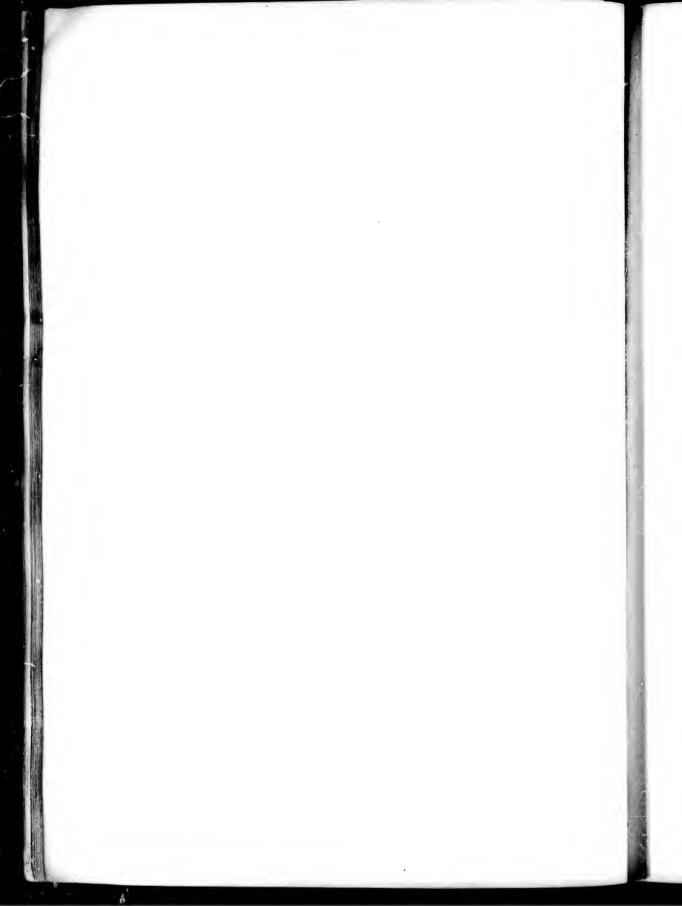


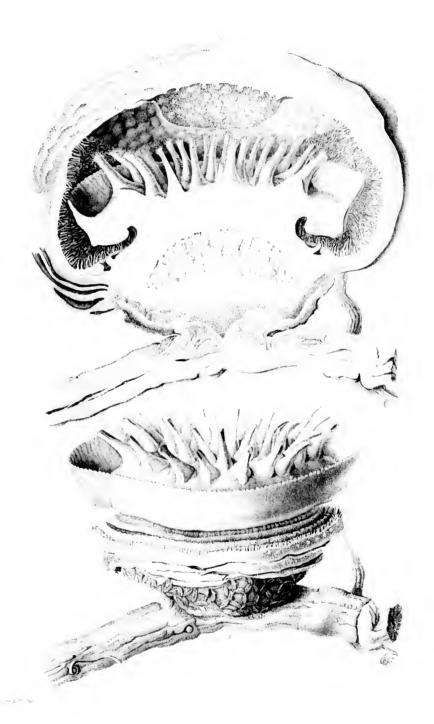


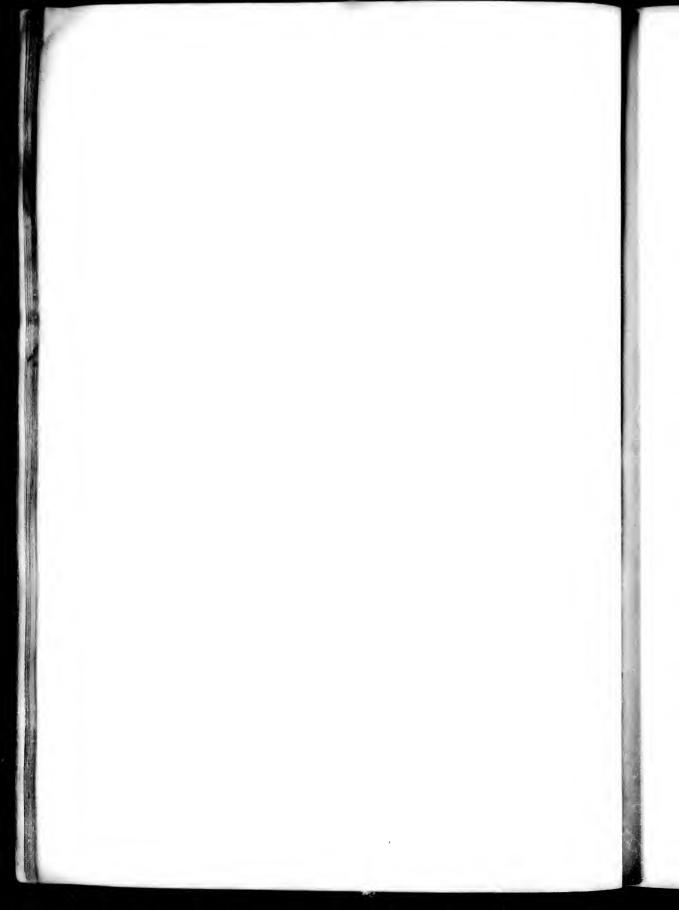


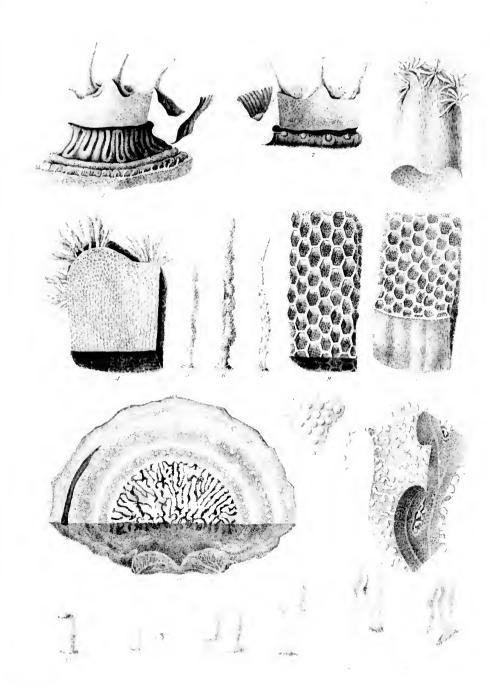


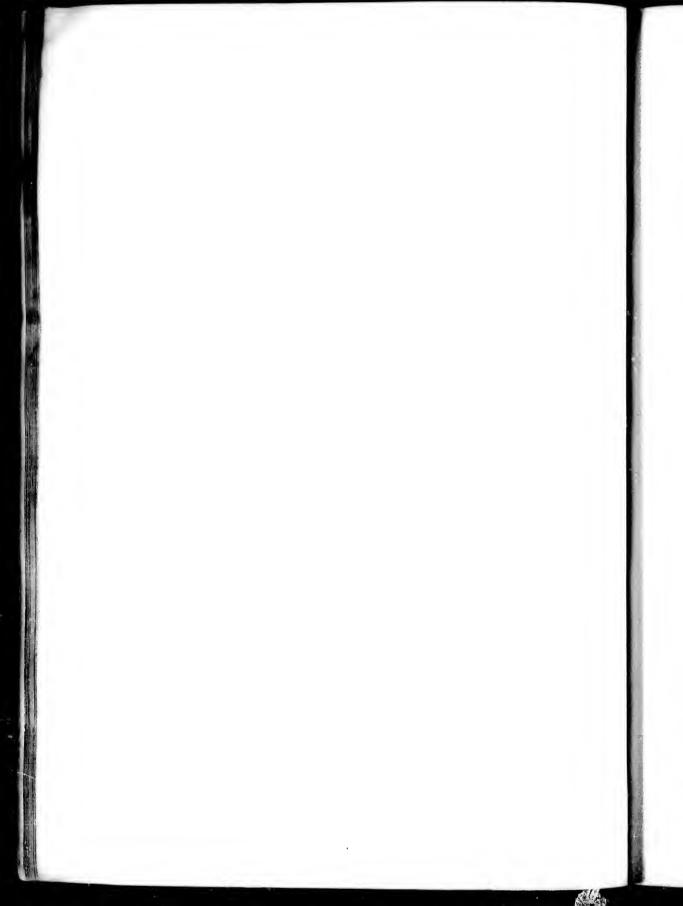
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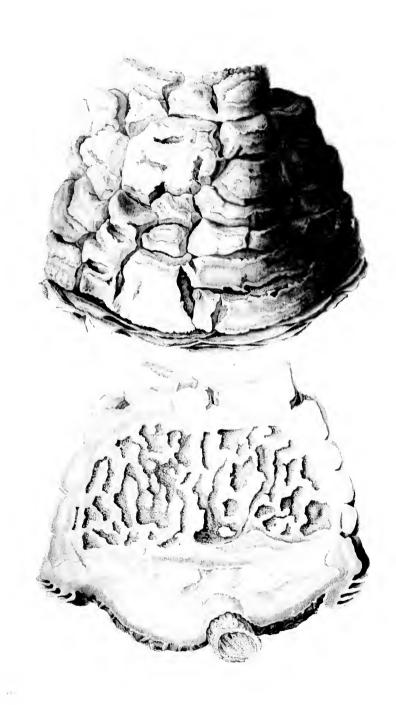




