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A new species of *Leptadenia* (Apocynaceae) and two other new records from southwestern Saudi Arabia



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Abstract *Leptadenia jazanica* Y. Masrahi from the province of Jazan, southwestern Saudi Arabia is described as a new species and illustrated. The species differs from the other known nearest species of the genus, *Leptadenia pyrotechnica*, by decumbent to scrambling habit of stems and persistent leaves. In the same province also two new records belonging to the genera *Canavalia* (Fabaceae) and *Craterostigma* (Scrophulariaceae) were collected; they were identified as *Canavalia virosa* (Roxb.) Wight & Arn. and *Craterostigma plantagineum* Hochst.

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1. Introduction

Southwestern Saudi Arabia is remarkable for its comparably high species diversity. This diversity is caused by variety in geomorphological characteristics, which includes islands, sand dunes, sandy plains, low rocky hills and high mountains (Masrahi, 2012). In the recent years, the floristic explorations have resulted in reporting of many new taxa and records in this part of Saudi Arabia (Alfarhan, 2000; Al-Turki et al., 2001, 2002; Al-Turki, 2003; Fayed and Al-Zahrani, 2007; Al-Zahrani and El-Karemy, 2007; Masrahi et al., 2010, 2012).

During field works in Jazan province, southwestern Saudi Arabia, between 2011 and 2014, three interesting species were collected (Fig. 1). One of them is described as a new species of *Leptadenia* (Apocynaceae-Asclepiadoideae) from Tihama and rocky habitats east of Tihama, which cannot be matched with any of the previously known species. And two others (*Canavalia virosa* - Fabaceae and *Craterostigma plantagineum* - Scrophulariaceae) described as new records, from eastern Tihama and Tallan mountain, respectively.

2. Materials and methods

The materials of new species and one of new record (*Canavalia virosa*) were collected from area between Sabya and Abu Arish, whereas another new record (*Craterostigma plantagineum*) was collected from Tallan Mountain, NE of Faifa (Fig. 1). The New species was compared with fresh specimens of its affinity *Leptadenia pyrotechnica*. In addition, relevant literature

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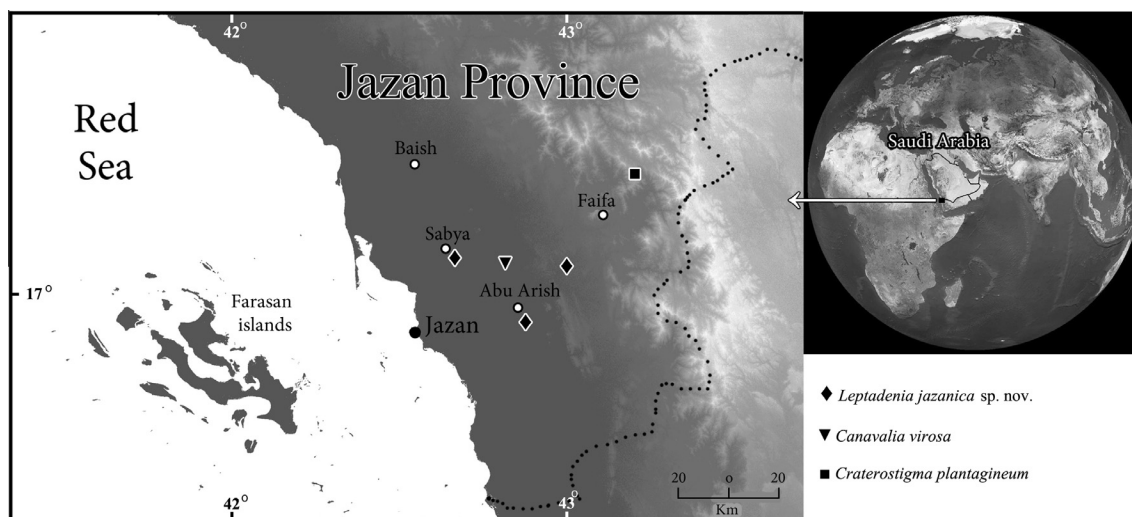


Figure 1 Map of Jazan province, southwestern Saudi Arabia, showing the locations where new species and new records were collected.

(Bullock, 1955; Chaudhary, 2001; Goyder, 2003) was examined. Voucher specimens are deposited in the Jazan U.H. and MUZ.

