

mucronate tip fleshy, externally puberulous, translucent-white suffused with purple; lateral lobes 0.9-1.1 x 0.3-0.5 cm, elliptic-oblong, distinctly 3-nerved, spreading. Lateral staminodes petaloid 0.8-0.9 x 0.6-0.65 cm, obovate, obtuse, slightly and unequally bilobed, basal end with 2 reddish-purple secreting glands, base united to form a short spur. Lip c. 1.2 x 1.2 cm in diameter. When flattened, cupular, fleshy, orange-yellow with reddish-purple dots and streaks, the median vein thickened from base, and forms a blunt projection in front, deep orange in colour. Stamen 6-7 mm long, curved, anthers at right angles to it; Anther cell c. 4 x 2 cm long, oblong, contiguous, connective narrow, not produced. Style c. 2.1 cm long, slender, translucent-white, glabrous, passing through the furrow of anther or connective of anther. Stigma small, sub-globose. Ovary c. 3.5 mm long, ribbed, minutely hairy, with 2 stylodes c. 3.8 mm long crowning the ovary, 1-celled with many ovules, with parietal placentation.

**Flowering:** April

**Altitudinal Zones:** 300-500 m.

**Distributional Status:** Rare

**Remarks:** It grows on the burnt Sal forest floor.

#### ACKNOWLEDGEMENTS

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### 36. *ARISAEMA ECHINATUM* (WALL.) SCHOTT — AN ADDITION TO THE ARACEAE OF PENINSULAR INDIA

(With one text-figure)

While revising the genus *Arisaema* Mart for a study on the Araceae of India, it was found that the material of an *Arisaema* species at Madras Herbarium (MH), collected in the Silent Valley on the Western Ghats, Kerala, had been wrongly determined as *A. erubescens* (Wall.) Schott. Critical examination revealed that it is *A. echinatum* (Wall.) Schott. The identity was later confirmed with the help of the protologue and type. *Arisaema echinatum* is known to occur in Manipur, Meghalaya and Sikkim in India, and also in Bhutan, China and Nepal. It is recorded here from Kerala for peninsular India. A detailed description is provided.

*Arisaema echinatum* (Wall.) Schott in Schott & Endl., Melet. Bot. 1: 17. 1832; Hook. f., Fl. Brit. India 6: 506. 1893; Engl., Pflanzenr.

(IV. 23 F) 73: 181. 1920; D. Chatterjee in Bull. Bot. Soc. Bengal 8: 124. 1955; Hara, Fl. E. Himal. 2: 152, t. 20, f. c-d, 351, f. 55m. 1971; Pradhan, Himal. Cobra-lilies: 90. 1990. *Arum echinatum* Wall., Pl. Asiat. Rar. 2: 30, t. 136. 1831; Wall., Numer. List No.: 8916. 1848; Engl. in DC., Monogr. Phan. 2: 555. 1879. - Type: Nepal, Sheopore, 1821, Wall., Numer. List No. 8916 (CAL, K, MH microfiche!).

Dioecious, rarely monoecious, cormous herb; corm 2-5 cm across, depressed-subglobose. Cataphylls 1-2, 2.5-22 cm long, obtuse, membranous. Leaf solitary; petiole 12.5-46 cm long, cylindric, pale green, streaked with reddish-brown, glaucous; leaflets 6-11, radiate, subsessile, 4.5-30 x 0.7-4 cm, oblanceolate to oblong-lanceolate, attenuate or subacute at the base,



