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A contribution to the Flora of Kuwait. 3

LOUTFY BOULOS
&
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RÉSUMÉ

BOULOS, L. & Y. AL-YAHYA (1991). Contribution à la flore du Koweït. 3. *Candollea* 46: 75-80. En anglais, résumés français et anglais.

Vingt-trois espèces sont signalées comme nouvelles pour la flore du Koweït, dont vingt-et-une sont des adventices des cultures et deux des plantes du désert: *Acacia gerrardii* Benth. subsp. *negevensis* Zoh. et *Papaver rhoeas* L. La première est la seule espèce sauvage d'arbre du pays. L'identification de deux espèces est corrigée. La présence d'une espèce est confirmée et deux angiospermes marins sont signalés.

ABSTRACT

BOULOS, L. & Y. AL-YAHYA (1991). Contribution to the Flora of Kuwait. 3. *Candollea* 46: 75-80. In English, French and English abstracts.

Twenty three species are reported new to the flora of Kuwait, of which twenty one are weeds in cultivated ground and two are desert plants: *Acacia gerrardii* Benth. subsp. *negevensis* Zoh. and *Papaver rhoeas* L., the former is the only wild tree species in the country. The identification of two species is corrected, the occurrence of one species is confirmed and two marine angiosperms are reported.

Introduction

In the two previous papers of this series (BOULOS, 1987 and BOULOS & ARMER, 1988) some taxa were either reported new to the flora of Kuwait or their occurrence was confirmed, the identification of some others was corrected. In the present paper twenty three species are reported new to the flora, of which twenty one are weeds in cultivated ground and two are desert plants. These new weedy species were not recorded by BOULOS (1988). The identification of two species is corrected. The marine phanerogams *Halodule uninervis* (Forsskål) Aschers. and *Halophila ovalis* (R. Br.) Hook. f. were recorded by AL-HASAN & JONES (1989).

BORAGINACEAE

Ogastemma pusillum (Coss. & Durand ex Bonnet & Barratte) Brummitt, in Kew Bull. 36: 680 (1982).
= *Megastoma pusillum* Bonnet & Barratte, Expl. Sci. Tunisie, Ill. Bot. tab. 11, fig. 4-11 (1895).

DAOUD & AL-RAWI (1985) cite *Lithospermum apulum* (L.) Vahl from Kuwait, apparently a misidentification and is replaced here by *Ogastemma pusillum*. The plant is rather widespread in the country and is not confined to Wadi Al-Batin as stated by DAOUD & AL-RAWI, l.c. The following are some representative specimens in Kuwait: Wadi Al-Batin 12 km N. Al-Salmi border station with Saudi Arabia, carbonaceous sandstone, alt. 280 m, 17 April 1990 *Boulos & Cope 17614* (K, KTUH). — Shu'aib Al-Batin, 25 km E. Al-Shagayah, coarse sand and gravel, alt. 280 m,

17 April 1990, *Boulos & Cope 17685* (BM, E, G, K, KTUH). — 60 km to Al-Salmi frontier station with Saudi Arabia, along the motorway from Kuwait, 19 March 1990, *Boulos & Ibrahim 17517* (BM, KTUH). — 86 km to Al-Salmi frontier station with Saudi Arabia, along the motorway from Kuwait City, sandy soil, alt. 200 m, 17 April 1990, *Boulos & Cope 17763* (KTUH). — 3 km SW. Um Al-Riman, N. Jal Az-Zor, coarse grained sand with carbonate cement, alt. 70 m, 8 April 1990, *Boulos & Ibrahim 17558* (K, KTUH). — Sobiyah, by the sea, 7 April 1983, *Al-Oumy & Al-Rawi AR1918* (KTUH). — 115 km N. of Kuwait, near Jabal Sanam, 24 April 1975, *Bajwa 1298-75* (KTUH). — 48 km along the road of Basra, near radio station of Mutla'a, 21 April 1983, *Al-Rawi & El-Kholy 12.435* (KTUH). — Kuwait Airport, 15 March 1971, *Daoud 154-71* (KTUH). — Runoff along the coastal highway to Al-Nuwaisib, facing Al-Ahmadi Port, loose sandy soil, alt. 20 m, 29°05'N., 48°05'E., 7 March 1985, *Boulos & Al-Hasan 15294* (BM, Br, CAIRC, KTUH). — Al-Khiran, near the chalets, 29 April 1982, *Al-Rawi 11,668* (KTUH). — Al-Nuwaisib, southern coastal area, near the frontier with Saudi Arabia, 3-4 km from the Gulf shore; coarse sandy soil, alt. 15 m, 28°35'N., 48°25'E., 8 March 1985, *Boulos & Al-Hasan 15400* (KTUH).

