

Pak. J. Bot., 9 (1): 59--66, 1977.

TAXONOMIC NOTES ON *FIORIA* MATTEI AND *THESPESIA* SOL. EX CORR.
FROM PAKISTAN*

SULTANUL ABEDIN**

Department of Botany, University of Karachi, Karachi-32, Pakistan

Abstract

In *Fioria* Mattei two new combinations are made. Typification of *Thespesia populnea* (Linn.) Sol. ex Corr. is discussed. *Thespesia populneoides* (Roxb.) Kostel. is recorded for the first time from Pakistan.

FIORIA

Mattei, Bol. R. Orto Bot.

Palermo 2:71. 1916

In his monograph of the genus *Hibiscus* Linn., Hochreutiner (1900) included 3 species in the section *Pterocarpus* Garcke viz. *H. vitifolius* Linn., *H. dictyocarpus* (Hochst.) Webb and *H. purpureus* Forsk. Mattei (1916) transferred the first two taxa to the genus *Fioria* Mattei, that he established in view of the presence of the winged fruits. He did not mention *H. purpureus* Forsk. but included *H. pavonioides* Fiori. Kearney (1955) has also accepted this genus. Hu (1955) noticed this unique character in *Hibiscus yunnanensis* Hu also, though she still kept it in the genus *Hibiscus* Linn. She, on the basis of solitary and cymose flowers and glandulose punctate seeds, suggested the affinity with *Abutilon* Mill. While Mattei suggested his genus to be intermediate between *Hibiscus* L. and *Kosteletzkya* Presl.

Distribution: A small genus with 4 species distributed in the tropics and subtropics of the Old World. One species is known from Pakistan.

1. *Fioria vitifolia* (Linn.) Mattei, Bol. R. Orto Bot. Palermo 2:71. 1916.

Hibiscus vitifolius Linn., Sp. Pl. 696. 1753.

Fioria vitifolia ssp. *vulgaris* (Brenan & Exell) S. Abedin comb. nov.

Hibiscus vitifolius ssp. *vulgaris* Brenan & Exell, Bol. Soc. Brot. II. 32:73. 1958.

Holotype: Angola, *Welwitsch* 5326 (BM!).

*Part of thesis approved for the degree of Ph.D. by the University of Karachi.

**Present address: Department of Pharmacognosy, University of Karachi, Karachi.

Hibiscus heterotrichus DC., prodr. 1: 450. 1824.

Holotype: (G-DC!).

Hibiscus vitifolius var. *heterotrichus* (DC.) Hochr. in Ann. Cons. Jard. Bot. Gen. 4: 170. 1900.

Representative Specimens: Hazara Dist.: Kaghan, Aug. 1950. *M. Zahur* s.n. (LAH); Rawalpindi Dist.: Panjar, field weed, flowers yellow with dark centre, 500 ft. *R.R. Stewart* 28532 (E); Jehlum Dist.: Salt Range, *Drummond* 24888 (KUH); Mount Tilla, c. 3000 ft. *Kabir* 14665 (KUH); Poonch Dist.: Nawal Nadi, 11.9.1953. *A. Rashid* s.n. (RAW); Lahore Dist.: Changa Manga, flowers yellow, 6.5.1956 *A. Rahman* s.n. (LAH).

Distribution: Tropical and subtropical regions of the Old World. In Pakistan it occurs in Punjab and N.W.F.P.

This subspecies differs from *F. vitifolia* L. ssp. *vitifolia* in the density of indumentum and leaf incision. In the present subspecies the stem and leaves are usually stellate-pubescent. Leaves entire to shallowly 3-7 lobed. While in ssp. *vitifolia* stem and leaves are usually sparsely pubescent. Further, the leaves are commonly deeply 3-7 lobed.

2. *Fioria yunnanensis* (Hu) S. Abedin comb. nov.

Basionym: *Hibiscus yunnanensis* Hu, Fl. China, fam. 153.55. p. 20. f.5. 1955.

Distribution: Endemic to China.

TETESPESIA

Sol. ex Corr. Ann. Mus. Hist. Nat. Paris
9: 290. f. 8. f. 1. 1807. nom. gen. conser.

It is a small genus with about 15 species distributed in the tropics of both the hemispheres. In Pakistan it is represented by 2 species which are cultivated along the roadside.

