

ON THE IDENTITY AND NOMENCLATURE OF SOME INDIAN PLANTS

J. K. MAHESHWARI

Systematic Botanist, Central National Herbarium,
Botanical Survey of India, Sibpur

ABSTRACT

The paper deals with the nomenclature, synonymy and identity of some Indian species of *Randia* Linn. (*sensu lato*), *Butea* Koen. ex Roxb., and *Gymnosporia* Bth. & Hk. f. Recent work has shown that nomenclatural changes are required in these genera and a few critical points have to be elucidated and corrected. These are discussed in the following pages. Two new combinations are also proposed.

XEROMPHIS Rafin.

The genus *Xeromphis* Rafin. (*Sylva Tellur.* 21, 1838) is given as a synonym of *Randia* Linn. in *Index Kewensis*. Recent studies of Keay (*Bull. Jard. Bot. Etat Brux.* 28: 37-39, 1958) on West African species have shown that *Randia* Linn. (*sensu lato*) is a very heterogeneous, pantropical assemblage of species. He proposed that *Randia* Linn. sect. *Ceriscus* Hook. f., should be transferred to the genus *Xeromphis* Rafin. Both pollen and floral morphology seem to support this separation. The two genera may be distinguished as follows:

Xeromphis	<i>Randia</i> (<i>sensu stricto</i>)
1. Pollen grains single.	1. Pollen grains in tetrads.
2. Inside of corolla tube with a distinct band of long hairs.	2. Inside of corolla tube with scattered hairs or glabrous.
3. Placentae in the centre on either side of a distinct septum which divides the ovary.	3. Placentae on the walls of the ovary and usually, but not always meeting to make the ovary spuriously bilocular.
4. Seed masses distinctly divided by the septum in fruit.	4. Seeds in a single mass which comes away from the walls of the fruit.

TYPE SPECIES: *Xeromphis retzii* Rafin. = *Xeromphis spinosa* (Thunb.) Keay.

DIAGNOSTIC CHARACTERS: Branches usually armed with spines formed from modified lateral branchlets; flowers 1-2 (-3) together, terminating opposite pairs of very much abbreviated leafy lateral shoots; corolla tube with a ring of hairs within; ovary bilocular, placentae attached to the septum which divides the seed masses in fruit; pollen grains single.

(1) **Xeromphis spinosa* (Thunb.) Keay, *Bull. Jard. Bot. Etat Brux.* 28: 37, 1958.

Gardenia spinosa Thunb. *Diss. Gard.* no. 7, 1780; Willd. *Sp. Pl.* 1: 1229, 1798.

G. spinosa Linn. f. *Suppl.* 164, 1781.

* For a lengthy synonymy of this plant, see Keay (*loc. cit.*).

G. dumetorum Retz. *Obs.* 2: 14, 1781; Willd. *Sp. Pl.* 1: 1229, 1798.

Canthium coronatum Lam. *Encyc. Méth. Bot.* 1: 602, 1785.

C. chinense Pers. *Syn. Pl.* 1: 200, 1805.

Randia dumetorum (Retz.) Poir. in *Lam. Encyc. Suppl.* 2: 829, 1811; Hook. f. *Fl. Brit. Ind.* 3: 110, 1880; auct. indic. passim.

R. spinosa (Thunb.) Poir. *loc. cit.*; Blume, *Bijdr.* 981, 1825.

R. longispina Wt. & Arn. *Prod.* 398, 1834.

Xeromphis retzii Rafin. *Sylva Tellur.* 21, 1838.

Randia brandisii Gamble, *Fl. Madras* 616, 1921.

This is the plant listed in Indian floras under the name of *Randia dumetorum* (Retz.) Poir. Keay has shown that the complex group of plants generally included under *Randia dumetorum* (Retz.) Poir. should be called *Xeromphis spinosa* (Thunb.) Keay. Gamble in his *Flora of Madras* has split this group into several species. However, an examination of the material collected from India, South China and neighbouring islands has revealed that there is a good deal of variation in the amount of indumentum on the ovary and calyx, and that only one species is involved.

