

MATERIALS FOR A FLORA OF TURKEY XXXI: COMPOSITAE, II

COMPILED by P. H. DAVIS

ABSTRACT. New Turkish taxa are described in the following genera: *Anacyclus* (1 subspecies and observations on the floral and achenial morphology of this and related genera), *Anthemis* (1 subspecies), *Carduus* (3 subspecies and a note on the status of *C. arabicus* Jacquin ex Murray), *Cirsium* (7 species and 4 subspecies, and comments on the occurrence of anomalous characters in Sect. *Epitrachys*), *Gnaphalium* (the typification of *G. supinum* its differentiation from *G. stewartii* and the occurrence of the latter in Turkey), *Hieracium* (1 species), *Inula* (1 subspecies), *Logfia* (1 species), *Picris* (1 species), *Tanacetum* (2 varieties). New combinations and/or new names are published in the following genera: *Achillea*, *Anthemis*, *Aster*, *Carduus*, *Carlina*, *Centaurea*, *Cicerbita*, *Cirsium*, *Crepis*, *Echinops*, *Erigeron*, *Galatella*, *Helichrysum*, *Hieracium*, *Jurinella*, *Lapsana*, *Leontodon*, *Leucocyclus*, *Logfia*, *Mulgedium*, *Pilosella*, *Prenanthes*, *Rhagadolius*, *Scorzonera*, *Senecio*, *Tanacetum* and *Tripleurospermum*.

INTRODUCTION

This is the second instalment on the Compositae (of which part I has already been published in Notes R.B.G.Edinb.33:207-264, 1974) prepared in conjunction with the accounts of this family written by various authors for the *Flora of Turkey* vol. 5. The paper is divided into two parts: 1) new taxa, 2) new combinations and names, the second part being necessary due to overlap with the preparation of *Flora Europaea* vol. 4 and some delay in the publication of the *Flora of Turkey* vol. 5. Only restricted synonymy is given in part 2; fuller synonymy and explanatory comments will appear in the *Flora*.

This paper brings together the contributions of 20 authors who are wholly responsible for the new names and combinations for which they are cited as authors: D. F. Chamberlain, A. Danin, P. H. Davis, A. J. C. Grierson, I. C. Hedge, J. Holub, A. B. M. Enayet Hossain, A. Huber-Morath, C. Jeffrey, A. Kästner, F. K. Kupicha, H.-W. Lack, J. M. Lamond, V. A. Matthews, H. Meusel, B. S. Parris, P. D. Sell, G. Wagenitz, C. West and Z. Yavin.

Genera and their constituent species are arranged alphabetically within each part. All specimens cited have been examined. Thanks are due to the directors of various herbaria for the loan of material used in the preparation of this paper. The contributions from F. K. Kupicha, V. A. Matthews and B. S. Parris were carried out under a grant from the Science Research Council (United Kingdom) who generously continue to support Edinburgh University's *Flora of Turkey* project.

I: NEW TAXA

Anacyclus

A. J. C. GRIERSON

SOME OBSERVATIONS ON THE FLORAL AND ACHENIAL MORPHOLOGY OF ANACYCLUS, LEUCOCYCLUS AND ANTHEMIS. *Anacyclus* is principally differentiated from *Anthemis* by its antero-posteriorly compressed achenes, of which at least the outer ones are winged at the lateral margins. The floral morphology of *Anacyclus* is also somewhat different from that of *Anthemis* in that, in the majority of species [with the evident exceptions of the N African *A. pyrethrum* (L.) DC. and *A. monanthos* (L.) C. Christ], two of the disc corolla lobes, at least those of the inner flowers, are longer and more erect than the others. This was the basis upon which De Candolle erected his Sect. *Diorthodon* (Prodr. 6:16, 1838).

