

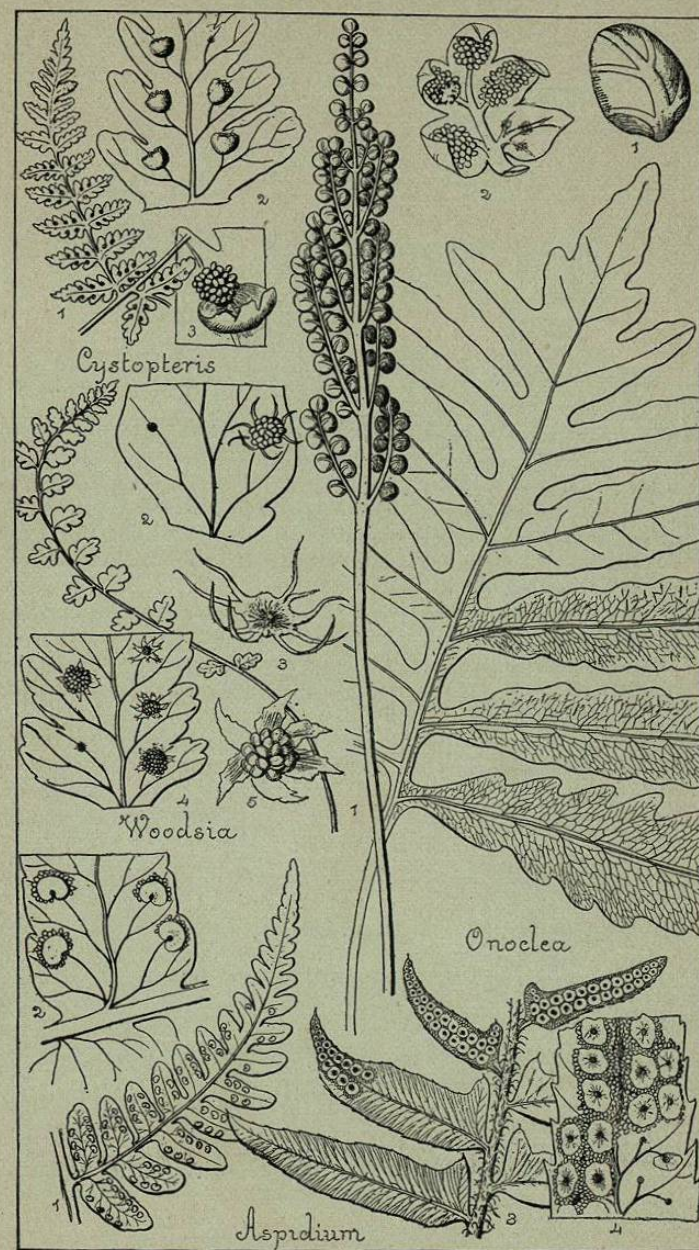
EXPLANATION OF PLATE XIX.

CYSTOPTERIS. — (1) Piece of the frond of *C. bulbifera*; (2) a lobe in fruit, enlarged; and (3) a small portion more magnified, bearing a fruit-dot with its indusium thrown back.

WOODSIA. — (1) Small frond of *W. glabella*; (2) a part of a fruiting pinna of the same, magnified; and (3) a separate indusium, more magnified; (4) a piece of a fruitful pinnule of *W. obtusa*, enlarged; and (5) a fruit with the opened indusium beneath, more magnified.

ASPIDIUM. — (1) Pinna of *A. (Dryopteris) marginale*; and (2) a magnified fruiting portion; (3) piece of *A. (Polystichum) acrostichoides*; and (4) a small fruiting portion, magnified.

ONOCLEA. — Sterile and fertile frond of *O. sensibilis*; (1) front view of a fruiting contracted pinnule, enlarged; and (2) the same laid open and viewed from the other side; on one lobe the sporangia are removed from the veins.



EXPLANATION OF PLATE XX.