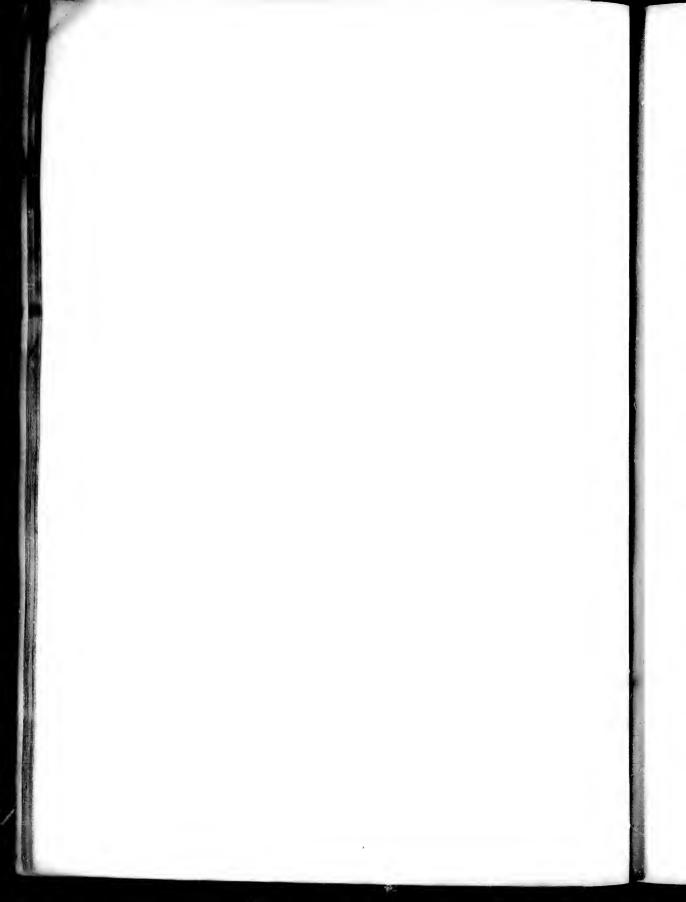


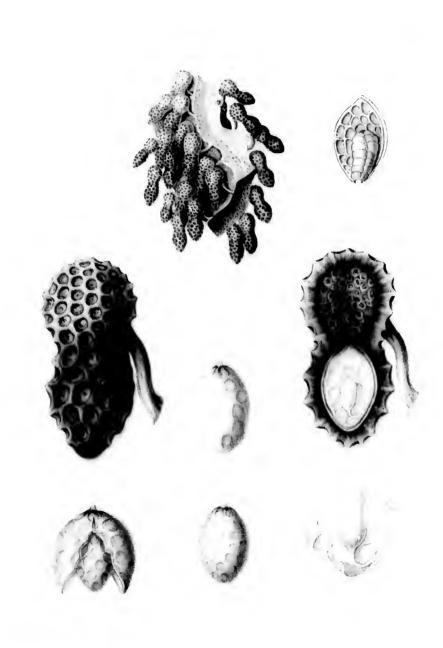


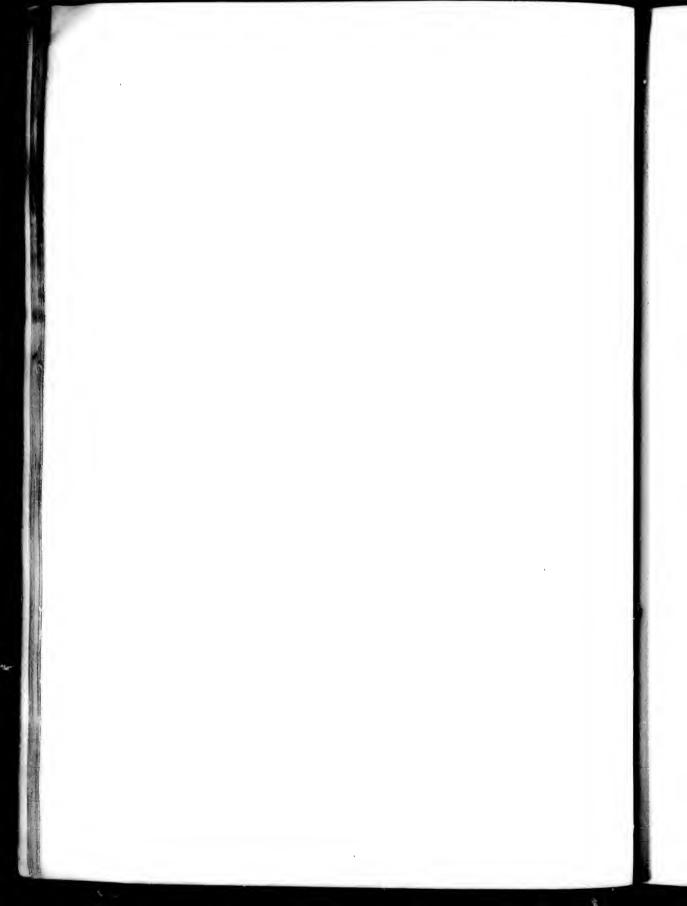




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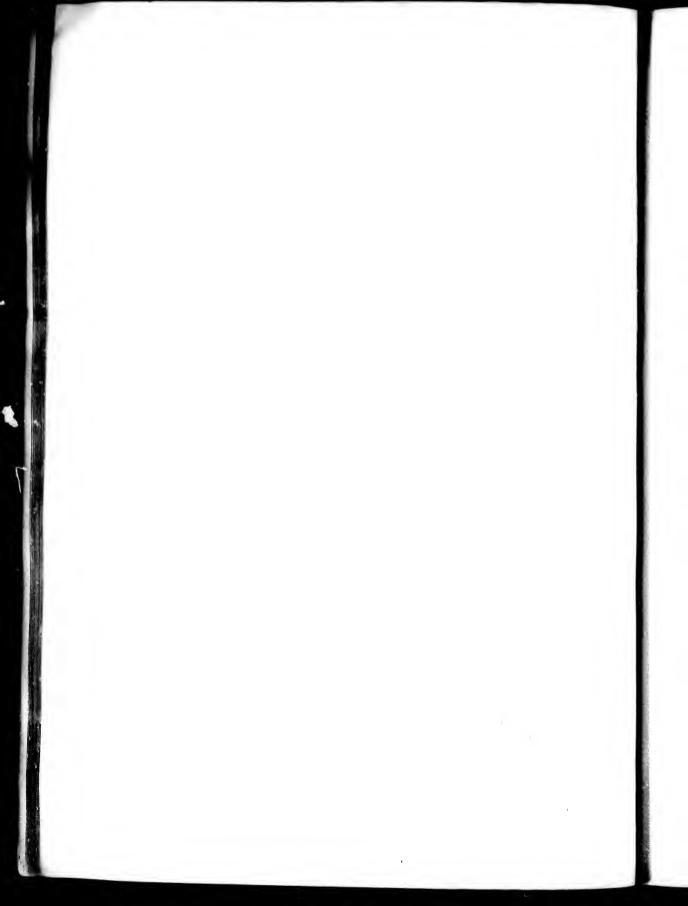
















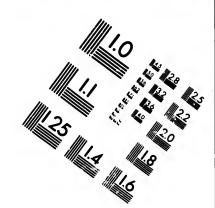
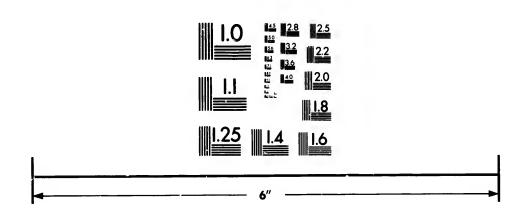


