

Seven *S. pygmaea* subsp. *pygmaea*, twenty-one *S. pygmaea* subsp. *nutans* and twenty *S. rigida* specimens have been examined in the herbaria of ANK, HUB, GAZI and ADO for this study. The study showed that the specimens collected in 2001 represent a species new to science.

A grid system was adapted for the division of the area of Turkey for the citation of specimens. This grid divided Turkey into twenty-nine squares, as shown in Fig. 2 (DAVIS, 1965). According to this grid system Osmaniye province falls within the C6 square.

***Scorzonera yildirimlii* A. DURAN et HAMZAOĞLU sp. nov. (Fig. 1).**

*Herba perennis. Scapus 2–8 cm longus. Folia conduplicata, glabrata, plerumque falcata. Capitulum 1 in quoque caule, 12–16 mm longum. Corolla lutea. Phyllaria externa ± glabra, 4–7 mm longum. Phyllaria interiora glabra, 10–15 mm longum. Pappus stramineus.*

Subscapigerous perennial herb. Rootstock thick, cylindrical. Stems scapiform 1–3 (-4), 2–8 cm long and c. 1 mm diam., striate, base of previous leaves persistent and leafy in 1/3 of stem at below, leafy part dull white. Leaves conduplicate, glabrescent or glabrous, entire, linear or linear-lanceolate, usually falcata, greenish above, purplish below, semiamplexicaul at base, 2–7 cm long, 1.5–3 mm wide. Capitula 1 per stem, homogamous, ligulate, 12–16 mm long, 4–8 mm wide. Outer phyllaries 4–7 mm long, 0.5–1.2 mm wide, linear or linear-lanceolate, ± glabrous, c. 1/2 x inner phyllaries; inner phyllaries 10–15 mm long, 1.5–2 mm wide, linear-lanceolate, acuminate, scarious margin, greenish, glabrous. Corolla yellow, equalling or longer than involucre, 9–12 mm long,