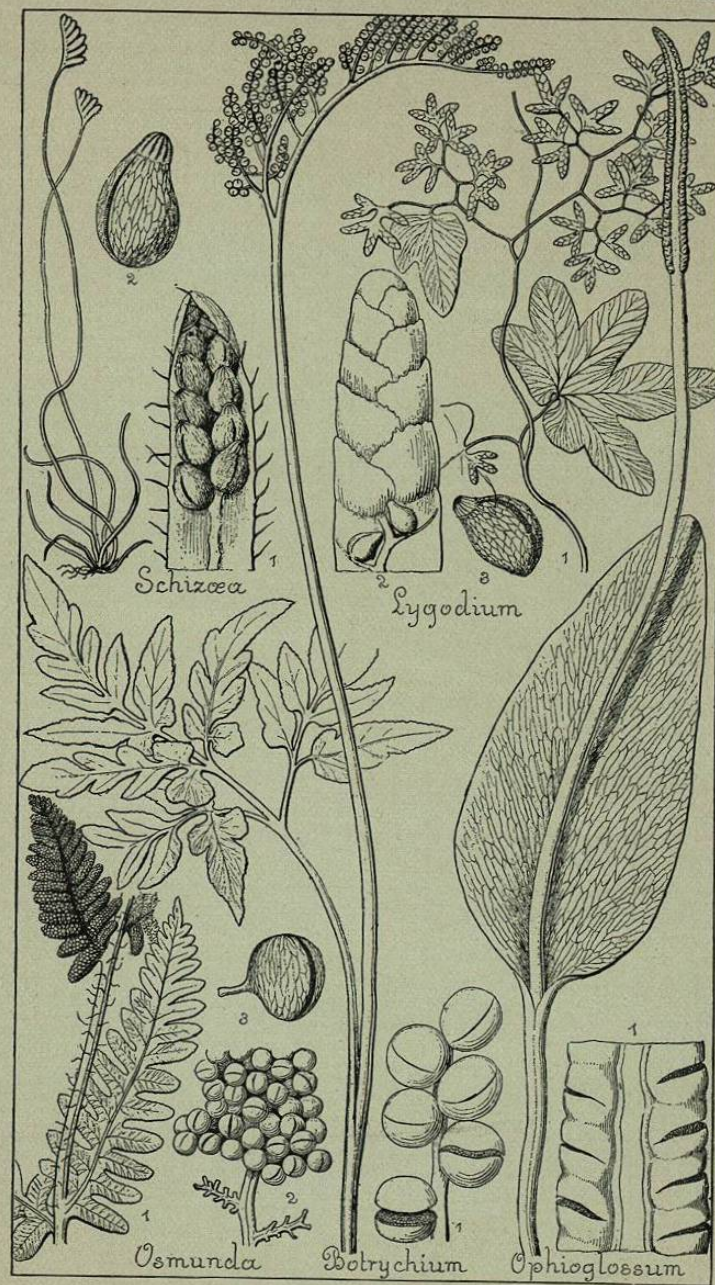
SCHIZÆA. — Plant of *S. pusilla*, of the natural size; (1) a fertile pinna with eleven sporangia, magnified; and (2) a separate sporangium, more magnified.

LYGODIUM. — (1) Summit of frond of *L. palmatum*, with fertile and sterile divisions; (2) a fruiting lobe enlarged, with two of the lower scales, or indusia, removed, displaying a sporangium under each; and (3) a sporangium more magnified.

OSMUNDA. — (1) Small piece of the frond of *O. Claytoniana*, with a fertile and a sterile pinna; (2) a portion of the fruit magnified; and (3) one sporangium more magnified.

BOTRYCHIUM. — Plant of *B. ternatum*, and (1) a portion of the fruit, with six sporangia, magnified.

OPHIOGLOSSUM. — Frond of *O. vulgatum*, and (1) a portion of the fruiting spike enlarged.



EXPLANATION OF PLATE XXI.

