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Four records of alien species new to the flora of the United Arab Emirates (UAE)

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Summary. The article presents new records for four alien species previously unknown from the flora of the United Arab Emirates (UAE) or very rare in the country – *Cyperus glaber* (Cyperaceae), *Ageratina adenophora* (Asteraceae), *Opuntia dillenii* (Cactaceae) and *Coccinia grandis* (Cucurbitaceae). Some of them have been recorded for the first time from the emirate Fujairah in the north-eastern part of the UAE. *Cyperus glaber*, which is rare in the country, was found only in plant nursery in the NE part of the farm of Sheikh Hamad bin Mohammed Al Sharqi, in Al Taiba, in environs of the city of Fujairah. *Ageratina adenophora* was found at Dibba town as a weed, in private nurseries located in 0.2 km to South from the Al Ameray Nursery and in the city of Fujairah, as a weed in irrigated rounds between highway lanes. *Opuntia dillenii* grows as a naturalized plant in Masafi town (near Masafi Fort) on a roadside steep slope near a garden fence. *Coccinia grandis* was found as a weed in a number of nurseries in Dibba town and the village of Al Bidiya (for example, “Desert Oasis Nursery Bidiyah” in Al Bidiya, “Al Ameray Nursery”), as well at Dibba town and among decorative shrubs on the middle line of the Fujairah Corniche, in the city of Fujairah. They are all new for the flora of Fujairah and the UAE.

Species, synonyms, spatial distribution, habitat preferences, and species taxonomy with remarks on identification and differentiation from the most similar taxa occurring in the study area, as well as the list of localities are presented. The herbarium materials were transferred to the Herbarium of the Komarov Botanical Institute (LE, St. Petersburg, Russia), and the duplicates to the Herbarium of Altai State University (ALTB, Barnaul, Russia).

Четыре новых чужеродных вида для флоры Объединённых Арабских Эмиратов (ОАЭ)

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Аннотация. В статье представлены новые находки четырёх ранее неизвестных чужеродных видов во флоре Объединённых Арабских Эмиратов (ОАЭ) – *Cyperus glaber* (Cyperaceae), *Ageratina adenophora* (Asteraceae), *Opuntia dillenii* (Cactaceae) и *Coccinia grandis* (Cucurbitaceae). Все они зарегистрированы впервые в эмирате Фуджейра в северо-восточной части ОАЭ. *Cyperus glaber*, который редко встречается в стране, был обнаружен только в питомнике растений в северо-восточной части фермы шейха Хамада бин Мохаммада Аль Шарки, в Аль-Тайбе в окрестностях города Аль-Фуджейра. *Ageratina adenophora* была обнаружена в городе Аль-Дибба как сорняк, в частных питомниках в 0,2 км к югу от питомника Аль-Амерей и в городе Аль-Фуджейра как сорняк на орошаемых кругах между полосами шоссе. *Opuntia dillenii* растёт в натурализованном виде в городе Масафи (возле форта Масафи) на крутом щебнистом склоне дороги возле садовой ограды. *Coccinia grandis* была обнаружена как сорняк в ряде питомников в городе Дибба и пос. Аль-Бидия (например, «Питомник Desert Oasis Bidiyah» в Аль-Бидие, «Питомник Al Ameru» и т. д. в городе Аль-Дибба, а также среди декоративных кустарников на разделительной линии шоссе на набережной г. Аль-Фуджейры). Они все новые для флоры Фуджейры и ОАЭ в целом.

Данное исследование является частью проекта «Флора Фуджейры, Объединённые Арабские Эмираты», в рамках соглашения о сотрудничестве между Офисом наследного принца Фуджейры и Ботаническим институтом им. В. Л. Комарова Российской академии наук, Санкт-Петербург. В ходе полевых исследований в 2017–2022 гг. авторы задокументировали информацию о распространении новых чужеродных видов растений на территории эмирата Фуджейра, Объединённые Арабские Эмираты (ОАЭ). В статье представлены новые находки чужеродных видов на территории эмирата.

Introduction

The study of the processes of anthropogenic transformation on the flora and the monitoring of alien species are an important part of regional floristic research (Pyšek et al., 2004; Baranova et al., 2018; Shabana et al., 2020). There is still insufficient information about the alien component of the Fujairah flora represented by species that were accidentally introduced by escaping from cultivation (Byalt, Korshunov, 2018).