The type material of *Gardenia spinosa* Thunb., the basionym of this species, was collected at Macao, South China, by P. J. Bladh. *Gardenia dumetorum* Retz. and *G. spinosa* Linn. f. both described in 1781, were based on specimens (possibly duplicates of the same material) collected in Madras by J. G. Koenig. It was believed for a long time that Bladh's specimens from Macao and Koenig's specimens from Madras, represented two different species (cf. Aiton, *Hort. Kew.* 1: 295, 1789; Willdenow, *Sp. Pl.* 1: 1229, 1798; Poiret in Lamarck, *Encyc. Méth. Bot. Suppl.* 2: 829, 1811) and, therefore, the name *Randia dumetorum* (Retz.) Poir. became firmly established for the Indian plant. However, it is now accepted that *Randia spinosa* (Thunb.) Poir. and *Randia dumetorum* (Retz.) Poir. are conspecific (Merrill, *Lingnan Sci. J.* 5: 174, 1924 et in *Trans. Amer. Phil. Soc. N. S.* 24: 367, 1935; Keay, *loc. cit.*). The earliest validly published name for this plant is, therefore, Thunberg's *Gardenia spinosa*, of 1780, on the basis of which the above combination was made by Keay.

TYPE LOCALITY: Macao, South China (P. J. Bladh).

DISTRIBUTION: India; Ceylon; Burma, S. Kurz; Malay Peninsula, B. Scortechini 95; South China, P. J. Bladh; Trop. E. and W. Africa, R. W. J. Keay.

INDIA—N.-W. HIMALAYA: without exact locality, *Herb. Royle*; Garhwal, 30 m., T. Thomson; Kumaon, Anderson; Dehra Dun, Mackinnon. E. HIMALAYA: Mungpoo, C. W. Cousins 82; Sikkim, 90 m., G. King 2148, S. Kurz; Badawtaw, Darjeeling, J. S. Gamble 9722. PUNJAB: Hoshiarpur, Aitchison. MADHYA PRADESH: without exact locality, Jerdon; Nimar Dist., J. K. Maheshwari, D. O. Witt. PENINSULAR INDIA: Rampa Dist., Madras State, V. Narayanswami 329; Tirukarungudi to Naterikal, Tinnevely Dist., D. Hooper and M. S. Ramaswami 38459; Sangam Hill, Nellore Dist., M. S. Ramaswami 1122; Nilgiris, B. Schmid; Coimbatore, C. E. C. Fischer 1052; Shevaroi Hills, Perrottet 351; Mysore and Karnatak, G. Thomson; Mahabaleshwar, D. Hooper 34601, N. Dalzell; Courtallum, Travancore, M. Rama Rao 2032; N. Kanara, W. A. Talbot 371; Malabar Dist., C. E. C. Fischer 2474; Lower Pulneys, G. Rodriguez 1910. BIHAR: Chota Nagpur, D. Prain, J. J. Wood; Rajmahal Hills near Sahibganj, S. Kurz. BENGAL: Dinajpur, C. B. Clarke 26434 A; Dacca, C. B. Clarke 20088 C; Siliguri, in the jungles along Mahanadi, S. Kurz. ASSAM: Makum, Dihing River, G. A. Gamble 57; Lumding, Nowgong, U. N. Kanjilal 2899; Tipperah Hill, Abhoynagar, near Agartala, P. M. Debbarman 357; Falkata, *Herb. G. Watt* 12150.

(2) *Xeromphis uliginosa* (Retz.) Maheshwari, *comb. nov.*

Gardenia uliginosa Retz. Obs. 2: 14, 1781; Roxb. Pl. Corom. t. 135, 1798.