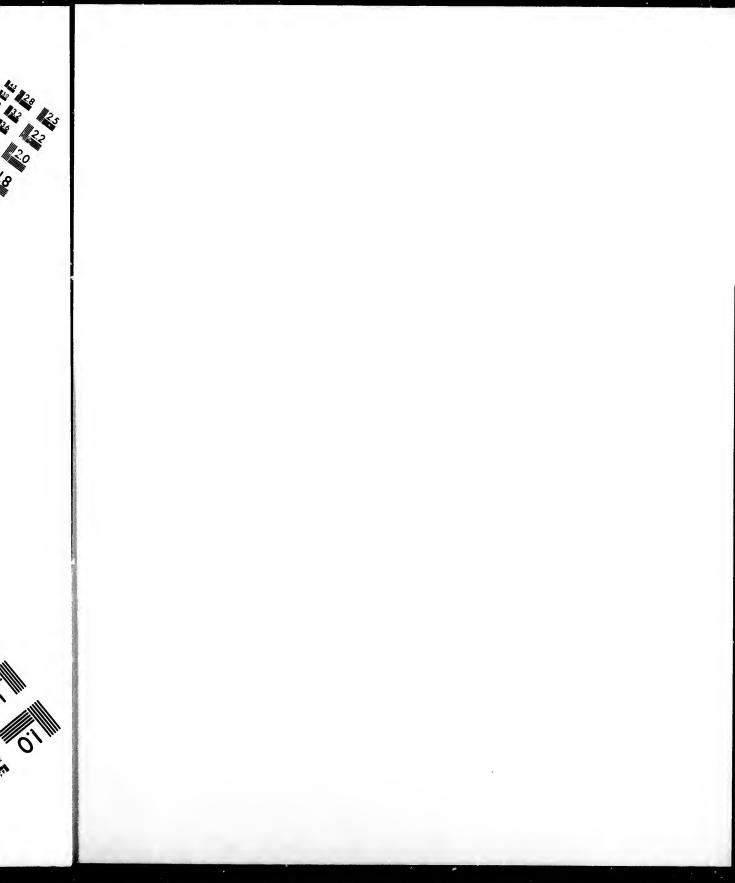
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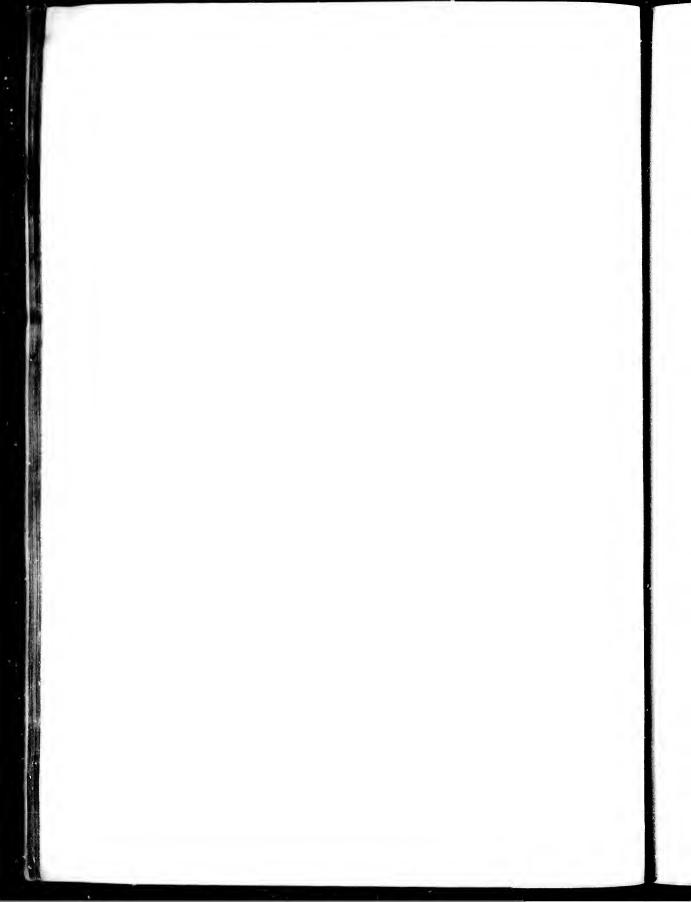


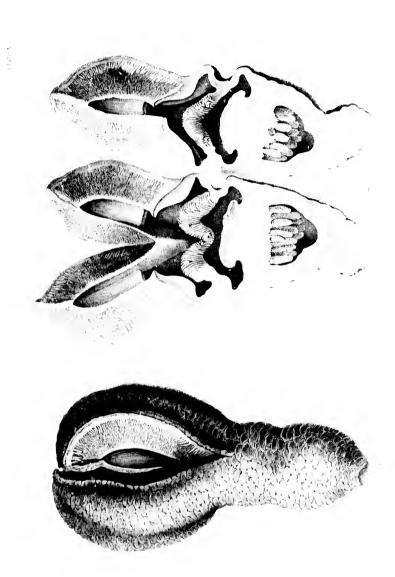
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