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Helianthemum polygonoides, a new species of the SE Iberian Peninsula

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FRANCISCO ALCARAZ & ISABEL ESPUELAS

RÉSUMÉ

PEINADO, M., J. M^a MARTÍNEZ-PARRAS, F. ALCARAZ & I. ESPUELAS (1987). *Helianthemum polygonoides*, une espèce nouvelle du sud-est de la péninsule ibérique. *Candollea* 42: 361-364. En anglais, résumé français.

Description d'une espèce nouvelle, *Helianthemum polygonoides*, récoltée dans le sud-est de l'Espagne, en donnant quelques commentaires écologiques et chorologiques.

ABSTRACT

PEINADO, M., J. M^a MARTÍNEZ-PARRAS, F. ALCARAZ & I. ESPUELAS (1987). *Helianthemum polygonoides*, a new species of the S.E. Iberian Peninsula. *Candollea* 42: 361-364. In English, French abstract.

A new species is described, *Helianthemum polygonoides*, from south-eastern Spain. Some ecological and chorological comments are added.

Introduction

While carrying out our phytosociological studies in Southeastern Spain (chorological province Murciano-Almeriense), we found a species of *Helianthemum*, that, due to its habit, subfleshy leaves, lack of stipules, glabrous sepals, maculated petals and, above all, its ecology and phytosociological behaviour, seemed to be a new taxon. After being studied in detail and consulted the correspondent herbaria (MA, MAF, MUB), this species has come out as new to Science and we call it *Helianthemum polygonoides* by its resemblance, excluding its flowers, with *Herniaria polygonoides* Cav. (= *Paronychia suffruticosa* (L.) Lam.).

Diagnosis and typification

***Helianthemum polygonoides* Peinado, Martínez-Parras, Alcaraz & Espuelas spec. nov.**

Descriptio: fruticulus ascendens, ramis floriferis erectis (20 cm), ramificatis, pilis stellatis vestitis, densioribus superne pedunculisque floralibus. Folia opposita, exstipulata, erecta, subcarnosa, lanceolato-elliptica (4-7 mm longa), glabra, nervis medialibus bene notatis apicem non tangentibus. Inflorescentia racemosa terminalis, bracteis minutis, pedunculi fructiferi reflexi, dense stellato-

