

MATERIALS FOR A FLORA OF TURKEY XXXVIII:

Araceae, Dioscoreaceae, Liliaceae

COMPILED BY P. H. DAVIS

ABSTRACT. The following groups are treated here. Araceae: *Arum*, 2 new species, 1 new variety and 1 new infraspecific combination. Dioscoreaceae: *Tamus*, 1 new subspecific combination. Liliaceae: *Asparagus*, 2 new species, 1 new name; *Colchicum*, 1 new species, with extensive discussion on its relationships and the status of *C. sieheanum* [Hausskn. ex] Stef.; *Fritillaria*, 3 new subspecies; *Lilium*, 2 new infraspecific combinations; *Polygonatum*, replacement of the name *P. latifolium* (Jacq.) Desf. by *P. hirtum* (Bosc ex) Poiret) Pursh, with discussion; *Scilla*, 1 new form.

This is the first of two Materials papers to treat the families to be included in *Flora of Turkey* vol. 8—to cover the petaloid Monocotyledons and Helobiaeae. The second paper will cover Orchidaceae. Some major groups, such as *Allium*, will be covered in separate papers, not part of the 'Materials' series, which at the time of writing (Feb. 1983) are in press or in preparation.

Following our usual policy, all specimens cited have been seen unless the contrary is indicated by n.v. (*non vidi*). As in 'Materials' XXXVII (Notes RBG Edinb. 38: 23-64, 1980) an exclamation mark (!) is placed after those synonyms of which type material has been seen.

The following authors have contributed to the present paper: C. D. Brickell, P. H. Davis, D. M. Henderson, R. R. Mill, E. V. Mordak, E. M. Rix and Kit Tan. We remain indebted to the Science and Engineering Research Council (UK) for their continued support for the *Flora of Turkey* project.

ARACEAE

Arum L.

R. R. MILL

Arum balansanum R. Mill, *sp. nov.*

Syn.: [*A. phrygium* Boiss., Fl. Or. 5:39 (1882) in syn., nom. nud.].]

Affinis *A. elongato* Steven sed spatha multo breviori, floribus sterilibus rudimentis albedo-lutescentibus distinguitur.

Herba perennis. Tuber verticale. Petioli foliorum 13-23.5cm longi. Lamina oblongo-hastata, 8-14×3.5-10cm, acuminata, lobis lateralibus breviusculis, obtusis. Pedunculus 13-26cm, quam petioli subaequalis vel paulo longior. Spatha 7-10.5×1-3.5cm, lamina extus pallide virens, intus plerumque purpurea; tubus 2-3.5cm, ventricosus, extus viridis, intus albidus. Spadix 4-7cm longa. Inflorescentia feminea 10-17mm longa; zona sterilis inferior 4-6mm; inflorescentia mascula 2.5×2-3.5mm, cinerea; zona sterilis superior 4.5-5mm longa. Florum sterilium rudimenta lutescentia, inferiora 2-6mm, superiora 3.5-6.5mm. Appendix spadix

tenuis, 2-5cm longa, indistincte stipitata; clava anguste cylindrica, 1-3cm x 0.8-2mm. Fl. Mai.-Jun.

Type. Turkey B2 Uşak: Yachamichlar-keui, à 8 kilom. au nord d'Ouchak (Phrygie), 3 vi 1857, *B. Balansa* 60 (holo. G-Boiss.; iso. G-Delessert, K). TURKEY. C1 Izmir: Selcuk, *Peşmen & Zeybek* EGE 16627. C2 Denizli: Honaz Dağ, Erikli Yayla, 1100m, *E. Tuzlaci* ISTE 24904.

This mainly SW Anatolian endemic appears to be related to *A. elongatum* Steven, which is widespread in Inner Anatolia, reaching its western limit in C2 Antalya. The spathe and spadix are very much shorter than in *A. elongatum*, and the sterile flowers are whitish-yellow, not purple or violet.

The type material is labelled '*A. phrygium*' by Boissier, and would presumably have formed the type of that name if he had validly published it. As Rec. 23(i) of the Leningrad Code asks one to avoid adopting unpublished names found on herbarium labels, I have named the new species after Balansa, who first collected it.

***Arum dioscoridis* Sm. in Sibth. & Sm., Prodr. Fl. Graec. 2:245 (1813) var. *luschanii* R. Mill, var. nov.**

A var. *liepoldtii* (Schott) Engler appendice breviori stipitata, stipite 11-20mm longo, et floribus sterilibus rudimentis brevioribus 2-3mm longa 1-2 cyclis differt.

