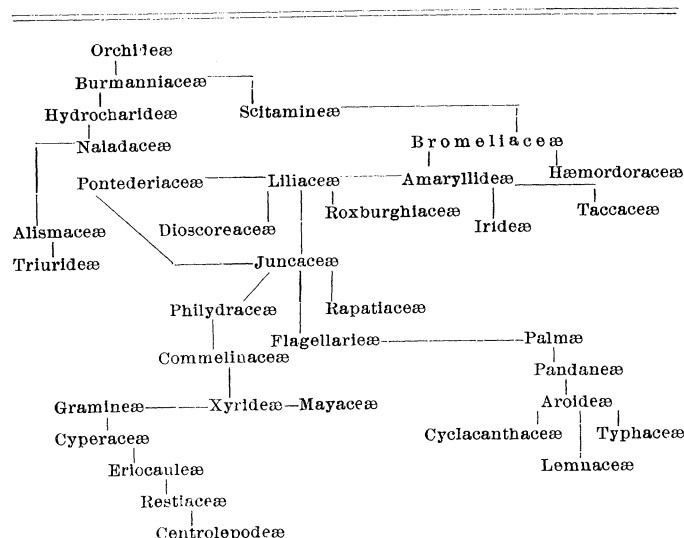


Chart of the Monocotyledons.



placing of Orchidaceae at the head of one alliance, and Gramineae of another, agrees with the general scheme. Again, among the dicotyledons Compositae is regarded as the highest and Ranunculaceae is placed well down in the scale. The whole arrangement is that of Engler and Prantl,<sup>2</sup> but it corresponds so well with the provisional outline suggested by the writer of this that he has called attention to it.

Professor MacMillan's plan in the citation of authorities is in

<sup>2</sup> Natur. Pflanzenfam., 1887-1893.

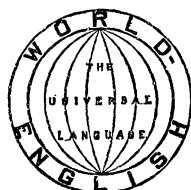
#### CALENDAR OF SOCIETIES.

##### Anthropological Society, Washington.

April 18.—J. Owen Dorsey, Siouan Photogenic Types; James Mooney, The Indian Messiah and the Ghost Dance (illustrated by Lantern Slides); Henry Gannett, Estimates of Wealth.

##### Society of Natural History, Boston.

April 19.—J. B. Woodworth, Traces of a Fauna in the Cambridge Slates; Charles P. Bowditch, Ruins of Central America.



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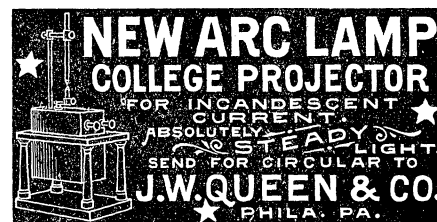
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which equals the old group Gamopetalæ. The classification may be tabulated as follows:—

- A.—Protophyta.
- B.—Metaphyta.
  - I. Gamophyta.
  - II. Sporophyta.
    - (1) Thallophyta.
    - (2) Archegoniata.
    - (3) Metaspermæ.
      - a. Chalazagamæ (a single genus *Casuarina*).
      - b. Porogamæ.
        - \* Monocotyledons.
        - \*\* Dicotyledons.
        - † Archichlamydeæ.
        - †† Metachlamydeæ.

While following the classification of Engler and Prantl to a large extent, Professor MacMillan takes issue with them upon some points. One of these is the nature of the Mycetozoa, or, as they are more commonly called, Myxomycetes. He believes them to be animals rather than plants. It is difficult for the present writer to see why the motility of the plasmodium of these plants, really the only animal-like feature they possess, should be regarded as very different in character from the motility of the swarm-spores of such universally recognized plants as *Hydrodictyon*, *Edogonium*, *Volvox*, and others. If motility in conjunction with lack of chlorophyll be evidence of the animal nature of the Myxomycetes, why should not the stationary *Hydra*, multiplying (as it can) when cut into small pieces, and possessing chlorophyll, be considered a plant? Or where are we to place *Dionæa*, *Drosera*, and the like, that present movements analogous to, if not precisely the same as, the contractile powers of many animals? The hard and fast lines between the animal and the vegetable kingdoms have long since been broken down, and there is as much justice in placing Myxomycetes with vegetables as in placing Protista with animals. The fact of motility, the absence of chlorophyll, or both combined, can scarcely be sufficient to

overbalance the preponderance of facts showing the distinct vegetable nature of the slime-molds.

There is a long and interesting discussion of the relationships of the metaspermic flora of the region, in which the general features of geographical distribution and the factors concerned with it are considered. The history of the region is regarded as of prime importance, and past time has been a most potent factor in the work. As the Metaspermæ have existed on the earth since as far back as Jurassic times, this history begins then. Glacial time, however, was the period most immediately concerned with the present distribution. Many plants previous to that epoch lived in Minnesota which were driven away never to return, or which were entirely exterminated; while, on the other hand, many species were found after the close of the period entirely unknown before. The Sequoias, once widely spread over the continent, but now occupying so restricted a range, he considers to be an indication of the great competition existing between plants in Tertiary times, their great height and giant bulk showing the magnitude of the struggle. So, on the other hand, the Compositæ are regarded as representing a type that permitted wonderful variation, and hence great adaptability to changed conditions.

The 150 pages devoted to statistics of the flora can only be mentioned here. Even a detailed statement of the heads treated of would give but a faint idea of the elaborateness of the discussion. A very full index (66 pages) gives easy reference to all species, genera, and orders mentioned. Altogether this is the most elaborate catalogue of plants of a limited district it has ever been our lot to examine. Its use of modern classification and nomenclature will make it of very great interest and value to all systematic botanists, and, while all may not agree with the author in his many suggestions or innovations, there are none but will recognize the enormous amount of labor put into the volume. It is greatly to be desired that other limited floras be as completely dissected and discussed.

JOSEPH F. JAMES.

Washington, D.C., March 27.

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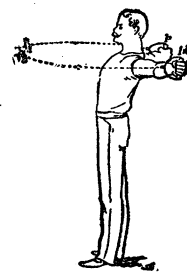
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