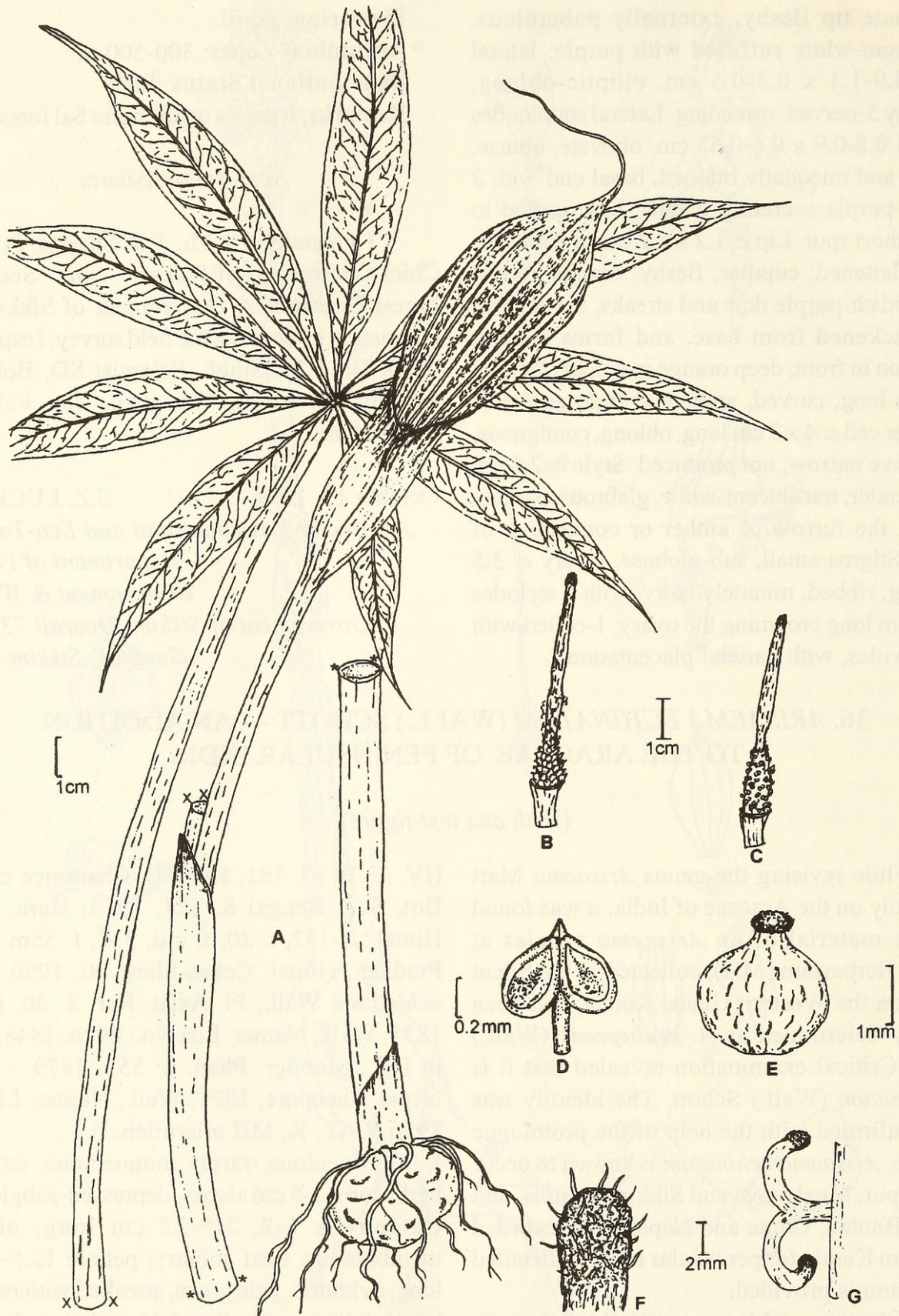


Fig. 1: *Arisaema echinatum* (Wall.) Schott: A. Habit; B. Bisexual spadix; C. Staminate spadix; D. Staminate flower; E. Pistillate flower; F. Apex of spadix-appendix; G. Sterile flower



undulate along the margins, caudate-acuminate at the apex, deep green above, pale green with streaks and glaucous beneath; midnerve broad at the base, narrowing towards the tip; lateral nerves slender, 10-14 on each side, obliquely ascending from midnerve, continuous to form intra-marginal nerves. Peduncle solitary, 7-35 cm long, green, streaked with reddish-brown, enclosed by the petiole and then exserted. Spathe 9.5-27 cm long, green, striped with white, brown or purple inside, dull white outside, glabrous; tube 3-6 x 1.5-2 cm, cylindric, convolute, green-and-white striped outside, dark purple striped inside, spreading at the mouth; limb 3-7 x 2.5-5 cm, ovate-lanceolate, vaulted, abruptly tapering into a long slender pendulous 5-15 cm long tail. Spadix included, cylindric, erect, hardly exserted beyond the mouth of the tube. Pistillate spadix 4-7.5 cm long; pistillate flower-portion 0.7-1.5 cm long, dense, with a few sterile flowers above (or none) along with a few staminate flowers; pistillate flowers many, 1.5-2 x 1.7-1.8 mm; ovary 1.5-1.7 x 1.5-1.8 mm, subglobose, green, streaked; ovules 2-3, basal; style minute; stigma discoid, white, viscid. Sterile flower-portion c. 1 cm long; sterile flowers 1-3.5 mm long, subulate, bifurcate, purple at the apex. Staminate spadix 4-6.5 cm long; staminate flower-portion 1.5-2 cm long; staminate flowers many, sparse; filament 0.1-0.5 mm long; anthers 1-5, 2-lobed, purplish brown, dehiscing by a pore; lobes 0.4-0.7 x 0.5-0.9 mm, globose or depressed-subglobose; connective beaked. Appendix 2.5-4.5 x 0.5-0.9 cm, cylindric or slightly

compressed, light green, streaked with purple, swollen at the base, contracted in the middle, rugose or echinate with white bristle, 0.07-0.2 cm long, round margins crenate at the apex. Appendix of staminate spadix distinctly stipitate; stipe c. 0.5 cm long. Berries c. 0.6 cm long.

**Fl. & Fr.:** Feb.-July.

Note: Easily distinguished by its densely echinate spadix-appendix apex. Commonly called the spiny cobra-lily (Pradhan *l.c.*). Berries of *Arisaema* spp. are bird-dispersed (Ridley 1930). This species may have been dispersed by birds internally.

**Specimen examined:** Kerala: Palakkad district, Silent Valley R.F., 900 m, 22.iv.1980, *V.J. Nair* 67259 (CAL, MH). Manipur: Mao, 6,500 ft (1975.25 m), 11.ii.1954, *S.C. Sinha* 1873 (CAL). Meghalaya: Khasia hills, Dumpep, 30.v.1911, *H. Burkill* & *S.C. Banerjee* 34249 (CAL). Sikkim: North district, Tallam Samolong, 25.vii.1986, *D.C.S. Raju* & *S. Singh* 6124 (SHC).

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#### REFERENCE

RIDLEY, H.N. (1930): The dispersal of plants throughout the World. L. Reeve & Co. Ltd, Ashford, Kent. Pp. 396.

### 37. TWO NEW ADDITIONS TO THE SEDGES, FAMILY CYPERACEAE, OF ANDHRA PRADESH

(With one text-figure)

During an exploration on aquatic and the authors encountered two interesting taxa wetland angiosperm diversity in Andhra Pradesh, which, on critical examination, were identified





Sasikala, K., Vajravelu, E., and Daniel, Pitchai. 2001. "Arisaema Echinatum (Wall.) Schott: An Addition To the Araceae of Peninsular India." *The journal of the Bombay Natural History Society* 98, 495–497.

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