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## A New Record for the Flora of Turkey: *Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk (*Senecioneae*, *Asteraceae*)

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**Abstract:** *Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk (*Senecioneae*, *Asteraceae*), recently collected from Ardahan (North-east Anatolia), is reported as a new species record for the Flora of Turkey. It is described and illustrated.

**Key Words:** *Senecio cladobotrys*, Compositae, new record, Anatolia

### Türkiye Florası İçin Yeni Bir Kayıt: *Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk (*Senecioneae*, *Asteraceae*)

**Özet:** Ardahan'dan (Kuzeydoğu Anadolu) toplanan *Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk (*Senecioneae*, *Asteraceae*) Türkiye Florası için yeni bir kayıttır. Türün betimi ve resmi verilmiştir.

**Anahtar Sözcükler:** *Senecio cladobotrys*, Compositae, yeni kayıt, Anadolu

### Introduction

*Senecioneae* is one of the largest tribes of *Asteraceae*, comprised of about 150 genera and 3000 species. *Senecio* L. is one of about 50 plant genera comprising over 500 species. The large size of the genus (about 1500 species) has impeded attempts to make an infrageneric classification of *Senecio* and, therefore, the evolution of this genus is still poorly known. However, morphological, karyological, and molecular data generated in the past 30 years indicate that this genus and several other genera in the tribe are presumably poly- or paraphyletic (Chater & Walters, 1976; Jeffrey et al., 1977; 1978; Barkley, 1978; Bremer, 1994; Vincent, 1996; Mabberley, 1997; Pelsner, 2002).

In Turkey, *Senecio* was revised by Matthews (1975) and 2 species have subsequently been described (Kit Tan, 2000). The genus is represented by 50 taxa (41 species, 3 subspecies, and 6 varieties).

Recently, the generic and infrageneric concepts of *Senecio s.l.* changed several times and it has been divided into several genera (Nordenstam, 1978, 1989, 1997). One of these is *Tephroseris* (Rchb.) Rchb., which has 2 species, namely *T. integrifolia* (L.) Holub ( $\equiv$  *Senecio integrifolius* (L.) Clairv.) and *T. papposa* (Rchb.) Schur ( $\equiv$  *Senecio papposus* (Rchb.) Less.), in Turkey (Reichenbach, 1841). In conclusion, one *Tephroseris* species is added to the flora of Turkey, increasing the total number of taxa to 3 (Matthews, 1975).

During a field excursion in the Ardahan-Yalnızçam Mountains in 2005, an interesting *Tephroseris* was found. The specimens, which are available in great abundance, resemble *Caucasalia macrophylla* (M.Bieb.) B.Nord. ( $\equiv$  *Senecio platyphyllus* DC.) in their general appearance, but differ, especially in their ligulate flowers. A more detailed examination revealed it to be *T. cladobotrys* (Ledeb.) Griseb. & Schenk, which is a new

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record for the Flora of Turkey (Matthews, 1975; Shishkin, 1995; Kit Tan, 2000). A description and illustration of the species is provided (Figure 1).

**TEPHROSERIS** (Rchb.) Rchb. (Tribus: *SENECIONEAE*)

*Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk, Wieg. Archiv. 18 (1): 343 (1852); Boiss., Fl. Or. 3: 411 (1875); Grossh., Fl. Kavk. 4: 148 (1934). (Figure 1).

Syn: *Senecio cladobotrys* Ledeb., Fl. Ross. 2: 644 (1845); *S. brachychaetus* DC., Prodr. 6: 362 (1837), p. min. p.; *Cineraria longifolia* Griseb. & Schenk, Wieg. Archiv. 18 (1): 343 (1852), non Jacq. (1774); *C. campestris* DC., Prodr. 6: 361 (1837), p.p.; *C. campestris* DC. var. *longifolia* Trautv., Tr. Petersb. Bot. Sada 5 (2): 471 (1878).

Type: Described from Western Georgia (LE).

