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Datura ferox and *Oldenlandia corymbosa*: New record to the UAE flora

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ABSTRACT

Datura ferox (Solanaceae) and *Oldenlandia corymbosa* (Rubiaceae) have been recorded for the first time from different parts of the United Arab Emirates. *D. ferox* which is rare in the country was found in the mountainous region of Ras al Khaimah emirate, while *O. corymbosa* was observed in various areas of Dubai emirate.

Key words: *Datura ferox*, Dubai, *Oldenlandia corymbosa,* Ras al Khaimah, Rubiaceae, Solanaceae, United Arab Emirates.

INTRODUCTION

Datura ferox belongs to the Solanaceae family that has nearly 100 genera and 2,700 species (Olmstead and Bohs, 2007), while the genus *Datura* is comprised of 9 species (Preissel and Preissel, 2002). In the United Arab Emirates (UAE), 8 species of Solonaceae have been reported including one species of the genus *Datura*, i.e., *D. stramonium* (Western, 1989; Jongbloed, 2003).

For long time *D. ferox* origin was thought to be China (Pearson and Guthbertson, 2001), but the latest studies reveal that it is native to southern North America (Flora Zambesiaca, 2013). The species has been naturalized in warm temperate and subtropics regions of the world where it was introduced by humans. Now it is a wide-ranging and common weed in cultivated and disturbed lands. In the Arabian Peninsula, Saudi Arabia is the only country where it has been recorded in its southwestern region (Chaudhary, 2001).

All parts of *D. ferox* plant including seeds have alkaloids such as atropine, hyoscyamine and scopolamine (Piá et al., 1997) which are toxic to both animals and humans. The plant can become a noxious weed in warm and hot regions of the world where its control could be problematic. Contamination of animal feed with its seeds leads to livestock poisoning.

Oldenlandia corymbosa is a member of the Rubiaceae family, which has about 610 genera and more than 13,000 species worldwide (Stevens, 2001). The genus *Oldenlandia* is comprised of around 300 species, mostly native to the tropics (Mabberley, 1997). *O. corymbosa* is the type species for the genus, which is native to Africa and South Asia and is naturalized in tropical and subtropical regions of the world (USDA, 2014). In the Arabian Peninsula, *O. corymbosa* is found in Oman (Ghazanfar, 1992), Saudi Arabia (Chaudhary, 2000) and Yemen (Wood, 1997).

Plants of *O. corymbosa* and some other species of the genus have medicinal value of treating poisonous snake bite, cancer and many other ailments (Chang and But, 1986; Gupta et al., 2004). The herb is used in traditional Indian and Chinese medicines. It is a weed of gardens, roadsides (Henty and Pritchard, 1975) and rice field (Soerjani et. al., 1987) of minor importance which can be controlled manually.

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MATERIALS AND METHODS

During various botanical explorations in the UAE, the specimens of *Datura ferox* and *Oldenlandia corymbosa* were collected by the authors. Data on plant populations and habitats were also gathered during the expeditions. A Garmin GPS 72H was used for the geographic coordinates of the collecting sites. The collected data was downloaded and processed with the program ArcGIS Explorer produced by Esri®. The identification and corroboration was performed with different relevant floras (Chaudhary, 2000; Chaudhary, 2001).

RESULTS AND DISCUSSION

***Datura ferox* L.**, *Amoen. Acad.* 3: 403.1756. (Figs. 1 & 2)

Annual herb, sub-dichotomously branched, 0.5–1.5 m high. Leaves solitary, emit unpleasant odor when crushed, ovate, roughly toothed lobes, slightly angular to rounded triangular, somewhat oblique at base, 8-14 cm long, 6-10 cm wide. Flowers white to yellow, borne singly on short stalks, trumpet shaped when open; corolla 4-6 cm long, 5 connate petals; stamens not exserted, stigma below the anther. Calyx 1.5-2.5 cm long, with 4-7 mm lobes. Fruit a capsule, ellipsoid, 2-4 cm long, 2-3 cm diameter, with stout, conical, sharp 10-15 mm spines. Seed many, 4-5 mm long, 3-4 mm wide, somewhat shining, black or grey.