Key to the species

1. — All parts green, sparsely peltate hairy. Stipules lanceolate, 5-8 mm long. Pedicel articulate at the base, 1-5 cm long, erect, with bracteate joints. Fruit indehiscent, slightly hard (easily pressed by fingers). Seeds with long, soft hairs, specially on angles. 1. *T. populnea*
- At least the young parts bronzed or coppery because of dense peltate hairs. Stipules linear, 2-3 mm long. Pedicel inarticulate, 5-12 cm long, tending to droop, without bracteate joints. Fruit (exocarp) dehiscent, very hard. Seeds with short clavate or bulbous hairs. 2. *T. populneoides*

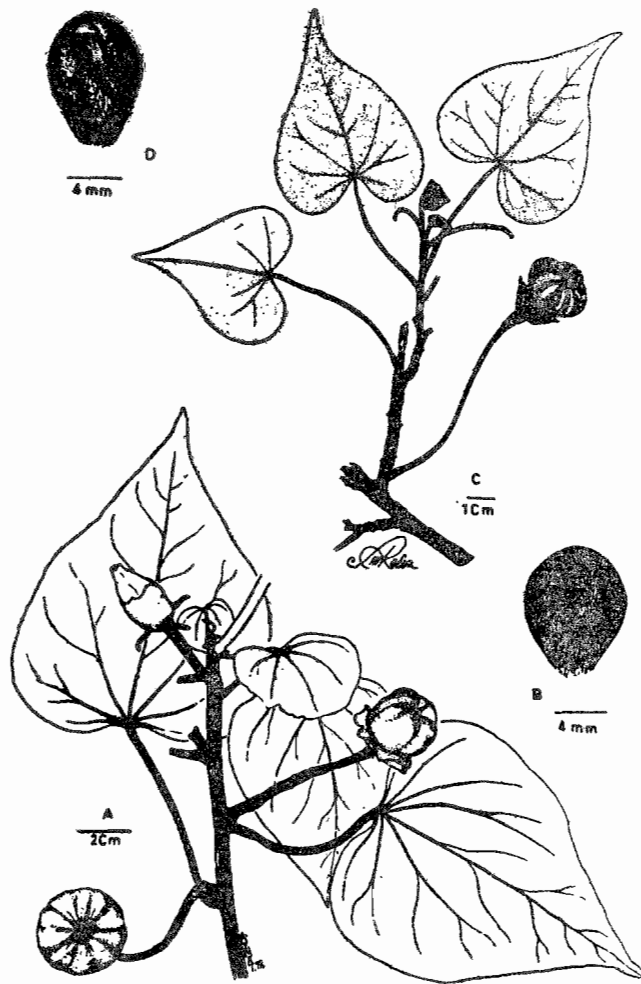


Fig. 1. *Thespesia populnea*: A, Fruiting twig; B, Seed. *Thespesia populneoides*: C, Flowering twig; D, Seed.

1. *Thespesia populnea* (L.) Sol. ex Corr. in Ann. Mus. Hist. Nat. Paris 9: 290. 1807; Mast. in Hook. f., Fl. Brit. Ind. 1:345. 1874. pp. (Fig. 1, A-B).

Hibiscus populneus L., Sp. Pl. 694. 1753.

Lectotype: Herb. Herm. vol. v. fol. 208 t. 258 (BM!)

Hibiscus bacciferus Forst. f., prodr. 48. 1786.

Syntype: Friendship Is., Forster s.n. (BM n.v.).

Malvavicus populneus (L.) Geart., Fruct. et Sem. 2: 253. t. 135. f. 3. 1791.

