

Moist gravelly or stony flats (snowbeds) on serpentine, c. 2000 m. Flowering in the beginning of July.

Resembling *S. lanata* (L.) Bieb. and *S. pseudolanata* Grossheim in habit but differing in several essential characters: the above-mentioned species both have a tuber, and few monoseriate phyllaries with minute black hairs. In addition the pappus is yellow, and the indumentum densely lanate to floccose. *S. sandrasica* seems to have no close relatives among the Turkish species.

*Senecio* cf. *castagneanus* DC.

24156 (C).

The phyllaries are more arachnoid than in other Turkish specimens seen, in this respect resembling *S. macedonicus* Griseb. from the Balkans. In particular it closely resembles plants from Mt Smolikas (serpentine) in Greece in the short, unbranched stems with a single capitulum, the longer calyculus and more arachnoid calycular bracts and phyllaries.

*Tragopogon oligolepis* Hartvig & Strid, sp. nova

23341 (holotype in C). — Fig. 6.

Herba perennis glabra ad basem residuis manentibus foliorum induta. Caulis primarius terminalis florifer, 4—8(—18) cm altus, plerumque ad ipsam basem ramos floriferos proferens. Folia basalia anguste linearia, obtusa. Phyllaria c. 5, ovato-lanceolata, inter anthesin 10—12 mm, in capitulo fructifero 20—25 mm longa, pilis minutis vestita, aliis albis aliis nigris. Ligulae flavae, involucre paulum superantes. Achenia 15 mm longa, quidque decem seriebus longitudinalibus squamularum ornatum; rostrum c. 3 mm longum, anulus subglaber. Pappus 14—17 mm longus, colore stramineo.

Glabrous perennial with a 4—5 mm thick, shortly branched, vertical woody stock; remains of petioles almost absent. Stem terminal, 4—8(—18) cm, branched at base into 2—4 flowering branches, rarely unbranched. Basal leaves narrowly linear, 4—7 mm long, 1.5—2.5 mm wide, obtuse. Cauline leaves somewhat wider, with a more or less dilated base up to 6 mm wide. Capitula solitary on branches; peduncle not thickened below capitulum. Phyllaries (4—)5(—6), ovate-lanceolate, with a whitish margin c. 0.2 mm wide, with minute white and blackish hairs, 10—12 mm long in flowering capitulum and up to 20—25 mm long in fruiting capitulum. Florets yellow, up to c. 15 mm long, somewhat longer than involucre. Achenes 15 mm long with 10 longitudinal rows of small scales most distinct in upper part; beak c. 3 mm, clavate above; annulus glabrous or very sparsely lanate. Pappus 14—17 mm, straw-coloured.

A species of moist, stony and gravelly flats with sufficiently deep mineral soil on serpentine, 1500—2000 m. Probably flowering from beginning of June, with some capitula still flowering in July; fruiting from end of June or beginning of July.

Superficially resembling *T. olympicum* Boiss. with which it has been confused in Flora of Turkey. *T. oligolepis* had in fact already been collected on Sandras Dağ by P. H. DAVIS in 1947. His material (two collections) was designated as a