3. Results and discussion

3.1. New species

Leptadenia jazanica Y. Masrahi, sp. nov. (Figs. 2 and 3).

Type: Saudi Arabia, Jazan province, Al-Ghaidania, 20 km NE of Al' Aridha, 17° 05' N, 43° 00' E, 200 m. a.s.l., 23.1.2013. Y. Masrahi 5426,5427 (Holotype: Jazan U.H.; Iso-type MUZ).

Diagnosis: Planta affinis *Leptadenia pyrotechnica*, sed habitu decumbente (non erecto); rami foliifer; foliis linearis.

Description: Leafy shrub with decumbent to scrambling stems to other supports, 1.3-4 m, stems much-branched, terete, green; latex light green to yellowish green; leaves 3-11.7 × 0.3-0.85 cm, opposite, entire, linear to (rarely) linear-lanceolate, the apex acute, the base attenuate, upper surface glabrous to slightly pubescent, lower surface slightly pubescent; petiole 2.2-7.5 mm. Flowers numerous (to 18) in axillary umbel-like cymes; peduncle 3.5-6 mm; pedicel 3-6 mm; sepals 1.2 × 0.6 mm, ovate to deltate, pubescent; corolla cream to yellow, lobes 1 × 2.5 mm, densely pubescent on both surfaces apart from a glabrous, non-fleshy triangle at the base of the lobes within; corolla lobes sinuses with squat, fleshy, coralline corona lobes c. 0.5-0.7 × 0.4 mm with an apical tuft of erect hairs. Gynostegium c. 1 mm long. Pollinaria obtriangular shaped, c. 0.1 × 0.1 mm. Follicle 5.5-12 × 0.5-0.7 cm, narrowly fusiform, terete, glabrous; seeds flattened, smooth, 6 × 2 mm, with silky coma 2.5-3 cm.

Distribution: *L. jazanica* is endemic to southwestern of Saudi Arabia. The species is known only from two different habitats: rocky area east of Tihama, Jazan province at c. 200 m. a.s.l., in open woodland dominated by *Acacia ehrenbergiana*, *Acacia tortilis* and *Dobera glabra* (type locality); and Tihama (at 58 m. a.s.l.), in two locations of sandy plain

dominated by *A. ehrenbergiana*, *A. tortilis*, *Panicum turgidum* and *Capparis decidua* (16° 55' N, 42° 50' E and 17° 05' N, 42° 42' E). So far only 4 individuals were seen in all localities. The name of species *jazanica* after Jazan province, where the species were found.

Flowering time: January - August.

Conservation status: In view of its restricted known distribution and the small number of plants seen, it should be regarded as Endangered (EN) (IUCN categories of red list, Marinelli, 2004).

Taxonomic remarks: *L. jazanica* is closely related to *L. pyrotechnica* (Forssk.) Decne, a species widely distributed from Africa to India, in sandy desert plains and wadis. The new species is readily separated in contrast to *L. pyrotechnica* by its characteristic habit: the plant is decumbent, stems are soft and leafy. *L. jazanica* is rare in Tihama extending to rocky habitats east of Tihama, whereas *L. pyrotechnica* widely distributed in low elevation of sandy habitats. A morphological comparison between *L. jazanica* and *L. pyrotechnica* is given in Table 1.

Bullock (1955) gives the brief review of *Leptadenia* genus and key for species recognition. Formerly 4 species are known, bordering the Sahara and extending eastward to Arabia, the Indian subcontinent and Madagascar. After discovery of new species, the following key serves for species-recognition:

| | |
|--|------------------------|
| 1. Erect, leafless shrubs or with few linear leaves on young shoots only | <i>L. pyrotechnica</i> |
| – Decumbent to scrambling or twining shrubs with persistent leaves | 2 |
| 2. Decumbent to scrambling shrubs with linear leaves | <i>L. jazanica</i> |
| – Twining shrubs with broad leaves | 3 |
| 3. Corolla-lobes 4–5 mm. long; calyx longer than the corolla-tube | <i>L. hastata</i> |
| – Corolla-lobes 2–2.5 mm. long | 4 |
| 4. Calyx shorter than the corolla-tube | <i>L. arborea</i> |
| – Calyx longer than the corolla-tube | <i>L. reticulata</i> |

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