
New plant records for the Flora of Libya

Verbesina encelioides Benth. ex A. Gray, *Retamamonosperma* (L.) Boiss. and *Euphorbia punctata* Delile, Descr.

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Abstract: This paper deal with three plant species which have not been previously recorded from Libya. One genera and three species are added to the flora of Libya. They are collected in trips throughout Libya from 2007 to 2011. These are *Verbesina* (Asteraceae). The species also include *Retamamonosperma* (Fabaceae) and *Euphorbia punctata* (Euphorbiaceae). *Verbesina encelioides* has ecological and medicinal, value, and it is considered drought tolerant plant, does not require large amounts of water, and in the folk medicine it uses in anti inflammatory action for both gum sores and in hemorrhoid treatment as well as for the treatment of spider bite symptoms.

Introduction: The climate of North Africa is predominantly arid. Coastal plains have a Mediterranean climate, with mild winters, when most of year's precipitation falls, and hot dry summers with little or no precipitation.

The terrestrial biosphere is the key of the global climate system. The arid and semi-arid regions of the Mediterranean combine a low rate of rainfall and high rate of evapotranspiration and subject to extreme recurrent drought (EUWI 2006). North Africa is characterized by vast territories of steppe and Saharaland. The vegetation in North Africa very arid and semi-arid desert types of forests, dry bushland and grassland (Boulos, 1999).

Libya is located in North Africa; it lies between 9° and 25° longitude to

the East and between 18° and 33° latitude to the North, divided into three geographic regions, Tripolitania (western provinces), Cyrenaica (Eastern provinces), and Fezzan region (Southern provinces), of which more than 90% are desert (Al-Idrissi, *et al.*, 1996). The climate is typical of the Mediterranean, characterized by the cool rainy winter season and a hot dry summer. The climate over most of the country is that of the hot arid Sahara, but it is moderated along the coastal littoral by the Mediterranean Sea. The annual rainfall is extremely low, the highest rainfall occurs in the western region. An average yearly rainfall of less than 100 mm covers 93% of the country's land surface (Abdelgawad, *et al.*, 1979).

Materials and Methods:The field trips were conducted different parts of Libya, the plant specimens included in this paper were collected from Marzuq farms(Fezzan) E – 3 in January 2011 and Al-Rofaya village,c. 10 km south of QasirKayar, WadiCandal,Al-Jabal Al-

Gharbi, and Misrata(*Tripolitania*), A-3 and A - 4 in 19 April 2007 and Al-Fadel Abu-Omar c. 40 km west of Darnah, Al-Jabal Al-Akhdar, (*Cyrenaica*) A-8 in 27 April 2007, during the study of the Weeds for agricultural crops and Flora of Libya. Figure (1).

