

Ten Species New to the Flora of Kuwait and Bahrain

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ABSTRACT. Ten species, mostly weeds, are newly recorded from Kuwait and Bahrain, of which the desert annual *Crassula alata* (Viv.) Berger is the first Crassulaceae ever recorded from Kuwait and Eastern Arabia; the species is also new to the Arabian Peninsula.

During the field trips carried out by the authors in Kuwait and Bahrain in 1985, some emphasis was placed on collecting weeds besides desert plants. Weeds were obviously undercollected, especially during the hot summers in our area. The recent Flora of Kuwait (Daoud and Al-Rawi 1985) and the work on grasses of the Arabian peninsula (Cope 1985) shows how little attention weeds received from previous collectors. Our collections from Kuwait and Bahrain included ten species, mostly weeds, not previously recorded: six from Kuwait, three from Bahrain, and one from both Kuwait and Bahrain. Among our new records is a small succulent desert annual: *Crassula alata* (Viv.) Berger subsp. *alata*: this is the first member of Crassulaceae ever recorded from Kuwait and East Arabia - the species is also new to the Arabian Peninsula.

A list of the species, arranged alphabetically within their families, is given with citations of their localities and habitats.

Compositae

Aster squamatus (Sprengel) Hieronymus (Fig. 1).

Kuwait: University Campus at Al-Shuwaikh, weed in the garden, 10 September 1985, Boulos 15696 (KTUH).



Fig. 1. *Aster squamatus*.

Bahrain: Al-Budaiya Agricultural Station, 12 km south of Manama, weed in cultivated ground, 18 April 1985, Boulos and Al-Hasan 15600 (E, KTUH).

A newly introduced weed from Central and South America, naturalized in Kuwait and Bahrain, as well as in many subtropical and tropical regions of the world. The plant has also been recently introduced into Saudi Arabia (Collenette 4462 in E) and probably other Gulf States. It grows in gardens, orchards and waste ground.

Aster squamatus has also been recently introduced into some neighbouring countries. Täckholm (1974) reports its introduction into Egypt (of American origin) and describes it as being naturalized, especially in the Tahrir Province along the Cairo-Alexandria desert road. Boulos and El-Hadidi (1985) report its introduction into Egypt from Central and South America some 15 years ago; it is now a widespread weed almost throughout the arable lands of the country.

Yeo (1976) reports *Aster squamatus* as a Central and South American species widely naturalized in Southwest Europe, recently also in the Central and Eastern Mediterranean region, and still spreading.

Feinbrun-Dothan (1978) reports the similar *Aster subulatus* Michx. as a newly introduced weed from Eastern U.S.A., spreading rapidly during the past few years.

Whether *Aster subulatus* of the Flora Palaestina area is different from, or a closely related species to our *A. squamatus*, is a question that can only be answered after a careful study of ample material from the entire Middle East. However, it is difficult to believe that one species (*A. squamatus*) is introduced and quickly naturalized throughout the whole Middle East, Central and Southwest Europe, while a different species (*A. subulatus*) is confined to the Flora Palaestina area, in the middle of the area of the fast spreading *A. squamatus*.

Crassulaceae

Crassula alata (Viv.) Berger subsp. *alata*

Syn. *Tillaea alata* Viv.

Kuwait: 10 km east of Al-Salmi border station with Saudi Arabia, coarse sandy soil and surface flint, 280 m. 29° 05' N, 46° 45' E, 22 February 1985, Boulos and Al-Hasan 15119 (KTUH).

A small succulent reddish annual, the first member of family Crassulaceae ever recorded from Kuwait and the eastern side of the Arabian Peninsula; the species is also new to Arabia.

According to Wickens and Bywater (1980) the distribution of *Crassula alata* subsp. *alata* is: Sicily, Cyprus, Aegean, Syria, Palestine, Libya, Sudan (Red Sea), Egypt and eastwards to Iraq, Iran and N.W. India.

Cruciferae

Coronopus didymus (L.) Smith (Fig. 2).