CHENOPODIACEAE

Chenopodium glaucum L., Sp. Pl., ed. 1, 220 (1753). New to the flora of Kuwait.

Kuwait: Al-Wafra, in a farm, 9 March 1989, *Boulos 17412* (BM, E, K, KTUH).

Chenopodium opulifolium Schrad. ex Koch & Ziz, Cat. Pl. Palat. 6 (1814). New to the flora of Kuwait.

Kuwait City: University campus at Khaldiya, in cultivated ground, 12 July 1988, *Boulos 17405* (K, KTUH).

COMPOSITAE

Cichorium endivia L., Sp. Pl., ed. 1, 813 (1753). New to the flora of Kuwait.

Kuwait City: University campus at Shuwaikh, garden weed, 28 April 1988, *Boulos 17402* (KTUH). — Al-Qadisiya, 10 May 1980, *Al-Rawi & students s.n.* (KTUH).

Flaveria trinervia (Spreng.) C. Mohr, Contr. U.S. Nat. Herb. 6: 810 (1901). New to the flora of Kuwait.

= *F. trinervata* (Willd.) Baillon, Hist. Pl. 55 (1882).

Kuwait: Al-Khiran resort, weeds on lawns by the Gulf, 24 November 1988, *Boulos 17409* (BM, K, KTUH).

Senecio vulgaris L., Sp. Pl., ed. 1, 867 (1753). New to the flora of Kuwait.

Kuwait City: Bab el-Jahra, in cultivated ground, 14 March 1989, *Boulos 17424* (BM, E, G, K, KTUH).

CRUCIFERAE

Descurainia sophia (L.) Webb ex Prantl, in Engler & Prantl, Natürl. Pflanzenfam. 3(2): 192 (1891). New to the flora of Kuwait.

Kuwait: Al-Doha region, in irrigated ground, 23 March 1989, *Boulos 17441* (K, KTUH).

CYMODOCEACEAE

Halodule uninervis (Forsskål) Aschers. in Boiss., Fl. Orient. 5: 24 (1882).

Kuwait: Shuwaikh, muddy area in coastal part of shore platform, 5 October 1983, *Jones s.n.* (KTUH). — Doha, littoral muddy sand, 13 October 1983, *Jones s.n.* (KTUH).

DAOUD & AL-RAWI (1985) did not refer to this species which was later reported by AL-HASAN & JONES (1989).

EUPHORBIACEAE

Euphorbia hirta L., Sp. Pl., ed. 1, 454 (1753). New to the flora of Kuwait.

Kuwait: Al-Khiran resort, on lawns by the Gulf, 24 November 1988, *Boulos 17408* (BM, K, KTUH). — University campus at Shuwaikh, garden weed, 28 December 1989, *Boulos 17466* (BM, E, G, K, KTUH).

Euphorbia serpens Kunth, Nov. Gen. & Sp. 2: 52 (1817). New to the flora of Kuwait.