When surveying the large wadi Helo, Dr. El-Keblawy (El-Keblawy et al., 2015) identified about 230 species, including new ones for the country. He suggested that further floristic research could add even more species to the flora of the Emirates. This is well supported by the floristic work of various researchers in recent years (e. g. Jongbloed et al., 2000, 2003; Karim, Fawzi, 2007; Feulner, 2011, 2014, 2016; Shahid, 2014; Shahid, Rao, 2014a, b, 2015a–c, 2016a–c; Mahmoud et al., 2015, 2016; Gairola et al., 2016; Byalt, Korshunov, 2020a–c; Byalt et al., 2020a; Shabana et al., 2020), which revealed the presence of about 40 more plant species new to the UAE. Most of these additions are associated with anthropogenically disturbed sites such as farms, roadsides and lawns, and were most likely introduced, intentionally or accidentally. Only four species identified from mountainous areas are likely to be indigenous. The number of plant species known in the UAE will undoubtedly continue to grow as a result of further field research, as confirmed by the findings we are publishing here. Our research of 2017–2022 has significantly added new data to the

list of flora species of Fujairah and the UAE (Byalt et al., 2020a–c; Byalt, Korshunov, 2020a–c, 2021a, b, 2022a, b; Korshunov, Byalt, 2022, and many other unpublished data).

In the course of field research in 2017–2022 during the project “Flora of Fujairah, United Arab Emirates” under a cooperation agreement between the Office of the Crown Prince of Fujairah and the Komarov Botanical Institute of the Russian Academy of Sciences, St. Petersburg (Byalt et al., 2020a, b), and as a result of study of herbarium specimens collected by the authors of this paper, information on the distribution of new adventive (alien) plant species in the territory of the Fujairah Emirate, the United Arab Emirates (UAE), was clarified. Due to changes in the species composition of the flora caused by the active development of the infrastructure of the region, the growth of urban agglomerations, and an increase in the recreational load on natural ecosystems, there has been a noticeable increase in the number and distribution of alien plant species in the region.

Material and Methods

During various botanical surveys in the UAE in 2017–2022, the specimens and / or photos of *Cyperus glaber* L. (Cyperaceae), *Ageratina adenophora* (Spreng.) R. M. King et H. Rob. (Asteraceae), *Opuntia dillenii* (Ker Gawl.) Haw. (Cactaceae) и *Coccinia grandis* (L.) Voigt (Cucurbitaceae) were collected by the authors in several localities in the territory of the Emirate of Fujairah (UAE).

Data on plant populations and their habitats were also gathered during the expeditions. The following

flora compendia and identification guides were used to identify specimens and determine their taxonomic status: local floras and field guides for UAE (Western, 1989; Jongbloed et al., 2000, 2003; Karim, Fawzi, 2007), and floras for neighbouring countries (Batanouny, 1981; Collenette, 1985, 1999; Daoud, Al-Rawi, 1985, 2013; Phillips, 1988; Cornes C. D., Cornes M. D., 1989; Migahid, 1989, 1996; Ghazanfar, 1992, 2003, 2007, 2015; Shuaib, 1995; Miller, Cope, 1996; Wood, 1997; Chaudhary, 1999, 2001; Jongbloed et al., 2000, 2003; Omar, 2001; Miller, Morris, 2004; Norton et al., 2009; Checklist, 2011–2024; Mosti et al., 2012; Al-Khulaidi, 2013; Abdullah, Al-Dosari, 2022; Richer et al., 2022; Alyammahi et al., 2023; etc.), websites “Flora of Qatar” (2013–2016. URL: <https://www.floraofqatar.com/indexf.htm>), “UAE Flora” (2025. URL: <https://www.uaeflora.ae>), “Flora of India” (2025. URL: <https://indiaflora-ces.iisc.ac.in/search.php>), “Global Biodiversity Information Facility” (GBIF. URL: <https://www.gbif.org>), “eFloras” (2025. URL: <http://www.efloras.org>).

The alien plant status was determined by the following criteria (Egorov et al., 2016; Baranova et al., 2018): 1) an indication in the literature that the species has been introduced into the study area or a larger region encompassing the study area; 2) the species occurred only or mainly in ruderal and/or weedy habitats; 3) the species occurred in isolation from its main natural geographic range. The status of the alien species was determined to be casual, naturalized, or invasive, using the approach developed by Pyšek et al. (2004) and which is quite widely used in Western Europe (Galasso et al., 2018). However, because our observations were made only once, the alien species status that we give might not be correct.

