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ADDITIONS TO THE FLORA OF GUJARAT FROM MEHSANA AND KUTCH DISTRICTS (N. GUJARAT)

P. J. PARMAR
Botanical Survey of India, Jodhpur–342 008

Cooke (1901) in preface of his "Flora of Bombay Presidency" remarked that "it can hardly be expected that the present FLORA will be an absolutely exhaustive one....". At that time Gujarat was the least explored part of the presidency, especially North Gujarat. The first comprehensive account available is "Flora of Kutch" by Blatter (1908-09) and of Saxton & Sedgwick (1918), who published a list of 614 flowering plants in their work "Plants of Northern Gujarat". This work was subsequently supplemented by Saxton in 1922. Afterwards, except the work of Thakar (1926), there was a big gap of 40 years in the history of floristic account of Gujarat. Subsequently, Santapau (1962) published pt. I of "Flora of Saurashtra", which was later on completed by Bole & Pathak (1988). Shah (1963), Shah & Yogi (1974) & Bhatt *& al.* (1972) further enriched our knowledge on the flora & floristics of N. Gujarat. Shah (1978) and Raghavan *& al.* (1981), provided a comprehensive account on flora of whole Gujarat state and checklist respectively. Pilo *& al.* (1996) compile all the previous publications and provided a complete biodiversity account of Gujarat state. During recent years, the scientists of Botanical Survey of India, Jodhpur have added new dimentions to our knowledge regarding the flora & floristics of the state (Pandey & Padhye, 1997; Pandey, 2001, 2003; Parmar & Singh, 2003, Parmar, 2003). A perusal of literature revealed that eight taxa dealt herewith have not been recorded from any part of Gujarat State and, therefore, worth to publish for further investigations.

ENUMERATION

MALVACEAE

Gossypium arboreum L. var. **wightianum** (Tod.) Almeida. Fl. Maharashtra 1 : 106, 1996. *G. wightianum* Tod., Oss. Sp. Cotone 47, 1863. *G. herbaceum* L. var. *wightianum* (Tod.) Cooke, Fl. Bombay 1 : 116, 1901. *G. obtusifolium* Roxb. var. *wightianum* Watt. Wild & Cult. Cotton 143-53, t. 21-22, 1907 et Kew Bull. 1926 : 203, 1926.

Large, shrubs upto 2 m high; stems erect, more or less hairy. Leaves often clothed with persistent, long, shaggy hairs over a short tomentum of stellate hairs especially on the veins

below, ovaterotund, cordate, (-3) -5-7 lobed; lobes ovate-oblong, acute, constricted at base into the rounded sinus. Bracteoles sometimes almost free, relatively small, ovate, obtuse or acute, deeply toothed on the upper margin, prominently nerved. Corolla yellow with purple base, 4-5 cm across. Capsules small, ovoid, acute, 4-celled, 8-seeded, wool white; seeds velvety and firmly adherent.

Fl. & Fr. : July October.

Rare, in clayey soil, along the road side in hedges.

Selected specimen : Mehsana : Kadi village. *Parmar* 12737 (BSJO).

RHAMNACEAE

Ziziphus mauritiana Lam. var. **pubescens** Bhandari & Bhansai, in Fasc. Fl. India 20 : 102, 1990.

Differs from var. *mauritiana* by its leaves which are 2.1-4.2 × 1.3-4.1 cm, pubescent above, woolly tomentose beneath, margin entire and obtuse apex.

Fl. & Fr. : June September.

Common in forest.

Selected specimen : Mehsana : Taranmata R.F., Kheralu, *Parmar* 12506 (BSJO).

FABACEAE

Tephrosia hookeriana Wight & Arn. Prodr. 212, 1834; Baker, in Hook. f. Fl. Brit. India 2 : 113, 1876 *pro parte.*

Erect, diffuse undershrubs, woody at base; branches villous. Leaves pinnate, narrowly oblanceolate, 0.6-3 × 0.3-1 cm, truncate, cuneate-acuminate or emarginate at apex, softly pubescent above atleast when young and thinly silky hairy beneath. Flowers deep pink in terminal or extra axillary racemes. Pods linear-oblong, nearly straight upto 5 cm long, hairy. Seeds 8-10, oblong, yellowish.

Fl. & Fr. : June September (After rainy season).

Common in wastelands and among boulders, usually confused with *T. purpurea.*

Selected specimen : Mehsana : Unja, *Parmar* 12906 (BSJO).

Note : Very much similar to *T. purpurea* and *T. leptostachya* but it may distinguished by its bracts which are longer than pedicels, whereas in *T. purpurea* and *T. leptostachya* the bracts are as long as pedicels.

Tephrosia pentaphylla (Roxb.) G. Don in Sweet, Hort. Brit., ed. 3 : 170, 1839; Gamble, Fl. Madras 1: 318, 1918. *Galega pentaphylla* Roxb. Fl. Indica ed. Carey, 3 : 384, 1832. *Tephrosia senticosa* sensu Wight, Ic. 2(1) : 6. t. 380. 1840-43; Baker in Hook. f. Fl. Brit. India 2 : 112, 1876, non (L.) Pers. 1807.

