

KEYS FOR IDENTIFYING MALAYSIAN PLANTS

The Flora Malesiana is not preceded by a general key enabling one to identify any unknown native or wild plant to the family or genus to which it belongs. This is certainly a serious lack and presents a formidable handicap to inexperienced taxonomists in rapid naming current collections.

However, there are several forcing arguments for omitting—at present—such an attempt which in itself would present no facile task, and could be accomplished only by a taxonomist thoroughly acquainted with the Malaysian flora. One could of course use some world key as a basis and cut out the entries leading to genera or families not represented in the Malaysian flora, but this procedure would be unsatisfactory, specially as these world keys make little use of vegetative characters; the latter appear to me very important specially in the earlier forks of the keys.

The difficulty in compiling a general key at the start of Flora Malesiana is mainly caused by the numerous exceptions to current interpretation and definitions of taxonal characters. These become only known when the taxa concerned have been thoroughly revised. Some random chosen examples will illustrate this: Leaves in *Ilex* are generally accepted to be spirally arranged, but MERRILL recently described some Bornean species with opposite leaves. The same author described a *Dichapetalum* with entire petals, though hitherto the bifid or emarginate petals were accepted to be characteristic of the genus. RIDLEY described an other species of this genus with 4-merous flowers. In *Leea* a species has been described with tetramerous flowers, in *Erythralum* one with 3 stamens without staminodes, and in *Cyrtandropsis* one with unisexual flowers. Cauliflory has been added as an extension of the generic characters of *Radermachera*. In *Thymelaeaceae-Gonystyloideae* one representative has been found to possess practically opposite leaves and an annular corolla. A *Uvaria* has been described with distinctly sympetalous corolla. One *Phytocrene* has its ♂ flowers arranged in solitary axillary heads. *Mastixiodendron*, the only representative of the Cornaceae with interpetiolar stipules, has been removed to the Rubiaceae. *Oleaceae*, generally defined in Malaysia with opposite leaves and two stamens show sometimes alternate leaves and in Javan *Olea* I found not rarely 3-4 anthers. Recently a *Quercus* was described with leaves in whorls of three. In *Premna* herbaceous species were recorded. In *Pentaphragma* some species possess a gamopetalous corolla. *Myricaceae* and *Celastraceae*, mostly accepted as exstipular have proved to possess stipules occasionally. In the *Myrtaceae* several aberrant genera have been discovered with few or only one basifixed seed. All these characters tend to extend the generic and family diagnoses and should be accounted for in general keys.

Another serious difficulty is that a number of genera have been referred to families to which they apparently do not belong; their descriptions are not seldom inadequate.

Finally, revisions show that quite a number of genera, either unknown to science or not yet recorded from the Malaysian flora occur within its boundary.

These arguments serve to demonstrate, that it is inadvisable to make a premature attempt towards a general key to the genera, that it would be hardly possible to make it reliable, and impossible to make it complete.

For the aim of referring specimens to a family there are some sources which have often yielded good results. They are the following:

BACKER, C. A.: *Schoolflora voor Java*. Weltevreden 1911, p. vii-cii.—Contains an original key to Javanese plants which has proved to be often useful for regions outside Java, though based on characters strictly belonging to the Javanese species.—In Dutch.

—: *Onkruidflora der Javasche suikerrietgronden*. Handboek ten dienste van de Suikerriet-cultuur en de rietsuikerfabricage op Java. Vol. 7. Soerabaja 1934, p. LXXIII-LXXXVII.—Key to c. 750 weeds of sugarcane fields in Java.—In Dutch.

ENDERT, F. H.: *Geslachtstabellen voor Nederlandsch-Indische boomsoorten naar vegetatieve kenmerken*. Thesis, Wageningen, 1928. Appeared also as 'Mededelingen van het Boschbouwproefstation te Buitenzorg' vol. 20, 1928, 242 pp. (Commun. For. Res. Institute Buitenzorg).—Key to the genera containing trees in Indonesia based on vegetative characters with the aid of a hand-lens. Of paramount value. Incomplete for Papuan genera.—In Dutch.

GAGNEPAIN, F.: *Clef analytique et synoptique des familles de plantes vasculaires décrites dans la Flora générale de l'Indo-Chine*. Supplément à la Flore générale de l'Indo-Chine.—Private issue, Paris 1922, 34 pp.. Published in a slightly revised edition in the said Flora, tome préliminaire. Paris 1943, p. 50-89.

HUTCHINSON, J.: *Families of flowering plants*. Vol. 1, Dicotyledones, London 1926, p. 9-80. Vol. 2, Monocotyledones, London 1934, p. 9-25.—An exceedingly useful, general key covering all genera.

MERRILL, E. D.: *A flora of Manila*. Manila 1912, p. 33-45.—A small key of a local flora, still original and not without merits for identifying specimens outside the area it covers.

ST JOHN, H. & F. R. FOSBERG: *Identification of Hawaiian plants*. Part 1, Dicotyledons. University of Hawaii, Occas. Pap. no 36, 1938, p. 4-25; part 2, Gymnosperms & Monocotyledons, *op. cit.* no 41, 1942, p. 5-13.—Intended only for Hawaii; the second part gives keys as far as the genera.

THONNER, F.: *Anleitung zum Bestimmen der Familien der Blütenpflanzen*. 2nd edition, 1917, Berlin, 280 pp.—Originally based on a general key to African plants but extended to all flowering plants.