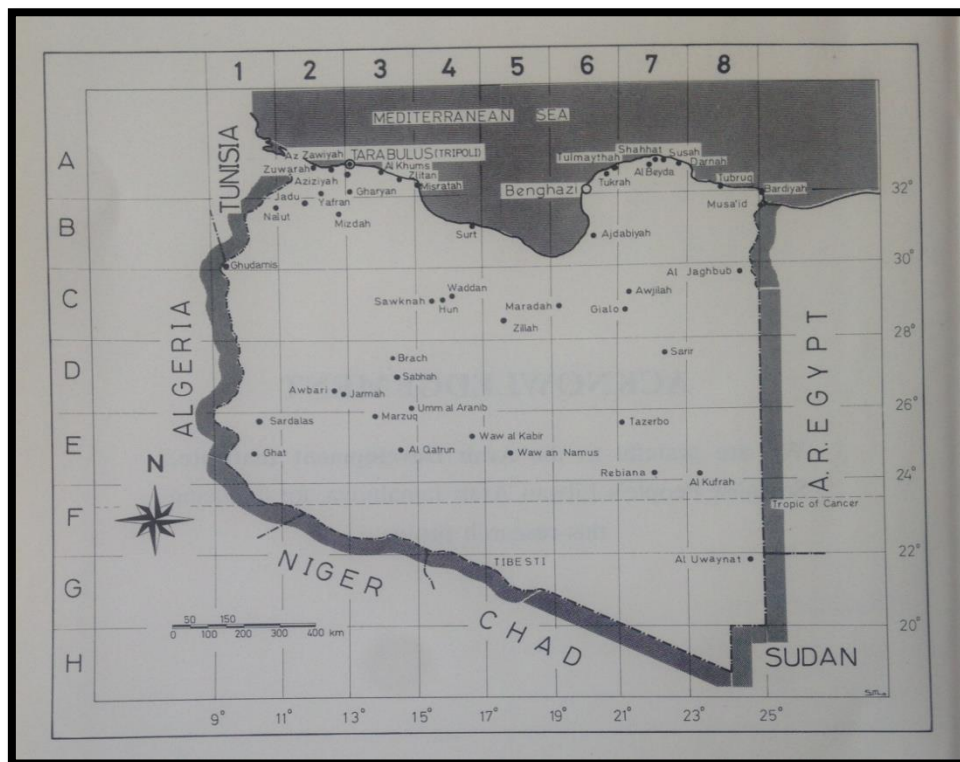


Figure (1): Location map of specimens. Modified from Ali et al., (1976 – 1986)

The collected specimens were then treated following the general herbarium techniques " Pressing and drying, Poisoning, Mounting and Identification", for identification, Flora of Libya, Jafri and El-Gadi, 1983, vol.,

107;Jafri and El-Gadi, 1980, vol., 86 and Flora of Egypt, (Tackholm,1974; Boulos,1999, vol.,1;Boulos, 2000, vol., 2 and Boulos, 2002, vol., 3) are used.

Result and Discussion

VerbesinaL.

Annual or perennial herbs, shrubs or small trees; leaves opposite or alternate, dentate or lobed, often decurrent along the stem; capitula solitary, corymbse or paniculate, radiate, discoid or disciform; phyllaries 2-6-seriate; receptacle paleaceous; ray florets female , sterile or rarely neuter with yellow, white or orange corollas; of disc florets yellow, orange or white; achenes compressed , winged; those of disc florets triquetrous; pappus of ray florets 2-3 awns, often connate to the wings, those disc florets mostly with 2 awns, rarely obsolete, About 150 species, North, Central and South America, some naturalized elsewhere, some cultivated ornamentals.

Asteraceae

Verbesinaencelioides(Cav.) Benth. ex A. Gray, Bot. Calif. 1: 350 (1876). Syn. *Ximenesiaencelioides* Cav., I con. 2: 60, t. 178 (1793).

Strigose grayish annual 20-80 cm; stems much-branched, sulcate; leaves 3-10 x 1-4 (-5) cm, dehooid to lanceolate, the lower opposite, the upper alternate, coarsely serrate to subentire, acute; petiole 1-3.5 cm; capitula 1.5 x 2.5 cm, in terminal lax cymes, radiate; peduncle 3-12 cm; ebracteate; phyllaries 2-seriate; 0.8-1.4 x 0.1-0.3 cm, narrowly lanceolate, subacute, strigose; paleae 6-8 x 0.5 mm, sczrious, acuminate and scabrid at the apex; outer florets radiate, fertile the rays 1-2 x 0.5-0.8 cm; disc florets to 100, yellow; achenes of outer florets 3-4 x 2 cm, compressed, glabrous, wingless; achenes of disc florets 5-6.5 x 2 mm (excluding the wings); wings 1-1.5 mm diam., whitish; pappus 2-2.5 mm, of 2 filiform awn-like bristles.

Specimen studied: Libya: E - 3, Marzuq farms, Marzuq, 20January 2011, **O. S. Sharashy**

Distribution:N (Aswan), O (Kcharge), S (El-Arish); waste ground, roadsides, edges of cultivation.