A few points of morphology appear to have escaped notice and concern the lower parts of the corollas and achenes. In all the radiate species, the tubular part of the ray corolla is persistent on the achenes. This character also occurs in *Anthemis* (e.g. in *A. arenicola*, *A. davisi*) but it is relatively uncommon in that genus. Bentham implied in his description (in Benth. & Hook. f., Gen. Pl. 3:419, 1873) that the achenes of *Anacyclus*, depending upon their position in the capitulum, are somewhat dimorphic due to the variable amount by which the wing is developed. The achenes, however, are more strongly dimorphic, not only on account of the persistent ray corolla bases, but also because the upper part of the wing of the ray achenes are usually differently shaped—sometimes more pointed, sometimes more truncate than those of the disc which tend to be rounded. Secondly, in the majority of species of *Anacyclus* the disc corollas are attached in a slightly subterminal position on the anterior side of the apex of the achene so that the upper part of the wing or corona extends behind it. In *A. valentinus* L., *A. pyrethrum* (L.) DC. and *A. monanthos* (L.) C. Chr.—apparently the only exceptions—the corolla is attached terminally on the achene. These species find a parallel in *Anthemis* sect. *Cota* in which the flowers are attached terminally on the achene as compared with the majority of species of Sect. *Anthemis* and Sect. *Maruta* in which the flowers are subterminal.

The corolla bases of *Anacyclus nigellifolius* Boiss. are apparently unique in that they are expanded into an almost orbicular flattened plate 1.5–2 mm broad which covers the upper part of the achene (though not its broad wings) on the anterior side. The achenes themselves are ecoronate, the wing being merely notched at the apex, in contrast to the achenes of *A. clavatus* and *A. latealatus*, the other two species represented in Turkey, which bear short lacerate, unilateral coronas. The wings both in *A. clavatus* and *A. nigellifolius* are narrower (1–1.75 mm) than in *A. latealatus* (2.5–2.75 mm).

There appear to be ample grounds for maintaining the closely related *Leucocyclus* Boiss. separate from *Anacyclus* not only on account of the vermiform leaves (similar to those of *Santolina*) and narrower wings on the achenes but also because the disc corollas are dorsiventrally compressed and divided into two lobes at the base which clasp the upper part of the achene from either side.

(*Leucocyclus formosus* Boiss. subsp. *amanicus* (Rech. f.) Hub.-Mor. & Grierson—see p. 432).

Anacyclus nigellifolius Boiss. subsp. *orientalis* Grierson, subsp. nov. a subsp. *nigellifolio* caulibus 30–45 cm altis, ramosis, involucri (0·7) 1–1·5 cm latis, ligulis 6–8 mm longis differt.

Turkey. C7 Urfa: Nemrut Da., 1888, *Sintenis* 817 (holo. LD).

Iraq: Sulaimaniya dist.: Pira Magran (Pir Omar Gudrun), 3–5000 ft., vi 1867, *Haussknecht* s.n. (K); Dara (?), viii 1867, *Haussknecht* s.n. (BM).

The specimens that Boissier originally described from the Anti-Lebanon, and similar ones that have later been found in Hatay, are much smaller than those from further east which appear to constitute a distinct subspecies and may be separated as follows:

1. Stems 12–16 cm tall, simple or sparsely branched; involucre less than 1 cm broad; ligules c. 4 mm long subsp. *nigellifolius*
- + Stems 30–45 cm tall, branched from the middle; involucre (0·7–) 1–1·5 cm broad; ligules 6–8 mm long subsp. *orientalis*

Anthemis

A. J. C. GRIERSON

Anthemis melanoloma Trautv. subsp. *trapezuntica* Grierson, subsp. nov. a subspecie typica foliis magis luxuriantibus plerumque tripinnatisectis differt. Turkey. A8 Trabzon: Bayburt to Of, 3 km N of pass top, 2400 m, *Stainton & Henderson* 6179 (holo. E); N slope of Soğanlı Da. above Çaykara, 2000 m, *Davis* 32175; Gümüşane: Kara Kaban Da. (Kara Kapan), 2285 m, *Balls* 562.