Specimens were deposited in the following herbaria (acronyms according to Thiers, 2024): (LE), and Fujairah Scientific Herbarium in Wadi Wurayah National Park (FSH, proposed acronym).

A Garmin GPS 72H was used for the geographic coordinates of the collecting sites. The identification and corroboration were performed with different relevant floras. The location of the plants was determined using a GPS receiver or Google Maps. All coordinates use the WGS84 standard.

The locations of the study sites Emirate of Fujairah: Al Dibba Town, environs of Masafi, wadi Siji, 3.1 km East from Wadi Siji Old Dam, villages Qidfa and Al Bidya.

Abbreviations used: United Arab Emirates – UAE, spp. – species, fl. – with flowers, fr. – with

fruits, veg. – in a vegetative state, juv. – young, underdeveloped. LE – Herbarium of Komarov Botanical Institute of the Russian Academy of Sciences, FSH [not yet accepted acronym] – Fujairah Scientific Herbarium (Byalt et al., 2020d). The labels are in English as in the original. The numbers in square brackets indicate the place of our research, recorded by GPS [point 776] and others. They are given on the labels for the convenience of working with the herbarium.

Results and Discussion

Cyperus glaber L. (Cyperaceae): “United Arab Emirates. Emirate of Fujaira, Al Taiba in environs of the city of Al Fujeira, 25°09′29.6″N, 56°17′31″E: in NE part of farm of the Sheikh Khamad II [point 342], in plant nursery. Fl. 24 XI 2019. V. V. Byalt, M. V. Korshunov. 1595 [f. No. 342/261] (LE 01259079) / ОАЭ, Фуджейра, Аль Тайба в окр. г. Фуджейра, 25°09′29.6″N, 56°17′31″E: в СВ части фермы шейха Хамада II [точка 342], сорняк в питомнике растений в ЮВ части. Цв. 24 XI 2019. В. В. Бялт, М. В. Коршунов 1595 [f. No. 342/261]” (LE 01259079). – Terophyte or hemicryptophyte / Annual or perennial herb. Distributed by seeds; anemochorous, antropochorous. Xenophyte colonophyte euneophyte. New alien species to the emirate Fujairah and UAE (Fig. 1).

This species is accepted in “Plants of the World Online” (POWO. URL: <http://www.plantsoftheworldonline.org>). The native range of this species is E. Central Europe to Pakistan (Hooper, 1985; Kukkonen, 1998, 2001; Govaerts, 1999; Egorova, 2006; Govaerts, Simpson, 2007; Tozhibaev et al., 2020, 2021; *Cyperus glaber*, 2023; POWO, 2026), and as alien in Bangladesh, South Africa (Cape Provinces), Germany and Spain (Govaerts, 1999; Govaerts, Simpson, 2007; Pasha, Uddin, 2013; Verloove, Messterházy, 2013; Hassler, Muer, 2022a; POWO, 2026). It is an annual or perennial and grows primarily in the temperate biomes (POWO, 2026). In Arabia this species was recorded only in Oman (Ghazanfar, 1992, 2018). It was found as a weed in the Fujairah Emirate in the NE part of a dairy farm of Sheikh Hamad bin Mohammed Al Sharqi, in plant nursery in Al Taiba in environs of the city of Al Fujairah. A few exemplars of it grew here on wet sand. *Cyperus glaber* is a new rare alien species for Fujairah and UAE at all. It is not invasive species.

From the closest species, *Cyperus compressus* L., differs by following features (Kukkonen, 2001):

1. Spikes 8–20 mm long, ca. 3.5 mm wide, with to 40 flowers, strongly compressed *C. compressus*
 + Spikes 7–9 mm long, 2.5–3 mm wide, with 8–14 flowers, not strongly compressed *C. glaber*

Ageratina adenophora (Spreng.) R. M. King et H. Rob. (Asteraceae): “UAE, Fujairah Emirate, Al Dibba Town, private nurseries, 0.2 km South from Al Ameray Nursery, 25°34′24.07″N, 56°14′6.39″E, elevation 48 m [point 776]: weed in nursery. Fl. 7 V 2020. V. V. Byalt, M. V. Korshunov. 2721” (FSH); “UAE, Fujairah Emirate, Al Fujairah, wasteland near Fujairah Corniche road, opposite of Fujairah International Marine Club, 25°7′22.82″N, 56°21′23.00″E, elevation 3 m [point 758a]: weed in irrigated rounds between highway lanes. Fl. 9 V 2020. V. V. Byalt, M. V. Korshunov. 2800” (FSH). – Chamaephyte / shrub. Xenoergasiophyte, colonophyte. Reproduces by seeds, autochorous, anemochorous, antropochorous. New alien species in Fujairah and UAE (Fig. 2A, B).

