

Leontodon tuberosus (Asteraceae: Cichorioideae): a new species to the Bulgarian flora

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Abstract. *Leontodon tuberosus* is reported as a new species to the Bulgarian flora. The species has been found in pastures in two localities of SE Bulgaria in the Black Sea Coast floristic region. A chromosome number $2n = 8$ has been established.

Key words: Bulgarian flora, chromosome number, identification key, *Leontodon*

Introduction

Until recently, the genus *Leontodon* L. has been represented by five species in the Bulgarian flora: *L. autumnalis* L., *L. cichoraceus* (Ten.) Sanguin., *L. crispus* Vill., *L. hispidus* L., and *L. rilaensis* Hayek (Peev 1992). One more species – *L. saxatilis* Lam. – was discovered in 2003 in NW Bulgaria (Dimitrova & al. 2005).

During a field study of the Bulgarian representatives of the tribe Cichorioideae of Asteraceae in SE Bulgaria, *L. tuberosus* L. was found in two localities. The authors report in this article information about its morphology, habitats, distribution in Bulgaria and karyotype features. *Leontodon tuberosus* is a relatively wide-spread species in the Mediterranean region of Europe (Kupicha 1975), but has never been reported from Bulgaria.

Material and methods

Achenes were collected and germinated in Petri dishes to obtain chromosome counts. Root tips were cut and pretreated with colchicine (0.01 %) for 1 h at room temperature. Then the roots were fixed in 3:1 acetic alcohol for 24 h in a refrigerator, hydrolyzed in 1 N HCl

for 15 min at 60°C, stained with Gomori's haematoxylin (Melander & Wingstrand 1953), and finally squashed in 45 % acetic acid.

Results

Leontodon tuberosus distinguishes from all other Bulgarian representatives of *Leontodon* by its tubers, numerous rigid, long-stalked 2 to 3-fid hairs on the leaves, and two types of achenes: the outer with a pappus of up to 0.5 mm hairs, the inner with a pappus of 2 rows of much longer plumose hairs.

Key to the Bulgarian species of *Leontodon*:

1. Plants with tubers 2
- 1*. Plants without tubers 3
2. Leaves glabrous or with occasional eglandular hairs; all achenes similar, with a well developed pappus *L. cichoraceus*
- 2*. Leaves with rigid, dense, 2 to 3-fid long-stalked hairs; achenes of two types: the outer with a pappus of very short (up to 0.5 mm) hairs, the inner with a well developed pappus of 2 rows of plumose hairs *L. tuberosus*

3. Leaves glabrous or with occasional simple eglandular hairs; stems thickened at apex; capitula erect before anthesis 4

3*. Leaves with at least some stellate or 2 to 7-fid hairs, or glabrous, but then stems not thickened at apex and capitula nodding before anthesis 5

4. Leaves entire to denticulate; stems unbranched; stigmas yellow *L. rilaensis*

4*. Leaves sinuate-dentate to deeply pinnatifid; stems usually branched; stigmas discoloured *L. autumnalis*

5. Outer achenes partly enclosed in the involucre bracts, with a pappus of *ca.* 1 mm long scariosus scales; involucre 7–11 × 4–9 mm; involucre bracts with dark brown to blackish membranaceous margin *L. saxatilis*

5*. Outer achenes not enclosed in the involucre bracts, with pappus of hairs over 5 mm long; involucre 10–25 × 6–14 mm; involucre bracts without dark membranaceous margin 6

6. Leaves glabrous or hairy, at least some hairs long-stalked, 2 to 3-fid; stems not distinctly thickened at apex, with 1–2 (3) bracts; involucre bracts in 3–4 rows, not regularly imbricate, the inner about two times longer than the middle, all with membranaceous hairless margin; achenes 5–8 mm *L. hispidus*

6*. Leaves hairy, at least some hairs short-stalked and 2 to 7-fid; stems thickened at apex, with 2–8 bracts; involucre bracts in 4–5 rows, regularly imbricate, gradually increasing in size from the outer to the inner rows, at least the outermost and the upper stem bracts with rigid white branched hairs at margin; achenes 7–12 mm *L. crispus*