Type. A specimen of a plant cultivated at Vienna in 1883, from tubers collected in [Turkey C2 ?Antalya] Lycia, 1882, *Luschan* (holo. WU).

TURKEY (S Anatolia). C3/4 Antalya: Alanya, *Gassner* 751 (ANK). C6 Hatay: Kirikhan to Reyhanli, c. 100m, *Coode & Jones* 537 (E). Gaziantep: Hassa to Kilis, *T. Baytop* ISTE 36723.

Although its provenance is not exactly known, the *Luschan* collection has been selected as the type of the new variety as it is by far the best preserved of the four specimens seen. The specimen is one of two cited under *A. dioscoridis* by Stapf (*Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl.* 50:3, 1885); the other, from Felen Çay, belongs to var. *spectabile* (Schott) Engler.

***Arum euxinum* R. Mill, sp. nov.**

Syn.: [*A. incomptum* auct. non Schott (1860)].

[*A. orientale* Bieb. subsp. *incomptum* (Schott) Engler, Pflanzenreich 73(IV.23F):81 (1920) p.p. excl. typ.].

[*A. hygrophilum* Boiss. var. *ponticum* [Hruby ex] Engler, loc. cit. (1920) in syn., nom. nud.].

Ab *A. hygrophilo* Boiss. lamina foliorum lobis basalibus vix vel paulo tantum evoluta, pedunculo semper quam petiolis longiori, et appendice spadiceis non stipitata differt.

Herba perennis. *Tuber* verticale. *Petoli foliorum* (6-)-15-20(-35)cm longi, saepe purpurascens. *Lamina* oblongo-hastata, 5-11 x 2-5(-6)cm, obtusa vel acuta, lobis basalibus brevissimis. *Pedunculus* (10.5-)-18-45cm, semper quam petioli longior. *Spatha* extus purpurascens vel viridi-purpurascens, basin versus atrans, intus albide margine ± angusta purpurea, apice saepe cucullata, 6.5-11 x 1.5-4cm; tubus 1.5-3cm, intus atropurpureus; lamina ovato-lanceolata, acuta vel breviter acuminata. *Spadix*

4.5-7(-9)cm longa. *Inflorescentia feminea* 6-10mm longa; zona sterilis inferior (0.7-)2-3.7mm longa; inflorescentia mascula 1.5-4×2-3mm; zona sterilis superior 3-7mm longa. *Florum sterilium rudimenta* rubro-purpurea vel -violacea, inferiora 2-3(-4)mm, superiora (2.5-) 4-5mm. *Appendix* non stipitata, linearis, tenuissima, 2.5-4cm×1.5-2.2mm. *Fl.* Apr.-Jun.

Type. Turkey A4 Zonguldak: Kel Tepe, 1450m, open meadow, somewhat marshy; apparently typical *Arum* of Black Sea area, 1 vi 1967, *C. Tobey* 1873 (holo. E).

TURKEY (N Anatolia). A3 Bolu: Abant Göl, 4 vi 1974, *D. & U. Rückbrodt* s.n. (E). Abant, 1350m, *A. Baytop* ISTE 32351 (ISTE). A4 Çankiri: 22km from Çerkeş to İsmetpaşa, *T. Baytop* ISTE 28104 (ISTE). A5 Samsun: Kizilirmak, after Asar, 300m, *Tobey* 1762a (E); Ladik station, Karadağ, 1200m, *Tobey* 945 (E). A7 Gümüşane: nr Ardas, 15 iv 1889, *Sintenis* 90 (LD).

This attractive endemic *Arum* from N Anatolia somewhat resembles *A. hygrophilum* Boiss. from Syria and Lebanon, which also has relatively small, purple-bordered spathes. The new species differs from the latter by the leaves having very small basal lobes, and the peduncle being always longer, not shorter, than the petioles. Despite earlier authors being aware of its existence, it has hitherto never had a valid name at any rank.

Arum orientale Bieb., *Fl. Taur.-Cauc.* 2:407 (1808) subsp. ***amoenum*** (Engler) R. Mill, **comb. et stat. nov.**

Syn.: [*A. albispatham* sensu Hruby in Bull. Soc. Bot. Genève sér. 2, 4:150 (1912) *p.p.* non Steven (1857)].

