33. *CYCLEA PELTATA* (LAM.) HOOK. F. AND THOMS., *VIOLA BETONICIFOLIA* J.E. SMITH AND *TEPHROSIA CANDIDA* (ROXB.) DC. — NEW RECORDS FOR ANDHRA PRADESH

During the floristic survey of Andhra Pradesh, we have collected three plants which, on critical examination, have been identified as *Cyclea peltata* (Lam.) Hook. f. & Thoms., *Viola betonicifolia* J.E. Smith and *Tephrosia candida* (Roxb.) DC. The occurrence of these taxa from Visakhapatnam district is recorded here as new additions to the flora of Andhra Pradesh. The citation, detailed description and distribution is given here for their easy identification. The specimens have been deposited in the Herbarium of the Department of Botany, Sri Krishnadevaraya University.

MENISPERMACEAE

Cyclea peltata (Lam.) Hook.f. & Thoms. Fl. Ind. 201. 1855 & in FBI 1: 101. 1872. p.p. Gamble 1:31(22). 1915. *Menispermum peltatum* Lam. Encycl. 4: 96. 1797. *Cyclea burmanii* Hook. f. & Thomas. Fl. Ind. 201. 1855 & FBI 1: 104. 1872.

Twining pubescent herbs. Leaves cordate, 6-11 x 4-7 cm, coriaceous, 5-7-nerved, base truncate, margin entire, apex acuminate. Inflorescence a panicle, axillary, male flowers regular, female flowers irregular. Drupe obovoid, style scar sub-basal.

Rare in deciduous forests in Visakhapatnam district.

Flowers and fruits: Jan.-April.

Araku valley (Visakhapatnam district), *TP & EC* 7337.

Gamble (1915) reported its occurrence in the Western Ghats, hills of Mysore and North Arcot. Its occurrence in Visakhapatnam district in Andhra Pradesh extends its distribution to the Eastern Ghats also.

VIOLACEAE

Viola betonicifolia J.E. Smith in Rees, Cyclop. 37. n. 7. 1817. ssp. *betonicifolia* Jacobs & Moore in Steenis, Fl. Malesiana ser. 1. 7: 203. 1972. *Viola patrinii* DC. var. *napaulensis* DC. prodr. 1:293. 1824. *Viola patrinii* auct. non Ging. 1824; FBI 1: 183. 1872; Gamble 1: 48 (35). 1915.

Herbs, up to 10 cm, rootstock woody; stolons nil. Stipules nearly entire, 7.5 mm; petiole 4-9 cm long, winged; blade longer than broad, oblong or lanceolate, 3.5-6 x 1.5-2.2 cm, glabrous, base hastate, margin crenate to serrate, tip slightly obtuse or acute. Peduncle 12-15 cm long; bracteoles 2, near the middle peduncle or above it. Flowers white with pink striations; calyx 3 mm, sepals 5, lanceolate, petals 5, violet, upper pair 1.2 x 0.5 cm; lateral pair 1.3 x 0.5 cm; lower one (lip) 1.5 x 0.5 cm, apex obtuse, ovary oblong or ovoid, style truncate; stigma terminal, faintly 3-lobed, capsule 8 x 4 cm.

Rare in hills of Visakhapatnam district.

Flowers and fruits: July-Dec.

Anjodigadda (Visakhapatnam district) *TP & EC* 7437.

S.P. Banerjee and B.B. Pramanik in their 'Fascicles of Flora of India, fascicle no. 12 on Violaceae did not report its occurrence from Andhra Pradesh. Gamble (1915) reported its occurrence from Mahendragiri hill in Orissa. There is not even a single sheet either in MH, CAL or DD from Andhra Pradesh. So it is considered as a new report to the state.

FABACEAE

Tephrosia candida (Roxb.) DC. Prodr. 2: 249. 1825; FBI 2: 111. 1876. *Robinia candida* Roxb. Fl. Ind. 3: 327. 1832. (Fig. 1).

Erect shrubs with grooved woolly branches, leaves up to 15 cm, leaflets 8-13 pairs, oblong-elliptic, 5-8 x 1 cm, chartaceous, rusty above, woolly below, base cuneate, margin entire, apex obtuse. Flowers red or white, 15-30 cm long, axillary, pseudoracemes or pseudopanicles. Pod linear, 6.5 x 0.8 cm, woolly, continuous within, apex slightly curved; seeds ellipsoid, compressed, 2.5 mm.

Rare in deciduous forests of Visakhapatnam district.

Flowers and fruits: June - September.

Anjodigadda-Araku (Visakhapatnam district, *TP & EC* 7437.

Gamble (1915) has not reported this taxon from Madras Presidency. It has been reported subsequently from Tamil Nadu (Nair and Henry 1983) and Karnataka (Saldanha 1984). The present report extends the distribution of this species northwards to Andhra Pradesh also.