Ageratina adenophora, a native species of Mexico (Davidse et al., 2018; *Ageratina adenophora*, 2023; POWO, 2026), was introduced and naturalized in pantropical and pansubtropical as invasive in Canary Islands, Cambodia, India, Laos, Myanmar, Nepal, Indonesia, Philippines, Thailand, Vietnam, South Africa, Americas, probably all over SE Asia, Australia, Pacific islands, South China Sea Islands (Barooah, Ahmed, 2014; Koyama et al., 2016; Balkrishna, 2018; Prakash, Balasubramanian, 2018; Benedi et al., 2019; Kartikeyan et al., 2020; Muer et al., 2020; Cameron, 2021; Schäfer, 2021; Hassler, Muer, 2022b; *Ageratina adenophora*, 2023; POWO, 2026), and has been introduced and widely naturalized in China since the middle of the nineteenth century in Chongqing, Guangxi, Guizhou, Hebei, Jiangxi, Sichuan, Taiwan and Yunnan provinces (Li, Xie, 2002; Yan, Ma, 2018), Australia (Randall, 2007, as *Eupatorium glandulosum* Michx.) and India: states Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Uttar Pradesh (Rao, Kumar, 2024a). It is a shrub and grows primarily in the seasonally dry tropical biomes (POWO, 2026). In Arabia this species was not recorded by main regional floras and checklists (Collenette, 1985, 1999; Cornes C. D., Cornes M. D., 1989; Migahid, 1989, 1996; Ghazanfar, 1992, 2015; Wood, 1997; Chaudhary, 1999–2001; Jongbloed et al., 2000, 2003; Omar, 2000; Karim, Fawzi, 2007; Abdel Bary, 2012; Richard et al., 2022; etc.), and on sites GBIF (*Ageratina adenophora*, 2023) or POWO (2026). We have listed it among the cultivated species of the Emirate of Fujairah (Byalt, Korshunov,

2020d). It was found in the Fujairah Emirate at Al Dibba Town as a weed, in private nurseries in 0.2 km South from Al Ameray Nursery (Fig. 2A, B) and at the Fujairah City as a weed in irrigated rounds between highway lanes. Most likely, *Ageratina* can get into nurseries with planting material from India or Pakistan, where this plant is invasive. It is new rare alien species for Fujairah and UAE. Not potentially invasive species.

Ageratina adenophora is clearly distinguished from other numerous species of the genus *Ageratina* by the presence of glandular pubescence on the peduncles, leaves, and involucre (Nesom, 2025).

Opuntia dillenii (Ker Gawl.) Haworth (*Opuntia stricta* L. var. *dillenii*, *Opuntia tuna* auct. p. p.) (Cactaceae): “UAE, Fujairah Emirate, Masafi, near Masafi Fort. 25°18′9.44″N, 56°09′45.71″E, elevation 440–460 m [point 762]: run wild on roadside steep slope near garden fence. Fl., fr. 21 IV 2020. V. V. Byalt, M. V. Korshunov. s. n.” (FSH). – Chamaephyte / succulent shrub. Mexico, northern Jamaica. Ergasiophytophyte, colonophyte / epocophyte, euneophyte. Reproduces by seeds and vegetatively, autochorous, antropochorous. New alien species for Fujairah and UAE (Fig. 3).

This species is accepted in POWO (as *Opuntia tuna* s. l.). The native range of this species is SW USA, Mexico, West Indies, Central America (Pinkava, 2003, as *O. stricta* s. l.; Holmes, 2016; Villaseñor, 2016), widely introduced and naturalized in tropical and subtropical regions (Glen, 2003; Randall, 2007; Dobignard, Chatelain, 2011; Yan, Ma, 2018; Rao, Kumar, 2024b), is treated as *Opuntia stricta* var. *dillenii* in China (Xu et al., 2006). The species was first recorded in China in 1702, and now widely spread in China: Chongqing, Fujian, Guangdong, Guangxi, Hainan, Hong Kong, Hunnan, Macao, Shandong, Yunnan and Zhejiang provinces (Yan, Ma, 2018). It is a succulent shrub and grows primarily in the seasonally dry tropical biome. It is used as animal feed and medicine, has environmental and social uses, and as a food product (POWO, 2026).