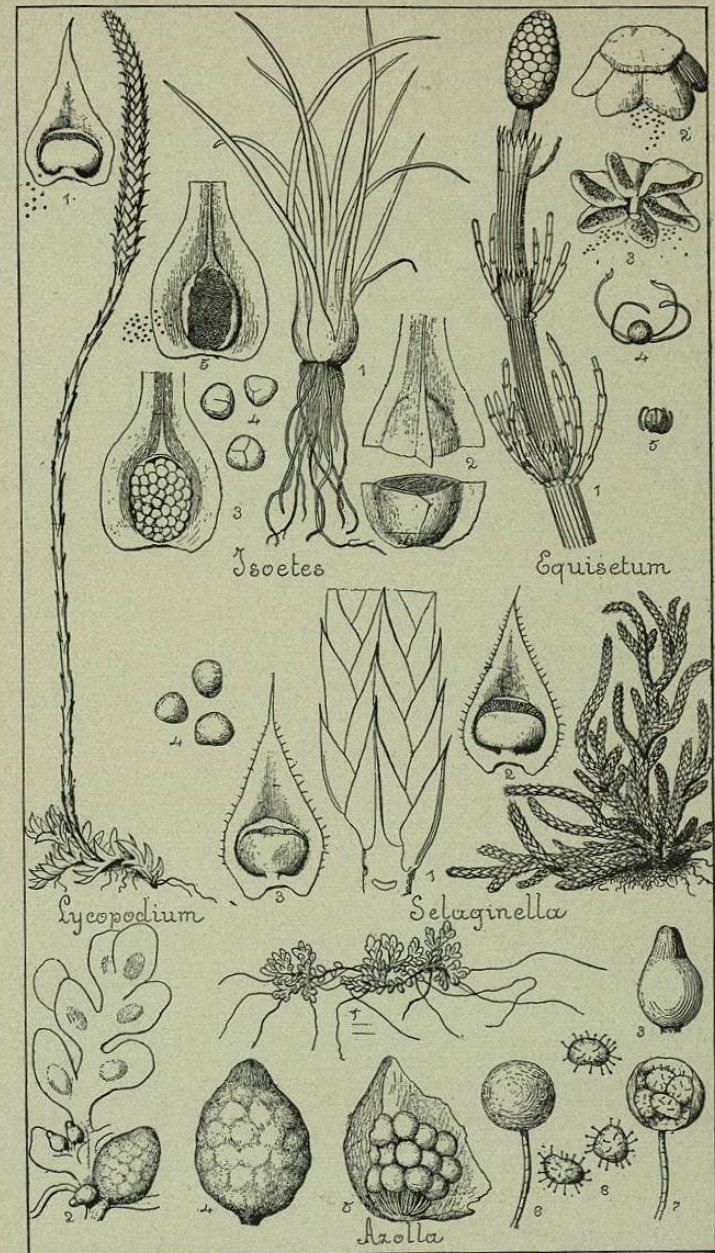
EQUISETUM. — (1) Upper part of fertile plant of *E. limosum*; (2) one of the shield-shaped scales or receptacles of the spike, with the six sporangia underneath, enlarged; (3) same seen from below, discharging the spores; (4) a magnified spore with the club-shaped filaments spreading; and (5) the same with the filaments coiled up.

LYCOPODIUM. — Plant of *L. Carolinianum*, and (1) a magnified scale of the spike removed, with the sporangium in its axil, discharging powdery spores.

SELAGINELLA. — Plant of *S. rupestris*; (1) part of a fertile spike, enlarged; (2) scale from the upper part of it, with its sporangium, containing innumerable powdery spores; (3) scale from the base, with its sporangium containing few large spores; and (4) three large spores.

