Rheedea
Vol. 25(2)
153-155
2015
ISSN: 0971 - 2313

Commelina africana subsp. *zanzibarica* (Commelinaceae): A new record for southern Asia

Sheba M. Joseph, Manudev K.M.[1], Alfred Joe[2] and Santhosh Nampy[2]*
Department of Botany, St. Mary's College, Sulthan Bathery, Wayanad District, Kerala-673 592, India.
[1]Department of Botany, St. Joseph's College, Devagiri, Kozhikode District, Kerala- 673 008, India.
[2]Department of Botany, University of Calicut, Malappuram P.O., Kerala- 673 635, India.
*E-mail: santhoshnampy5@gmail.com

Abstract

Commelina africana L. subsp. *zanzibarica* Faden, a native of Africa is reported for the first time from Kerala, India. It also forms the first report of its occurrence in southern Asia. Detailed description, photographs and relevant notes are provided to facilitate easy identification.

Keywords: Cleistogamous flowers, Commelinaceae, *Commelina*, Kerala, New Record, southern Asia

Introduction

Commelina is the largest genus of Commelinaceae comprising about 206 species in the world (Govaerts, & Faden, 2015). It is the second largest genus of the family in India with 25 species (Nampy *et al*., 2013; Joseph, 2013). Recently, a yellow flowered species of this genus has been collected from the campus of Calicut University, Malappuram district, Kerala and the plants were grown in the experimental garden for further observation. Plants grown in the garden produced yellow flowers and cleistogamous flowers whole through the year and are quite distinct from *Commelina wightii* R.S. Rao, the only yellow-flowered species of the genus in India. Critical examination of the available literature and authentic specimens culminated in the identification of the specimen as *Commelina africana* L. subsp. *zanzibarica* Faden. The identity of the species was subsequently confirmed by Dr. Robert B. Faden (Smithsonian Institution, USA). This represents the first ever record of the species from India and the first report of its occurrence in southern Asia. Detailed description and photo plate are provided to facilitate easy identification.

Commelina africana* L.** subsp**. *zanzibarica Faden, Fl. Trop. East. Africa 148. 2012.

Type: **KENYA**, Kwale District, Jadini Hotel, 30 km south of Mombasa, *R.B. Faden & A. Evans 70/442* (Holotype K). **Figs.1**

A much branched, trailing to ascending, perennial herb, rooting at the nodes, lacking a definite base. Roots thick, fibrous. Stems terete, prostrate, trailing or ascending, glabrous, green; branches 4–13 cm long; subterranean shoots bear cleistogamous flowers and fruits from the rooted nodes; internodes 1–5 (-10) cm long, glabrous. Leaves distichous, subsessile; sheaths 0.7–1 cm long, with a line of pubescence along the fused margins extending below to the internode, white ciliate at the mouth, 1 or 2 cilia at the margins of leaf base; petiole *c*. 3 mm long; laminae ovate, ovate-lanceolate or lanceolate, 3–10 × 1–2.5 cm, acuminate or acute at apex, oblique at base, margins scabrous; pubescent at both surfaces. Spathes solitary, axillary, leaf opposed, conduplicate, slightly falcate, 1.8–3.5 × 1.5–2.4 cm, green, acuminate at apex, cordate at base, with a strong vein on both sides of the midrib bearing long hairs, rest of the spathe subglabrous to pubescent, glabrous inside with a band of pubescence sub-marginally; peduncle 0.5–1.5 cm long, green, pubescent; upper cincinnus 0.4–1 cm long or absent, 1 male flowered; lower cincinnus 5–8 mm long, glabrous, 2–3-flowered. Sepals 3, hyaline, medial boat-shaped, *c.* 2 × 1.4 mm, lateral sepals orbicular, 2.7–3 × 1.8–2 mm, fused ½ of its length. Petals 3, yellow; paired petals orbicular, broader, claws 2.7–2.85 mm long, limb 4.5–5.3 × 6.5–7.5 mm; medial petal ovate-elliptic, 3.5–3.7 × 2–2.3 mm, nearly sessile. Staminodes 2, equal; filaments 2–2.6 mm long, attached to the base of paired petal; antherodes yellow, cruciform with lateral appendages, *c.* 1 × 0.4–0.6 mm. Stamens 3, subequal; filaments fused at the extreme base;