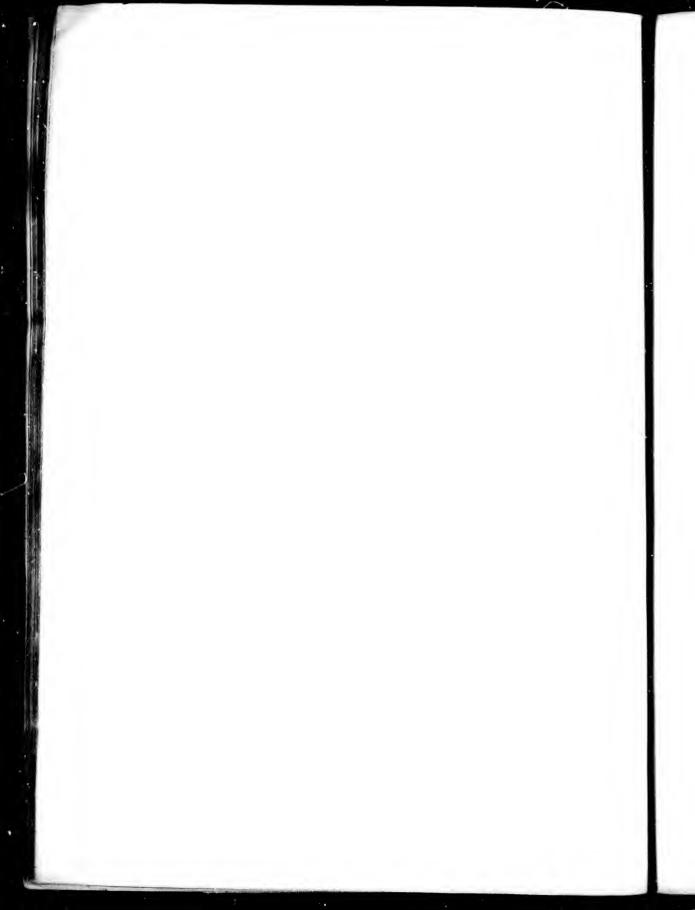
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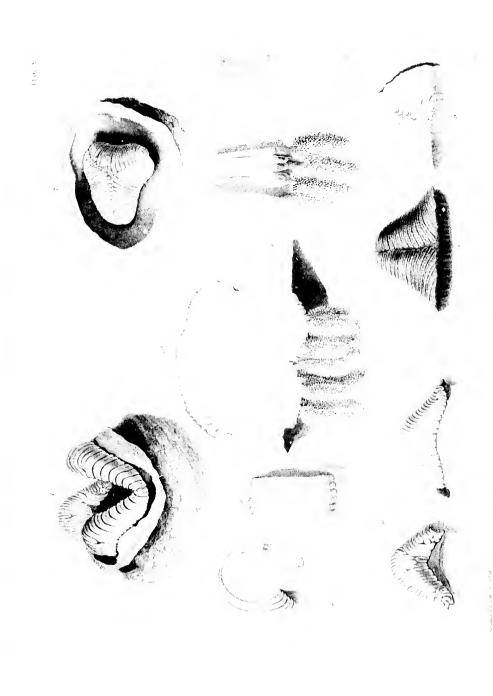
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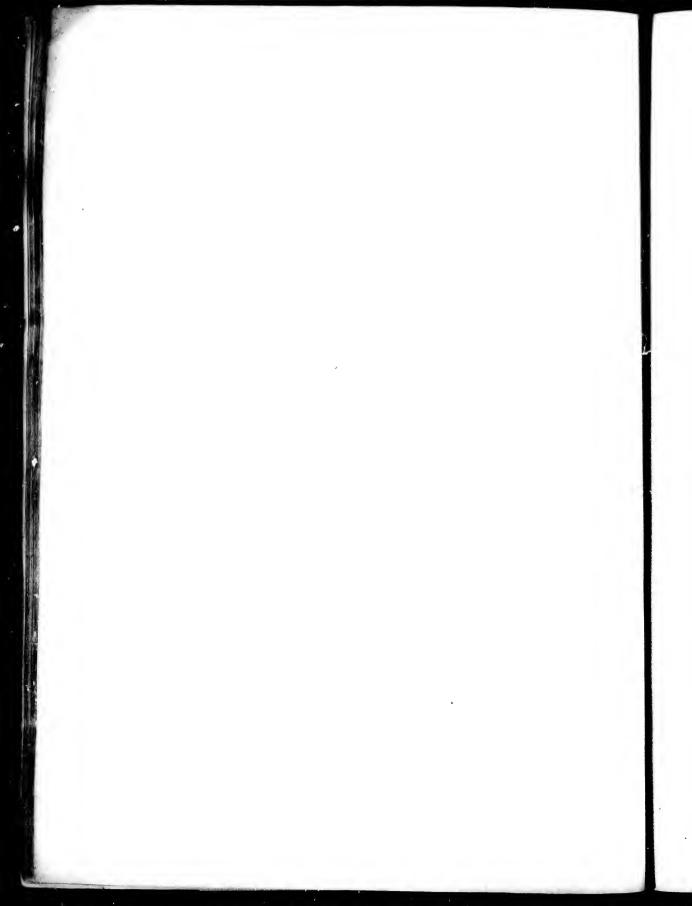