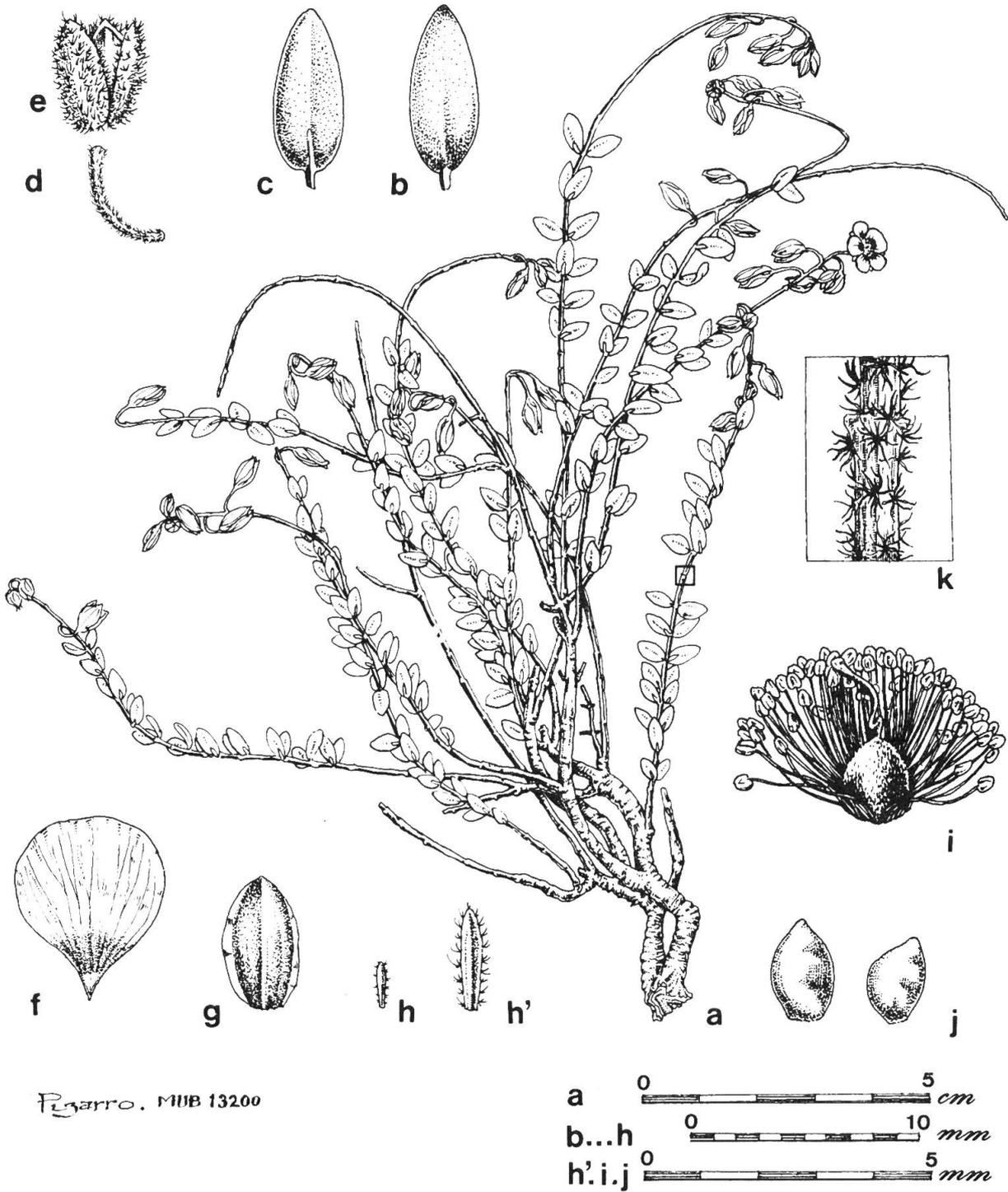


Fig. 1. — *Helianthemum polygonoides* Peinado, Martínez-Parras, Alcaraz & Espuelas (Holotypus MUB 13200). Diagnostic features: a, habit; b, leaf bundle; c, leaf back, with well marked middle nerve; d, fructiferous peduncle; e, capsule; f, petal; g, inner sepal; h-h', outer sepals; i, androecium and gynoecium; j, seeds; k, detail of stem, with stellate hairs.

pilosi. Sepalis erectis, externis minusculis, lineari-lanceolatis, ciliatis, internis glaberrimis (5-6 mm longis), quinque nervis bene notatis, centralibus acrodromis, lateralibus acrodromis imperfectis. Corolla calice longior, petala 7-7.5 mm longa, luteo-aurea, singula petala maculam croceam prope unguem habentia. Stamina copiosa stylum superantia, filamentis glabris. Ovarium pilosum, capsula trivalvis, loculicida, sepalis brevior, pilis hialinis brevibus vestita (0.1-0.2 mm). Semina ovato-lanceolata, fusca tuberculata. Embryo complicatus, cotyledonibus rectus.

Habitat: In solis salinariis, prope Tobarra et Cordovilla (Albacete, Hispania). Floret Junio-September.

Typi: Holotypus MUB 13200. De Tobarra a Cordovilla (Albacete), *XH 17*, 580 m, suelos salinos (*Schoeno-Plantaginetum maritimae* Rivas-Martínez 1984), 5.7.1985. Leg. Alcaraz, Peinado, Garre, Ríos & Martínez-Parras. Isotypi: MAF 123051; MA 293276; Herbarium Universidad de Alcalá de Henares 39-3920. All isotypes and holotype with identical labels.

Description and affinities

Chamaephyte up to 20 cm high, with ascending tendency and erect flowering branches; stem woody, very branched, covered by stellate hairs, more dense in the apical portion and floral peduncles. Leaves opposite, exstipulate, erect, subfleshy, elliptical-lanceolate, 4-7 mm long, glabrous, with well marked middle nerve which does not reach the apex; foliar surface reticulate-punctate with rugose aspect. Petioles short (0.5 mm) somewhat decurrent on the nodes.

Inflorescence racemose terminal, with 4-10 small flowers, sustained by reflexed peduncles densely covered by stellate hairs. Five erect sepals, the two outer linear-lanceolate, with obtuse apex and ciliate; the three inner sepals 5-6 mm long, more or less elliptical with truncate base pole. Limb of the inner sepals green, with three principal, basal acrodromous nerves and two lateral imperfect acrodromous ones; internal margin broadly scarios (ca. 0.1 mm). Inner sepals glabrous contrasting with the dense hairyness of the floral peduncles.