Annuals or short-lived perennials; stem more or less silvery. Leaflets usually 5, cuneate-oblanceolate, upto 2.2 × 0.7 cm, rounded and reflexed mucronate at apex. glabrous above, silvery beneath. Flowers red, 1-3 together, axillary. Pods somewhat upcurved towards the tip, 4-4.5 × *ca* 0.4 cm, more or less silvery, fulvous at the sutures. Seeds 7-8, rounded-oblong, olive-green, mottled.

Fl. & Fr. : June September.

Rare, in forest.

Selected specimen : Kutch : Mindyari R.F., Narayan sarovar, *Singh* 15871 (BSJO).

CONVOLVULACEAE

Convolvulus sindicus Stock in Hook, Kew J. Bot. 4 : 173, 1852, *non* Boiss. 1856; Clarke in Fl. Brit. India 4 : 217. 1883. *C. brachyphyllus* Boiss. Diagn. Ser. 2(3) : 122, 1856.

Small, perennial undershrub; branches many, densely fulvoustomentose. Leaves 5-12 × 3-6 mm, sessile to sub-sessile, ovate or spathulate, solitary or in group of 2-4, entire, obtuse to subacute at apex, sometimes plicate. Flowers in fulvous-sericeous, subsessile, bracteate heads. Corolla *ca* 1.2 cm long, widely funnel-shaped, white with pinkish mid petaline bands which are hairy outside at tip. Ovary glabrous. Seed I, dark-brown, glabrous.

Fl. & Fr. : June September.

Rare, in sandy soil.

Selected specimen : Mehsana : Dharoi dam, *Parmar* 12550 (BSJO).

NYCTAGINACEAE

Boerhavia diandra L. Sp. Pl. 1194, 1753; Nasir in Nasir & Ali, Fl. W. Pakistan 115 : 7. f. 2A-C. 1977 : Pandey in Shetty & Singh Fl. Rajasthan 2 : 713. 1991. *B. vulvariaefolia* Poir. in Lam.

Encycl. 5 : 55. 1804. *B. repens* L. var. *glabra* Choisy in DC. Prodr. 8(1) : 455, 1849. *B. repens* L. var. *vulvariaefolia* (Poir.) Boiss, Fl. Or. 4 : 1045, 1879.

Prostrate, puberulous to glabrescent herbs: branches opposite. Leaves unequal, 0.4-1.5 × 0.1-1.2 cm, ovate-lanceolate or oblong-lanceolate, acute, sinuate-repand to sub-entire, whitish beneath. Flowers pale pink, in axillary, 1-7 flowered pedunculate cymes. Bracts 2. Stamens 2. Anthocarps 2.5-3 mm long, broadly clavate, strongly ribbed, often papillose.

Fl. & Fr. : June September.

Common, in damp places in gravelly habitats.

Selected specimen : Mehsana : Dharoi dam, *Parmar* 12565 (BSJO).

Boerhavia procumbens Banks ex Roxb., Fl. Indica 1 : 148, 1820; Wight, Ic. 3 (2) : 6 t. 874. 1844-45. *B. repens* L. var. *procumbes* (Banks ex Roxb.) Hook. f. Fl. Brit. India 4 : 709, 1885. *B. coccinea sensu* Stewart, Ann. Cat. Vasc. Fl. W. Pak & Kash. 233, 1972, *non* Mill, 1768.

Prostrate or decumbent, puberulous perennial herbs; stem & branches often pigmented pink. Leave opposite, 1.5-2.5 × 0.25-1.5 cm, often unequal, ovate-oblong, subentire to repand, acute to cuspidate or obtuse. Flowers pink, in diffuse, terminal panicles. Stamens 2-3, exserted. Anthocarps strongly 5-ribbed, turbinate, glandular-papillose.

Fl. & Fr. : Throughout the year.

Common weed in the forest & wastelands.

Selected specimen : Mehsana : Taranmata R. F., Kheralu, *Parmar* 12508 (BSJO).

B. repens L. Sp. Pl. 3, 1753; Hook. f. Fl. Brit. India 4 : 709, 1885 excl. var. *diffusa & procumbens. B. diffusa sensu* Duthie, Fl. Gangetic Plain 3 : 2. 1915, *pro parte, non* L. 1753; Mukherjee in J. Econ. Tax, Bot. 5 : 583, 1984.

Straggling, prostrate or diffuse perennial herbs: root stock woody; stem and branches pigmented pink. Leaves unequal, 1.25-4 × 0.25-3.0 cm, ovate-oblong, puberulous, whitish beneath. Flowers pink, in short, axillary, bracteate, pedunculate cymes. Anthocarps turbinate to broadly clavate, 5-ribbed, glandular-papillose.

Fl. & Fr. : Almost throughout the year.

Occasionally found in gravelly sandy soil.

Selected specimen : Mehsana : Taranmata hills, Kheralu, *Parmar* 12565 (BSJO).

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