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OBSERVATION ON DOUBLE COCONUT IN THE INDIAN BOTANIC GARDEN

1. Lodoicea maldivica (J. F. Gmel.) Pers. (Arecaceae)—Fig. 1.

Commonly known as Double coconut or coco de Mer Lodoicea maldivica (J. F. Gmel.) Pers. (Syn. L. seychellarum Labill) is a very large palm with gigantic leaves and bearing the largest seed in the plant kingdom. For centuries the seed was attributed to have a supernatural origin until the tree itself was discovered in 1743.

It is an indigenous plant of Seychelles found in Praslin ('Isle of Palms) and Curieuse Island, and is protected by law, as the demand for nuts by tourists and others constitutes a threat to the species. Recently Government of the Republic of Seychelles has taken over the sole distribution and sale of the nut at a fixed price for controlling over-exploitation.

This wonderful plant was introduced in the Indian Botanic Garden in 1894 and cultivated in the Large Palm House located in Divn. No. 17. Germination of the seed and initiation of the first two leaves took about ten years. One leaf is produced at a time in a very close spiral to the left, around the stem. Growth of the plant is very slow, apparently 3-4 cm a year. The base of the tree lies about 2 m under the ground. The sheathing bases of older leaves are still persisting around the trunk measuring together about 25-28 cm across (including the bases). The crown is about 10 m in height. The leaf arises like a large rod, gradually appearing as a folded fan and later opening into a broadly ovate blade with subpendulous folds or segments, 4-10 cm broad. They are yellowish green, 4-6 m long and 2-4 m wide on stout stalks 2-4 m long, the bases



Fig. 1. Lodoicea maldivica (G. F. Gmel.) Pers. showing a view of the 86 years old tree.

clasping the stem up to about one third of its circumference. Older leaves are removed when they become yellow while drying, leaving about twelve in number forming the crown.

According to the literature on the subject, the plants bear male and female flowers on different trees after 14-30 years of growth. But the tree in Indian Botanic Garden is yet to bear flowers though it is about 86 years old.

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TAXONOMIC NOTES ON LYCOPODIUM ANNOTINUM L. AND L. VEITCHII CHRIST

Linnaeus (1753) characterised his Lycopodium annotinum as having leaves sparse, 5-whorled, wavy to subserrate, strobili solitary and sessile. In India Clarke (1880) was the first to describe L. annotinum L. However, the material that he described was not homogeneous as discovered by later studies. Clarke himself had noticed that his material differed from the Linnaean material in the strobili being distinctly peduncled but he did not realise the significance. Tagawa (1971) and Iwatsuki (1975) who collected the plants with peduncled strobili from Nepal and Bhutan Himalayas identified their material as L. veitchii Christ and cited in synonymy L. annotinum sensu Clarke. However, Clarke's material was partly L. annotinum and partly L. veitchii. Material of the several herbaria were studied and L. annotinum or L. veitchii were identified. The two species can be differentiated as follows:

Leaves lanceolate; strobili sessile; sporophylls ovate ... L. annotinum Leaves deltoid-lanceolate; strobili peduncled; sporophylls ovateauriculate ... L. veitchii

L. annotinum L. Sp. Pl. 2: 1103. 1753; Spring in Mem. Acad. Sci. Belg. 15(1): 78. 1843 & 24(2): 36. 1850; Clarke in Trans. Linn. Soc. Lond. II. Bot. 1: 592. 1880 (pro parte).

wide trailing, branched; Main stem branches ascending, upper simple, lower copiously compound, constricted at intervals simulating nodes where growth has been suspended (may be an indication of yearly growth). Leaves 5-whorled, clcse, spreading to reflexed, glaucous, pale-brownishgreen when dry, lanceolate, $3-5 \times 1-2$ mm, acute to mucronate, margins wavy to subserrate thick in texture, midrib distinct. Strobili solitary, sessile at the end of leafy branchlets, cylindrical, 2.5 - 4.0 cm × 4 - 6 mm. Sporophylls broadly ovate, short cuspidate. ascending brownish-green, imbricate, wavy to irregularly denticulate in margins. Spores trilete, 35-40 µ m, yellow, reticulate. (Figs. 1-3).

Specimens examined: UTTAR PRADESH: Kumaon: Furkia, 3500-5000 m, 23.9.1957, T A. Rao 4505 (BSD); Pindari Noriaine, 3500-5000 m, 24.9.1957, T A. Rao 4505 Acc. no. 10260 (BSD); Bogdwar bugyar, 3200-4500 m, 21.6.1958, T. A. Rao 7123 (BSD). SIKKIM: 3500-4000 m, Aug. 1836, Herb. Hook. f. & Thomson, s. n. Acc. no. 29499 (CAL). MEGHALAYA: Khasia, 2000 m, Herb. Hook. f. & Thomson, s. n. Acc. no. 29570, Plant numbered 6 (CAL). NEPAL: Western part, 4000-4500 m, 25.7.1886, Duthie 6308. CHINA: Hupeh, 1899, Henry 6986, two sheets (CAL). JAPAN: Tokyo, Mawrike, 1500 m,