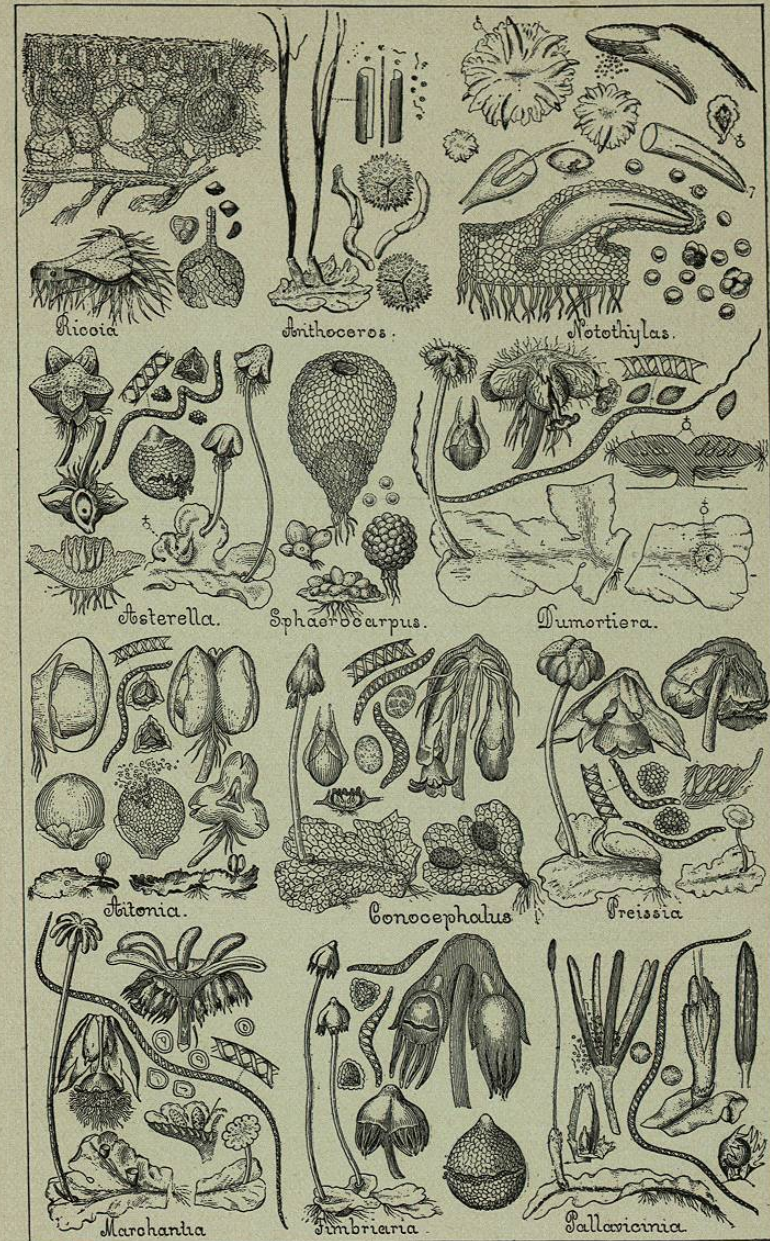
ISOETES. — (1) Plant of *I. lacustris*; (2) sporocarp containing the minute spores, cut across, enlarged; (5) same divided lengthwise; (3) sporocarp with the large spores, divided lengthwise; and (4) three large spores more magnified.

AZOLLA. — (1) Plant; (2) a portion magnified, with conceptacles of both kinds; (3) the macrosporic one, more magnified; (4) the microsporic one, more magnified; (5) the same burst open, showing the stalked microsporangia; (6) one of the latter more magnified; (7) another bursting; and (8) three masses of microspores beset with glochidiate or barbed bristles.



