

A new variety of *Arisaema* (Araceae) from Western Ghats of India

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Summary. A new taxon of *Arisaema*, *A. murrayi* (J. Graham) Hook. var. *sonubeniae* from North Western Ghats of Maharashtra, India is described. Line drawings and a distribution map are provided.

Introduction

The genus *Arisaema* Mart. comprises c. 170 species (Mayo *et al.* 1997), 210 species (Govaerts & Frodin 2002) or c. 150 species (Gusman & Gusman 2002). In addition, Govaerts & Frodin (*l.c.*) recognized 9 subspecies and 24 varieties whereas Gusman & Gusman (*l.c.*) recognized 12 subspecies, 8 varieties and 2 formas. The genus extends from Central and East Africa to southeast Asia, via Yemen, Oman, Pakistan, Afghanistan, the Himalayan range, India, China, Korea, Japan, Siberia and North America. In India, the genus comprises 44 species and 9 varieties (Karthikeyan *et al.* 1989), 38 species and 6 varieties (Govaerts & Frodin *l.c.*) and 36 species, 1 subspecies, 1 variety and 1 form (Gusman & Gusman, *l.c.*)

During a floristic survey of Junnar Taluka, Pune district, Maharashtra State, India, an *Arisaema* plant was collected with the spathe tube purple-lavender in its upper half, the spathe limb purple and the appendix dark purple in the lower portion and white in the upper portion. After study of relevant literature (Sivadasan 1982; Sasikala 2000; Gusman & Gusman, *l.c.*) and comparison with herbarium collections at BSI and K and our own field observations, we are of the opinion that this plant is distinct, and we therefore describe it here as a new variety of *Arisaema murrayi* (J. Graham) Hook., a species endemic to Peninsula India (Gujarat, Nagar haveli, Maharashtra, Karnataka, Tamil Nadu and Kerala).

***Arisaema murrayi* (J. Graham) Hook. var. *sonubeniae* Tetali, Punekar & Lakshmin. var. nov.** a varietate typico tubo spathae in dimidio superiore purpureo-lavendulo macula scarlatina basi antici notato (non viridi pallide vittata ad orem albicanti), limbo spathae

deorsum curvato (non rectangulariter flexo) pallide purpureo-lavendulo maculo atropurpureo basi notato (non albo venis translucentibus notato basi cerasino-fasciato), appendice in dimidio inferiore atropurpurea in dimidio superiore alba non viridi purpureo-suffusa differt. Typus: India, Maharashtra, Pune Distr., Junnar Taluka, Ganesh Khind c. 8 km from Junnar village on Malshej Ghat Road, 25 June 2002, Tetali & Punekar 186490 (holotypus CAL; isotypi K, BSI).

Perennial herbs. Corms warty, flesh-coloured, hemispherical, 2.8–3 cm tall and 3.5–4 cm diam. in monoecious plants, 1.4–1.9 cm tall and 1.5–2.5 cm diam. in dioecious male plants; roots arising from the upper side of the corm; pink buds present on the upper side of the corm. Cataphylls 3, outermost almost underground, deltoid, c. 1.8 cm long without any pigmentation, innermost longest, c. 15.5 cm long, oblong, rounded at the apex, mucronate slightly below tip on the outside, rose-tinged with small red dots, coriaceous, underground portion white. Leaves mostly solitary, rarely two in monoecious plants, petiole 12–40 cm long, longer in monoecious plants; 0.6–1.5 cm diam. at base, 0.5–1 cm at middle and 0.3–0.7 cm at tip, light green in mature plants, greyish-brown tinged when young; leaf blade subpedatisect, leaflets 5–9, sessile, 5.5–17 × 1.7–6.5 cm, elliptic to obovate, base cuneate, apex caudate in monoecious plants, mucronate in dioecious male plants, dark or pale green above, glossy below; midrib, veins and veinlets prominently raised below, lateral nerves 10–12, uniting to form an intramarginal nerve 3–6 mm from the margin; margins glandular, erose. Inflorescence solitary,