A. italicum Miller var. ***amoenum*** Engler, *Pflanzenreich* 73(IV.23F):86 (1920)!

The affinities of Engler's var. *amoenum* are clearly with *A. orientale*, not *A. italicum*. As in *A. orientale* var. *orientale* the spathe is delicately washed with purple outside, a state never found in *A. italicum*. The slender, purplish spadix also differs from the stout, markedly stipitate, yellowish one of *A. italicum*.

DIOSCOREACEAE

***Tamus* L.**

KIT TAN

Tamus communis L., *Sp. Pl.* 1028 (1753) subsp. ***cretica*** (L.) Kit Tan, **stat. nov.**

Syn.: *T. cretica* L., *Sp. Pl.* 1028 (1753)!

T. communis L. var. ***cretica*** (L.) Boiss., *Fl. Or.* 5:344 (1882)!

T. communis L. var. ***polycarpus*** Kotschy, *Reise* 405 (1858)!

Two subspecies have been recognised after studying *T. communis* throughout its geographical range. In Turkey, subsp. *cretica* can be readily distinguished from the typical subspecies by its leaves which are always hastate-trilobed, the lateral lobes being orbicular and the middle lobe

lanceolate. It occurs in European Turkey, W & S Anatolia and the E Aegean Islands. Outside Turkey, it is restricted to the Balearic Is, Îles Hyères, Corsica, S Greece, Crete, Cyprus and W Syria. Subsp. *communis* occurs in N, S & E Anatolia and has a wider external distribution, ranging from the Azores to USSR. Transitional forms occur in S Spain (Cádiz) and Gibraltar.

LILIACEAE

Asparagus L.

P. H. DAVIS

Asparagus coodei P. H. Davis, *sp. nov.*

Affinis *A. lycico* P. H. Davis (Syn.: *A. brevifolius* Boiss. non Tornab.: vide infra) sed caule multo brevior, habitu pyramidalis, internodiis caulibus centralibus curtis, fasciculis approximatis vel superpositis (haud distantibus), cladodiis in transectione obtuse pentagonalibus sparse papilloso differt.

Herba erecta, glaucescens habitu pyramidalis, 12–38cm alta. *Caulis principalis* inferne flexuosus, striatus, glaber vel cristis minute scabridulis, internodiis tantum 5–15mm, fere ad basin ramosus. *Rami primarii et secundarii* late divaricati vel patentes ad angulum 70°–90°. *Folia* squamiformia calcare 0.5mm. *Fasciculi cladodiorum* approximati vel superpositi. *Cladodia* 6–10 per fasciculum, inaequalia, 3–8(–13)mm longa et 0.2mm lata, erecto-patentia, in transectione obtuse quinquangularia angulis sparse papilloso, apice mucronulata. *Flores* 1–4 in axillis ramorum et interdum in fasciculis cladodiorum. *Pedicelli* 4–8mm longi, ad medium vel infra articulati. *Perianthium masculum* 6–8mm longum, badium, segmentis interioribus pallidiora. *Antherae* 1.75mm longae. *Bacca* globosa, aurantiaca vel rubra, c. 10–11mm. *Fl.* Mai.

Type. Turkey C4 İçel: Mut, Adras Dağ, between Mut and Ermenek, 1300m, NE-facing sheltered limestone slope with *Quercus* and *Juniperus*, M. J. E. Coode & B. M. G. Jones 984 (holo. E).

TURKEY. C4 İçel: Mut, Mahras Dağ, limestone rocks and slopes, 1300m, and in wheat fields at 1200m, Coode & Jones 790 (E). Konya: Ermenek, Kuruseki, 1100m, with *Quercus coccifera*, M. Vural 681 (ANK, in fruit).

Endemic to the Isaurian Taurus, and apparently allied to *A. lycicus* P. H. Davis (see below), known only from the Lycian Taurus. The broad conical habit of *A. coodei*—reminiscent of a miniature Christmas tree—is very distinctive. It is a pleasure to name this new species after M. J. E. Coode, who contributed so much to the first two volumes of the *Flora of Turkey*.

Asparagus lycaonicus P. H. Davis, *sp. nov.*

Species valde distincta, prostrata, brevipapillosa, caule breviter ramosa cladodiis brevibus carnosius.