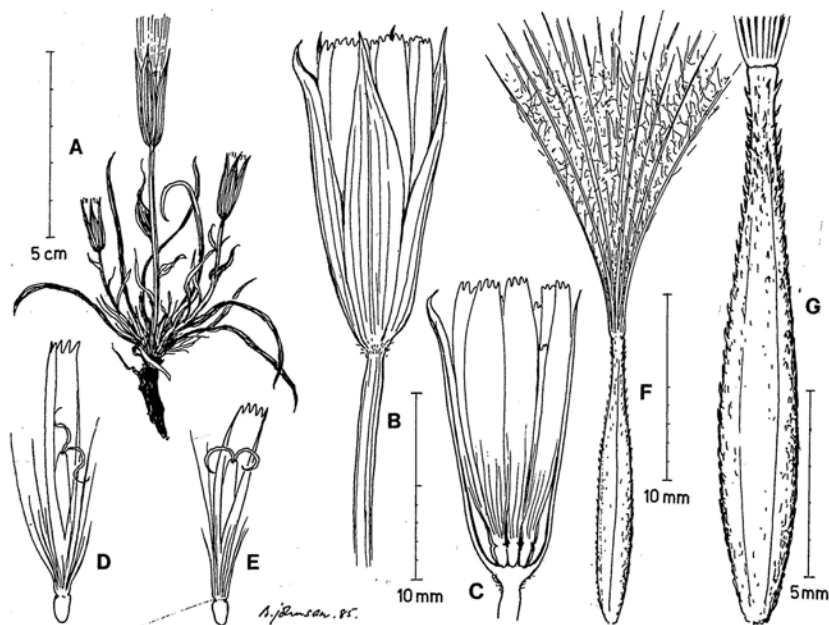


Fig. 6. *Tragopogon oligolepis* Hartvig & Strid, sp. nova. — A, Habit. — B, Flowering head. — C, Ditto with some of the involucre bracts removed. — D and E, Florets. — F, Achene. — G, Ditto, enlarged.

“probably undescribed” species close to *T. olympicum* by M. OWNBEY on a herbarium label in 1955. It was, however, never described, and later V. A. MATTHEWS in her revision of the genus for Flora of Turkey included the material in *T. olympicum* without further comment. A closer examination of material in the herbarium at E revealed several important morphological, phenological and ecological differences between the two species; they are listed in Table 1.

*T. subacaulis* O. Schwarz, described from Manisa Dağ and known only from the type gathering consisting of a single fruiting specimen, is probably the closest relative to *T. oligolepis*. According to the description the achenes resemble those of *T. oligolepis* and the number of phyllaries is the same (5–6). It differs, however, essentially in 3–3.5 cm long phyllaries in the fruiting capitulum and a 25 mm long, brownish pappus.

Other collections: Vil. Muğla (Konya): Sandras dagh near Gökce na., 1700 m, 23.7.1947, *Davis 13495!*; Vil. Muğla: Sandras dagh, 5000 ft., 22.7.1947, *Davis 13616!*

Another collection of *Tragopogon* from Sandras Dağ (*Strid et al. 23331a*) consisting of a single plant, may represent another undescribed species, or may

Table 1. Characters distinguishing *Tragopogon oligolepis* from *T. olympicus*.

	<i>T. oligolepis</i>	<i>T. olympicus</i>
Stock	Usually branched	Unbranched
Leaf remains	Almost lacking	Some papery remains
Leaf base	Narrow (sometimes wide on cauline leaves)	Wide
Stem	Usually branched	Unbranched
Phyllaries		
length in flower	c. 10 mm	15–20 mm
length in fruit	20–25 mm	20–30 mm
number	c. 5	c. 8
Floret length	Up to 15 mm	20–25 mm
Habitat	Serpentine	Limestone
Flowering time	From mid-June or earlier	From late July

be a variant of *T. oligolepis*. It differs in the purplish-brown pappus, slightly longer and darker achenes with a longer and much slenderer beak; one capitulum has 8 phyllaries, two have 5 phyllaries. In all other essential characters, including the short florets and short phyllaries, it resembles *T. oligolepis*.

### Brassicaceae

*Aethionema cordatum* (Desf.) Boiss. ssp. *pichleri* (Boiss.) Hartvig & Strid, comb. et stat. nov.

23356 (C, E). The combination is based on *A. cordatum* var. *pichleri* Boiss. described from Ulu Dağ. Plants from Murat Dağ, B2 Kütahya, (Davis 36767!, 36801! and Coode & Jones 2477a!), probably from a serpentine substrate, resemble our specimens from Sandras Dağ and match the description of var. *pichleri* Boiss. (type not seen). Ssp. *pichleri* differs from ssp. *cordatum* in the trailing shoots 5–8 cm long; leaves 3–4(–5) mm, more or less obtuse (versus flowering shoots more or less erect, 10–25 cm tall; leaves 7–15 mm, acute). Ssp. *pichleri* has a westerly distribution in Anatolia separated from that of ssp. *cordatum*.

*Aethionema speciosum* Boiss. & Huet. ssp. *compactum* Hartvig & Strid, ssp. nova

23339 (holotype in C; isotypes in E, EGE and G). — Fig. 7.

Caudice validiore lignoso ad 1 cm crasso, caulibus decumbentibus brevibus densissime foliosis, foliis subobtusis 4–5(–6) mm longis, inflorescentia fructigera 8–12(–17) mm longa, stylo 0.7–2 mm longo a ssp. *specioso* diversum.