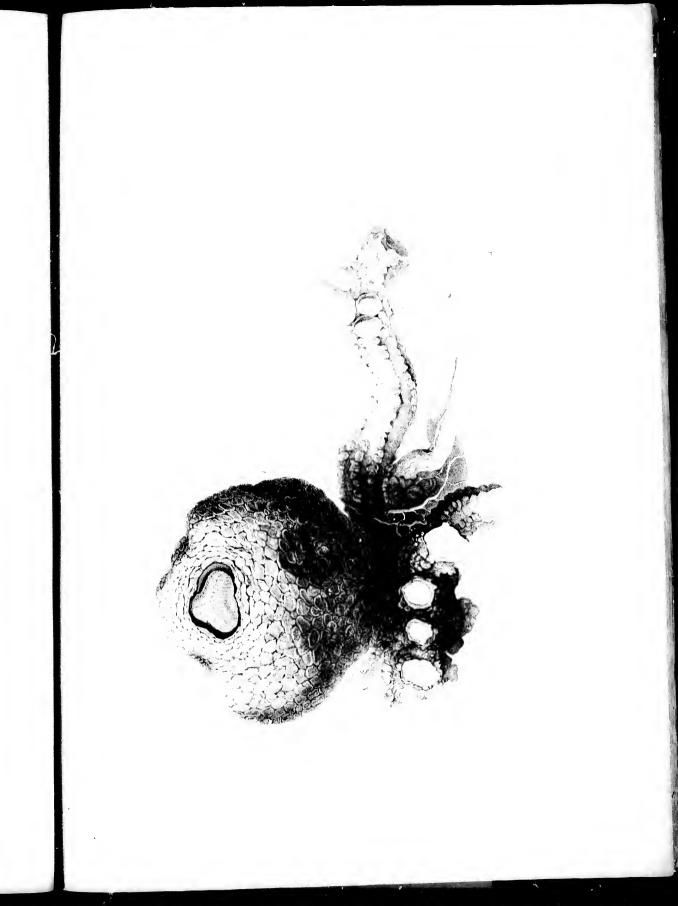


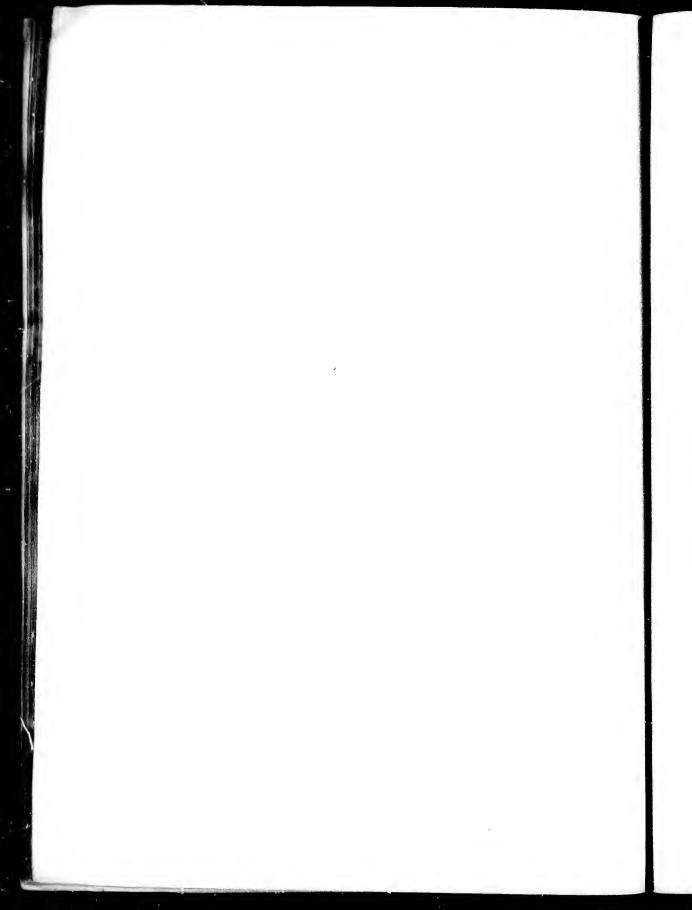


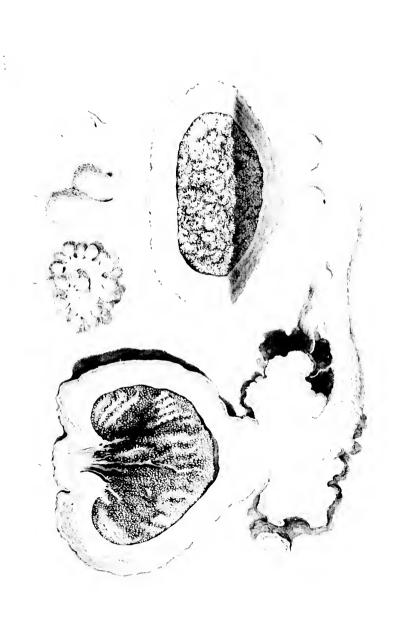


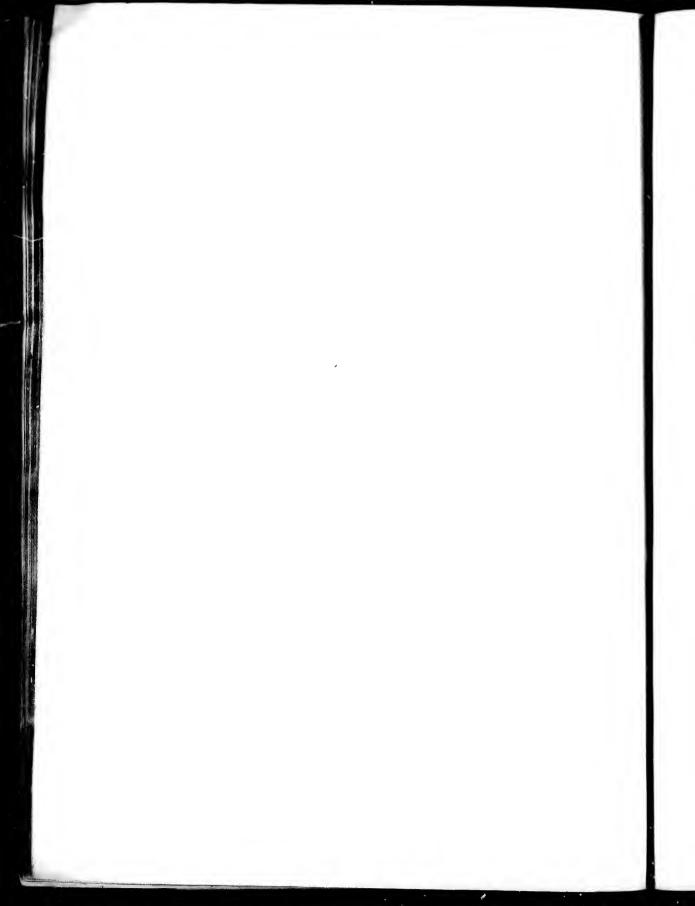


