Shortly villous to strigose perennial with a stout, black, vertical rhizome. *Stems* simple, ascending to erect, (7–)10–20(–25) cm. Basal *leaves* in a rosette, attenuate into petioles, laminas lanceolate, up to 15 cm long, 5–20 mm broad, acute. Cauline leaves lanceolate to ovate-lanceolate (rarely ovate), 2–6 × 7–15(–20) mm. Indumentum of leaves and bracts strigulose to strigose. *Inflorescence* in dense cincinnate cymes or subcapitate with 10–15(–18) flowers. Pedicels 1–4 mm. *Calyx* 9–11 (after anthesis up to 15 mm), strigose, with lobes linear to linear-lanceolate. *Corolla* funnel-shaped, very slightly oblique, 12–15 × (22–)25–30 mm, with lobes 5–6 mm long, externally sparsely pilose, azure blue. *Stamens* inserted 1.5 mm above the insertion of the corolla. Anthers 1.3–1.5 mm long. *Style* short, c. 0.6 mm and erect. *Nutlets* 4 × 2.8 mm, smooth and shining, ovoid, compressed dorsi-ventrally, with a ventral carina, abruptly narrowed at apex and with a broad base (2 mm).

The genus *Lithospermum* is maintained according to Riedl (1967).

Ssp. *goulandriorum* was found by Stamatiadou on Mt Timphi in Epiros in 1969 and later described by Rechinger (1971).

Ssp. *thessalicum* is clearly separable from ssp. *goulandriorum* in having very large azure blue corollas. The inflorescence is denser and the indumentum consists of hairs at least 1 mm long, giving a greyer appearance. The nutlets are greyish-white and shining as in ssp. *goulandriorum*, but differ in having a well-marked, not subattenuate apex and a broad base.

Ssp. *thessalicum* is a chasmophyte growing on hard limestone from 1800 to 1900 m.

Chromosome number 2n = 28 (A 1202). In the section *Margarospermum* Reichenb., which comprises 6 taxa most of which are evidently old relicts, no chromosome counts are yet available of *L. gastonii* Benth., from the French Pyrenees, and *L. goulandriorum* ssp. *goulandriorum*. The more widespread *L. purpureo-coeruleum* and *L. zollingeri* A. DC., from E Asia, both have 2n = 16 (Reese 1952, Britton 1951, Matsuura & Suto 1935, Grau 1966). *L. calabrum* Ten., endemic to S Italy has 2n = 20 (Grau 1968).

Solenanthus pindicus Aldén, sp. nov. – Fig. 6

Typus. Graecia, Thessalia: Mons Kakarditsa, supra pagum Athamania in Aspropotamos, in rupestribus, aridis, superioribus, 2050–2250 m. 20.7. 1973. Aldén 3507 (LD holotypus).

Perennis. Caulis simplex, crassus, ad 60 cm longus. Folia basalia longe petiolata, ad 35 cm longa, 2–4 cm lata, inferiora et media sessilia lanceolata vel ovato-lanceolata, superiora ovato-lanceolata vel ovata. Folia et caules breviter tomentosi. Inflorescentia sat longe paniculata, ramis non vel paulo crassis, fructiferis sat laxis. Pedicelli calyce breviores vel subaequantes. Calyx (post anthesin) 4–5 mm longus, laciniis linearibus vel lineari-lanceolatis, obtusis. Corolla tubulosa, 5–6 mm longa, stamina valde exserta, 8–10 mm longa. Nucula magna, compressa, plana vel paullo convexa, interne et lateribus ± dense aculeolata vel sub-glochidiata, glochidia 1–2-unguiculata, externa non vel parce aculeolata. Aculei semiaequales. Areolae non aculeatae glabrae, nitidae.

Robust perennial up to 60 cm. *Stems* simple, rather thick, striate-sulcate. Basal *leaves* long-petiolate, up to 35 cm, with lamina lanceolate, 2–4 cm broad, lower and middle cauline leaves sessile, acute, attenuate-rotundate, lanceolate to ovate-lanceolate, upper cauline leaves ovate-lanceolate to ovate. Leaves and stem shortly tomentose. *Inflorescence* rather lax, branches not or slightly thickened, elongating until fruiting stage. Pedicels 2–4 mm, mostly shorter than calyx. *Calyx* (after anthesis) 4–5 mm, tomentose, with lobes linear to linear-lanceolate. *Corolla* tubular, 5–6 mm long, glabrous or with a few hairs externally. *Stamens* long-exserted (3–4 mm above apex of corolla), filaments 8–10 mm long. *Style* long-exserted. *Nutles* 5–6 mm long, outer surface with a few circular glochidia up to 1 mm long, hooks of glochidia (0–)1(–2), lateral and inner surfaces rather densely glochidiate-aculeolate.

