

## A new taxon of *Senecio* (Asteraceae) from Turkey: *Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoğlu & Budak

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**Abstract:** *Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoğlu & Budak (Asteraceae, Senecioneae) is described as a new subspecies from Karaman Province (Inner/South Anatolia). A Latin diagnosis, a taxonomic description, an illustration of the new subspecies, geographical distribution, and some comments on its affinity with *Senecio inops* Boiss. & Balansa subsp. *inops* are given.

**Key words:** Asteraceae, Karaman, *Senecio*, taxonomy, Turkey

### Türkiye'den *Senecio*'nun (Asteraceae) yeni bir taksonu: *Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoğlu & Budak

**Özet:** *Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoğlu & Budak (Asteraceae, Senecioneae) Karaman ilinden yeni bir alttür olarak tanımlandı (İç/Güney Anadolu). Yeni alttürün Latince kısa ayrımı, taksonomik betimlemesi, resmi, coğrafik yayılışı ve *Senecio inops* Boiss. & Balansa subsp. *inops* ile yakınlığı hakkında bazı yorumlar verildi.

**Anahtar sözcükler:** Asteraceae, Karaman, *Senecio*, taksonomi, Türkiye

#### Introduction

*Senecioneae* is one of the largest tribes of *Asteraceae*, comprising about 150 genera and 3000 species. *Senecio* L. is one of about 50 plant genera that contain over 500 species. The extent of the genus (about 1500 species) has made attempts at

infrageneric classification of *Senecio* difficult, and therefore, the evolutionary history of this genus is still poorly known (Jeffrey et al., 1977; Bremer, 1994; Vincent, 1996; Mabberley, 1997).

The generic and infrageneric concepts of *Senecio* s.l. have been changed several times and it was divided

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into several genera, such as *Tephroseris* (Rchb.) Rchb., *Jacobaea* Mill., *Iranecio* B.Nord., and *Caucasalia* B.Nord. (Nordenstam, 1978; 1989; 1997; 2006; 2007; Pelser et al., 2002; 2003; 2004; 2006; 2007); however, newly described or refreshed genera are not discussed here because they are beyond the scope of this manuscript and the newly described taxon is evaluated in the genus *Senecio*, as in *Flora of Turkey*.

In Turkey, *Senecio* was revised by Matthews (1975) for *Flora of Turkey*. Four species have been subsequently described (Kit Tan, 2000; Vural et al., 2006; Budak et al., 2007). The genus is represented by 43 species or 52 taxa (according to the latest reports: *Senecio* 17 species or 17 taxa, *Iranecio* 12 species or 16 taxa, *Jacobaea* 10 species or 12 taxa, *Tephroseris* 3 species or 5 taxa, and *Caucasalia* 1 species or 2 taxa).

Some *Senecio* specimens were collected from Karaman (between Başıyayla and Taşkent) during a project to revise Turkish *Senecio*. After a comparison with the literature (Matthews, 1975; Chater & Walters, 1976; Shishkin, 1995; Kit Tan, 2000), the authors identified it as a new subspecies.

Measurement of vegetative characters was made with a ruler accurate to 0.5 mm and floral characters were measured with an ocular micrometer fitted to an Olympus SZ model 61 stereo zoom microscope.

***Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoglu & Budak, subsp. nova (Figures 1 and 2)**

Affinis *Senecio inops*, sed indumentis plerumque floccosis (nec glabratis ad sparse floccosis), bracteis calyculatis 8-11 mm longis (nec 4-6 mm longis), phyllariis 10-11 mm longis (nec 7-8 mm longis), ligulis 15-17 mm longis (nec 11-12 mm longis), stylis ramis 1.2-1.3 mm longis (nec 0.9-1.0 mm longis), acheniis 1.5-2.5 mm longis (nec 3-4 mm longis) differt.

**Type:** Türkiye. C4 Karaman: Başıyayla-Taşkent arası, 7-9 km, 1810 m, taşlı yamaçlar, 21.vi.2006, Hamzaoglu, Budak & Aksoy 2066 (holotype BOZOK Hb.; isotypes BOZOK Hb., ERCIYES Hb., GAZI, ANK, HUB).

Perennial herb. Stem simple, 20-60 cm tall, 2-6 mm in diameter below, densely floccose, erect, ridged,

not hollow. Basal leaves petiolate; petioles 0.5-5.5 cm long; lamina linear-elliptic to lanceolate, 2-11 × 0.3-2.5 cm, densely floccose and hairy on both surfaces, margin slightly or deeply serrate, attenuate-cuneate at base. Lower cauline leaves similar to basal leaves; petioles 0.2-2.5 cm long; lamina 3-14 × 0.3-3 cm. Upper cauline leaves smaller and sessile; lamina 1-11 × 0.2-1.5 cm, amplexicaule at base, rarely auriculate. Synflorescences compound corymbose with (2-) 5-8 (-13) capitula, supported by linear-lanceolate leaves with entire margins and ± amplexicaule at base. Peduncles 1-9 cm long, densely floccose. Capitula radiate, densely floccose at base. Calycular bracts 4-5, 8-11 mm long. Involucre 14-16 mm wide; 14-15 phyllaries, linear-lanceolate, 10-11 mm long, margin scarious, acute at apex. Ligules 13-15, broadly oblong to oblanceolate, 15-17 × 4-6 mm. Disc flowers 5-lobed, 7.5-8 mm long. Filament collar baluster-form; anther bases ecaudate. Style branches, 1.2-1.3 mm long, outside papillate, obtuse-truncate and long papillate at apex. Achenes 1.5-2.5 mm long, hairy between ribs. Pappus 6.5-7 mm long, whitish.