Randia uliginosa DC. Prod. 4: 386, 1830; Wt. & Arn. Prodr. 398, 1834; Hook. f. Fl. Brit. Ind. 3: 110, 1880; auct. indic. passim.

Posoqueria uliginosa Roxb. Fl. Ind. 1: 712, 1832.

In our floras the name of this plant is given as *Randia uliginosa* Roxb. The oldest validly published name for this plant is that of Retzius, *Gardenia uliginosa*, of 1781. As this specific epithet is only the valid one, the above new combination is made for the species, in accordance with the provisions of Article 55 of the Code.

TYPE: *Koenig s. n.* (India).

DISTRIBUTION: India; Burma, S. Kurz; Nepal, Inayat.

INDIA—N.-W. PROVINCES: Banda, A. S. Bell 159. N.-W. HIMALAYA: Garhwal, Bhabur, G. King. C. HIMALAYA: Gulma Forest, Terai, J. S. Gamble 3766 C. E. HIMALAYA: Sukna Tarai, Sikkim, G. H. Cave; Tarai, E. A. C. Modder 334 K; Siliguri, J. L. Lister. MADHYA PRADESH: without exact locality, Jerdon; Nimar Dist., D. O. Witt, J. K. Maheshwari. GUJARAT: without exact locality, Woodrow. PENINSULAR INDIA: Malabar, Konkan, Stocks, Law; Kanara, Ritchie 343. BIHAR: Chota Nagpur, J. J. Wood, J. S. Gamble 9107. BENGAL: Dacca, C. B.

Clarke 2009 D. ASSAM: Khasi Hills and Brahmaputra Plains, *Herb. S. Kurz* 111.

(3) *Butea monosperma* (Lam.) Taub. in Engl. et Prantl, Nat. Pflanzenfam. 3(3): 366, 1894; Blatter. J. Indian Bot. Soc. 8: 134, 1929; Bor, Man. Ind. For. Bot. 92, 1953; Blatt. et Mill. Beaut. Ind. Tr. (ed. 2) 12, t. 2, 1954.

Erythrina monosperma Lam. Encyc. 2: 391, 1790.

Butea frondosa Koenig ex Roxb. in Asiat. Res. 3: 469, 1792; Pl. Corom. 1: 21, t. 21, 1795; Fl. Ind. 3: 244, 1832; auct. indici.

Plaso monosperma Kuntze, Rev. Gen. Pl. 1: 202, 1891.

This characteristic Indian tree has for a long time been referred to as *Butea frondosa* Koenig ex Roxb. The oldest published name for this plant is that of Lamarck, *Erythrina monosperma*, of 1790. As the specific epithet is only the valid one, Taubert made the combination *Butea monosperma* (Lam.) Taubert, *loc. cit.*, which is now accepted as the correct name of this plant. However, in checking the authorship of this name, it appears from the literature that the new combination is often wrongly attributed to Otto Kuntze (Rev. Gen. Pl. 202, 1891), who cited this name merely as a synonym of *Plaso monosperma*. According to the rules, this method of publication is not valid and, therefore, the authorship of *Butea monosperma* must be attributed to Taubert.

VAR. 1. *monosperma*

TYPE LOCALITY: Malabar (India).

DISTRIBUTION: India; Ceylon; Burma, S. Kurz.

INDIA—N.-W. HIMALAYA: Dehra Dun, P. W. Mackinnon, T. W. Forster 39, G. King. E. HIMALAYA: Tarai, E. A. C. Modder 306. K. PUNJAB: Delhi, Ridge, J. K. Maheshwari 658. RAJASTHAN: Marwar, G. King; Aboo, ex *Herb.* Cal. SAURASHTRA: Rajkot, ex *Herb.* Cal. GUJARAT: without exact locality, Graham. MADHYA PRADESH: Goona, G. King 45; Gwalior, C. Maries 310; Khandwa, J. K. Maheshwari. PENINSULAR INDIA: without exact locality, *Herb. Wight* 744; Annamallai Hills, C. E. C. Fischer 3702; Coimbatore, C. E. C. Fischer 1439; Shevaroi Hills, Perrottet 502; Malabar, Konkan, *Herb. Hook. f. et Thomson*. BENGAL: without exact locality, S. Kurz. ASSAM: Teock jungle near Tingali, M. A. Hock 684; Tipperah Hill, Agartala, P. M. Debbarman 1063.