S. pindicus is related to the likewise very local *S. albanicus*, known from NW Greece and S Albania. The most useful characters are the number and shape of the glochidia. *S. pindicus* has much fewer and shorter (up to 1 mm) glochidia on the outer surface of the nutlet and the glochidia or aculei are subequal mostly with one (rarely 0 or 2) apical hook (in *S. albanicus* (2–)4–6 hooks; Fig. 6 B). The upper cauline leaves are ovate-lanceolate to ovate, not ovate-rhombic as in *S. albanicus*. *S. stamineus*, a mainly SW Asiatic species, occurs on Mt Chelmos on Peloponnesos. It differs from

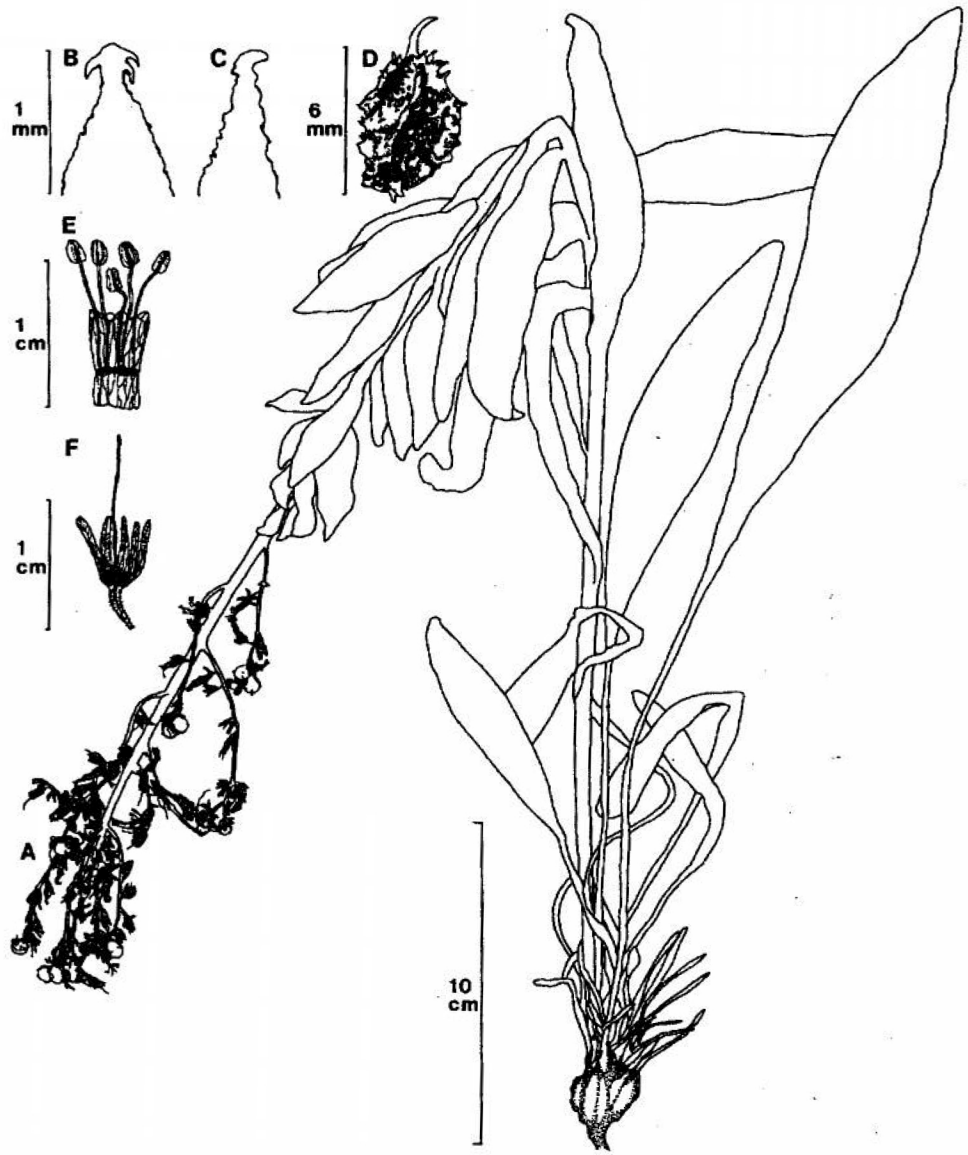

Fig. 6. A, C–F: *Solenanthus pindicus*. – B: *S. albanicus*. – A: Habit. – B–C: Glochidia from nutlets. – D: Nutlet. – E: Corolla and stamens. – F: Calyx and style. – A, C–F: Aldén 3507 (holotype). – B: Baldacci 188 (holotype).

both *S. pindicus* and *S. albanicus* in its grey indumentum of leaves and stem and the flattened glochidia. A fourth species in Greece, *S. scardicus*, was reported from Mt Kaimaktsalan by Zaganiaris (1938–40). It is best distinguished from the others on larger and winged nutlets.

