

Two new records of *Viola* L. (Violaceae) for Nepal

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Viola mandshurica W. Becker and *Viola odorata* L. belonging to the family Violaceae are reported for the first time from Nepal. The plants were collected along the trail between the suburbs Chovar and Jalbinayak, Kathmandu.

Key words: Herbarium, Nepal, *Viola*

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The family Violaceae consists of 23 genera with 830 species and the genus *Viola* alone consists of about 400 species (Mabberley 1987). In Nepal the family is represented by the single genus *Viola*, with 16 taxa in 14 species (Press et al. 2000). The Violaceae is generally characterized by simple stipulate leaves, bisexual flower borne on an axillary raceme, lower petal often spurred, 3 to 5 stamens, 3-chambered ovary in parietal placenta with numerous ovules and fruit usually in the form of a loculicidal capsule.

Previous records (Hooker 1872, Maekawa 1955, Malla et al. 1976, Hara and William 1979, Polunin and Stainton 1984, Malla et al. 1986, Koba et al. 1994, Press et al. 2000) do not reveal the existence of the species from Nepal. Morphologically, the species is often confused with other endemic species of the family.

Methodology

The present work includes the morphological variations among the taxa both in quantitative and qualitative characters such as habit, habitat, leaf size and shape, colour of flowers, spur length, size and nature of sepals, stamens, and styles. The species delimitation during this study was made from thorough examination of 300 specimens housed in National Herbarium and Plant Laboratories (KATH), 50 specimens in Tribhuvan University Central Herbarium (TUCH), 53 specimens in The Natural History Museum London (BM) and 50 specimens collected by the first author from different localities. Several photographs of type specimens were also received from different herbaria: BM, KATH, Botanical Survey of India (CAL), Royal Botanical Garden Edinburgh (E) and Royal Botanical Gardens Kew (K).

For proper identification, protologue texts, photographs of type specimens and authentic literature were used.



FIGURE 1. *Viola mandshurica* W. Becker. A, habit; B, stipules; C, flowers; D, calyx; E, upper petal; F, lateral petal; G, basal petal; H, basal stamens; I, other stamens; J, style (R.S. Dani, 202, TUCH)

Results

The following are recorded as new species for Nepal.

1. *Viola mandshurica* W. Becker in *Bot. Jahrb.* 54, *Beibl.* 120: 179 (1917)

Viola mandshurica W. Becker var. *ciliata* Nakai et var. *glabra* Nakai i c 36: 60 (1922)

Annual herbs, rarely perennial. *Rhizome* erect to ascending, rather stout. *Stem* absent. *Leaves* basal; *petiole* 2-3 (-11) cm long, glabrous, long winged (almost whole length); *leaf blade* linear-lanceolate to triangular lanceolate, 2-3 × 0.7-1.2 cm, base truncate, apex acute to obtuse, margin shallowly crenate, sometimes dentate to basal lobes, glabrous, chartaceous or subcoriaceous; *stipules* adnate to petiole more than half, lanceolate, 5-8 × 0.5-2 mm, upper 3-4 mm free, apex acuminate, margin entire or sparsely denticulate to ciliate. *Flowers* 6-9 mm across, usually dark purple to violet. *Peduncles* 2-7.5 cm long, equaling or exceeding leaves, glabrous; *bracteoles* linear, 4-5 mm long, oppositely inserted near base. *Sepal* lanceolate to ovate-lanceolate, 4-5 × 1-15 mm, apex acute, glabrous, margin entire; *appendage* 1-1.5 mm long, apex squarish to rounded. *Petal* oblanceolate to obovate, 6-7.5 × 2-3.5 mm, margin entire to undulate; *laterals* bearded; the basal apex

truncate to emerginate; *spurs* 3-4 × 1-2 mm, apex rounded. *Styles* 2 mm long, slightly geniculate at base, clavate distally; *stigma* distinctly 3 lobed, terminal, with distinct anterior stigmatic beak; *fruit* loculicidal capsule (Figure 1).

Type: Unknown

Flowering: Mar – May

Fruiting: May – June

Distribution: 1400-1700 m Nepal (Central: Kathmandu) [China]

Specimen examined: Kathmandu, Kirtipur to Jalbinayak, 1450 m, 29.02.2000, R. S. Dani, 202 (TUCH); Kathmandu, Kirtipur, Chovar, 1500 m, 17.03.2000 (R. S. Dani, 226 (TUCH).

Note: Morphologically, *Viola mandshurica* shows close similarities to *V. betonicifolia*, however; it can be distinguished by its complete glabrous habit, shorter stipules, smaller flower (6-9 mm across), shorter peduncles, oppositely inserted bracteoles near the base, shorter spur (3-4 mm long), and distinctly trilobed stigmas. It is also similar to *Viola kunawarensis* except that the latter has spatulate leaf, pink smaller flower, style geniculation at base, stigma subterminal or lateral with anterior stigmatic beak. The *V. kunawarensis* has comparatively longer peduncle than leaf.

2. *Viola odorata* L., *Sp. Pl.* 933 (1753); Hook. f. & Thomson in Hook. f., *Fl. Brit. Ind.* 1: 184 (1875); Banerjee & Pramanik in *Fasc. Fl. Ind.* 12: 29 (1983); Wang in *Fl. Reip. Pop. Sin.* 51: 20 (1991).