VAR. 2. *lutea* (Witt) Maheshwari, *comb. nov.*

Butea frondosa Koen. ex Roxb. var. *lutea* Witt, Descrip. List, N. et Ber. For. Circ. C. P. 75, 1916.

Butea lutea Sagreiya, Indian For. 65: 560, 1939.

Differs from the typical form in flowers yellow, canary-yellow or pale yellow.

TYPE LOCALITY: Kharbi, Yeotmal Division, M. P. (C. G. Rogers.)

DISTRIBUTION: India: Kinwat Reserve, M.P., D. O. Witt; Burhanpur-Amraoti Road, M.P., K. P. Sagreiya; Manpur Fargana, M.P., C. E. Luard; Amraoti, Berar, D. O. Morris;

Ghodra, Panch Mahals, *Ommanney*; Malabar Hill, Bombay; Duke's Nose, Khandala, *G. Carstensen*. Also cultivated in gardens.

Maytenus H. B. et K. OR Maytenus Molina?

In Indian floras the genus *Maytenus* (Celastraceae) goes under the name of *Gymnosporia* Benth. & Hk. f. (Gen. Pl. 1: 365, 1862). Modern authors have united the latter genus with *Maytenus sensu lato* (Exell, 1952; Blakelock, 1956; Cufodontis, 1958). It appears from the literature that the correct authorship of *Maytenus* has for long remained a debatable point. The two publications of *Maytenus*, namely *Maytenus* Molina (Sagg. Stor. Nat. Chili, ed. 1, 177, 1782) and *Maytenus* H. B. et K. (Nov. Gen. et Sp. Pl. 7: 64-65, 1825) apply to the same taxon. Blakelock Taxon, 3: 196-197, 1954) proposed under number 4626 that the generic name *Maytenus* H.B. et K. should be treated as a "nomen conservandum" over *Maytenus* Molina and *Haenkea* Ruiz et Pavon (Fl. Peruv. Chil. Prodr. 36, t. 6. 1794 et Syst. Veg. 65, 1798). The reasons for this proposed conservation are: (1) Molina's original description is an error, (2) Molina corrects this in his second edition where *Maytenus* is treated as a synonym of *Celastrus*, (3) established custom regards *Maytenus* as a member of the Celastraceae; Molina treats it under Oleaceae? The proposer stated further that Humboldt, Bonpland and Kunth were the first to give a correct diagnosis of the generic characters, but Bosc (*vide* Rickett in Taxon, 9: 15, 1960) in 1803 had already emended Molina's genus. In a recent report of the Committee for Spermatophyta, Conservation of Generic Names (Rickett in Taxon 9: 15, 1960), it has been recommended that an erroneous generic description is in itself no sufficient reason for conservation of a later publication. Further, there is no doubt of the identity of *Maytenus* Molina. The genus *Maytenus*, therefore, must be ascribed to Molina as emended by Bosc (1803), without legislation. *Haenkea* Ruiz et Pavon is, then, a later synonym. *Maytenus boaria* Molina is the type species of the genus.

(4) **Maytenus senegalensis* (Lam.) Exell in Bull. Soc. Brot. (2 ser.) 26: 223, 1952; Cufodontis in Bull. Jard. Bot. Etat Brux. Suppl. 28: 479, 1958.

Celastrus senegalensis Lam. Encyc. 1: 661, 1783.