In Arabia *O. dillenii* was introduced and sometimes naturalized in Saudi Arabia (Collenette, 1999; Checklist, 2011–2024) and Yemen: in Tihama, Tihama foothills, Taiz (Miller, Cope, 1996; Wood, 1997; Al Khualidi, 2013). New alien species in Fujairah and UAE. We found it on a steep rocky slope next to the road near a garden fence, and inside a garden in environs of the Masafi Town, near Masafi-Fort (Fig. 3). Here it grows in large numbers of specimens, blooms and bears ripe fruits. Potentially



Fig. 1. Herbarium specimen of *Cyperus glaber* L., collected in farm of the Sheikh Khamad II in Al Taiba – environs of the city of Al Fujairah, kept in LE (LE 01259079, scan by L. Orlova).

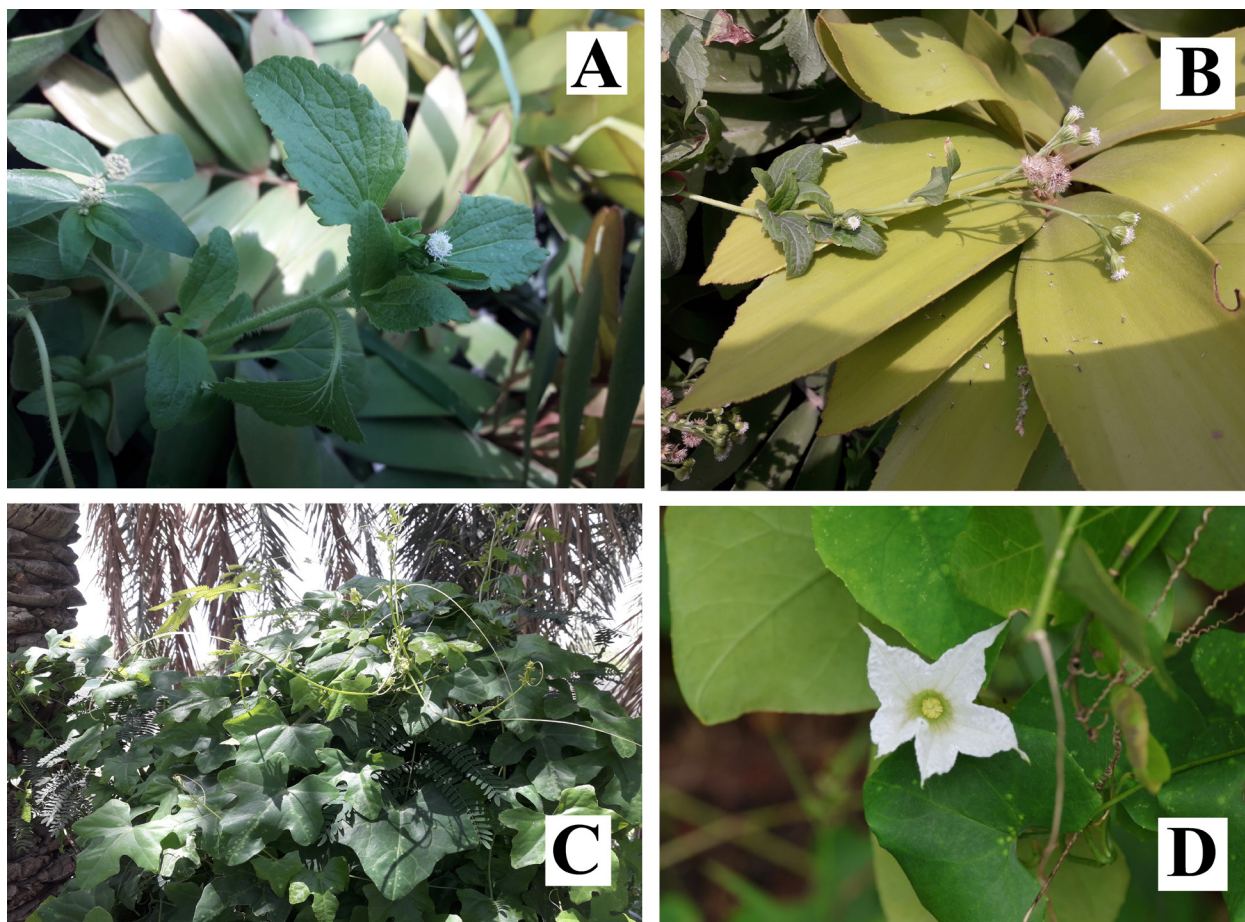


Fig. 2. New alien plants for the Fujairah emirate: A, B – *Ageratina adenophora* (Spreng.) R. M. King et H. Rob.; C, D – *Coccinia grandis* (L.) Voigt (photos by M. Korshunov).

invasive species, but yet rare cultivated in the region (Byalt, Korshunov, 2020d).