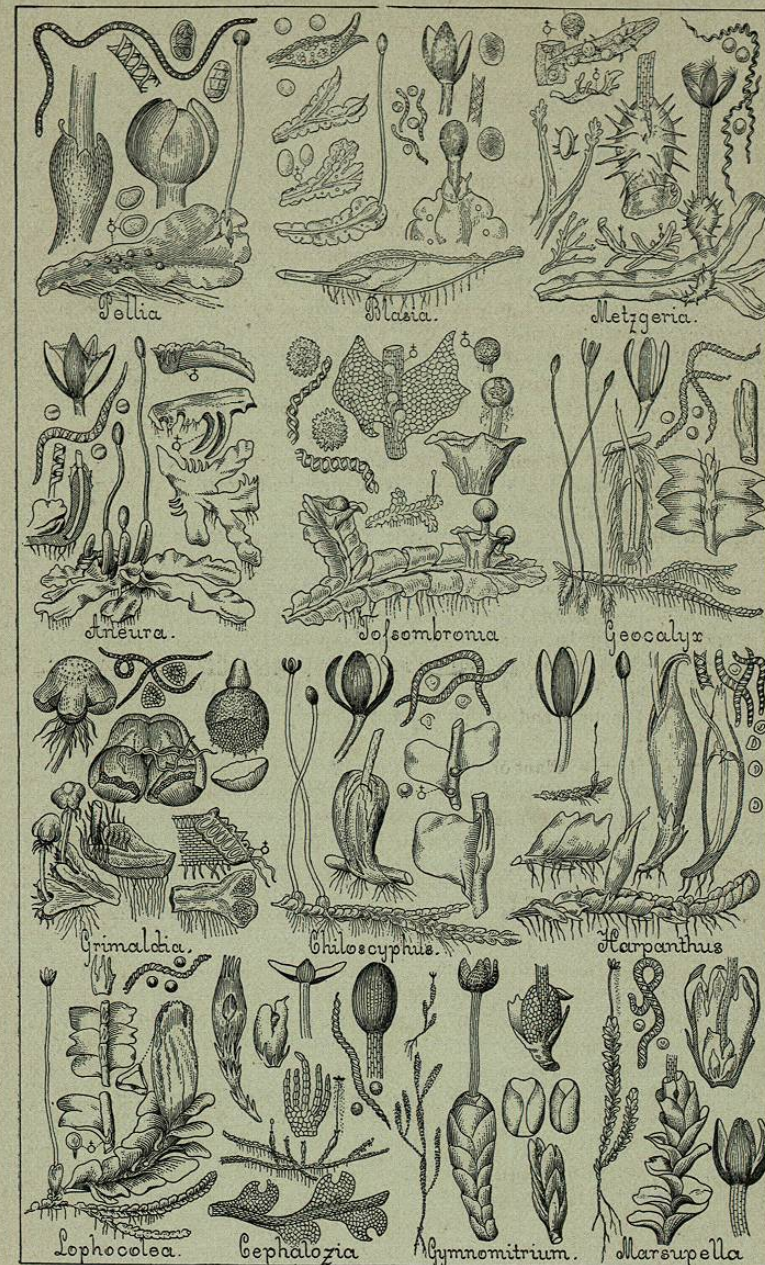
EXPLANATION OF PLATE XXII.

- RICCIA.**—Plant of *R. natans*; section of thallus, showing two imbedded capsules and numerous air-cavities; spores enclosed in a mother-cell; three free spores; and calyptra with style.
- ANTHOCEROS.**—Plant of *A. lævis*; portion of the columella and valves of the capsule, with spores and elaters; two spores and two elaters.
- NOTOTHYLAS.**—Plants of *N. orbicularis*; section of the thallus through the involucre; apex of protruding capsule; lower half of capsule showing the columella; upper half of capsule; a gemma; an antheridium; twelve free spores, and two clusters of spores (4 in each).
- ASTERELLA.**—Plant of *A. hemisphaerica*; ♀ receptacle viewed from above; the same from below; capsule dehiscing, with remains of calyptra at base; section of ♂ disk; an elater, a portion of same, and spores.
- SPHAEROCARPUS.**—Plant of *S. terrestris*; cluster of five involucre; involucre enclosing a capsule; capsule filled with spores; and three spores.
- DUMORTIERA.**—Portions of ♂ and ♀ plants of *D. hirsuta*; ♀ receptacle showing three involucre, two with capsules; capsule with calyptra; section of ♂ disk; elater and portion of same; spores.
- AITONIA.**—Plant of *A. Wrightii*; upper view of ♀ receptacle with three involucre; side view of same; involucre partly cut away showing capsule and remains of calyptra; a capsule closed, and dehiscing; an elater, a piece of same, and spores.
- CONOCEPHALUS.**—Parts of ♂ and ♀ plants of *C. conicus*; section of ♀ receptacle, showing two involucre and capsules; capsule with ruptured calyptra; section of ♂ disk; elaters, a portion of one, and spores.
- PREISSIA.**—Parts of ♂ and ♀ plants of *P. commutata*; section of ♀ receptacle; perianth opened showing calyptra and capsule; section of part of ♂ disk; elaters, a part of one, and spores.
- MARCHANTIA.**—Parts of ♂ and ♀ plants of *M. polymorpha*; section of receptacle; perianth, calyptra, and capsule; section of part of ♂ disk; an elater, part of same, and spores.
- FIMBRIARIA.**—Plant of *F. tenella*; ♀ receptacle, and section of same; capsule dehiscing; elaters and spores.
- PALLAVICINIA.**—Plant of *P. Lyellii*; part of thallus with involucre, perianth, and calyptra; perianth cut away showing young calyptra; capsule closed, and dehiscing; antheridium enclosed in a leaf; elater and spores.