C. glaucus R. Br. apud Salt, Voy. Abyss. App. 64, 1814.

C. montanus Roth, Nov. Pl. Sp. 154, 1821.

C. decolor Del. Voy. Méroë, 100, t. 64, f. 6, 1826.

C. coriaceus Guill. et Perr. Fl. Seneg. Tent. 1: 142, 1831.

C. europaeus Boiss. Elench. 29, 1838.

Catha europaea (Boiss.) Boiss. Voy. Espagne 2: 725, 1845.

C. decolor (Del.) Webb, Fragm. Fl. Aethiop. 60, 1854.

C. senegalensis (Lam.) Webb, Fragm. Fl. Aethiop. 61, 1854.

Gymnosporia montana (Roth) Benth. Fl. Austral. 1: 400, 1863; Lawson in Hook. f. Fl. Brit. Ind. 1: 621,

*The lengthy synonymy of this much debatable plant is based on the authority of Cufodontis (*loc. cit.*).

1875; Cooke, Fl. Pres. Bombay 1: 233, 1902; Gamble, Fl. Madras 209, 1918.

Gymnosporia europaea (Boiss.) Masf. in Anal. Soc. Esp. Hist. Nat. 10: 176, 1881.

G. crenulata Engler, Bot. Jahrb. 10: 38, 1889.

G. senegalensis (Lam.) Loes. in Bull. Herb. Boiss. 4: 430, 1893.

G. spinosa Fiori, Bos. Piante legn. Eritrea 225, 1909, non Merr. et Rolfe, 1908, non *Catha spinosa* Forsk. Fl. Aegypt. Arab. 64, 1775.

The nomenclature of this plant is rather complicated. It is known in Indian floras under the name of *Gymnosporia montana* Benth.; some systematists consider that the proper name of the plant ought to be *Gymnosporia senegalensis* (Lam.) Loes. (based on *Celastrus senegalensis* Lam.), or *Gymnosporia spinosa* Fiori (based on *Catha spinosa* Forsk.). It has been stated earlier that the genus *Gymnosporia* Benth. et Hk. f. (Gen. Pl. 1: 365, 1862) has been partially united with *Maytenus* Mol. emend. Bosc, by Loesener (in Engler et Prantl, Nat. Pflanzenfam. 2 ed. 20 B, 1942) and fully united with it by Exell and, following him, Blakelock (Kew Bull. 240, 1956) and Cufodontis (Bull. Jard. Bot. Etat Brux. Suppl. 28: 477-481, 1958). Furthermore, Blakelock has shown that *Catha spinosa* Forsk. is to be classified as a variety of *Gymnosporia ovata* Lawson ex Hook. f. (Fl. Brit. Ind. 1: 619, 1875), and becomes *Maytenus ovatus* Loes. var. *kurmaicus* Blakelock. It may be noted that the combination *Maytenus spinosus* is pre-occupied by a South American plant—*Maytenus spinosus* (Griseb.) Lourt et O'Donnell (based on *Moya spinosa* Griseb.). The correct name for *Gymnosporia montana* Benth. is *Maytenus senegalensis* (Lam.) Exell (B. L. Burt in litt.)

TYPE: *Adanson* (Senegal), cult. in Horto Parisiensi.

DISTRIBUTION: India; Burma. *C. G. Rogers* 540. *A. Meebold* 17287; Afghanistan, *Herb. Griffith* 1990; Baluchistan, *J. H. Lace* 3617; Trop. Africa; Arabia; Ethiopia; S.-W. Europe; Malaya; Australia.

INDIA—PUNJAB: Rohtak Dist., *Bailey*; Delhi, *C. B. Clarke* 23420, *J. K. Maheshwari* 463. RAJASTHAN: Marwar, *G. King*. KUTCH: without exact locality, *Stoliczka*. UTTAR PRADESH: Bundelkhand, *Vicary*. MADHYA PRADESH: without exact locality, *Jerdon*, *Schlich*; Nimar District, *J. F. Duthie* 8212, *J. K. Maheshwari*. PENINSULAR INDIA: Dharwar Dist., *Herb. L. J. Sedgwick* 1918; Poona Dist., *Woodrow*, *V. M. Tilak*; Khandesh, *Edgeworth*; Malabar, Konkan etc., *Stocks*, *Law*; Kanara, *Sirsi*, *Hohenhacker* 734; Nellore Dist., Madras State, *C. E. C. Fischer* 4202, *M. S. Ramaswami* 1202; Cuddapah Dist., *C. E. C. Fischer* 4772. BIHAR: without exact locality, *S. Kurz*.

