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NOTES ON THE GENUS *MICROMELES* DECNE. (ROSACEAE) IN INDIA

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The genus *Micromeles* Decne., meaning the small pomes, was described by Decaisne in 1874 with 5 species from eastern Himalaya. J.D. Hooker (1878) reduced the genus *Micromeles* Decne., as a section of the genus *Pyrus* L. in Flora of British India (2 : 377) with 7 species from Sikkim, Meghalaya (Khasia) and 1 species from Bhuttan. Rehder (1927) reduced *Micromeles,* Decne., as a section of the genus *Sorbus* L. Later Koehne (1890), C.K. Schneider (1906), Poyarkova (1939, 1985), Kalkman (1973) and Panigrahi (1982) segregated the genus from *Sorbus* L. and *Pyrus* L. and reinstated it as a distinct genus.

The differences of the genera *Micromeles* Decne., *Sorbus* L., *Pyrus* L., *Malus* Mill. and *Photinia* Lindl. are shown in the following table (Table-1).

The taxonomy of the genus *Micromeles* Decne., is given below.

MICROMELES

Decne., Nouv. Arch. Paris 10 : 168. 1874; Koehne, Gattung, Pomaceae, 21.1890; C.K. Schneid., Ill. Handb. Laubholzk. 1 : 700. 1906. Poyarkova in Fl. U.S.S.R. 9:406 (306). 1939 (1985); Kalkman, Blumea, 21:437. 1973; Panigrahi in Bull. Bot. Surv. India 24:238. 1982; *Pyrus* L. sec. *Micromeles* Hook. f., Fl. Brit. India 2:377. 1878. *Sorbus* sect. *Micromeles* Rehder, Manual Cult. Tree & Shrubs 382, 1927 (2nd ed. 380. 1940); Yu and Kuan, Acta Phytotax. Sin. 8 : 207, 221. 1963; Vidal, Fl. Camb. Laos & Vietn. 6 : 24. 1968

Type : Not designated.

There are about 15 species of *Micromeles* Decne. distributed in S.E. Asia (Kalkman, 1973). In the Indian subcontinent there are 7 species, viz. *Micromeles rhamnoides* Decne., *M. corymbifera* (Miq.) Kalkman, *M. cuspidata* (Bertol.) C.K. Schneid., *M. griffithii* Decne., *M. meghalayensis* Panigrahi, *M. polycarpa* (Hook. f.) Panigrahi and *M. thomsonii* (King ex Hook.f.) C.K. Schenid. distributed mostly in eastern Himalayan regions (Sikkim, Meghalaya, Bhutan) and 3 species viz. *Micromeles polycarpa* (Hook.f.) Panigrahi, *M. rhamnoides* Decne., and *M. thomsonii* (King ex Hook. f.) C.K. Schneid, are endemic to India. The key to the 7 species growing wild in India is presented for easy identification:

1a.	Fruits 4 6 mm diam., ovoid, depressed with a large conical centre, not with white round spot	...	2
1b.	Fruits 12 18 mm diam., globose, depressed with a small conical centre, with white round spots	...	5
2a.	Corymbs densely warted, covered with oblong raised lenticels, fruits ovoid, ovary not lobed	...	2. *M. cuspidata*
2b.	Corymbs smooth, not lenticellate, fruits usually tumid, globose, ovary 10 lobed	...	3

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Table 1

Characters	**Pyrus** L. (1)	**Malus** Mill. (2)	**Sorbus** L. (3)	**Micromeles** Decne. (4)	**Photinia** Lindl. (5)
Habit	Trees, rarely shrubs, sometimes throny.	Trees or shrubs, sometimes with spiny branches.	Trees or shrubs without spines.	Trees or shrubs without spines.	Shrubs or trees without spines.
Leaves	Simple lobed, green, alternate, margin serrate, crenate, serrulate, glossy, glabrous.	Simple, opaque, alternate, pubescent with soft texture, margin entire.	Simple imparipinnate, leaflets serrate to serrulate at apical part, basal part entire, glabrous pubescent or woolly.	Simple, margin dentate, serrate, pubescent, woolly or glabrous.	Simple, margin entire to shallowly dentate, serrate.
Flowers	Flowers in umbellate racemes brone on a pyrostle or central column, 2-3.5 cm in diam. Sepals 5, entire, villous on both surfaces or glabrous. Petals 5, white with longe glabrous claw.	Flowers in few flowered umbellate racemes or corymbs 2.5-4 cm in diam. Sepals 5, entire villous on both surfaces. Petals 5, fragrant, white, pink, red with pubescent long claw.	Flowers in many flowered umbel or lax corymbs, 10-20 mm diam. Sepals 5, dentate, serrate, sometimes white, pubescent or woolly. Petals 5, white rarely pink with short claw.	Flowers in threes, 6-8 mm in diam. in paniculate compound racemes. Each corymb later in groups at tip of the lateral branches. Sepals 5, entire or serrate, Petals 5, white.	Flowers in panicle or corymbshaped compound racemes, 4 - 5 mm in diam. Sepals 5, entire glabrous. Petals 5, white, with few hair at base, fragrant.
Stamens	Stamens 20-40, anthers red or reddish violet.	Stamens 18-50, anthers yellow or red.	Stamens 15-25, anthers yellow or reddish.	Stamens 18-20, anthers yellow.	Stamens 17-20, anthers yellow.
Pistil	Styles 5, rarely 3-4, free, carpels connate with the hypanthium, pericarp and hypanthium fleshy, ovary inferior.	Styles 3-5, hairy and united at base. Ovary inferior.	Styles 2-5, hairy and united at base, ovary semi-inferior or if inferior, the top not covered by hypanthial disc.	Styles 3 (or 2), united to ½ to 1/3 part, ovary inferior and hypanthia covered by the disc.	Styles 2, united up to middle. Ovary semi inferior.