Flowering January to March, fruiting February to April.

Datura ferox L. was found at one place in the mountainous region of the emirate of Ras al Khaimah (25˚53′087″N, 056˚06′148″E), where only a single plant was growing. The review of the pertinent literatures indicates that the species has not been reported in the UAE before (Western, 1993; Jongbloed, 2003). Hence it is the first time that *D. ferox* has been recorded in the country. This Solanaceae species is rare in the region as only one plant was observed during many floral explorations. The species is not common in the Arabian Peninsula either as Saudi Arabia is the only other country of the region where it has been reported before (Chaudhary, 2001).

Financial loss due to *D. ferox* includes crop yield fall as a result of weed infestations and livestock poisoning. *Datura* poisoning has been reported for farm animals including cows, sheep, goats and horses. Its eradication from the farms needs to be done before it produces seed to avoid economic damage. Though at present the plant has been spotted at few places in the region, but in future it may become scourge as it produces a lot of seeds here (Fig. 3) and it propagate quite rapidly in places with warm and dry climate.

***Oldenlandia corymbosa* L.** Sp. pl. 1:119. 1753 (Figs. 4 & 5)
Syn.: *Hedyotis corymbosa* (L.) Lam.

A small annual, perennial herb, thinly to very densely branched near the base; stems erect or prostrate, up to 30 cm long, ridged, glabrous to scabridulous to glandular-pubescent. Leaves sessile, linear to narrowly elliptic, 5–35 mm long 0.5–7 mm wide, narrowed to the base, glabrous to sparsely pubescent on margins; stipular-sheath, 0.5–2 mm long with a few minute lobes. Flowers mostly solitary some on 2-5 flowered axillary cymes with the pedicels. Calyx tube ellipsoid, 0.7–1 mm long, lobes 0.5–1.8 mm long, triangular. Corolla white to bluish to purplish, tube 0.6–1 mm long, lobes up to 1.2 mm long, ovate to oblong, about as long as the tube. Style pubescent, 0.5–1.5 mm long. Capsule ovoid to globose, 2 x 2 mm, the beak barely raised. Seeds pale brown, about 0.3 mm long, ellipsoid, reticulate.

Flowering all year round.

Oldenlandia corymbosa was recorded in 3 different areas in Dubai. In the vicinity of Oud Metha they were found at two places; at one location around 15 plants in a grass field along the road (25˚14″013′N, 055˚18″017′E) were observed, while 6 of them were recorded in a lawn next to a metro station (25˚14′609″N, 055˚18′017″E). In the Deira neighborhood, about 25 plants were noted growing in a grassy patch close to a road (25˚15′ 949″N, 055˚18′630″ E). The study of relevant literature (Western, 1993; Jongbloed, 2003) reveals that *O. corymbosa* has not been recorded from the UAE previously. Though the species has been reported in other countries of the Arabian Peninsula including Oman (Ghazanfar, 1992), Saudi Arabia (Chaudhary, 2000) and Yemen (Wood, 1997), it is the first time that it was recorded here in the country.

The observations indicate that in the UAE, *O. corymbosa* grows in places such as lawns and grass fields where irrigation water is available. The

Fig. 1. *Datura ferox* L. plant growing in Ras al Khaimah, United Arab Eimartes.

Fig. 2. Fruit of *Datura ferox* L.

Fig. 3. *Datura ferox* L. seeds on ground.

Fig. 4. *Oldenlandia corymbosa* L. herb growing in Dubai, United Arab Emirates.

herb competes there with turf grass and is considered to be a weed. It has been reported as an ecological weed with minor impact. It does not pose any big threat to the environment in the UAE.

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Fig. 5. *Oldenlandia corymbosa* L. flower.

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