Herba halophila, glaucescens, caule solitario prostrato 8–27cm longo, cristis minute papilloso, breviter 1–2-plo ramosis, ramis primariis 0.5–3cm, saepe breviter ramulosius. *Folia* bracteiformia ad basin in spinam ad 0.75mm longam producta. *Cladodia* in fasciculo 4–6, erecto-patentia, brevia,

2-6mm longa et 0.5mm lata, carnosa, in transectio obtuse sexangularia angulis breviter papillosis, apice subobtusum et mucronulatum. *Flores* non vidi. *Pedicelli* solitarii in axilla ramorum primariorum, in fructu 5-6mm longi, prope medium articulati. *Bacca* rubescens 6-8mm diametro, segmentis perianthii 2-2.5mm longis suffulta. *Semina* c. 4. *Fr.* Aug.

Type. Turkey B4 Konya: d. Cihanbeyli, Boluk Gölü, 1010 m, 4 viii 1960, Khan, Prance & Ratcliffe 438 (holo. E, iso. K).

A very distinct prostrate, halophytic species, only known from a small salt lake S of Cihanbeyli. The dominant *Asparagus* in the C Anatolian basin is *A. persicus* Baker *sensu lato*. It is possible that the nearest affinity for the new species is with *A. officinalis* L. (common in Anatolia) or even the S European *A. maritimus* (L.) Miller. No male flowering material has been collected.

***Asparagus lycicus* P. H. Davis, nom. nov.**

Syn.: [*A. brevifolius* (Boiss. ex) Baker in J. Linn. Soc. (Bot.) 14:602 (1875) non Tornab. in Atti Acc. Gioenia ser. 2, 12:35 (1856)].

Type. [Turkey C2 Antalya] Lycia in cultis ad Elmalı, Bourgeau (holo. K). Known only from the type gathering.

***Colchicum* L.**

C. D. BRICKELL*

***Colchicum baytopiorum* C. D. Brickell, sp. nov.**

A *C. cupanii* Guss. cormi tunicis membranaceis rufescentibus (nec crassis, coriaceis, fuscis), foliis 3 (nec 2), anguste vel angustissime lanceolatis (nec linearibus vel lineari-lanceolatis), antheris flavis (nec fuscis) inter alia distinguenda; a *C. boissieri* Orph. foliis synanthis, interdum subsynanthis, anguste vel angustissime lanceolatis (nec hysteranthis, linearibus) praeterea differt.

Cormus anguste ovoideus vel subglobosus, 2.5-3.5 × 1.5-2.5cm, interdum sobolifer et tum horizontalis vel subhorizontalis, 4-6 × 1.3-2cm, forma irregularis; cormi tunicis membranaceis, rufescentibus, saepe evanescentibus. *Folia* 3, synantha, interdum subsynantha, primo suberecta, tandem recurva, anguste vel angustissime lanceolata, e spathis anthesi 1-5(-8)cm, maturitate (20-)22-32 × 2.4-4.5cm excedentia, obtusa vel acuta, glabra. *Flores* autumnales, 1-3(-5), campanulati vel anguste infundibuliformes, intense purpureo-rosei. *Perianthii segmenta* (2.2-) 2.5-3.5(-4.2)cm × 5-8(-11)mm, elliptica vel oblongo-elliptica vel oblanceolata, obtusa vel acuta, glabra. *Filamenta* alba, 10-14mm longa, basi inflata, aurantiaco-flava; antherae flavae, 5-7 × 1mm, polline citrino ornatae. *Styli* recti, stigmatibus punctiformibus. *Capsula* anguste ellipsoidea, 2-2.5cm × 9-10mm, pallide brunnea vel argenteo-brunnea, glabra, apiculata, extus leviter vel valde reticulata, punctis atrofuscis ornata. *Fl.* Oct.-Nov.

* The Royal Horticultural Society's Garden, Wisley, Woking, Surrey GU23 6QB.

Type. Turkey C3 Antalya: Termessos, 550m, 7 xi 1976, *T. Baytop* ISTE 36225 (fl.—holo. ISTE).