The differences between *O. dillenii* and another species cultivated in the UAE are given in Table 1.

***Coccinia grandis* (L.) Voigt** (Cucurbitaceae): “UAE. Emirate of Fujaira, seafront of the city of Al Fujeira, 25°07′18.09″N 56°21′22.92″E [point 347]: weed in irrigated round between highway lanes at the middle of the seefront. Veg. 27 XI 2019. V. V. Byalt, M. V. Korshunov. 1825/454” (LE 01259643) / ОАЭ, Фуджейра, морская набережная г. Фуджейра, 25°06′38.35″N 56°21′27.04″E [точка 347]: сорняк в поливных кругах между полосами шоссе в середине набережной, лиана. Вег. 27 XI 2019. В. В. Бялт, М. В. Коршунов 1825/454 (LE 01259643)”; “UAE, Fujairah Emirate, Al Dibba Town, private nurseries, 0.2 km South from Al Amerey Nursery, 25°34′24.07″N, 56°14′6.39″E, elevation 48 m [point 776]: without irrigation on abandoned land and near fence, common. 7 V 2020. Veg. V. V. Byalt, M. V. Korshunov. 2710” (LE, FSH); “UAE, Fujairah Emir-

ate, Al Bidiya, Al Qalamoon Nursery, 0.3 km East from Eid Prayer Ground Bidyah, 25°25′24.70″N, 56°20′18.77″E, elevation 22 m [point 781]: weed without irrigation on abandoned land among fence, on tree trunks and on bushes. 15 V 2020. Veg., fl. V. V. Byalt, M. V. Korshunov. 2945” (LE 01195035; FSH); “UAE, Fujairah Emirate, Al Dibba Town, The Green Nursery Sales Dibba, 0.2 km South from Khalid Hadi Resort Dibba. 25°34′29.81″N, 56°14′16.32″E, elevation 44 m [point 795]: weed under tree, in shade and under palm trees. 8 VI 2020. Veg. V. V. Byalt, M. V. Korshunov. 3346 (FSH); “UAE, Fujairah Emirate, Al Bidiya, Desert Oasis Nursery Bidyah, 0.7 km West from Bidiyah Association for Culture and Folklore. 25°26′9.06″N, 56°20′17.72″E, elevation 14 m [point 794]: weed in plastic pot and between pots in nursery. 4 VI 2020. Veg. V. V. Byalt, M. V. Korshunov. 3420” (LE; FSH); “UAE, Fujairah Emirate, Al Bidiya, Desert Oasis Nursery Bidyah, 0.7 km West from Bidiyah Association for Culture and Folklore. 25°26′9.06″N, 56°20′17.72″E, elevation 14 m [point 794]: weed in plastic pot UAE,

Table 1. Comparative features of *Opuntia dillenii* (Ker Gawl.) Haw. and closely related species of the genus *Opuntia*