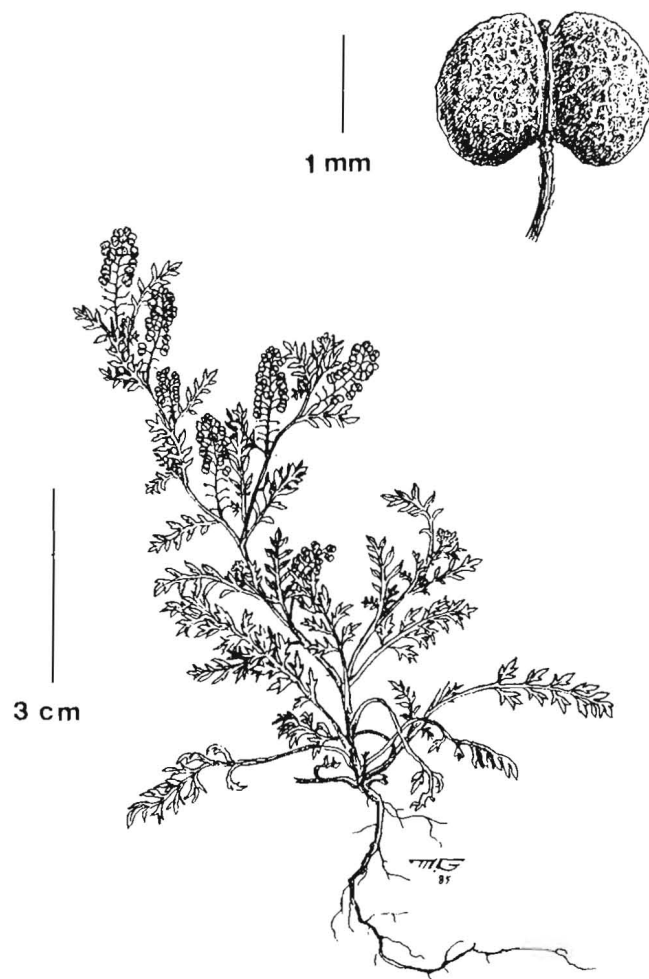


Fig. 2. *Coronopus didymus*.

Kuwait: University Campus at Khaldiya, weed on lawns, 24 April 1985, Boulos 15690 (E, KTUH).

A cosmopolitan weed, probably of South American origin (Jonsell 1982), of recent introduction into Kuwait. This species is not listed among the crucifers of Kuwait by Hedge and King (1983), nor by Daoud and Al-Rawi (1985).

Gramineae

Cutandia dichotoma (Forssk.) Trabut

Kuwait: Al-Khiran, southern coastal area, near the frontier with Saudi Arabia, calcareous sandstone, 10 m, 28° 40' N, 48° 20' E, 7 March 1985, Boulos and Al-Hasan 15347 (KTUH); Al-Subiyah, facing Bubyah Island, coarse maritime sand near the Gulf shore, 0-5 m, 29° 35' N, 48° E, 21 March 1985, Boulos 15508 (KTUH).

According to Cope (1985) *Cutandia dichotoma* is restricted in Arabia to Bahrain; he considers its occurrence in Saudi Arabia unconfirmed being based on literature records. Cope, l.c., gives North Africa and Southwest Asia as its area of distribution.

Imperata cylindrica (L.) Raeuschel

Bahrain: Al-Budaiya Agricultural Station, 12 km south of Manama, weed in waste ground, 18 April 1985, Boulos and Al-Hasan 15599 (KTUH).

According to Cope (1985), *Imperata cylindrica* is known in the Arabian Peninsula from Saudi Arabia, Yemen Arab Republic, Socotra (unconfirmed literature record) and Oman. Our new record from Bahrain is also the first from Eastern Arabia.

Lasiurus scindicus Henrard

Syn. *L. hirsutus* (Vahl) Boiss.

Bahrain: Al-Areen Wildlife Park and Reserve, 20 April 1985, Boulos and Al-Hasan 15679 (E, KTUH).

Bahrain is not given by Cope (1985) among the countries of the Arabian Peninsula where *L. scindicus* occurs; indeed, Bahrain was the only Arabian country where the species was not previously recorded.

The general distribution of *L. scindicus* according to Cope, l.c., is from east Tropical Africa to N.W. India.

Leptochloa fusca (L.) Kunth (Fig. 3).

Syn. *Diplachne fusca* (L.) P. Beauv.



Fig. 3. *Leptochloa fusca*.

