Rheedea
Vol.16 (1)
45-48
2006

A New Variety of *Arisaema sahyadricum* Yadav *et al.* (Araceae) from the Western Ghats of Maharashtra, India

M. M. Sardesai, S. P. Gaikwad and S. R. Yadav

Department of Botany, Shivaji University, Kolhapur, Maharashtra 416 004, India.
E-mail: sardesaimm@yahoo.co.in

Abstract

A new variety of *Arisaema sahyadricum* Yadav *et al.* is described and illustrated. This variety, called *Arisaema sahyadricum* var. *ghaticum* Sardesai *et al.*, differs from the variety proper by its smaller size, connectives having 2-6 conical processes and spadix appendage much longer than the spathe.

Keywords: *Arisaema sahyadricum* var. *ghaticum*, New variety, The Western Ghats

Introduction

The genus *Arisaema* C. Martius (Araceae) is represented by about 170 species distributed almost throughout the world (Mayo *et al.*, 1997). In India it is represented by 43 species and 9 varieties distributed in the Himalayas and the Western Ghats (Karthikeyan *et al.*, 1989; Pradhan, 1997). The Western Ghats harbour 18 species of *Arisaema*, of which 16 species are reportedly endemic to the area (Chatterjee, 1959; Sivadasan, 1985; Sivadasan & Sathish Kumar, 1987; Yadav *et al.*, 1993, 1998). In Maharashtra, the genus *Arisaema* is represented by 7 species (Sharma *et al.*, 1996; Singh *et al.*, 2001), of which *A. caudatum* Engl. and *A. sahyadricum* Yadav *et al.*, are endemic to the State (Mishra & Singh, 2001).

The authors during their field study on flowering plants of Maharastra came across a few specimens of *Arisaema*. A perusal of relevant literature and critical examination helped the authors to recognize it as a new variety of *Arisaema sahyadricum* Yadav *et al.*

Arisaema sahyadricum var. **ghaticum** Sardesai, Gaikwad *et* Yadav, ***var. nov.*** **Figs 1, 2**

Varietate typica arcte similis staturo minore, connectivis 2–6 processis elongatis conicis, spadicis appendicibus gradatim acutis spatha multo longiore differt.

Type: INDIA, **Maharashtra**: Kas 26th May 1997, *Sardesai 394* (Holotype, CAL; Isotypes BLAT, BSI, CALI, K, Shivaji University, Kolhapur).

Perennial, succulent, cormatous, monoecious or dioecious herbs; corms 1.3-6 cm across, oblate; roots fibrous,

Figure 1. *Arisaema sahyadricum* a. var. *sahyadricum*; b, c. var. *ghaticum*

arising from the upperside of corm; cataphylls 1-5, each 1.5-9.3 cm long, gradually narrowed into acute or obtuse tip with grayish-brown mottling. *Leaves* usually 1, rarely 2; petiole 10-25 cm long, 1-1.3 cm in diameter at base, yellowish-green, basal half or more sheathing the peduncle; leaflets 3-9, radiate, sessile, each 4–16 x 2.5-7.5 cm, broadly elliptic-obovate, base narrowly cuneate, apex abruptly acuminate, dark green above, light green and glossy below, primary nerves 11-30, arising at an angle of 40^0-55^0 from midrib and uniting into an intramarginal nerve 2–3 mm below the erose margin. *Peduncle* much shorter than