Kuwait City: KISR experimental sites by the Gulf, near Midan Hawally, 29 February 1988, *Boulos 17149* (BM, E, G, K, KTUH). — University campus at Shuwaikh, garden weed, 28 December 1989, *Boulos 17468* (BM, K, KTUH). — Al-Khiran resort, on lawns by the Gulf, 24 November 1988, *Boulos 17410* (BM, E, K, KTUH).

GRAMINEAE

Avena sativa L., Sp. Pl., ed. 1, 79 (1753). New to the flora of Kuwait.

Kuwait: 57 km to Al-Salmy frontier station with Saudi Arabia, along the motorway from Kuwait City, sandy soil, alt. 250 m, 17 April 1990, *Boulos & Cope 17754* (K, KTUH).

Escape from cultivation.

Bromus catharticus Vahl, Symb. Bot., 2: 22 (1791). New to the flora of Kuwait.

Kuwait: Al-Doha region, in irrigated ground, 23 March 1989, *Boulos 17442* (BM, E, G, K, KTUH).

Chloris barbata Sw., Fl. Ind. Occ. 1: 200 (1797). New to the flora of Kuwait.

Kuwait City: KISR experimental site by the Gulf, near Midan Hawally, 16 December 1987, *Boulos 17122* (BM, K, KTUH).

Dactyloctenium aristatum Link, Hort. Reg. Bot. Berol. 1: 59 (1827). New to the flora of Kuwait.

Kuwait City: Omariya Agricultural Research Station, in cultivated ground, 19 March 1988, *Al-Yahya 176* (KTUH).

Digitaria ciliaris (Retz.) Koeler, Descr. Gram. 27 (1802). New to the flora of Kuwait.

Kuwait City: Omariya Agricultural Research Station, in cultivated ground, 19 March 1988, *Al-Yahya 175* (BM, K, KTUH).

Dinebra retroflexa (Vahl) Panzer, in Denkschr. Acad. Münch. 1813: 270, t. 12 (1814). New to the flora of Kuwait.

Kuwait City: University campus at Khaldiya, in cultivated ground, 12 July 1988, *Boulos 17404* (KTUH).

Eragrostis minor Host, Gram. Austr. 4: 15 (1809). New to the flora of Kuwait.

Kuwait City: University campus at Shuwaikh, garden weed, 28 December 1989, *Boulos 17467* (BM, K, KTUH).

Eremopoa persica (Trin.) Rosch. in Komarov, Fl. URSS 2: 430 (1934). New to the flora of Kuwait.

Kuwait City: Rumaithiya, garden weed, 28 January 1988, *Al-Yahya 166* (KTUH).

Lolium multiflorum Lam., Fl. Franç. 3: 621 (1778). New to the flora of Kuwait.

Kuwait: Runoff along the coastal highway to Al-Nuwaisib, facing Al-Ahmadi Port; loose sandy soil, atl. 20 m, 29°05'N., 48°05'E., 7 March 1985, *Boulos & Al-Hasan 15301* (BM, BR, CAI, CAIRC, E, KTUH, S).

Phalaris paradoxa L., Sp. Pl., ed. 2, 1665 (1763). Occurrence in Kuwait confirmed.

Kuwait: Jahra, on the outskirts of the town, in the middle of the road, 4 April 1972, *Daoud 638 A-72* (KTUH).

HALWAGY & MACKSAD (1972) as well as DICKSON & MACKSAD (1973) report this species from Kuwait. AL-RAWI (1987) however, lists it under "also mentioned" denoting its doubtful record. The above specimen confirms its cocurrence in Kuwait.

HYDROCHARITACEAE

Halophila ovalis (R. Br.) Hook. F., Fl. Tasm. 2: 45 (1858).

Kuwait: Doha, littoral sandy mud, 13 October 1983, *Jones s.n.* (KTUH).

DAOUD & AL-RAWI (1985) did not refer to this species which was later reported by AL-HASAN & JONES (1989).

