

loides (A. F. Lang) Sell & West (*P. echioides* × *piloselloides*), but differs in the longer, denser indumentum, and phyllaries with abundant short yellow glandular hairs and fewer eglandular hairs.

Scorzonera mollis Bieb. ssp. *szowizii* (DC.) Chamberlain

23328 (C). New to C2; mainly known from Inner Anatolia and extending eastwards to Soviet Armenia, NW Iran and W Syria.

Scorzonera sandrasica Hartvig & Strid, sp. nova

23342 (holotype in C; isotypes in E and EGE). — Fig. 5.

Herba perennis sparse lanata vel subglabra radice palari, base residuis papyraceis foliorum induta. Caules floriferi laterales, simplices, 2–5 cm longi, quisque 1–3 folia prope basem gerens. Folia rosularia lineari-lanceolata, marginibus valde undulatis. Phyllaria sparse lanata, exteriora 4–6 × 3 mm, interiora 14 × 4 mm magna. Ligulae sulphureae, involucre superantes. Achenia immatura dense lanata; pappus rubenter violaceus.

Sparsely lanate to subglabrous perennial with a vertical, often branched stock, 7–9 mm thick, apparently lacking tuber, crowned with sparse brown papery remains of leaf sheaths. Flowering stems (1–)2–3, lateral, 2–5 cm long, unbranched with 1–3 leaves near the base. Basal leaves linear-lanceolate, 3–5 cm long, 5–8 mm wide, gradually narrowing towards the base and with an acute, narrow apex; margins strongly undulate. Stem leaves similar, gradually decreasing in size upwards. Capitula solitary. Involucre 12–15 mm long, c. 8 mm wide in flower. Phyllaries sparsely lanate with appressed hairs, the outer ovate, acute, 4–6 × 3 mm, the inner oblong-lanceolate with a more or less falcate apex, up to 14 × 3 mm; midvein distinct in upper 2/3. Ligules light yellow, exceeding involucre. Immature achenes lanate; pappus reddish-violet, barbellate above, plumose below. Mature achenes not known.

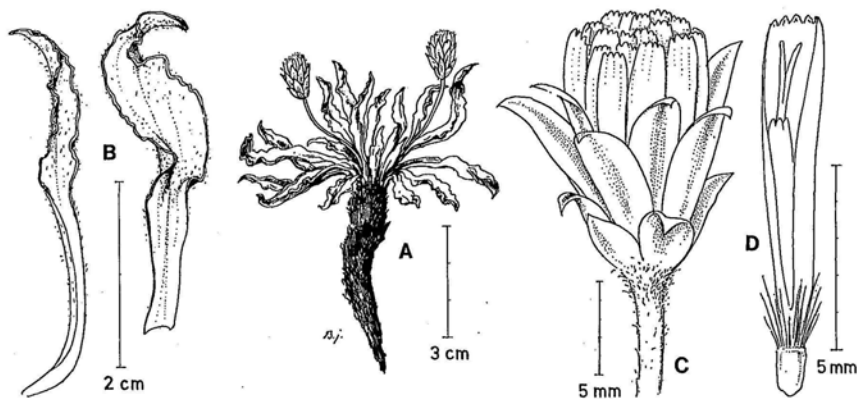


Fig. 5. *Scorzonera sandrasica* Hartvig & Strid, sp. nova. — A, Habit. — B, Leaves. — C, Young flowering head. — D, Young floret.

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

CONTANDRIOPOULOS & QUÉZEL 1976: 421) described *V. sandrasea* ssp. *cilicica* from the Aladağ area (C5), apparently also on serpentinite. 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* forest. 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.