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34. *STYLIDIUM TENELLUM* SWARTZ (STYLIDIACEAE) — A NEW RECORD FOR SOUTH INDIA

The family Stylidiaceae is very closely related to Campanulaceae and Lobeliaceae (Backer and Brink 1963-65) and is of special phyletic interest because of the peculiar gynostemium. Its members are distinguished from other related families by reduction in stamen number, adnation of the stamen to style and the extrorse anthers. The family has five genera with about 150 species in tropical Asia, Australia, New Zealand and temperate South America. The genus *Stylidium* Swartz (1805) was conserved over *Candollea* Labill (1805) and since this is the type genus of the family, the name of the latter was changed from Candoleaceae to Stylidiaceae (Lawrence 1951). If *Donatia* Forst. of which the systematic position is not at all clear is included, four genera are confined to Australia, Tasmania, New Zealand and Magellan region of South America. *Stylidium* is almost entirely Australian but a few species occur in Malaysia, Sri Lanka and continental Asia (Hooker 1885). Two species of *Stylidium*, very similar to certain intra-tropical ones, were found by Koenig—*S. uliginosum* in Sri Lanka and *S. tenellum* in Malacca. Two additional species are encountered in Dr Wallich's Catalogue, *S. wightianum* from peninsular India and *S. kunthii* from Khasi hills, Silhet, showing as in many other instances, the spreading of species into congenial climates beyond what at first appeared the natural limits of an order (Royle 1970, Kanjilal 1939).

According to Babu (1977) there are two species of *Stylidium* (*S. tenellum* Sw. and *S. kunthii* Wall.) in India, confined to eastern India with one extending to sub-Himalayan tracts. Babu (loc. cit.) has collected *S. tenellum* from grassy localities in the sal *Shorea robusta* forest in Rajpur and has reported it to be rare. These two species have also been reported earlier from Bihar and Orissa (Haines 1921-1924); and *S. tenellum* var. *minima* Clarke from Chhotanagpur (Prain 1963).

We are reporting for the first time the occurrence of *S. tenellum* from south India and have collected the specimens from Devarayanadurga while carrying out floristic explorations in Tumkur district, Karnataka, since 1985. The description of the plant is given below:

Stylidium tenellum Sw. Mag. Ges. Naturf. Fr. Berlin 1: 51. t. 2 + 3, 1807 (non R. Br. 1810); Hook. f. F.B.I. 3: 420, 1885; Mildbraed, Pfreich. 35: 35. 1908; Ridley, Fl. Malay peninsula 2: 197. 1923; Haines, Botany of Bihar & Orissa part iv, 499. 1921- 24; Sloot. Fl. Males. ser. 1. 4: 530. 1954; Babu, Herb. Fl. Dehra Dun, p. 291. 1977.

Very small slender herb, glabrous, branched, branches filiform, stems dark brown or copper brown; leaves mostly basal, alternate, basal leaves mostly spathulate or linear or ovate, 3-nerved, nerves visible only on the upper surface; flowers solitary, minute, sessile in the axils of leafy bracts, zygomorphic, epigynous; base of the flower glandular; sepals 5, linear, subequal, rotately spreading, persistent in the fruits, lower lobes fused to 1/4 length; corolla strongly bilabiate, two of them prominent and ray-like, lobes divided, corolla tube minute; stamens 2, filaments united into a column, column slightly bent to one side, anther lobes 4, all equal, syngenaceous, stigma hairy; ovary inferior, well developed; capsule linear, elongating in fruit, dehiscing along longitudinal sutures; seeds powdery, minute, surface light brown, smooth, more or less angled.

Coll.: V. Bhaskar and C.G. Kushalappa 1944, 20 October 1986; 2079a, 10 December 1987, Devarayanadurga, Tumkur dist., Karnataka (Figs. 1 and 2).

This delicate herb occurs in moist grassy places at the foot of the hill during rainy season. The plants are so inconspicuous in stature (5-8 cm) that one may miss them completely or mistake them for most common utricularias. *Rotala ilecebroides*, *Lindernia*, *Bergia*, *Canscora diffusa*, *Xyris*, *Commelina* and *Eriocaulon* form the other chief associates. However, they may be distinguished by their copper brown tinged stem, pink or rose coloured flowers and the peculiar gynostemium with 2 stamens connate with style and extrorse anthers



Pullaiah, T and Chennaiah, E. 1991. "Cyclea peltata (Lam.) Hook. F. and Thoms., Viola betonicifolia J.E. Smith and Tephrosia candida (Roxb.) DC: New records for Andhra Pradesh." *The journal of the Bombay Natural History Society* 88, 464–465.

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