Fig. 1. *Commelina africana* L. subsp. *zanzibarica* Faden: **a.** Habit; **b** & **c.** Flowering shoots; **d.** Sheath apex showing white hairs; **e.** Spathe showing long hairs on veins flanking the midrib; **f.** Cleistogamous flowers; **g.** Capsule, also see the submarginal band of pubescence inside the spathe; **h.** Flower; **i.** Sepals; **j.** Clawed petal; **k.** Medial petal; **l.** Stamens; **m.** Lateral stamen; **n.** Medial stamen; **o.** Staminode; **p.** Capsules; **q.** Seed of dorsal locule-dorsal and ventral views, see the testa fused to the capsule wall; **r.** Seed of ventral locule- dorsal and ventral views (a-e & h-o from *Joe, Nampy & Manudev* 135353; f, g & p-r from *Nampy & Manudev* 139977).

lateral stamens with filaments 5–6 mm long, yellow; anthers ovate, 0.75–1 × 0.5 mm, yellow; medial stamen with filaments 3.5–4.5 mm long, yellowish; anther elliptic-oblong, 1–1.3 × 0.5–1 mm, curved, yellow, connective yellow. Ovary ovate-elliptic, *c.* 1.5 × 0.78 mm, pale green, faintly rugose; style slender, 5–6 mm long, yellow; stigma capitate, yellow. Capsule 1 or 2 in a spathe, oblong-ellipsoid, 4–6 × 2–3.5 mm, light-dark brown with darker brown spots, 3-loculed, bivalved, 1–3 seeded, shortly apiculate or rostrate; ventral locules 1 or 2-seeded, one of the ventral locule seeds or sometimes one ventral locule aborted; dorsal locule 1-seeded. Dorsal locule seed fused to the capsule wall, elliptic, elongate-hemispheric, 2.7–3.5 × 2.3–3.3 mm, dorsi-ventrally compressed; ventral locule seeds broadly obovoid to oblong-rectangular, dorsiventrally compressed; testa dark brown, foveolate to foveolate-reticulate or alveolate; hilum linear; embryotega lateral.

Flowering & Fruiting: The plant flowers and fruits almost throughout the year and the flowers open between 6.00 and 9.00 in the morning.

Habitat: The present collections were from Calicut University Campus, where it grows as a weed along roadsides and open places. It is found that plants grown in the garden are perennating under favourable conditions with abundant moisture. It is assumed that the seeds of this species arrived to campus either through packing materials or through the students from Africa at this University.

Specimens examined: INDIA**, Kerala**, Malappuram District, Calicut University Campus, near Villoonniyal Temple, 19.07.2013, *Joe, Nampy & Manudev* 135353; *Ibid*., 23.09.2014, *Nampy & Manudev* 139977; Botanical Garden, 10.04.2014, *Manudev & Nampy* 138955 (CALI).

Taxonomic notes: *C. africana* L. subsp. *zanzibarica* can be easily distinguished from *C. wightii* in having cleistogamous flowers, pubescent leaves, pubescent spathes with a strong vein on both sides of the midrib bearing long hairs and foveolate to foveolate-reticulate or alveolate seeds as opposed to the absence of cleistogamous flowers, glabrous leaves and spathes without a strong vein on both sides of midrib and smooth seeds in the latter.

Faden (2012) had reported the occurrence of cleistogamous flowers rarely in this subspecies and suggested further observation in the field. However, we have noticed several cleistogamous flowers and fruits on rooted nodes of horizontally creeping, subterranean shoots. Spathes with a strong vein on both sides of the midrib bearing long hairs are a distinctive feature of this taxon.

Acknowledgements

Authors are thankful to Prof. John E. Thoppil, Head, Department of Botany, University of Calicut and The Principal, St. Joseph's College, Kozhikode for facilities. SN is thankful to Department of Science and Technology, New Delhi for financial assistance (F.No.SERB/SR/SO/PS/09/2012).

Literature Cited

Govaerts, R. & R.B. Faden 2015. *World Checklist of Commelinaceae*. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet. http://apps.kew.org/wcsp/ accessed 20 February 2015.

Faden, R.B. 2012. Commelinaceae. *In*: H.J. Beentjee (Ed.), *Flora of Eastern Tropical Africa*. The Board of Trustees of the Royal Botanic Gardens, Kew. p. 450.

Joseph, S.M. 2013. Taxonomic revision of the genus *Commelina* L. (Commelinaceae) in India. Ph.D. thesis, Calicut University (unpublished).

Nampy, S., Joseph, S.M. & K.M. Manudev 2013. The genus *Commelina* (Commelinaceae) in Andaman & Nicobar Islands, India with one new species and three new records. *Phytotaxa* **87** (**2**): 19–29.

Received: 18.06.2015
Revised and Accepted: 28.12.2015