(5) *Maytenus ovatus* (Wall. ex Wt. & Arn.) Loesener var. *ovatus* forma *ovatus*

Celastrus ovatus Wall. ex Wt. & Arn. Prodr. 159, 1834.

Catha ovata (Wall. ex Wt. & Arn.) Walp. Rep. 1: 532, 1842.

Celastrus obscurus Rich. Tent. Fl. Abyss. 1: 132, 1847.

Gymnosporia ovata (Wall. ex Wt. & Arn.) Lawson ex Hook. f. Fl. Brit. Ind. 1: 619, 1875; Gamble, Fl. Pres. Madras 210, 1918.

G. obscura (Rich.) Loes. in Bot. Jahrb. 17: 546, 1893.

G. addat Loes. in Bot. Jahrb. 41: 302, 1908.

G. serrata (Hochst.) Loes. var. *niansaica* Loes. loc. cit.

In Indian floras this plant is listed under *Gymnosporia ovata* (Wall. ex Wt. & Arn.) Lawson ex Hook. f. Loesener (in Engler et Prantl, Nat. Pflanzenfam. 20 B: 140, 1942) proposed the new combination, *Maytenus ovatus* Loes. based on *Celastrus ovatus* Wall. ex Wt. et Arn. He was followed by Blakelock (Kew Bull. 239, 1956) and Cufodontis (Bull. Jard. Bot. Etat Brux. Suppl. 28: 478, 1958) who, however, reduced the Indian species to *Maytenus ovatus* Loes. var. *ovatus* forma *ovatus*. The close relatives of the Indian form, namely *Maytenus ovatus* Loes. var. *ovatus* forma *pubescens* (Schweinf.) Blakelock (Kew Bull. 240, 1956), *M. ovatus* Loes. var. *argutus* (Loes.) Blakelock (241) and *M. ovatus* Loes. var. *kurmaicus* Blakelock (242) are known to occur in Tropical Africa, Arabia and Ethiopia. The distinguishing characters are: "Leaves usually coriaceous or subcoriaceous, 5-12 nerves prominent on both surfaces, apex obtuse to rounded, margin serrate or crenate-serrate. Inflorescence, glabrous, 0.5-3.5 cm. long. Capsule 4-10 mm. long." The only clear character which distinguishes this plant from forma *pubescens* is the glabrous inflorescence. Blakelock has, therefore, preferred to regard the Indian plant as a form of *Maytenus ovatus* Loes., rather than a variety with the same status as vars. *argutus* and *kurmaicus*.

The lengthy synonymy of this plant is based on the authority of Blakelock (Kew Bull. 239, 1956) and Cufodontis (Bull. Jard. Bot. Etat Brux. Suppl. 28: 478, 1958).

TYPE: *Noton ex Herb. Wallich* 4308 (Nilgiris, India).

DISTRIBUTION: India; Central Africa, *Kandt* 10; Trop. Africa, *vide* Cufodontis; Ethiopia, *Schimper* 129, *Steudner* 600, *Massey* 39, *Mooney* 5042; Uganda, *Sangster* 414, *Thomas* 3647, *Eggeling* 5911; Kenya, *Bally* 6520, *Munro* 1363, *James*, *Fries* 1494; Abyssinia, *Ellenbeck* 1864.

INDIA: Western Ghats, in the Nilgiri and Pulney Hills, 90 to 180 m. and perhaps elsewhere.

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