Stout perennial. Rhizomes premorse, oblique, with numerous roots. Plant almost completely sparsely

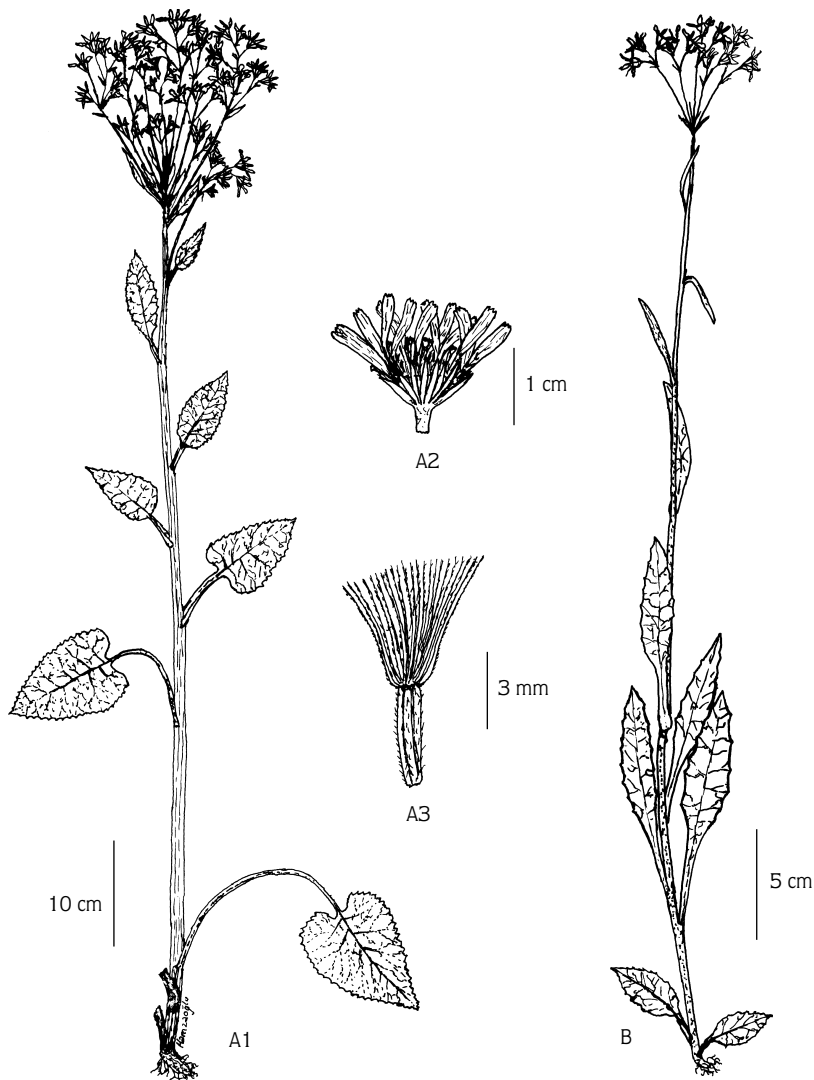


Figure 1. A. *Tephroseris cladobotrys* (Ledeb.) Griseb. & Schenk subsp. *cladobotrys*, A1-Habit, A2-Capitulum, A3-Achene; B. Habit of *Tephroseris integrifolia* (L.) Holub subsp. *karsiana* (V.A.Matthews) B. Nord.

arachnoid, glabrescent with age. Stems 110-150 cm, 9-14 mm in diameter below, solitary, simple, erect, ridged, hollow. Basal leaves early withering; petiolate. Lower cauline leaves petiolate; petioles 25-35 cm, winged; lamina ovate, 12-20 x 9-15 cm, with irregular dentate margin, apex acute, cordate at base. Upper cauline leaves similar, but smaller and shorter petiolate; lamina ovate to lanceolate. Synflorescences a compound corymb with 30-76-capitulate, supported by linear-lanceolate leaves with entire margins. Peduncles 0.7-4.5 cm long, ± erect. Capitula radiate, glandular-arachnoid at base. Calycular bracts absent. Involucres 7-8 mm wide. Phyllaries linear-lanceolate to oblong, 6-8 x 1.2-2 mm, acute, margin scarious, with greenish apex. Ligules 12-14, oblanceolate-oblong, 7-12 x 1.5-2 mm, yellow. Disc flowers 5-lobed. Achenes 4 mm long, subadpressed hairy, ribbed. Pappus 4-6 mm, white. *Fl.* 7-8, *Fr.* 8-9, *woodland, stream-sides*, 1700-2300 m.

**Distribution:** In Turkey, *Tephroseris cladobotrys* is distributed in the provinces of Ardahan and Artvin in north-east Anatolia. Western Georgia (West Transcaucasia) was previously the only known distribution area of the species (Shishkin, 1995). The species belongs to the Euxine or Caucaso-Euxine elements, occurring in the mountain belt of the Euxine province of the Euro-Siberian (or circumboreal) phytogeographical region (Zohary, 1973; Takhtajan, 1986).

