



Original Research Paper

Psephellus xeranthemoides (Asteraceae): A species new to the flora of Turkey, with contributions to its taxonomy

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Psephellus xeranthemoides (Rech.f.) Wagenitz (Asteraceae) is described as a species new to the flora of Turkey. The genus *Psephellus* were collected from Eastern Anatolia, in the Van/Başkale province). Grow on fallow land and calcareous soils, the taxonomic position of *Psephellus xeranthemoides* in relation with other species, flowering and fruiting times, a detailed morphological description using capitulum photographs, a comparison of selected morphological characters between descriptions given in the type specimen and distribution map of the plant (new record) are given.

Key words: New record, *Psephellus xeranthemoides*, Başkale, Van, Turkey

INTRODUCTION

According to Wagenitz and Hellwig (2000), 12 sections that were included in the genus *Centaurea* were transferred to the genus *Psephellus* namely; *P. sect. Psephelloideae* (Boiss.) Wagenitz & Hellwig, *P. sect. Psephellus* (Cass.) Wagenitz & Hellwig, *P. sect. Hyalinella* (Tzelev) Wagenitz & Hellwig, *P. sect. Aetheopappus* (Cass.) Wagenitz & Hellwig, *P. sect. Odontolophus* (Cass.) Wagenitz & Hellwig, *P. sect. Xanthopsis* (DC.) Wagenitz & Hellwig, *P. sect. Amblyopogon* (DC.) Wagenitz & Hellwig, *P. sect. Heterolophus* (Cass.) Wagenitz & Hellwig, *P. sect. Czerniakovskya* (Czerep.) Wagenitz & Hellwig, *P. sect. Odontolophoideae* (Tzelev) Wagenitz & Hellwig, *P. sect. Uralepis* (DC.) Wagenitz & Hellwig and *P. sect. Sosnovskya* (Takht.) Wagenitz & Hellwig. New combinations under the genus *Psephellus* were provided for these sections and 36 species, especially from Turkey and Iran. Some of these species exist only in Turkey.

In Turkey, the genus *Psephellus* is represented by 32 species including some recently described ones. After Wagenitz and Hellwig (2000), *P. turcicus* Duran & Hamzaoglu, *P. recepui* Wagenitz & Kandemir, *P. erzincanii* Wagenitz & Kandemir, *P. coruhensis* A. Duran & M. Öztürk, (Duran and Hamzaoglu, 2005; Wagenitz and Kandemir, 2008; Duran et al., 2009; Dogan et al., 2015) and *P. vanensis* Duran, Behçet & Doğan were described.

MATERIALS AND METHODS

During a tour of Başkale the fairy chimneys, some specimens of the genus *Psephellus* were collected in the Van/Başkale Province, Eastern Anatolia (Figure 1). After carefully examining the specimens and the descriptions of *Psephellus* species in Wagenitz (1975), Dostal (1976), Davis et al. (1988), Wagenitz et al. (1998), Wagenitz and Hellwig (2000), Güner (2000), Duran and Hamzaoglu (2005), Wagenitz and Kandemir (2008), Duran et al. (2009), Ertuğrul, (2012), Duran et al. (2015) as well as comparison with specimens in the Herbaria ANK, GAZI, HUB, VANF and FUH, it was determined that our specimens represent a species new to science. In this paper, is described and illustrated, a species (*Psephellus*) new to the flora of Turkey.

RESULTS

Description of *Psephellus xeranthemoides* (Rech.f.) Wagenitz (Figures 2, 3)

Perennial, woody at the base, multi stemmed; stem 15–55 cm long, erect or ascending, simple or generally branched in upper part; Leaf finely floccose-tomentose,