A. melanoloma is generally less tall than *A. triumfettii* (L.) All., to which it is allied, and its stems are unbranched. This new subspecies has more luxuriant leaves which tend to be tripinnatisect with more numerous segments and less grey in colour than in the typical variety. In facies, subsp. *trapezuntica* resembles the Caucasian *A. zyghia* Woron. (see Fl. URSS 26: t. 3, f. 1, 1961) but this bears a dense indumentum of soft white hair (subsp. *trapezuntica* is sparsely to moderately pubescent) and has not so far been recorded from Turkey.

Carduus

P. H. DAVIS

Carduus nutans L., Sp. Pl. 821 (1753) subsp. *falcato-incurvus* P. H. Davis, subsp. nov.

Caulis 40–60 cm altus, lobulis ciliato-spinosis (spinis 0·5–3 mm longis) interrupte alatus. *Folia basalia* spinoso-petiolata, profunde pinnatifida, lobis 7–8-binatis in lobulis 2–4 triangulari-lanceolatis fidis, spinis 3–5 mm longis, ut caulis dense vel sparse albo-arachnoidea; folia caulina mediana similia sed sessilia et minus profunde divisa. *Pedunculi* longi, lobulis ciliato-spinulosis interrupte armati, supra haud armati, 1(–2)-cephali. *Involucrum* depressoglobosum, 4–6 cm latum (spinis inclusis). *Phyllaria* angusta, firma, pubescentia et interdum arachnoidea, mediana ad vel infra medium vix constricta,

"appendice" lineari-lanceolata, 12–20 × 1.5–3 mm, deflexa sed laxe falcato-incurva, plana vel margine subincurva, subtus costata, apice in spinam 1–3 mm longam attenuata. *Corollae* purpureae, 25–31 mm longae.

Turkey. A2(E): Arnavoutkeuy, 4 vii 1900, *Aznavour*; Yedikoule to Macrikeuy, 25 vi 1899, *Aznavour*. B1 Balıkesir: Mt. Ida (Kaz Da.), Mt. Szu-Da. (Susuz Da.), *Sintenis* 1883:794 p.p. (LD); nr. Adramyti (Edremit), *Montbret* (W). B2 Uşak: 6.5 km S of Uşak towards Sivasli, 800 m, chalky slopes, *Coode & Jones* 2429 (holo. E).

Distinguished from subsp. *taygeteus* (Boiss. & Heldr.) Hayek by its shorter-spined, laxly falcate-incurved appendages, and usually by the scattered shorter spines on its stems.

subsp. *trojanus* P. H. Davis, **subsp. nov.**

Caulis (12–)20–35 cm altus. *Folia basalia* bipinnatifida, forma et indumento arachnoidea ut in subsp. *taygeteo* (Boiss. & Heldr.) Hayek, spinis 1–5 mm longis; folia caulina fere ad capitulum saepe evoluta, summa angusta, pinnatilobata, spinulosa. *Involucrum* depresso globosum vel hemisphaericum, erectum, 3.5–5 cm latum (in sicco). *Phyllaria* lanceolata, haud vel vix constricta, textura tenuia, minute pubescentia vel subglabra, costata, omnino 15–22 mm longa, erecto-patentia, in spinam 2–3 mm longam attenuata. *Corollae* purpureae, 23–26 mm longae.

Turkey. A2(A) Istanbul: Yakacik, 23 vi 1901, *Aznavour*. B1 Balıkesir: Mt. Ida (Kaz Da.), in Mt. Szu-Szu Dagh (Susuz Da.), *Sintenis* 1883:794 p.p. (holo. BM). B3 Eskişehir: 10 km N of Eskişehir, steppe, *Sorger* 64–10–7 (depauperate).