Kuwait: Al-Wafra, at Al-Hazim farm, c. 115 km south of Kuwait City, weed in cultivated land, 120 m, 28° 35' N, 48° E, 17 January 1985, Boulos and Al-Hasan 14951 (E, KTUH).

According to Cope (1985), the distribution of *L. fusca* within Arabia is: Saudi Arabia, Yemen Arab Republic, UAE and Qatar. Our finding is the first record in Kuwait.

Parapholis incurva (L.) C.E. Hubb.

Bahrain: Al-Jasra village, 16 km south of Manama, salt marsh adjacent to the Gulf shore, 18 April 1985, Boulos and Al-Hasan 15654 (E, KTUH).

According to Cope (1985), *P. incurva* was not previously recorded from Bahrain.

Three more grasses are reported by Cope (1985) from Kuwait as unconfirmed literature records. Their occurrence in Kuwait is now confirmed by the following collections:

Dactyloctenium aegyptium (L.) Beauv.

Kuwait: Omariya Agricultural Station, weed in cultivated ground, 11 September 1985, Boulos 15702 (KTUH).

Echinochloa colonum (L.) Link.

Kuwait: University Campus at Shuwaikh, weed in moist ground in the garden, 10 September 1985, Boulos 15693 (KTUH); Omariya Agricultural Station, 11 September 1985, Boulos 15698 (KTUH).

Hordeum vulgare L.

Kuwait: Al-Wafra, at Al-Hazim farm c. 115 km south of Kuwait City, cultivated, 120 m, 28° 35' N, 48° E, 17 January 1985, Boulos and Al-Hasan 14952 (E, KTUH).

Leguminosae

Medicago polymorpha L. var. *vulgaris* (Benth.) Shinn (Fig. 4).

Kuwait: University Campus at Khaldiya, weed in the garden, 24 April 1985, Boulos 15689 (E, KTUH).

Our species is not listed by Daoud and Al-Rawi (1985) under *Medicago* species known from Kuwait.