TURKEY. C3 Antalya: Termessos, 550 m, 6 x 1975, *T. Baytop & Leep* ISTE 33890 (fl.); *ibid.*, 900m, 28 x 1976, *T. Baytop & Leep* ISTE 36222 (fl.); *ibid.*, 900m, 26 iv 1976, *A. Baytop* ISTE 34713 (lf. & fr.); *ibid.*, 900–1000m, 22 iv 1976, cult. Wisley, *Brickell* 1380 (lf. & fr.—K); Kemer, Kesmeboğazi–Sumrakşehri, 50–600m, 28 ii 1980, *Peşmen & Güner* 4768 (lf. & fr.—ANK); W of Kemer in Kesmeboğazi gorge, 175m, 28 x 1981, *Sønderhausen* 793 (fl.—hb. Wisley); Kemer, between Kesikboğaz and Gedelme, 200m, 29 x 1981, *A. & T. Baytop* ISTE 47676 (fl.); Manavgat, Beşkonak E of Altinkaya, 300m, 22 xi 1981, *Ayaşlıgil* 690 (ISTE 47970—fl.). C3 Isparta: südküste Kleinasein, oberhalb Anamas am flusse, anfang Tarmar, 1911, *Siehe* 87 (fl.—E).

C. baytopiorum was first collected by Siehe in 1911 under his number *Siehe* 87 from C3 Isparta 'on the S coast of Asia Minor, above Anamas by the river, at the source of the Tarmar'. The specific epithet is given in appreciation and recognition of the work by Professors A. & T. Baytop, whose collections in Turkey have been of inestimable value in helping to further the study of this difficult genus.

Siehe recognised it as a distinct species, writing '*C. hiemale* Siehe sp. nov.' on the label, but he was apparently unaware of the prior use of this epithet by Freyn for a species of *Colchicum* from Cyprus, *C. hiemale* Freyn in *Bull. Herb. Boiss.* 5:802 (1897), now considered to be conspecific with *C. pusillum* Sieber (1822).

Stefanov (*Sborn. Bălg. Akad. Nauk.* 22:33, 1926) links Siehe's *C. hiemale* with *C. serpentinum* [Woronow ex] Misch., a spring-flowering species with narrowly linear, canaliculate leaves, at maturity 3–5(–7)mm broad. In my forthcoming account of *Colchicum* for *Flora of Turkey* vol. 8, this species is referred to *C. falcifolium* Stapf. The Siehe specimens have leaves which are flat, not canaliculate, and even at flowering time are up to 12mm broad. They match very closely with flowering material collected by T. Baytop and H. J. Leep in October 1975 and by T. Baytop in November 1976 at Termessos (C3 Antalya). Specimens of foliage and fruit were also collected from this site by A. Baytop in April 1976 and several further collections from the Antalya area have since been made in habitats varying from macchie under *Pinus* to light woodland among *Styrax officinalis* L., *Quercus* L. and *Pinus* L. at altitudes of from 50–1000m. *Brickell* 1380 (cited above) has been selected to describe the mature foliage and capsules. Corms from this collection flowered in October 1977 at Wisley and match very closely with the holotype and *Siehe* 87.

In general facies *C. baytopiorum* resembles *C. cupanii* Guss. in producing its bright red-purple, campanulate or narrowly vase-shaped flowers with the leaves in autumn and early winter, but it differs consistently in producing three leaves which are narrowly to very narrowly lanceolate, not two linear to linear-lanceolate leaves as in *C. cupanii*. It also differs in the colour and texture of the corm tunics and in its yellow, not purplish-black, undehiscent anthers.

C. baytopiorum appears to be closely related to *C. boissieri* Orph. even though the leaves in the latter species are linear and much narrower and are

also strictly hysteranthous. Both have bright rosy purple flowers with yellow anthers and punctiform stigmas and also share the characteristic of having membranous, red-brown, frequently evanescent corm tunics. The corm of *C. boissieri* is soboliferous although occasionally it may produce irregularly ovoid or oblong-ovoid \pm vertical 'conventional' corms. This soboliferous character is also partially developed in *C. baytopiorum* which produces similar soboles to those of *C. boissieri* but usually they are thicker and larger in diameter. Initial development of the soboles of *C. baytopiorum* appears to take place during the flowering period as active growth begins in the autumn. The soboles then extend during leaf development and at the end of the growing season usually form a new 'conventional' corm into which the food material from the sobole is absorbed. Some corms may still retain this soboliferous character at the end of the growing season.