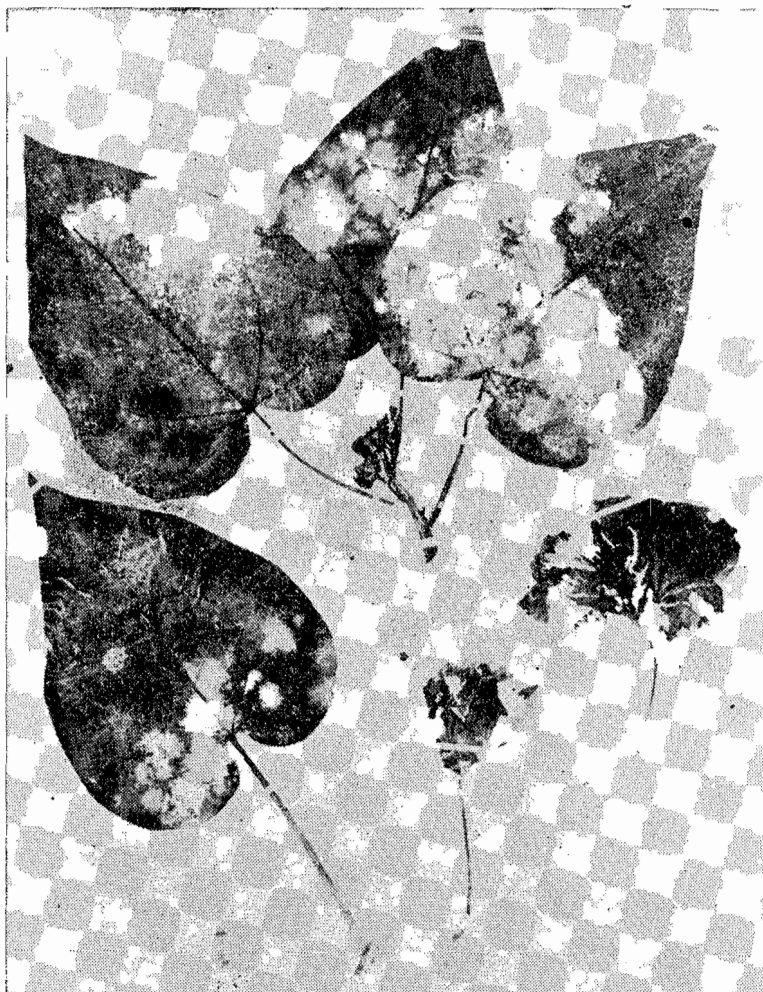


Fig. 2. Photograph of Hermann's specimens of *Hibiscus populneus* (Present in BM) showing mixture of 2 species.

Upper: *Thespesia populnea*: flowering twig.

Lower: *Thespesia populneoides*: One leaf and 2 flowers.

Thespesia macrophylla Blume, Bijdr. 2: 73. 1825.

Isolectotype: Java, Blume s.n. (P n.v.)

Distribution: Common in tropical countries. In Pakistan it is confined to coastal region particularly in Karachi, where it is cultivated as a roadside shade tree.

Borssum Waalkes (1966) has considered the specimen in Hermann's herbarium, now in British Museum, as lectotype. The folio 34 given by Borssum Waalkes seems to be erroneously printed as this specimen is mounted on folio 54. According

to Borssum Waalkes this specimen consists of leaves, possessing distinct nectaries in the axils of the basal nerves, and two damaged flowers. A close examination of the Hermann's sheet reveals that specimens on this sheet belong to two different species. There is a twig in the upper half of the sheet (folio) which consists of leaves and immature fruit. The pedicel of this fruit is very small and thick and is characteristic of *Thespesia populnea* (L.) Sol. ex Corr. Nectaries cannot be observed in this specimen as the leaves are mounted in such a way that the lower surfaces of the leaves are not visible. The leaves are cordate with narrow and broad sinuses (Fig. 2). The lower half of the sheet consists of one leaf and two damaged flowers which are separately mounted. The leaf is comparatively long petioled and deeply cordate. Nectaries cannot be observed for the same reason as given above. Both the flowers have very long and comparatively thinner pedicel which are characteristic of *Thespesia populneoides* (Roxb.) Kostel. (Fig. 2).

In the Linnean herbarium there is a sheet (875.9) which bears in the handwriting of Linnaeus the specific epithet "populneus" and number "3" corresponding to its position in Species Plantarum. The specimens present on this sheet also belong to two species. The specimen mounted on the upper side is *T. populnea* (L.) Sol. ex Corr. in which pedicel is small, thick and articulate at base. The leaves are deeply cordate with narrow sinuses and have nectaries on the lower surface and are almost free from peltate hairs. The other specimen in which pedicel is long, thin and inarticulate, is mounted below and belongs to *T. populneoides* (Roxb.) Kostel. The leaves are deeply cordate with broad sinuses and peltate hairy. Undersurface of leaf is not visible.

Fosberg & Sachet (1972) have discussed the variation in *T. populnea* (L.) Sol. ex Corr. and *T. populneoides* (Roxb.) Kostel. critically and in considerable detail. They have seen both the specimens present in Linnaean and Hermann's herbaria and for the typification they write "Neither one is satisfactory or complete specimen. Van Borssum Waalkes' choice of the Hermann's sheet is probably the most acceptable. The question of which of these should be type is rather academic, however, as both specimens seem to belong to the plant with deeply cordate leaves and indehiscent fruits".

There are also two illustrations in Hermann's herbarium viz. (1) Vol. V. fol. 208 t. 258; and (2) Vol. V. fol. 471. t. 258. The former illustration which only belongs to *Thespesia populnea* (L.) Sol. ex Corr. is nicely drawn and gives more information than any of the specimens discussed above and therefore is considered here as lectotype (Fig. 3).

2. *Thespesia populneoides* (Roxb.) Kostel., Allg. Med. Pharm. Fl. 5:1861. 1836. (Fig. 1, C-D).

Hibiscus populneoides Roxb. (Hort. Beng. 51. 1814. nom. nud.) Fl. Ind. ed. Carey 3: 190. 1832.

Lectotype: India, Wallich 1888F (K!).

Thespesia banalo Blanco, Fl. Filip. ed. 2:282. 1845.

Holotype: Luzon, Llanos 188 (MA n.v.)