S. pindicus grows on dry stony rock ledges at about 2150 m.

Campanulaceae

Asyneuma canescens (Waldst. & Kit.) Griseb. & Schenk ssp. **canescens**

Collections. Mt Karava, 3 km ESE of Vlasion, c. 2150 m, A 974 – Mt Kazarma, 4 km NE of Vlasion, c. 1800 m, A 720; 5.5 km NE of Vlasion, c. 1900 m, A 4378 – Mt Mazur-Ailas, 3 km ESE of Argidhea, 1750–1800 m, A 882 – Mt Pachtourion, 5 km SSE of Athamania, c. 1880 m, A 4576.

A. canescens ssp. *canescens* (cf. Damboldt 1970) is new to Pindhos, but known both N and S of the area. It is a rare plant in Pindhos, found mainly in the SE parts. The plants from Pindhos are usually smaller than normal, have ascending, often flexuose to erect stems, 10–20 cm, leaves 1–3 cm long, flowers mostly single in the panicle.

It grows in dry stony places from 1750 to 2100 m.

General distribution. SE Europe.

Campanula pindicola Aldén, sp. nov. – Fig. 7

Typus. Graecia, Thessalia: Mons Kakarditsa, supra pagum Athamania in Aspropotamos, in rupestribus calcareis superioribus, c. 2100 m. 21.7. 1973. Aldén no. 3669 (LD holotypus).

Perennis. Caules plures, tenues, nudi, teretes, ascendentes, 15–20 cm alti. Rhizoma tenue repens. ~~Folia basalia ignota~~ (per anthesin deficientia), caulina inferiora lanceolato-spathulata, integerrima vel rarius sparsim crenulata, 1–2 × 5–10 mm, media et superiora linearia vel lineari-lanceolata, stricta vel paullo reflexa, media longiora ± dense obsita, basi et apice breviora, 0.4–2.0 × 10–30(–37) mm, plerumque canaliculata, obtusa et breviter mucronata. Flores (1–)2–6, subnutantes, racemum laxum formantes. Bractea 6–10 mm longa. Pedunculi et pedicelli ± crassi, plerumque ante anthesin nutantes, 3.5–12 mm. Calyx glaber, 6–9 mm laciniis 3–6(–7) mm tenuibus triangularibus vel linearibus, apice reflexis. Corolla cyanea, breviter campanulata, apice parum expanda demum subangustata, 9–11 mm longa, interne papillosa et sparse pilosa, laciniis 3–4 mm longis, triangularibus. Stamina c. 5 mm longa. Stigma corollam subaequans. Receptaculum papillosum, 3-loculare.

Glabrous perennial. *Stems* several, terete, somewhat ribbed, slender, ascending, 15–20 cm, from a slender more or less horizontal rhizome. Basal *leaves* unknown, absent at anthesis, lower cauline leaves lanceolate-spathulate, entire or very rarely remotely crenulate, 1–2 × 5–10 mm, middle and upper cauline leaves linear to linear-lanceolate, straight or slightly recurved, 0.4–2.0 × 10–30(–37) mm, usually canaliculate, obtuse and shortly mucronate. Middle cauline leaves longest and more abundant. *Inflorescence* (1–)2–6-flowered, lax, with 1–4 undeveloped flower primordia. Peduncles and pedicels rather stout, usually recurved, 3.5–12 mm long. Bracts 6–10 mm long. *Calyx* 6–9 mm with lobes 3–6(–7) mm, narrowly triangular to linear, apex recurved. *Corolla* dark blue, shortly campanulate, scarcely expanded, 9–11 mm long, lobes (2–)3–4 mm long, triangular. Inner surface of corolla with papillae and very fine dendroid hairs. *Stamens* c. 5 mm long. *Stigma* almost equalling corolla. *Ovary* papillose, 3-locular.

C. pindicola is clearly referable to the taxonomically very difficult subsect. *Heterophylla* (Witas) Fed. The nomenclature below according to Podlech (1965). Of the four series recognized within this subsection *C. pindicola* comes close to species in *Saxicolae* Witas. The main difference is the slender rhizome which it has in common with *C. gentilis* Kovanda (Kovanda 1968) that was placed in *Saxicolae* by Kovanda (1970). *C. gentilis* differs from *C. pindicola* in shape and size of corolla, the more abundant lower cauline leaves, leaves increasing abruptly in length upwards and in being densely caespitose. An intermediate between *Saxicolae* and *Vulgares* Witas is *C. velebitica* from N Balkan. It differs from *C. pindicola* in having much larger, broadly campanulate corollas and narrower calyx teeth. *C. romanica*, a typical *Saxicolae*, differs (apart from the thickened rhizome) in having the middle cauline leaves remotely serrulate and a narrowly campanulate corolla. The only *Campanula* species with a papillose receptacle (as in all *Saxicolae*) known from Pindhos is *C. albanica* ssp. *albanica*. It is commonly 1-flowered with corollas 14–18(–22) mm long. In the shape of the corolla *C. pindicola* comes close to species in the series