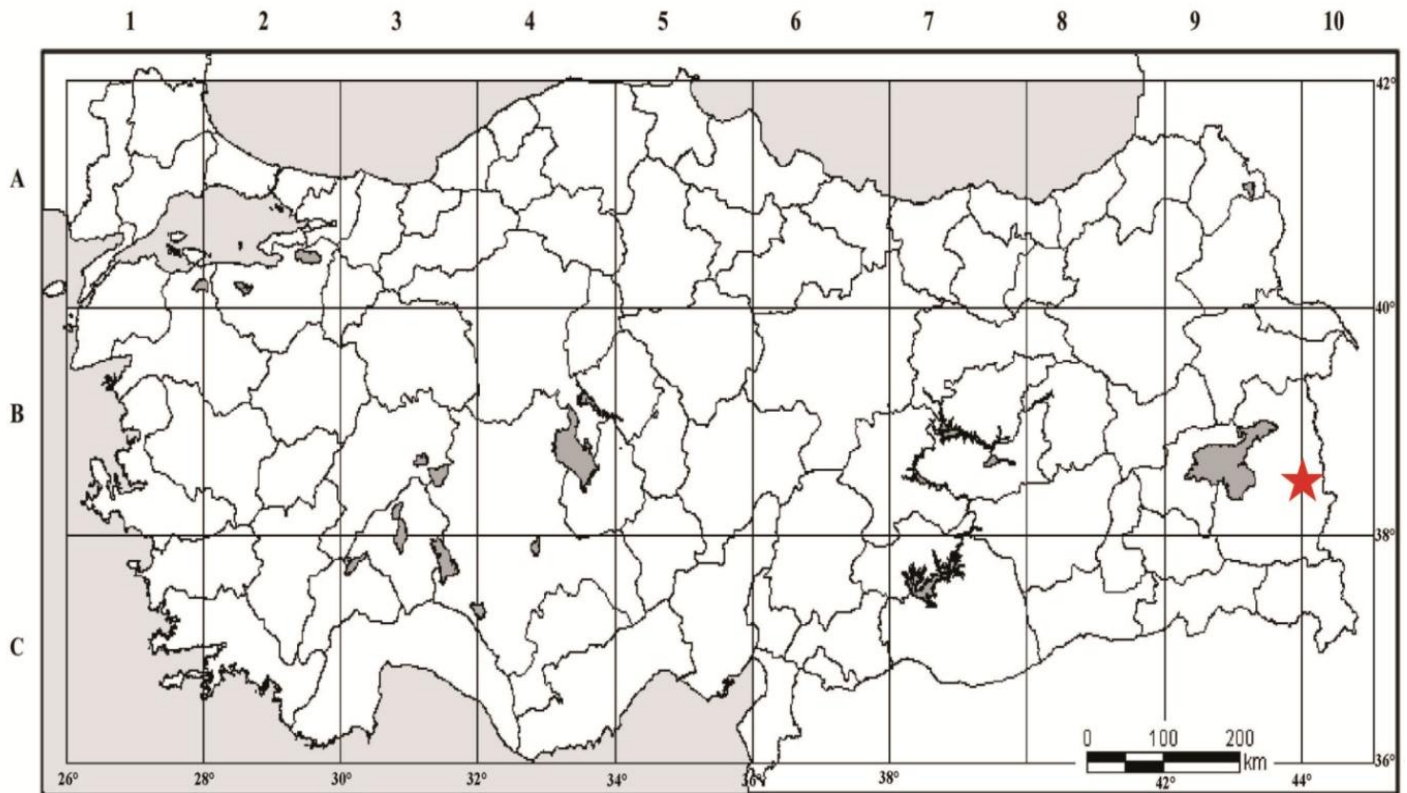


Figure 1: Geographical distribution of *Psephellus xeranthemoides* (★) in Turkey.

somewhat glabrescent, basal leaves petiolate, lyrate, terminal segment lanceolate or oblong, lateral segments 1–3(4) narrowly lanceolate or oblanceolate, base of leaves sometimes entire, lanceolate, middle lyrate, lateral segments 1–2, entire, lanceolate or oblanceolate; upper part smaller or bigger, angustate-lanceolate. Peduncle somewhat colored or green, striate, angular. Involucre 12–20 (22) × (8–) 10–17 mm, ovate or subglobose; phyllaries many-seriate; appendages

clawed, somewhat cucullate, broadly lunate, decurrent, outer phyllaries 13–17 (19) mm with membranous appendage, entire; median phyllaries 8–11 mm with brownish-membranous appendage somewhat toothed; upper phyllaries 5–7 (8) mm hyaline, entire, sometimes irregularly toothed. Flower rose-purple, marginal flowers radiant, staminode marginal florets longer than central florets, radiant, 15–20(22) mm long, central flowers radiant, 8–13(15) mm long. Achenes 3–8 mm, immature achenes golden to brownish, mature achenes brownish, smooth, glabrous; pappus 4–7(8) mm, inner row of scales 1–2(3) mm, scabrous.

Grow in habitat of *Psephellus xeranthemoides*: Farmland left fallow and calcareous soils.

Flowering and fruiting times of *Psephellus xeranthemoides*: from June to July.

Distribution in Turkey of *Psephellus xeranthemoides*: Başkale, Van

General distribution of *Psephellus xeranthemoides*: Iran and Turkey

***Psephellus xeranthemoides* associated with other species:** *Iris urmiensis*, *Myosotis* sp., *Poa bulbosa*, *Astragalus* sp., *Zizophora persica*, *Senecio vernalis*, *Euphorbia* sp., *Stipa* sp., *Isatis* sp.

Taxonomic position of *Psephellus xeranthemoides*: The new species is placed in *P.* sect. *Psephelloidei* (Boiss.) Wagenitz & Hellwig according to the involucre and achene characters as determined by Wagenitz (1975), Wagenitz and Hellwig (2000).

Examined material of *Psephellus xeranthemoides*: Turkey. B9 Van; Başkale, from Bebleşin to Albayrak, near road, farmland left fallow and calcareous soils, 2091 m, 38°07'32" N, 44°10'07" E, 11 July 2011, A. Aziret 2541 (FUH).

DISCUSSION

In the description of the species, each numerical value is the average of ten measurements from different specimens (Table 1). Our specimens of *Psephellus xeranthemoides* were examined and compared with specimens of the related species collected in Turkey. With the new species record described here, the total number of taxa in the genus *Psephellus* has risen to 33 in Turkey.



Figure 2: *Psephellus xeranthemoides* A: General view in its natural habitat. B: Leaves.



Figure 3: *Psephellus xeranthemoides* A-B: Capitulum at anthesis

Table 1. A comparison of selected morphological characters of *Psephellus xeranthemoides* between descriptions given in the Type specimen.

Morphological character	<i>Psephellus xeranthemoides</i> (Type specimen)	<i>Psephellus xeranthemoides</i> (Findings of the present study)
Stem	25-50 cm long, simple or branched above	15-55 cm long, not branched.
Leaf	Floccose-tomentose, basal leaves petiolate, lyrate, terminal segment lanceolate. Lateral segments 1-2, entire, lanceolate or oblanceolate; upper part smaller, angustate- lanceolate.	Tomentose, lyrate, petiolate, terminal segment lanceolate or oblong. Lateral segments 1-3(4), entire, lanceolate or oblanceolate; upper part bigger, angustate- lanceolate.
Peduncle	Peduncle somewhat colored.	Peduncle green, striate, angular.
Involocrum	Involucre 14-20 mm x (8-)10-15 mm, ovate or subglobose	Involucre 12-20(22) mm x (8-)10-17 mm, ovate or subglobose
Achens	6-8 mm long	3-6 mm long
Pappus	(6-)8-10 mm long	4-7(8) mm long, inner row of scales 1-2(3) mm long

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