**Habitat, life form, and suggested conservation status**

*Senecio inops* subsp. *karamanicus* grows as a hemicryptophyte on calcareous rocky slopes with *Marrubium globosum* Montbret & Aucher ex Benth. subsp. *micranthum* (Boiss. & Heldr.) P.H.Davis, *Genista involucre* Spach, *Cousinia ermenekensis* Hub.-Mor., *Thymus sipyleus* Boiss. subsp. *sipyleus* var. *sipyleus*, *Bromus tomentellus* Boiss., *Stipa lessingiana* Trin. & Rupr., *Arenaria ledebouriana* Fenzl var. *parviflora* Boiss., *Minuartia hamata* (Hausskn.) Mattf., *Salvia hypargeia* Fisch. & C.A.Mey., *Scutellaria orientalis* L., and *Astragalus angustifolius* Lam. at an altitude of ca. 1800 m. It flowers in June and fruits in July.

The new subspecies is endemic to Karaman, (Inner/South Anatolia), and is an East Mediterranean element. The subspecies is known only from 1 population in the type locality and the estimated area of occupancy is less than 10 km<sup>2</sup>. Therefore, it is suggested that this new subspecies should be listed under IUCN threat category "Critically Endangered" (CR) criterion B2a (IUCN, 2001).

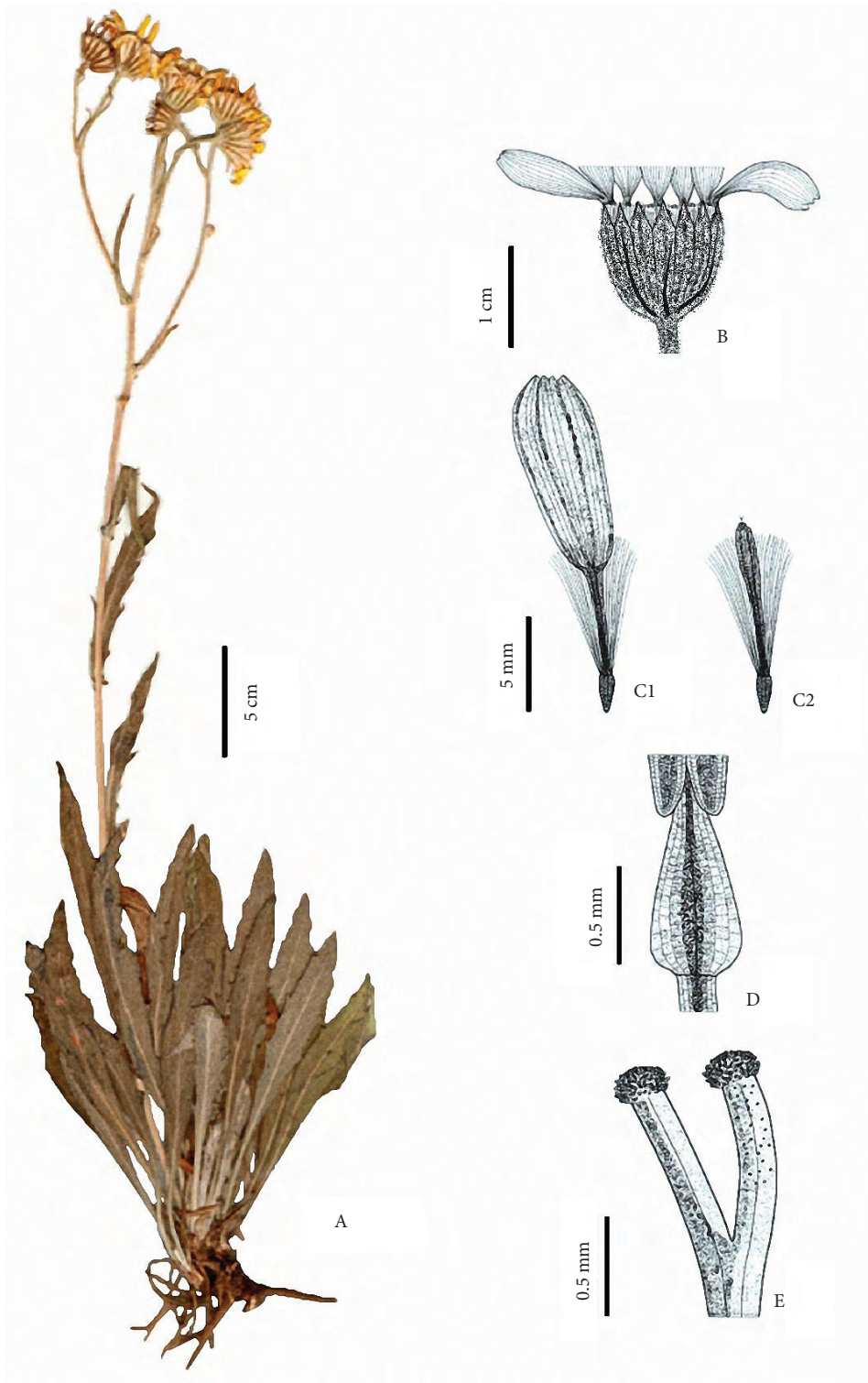


Figure 1. *Senecio inops* Boiss. & Balansa subsp. *karamanicus* Hamzaoglu & Budak: A- Habit, B- Capitulum, C1- Ligulate flower and achene, C2 - Disc flower and achene, D- Filament collar and anther bases, E- Style branches.

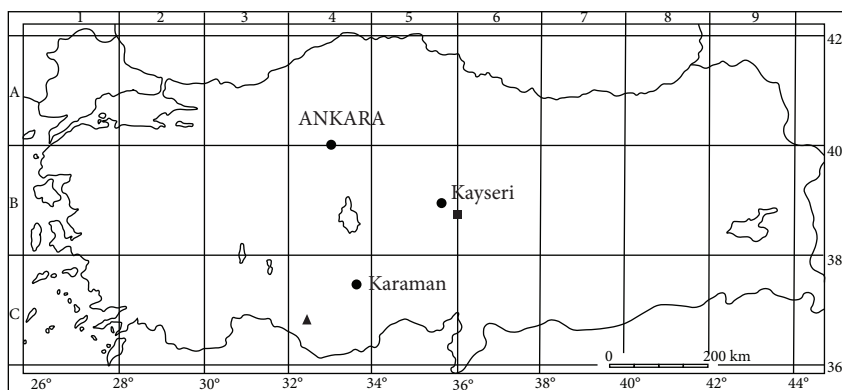


Figure 2. Distributions map of *Senecio inops* subsp. *karamanicus* (▲) and subsp. *inops* (■) in Turkey.

### Representative specimens examined

*Senecio inops* subsp. *inops* – Türkiye. B6 Kayseri: Tomarza, Arslantaş köyü, Kurubel yaylası civarı, 2050-2250 m, 20.07.2006, Hamzaoğlu 4370, Aksoy & Budak (BOZOK Hb.); ibid., 2130 m, 12.08.2005, Budak 1991, Hamzaoğlu & Aksoy (BOZOK Hb.).

