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New record for Iraqi Flora from the Family Euphorbiaceae the species *Euphorbia serpens* Kunth in Iraq

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Abstract

The new species, *Euphorbia serpens* Kunth, from the family Euphorbiaceae, was observed and recorded during field trips in separate areas in the city of Baghdad. Characteristics different of the previous species of this genus spread in Iraq were observed, and its distribution was in the form of population groups. The samples were collected and study the important characteristics of the species, and its stems were characterized by being glabrous that indumentum was smooth, and the leaves were also characterized by being opposite and the top of the leaf heart-shaped, also the characteristics of the reproductive parts, such as the inflorescences of the family, as well as the fruits and seeds, were studied. The flowering period of the species was determined from the end of April until the beginning of September. The sample is in the herbarium of the University of Baghdad (BUH), Department of Biology and was given the two numbers (50470-50471).

Keywords: New record, Euphorbiaceae, *Euphorbia serpens* Kunth, Glabrous, Heart-shaped leaf.

Introduction

The genus *Euphorbia* L. (Sp. Pl. 1: 450. 1753) is one from the greater genera of Dicot plants that the generality species-expanded in Euphorbiaceae family include more than 2000 species that distributed on a global level and have the most diversity founded in drought and semi-drought zones from the tropical and subtropical (Horn *et al*., 2014; Mabberley, 2017). The genus *Euphorbia* was classified into four subgenera that was, *Athymalus* (Peirson *et al*., 2013); *Chamaesyce* (Yang *et al*., 2012); *Esula* (Riina *et al*., 2013) and *Euphorbia* (Dorsey *et al*., 2013). The genus *Euphorbia* includes terrestrial plants , herbs , shrubs , trees, as well as a group from succulent and also some xerophytic sort and its distinguished by special morphological tangled, cyathium inflorescence (Horn *et al*., 2012) .The species was recorded for the first time by Carl Linnaeus that recognized the genus *Euphorbia* In the eighteenth century (Linnaeus and Wiman, 1752 in Nambudiri and Nambudiri, 2013), there was many studies for the family and the genus *Euphorbia* in Iraq like (Sulaiman *et al*., 2020) studied the micro-morphology and cytology for six species of *Euphorbia*, also the study of (Sakar and Ahmed, 2020) about new species of the genus *Euphorbia* in Kurdistan region in Iraq ,as well as the study of (Alhasan ,2016) the study touched upon the fruit of eleven species belong to Euphorbiaceae family in Iraq , in addition to the study of (Zokian, 2011) of four species of the genus *Euphorbia*. The species has been recorded for the first time in Hungary by (Wolf and Kiraly, 2014) ,also recorded in Romania for the first time by (SÎRBU and ȘUȘNIA,2018).

Materials and Methods

A strange species was identified and diagnosed during field trips in the fields and gardens of the University of Baghdad, Al-Jadiryah campus during the two growing seasons 2021-2022. Several samples of the species were collected and the different parts of the species were studied in laboratories of Department of biology, College of Science, University of Baghdad. The diagnosis was made based on the taxonomic keys in references and floras by (HÜGIN, 1998; JINSHUANG and GILBERT, 2008; PAHLEVANI and RIINA, 2011; BERRY and *et al*., 2016; RADCLIFFE-SMITH, 2018) and many other references, as indicate below, for each species. The nomenclature for the plant taxa had been follows (BERRY *et al.*, 2016).

Results and Discussion

The species, herb, annual, 10-18 cm tall (Fig.1-h).Roots fibrous, branched (fig1-a), Stems, glabrous, prostrate ,branched from base, 1-2 mm width ,have

internodes with advenetitous roots at each node ,green in color or purple(Fig.1-b). Leaves opposite petiolate width triangle membranous stipules , base of leaf cordate or flat,(about 0.5 cm long) ,margin was intire(Fig.1-c).Inflorescence is Cyathium with appendages (Fig 1- c,d,f) axillary, single, involucre bell-shaped or inverted cone, 0.4-0.6 × 0.3-0.4 mm, glabrous, lobes in margin are four, glands are four, rounded to reniform ,the appendages white, wider and longer than glands, Male flowers are 3-5, usually unexserted, female flower: pedicel 0.5 mm; exserted at involucre; ovary is smooth, glabrous; styles are free; stigma 2-lobed. Capsule sub-globose, 1.4-1.7 × 1.5-1.8 mm, glabrous ; fruit pedicel 2 mm ; Seeds (Fig1-d) ovoid - oblong, 0.9-1.3 × 0.6-0.9 mm, gray to brown , smoothly , sometimes creased; caruncle is absent. It is worth noting that the species was not mentioned in the(Flora of Iraq,1980 – Euphorbiaceae) or in the(Flora of lowland,1964)or in (Al-Rawi 1988).

The sample was preserved in the herbarium of the University of Baghdad(BUH) in the Department of Biology, and the two numbers were given (50470-50471).

