

Root. Cortex including numerous scattered fibrous strands.

Silica bodies. Silica cells adjacent to vascular bundles including silica bodies described as "hat-shaped."

The Anatomical Relation Between the Caryotoid Palms and the Palms as a Whole.

Palms can be classified, according to the way in which the leaf segments are folded, into two major groups. The induplicate palms have leaf segments which are V-shaped in section and include *Phoenix* together with most of the fan palms. The reduplicate palms have leaf segments which are A-shaped in section and include all the remaining feather palms together with the fan-leaved genera *Mauritia*, *Mauritiella* and *Lepidocaryum*. Correlated with these morphological features are certain anatomical arrangements conspicuous in the ribs of the segments and in the leaf axis. One could refer to these anatomical types as "induplicate" and "reduplicate." The caryotoid palms, however, are distinctive

because although they have induplicate morphology, their anatomy is undoubtedly of the reduplicate type.

The general anatomical conclusion about the caryotoid palms is that they can be recognized instantly from the type of hair base and guard cell they possess and apart from this that they form rather an isolated group within the palms as a whole.

Attention has been drawn to the shape of the silica bodies in caryotoid palms, this being hat-shaped and not spherical as in the arecoid palms within which the caryotoid palms have usually been included. It should be noted that several other groups of palms possess silica bodies of the same shape as those in the caryotoid palms, i.e. the bactroid, chamaedoreoid, iriarteoid and nypoid palms. However, these groups are apparently not closely related and this common feature has probably evolved independently within each group and may not be an indication of close phylogenetic affinity.

Harley Harris Bartlett 1886 - 1960

The Society has lost one of its very distinguished members by the recent death of Harley Harris Bartlett, retired Professor of Botany at the University of Michigan.

Professor Bartlett had been a diligent student of the palms and had accomplished important work with them, frequently publishing on them over a period of years.

He was born March 9, 1886, at Anaconda, Montana. In 1904 he matriculated at Harvard University. He re-

ceived the A. B. degree *cum laude* in Chemistry in 1908. He took only one or two formal courses in Botany.

Professor Bartlett had extraordinary linguistic accomplishments, his attainments including fluency in Malayan and a knowledge of the finer points of the language of the Batak people in Sumatra. How many Latin descriptions of new species of plants were to come from his pen to bolster the taxonomic contributions of fellow botanists, less skilled in the classical languages!

He joined the staff of the Department of Botany of the University of Michigan

in 1915 as an Assistant Professor, and rose to a professorship within six years. He presided over the Department as an intellectual leader and powerful though benevolent administrator for 25 years. He developed the Botanical Gardens as its Director from 1915-1955.

In 1918 he made his first of many trips to foreign lands, on this initial one as a botanist with the U. S. Rubber Company in Sumatra. He conducted botanical and agricultural field work and research in Sumatra, the Philippines, Formosa, Mexico, Guatemala, British Honduras, Panama, Haiti, Argentina, Uruguay and Chile under the auspices of the University of Michigan, the United States Rubber Company, the Smithsonian Institution, the Carnegie

Institution of Washington, the University of the Philippines, and the U. S. Department of Agriculture.

Professor Bartlett's known list of publications numbers over 150 titles. They reflect a major interest at first in taxonomy, then in turn plant chemistry, genetics, and anthropology. Original observations are recorded also in paleobotany, plant anatomy and morphology, plant geography, radiation, ethnology, history, linguistics, education and philately.

He was unmarried.

Chiefly extracted from an account signed by K. L. Jones, Rogers McVaugh and Wm. Randolph Taylor.

How Many Kinds of Palms Are There?

The question is often asked "How many kinds of palms are there?" In order to answer this question with some accuracy, I counted genera and species in 1954 using my own provisional keys to genera and attempting through the use of monographs, floras, and personal knowledge to eliminate synonymous names from consideration in the number of species. The figures are not exact but seem a reasonable estimate. A reduction in the number of genera may be expected when relationships among the arecoid palms are better understood and it is certain that the number of species will change as new ones are discovered and described and as many old species become better known. Figures for 1960 are essentially those of 1954.

A total of about 230 genera and 2640 species in round numbers is distributed as follows. The "induplicate" palms include about 44 genera and 422 species: Borassoideae 7 genera and 42 species; Caryotoideae 3 genera and 38 species; Coryphoideae 33 genera and 330 species; Phoenicoideae 1 genus and 12 species. The "reduplicate" palms number about 186 genera and 2220 species: Arecoideae about 130 genera and 1100 species; Cocoideae 27 genera and 610 species; Lepidocaryoideae 24 genera and 500 species; Nypoideae 1 genus and 1 species; Phytelephantoideae 4 genera and 8 species.

It is of interest to note that the arecoid palms account for more than half the genera and somewhat less than half the species, a situation not likely to be radically changed even if further small subfamilies are segregated from them. The cocoid palms follow in number of species though not of genera. The smallest subfamily consists solely of *Nypa fruticans*.

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