Thespesia populnea var. *populneoides* (Roxb.) Pierre, Fl. For. Coch. 3: pl. 173. 1888.



Fig. 3. Photograph of illustration of *Hibiscus populneus* given by Linnaeus (present in BM).

Thespesia howii Hu, Fl. China, fam. 153. 69. pl. 22. f. 3. 1955.

Type: Hainan, How 70921 (photo!).

Distribution: Coastal parts of the Indian Ocean and its islands, probably introduced in W. Africa, cultivated elsewhere.

It is a new record from Pakistan and is commonly cultivated along the roads in Karachi.

It has been considered to be conspecific with *Thespesia populnea* (L.) Sol. ex Corr. by various authors (Masters, 1874; Hutchinson, 1947; and Borssum Waalkes, 1966). But Fosberg & Sachet (1972) have discussed the problem critically, and have re-established Roxburgh's species. I agree with their views and keep *T. populnea* (L.) Sol. ex Corr. and *T. populneooides* (Roxb.) Kostel. as two distinct species based on constant characters given in the key.

Fosberg and Sachet have stated that the leaves are deeply cordate in *T. populnea* (L.) Sol. ex Corr. and very shallowly cordate to truncate in *T. populneooides* (Roxb.) Kostel. But the figure of *T. populnea* (L.) Sol. ex Corr. as given by them shows shallowly cordate leaves. They have also discussed the variation in leaf bases in the intermediate plants of these 2 species which are mostly without fruits. It seems possible that the variation in this character may be found in both the species. In our plants the leaves are usually deeply cordate with nectaries underneath in *T. populneooides* (Roxb.) Kostel. and shallowly, cordate to truncate and without nectaries in *T. populnea* (L.) Sol. ex Corr.

Acknowledgement

I am greatly thankful to Prof. Dr. S. I. Ali, Botany Department, Karachi University, Karachi for going through the manuscript and giving critical suggestions. I am grateful to Prof. Dr. Rafiq Ahmad, Karachi, for his help and for kindly granting me leave to go abroad. Thanks are also due to the United States Department of Agriculture for financing this research under P.L. 480. I am indebted to the Directors/Librarians of the following herbaria, Karachi University Herbarium, Karachi; Punjab University herbarium, Lahore; The herbarium, Royal Botanic Gardens, Kew; British Museum (Natural History), London and the Linnean Society, London. I am also grateful to Dr. W. T. Stearn and Dr. N. K. B. Robson, British Museum (Natural History), London, for their help.

References

- Blume, C. L. 1825-26. Bijdragen tot de flora van Nederlandsch Indie 2: Batavia.
- Blanco, F. M. 1845. Flora de Filipinas. Ed. 2. Manila.
- Borssum Waalkes, J. van. 1966. Malesian Malvaceae revised. Blumea 14(1): 1-213.
- Brenan, J. P. M. and A. W. Exell. 1958. Note on *Hibiscus vitifolius* Linn., Bot. Soc. Brot. II. 32: 69-74.
- Correa, J. S. 1807. Vues corpologiques and Suite des observations carpologiques. Ann. Mus. Herb. Paris 9: 290.
- Forster, J. G. A. 1786. Florulae insularum australium prodromus. Goethingen.
- Fosberg, F. R. and M. H. Sachet. 1972. *Thespesia populnea* (Linn.) Solander ex Correa and *Thespesia populneooides* (Roxburgh) Kostelecky (Malvaceae). Smithsonian. Con. Bol. n. 7.1-13.
- Gaertner, J. 1791. De Fructibus et Seminibus Plantarum 2. Stuttgart/Tubingen.
- Hochreutiner, B. P. G. 1900. Revision du genre *Hibiscus*. Ann. cons. Jard. Bot. Geneve 4: 23-191.
- Hu, S. 1955. Flora of China. Family 153. Malvaceae. Arnold Arboretum of Harvard University.

- Hutchinson, J. B. 1947. Notes on the classification and distribution of genera related to *Gossypium*. *New Phytol.* 46: 123-141
- Kearney, T. H. 1955. Notes on Malvaceae. *Leafl. West. Bot.* 7(ii): 272.
- Kosteletsky, V. F. 1836. *Allgememe medizinisch pharmaceutische Flora Prag*. Mannheim.
- Linnaeus, C. 1753. *Species Plantarum*. Stockholm.
- Masters, M. T. 1872-75. In: J. D. Hooker, *Flora of British India*. 1: London.
- Mattei, G. E. 1916. III. Note spora alcune Mawaceae. *Bol. R. Orto Bot. Palermo* 2: 63-74.
- Pierre, L. 1888. *Flora forestiere de la cochinchine* 3: Paris.
- Roxburgh, W. 1832. *Flora indica*.....Ed. Carey. 3: Serampore.