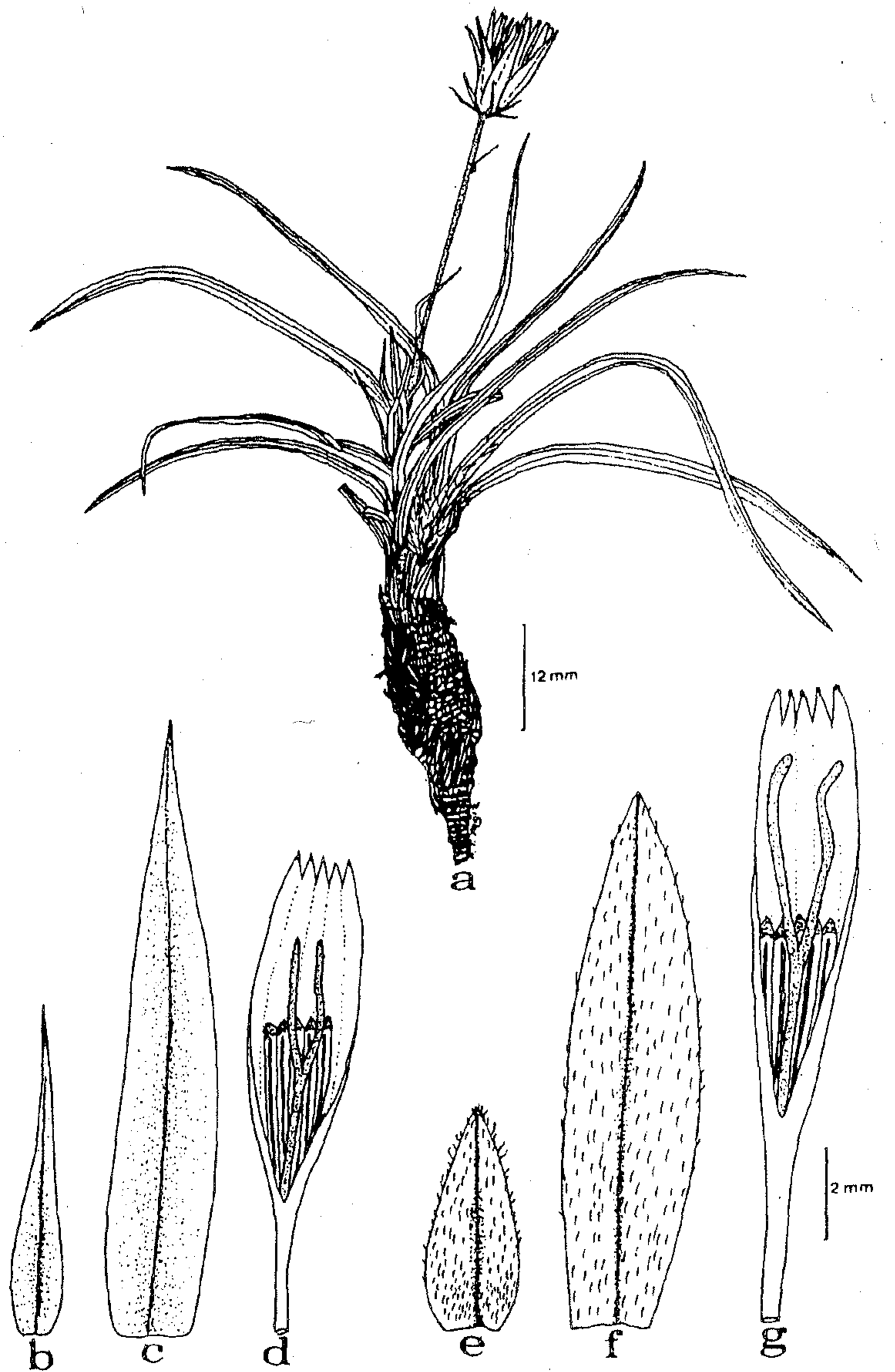


Fig. 1. *Scorzonera yildirimlii* A. DURAN et HAMZAOĞLU: a – habit, b – outer phyllary, c – inner phyllary, d – corolla; *S. pygmaea* subsp. *nutans*: e – outer phyllary, f – inner phyllary, g – corolla.