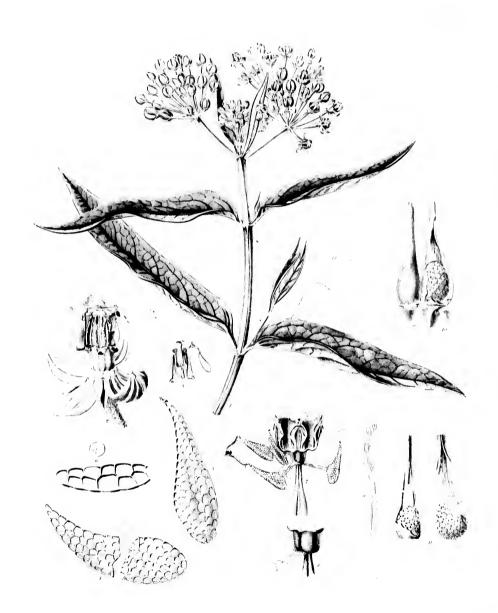


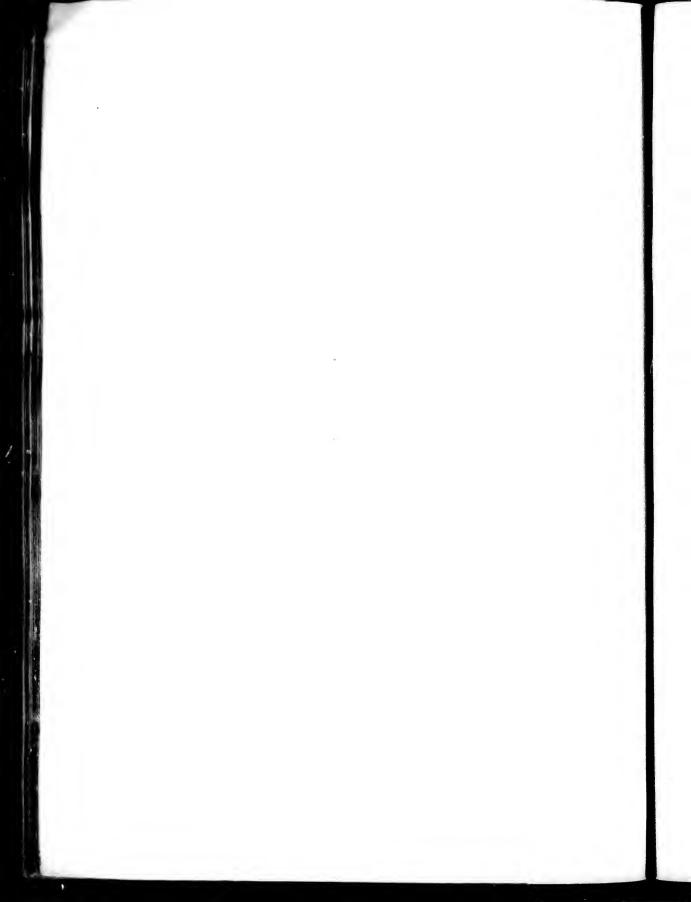


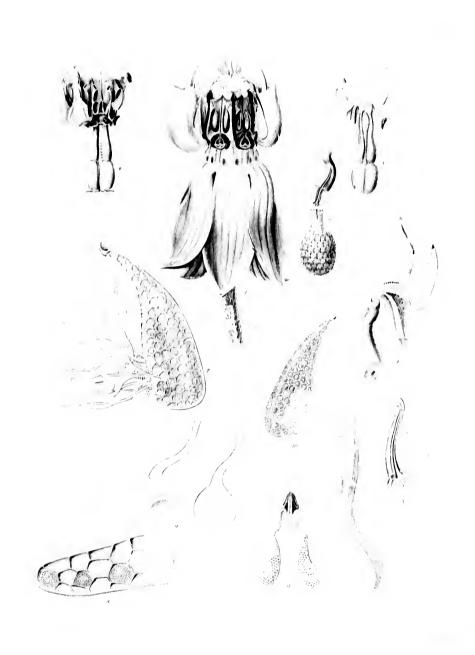


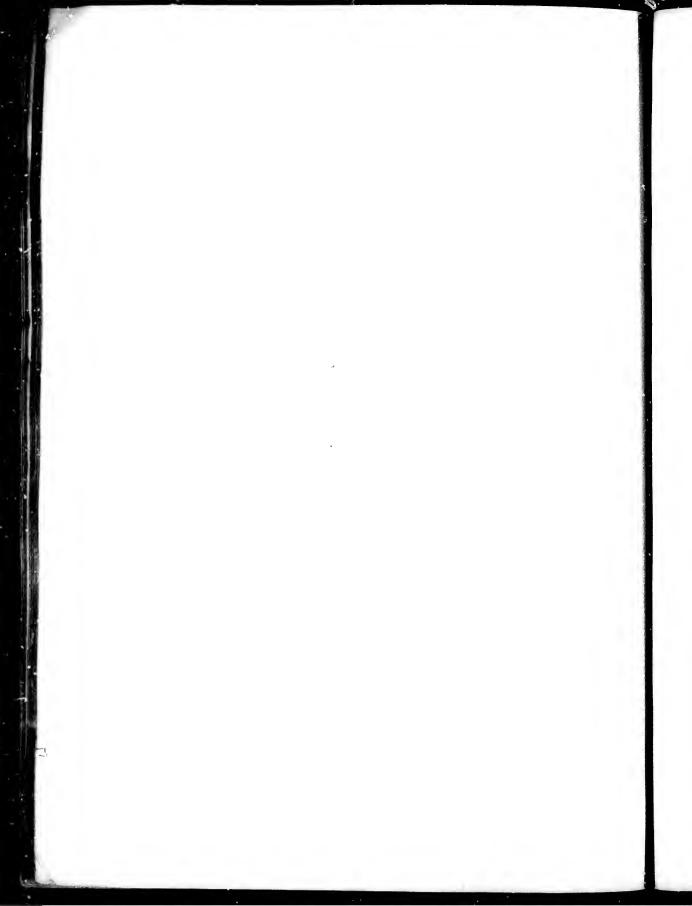




