

Aristolochia maxima (Aristolochiaceae): A new record for India

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Abstract

Aristolochia maxima is a Neotropical species native to Central and South America. It is reported here for the first time from northern Western Ghats of Maharashtra, India. A brief description along with photographs are provided for easy identification.

Keywords: India, Maharashtra, Taxonomy, Neotropical.

Introduction

Aristolochia L., the largest genus of the family Aristolochiaceae, comprises c. 500 species, is pantropically distributed, extending to the subtropics as well as to Mediterranean zones with a few species in temperate areas (Pfeifer, 1966; Wagner *et al.*, 2012; Do & Nghiem, 2017). Diversity of the species declines sharply from tropics to temperate regions with China, Mexico, Brazil, and Hispaniola showing high rate of endemism (Pfeifer, 1966; González *et al.*, 2014; Do & Nghiem, 2017). In India, the genus is represented by 18 species (Santapau & Henry, 1973; Sivarajan & Pradeep, 1989; Karthikeyan *et al.*, 2009; Baruah *et al.*, 2012; Ravikumar *et al.*, 2014). During the field exploration to northern Western Ghats in 2013, an unreported species of *Aristolochia* was collected from Tilarí Ghats of Maharashtra. On careful examination, it was identified as *Aristolochia maxima* Jacq., which is reported here as new to India.

Taxonomy

Aristolochia maxima Jacq., Enum. Syst. Pl. 30, 1760. *Neotype*, (designated by Howard, 1988): Jacq., Select. Stirp. Amer. Hist. t. 146. (1763). **Figs. 1 & 2.**

Sprawling lianas, c. 20 m long, stem at base woody with corky-ridged bark. Leaves oblong to obovate, 6–11.3 × 2.6–5 cm, obtuse to apiculate at apex, truncate to shallowly subcordate at base, with prominent, raised veins beneath; petioles c. 1.6 cm long. Inflorescences on new growth, axillary, solitary flowers or rhipidiate from base of plant; flowers puberulent, bracteolate, geniculate, purple



Fig. 1. *Aristolochia maxima* Jacq. in flowering and fruiting.

brown with venaceous veins; the utricle horizontal, ovoid, 2–2.5 cm long, creamy white with reddish brown patches, stellate hairy, reddish brown ring towards the base; syrx absent; the tube bent, 2 cm long, the limb 1 lobed, ovate, gradually expanding from the tube with dense papillae, 2.5–3.5 cm long, 2–3 cm wide. *Gynostemium* 6 lobed, 4–5 × 4 mm, crown-shaped; lobes acute to obtuse. Anthers 6, oblong, adnate to the base of the gynostemium, each anther consists of two thecae with four microsporangia (pollen sacs) equidistant. Ovary 6 locular, 2–2.5 cm long. Fruits very large, pendent, ovoid, 14–17 × 6–7 cm, dehiscence acropetal, septifragal, exposing latticed septa, hypanthium absent. Seeds numerous, flat, triangular, 10–13 × 7–9 mm, 1 mm thick.

Flowering & fruiting: March–August.



Fig. 2. *Aristolochia maxima* Jacq. **a. & b.** Corky stem; **c.** Flowering twig; **d.** Flower; **e.** Flower side view; **f.** Flower back view; **g.** Flower with calyx column open (**1.** Unicellular hairs in the limb, **2.** Stellate hairs inside the utricle); **h.** Gynostemium; **i.** Stamens: front view; **j.** Stamens: back view; **k.** C.S. of ovary; **l.** Fruit; **m.** Seeds.

Distribution: Central, North and South America, Martinique. In India it is found growing on moist thickets at an elevation of c. 590 m along northern Western Ghats in Maharashtra.

Notes: This species is commonly known as Florida Dutchman's pipe vine and is distributed in the Neotropical regions and its present report is of phytogeographical significance as may be a case of escape into wild. Pollination systems of *A. maxima* are different from those of other *Aristolochia* in lacking trap mechanisms. Furthermore, the pollinators oviposit in the flowers, and their larvae grow on the fallen, decaying flowers on the ground. Therefore, the plants have a mutualistic relationship with their pollinators (Sakai, 2002). Preliminary observations show that even though there is profuse fruiting and seed setting, the regeneration rate is quite low.

Specimens examined: INDIA, Maharashtra, Kolhapur district, Tilari Ghats, 15.10.2013, A.G. Panduragan & Deepu Sivasdas 78664 (TBGT!).

Literature Cited

- Baruah, S., Sarma, J. & S.K. Borthakur 2012.** *Aristolochia planifolia* (Koltz.) Duch. (Aristolochiaceae): A new record for Assam, India. *Asian J. Cons. Biol.* **1**(2): 138–139.
- Do, T.V. & T.D. Nghiem 2017.** Taxonomic notes on some *Aristolochia* species in Vietnam. *Taiwania* **62**(2): 216–218. <http://dx.doi.org/10.6165/tai.2017.62.216>.
- González, F., Wagner, S.T., Salomo, K., Symmank, L., Samain, M.S., Isnard, S., Rowe, N.P., Neinhuis, C. & S. Wanke 2014.** Present trans-Pacific disjunct distribution of *Aristolochia* subgenus *Isotrema* (Aristolochiaceae) was shaped by dispersal, vicariance and extinction. *J. Biogeogr.* **41**: 380–391.
- Howard, R.A. 1988.** Aristolochiaceae. *Fl. Lesser Antilles* **4**: 120–126.
- Karthikeyan, S., Sanjappa, S. & S. Moorthy 2009.** *Flowering Plants of India – Dicotyledons*. Vol. **1** (Acanthaceae – Avicenniaceae). Botanical Survey of India, Kolkata.
- Pfeifer, H.W. 1966.** Revision of the North and Central American hexandrous species of *Aristolochia* (Aristolochiaceae). *Ann. Missouri Bot. Gard.* **53**: 115–196.
- Ravikumar K., Umeshkumar, T. & N. Balachandran 2014.** *Aristolochia gurinderii* (Aristolochiaceae): a new species from Great Nicobar Island, India. *Phytotaxa* **172**(2): 117–122. <http://dx.doi.org/10.11646/phytotaxa.172.2.7>
- Sakai, S. 2002.** *Aristolochia* spp. (Aristolochiaceae) pollinated by flies breeding on decomposing flowers in Panama. *American J. Bot.* **89**(3): 527–534. <http://dx.doi.org/10.3732/ajb.89.3.527>
- Santapau, H. & A.H. Henry 1973.** *A Dictionary of the Flowering Plants in India*. Publication and Information Directorate-CSIR, New Delhi.
- Sivarajan, V.V. & A.K. Pradeep 1989.** A new species of *Aristolochia* (Aristolochiaceae) from India with co-evolutionary notes on *A. indica* and papilionoid butterfly. *Plant Syst. & Evol.* **163**: 31–34. <http://dx.doi.org/10.1007/bf00936150>
- Wagner, S.T., Isnard, S., Rowe, N.P., Samain, M.S., Neinhuis C. & S. Wanke 2012.** Escaping the lianoid habit: evolution of shrub-like growth forms in *Aristolochia* subgenus *Isotrema* (Aristolochiaceae). *American J. Bot.* **99**(10): 1609–1629.

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