Taxonomy*: Euphorbia serpens* Kunth first published in (F.W.H.von Humboldt, A.J.A. Bonpland and C.S. Kunth, Nov. Gen. Sp. 2: 52 ,1817)

Synonym name: *Chamaesyce serpens* (Kunth) Small, Fl. S.E. U.S. [Small]. 709, 1333. 1903).

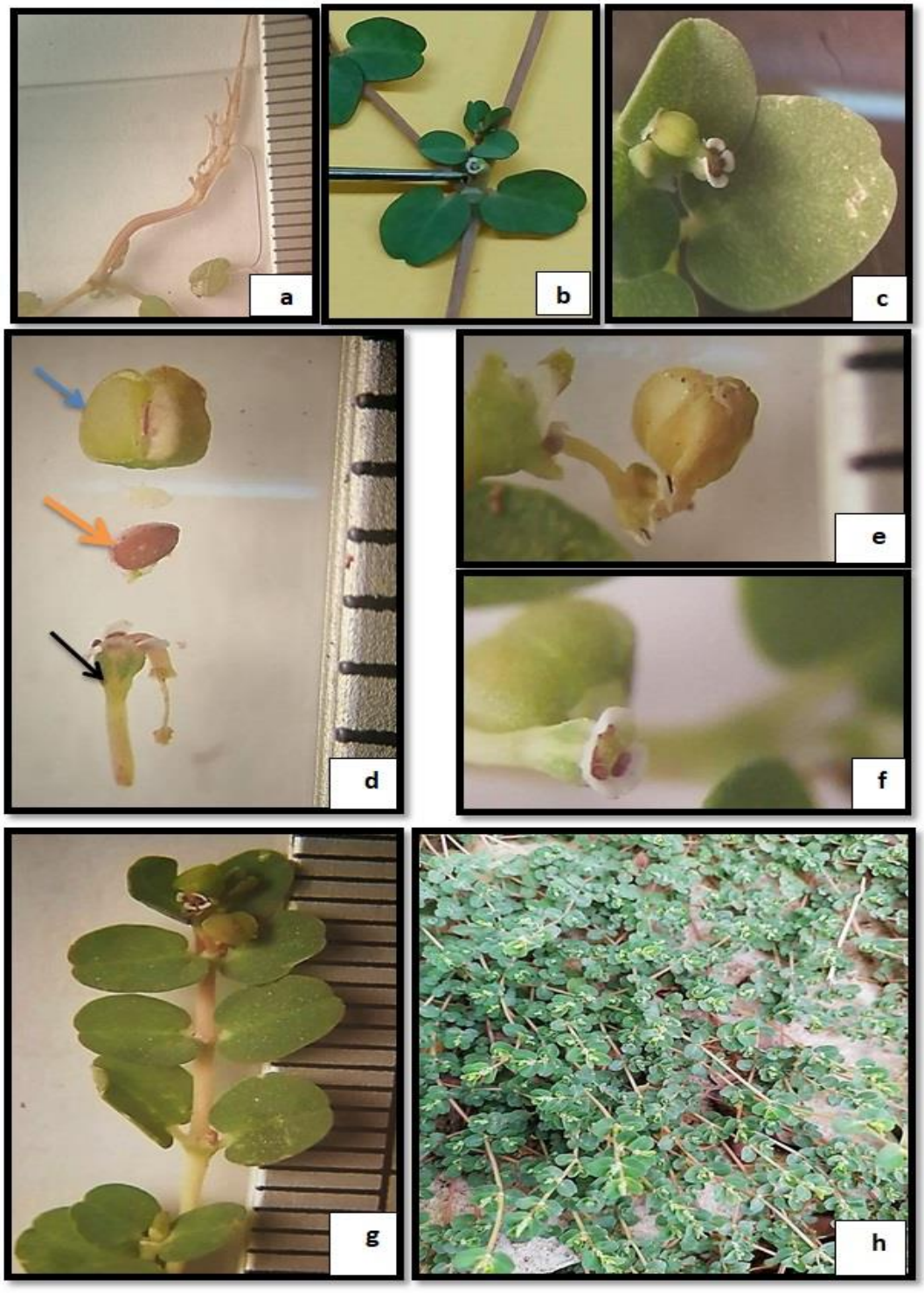
Flowering period: From Late April to early September.

Common name: matted sandmat ,Creeping spurage .

In flora of Iraq the species often confused with *E.prostrata* but it was different in glands that without prominent appendages in *E.prostrata* .

Conclusion

The new type of Euphorbia was recorded at the first time in Iraq to the Iraqi flora, where it was compared with the existing species, and there was no similarity in the characteristics between it and the rest of the species.



Figure(1) : a-Root, b-Stem(smooth), c-Leaf, d-Fruit (↘), seed (↘), Female flower (↘), e-male flower, f-male and female flower in the same plant, g-species with vegetative and reproductive parts, h-species in garden.

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