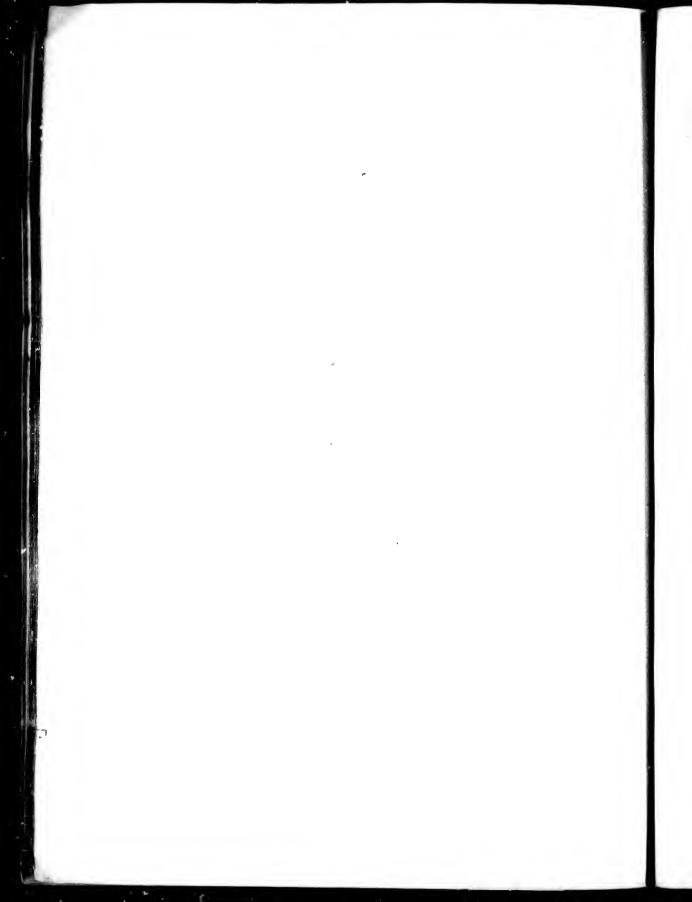


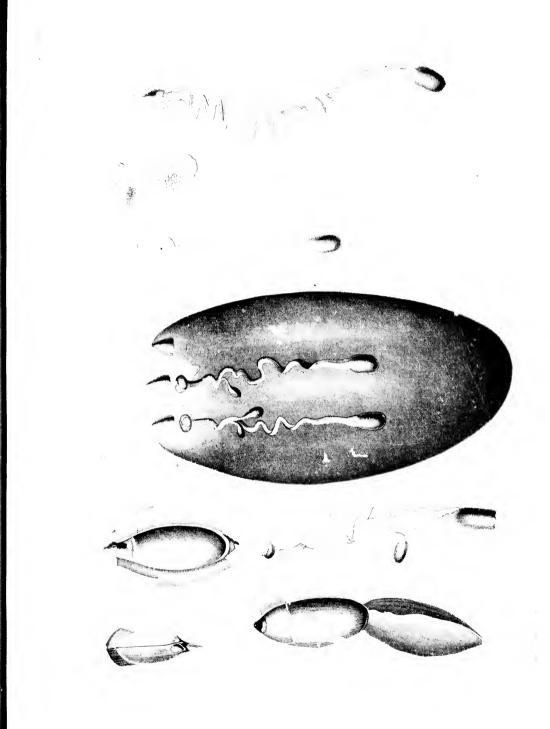


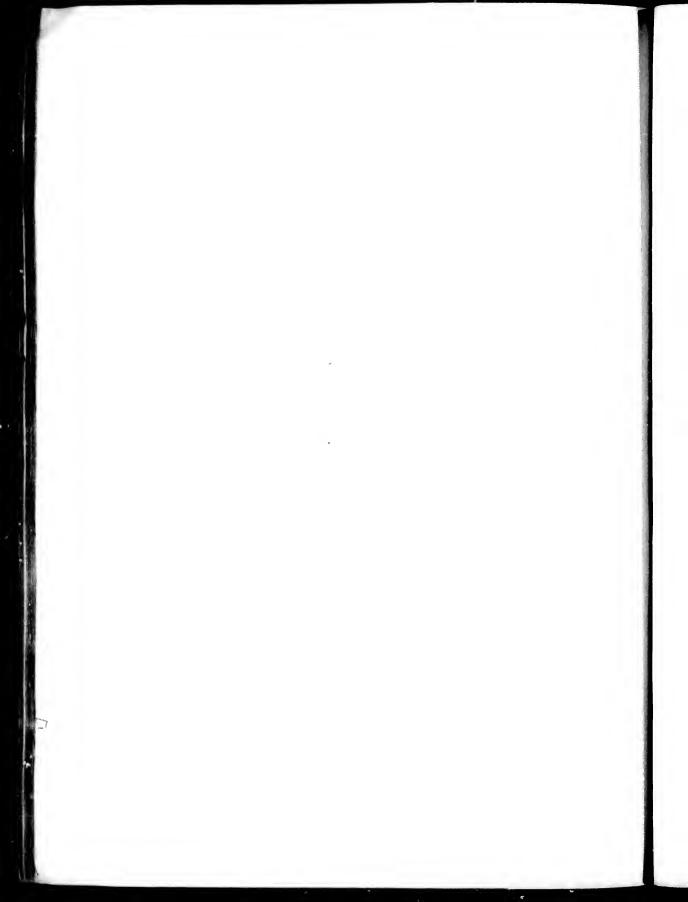


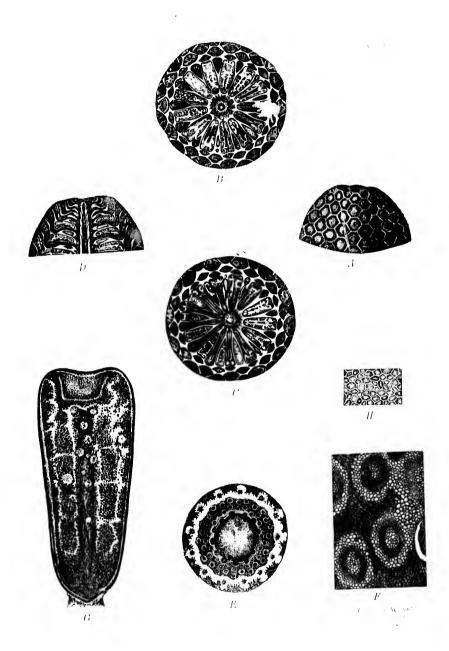