EXPLANATION OF PLATE XXIII.

- PELLIA. — Plant of *P. epiphylla*; calyptra with base of pedicel; capsule; an elater, part of same, two spores, and two antheridia.
- BLASIA. — Plants of *B. pusilla*; section of cavity at the end of the midrib showing young perianth and calyptra; end of thallus with calyptra and protruding capsule; capsule dehiscing; elaters and spores; part of elater and two spores; ♂ thallus with two antheridia; gemmiparous thallus with two receptacles; section of a receptacle showing enclosed gemmæ and the protruded orifice.
- METZGERIA. — Plants (♂, ♀, and gemmiparous) of *M. furcata*, and parts of same enlarged; hispid perianth with 2-lobed involucre leaf and base of pedicel; a gemma; an antheridium; elaters and spores.
- ANEURA. — Plants (♂ and ♀) of *A. sessilis*; section of fleshy calyptra with base of pedicel; dehiscing capsule bearded by persistent elaters; elater, part of same, and spores; part of thallus with long deflexed ♂ receptacles, and one cut transversely showing antheridia.
- FOSSOMBRONIA. — Plant of *F. pusilla*, and a part enlarged; capsule dehiscing, with perianth and involucre leaves; part of stem with two leaves and dorsal antheridia; an antheridium, elaters, and spores.
- GEOCALYX. — Plant of *G. graveolens*; two pairs of leaves with underleaves; part of stem with an underleaf; section of involucre showing calyptra and base of pedicel; dehiscing capsule; elaters and spores.
- GRIMALDIA. — Parts of ♂ and ♀ plants of *G. barbifrons*; section of ♂ disk; ♀ receptacle and section of same; dehiscing capsule; elaters and spores.
- CHILOSCYPHUS. — Plant of *C. ascendens*; a leaf with underleaf; a pair of leaves with antheridia; a part of stem with involucre leaves, perianth, and calyptra; dehiscing capsule; elaters and spores.
- HARPANTHUS. — Plant of *H. Flotvianus*, and same enlarged; a pair of leaves with underleaf; perianth with involucre leaves, and section showing calyptra; elaters, a part of one, and spores.
- LOPHOCOLEA. — Plant of *L. heterophylla*; a part enlarged with involucre leaves and perianth; cross-section of perianth; three pairs of leaves with underleaves; a leaf and antheridium; an underleaf; an elater and spores.
- CEPHALIZIA. — Plant of *C. multiflora*; two pairs of leaves; perianth with involucre leaves; an involucre leaf; calyptra; capsule closed, and dehiscing; an elater and spores.
- GYMNOMITRIUM. — Plants of *G. concinnatum*; three pairs of leaves; apex of stem with involucre leaves and dehiscing capsule; two involucre leaves; calyptra.
- MARSUPELLA. — Plant of *M. emarginata*; part of same with involucre leaves; involucre and perianth opened showing calyptra and base of pedicel; capsule; elater and spores.