**Specimens examined:** *TEPHROSERIS CLADOBOTRYS* - A8 Artvin: Borçka, Balcı, Kayadibi, 1710 m, 17.vii.1977, *Düzenli* 964 (HUB); A9 Ardahan: Yalnızçam Plateau, Katmerlikaya, 2300 m, 19.viii.1984, *Demirkuş* 2756 (HUB); A9 Ardahan: from Şavşat to Ardahan, Yalnızçam Mountains, Çam Pass, below Kocabey Plateau, 2300 m, lat 41°12.35' N, long 42°28.64' E, 03.viii.2005, *Budak* 1951, *Hamzaoğlu & Aksoy* (herb. BOZOK); *TEPHROSERIS INTEGRIFOLIA* subsp. *KARSIANA* - A8 Rize: İkizdere, between Gölyayla and Cihantepe, 2500 m, 25.vii.1985, *Güner* 6605 (HUB, GAZI); A8 Rize: İkizdere, between Gölyayla village and Gölyayla Plateau, 2665 m, 3.viii.2005, *Budak* 1967, *Hamzaoğlu & Aksoy* (herb. BOZOK); A9 Kars: Çıldır Lake, E face of Kısır Mountain, 2200 m, 18.vii.1984, *Ocakverdi* 2568 (GAZI); A9 Ardahan: Posof, between Alabalık village and Alabalık Plateau, 2160 m, 3.viii.2005, *Budak* 1957, *Hamzaoğlu & Aksoy* (herb. BOZOK); A9 Ardahan: Posof, Ilgar Pass, 2545 m, 4.viii.2005, *Budak* 1967, *Hamzaoğlu & Aksoy* (herb. BOZOK).

## Discussion

Hitherto, *T. cladobotrys* was considered to be endemic to the Caucasian territories (West Transcaucasia-Western Georgia) covered by the Flora of USSR (Shishkin, 1995).

The first Turkish records come from the vicinity of Çam Pass (Yalnızçam Mountains), which is situated between Şavşat (Artvin) and Ardahan. In the vicinity of Çam Pass, *Caucasalia macrophylla* and *Urtica* sp. densely line the river between the Kocabey Plateau and Şavşat. The occurrence of the species is restricted, but the number of individuals is more than 50. Due to the frequency of similar habitat types in the Yalnızçam Mountains, a wider distribution of *T. cladobotrys* in this area is very likely.

Other records of *T. cladobotrys* could be discovered in HUB (*Demirkuş* 2756 and *Düzenli* 964), in which samples were wrongly identified as *Senecio integrifolius* (L.) Clairv. subsp. *karsianus* V.A. Matthews (e.g., *Tephroseris integrifolia* (L.) Holub subsp. *karsiana* (V.A. Matthews) B. Nord).

The descriptions of the species from Ardahan and the Flora of USSR (Shishkin, 1995) deviate only moderately; the petioles of basal leaves of the Ardahan samples have nearly 2 x lengths (not almost equal) and lamina is 12-20 x 9-15 cm (not 6-12 x 3.5-10 cm). These differences are thought to be taxonomically inadequate.

According to the studies by Greuter and Raab-Straube (2005), the taxon known as *Senecio subfloccosus* Schischk. (e.g., *Tephroseris subfloccosa*) is reduced to subspecies level for *Tephroseris cladobotrys* and named *T. cladobotrys* Griseb. & Schenk subsp. *subfloccosa* (Schischk.) Greuter. In this paper, the given taxon as a new record is *T. cladobotrys* subsp. *cladobotrys*. The separation of 2 subspecies belonging to *T. cladobotrys* is given below.

1. Basal and lower cauline leaves cordate at base; middle cauline leaves short petiolate; ligules 7-12 mm long ..... subsp. *cladobotrys*
1. Basal and lower cauline leaves not cordate at base; middle cauline leaves sessile; ligules 12-14 mm long ..... subsp. *subfloccosa*

*T. cladobotrys* is taxonomically close to *T. integrifolia* subsp. *karsiana*. The distribution areas of these 2 taxa overlap and the taxa are different from each other, especially in terms of their habits, inflorescence, and leaves (see Figure 1).

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