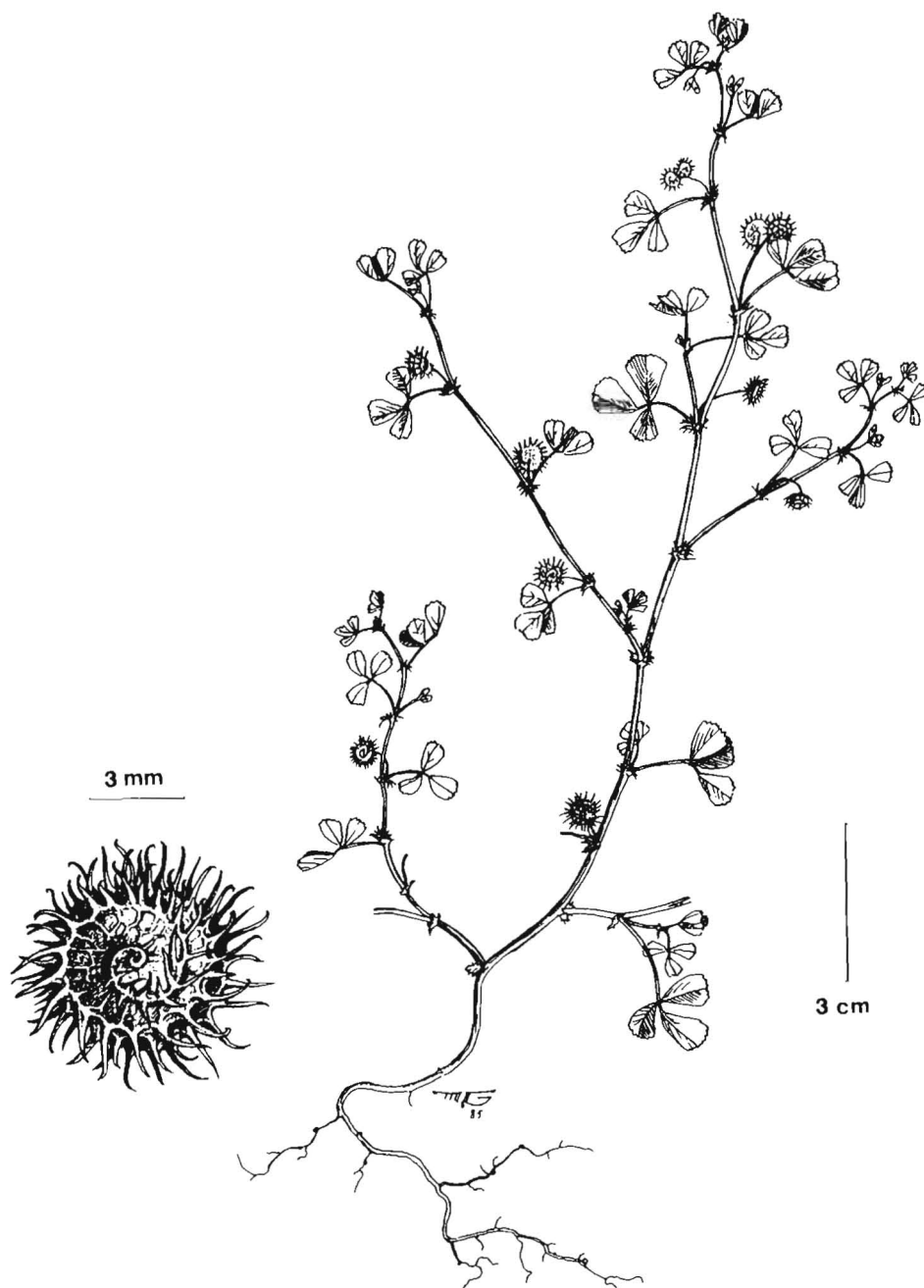


Fig. 4. *Medicago polymorpha* var. *vulgaris*.

Orobanchaceae

***Orobanche ramosa* L. (Fig. 5).**

Kuwait: Root parasite on tomatoes in a garden at Al-Sharq, Kuwait City, 31 March 1985, Al-Nimer, s.n. (E, KTUH); 12 April 1985, Al-Nimer, s.n. (E, KTUH).

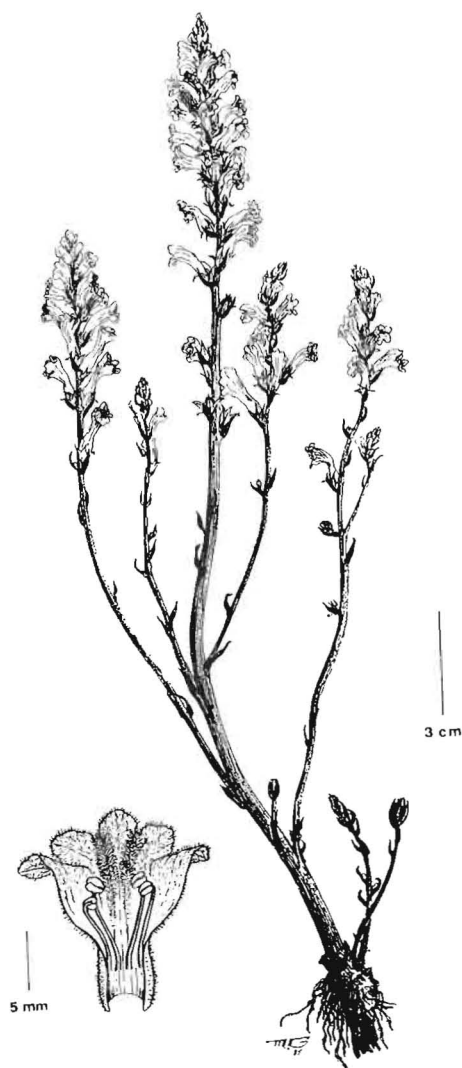


Fig. 5. *Orobanche ramosa*.

Orobanche ramosa is not listed by Daoud and Al-Rawi (1985) under *Orobanche* from Kuwait.

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عشرة أنواع جديدة على نباتات الكويت والبحرين

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سجلت عشرة أنواع جديدة على فلورا الكويت والبحرين،
منها النبات الصحراوي الحولي *Crassula alata* من فصيلة
Crassulaceae لم يسبق أن سجل من الكويت أو شرقي شبه
الجزيرة العربية، كما أن النوع جديد على شبه الجزيرة
العربية.