Annual herbs. *Rhizome* erect to prostrate, rooting from rhizome and producing dense rosettes of leaves and flowers, stoloniferous. *Stem* absent. *Leaves* basal; *petioles* 7-14 cm long, shortly winged, glabrous; *leaf blade* broader ovate, 2-5 × 2.5-6 cm, base deeply cordate, acute apex, margin dentate, glabrous or sparsely pubescent; *stipules* almost free, membranous, 8-11 × 3-4 mm, margin shortly fimbriate. *Flowers* 1.5-2 mm across, dark purple with yellowish white at base. *Peduncle* 5-7 mm long, not exceeding the leaves, glabrous; *bracteoles* linear, 4-5 mm long, oppositely inserted below the middle, margin dentate, glabrous. *Sepal* broader lanceolate, 11 × 4 mm, acute apex; lateral broader than other; *appendage* 2 mm long, upper two smaller with entire margin, apex dentate. *Petal* obovate to orbicular, 17 × 9 mm, yellowish white spot on inner neck; lateral bearded; *spur* 5 mm long, cylindrical, apex obtuse. *Style* 3 mm long, geniculate at base, clavate distally; *stigma* hooked, with a conspicuous anterior stigmatic beak. *Fruit:* capsule 5 mm in diameter, globose, hirsute (Figure 2).

Type: Amman, 1052.11 (Linnaeus Botanical Herbarium, LINN - holo)

Flowering: Mar – May

Fruiting: Jun – Aug

Distribution: Cultivated in gardens, sometimes escapes from the garden; 1400-1600 m. Nepal (Central: Kathmandu) [China, India, North & West Asia; Europe; North Africa]

Specimen examined: Kathmandu, along the trail between the suburbs Chovar and Jalbinayak, 1450 m, 29.02.2000, R. S. Dani, 206 (TUCH); Kathmandu, Kirtipur, Coronation Garden, 1500 m, 29.02.2000, R. S. Dani, 207 (TUCH).

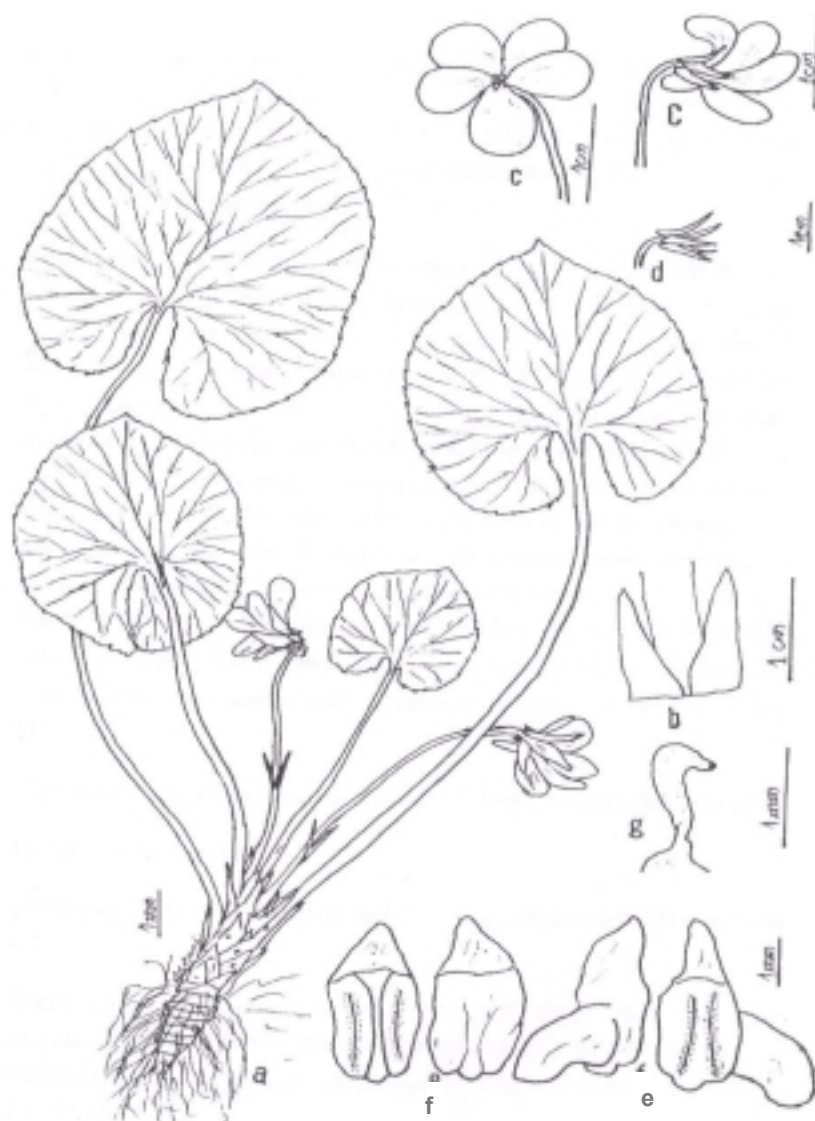


FIGURE 2. *Viola odorata* L. A, habit; B, stipules; C, flowers; D, calyx; E, basal stamens; F, other stamens; G, style (R.S. Dani, 205, TUCH)

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