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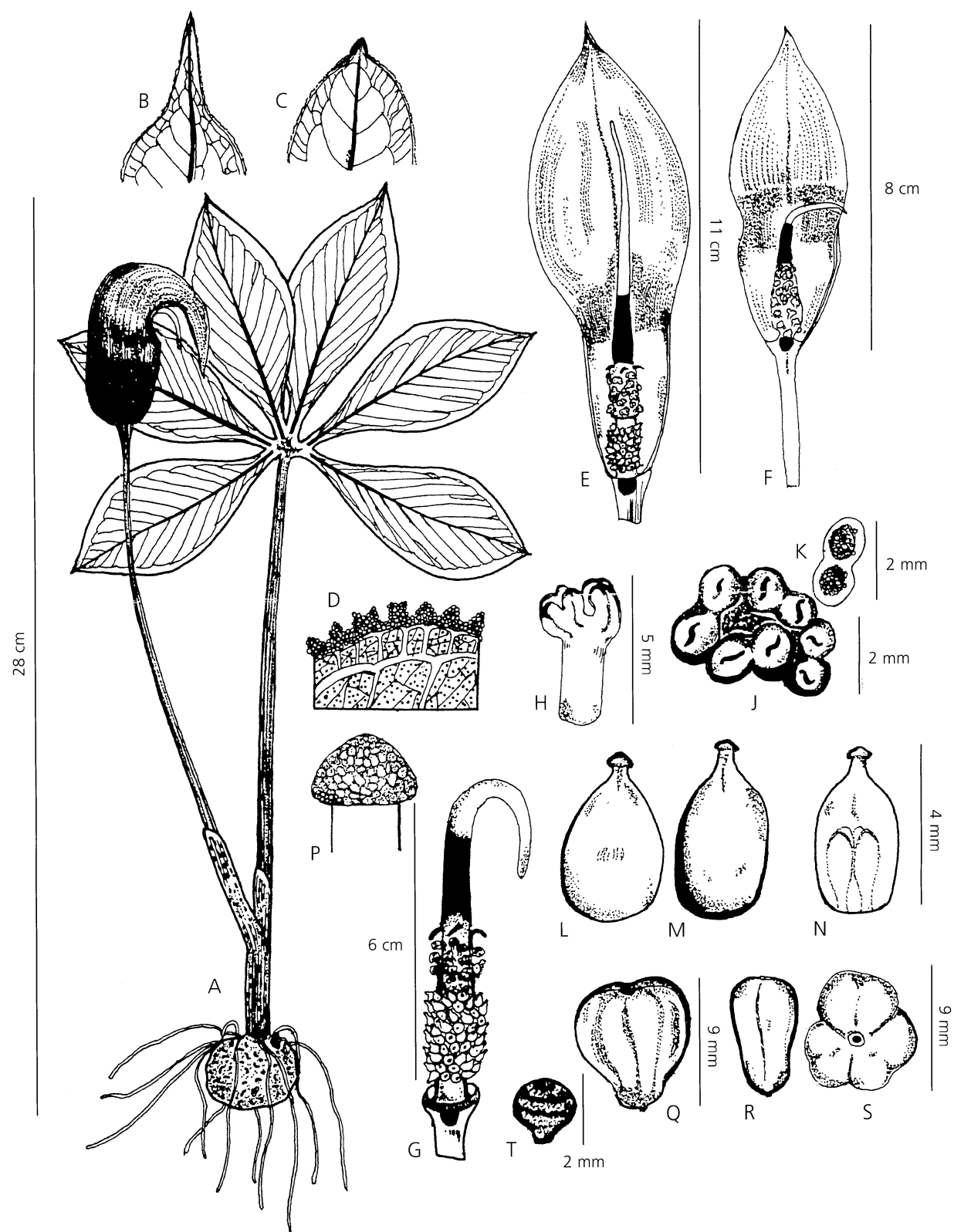


Fig. 1. *Arisaema murrayi* var. *sonubeniae*. **A** habit; **B** leaflet apex of monoecious plant; **C** leaflet apex of dioecious male plant; **D** leaflet margin; **E** spathe cut open to show androgynous spadix; **F** spathe cut open to show staminate spadix; **G** spadix; **H** stamen; **J** upper view of anther lobes showing slit dehiscence; **K** upper view of anther lobes after dehiscence; **L** & **M** gynoeceum; **N** L.S. of gynoeceum; **P** stigma; **Q** & **R** fruit; **S** upper view of fruit; **T** seed. Drawn from Tetali & Punekar 186490 by SACHIN ANIL PUNEKAR.

