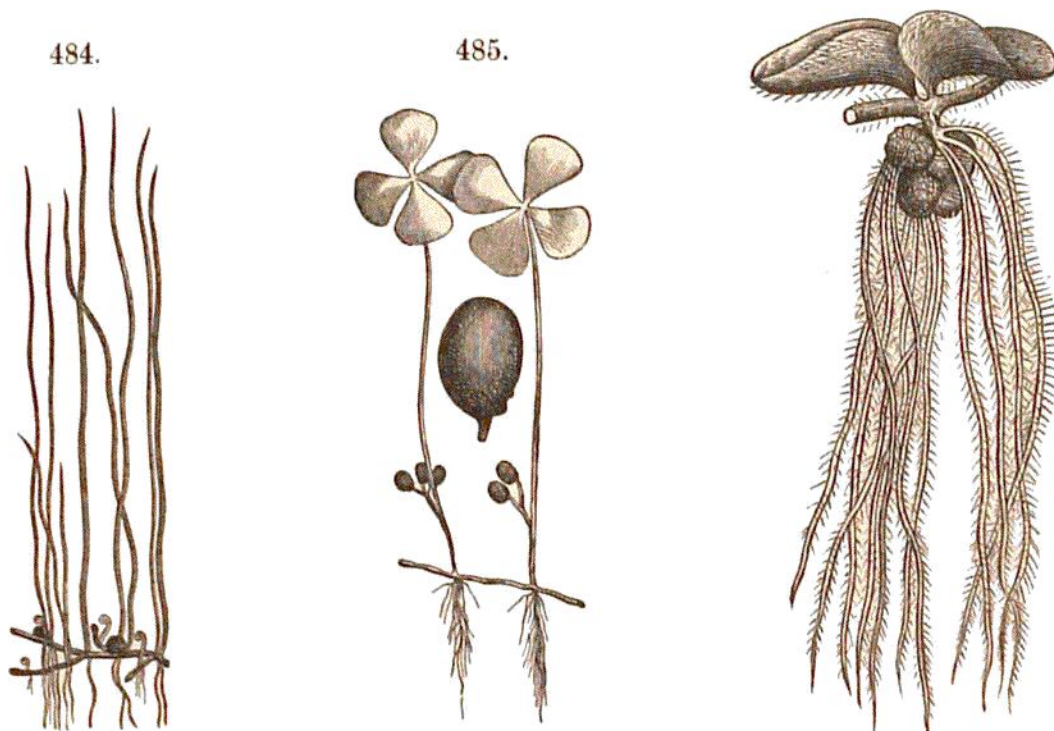


The other principal divisions of the Acrogens are the following:—

(1) *Equiseta*, or Horse-tails. — The existing species have hollow-jointed, slender stems; the leaves arranged in whorls at the nodes; and the cone-like fructification at the ends of the stems. Ancient species grew with stout trunks to a height of 30 feet or more.

(2) *Lycopods*, or Ground-Pines. — The Lycopods have many leaves, with the habit of



RHIZOCARPS. — Fig. 484, *Pilularia globulifera*, with fructification; 485, *Marsilea quadrifolia*, with an enlarged view of the nut; 486, *Salvinia natans*, part of plant. All half the natural size, Luerßen.

a Spruce or Pine; they are small plants now, but in the Coal era grew up as trees, 30 to 90 feet in height.

(3) *Ferns*. — Modern Ferns sometimes make trees 20 to 30 feet high.

## 2. The Lower Cryptogams.

The Lower Cryptogams consist of cellular tissue alone. The principal groups are:—

1. **Mosses**. — Green, terrestrial plants having delicate leaves along the slender stems; limited to a few inches in the height of the living part of stems. Closely related to the Mosses are the *Hepaticæ*, or Liverworts.

2. **Lichens**. — Dry plants, of gray, brown, and black colors, making fronds without leaves, which spread over the surfaces of rocks, the outer bark of trees, etc.

3. **Fungi**. — Succulent plants, gray to brown in color, and never green; without foliage; grading down to Molds, which consist of strings and groups of cellules, and to Bacteria and other microscopic, free-swimming, unicellular kinds.

4. **Algæ**, or Seaweeds. — The water-plants are green to brown in color, and contain more or less chlorophyl. They graduate downward from ordinary seaweeds to microscopic, free-swimming, unicellular kinds. Of like grade with the unicellular species are other kinds having the form of threads or groups of threads, each thread consisting of a series of cells. The lowest groups include the species of *Protococcus*, of which *P. nivalis* is red and gives the red color to the snow or ice in some Alpine regions. The Diatoms