EXPLANATION OF PLATE XXIV.

SCAPANIA.—Plant of *S. undulata*; apex of stem with involucre leaves and perianth enclosing calyptra; three pairs of leaves, a capsule, elater, and spores.

PLAGIOCHILA.—Plant of *P. interrupta*; five leaves; an underleaf; perianth enclosing calyptra; antheridia, capsule, elaters, and spores.

ODONTOSCHISMA.—Plant of *O. Sphagni*; parts of stems, one bearing gemmæ, the other a perianth with involucre leaves; an involucre leaf; a capsule, elaters, and spores.

LEJEUNEA.—Plant of *L. clypeata*; perianth with capsule and involucre leaves; cross-section of perianth; part of stem with ♂ branch; leaves with underleaves; elaters and spores.

FRULLANIA.—Plant of *F. Asagrayana*; two pairs of leaves seen from above, and from below with underleaves and ventral lobes; perianth with involucre leaves; cross-section of perianth; involucre leaf; capsule, elaters, and spores.

PORELLA.—Plant of *P. platyphylla*; a pair of leaves with underleaves; part of stem with ♂ spikes; an antheridium in its leaf; perianth with involucre leaves and capsule; an elater, and spores.

RADULA.—Plant of *R. obconica*; end of branch with perianth and capsule and lateral ♂ branches; a ♂ branch; an antheridium; leaves seen from above and below; a capsule, elater, and spores.

PTILIDIUM.—Plant of *P. ciliare*; a pair of leaves; an underleaf; perianth with involucre leaves; capsule, elater, and spores.

BAZZANIA.—Plant of *B. trilobata*; two pairs of leaves with underleaves and ♂ spike; portion of ♂ spike, and antheridium; capsule, elaters, and spores.

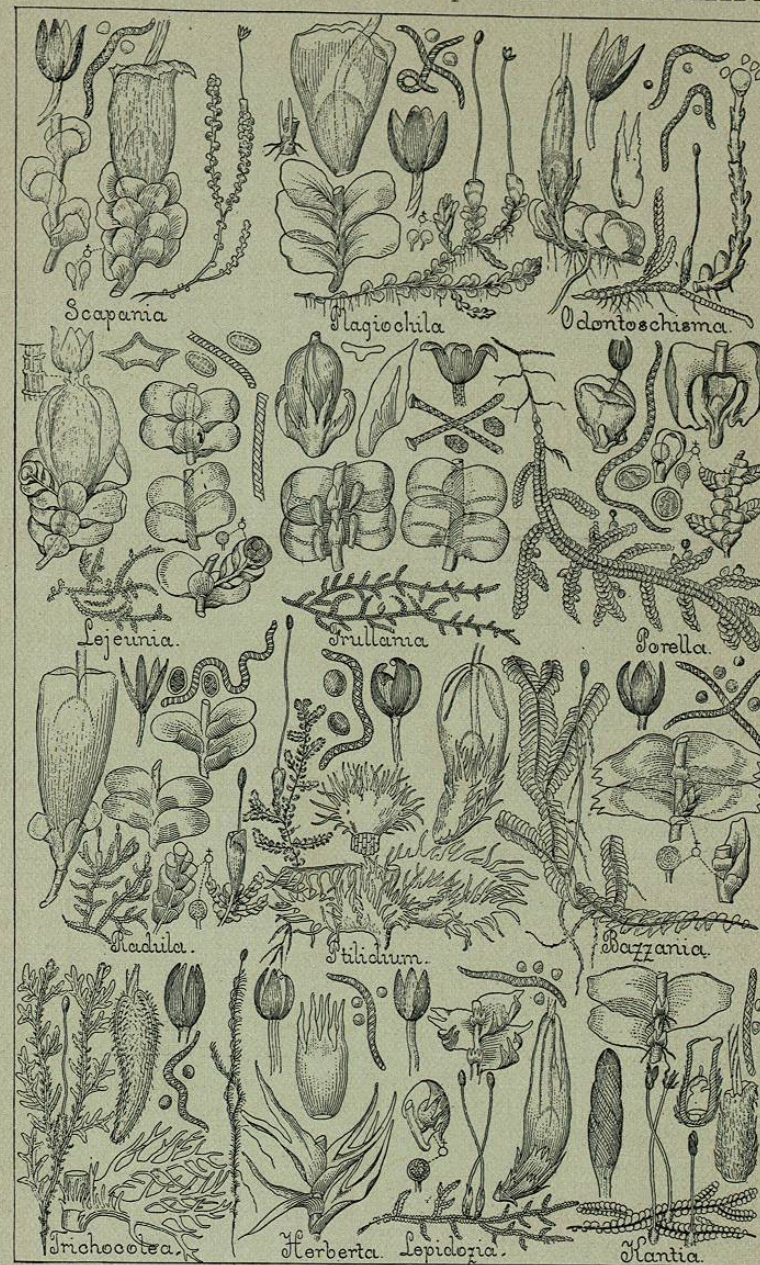
TRICHOCOLEA.—Plant of *T. tomentella*; leaf and underleaf; capsule; elater and spores.