usually with male spadix, rarely androgynous spadix, exclusively female spadix not seen; peduncle 15–30 cm long, 0.4–0.8 cm diam., pink, apex green tinged with very faint white or purple streaks. Spathe 6.5–11.6 cm long; tube 2.5–4.7 cm long, 1.3–2.3 cm diam., cylindrical or narrowly funnel-shaped, mouth with revolute margins, convolute part of tube prominently veined, green in lower half, with scarlet blotch of c. 0.5 cm long externally on anterior side where tube margins meet at base, faint purple or lavender in upper half; limb expanded, ovate, acuminate, 3.5–6.5 cm long, 2.5–3.5 cm diam., light purple or lavender, distinctly veined, margins revolute in basal half, dark purple at base inside, curved forward so as to be horizontal. Spadix stipitate, curved, 4–8.5 cm long, stipe 2–4 mm long, androgynous spadix longer than staminate spadix; androgynous spadix with staminate portion 0.6–1.5 cm long and 0.6–0.8 cm in diam., in male spadix 1.8–2.6 cm long and 0.4–0.6 cm diam., staminate flowers scattered; stamens loosely arranged, each consisting of 3–6 fused anthers borne on a short stipe, c. 1.5 × 1 mm; anther lobes oblong, bilobed c. 0.5 mm long, pale yellow, dehiscing by upper transverse slit; sterile flowers 3–4, subulate, c. 2 × 0.5 mm, purple, present only rarely above the staminate flowers in androgynous spadices, otherwise absent, pistillate portion 1.6–3 cm long, 1.2–1.3 cm diam.; ovaries cylindric or ovoid, densely arranged, each with 4 erect, basal, orthotropous ovules; style short, white, pale green at base, 0.4–0.7 mm long and c. 0.3 mm in diam.; stigma capitate, papillose, brownish or white; appendix stout, 1.8–4.5 cm long, purple in lower half, white in upper half, columnar, round, curved, basally swollen with furrows and tapering towards apex, white or faint purple at base. Berries 0.6–0.9 cm long and 1–1.2 cm across in the middle, obovoid-oblong, green when tender, becomes orange-scarlet after maturity. Seeds spherical, 0.2–0.3 mm long and 0.2 mm across, brown. Fig. 1.

VERNACULAR NAME. “Patari”

DISTRIBUTION. India, Maharashtra State, Pune and Nasik districts.

ECOLOGY. Teak forest on hill slopes, in association with *Ampelocissus latifolius*, *Artemisia* sp., *Curcuma pseudomontana*, *Dioscorea oppositifolia*, *Gloriosa superba*, *Habenaria foliosa* var. *foetida*, etc. in rock crevices and near boulders. Around 850 m.

ETYMOLOGY. This variety is named in honour of the late Sonuben N. Godrej who was a social worker and former Director of the Naoroji Godrej Centre for Plant Research.

SPECIMENS SEEN. INDIA: Maharashtra State, Pune Distr., Junnar Taluka: Ganesh Khind c. 8 km from Junnar

village on Malshej Ghat Road, 25 June 2002, *Tetali & Punekar* 186490 (holotype CAL; isotypes K, BSI), Gogrewadi (Aptali), 22 Sept. 1965, *Hemadri* 107243 (BSI), Junnar – Khangaon road, 4 miles NW, 29 June 1964, *Hemadri* 99520 (BSI), Vanvadi – Kaldari Road, 9 – 10 miles W of Junnar, 26 June 1964, *Hemadri* 94329, 94351 & 94352 (BSI); Khed Taluka: Bhimashankar, 10 June 1960, *Puri* 2264 (BSI) & 12 June 1961, *Janardhanan* 72232 (BSI), foot of Shinga hill, 12 Oct. 1961, *Janardhanan* 75886 (BSI), Choura hill, 7 June 1962, *Janardhanan* 76649 (BSI). Nasik Distr., Peint Taluka: Nanasi-Ambe, c. 8 km, 18 July 1966, *Cherian* 109363 (BSI); Nasik Taluka: Trimbak, near Lagnastambha temple, 6 Oct. 1983, *Lakshminarasimhan* 165990 (BSI).

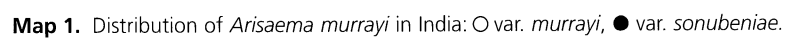
NOTE. This variety differs from the typical variety in having the spathe tube purple-lavender in the upper half with a scarlet blotch at the base on the anterior side, the spathe limb curved downwards, pale purple-lavender with a dark purple blotch at the base, stigma capitate and the appendix dark purple in the lower half and white in the upper half. In the typical variety, the tube is green with paler longitudinal stripes, becoming white near the mouth. The limb is almost at right angles to the tube and white with translucent veins and a cherry-red cross band at the base (except at the rear), and the appendix is green suffused with purple.

The type variety is found in south western Maharashtra (Borbet, Khandala, Mahabaleshwar, Matheran, Mulshi, Mumbra, Panchgani, Purandhar, Sinhagadh, Vasota) where annual rainfall is 400 cm or above. Variety *sonubeniae* is found in north western Maharashtra (Bhimashankar, Kaldari, Khed, Ganeshkind, Harishchandragad, Trimbakeshwar) where the annual rainfall is between 200–300 cm (Map 1).

As in most of the species of the genus *Arisaema*, this variety exhibits ‘paradioecy’, in which androgynous spadices are produced from larger corms and only male spadices from smaller corms. The size of the plant was found to vary according to the sex. Plants with androgynous spadices were more robust compared to those with male spadices. Among the 45 flowering individuals examined, 42 had male spadices and 3 had androgynous spadices. These above figures indicate a high male-female ratio, i.e. 14:1, commonly observed in other dioecious species of *Arisaema*. The leaves are eaten locally as a vegetable.

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