Five petals a little longer than the sepals (7-7.5 mm), yellow, with an orange basal spot. Stamens numerous with glabrous filaments, longer than the style. Ovary hairy, with style strongly elbowed at base. Capsule three-valved, loculicidal, shorter than the sepals, covered with short hyaline hairs (ca. 0.1-0.2 mm). Seeds ca. 1.5 mm long, ovate-lanceolate, brown-blackish, finely tuberculate, 4-6 in each capsule, only 1-2 generally fertile.

Species of *Helianthemum* that, because of its chromosomal number ($x = 10$), lack of stipules and stamens that overtake the style's length, belongs to the subgenus *Plectolobum* Willk., nevertheless it differs by its non-biplicate embryo. According to the enumerated characters, typical of subgenus *Plectolobum* and not of subgenus *Helianthemum* Willk. ($x = 11$) and considering the yellow petals with spotted base, it shows great affinities with section *Macularia* Dunal in DC. In this section only *H. lunulatum* (All.) DC. in Lam. & DC. has been described for Europe, this one being an alpidic dolomiticulous and subalpine endemism, from which our species clearly differ by its glabrous leaves, not fringed by long and thick cilia; by its glabrous calyces, devoid of star-shaped hairs in the intercostal spaces and long hairs in the ribs; by its tomentum of caulinar star-shaped hairs that are absent in the alpidic taxon and also by its racemose inflorescence, very different from the scarce axillary and terminal flowers of *H. lunulatum*.

Besides, the ecological behaviour of both taxa is completely different: petrophilous subalpine in *H. lunulatum*, halophilous mesomediterranean in *H. polygonoides*.

Chorology and ecology

The territory of the new taxon grows (area from Tobarra to Cordovilla in Albacete province, *XH 17*), belongs to the chorological province Castellano-Maestrazgo-Manchega (sector Manchego, subsector Manchego-Murciano), but the proximity of the chorological province Murciano-Almeriense allows to see irradiations of the latter and the presence of some "murciano-almerienses" endemisms too, placed in precise biotopes. The limit between the sector Manchego and sector Murciano, which happens in this area, is very subtle, though the thermoclimatic parameters can be used with diagnostic value; above the mesomediterranean inferior horizon, either the species or

<i>Characteristics of association and higher unities</i>		
<i>Schoenus nigricans</i> L.....	.	1.2
<i>Plantago maritima</i>	3.3	3.3
<i>Elymus curvifolius</i> (Lange) Melderis.....	+	.
<i>Helianthemum polygonoides</i>	2.2	2.3
<i>Companions</i>		
<i>Limonium supinum</i> (Girard) Pignatti.....	2.3	.
<i>Suaeda vera</i> Forssk.....	+	+
<i>Inula crithmoides</i> L.....	1.2	1.2
<i>Limonium tournefortii</i> (Girard) Erben.....	+	1.1
<i>Lygeum spartum</i> L.....	+2	.
<i>Frankenia thymifolia</i> Desf.....	.	1.2

Table 1. — *Schoeno nigricantis-Plantaginetum maritimae* Rivas-Martínez, 1984.

communities have a marked “manchego” character; below this horizon the “murciano-almerienses” taxa are plenty and, as consequence, a manifest change of the sector and province happens (PEINADO & MARTÍNEZ-PARRAS, 1985: 78). According to our present knowledge, the area of Tobarra-Cordovilla, very altered by anthropogenic action, should have had a mesomediterranean evergreen oak wood as vegetation (*Bupleuro rigidi-Querceto rotundifoliae* S.), now very poor being located in the limit of area and in contact with the mesomediterranean semiarid series of kermes oak (*Rhamno lycioidis-Querceto cocciferae* S.), with the first alternates in the territory depending on the ombroclimate (ALCARAZ, 1984: 334; PEINADO & MARTÍNEZ-PARRAS, 1985: 79).

In some loamy waterways, where the saline sediments of the Iberian Miocene crop out, *Helianthemum polygonoides* lives, together with halophilous plants, in communities that belong to the association of saline swamp soils *Schoeno nigricantis-Plantaginetum maritimae* Rivas-Martínez 1984. Summarizing, *H. polygonoides* lives in the median horizon of the Mesomediterranean floor with semiarid ombroclimate (P 350 mm). We add two inventories (Table 1) made as typical locality (between Tobarra and Cordovilla, 580 m).

The stenotopy of this new taxon, probably linked to the saline outcropping of the Jumillano-Socovense chorological district, makes it endemic and in clear danger of extinction.

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