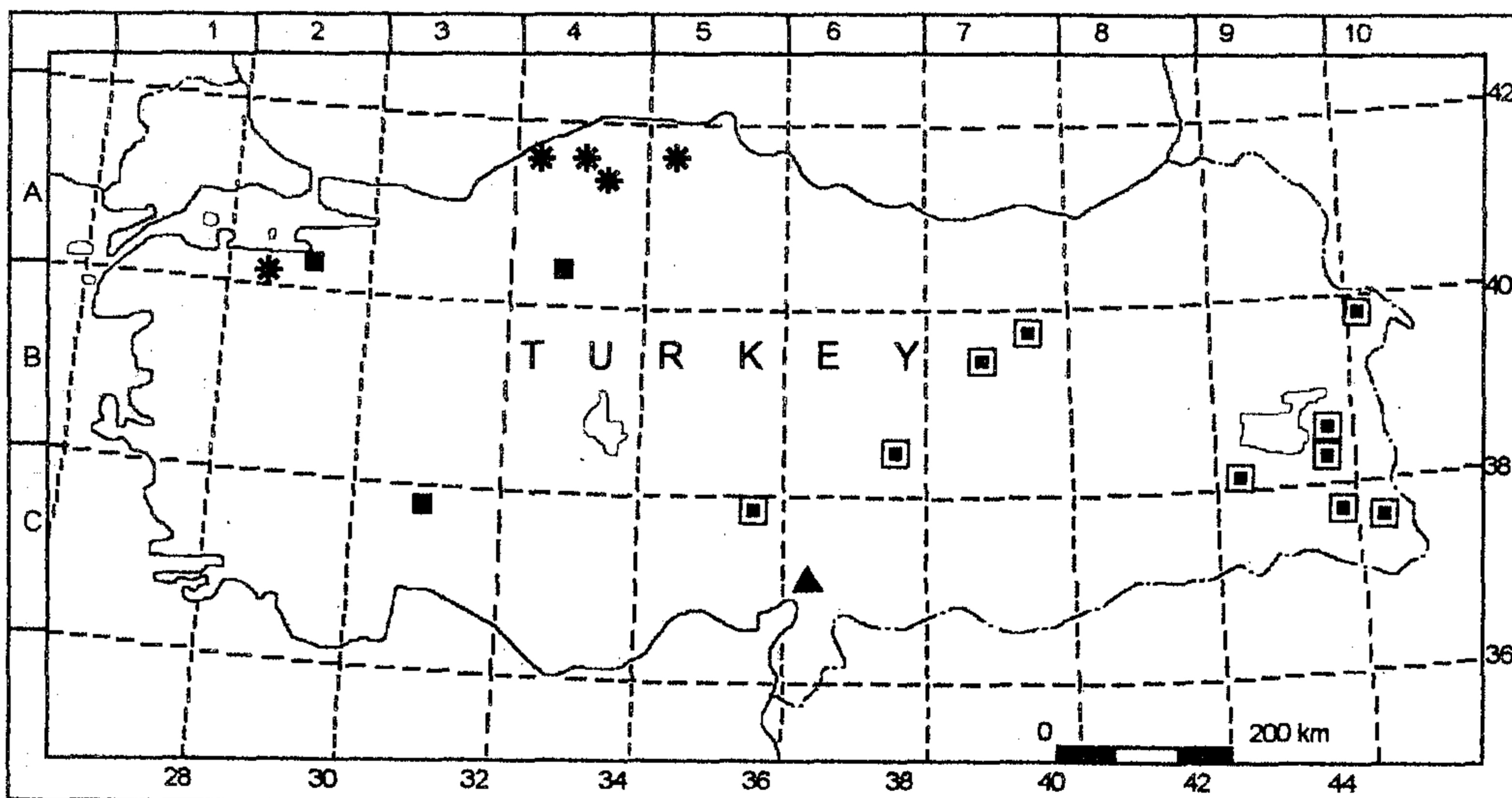


Fig. 2. Distribution map of *Scorzonera yildirimlii* (▲), *S. pygmaea* subsp. *pygmaea* (■), *S. pygmaea* subsp. *nutans* (\*), and *S. rigida* (□) in Turkey.

Table 1. A comparison of *Scorzonera yildirimlii* with the relevant species.

Characters	<i>Scorzonera yildirimlii</i>	<i>Scorzonera pygmaea</i>	<i>Scorzonera rigida</i>
Habitus	not cushion-forming, with 1-3 scapiform stems	cushion-forming, with numerous scapiform stems	cushion-forming, with numerous scapiform stems
Leaves	glabrescent or glabrous, semi-amplexicaule, conduplicate, usually falcate, at base purplish	Sparsely lanate, $\pm$ amplexicaule, not conduplicate, straight, at base not purplish	$\pm$ pubescent, amplexicaule, not conduplicate, straight, at base not purplish
Stem	leafy 1/3 at below, leafy part dull white	all leaves basal, completely greenish	all leaves $\pm$ basal, completely greenish to yellowish
Outer phyllary	$\pm$ glabrous, 4-7 mm long, linear to linear-lanceolate	pubescent, 3-5 mm long, ovate-lanceolate	sparsely pubescent, 2-5 mm long, lanceolate
Inner phyllary	glabrous, acuminate	pubescent, acute	sparsely pubescent, acute
Lobes of ligule	c. 0.5 mm long	0.5–1.5 mm long	0.5–1 mm long
Branches of style	c. 3 mm long	c. 5 mm long	c. 4 mm long
Pappus	straw coloured	pink-tinged	yellow
Hairs of pappus	barbellate and plumose below, barbellate above	plumose below, barbellate above	entirely barbellate

ligules 5 toothed, lobes c. 0.5 mm long; style branches filiform, c. 3 mm long per branch, papillose, obtuse, shorter than ligule. Achenes immature, c. 6 mm long, cylindrical, slender, glabrous; pappus 10–13 mm long, straw coloured, pappus hairs barbellate and plumose below, barbellate above. Fl. 6–7, alpine steppe, 1900–2000 m a.s.l.

*Type*: Turkey. C6 Osmaniye: Amanos Dağı, Zorkun Yaylasından 5 km sonra, Keldazi tepesi, 1950 m a.s.l., 36°58.95'N, 36°24.22'E, 5.VII.2001, A. DURAN 5765 & E. HAMZAOĞLU (holotype: ADO, isotypes: GAZI, ANK, HUB, YILDIRIMLI).

*Paratypes*: Turkey. C6 Osmaniye: Amanos Dağı, Zorkun Yaylasından 5 km sonra, Keldazi tepesi, 1900–2000 m a.s.l., 36°58.95'N, 36°24.22'E, 4.VII.2003, A. DURAN 6284 & M. SAĞIROĞLU (ADO, GAZI).

*S. yildirimlii* is endemic for Turkey. It is found in the Amanos Mountains (Osmaniye province, Zorkun). Mediterranean (mt.) element.

This species is only known from the type locality and has to be classified as *Critically Endan-*

*gered* (CR) category according to the new IUCN categories (2001).