Differs from ssp. *speciosum* in the following characters: Basal part of stem strongly woody, up to 1 cm thick. Stems decumbent; leafy part of flowering

CONTANDRIOPOULOS & QUÉZEL 1976: 421) described *V. sandrasea* ssp. *cilicica* from the Aladağ area (C5), apparently also on serpentine. It is said to differ from material from Sandras Dağ in the longer leaves with decurrent petioles, longer stipules, and densely pilose pedicels and sepals.

### Localities visited

Coll. nos.

23201—23211: B1 Manisa, along road from the town of Manisa to Manisa Dağı (Mt Sipylus), 800 m. Deciduous oak scrub. Lat. 38°32'N, long. 27°25'E. 5.7.1984. *P. H., A. S. & A. Y.*

23212—23224: B1 Manisa, along road from the town of Manisa to Manisa Dağı (Mt Sipylus), 600 m. *Pinus brutia* scrub. Lat. 38°32'N, long. 27°25'E. 5.7.1984. *P. H., A. S. & A. Y.*

23225—23228: B1 Manisa, along road from the town of Manisa to top of Manisa Dağı (Mt Sipylus), 1200 m. Rocky plateau with *Juniperus oxycedrus* & *J. excelsa* scrub. Limestone. Lat. 38°32'N, long. 27°25'E. 5.7.1984. *P. H., A. S. & A. Y.*

23229—23246: B1 Manisa, Manisa Dağı (Mt Sipylus), summit area, 1450 m. *Pinus nigra* woodland. Lat. 38°32'N, long. 27°25'E. 5.7.1984. *P. H., A. S. & A. Y.*

23247—23254: C2 Muğla, 14 km from Köyceğiz along main road to Muğla, 150 m. Open *Pinus brutia* woodland. Serpentine. Lat. 36°58'N, long. 28°37'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23255—23262: C2 Muğla, Sandras Dağ, SW foothills, 4 km SW of the village of Ağla, 500 m. Opening in *Pinus brutia* forest. Serpentine. Lat. 37°03'N, long. 28°47'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23263—23274: C2 Muğla, Sandras Dağ, SW side, along road between the village of Ağla and the fire watchtower, 1250 m. Open *Pinus nigra* forest. Lat. 37°04'N, long. 28°49'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23275—23282: C2 Muğla, Sandras Dağ, SW side, along road between the village of Ağla and the fire watchtower, 1450—1600 m. Open *Pinus nigra* forest. Lat. 37°04'N, long. 28°49'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23283—23299: C2 Muğla, Sandras Dağ, SW side, along road between the village of Ağla and the fire watchtower, 1750 m. Open *Pinus nigra* forest. Lat. 37°04'N, long. 28°49'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23300—23324: C2 Muğla, Sandras Dağ, SW of the summit, 1750 m. Marshy place by a creek in opening of *Pinus nigra* forerest. Serpentine. Lat. 37°04'N, long. 28°49'E. 6.7.1984. *P. H., Ö. S. & A. S.*

23325—23329: C2 Muğla, Sandras Dağ, SW side, by a loggers' camp c. 1 km N of the fire watchtower, 1750 m. Rocky places in opening of *Pinus nigra* woodland near a stream. Serpentine. Lat. 37°04'N, long. 28°49'E. 7.7.1984. *P. H., Ö. S. & A. S.*

23330—23332: C2 Muğla, Sandras Dağ, W of the summit, 1800 m. Rocky slope in open *Pinus nigra* forest. Serpentine. Lat. 37°04'N, long. 28°49'E. 7.7.1984. *P. H., Ö. S. & A. S.*

23333—23342: C2 Muğla, Sandras Dağ, W of the summit, 1970 m. Slightly sloping stony flat (snowbed) near a small creek close to timberline. Serpentine. Lat. 37°04'N, long. 28°50'E. 7.7.1984. *P. H., Ö. S. & A. S.*

23343—23384: C2 Muğla, Sandras Dağ, W side of the summit area, 2100—2200 m. Snowbed meadows and rocky slopes. Serpentine. Lat. 37°04'N, long. 28°50'E. 7.7.1984. *P. H., Ö. S. & A. S.*

23385—23422: C2 Muğla, Çal Dağ (N of Fethie), S side, 1800 m. Rocky slope in opening of mixed coniferous forest (*Pinus nigra*, *Cedrus libani*). Limestone. Lat.