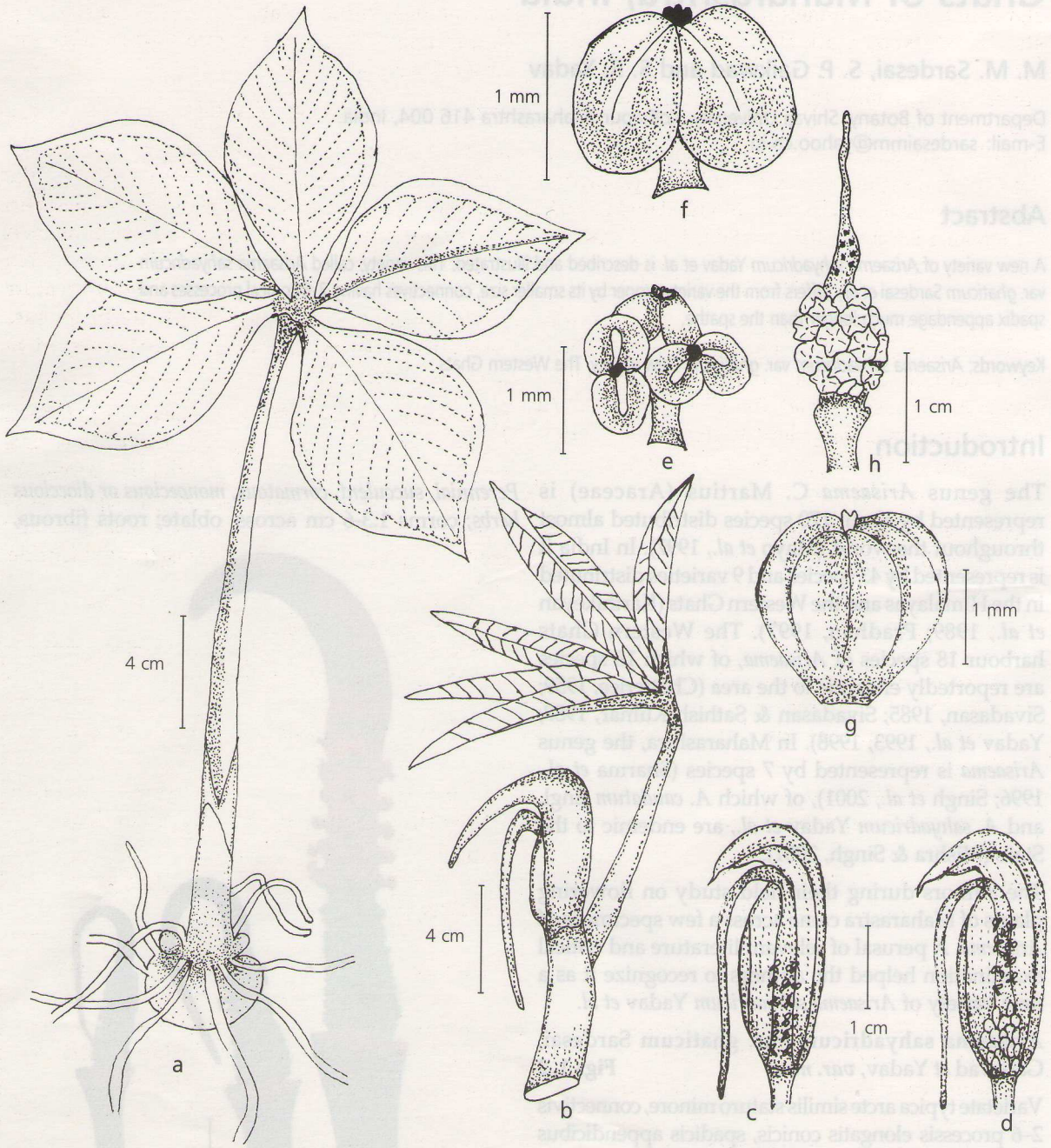

Figure 2. *Arisaema sahyadricum* var. *ghaticum* Sardesai, Gaikwad *et* Yadav. - a. & b. Habit; c. Infloresence with spathe partly removed showing staminate spadix; d. Bisexual; e. Synandrium; f. Anther; g. Berry; h. Infructescence.

petiole, 4-10 cm in length, 0.25-1 cm in diameter, longer in infructescence; spathe 3–5.5 cm long with narrow funnel shaped convolute tubular basal portion of 1.5-2.5 x 1-1.2 cm, middle vaulted, dilated, ovate, reddish-green, more or less hemispherical, limb portion of 1–2 x 1.5-2 cm, and a terminal abruptly tapering tail portion of 0.8-1 cm length; spadix sessile or subsessile, bisexual or unisexual, large in female. *Male spadix* with floriferous part 1.5-2.5 cm long; staminate flowers numerous, scattered, sessile or shortly stalked, stalk 0.05-0.2 cm long, each represented by 4-8 purplish anthers, anther lobes suborbicular, connective produced into 2-6, very short, 0.1–0.2 mm long processes, dehiscence by apical short longitudinal slits, spadix-appendix short, 2.5-3.6 cm long, cylindric, thick, gradually pointed at apex, recurved. *Bisexual spadix* differentiated into 0.3-1.2 cm long basal pistillate portion; 1.2-1.7 cm long, intermediate staminate portion male flowers and appendix as in male spadix but larger, 3.2-4 cm long. *Pistillate flowers* numerous, closely arranged; ovaries green, ovoid with 3–9 basal ovules; style very short, 0.5-1.5 mm long; stigma white, peltate, papillose. *Berries* numerous, obovoid, 0.4-0.7 x 0.4-0.5 cm, red at maturity, irregularly lobed, depressed at apex, apiculate; seeds 3-8 per berry, immersed in a mucilaginous pulp.

Etymology: The specific epithet to indicates that the new taxon is confined to the Ghats.

Flowering & Fruiting: May- July.