### Ecology

*Scorzonera yildirimlii* grows in alpine serpentine steppe with *Alyssum oxycarpum* BOISS. et BAL., *Hesperis* sp., *Thurya capitata* BOISS. et BAL., *Silene spergulifolia* (DESF.) M. BIEB., *Genista albidula* WILLD., *Cytisopsis dorycniifolia* JAUB. et SPACH subsp. *dorycniifolia*, *Hypericum* sp., *Ferula elaeochytris* KOROVIN, *Salvia tomentosa* MILL., *Salvia cryptantha* MONTBRET et AUCHER ex BENTH., *Anthemis* sp., *Centaurea* sp., *Onosma* sp., *Allium* sp.

### Discussion

*S. yildirimlii* is closely allied to some species in being subscapigerous and herbaceous, and having entire leaves. It differs from the similar species especially in its conduplicate leaf feature.

*S. yildirimlii* is related to *S. pygmaea* and *S. rigida*. *S. pygmaea* is especially widespread in Northwest Anatolia and is endemic (Fig.2). *S. rigida* grows in East and South-East Anatolia, Northwest Iran, Georgia, Armenia and Lebanon. The main differences among the four taxa are given in Table 1.

*S. yildirimlii* is a plant with a single stem, rarely 2–3 stems. whereas *S. pygmaea* and *S. rigida* are with numerous (cushion-forming) stems. *S. yildirimlii* grows in alpine serpentine steppes, whereas *S. pygmaea* and *S. rigida* are found in limestone rocks, screen and alpine steppes.

Chromosome counting of *S. yildirimlii* has not been carried out, but the chromosome number of the related species are  $2n = 12$  in *S. rigida* and  $2n = 14$  in *S. pygmaea* (NAZAROVA, 1997).

*Specimens examined.* — *Scorzonera pygmaea* SIBTH. & SM. subsp. *pygmaea*: Turkey. A2 Bursa: Uludağ, P. QUÉZEL, 1968 (ANK, 3 specimens); A4 Ankara: Çubuk, Karagöl, ca. 1700 m a.s.l., 5.VI.1974, S. ERIK 531 (ANK, 2 specimens); C5 Konya: Ereğli, Aydos Dağı, Kayasaray, Sayıntaş mevkii, 2500 m a.s.l., 15.VII.1977, S. ERIK 2602 (HUB, 2 specimens) — *S. pygmaea* SIBTH. & SM. subsp. *nutans* (Czeczott) D. F. Chamb.: Turkey. A2 Bursa: Uludağ, 2400–2500 m a.s.l., 28.VII.2001, Y. MENEMEN 512 & E. HAMZAOĞLU (ADO, 7 specimens); A4 Kastamonu: Ilgaz Dağı, Küçükacet tepesi, ca. 2400 m a.s.l., 29.VII.1982, Y. AKMAN 12178, E. YURDAKULOL & M. DEMİRÖRS (ANK, 3 specimens); A4 Karabük: Keltepe, ca. 1950 m a.s.l., 12.VII.1984, M. DEMİRÖRS 1263 (ANK, 2 specimens); A4 Çankırı: Ilgaz Dağı, TRT vericisi civarı, 2000 m a.s.l., 21.VII.2001, A. DURAN 5818 & Y. MENEMEN (ADO, 9 specimens). — *S. rigida* AUCHER: Turkey. B9 Bitlis: 10 km S.E. of Pelli, 2600 m a.s.l., 8.VII.1954, D. 22544 & Q. POLUNIN (ANK, 3 specimens); B9 Van: Başkale, İspiriz Dağı, 3200 m, 31.VII.1954, D. 23763 & Q. POLUNIN (ANK, 2 specimens); C10 Hakkari: Cilo Tepe, 3700 m a.s.l., 9.VIII.1954, D. 24216 & Q. POLUNIN (ANK, 7 specimens); B9 Van: Çatak, Kavuşşahap Dağı, 3100 m a.s.l., 23.VII.1954, D. 23142 & Q. POLUNIN (ANK, 2 specimens); B9 Van: Gevaş, Artos Dağı, 2286 m a.s.l., 31.VII.1954, D. 22681 & Q. POLUNIN (ANK, 4 specimens); B9 Van: between Van-Hoşap, 40<sup>th</sup> km, steppe, 22.VIII.1993, Y. ALTAN 5562 (GAZI, 2 specimens).

### Etymology

The species is named in honour of the eminent Turkish botanist Prof. Dr. Şinasi YILDIRIMLI (Bi-

ology Department, Hacettepe University) who is an expert on the Flora of Turkey.

### Acknowledgements

The authors wish to thank the TÜBİTAK (Project No: TBAG-1748) for financial support to, and to F. Talia YAĞIZ for the illustration.

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Received Oct. 25, 2002

Accepted Oct. 2003