Close to subsp. *taygeteus* (Boiss. & Heldr.) Hayek in leaf shape but distinguished by its phyllaries that are erecto-patent, thin-textured and shorter spined. In the form of its involucre subsp. *trojanus* approaches *C. onopordioides* Fisch. ex Bieb. (an Irano-Turanian species that only extends as far west as NE Anatolia), but lacks the corymbose inflorescence and distinctive leaves of the latter species.

Carduus pycnocephalus L., Sp. Pl. ed. 2:1151 (1763) subsp. *breviphyllarius* P. H. Davis, **subsp. nov.**

A subsp. *cinereo* (Bieb.) Davis (p. 429) capitulis plerumque subsessilibus et ad apicem caulium fasciculatis, phyllariis medianis ovato-oblongis, ± obtusis, nervo obscuro solum in parte distali $\frac{1}{2}$ evoluta, mucro c. 0.3 mm.

Folia pinnatifida lobis latis triangulari-lobulatis, spinis 0.5–3 mm longis. *Involucrum* ovatum, 10–15 mm longum, glabrum vel sparse arachnoideum; phyllaria 30–35, saltem intima versus apicem purpurascencia.

Turkey. B9 Bitlis: 3 km from Ahlat, ii 1967, *J. G. Ross*. C6 Hatay: above Iskenderun, 300 m, *Davis* 26989. Gaziantep: Dülük Baba, c. 7 km from Gaziantep, 1100 m, *Davis* 28075. Urfa: Birecik, Seitun Bagtsche (olive garden), *Sintenis* 1888:439 p.p. (E). C8 Mardin: 34 km from Midyat to Idil, 900 m, among ruins, *Davis* 42872 (holo. E). Urfa: Ras-el-Ain (Ceylanpinar), *Haussknecht* 575.

Lebanon. Beirut, v 1875, *G. Post*. Anti-Lebanon, above Baalbek, 1150–1300 m, *Bornmüller* 1910:12047.

Palestine. Jerusalem, 800 m, Meyer & Dinsmore 6496. Wadi Themed, Davis 9642. Medabam, 770 m, Meyer & Dinsmore M496.
 Syria. Ruins of Daraa, iv 1855, W. K. Lofthus.
 N Iraq. Qara Chitan, 900 m, Gillet 7697. Dohuk, 1700 m, Guest 1321.
 Iran. Near Malayer, Hamadan/Arak road, 1830 m, Bowles Scholarship Botanical Expedition 1716. Faraman, 22 km E of Kermanshah, P. Watson 419-605. Marivan, 1300 m, M. Jacobs 6560 (with subsp. *albidus*).

Much confused in herbaria with subsp. *albidus* (Bieb.) Kazmi, with which it is partly sympatric; the latter has phyllaries with a strongly nerved lanceolate prolongation, thus resembling the more western subsp. *pycnocephalus* from which it differs only in its smaller arachnoid-tomentose involucre, shorter corollas and usually shorter, weaker leaf spines.

The difficulties involved in classifying the *Carduus pycnocephalus* complex are notorious, difficulties brought about by modifications, the presence of intermediates, and the problem of deciding on the correct application of some early names. Thanks to the kindness of Professor K. H. Rechinger, I have been able to examine the type (a cultivated specimen) of *C. arabicus* Jacquin ex Murray in Vienna, and consider it to be equivalent to *C. marmoratus* Boiss. & Heldr. (described from Greece), the latter being an exceptionally long-spined variant. I can find no evidence that *C. arabicus* originated from Arabia, or even Sinai. Both binomials are antedated by *C. australis* L. fil. (Suppl. 348, 1781), of which I have seen the type in London (Hb. Linn. 966/11). However, by taking a broad view of *C. pycnocephalus* (as I think one must for taxonomic reasons), the correct name for *C. australis* (*C. arabicus*) at subspecific rank becomes *C. pycnocephalus* L. subsp. *marmoratus* (Boiss. & Heldr.) Davis (p. 429), since *marmoratus* provides the earliest epithet available at that rank. Five subspecies of *C. pycnocephalus* will be recognised in the Flora of Turkey: subsp. *pycnocephalus*, subsp. *albidus* (Bieb.) Kazmi (the most widespread), subsp. *marmoratus* (Boiss. & Heldr.) Davis, subsp. *cinereus* (Bieb.) Davis, and subsp. *breviphyllarius* described above. Inferring from Kazmi's map (in Mitt. Bot. Staatssamml. München 5:524, 1964), his usage of the name *C. arabicus* subsp. *arabicus* covers both subsp. *cinereus* (as typified by a Georgian plant) and subsp. *breviphyllarius*, but not the type of *C. arabicus*.