It is relevant here to discuss the status of *C. sieheanum* [Hausskn. ex] Stef. in *Sborn. Bälz. Akad. Nauk.* 22:47 (1926). The name *C. sieheanum* was used by Haussknecht in *Ann. Nat. Hofmus. Wien.* 28:182 (1914) when he tentatively referred it to *C. arenarium* Waldst. & Kit. It was validated by Stefanov (*loc. cit.*, 1926) and was based on *Siehe* 92 collected in wooded areas above Fundikpinar (Findikpinari) in Cilicia (C5 İçel) at an altitude of 1400m. Stefanov's description is based on flowering material only and no foliage or fruiting specimens corresponding to *Siehe* 92 have been traced. Stefanov keys out *C. sieheanum* in a group of glabrous, 3-leaved species with glabrous fruits, although his description states 'folia hysteranthia ignota' and 'fructus mihi ignotus'. There also appears to be some confusion in Stefanov's description over the flowering period, which is stated to be both 'flores vernaes' and 'Floret Autumno'. No collecting date is shown on sheets of *Siehe* 92 but there is little doubt that the specimens were collected in autumn.

Examination of the holotype (B) and an isotype (E) of *C. sieheanum* shows that in the characters of stigmas, anthers, perianth segments and corm tunic it does not differ in any significant way from *C. boissieri*. Stefanov described the flowers of *C. sieheanum* as obscurely tessellated but no trace of tessellation is apparent on the flowers of the material examined.

Partial development of soboliferous corm growths or tooth-like projections may be seen on the holotype and isotype of *C. sieheanum*. In this character it is closely akin to *C. boissieri* and *C. baytopiorum*. In the former species the leaves are hysteranthous whilst in *C. baytopiorum* they are synanthous or subsynanthous. Dissection of the spathe on subsynanthous material of *C. baytopiorum* shows that the leaves have developed to within a very short distance of the spathe apex. In both *C. boissieri* and *C. sieheanum* leaf growth within the spathe is absent at flowering time or only very slightly developed at the base by the corm.

Whilst Stefanov may well be correct in his assumption that *C. sieheanum* is a 3-leaved species, its exact status and relationships with *C. baytopiorum* and *C. boissieri* cannot be determined without field studies of populations of *Colchicum* species in the area where *Siehe* 92 was collected.

Fritillaria L.

E. M. RIX*

Fritillaria acmopetala Boiss., Diagn. ser. 1(7): 104 (1846) subsp. **wendelboi** Rix, subsp. nov.

A subsp. *acmopetala* caule humiliore, foliis vulgo 4 numero, lanceolatis, 1–3cm latis et flore basi angulato nec rotundato distinguitur. *Fl.* Apr.–Jun. Type. Turkey C3 Antalya: mountains NE of Akseki, 1700m, 1972, *Wendelbo* 447 (holo. GB).

TURKEY. C4 Konya: Ermenek to Karaman, Yelibel Dağ, 2020m, *Huber-Morath* 10350 (Hb. Hub.-Mor., Basel). İçel: d. Anamur, Kaş Yayla, 1600m, *Markgraf* 11180 (Z).

Subsp. *wendelboi* inhabits *Cedrus* forest and rocky places on limestone at altitudes from 1600 to 2020m and thus is found at higher levels than subsp. *acmopetala*; it is known only from the central Taurus. Its untessellated flowers with the inner perianth segments recurved and apiculate are similar to subsp. *acmopetala*, as are the blackish, ovate-lanceolate nectaries.

Fritillaria assyriaca Baker in J. Linn. Soc. (Bot.) 14: 265 (1875) subsp. **melananthera** Rix, subsp. nov.

A subsp. *assyriaca* segmentis omnibus perigonii ad 5mm latis, acutis, in medio viridibus, marginibus nigris antherisque nigris differt. *Fl.* Mar.

Type. Turkey C4 İçel: 2km N of Mut, sandige Lehmhügel, 290m, 5 vi 1966, (fruct. & fl. ex cult.) *Sorger* 66-18-28 (holo. Hb. Sorger, Wien).

TURKEY. C4 İçel: Seleucia ad Calycadnum, 2–200m, *Siehe* 1904: s.n. & 1907:48. Anamur to Silifke, limestone hill, 200m, *Horton & Stevens* 2257.

Subsp. *melananthera* is found only on the S coast of Anatolia at low altitudes, whereas subsp. *assyriaca* is found at higher altitudes above 1000m. *F. elwesii* Boiss. and *F. latakiensis* Rix possibly originated as hybrids between this new subspecies and *F. acmopetala* Boiss., but both are now recorded from many localities where subsp. *melananthera* has not been seen. Variants with somewhat similar flowers have been found in the southern Zagros in Iran, but they do not have black anthers. In cultivation subsp. *melananthera* flowers about two months later than subsp. *assyriaca*, at the same time as *F. acmopetala* and *F. elwesii*. The collections of *Siehe* were labelled '*F. glauca*' but this name was never published and the epithet had been used for a N American species in 1893.