Habitat: The new variety grows on lateritic plateaus in accumulated soil amidst trees of *Careya arborea* Roxb., *Catunaregam spinosa* (Thunb.) Tirveng., *Memecylon umbellatum* Burm. f., *Syzygium cumini* (L.) Skeels, and in bushes of *Pavetta crassicaulis* Bremek. and *Euphorbia ligularia* Roxb. It also grows in crevices of laterite rocks.

Distribution: India (Maharashtra, Pune District: Rajgad and Sinhgad fort; Satara District, Kas and Chalkewadi plateaus).

Local Name: Saapkanda (Marathi)

Note: The spadices of *Arisaema sahyadricum* var. *ghaticum* and *A. murrayi* usually appear during the last week of May or first week of June when mist sets on the hills before or during the pre-monsoon showers. Formation of several small cormlets from the upperside of parent corm is a noteworthy feature of the variety, and helps the plants propagate vegetatively. Several small plants were observed all over the plateau.

Common associates include *Arisaema murrayi* (Grah.) Hook., *Ceropegia jainii* Ansari & Kulk., *C. oculata* Hook., *C. vincaefolia* Hook., *Curculigo orchioides* Gaertn., *Curcuma neilgherrensis* Wight, *Hypoxis aurea* Lour., *Iphigenia stellata* Blatt., *Peristylus densus* (Lindl.) Sant. & Kapad. and *Scilla hyacinthina* (Roth) McBride.

Table 1. Morphological differences of *Arisaema sahyadricum* var. *ghaticum* and *A. sahyadricum* var. *sahyadricum*

Arisaema sahyadricum* var. *ghaticum	***A. sahyadricum* var. *sahyadricum***
Spadices appear during pre-monsoon showers.	Spadices appear after onset of monsoon.
Flowering commences before leaves appear.	Flowering commences only after leaves appear.
Leaflets initially pendulous.	Leaflets erect.
Anther connectives with 2–5 elongated conical processes.	Anther connectives without any processes.
Spadix appendage very slender, gradually pointed and more protruding than the spathe.	Spadix appendage very thick, blunt and as long as or hardly longer than the spathe.
Appendices rough and papillose.	Appendices smooth.
Several small cormlets arise from the upper side of parent corm.	No cormlets formation from the upper side of parent corm.

Acknowledgements

Authors are thankful to Pascal Bruggeman, Wormer and Wilbert Hetterscheid, Botanical Garden Wageningen University, Wageningen, The Netherlands for critical comments and to Dr J. F. Veldkamp, National Herbarium, Leiden, The Netherlands for Latin diagnosis; Head, Department of Botany, Shivaji University, Kolhapur for providing facilities and to Dr Girish Potdar for illustrations. The first two authors are thankful to the Department of Science and Technology, Government of India, New Delhi for providing financial assistance under SERC-FAST TRACK proposals for young scientists-2000 scheme.

Literature Cited

Chatterjee, D. 1959. Indian and Burmese species of *Arisaema*. *Bull. Bot. Soc. Bengal* **8**: 118-139.

Karthikeyan, S., Jain, S.K., Nayar, M.P. and M. Sanjappa 1989. *Florae Indicae Enumeratio: Monocotyledonae*. Botanical Survey of India, Calcutta.

Mayo, S. J., Bogner, J. and P. C. Boyce 1997. *The Genera of Araceae*. Royal Botanic Gardens, Kew.

Mishra, D. K. & N. P. Singh 2001. *Endemic and Threatened Plants of Maharashtra*. Botanical Survey of India, Calcutta. pl.14.

Pradhan, U. C. 1997. *Himalayan Cobra Lilies (Arisaema) Their Botany and Culture* (Edn **2**). Primulaceae Books, Kalimpong.

Sharma, B. D., Karthikeyan, S. and N. P. Singh (Eds) 1996. *Flora of Maharashtra State: Monocotyledones*. Botanical Survey of India, Calcutta.

Singh, N. P., Lakshminarasimhan, P., Karthikeyan, S. and P. V. Prasanna (Eds) 2001. *Flora of Maharashtra State: Dicotyledones* - Vol. 2. Botanical Survey of India, Calcutta.

Sivadasan, M. 1985. A new species of *Arisaema* (Araceae) from South India. *Kew Bull.* **40**: 801-803.

Sivadasan, M. & C. Sathish Kumar 1987. A new species of *Arisaema* (Araceae) from India with a note on variation and evolution of staminate flowers. *Ariodeana* **10**: 18-21.

Yadav, S. R., Patil, K. S. and M. P. Bachulkar 1993. *Arisaema sahyadricum* (Araceae), a new species from India. *Willdenowia* **23**: 177-179.

Yadav, S. R., Patil, K. S. and M. K. Janarthanam 1998. A new species of *Arisaema* (Araceae) from Western Ghats of Southern India. *Aroideana* **20**: 53-56.

Received : 21.8.2003
Revised and accepted : 08.5.2006