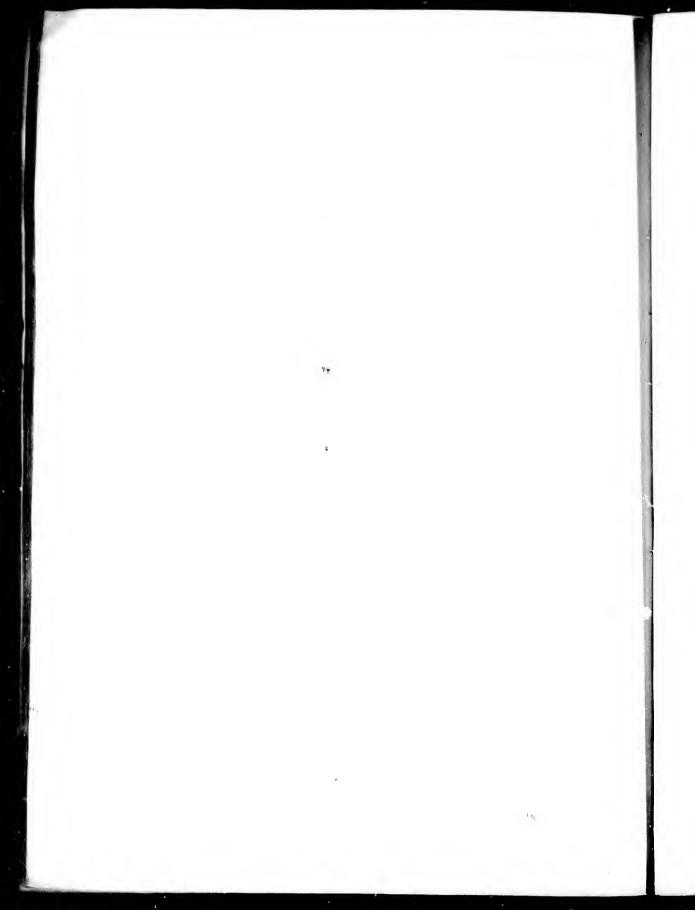


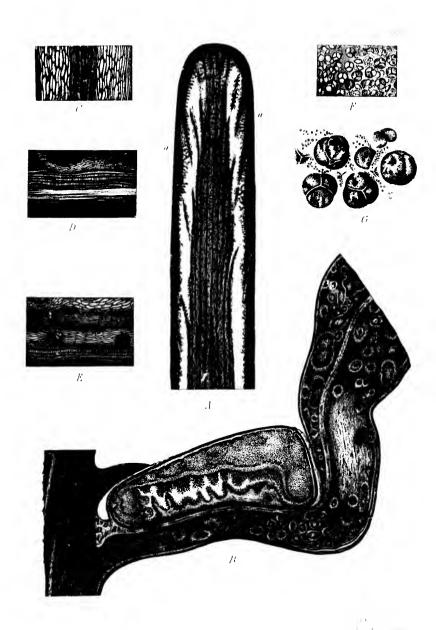












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