### Discussion

Subsp. *karamanicus* can be easily distinguished from subsp. *inops* by its densely floccose indumentum (not glabrescent to sparsely floccose), upper cauline leaves that are rarely auriculate (not usually auriculate), synflorescence of (2-) 5-8 (-13) capitula (not with (1-) 2-4 (-6) capitula), calycular bracts 8-11 mm long (not 4-6 mm long), phyllaries 10-11 mm

long (not 7-8 mm long), ligules 15-17 mm long (not 11-12 mm long), and achenes 1.5-2.5 mm long (not 3-4 mm long). A comparison of the diagnostic morphological characters of *Senecio inops* subsp. *karamanicus* and subsp. *inops* is given in the Table.

Subsp. *inops* is an endemic subspecies with a narrow distribution and is known only in the vicinity of Arslantaş Village (Kayseri-Tomarza) (Figure 2). The distance between subsp. *inops* and subsp. *karamanicus* is approximately 330 km. Although, there are many similar habitats with this area, both subspecies are only known from single localities. With future field excursions it is highly probable that new localities for the taxa will be found.

The separation of the 2 subspecies belonging to *Senecio inops* is given below.

Table. Morphological comparison of *Senecio inops* subsp. *karamanicus* and subsp. *inops*.

Characters	subsp. <i>karamanicus</i>	subsp. <i>inops</i>
General indumentum	densely floccose	glabrescent to sparsely floccose
Upper cauline leaves	rarely auriculate	usually auriculate
Synflorescence	with (2-) 5-8 (-13) capitula	with (1-) 2-4 (-6) capitula
Calycular bracts	8-11 mm long	4-6 mm long
Phyllaries	10-11 mm long	7-8 mm long
Ligules	15-17 mm long	11-12 mm long
Style branches	1.2-1.3 mm long outside papillate	0.9-1.0 mm long outside papillate or glabrous
Achenes	1.5-2.5 mm long	3-4 mm long

1. Plant glabrescent to sparsely floccose; upper cauline leaves usually auriculate; calycular bracts 4-6 mm long; ligules 11-12 mm long .. subsp. *inops*
1. Plant densely floccose; upper cauline leaves rarely auriculate; calycular bracts 8-11 mm long; ligules 15-17 mm long ..... subsp. *karamanicus*

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