Species	Perianth segments	Stamens	Areoles and spines	Joints	Fruits
<i>O. cochenillifera</i> (L.) Mill.	All perianth segments erect, red	Stamens erect, longer than perianth, filaments and anthers red	Areoles ca. 2 mm in diam. Spines usually absent, when present: 1–3 per areole, spreading, grayish tan, acicular	Joints green, elliptic to narrowly obovate, thick, margin entire, base and apex rounded	Mature fruit red, ellipsoid, 3–5 × 2.5–3 cm
<i>O. dillenii</i> (Ker Gawl.) Haw.	Inner perianth segments spreading, yellow to orange or red	Stamens spreading, but sensitive, closing around style when touched, shorter than perianth, filaments greenish or yellowish to white, anthers yellow	Areoles of mature, ultimate joints with 3–10 spines, spines yellow, ± brown banded or mottled, subulate, straight to curved, stout, usually flattened at base	Terminal joints green to gray-green, obovate or elliptic-obovate to suborbicular	Mature fruit purple, turbinate to obovoid, 4–6 × 2.5–3(–4) cm, fleshy at maturity
<i>O. stricta</i> L. s. str.	Inner perianth segments spreading, yellow to orange	Stamens spreading, but sensitive, closing around style when touched, shorter than perianth, filaments greenish or yellowish to white, anthers yellow	Areoles of mature, ultimate joints with 1–3 spines, spines white to grayish to reddish brown, aciculate, not flattened at base, sometimes absent	Terminal joints green to gray-green, obovate or elliptic-obovate to suborbicular	Mature fruit purplish throughout, stipulate, ellipsoid or barrel-shaped, 40–60 × 25–30 (–40) mm, juicy, spineless
<i>O. ficus-indica</i> L.	Inner perianth segments spreading, yellow to orange	Stamens spreading, but sensitive, closing around style when touched, shorter than perianth, filaments greenish or yellowish to white, anthers yellow	Areoles of mature, ultimate joints spineless or with 1–5 white spines	Joints dull green or grayish green, broadly to narrowly obovate, elliptic, or oblong, (20–)25–60 × 7–20 cm, thick	Mature fruit yellow, orange, or purplish, 5–10 × 4–9 cm, barrel-shaped
<i>O. monacantha</i> Haw.	Inner perianth segments spreading, yellow to orange	Stamens spreading, but sensitive, closing around style when touched, shorter than perianth, filaments greenish or yellowish to white, anthers yellow	Areoles of mature, ultimate joints with 1–3 spines, spines white to grayish to reddish brown, aciculate, not flattened at base, sometimes absent	Terminal joints glossy green, obovate, narrowly so, obovate-oblong, oblong, or oblanceolate, 10–30 × 7.5–12.5 cm, thin, narrowed basally, margin undulate toward apex	Mature fruit reddish purple, obovoid, 5–7.5 × 4–5 cm, obconic to obovoid

Fujarah Emirate, Al Dibba Town, Alamarey Nursery, 0.5 km South from Khalid Hadi Resort Dibba. 25°34'33.97"N, 56°14'6.15"E, elevation 45 m [point 797]: weed on the garden fence, near wall. 13 VI 2020. Fl., V. V. Byalt, M. V. Korshunov. 3541 (FSH); "United Arab Emirates, Fujarah Emirate, Al Dibba

Town, Alamarey Nursery, 0.5 km South from Khalid Hadi Resort Dibba. 25°34'33.97"N, 56°14'6.15"E, elevation 45 m [point 797]: weed under tree, on the garden fence, near wall, on the agricultural waste. 13 VI 2020. Veg. V. V. Byalt, M. V. Korshunov. 3552 (7)" (LE 01195033; FSH); UAE, Fujairah Emirate,



Fig. 3. *Opuntia dillenii* (Ker Gawl.) Haworth in flower and fruit in a garden near the Masafi Fort.

Al Bidiya, Desert Nurseries Group store 1 (palms), 0.9 km West from Bidiyah Association for Culture and Folklore, 25°26'9.61"N, 56°20'8.21"E, elevation 14 m [point 809]: weed near and on the garden fence. 16 VII 2020. Veg., fl. V. V. Byalt, M. V. Korshunov. 4146 (FSH). – Geophyte/ Perennial tuberous liana. Distributed by seeds; zoochorous, antropochorous. Xenoergaziophyte colonophyte. New alien species to emirate Fujairah and UAE at all (Fig. 2C, D).

This species is perennial herbaceous climbing plant, and its native range is Tropical Africa, S. W. Arabian Peninsula, Tropical and Subtropical Asia (Hutchinson et al., 1954–1958; Jeffrey, 1967, 1978; Keraudren-Aymonin, 1975; Peyre de Fabregues, Lebrun, 1976; Boudet et al., 1986; Barry, Celles, 1991; Edwards et al., 1995; Wood, 1997; Govaerts, 1999; Dy Phon, 2000; Akoëgninou et al., 2006; Newman et al., 2007; De Wilde, Duyfjes, 2008; Dobignard, Chatelain, 2011; Lu, Jeffrey, 2011; Kuo, 2012; Darbyshire et al., 2015; Holstein, 2015; Rao, Kumar, 2024c; POWO, 2026). *Coccinia grandis* has been introduced to Australia, the Caribbean, southern USA and the Pacific region, in total to 23 countries of the world (Govaerts, 1999; Boulos, 2000; Csurhes, 2004; Randall, 2007; Suzuki et al., 2007; Acevedo-Rodríguez, Strong, 2012; Holstein, 2015;