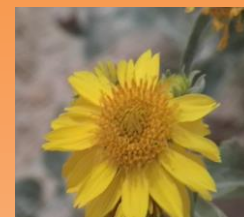
Verbesinaencelioides



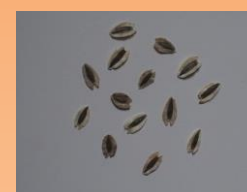
Branch of *Verbesinaencelioides*



Leaf



Head



Seeds

Native to South and Central America, naturalized in many regions of the Old World, Pantropical weed.

Confirmed by: Prof. **Ahmad K. Hegazy**, Department of Botany, Cairo University, Giza, Egypt & Department of Botany and Microbiology Collage of Science, King Saud

RetamaRaf., npm. Conserv.

Shrubs or small trees; stemsspartioid; leaves simple,small, soondeciduous; racemes lateral; corolla much longer than the calyx; stamens all connate into a closed tube; pod indehiscent or dehiscent, 1- to 2- seeded; seeds spherical, withoutcaruncle. About 4 species, Canary Islands, Mediterranean region and Middle East.

Fabaceae

Rrtamamonosperma (L.) Boiss., Voy. Bot. Espagne 2: 144 (1840) subsp. bovei (Spach) Maire in Jahand&Maire, Cat. Pl. Maroc 357 (1932). Syns. SpartiumboveiSpach, Ann. Sci. Nat. Bot., ser. 2, 19: 297 (1943). Retamabovei (Spach) Webb, OtiaHispan., ed. 2, 24 (1853).

Shrub to 3 m; differs from *R. raetam* subsp. *raetam* by the larger flowers 1.5 – 1.7 cm; standard shorter than the wings; pod 1 – 1.5 x 1 cm; seeds reddish – brown or olive-green.

Specimen studied: Libya: A-3, Al-Jabal Al-Gharbi, WadiCandal, c. 10 km south of QasirKayar, Al-Rofaya village. 19 April 2007. A - 4 Misrata, c. 200 km east of Tripoli. 23 April 2007, **O. S. Sharashy**

Distribution:The Mediterranean Libya near Sollum to port Said; sand coastal strip from the border with dunes. Egypt, Algeria. Morocco.



Branch of Rrtamamonosperma



Fruiting branch



Pods



Seeds

Confirmed by: Prof. **LoutfyBoulos**,
Department of Botany,

Faculty of Science, Alexandria
University, Alexandria, Egypt.

Euphorbia L.

Monoecious herbs, shrubs, trees or succulents; milky latex always present; leaves alternate, opposite or whorled, the lower or stem-leaves usually alternate, the median or pseudumbel-leaves whorled, the upper or ray leaves whorled or opposite, all usually sessile, rarely shortly-petiolate, simple, entire or toothed, penni- or palmi-nerved; stipules present or absent; inflorescence a cyathium, with several male flowers and 1 female flower, enclosed in a gland-bearing involucre; cyathia axillary or in pseudumbels; involucre usually 5-lobed with 1-5 glands alternating with them; *male flowers*: 1 stamen borne on its own

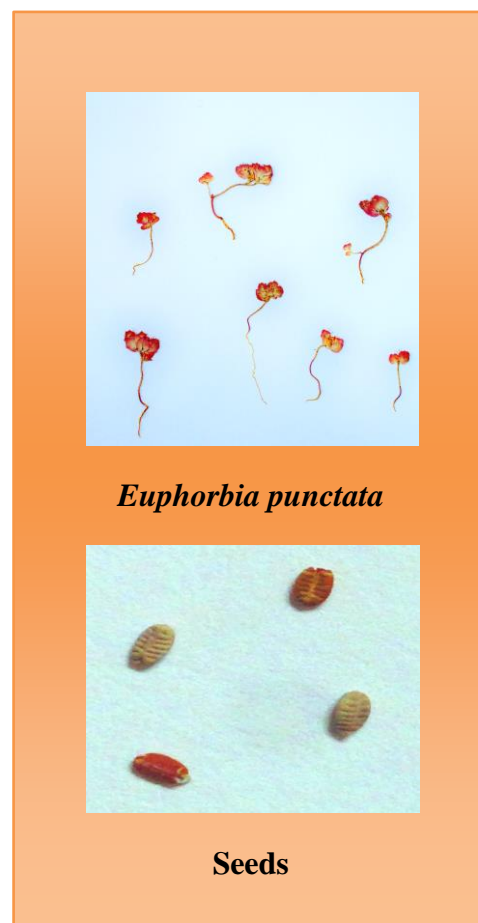
pedical; *female flowers*: 3-locular ovary on a pedical, usually elongate in fruit; ovules 1 per locule; style 3, free or connate at the base; stigmas often 2-fid; fruit 3-celled capsule, dehiscent into 2-valved, 1-seeded cocci; seeds carunculate or not, smooth or wrinkled. About 2000 species, cosmopolitan, but especially tropical, subtropical and warm-temperate regions.