LEGUMINOSAE

Acacia gerrardii Benth., Trans. Linn. Soc. London 30: 508 (1875) subsp. *negevensis* Zoh., Israel J. Bot. 13: 39 (1964). New to the flora of Kuwait.

Kuwait: Jal Az-Zor, behind Um Al-Riman, inside the fence of the research unit, *Salmeen & students OJS 164* (KTUH). — 5 km NE. Um Al-Rimam, north of Jal Az-Zor hills, one old tree, 5 m high, protected by a fence, 16 March 1989, *Boulos, Saleh & Al-Mutaw'a 17429* (E, K, KTUH).

DICKSON (1955) reports *Acacia seyal* Del. from northern Kuwait and describes it as "a very thorny tree growing 18-20 ft. high". DAOUD & AL-RAWI (1985) however, give no mention of this *Acacia* in Kuwait, nor refer to any other species. The identification of specimens (cited above) recently collected from the same tree referred to by DICKSON, l.c., was reconsidered and proved to be *Acacia gerrardii* Benth. subsp. *negevensis* Zoh. ZOHARY (1972) writes about the area of this species "Sudanian and E. African. Also known from Iraq and Kuwait" [Kuwait]. The occurrence of *A. gerrardii* subsp. *negevensis* in Iraq is also confirmed by TOWNSEND (1974) who describes it as "very rare in Iraq, only found in one locality in the desert zone". He gives Palestine, Jordan, and Kuwait as the area of the subspecies outside Iraq.

From the above, the occurrence of *Acacia gerrardii* subsp. *negevensis* is confirmed in Kuwait and may replace *A. seyal* given by DICKSON (1955).

Coronilla scorpioides (L.) Koch, Syn. Fl. Germ. et Helv., ed. 1, 188 (1835). New to the flora of Kuwait.

Kuwait City: Omariya Agricultural Research Station, cultivated ground, 19 March 1988, *Al-Yahya 172* (K, KTUH).

Medicago rotata Boiss., *Diagn. ser. 1, 2: 24* (1843) var. **eliezeri** Eig, *Bull. Inst. Nat. Hist. 6: 20* (1927). New to the flora of Kuwait.

Kuwait City: Sixth Ring Road, Hunting and Equestrian Club, near the golf course, alt. 40 m, 8 March 1982, *Al-Rawi, Jalili & Armer 10,931* (E, K, KTUH).

Trifolium resupinatum L., *Sp. Pl., ed. 1, 771* (1753). New to the flora of Kuwait.

Kuwait: Al-Khيران, near the chalets, 29 April 1982, *Al-Rawi 11,659* (KTUH).

The occurrence of this species is confirmed by the above specimen as well as by another collected from Kuwait, 15 March 1961, *Dickson 764* (K). *Trifolium resupinatum* is the first species of the genus in Kuwait.

OROBANCHACEAE

Orobanche minor Sm., *English Bot., 6: t. 422* (1797), det. F. N. Hepper 1990. New to the flora of Kuwait.

Kuwait: D'baiyyah, near The Green Palace, 8 April 1972, *Daoud 766-72* (KTUH).

PAPAVERACEAE

Papaver rhoeas L., *Sp. Pl., ed. 1, 507* (1753). New to the flora of Kuwait.

Kuwait: Shu'aib Al-Batin, 25 km E. Al-Shagayah, coarse sand and gravel, alt. 280 m, 17 April 1990, *Boulos & Cope 17680* (KTUH).

SOLANACEAE

Withania somnifera (L.) Dunal in DC., *Prodr. 13, 1: 453* (1852), det. F. N. Hepper. New to the flora of Kuwait.

Kuwait City: University campus at Shuwaikh, growing inside a hedge, 17 April 1990, *Boulos & Cope 17771* (BM, E, G, K, KTUH).

ZYGOPHYLLACEAE

Fagonia indica Burm. f., *Fl. Indica 102* (1768).

According to M. N. El-Hadidi (private communication) this species replaces *Fagonia olivieri* DC. in Kuwait.

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