HERBERTA.—Plant of *H. adunca*; portion with leaves and underleaves; perianth; capsules; elater and spores.

LEPIDOZIA.—Plant of *L. reptans*; portion with leaves and underleaves; antheridium in its leaf and free; perianth with involucre; capsule, elater, and spores.

KANTIA.—Plant of *K. Trichomanis*; leaves and underleaves; hairy involucre, and section showing calyptra; capsule with spiral valves; elater and spores.

Genera of Hepaticae Plate XXIV



EXPLANATION OF PLATE XXV.

- JUBULA.** — Plant of typical *J. Hutchinsiae*, enlarged; two pairs of leaves seen from below; a lower lobe separate and divided; a perianth with its outer involucre and the dehiscent capsule; an elater.
- BLEPHAROSTOMA.** — Plant of *B. trichophylla*, and same enlarged; perianth with the outer involucre, ventral side; two cross-sections of perianth; portion of the margin of its orifice, expanded.
- LIOCHLÆNA.** — Plant of *L. lanceolata*; end of fertile branch, with two leaves, two involucre leaves, and young perianth; summit of perianth; perianth and involucre, the capsule protruding; capsule on its pedicel, with remains of calyptra; capsule dehiscent.
- MYLIA.** — Plants of *M. Taylori*, enlarged; portion of stem, seen from beneath; a cauline leaf (below); an underleaf; an involucre leaf (above); perianth partly cut away, showing the calyptra and exserted dehiscent capsule.
- DIPLOPHYLLUM.** — Plant of typical *D. albicans*, enlarged; a folded leaf; a leaf with the upper lobe expanded to show the nerve; an involucre leaf seen from without, and from within; perianth, cut longitudinally; calyptra.
- NARDIA.** — Plant of *N. crenulata* (a slender small-leaved form), enlarged; portion of upper stem with leaves; perianth; calyptra; elater and spores.
- JUNGERMANNIA.** — § 1. Plants of *J. Schraderi*, natural size and enlarged; two leaves; two underleaves; involucre; summit of perianth. — § 2. Plant of *J. barbata*, enlarged; portion of stem with leaves and underleaves; perianth with involucre; involucre. — § 3. Plant of *J. Helleriana*, enlarged; summit of stem with leaves, involucre, and perianth; involucre leaves; margin of perianth unfolded. — § 4. Plants of *J. inflata*, natural size and enlarged; cauline leaves; involucre leaf.
- LUNULARIA.** — Sterile and fruiting plants of *L. vulgaris*, enlarged; section of involucre, showing calyptra and capsule; lunate receptacle of sterile plant, with gemmæ.
- MARSILIA.** — Portion of plant of *M. quadrifolia*; a sporocarp; sporocarp burst in water and extruding the gelatinous ring with compartments attached.