***Leontodon tuberosus* L. (Fig. 1).**

Perennial, with long, slender tubers. Stems 1–6, 7–35 cm, simple, with few to numerous rigid, simple eglandular or long stalked 2 to 3-fid hairs; bracts 0–2. Leaves 20–140 × 5–25, obovate to oblanceolate-oblong, runcinate-pinnatifid, narrowed to a sometimes dentate petiole, with numerous rigid, long-stalked 2 to 3-fid hairs. Capitulum solitary, nodding in bud. Involucre 9–15 × 6–10 mm; bracts oblong, narrowed to an obtuse apex, with rigid 2-fid hairs, often confined to a median line. Ligules yellow. Achenes 3–7 mm, transversely rugose or muricate, of 2 kinds: the outer curved, sometimes with a short beak and with a pappus of up to 0.5 mm hairs, the inner usually straight, beaked, the pappus of 2 rows of plumose hairs.



Fig. 1. *Leontodon tuberosus*: 1, whole plant; 2, leaves; 3, flower head.

Distribution in Bulgaria

The species has been found in two localities at the Black Sea Coast (*Southern*) floristic region (Fig. 2): **1.** Pastures at the seashore, east of Rezovo village, ca. 10–20 m alt., NG-84, 10.05.2004, coll. *D. Dimitrova* & *V. Vladimirov* (SOM); **2.** Openings in an oak forest near Sinemorets village, along the road to Rezovo, NG-85, 10.05.2005, coll. *D. Dimitrova* & *V. Vladimirov* (SOM).

Chromosome number

The chromosome number $2n = 2x = 8$ (Fig. 3) has been established from the Bulgarian accessions. It confirms the earlier counts of Montmollin (1986), Ruíz de Clavijo Jiménez (1988), Izuzquiza & Feliner (1991), and Vogt & Aparicio (1999).

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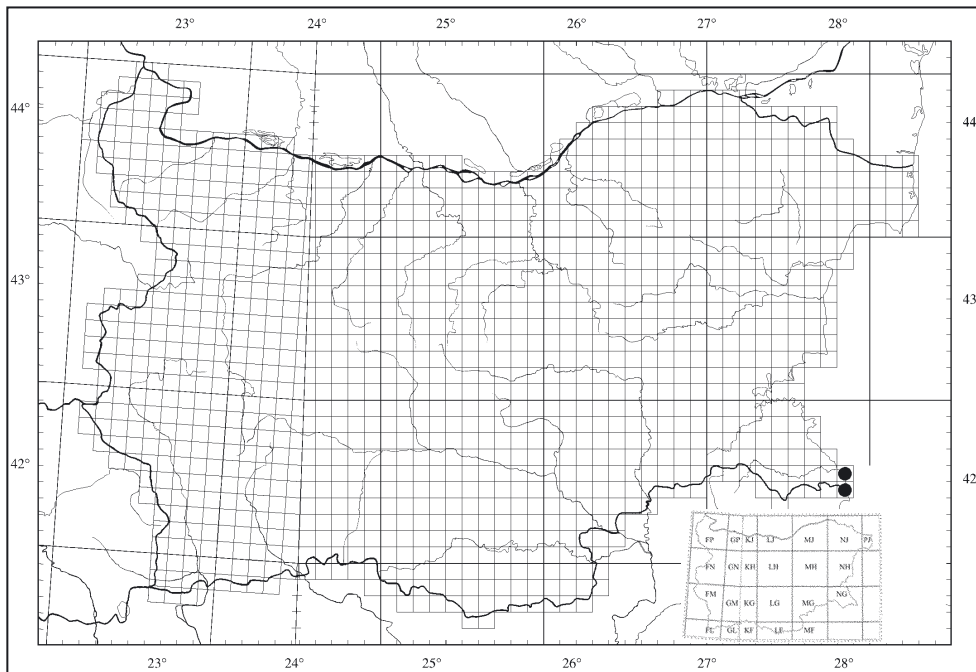


Fig. 2. UTM-distribution map of *Leontodon tuberosus* in Bulgaria.



Fig. 3. Mitotic metaphase plate of *Leontodon tuberosus*.

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