Characters	***Pyrus* L.** (1)	***Malus* Mill.** (2)	***Sorbus* L.** (3)	**Micromeles** Decne. (4)	**Photinia** Lindl. (5)
Fruits	Pyriform pome, 2-9 × 5-6 cm, base umbellicus, flesh with sclerenchymatous cells (grit cells).	Wild pome ovoid to obovoid, 2-3 × 4-5 cm with distinct depression at both ends, flesh without sclerenchymatious girt cells. Pome yellow, reddish with white spots, up to 10 × 10 cm in cultivated fruits.	Pome 5-20 × 8-15 mm, ripe fruits globose or pyriform, greenish yellow, red or brownish red.	Pome 7-20 × 5-15 mm, globose with white spots with conical depression at centre, pulps big granular.	Subglobular fleshy drupe or pome, 4-8 × 5-10 mm, red, or bluish, sepals and upper part of hypanthium closely appressed against top of fruit.
Distribution	Warm temperate regions of Western Europe, Russia, Asia. Grow at 600-2500 m alt.	Temperate regions of N. America, Europe Asia (Himalaya). Grow at 600-3400 m alt.	Temperate zone of the northern, Asia, America. Grow at 1300-4300 m alt.	Far East and S.E. Asia. Grow at 1000-2700 m alt.	S.E. Asia (Assam Sikkim, S. India), Bhutan, Burma, C. & S. China, Laos, Thailand, Ceylon, Malaya, Sumatra, Java, Sunda Islands). Grow at 1200-2350 m alt.

3a.	Petioles slender, long; styles united at the middle, ovary glabrous	...	5. *M. polycarpa*
3b.	Petioles short; styles united below the middle, ovary hairy	...	4
4a.	Corymbs, ovary densely woolly	...	3. *M griffithii*
4b.	Corymbs globrous at age, ovary puberulous	...	6. *M. rhamnoides*
5a.	Plants entirely globrous, leaves usually up to 7.5 cm long, petioles very short, petals with woolly claw, styles 2 – 4	...	7. *M. thomsonii*
5b.	Plants more or less pubescent or tomentose, leaves usually 7.5 to 10 cm long, petioles slender long, petals with pubescent claw, styles 2	...	6
6a.	Leaves ovate – lanceolate with arching nerves, apex long acuminate, fruiting branches smooth, pulp big granular	...	1. *M. corymbifera*
6b.	Leaves elliptic – obovate with straight nerves, apex abrupty acuminate, fruiting branches warted, pulp small granular	...	4. *M. meghalayensis*

The species of *Micromeles* Decne., usually grow between 300 to 2750 m. The altitudinal variations of the species recorded in India are shown in table 2.

Table 2. Altitudinal ranges of Indian species of *Micromeles* Decne.

Name of the species	Altitudinal range
1. *Micromeles corymbifera* (Miq.) Kalkman	1200 - 1800 m
2. *M. cuspidata* (Bertol.) C.K. Schneid.	1300 - 1500 m
3. *M. griffithii* Decne.	300 - 1800 m
4. *M. meghalayensis* Panigr.	1500 – 1660 m
5. *M. polycarpa* (Hook. f.) Panigr.	100 – 1800 m
6. *M. rhamnoides* Decne.	2100 – 2750 m
7. *M. thomsonii* (King ex Hook. f.) C.K. Schneid.	2400 – 2700 m

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