Fritillaria carica Rix in Kew Bull. 30:156 (1975) subsp. **serpenticola** Rix, subsp. nov.

A subsp. *carica* caule humiliore, 3–5cm alto, foliis paucis usque ad 5 numero, filamentis glabris styloque gracillimo minute papilloso vel glabro distinguitur. *Fl.* Apr.

Type. Turkey C2 Antalya: between Karaçulha and Altinyayla, in bare brown scree, 1700m, 5 iv 1980, *O. Sønenderhousen* 680 (holo. E).

* Grove House, Sellindge, near Ashford, Kent.

This new subspecies, known only from the type, appears to be confined to serpentine rocks, where it grows among *Pinus* and *Juniperus*. Other vicarious species restricted to serpentine are found in Muğla (*F. forbesii* Baker), and in Greece (*F. epirotica* [Turrill ex] Rix) and more commonly in California (*F. falcata* Jepson, *F. liliacea* Lindley, etc.).

Lilium L.

P. H. DAVIS & D. M. HENDERSON

Lilium carnolicum [Bernh. ex] W. Koch, Syn. Fl. Germ. 708 (1837) subsp. **ponticum** (C. Koch) Davis & Henderson, **comb. et stat. nov.**
Syn.: *L. ponticum* C. Koch in Linnaea 22:234 (1849).

Lilium carnolicum [Bernh. ex] W. Koch subsp. **ponticum** (C. Koch) Davis & Henderson var. **artvinense** (Misch.) Davis & Henderson, **comb. et stat. nov.**
Syn.: *L. artvinense* Misch. in Trudy Bot. Mus. Akad. Nauk. 8:191 (1911).

We are indebted to Dr Kit Tan for studies on the indumentum of the perianth and stamens of the whole *Lilium carnolicum* group.

Polygonatum L.

R. R. MILL

Polygonatum hirtum ([Bosc ex] Poiret) Pursh, Fl. Am. Sept. 1:234 (1814).
Syn.: [*Convallaria latifolia* Jacq., Fl. Austr., 3:18, t. 232 (1775) non Miller, Gard. Dict. ed. 8 no. 2 (1768)].
C. hirta [Bosc ex] Poiret in Lam., Encycl. 4:369 (1797).
[*Polygonatum latifolium* (Jacq.) Desf. in Ann. Mus. Hist. Nat. (Paris) 9:50 (1807)].

Because the basionym of *P. latifolium* (Jacq.) Desf. is a later homonym of *Convallaria latifolia* Miller, a synonym of *C. majalis* L. ('lily of the valley'), the unfamiliar and somewhat unsatisfactorily typified name *P. hirtum* has had to be taken up. Its basionym, *Convallaria hirta* [Bosc ex] Poiret, was described from material said to have been sent to Paris from N America in 1789 by Crevecour. This provenance is highly improbable. According to Ownbey in *Ann. Missouri Bot. Gard.* 31:373-413 (1944), no *Polygonatum* with hairy stems and pedicels (as described by Poiret) is known from N America. *P. hirtum* reaches its easternmost limit in European Turkey, where it has been collected by A. Baytop (A1 (E) Kirklareli: 8km from Dereköy to Kirklareli, *A. Baytop* ISTE 24457; A2 (E) Istanbul: Karamandere to Karacaköy, *A. Baytop* ISTE 11618, n.v.).

Scilla L.

E. V. MORDAK

Scilla siberica Haw. in Bot. Reposit. 6: t. 365 (1804) subsp. **armena** (Grossh.) Mordak in Bot. Zhurn. 56:1450 (1971) forma **robusta** Mordak, f. **nov.**

Scapae numero 2-10; *folia* 4-5, usque ad $28 \times 1.1-1.7$ cm.

Type. Turkey A7 Gümüşane: Koesoedagh (Köse Dağ), in silvis acerosis, 1 v 1890, *P. Sintenis* 2124 (holo. LE, iso. LD).

Known also from three other *Sintenis* collections from Gümüşane (*Sintenis* 1889:114, 1894:5468 and 1894:5469b).