Euphorbiaceae

Euphorbia punctata Delile,
Descr. Egypte, Hist. Nat. 234 (1814).

Like *Euphorbia chamaepeplus*, but plant c. 3 cm; stems narrowly winged; leaves fleshy; cauline leaves sessile, broadly obovate, usually caduceous; umbellar leaves broadly ovate; seeds 1x0.8 mm.

Specimen studied: Libya: A-8, Al-Jabal Al-Akhdar, Al-Fadel Abu-Omar,



Euphorbia punctata

Seeds

c. 40 km west of Darnah, 27 April 2007, **O. S. Sharashy**

Distribution: The Mediterranean coastal strip from the border with Libya near Sollum to port Said, the entire Sinai peninsula including the coastal Mediterranean strip and El-Tih Desert east of Suez Canal; cultivated ground. Endemic.

Confirmed by: Prof. **LoutfyBoulos**,
Department of Botany, Faculty of

Science, Alexandria University,
Alexandria, Egypt.

These species are reported for the first time for the flora of Libya. The importance of discovering and identifying new species of plants in local habitat, this adds new species to Flora of Libya, and from then addition to diversity of plants in our region, which is considering poor in density and diversity of plants.

Acknowledgements

I express my sincere thanks, gratitude and appreciation to Professor **Ahmad K. Hegazy** and Professor **Loutfy Boulos** for kind help to confirm the identification of specimen. Without this support this work would have never been realized.

تسجيل نباتات جديدة في ليبيا

***Verbesina encelioides* Benth. ex A. Gray; *Retamamonosperma* (L.)
Boiss and *Euphorbia punctata* Delile, Descr.**

عمر سعد شراشي

كلية العلوم (قسم علم النبات) جامعة سبها

المخلص: هذه الورقة تتعامل مع جنس جديد و ثلاثة أنواع لم تسجل من قبل في ليبيا، لتضاف إلى موسوعة النباتات الليبية و ذلك من خلال زيارات من 2007 - 2011، وهذا الجنس هو *Verbesin* (Asteraceae)، و تتضمن الأنواع (*Euphorbia punctata* (*Retamamonosperma* (Fabaceae)) (*Euphorbiaceae*). النوع *Verbesina encelioides*، سجل في منطقة مرزق بالجنوب الغربي من ليبيا، و هذا النوع له قيمة بيئية و طبية، و هو يعتبر نبات مقاوم للجفاف و لا يحتاج إلى كميات كبيرة من الماء، أما و في الطب الشعبي فهو يستعمل ضد الالتهاب لكتنا قرح اللثة الجلدية و في معالجة الباسور بالاضافة إلى معالجة عضة العنكبوت. أما النوع *Retamamonosperma* سجل في وادي قندال بقريّة الرفابع، جنوب قصر خيار، بالجبل الغربي و في مصراتة بالمنطقة الغربية. بينما النوع *Euphorbia punctata* سجل في منطقة الفضيل ابو عمر غرب درنه بالجبل الأخضر بالمنطقة الشرقية من ليبيا.

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