Nesom, 2015; *Coccinia grandis*, 2023; POWO, 2026). It grows aggressively and can smother and kill native vegetation, including mature trees (Englberger, 2009). This species is particularly invasive in USA, Saipan and Guam (*Coccinia grandis*, 2023). In Fujairah we found this species as a weed in a number of nurseries in the Dibba Town and the Al Bidiya Village (for example, “Desert Oasis Nursery Bidiyah” and “Al Qalamoon Nursery” in Al Bidiya or “Al Amerey Nursery” and “The Green Nursery Sales Dibba” at the Al Dibba Town), where it actively climbs trees and shrubs near fences. Also, it was found among decorative shrubs on middle line of highway on embankment of the city of Fujairah. It appears to be a potentially invasive species in irrigated areas and in the moistest parts of the wadi in case if it can get there.

Based on our data, cultivated, running wild, and wild-growing representatives of 9 genera of the Cucurbitaceae family have currently been identified in the UAE (these are – *Lagenaria* L., *Luffa* L., *Momordica* L., *Corallocarpus* Hook. f., *Citrullus* Schrad., *Mukia* Arn., *Cucumis* L. (incl. *Melo* Mill.), *Coccinia* Wight et Arn., and *Cucurbita* L.). The differences between *Coccinea* and another genera of Cucurbitaceae known in UAE are given in the key.

Key for determination of genera of Cucurbitaceae known in UAE (orig.)

1. Petals free 2
- + Petals united 3
2. Petiole with a pair of glands below the lamina. All flowers solitary, white. Leaves and stems densely soft pubescent. Fruit polymorphic, woody, indehiscent 1. **Lagenaria**
- + Petiole without glands below the lamina. Male flowers in racemose inflorescence, female solitary, yellow. Leaves and stems roughly hirsute. Fruit oblong or cylindric, fibrous, dehiscing by a terminal operculum 2. **Luffa**
3. Calyx tube of male flowers closed at the bottom by 2–3 incurved scales. Peduncle mostly with large foliaceous bracts 3. **Momordica**
- + Calyx tube of male flowers without scales. Peduncle mostly ebracteate. Petiole without stipule-like lamina at the base 4
4. Flowers up to 5–10 mm long 5
- + Flowers more than 10–15 mm long 6
5. Fruit operculately dehiscent at the base, ovoid or broadly ellipsoid to conical. Disc absent. Flowers small, dull or greenish yellow. Male crowded at the apex, female flowers solitary or fascicled, sessile. Seed subglobose, ca. 3 mm long, smooth, $\pm$ margined. 4. **Corallocarpus**
- + Fruit indehiscent, subglobose. Disc present, annular or cupular. Connective apiculate, not appendaged or 2-fid. Flowers very small, yellow. Male flowers in sessile or sessile fascicles, female flowers usually in sessile clusters; ovary hispid. Ovules few, seeds scrobiculate, compressed 5. **Mukia**
6. Leaves pinnately lobed. Seeds not marginate, compressed 7
- + Leaves entire or palmately lobed. Seeds more or less marginate. All flowers solitary (or corymbose-subcorymbose in *Coccinia*) 8
7. All (male and female) flowers solitary. Leaves deeply pinnatipartite. Tendrils simple, or proximally 2–3(–4)-fid 6. **Citrullus**
- + Male flowers in racemose inflorescence, fasciculate or clustered. Leaves ovate, 3–8-lobed, tendrils always simple 7. **Cucumis**
8. Flowers white. Leaves glabrous, punctate on upper surface, sometimes glandular beneath 8 **Coccinia**
- + Flowers yellow. Leaves densely or roughly hirsute on both sides or somewhat long haired on nerves beneath to scabrescent 9. **Cucurbita**

Conclusion

In the flora of the UAE, several taxa have been introduced during development of gardens, road planting, through imported plants and soil in plant nurseries. As our new research has shown, it is now a similar situation in Fujairah. However, alien plants are introduced here exclusively in anthropogenic habitats, disturbed habitats, plant nurseries, private gardens, on wastelands, irrigated lawns, near garden fences with water inflow and along roadsides. The processes of their naturalization in transformed habitats have not yet been completed. With the development of roads, several alien plant species are found in the mountains along roadsides. In Fujairah, plant nurseries appear to be an important source of introduction of new alien species. These introductions have occurred in the last 10–15 years, as evidenced by the absence of inclusion of these species in the floras of the UAE (Jongbloed et al., 2000, 2003; Karim, Fawzi, 2007).

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