Cirsium

P. H. DAVIS & B. S. PARRIS

Two anomalies have come to light in Turkish members of Section *Epitrachys*: 1) the occurrence of only scabrous hairs in the pappus of one plant of *C. amani* Post (a character diagnostic of *Carduus*) 2) the absence of bristles (setae) on the leaf surface of one specimen of *C. pseudobracteosum* Davis & Parris—the most diagnostic character separating Sect. *Epitrachys* from Sect. *Cirsium*.

Attention is drawn to another feature that distinguishes most of the Turkish species of Sect. *Epitrachys* from Sect. *Cirsium* as broadly defined: the occurrence of a subterminal 'vitta' (often prominent) on the phyllaries in Sect. *Cirsium*; however, this is weakly developed or virtually absent in *C.*

creticum (Lam.) d'Urv., *C. echinus* (Bieb.) Hand.-Mazz. and *C. rhizocephalum* C. A. Mey.; in Sect. *Epitrachys* we have only seen vittae in *C. italicum*. The occasional occurrence of unisexual flowers in *Cirsium* [outwith the subdioecious *C. arvense* (L.) Scop.] deserves further investigation.

As interspecific hybrids are quite frequent in *Cirsium*, there is a danger that these may get described as species. However, we have looked at several putative hybrids and found that they have largely sterile pollen. In most taxa described here as new species or subspecies the pollen, when stained with acetocarmine, appears fertile; this test, however, could not be applied to *C. cassium* (the flowers being immature) and *C. hakkaricum* (the specimen being functionally female).

***Cirsium aduncum* Fisch. & Mey. ex DC. subsp. *bashkalense* Davis & Parris, subsp. nov. (Sect. *Epitrachys*).**

A subsp. *aduncum* base involucri obconica non rotundata differt.

Turkey. B9 Van: 10 km NW of Başkale, 2500 m, hillsides, 18 viii 1954, Davis & O. Polunin, D. 24520 (holo. E; iso. BM); between Hoşap and W foot of Keper Da., 2200 m, D. 24528.

Subsp. *bashkalense* differs from subsp. *aduncum* (Caucasus, Transcaucasia, NW Iran, N Iraq) in having the base of the involucre obconical rather than rounded. However, an illustration in Fl. URSS [28: t.5, fig. 1 (1963)] closely matches subsp. *bashkalense* in involucre shape.

***Cirsium alatum* (Gmelin) Bobrov in Bot. Zhurn. 43:1547 (1968) subsp. *pseudocreticum* Davis & Parris, subsp. nov.**

Herba perennis, saepe ad 1 m alta, caulibus simplicibus vel laxè paniculatis. A subsp. *alatum* capitulis subsessilibus, confertis vel in ramis elongatis racemose dispositis, ramis inflorescentiae spinis longioribus (4-12 mm longis) dense obsitis, involucre minore (13-14 mm longo) differt. Chalk and salt steppe, gypsum hills.

Turkey. (C Anatolia) A4: 10 km S of Çankiri, 670 m, Huber-Morath 17317. B3 Afyon: 8 km from Afyon to Uşak, on road to Banaz, 1010 m, Buttler 15510. B3/4 Eskişehir: Polatlı to Sivrihisar, 1250 m, chalk steppe near roadside, Davis 47761 (holo. E; iso. K). B4 Ankara: d. Çankaya, 3 km S of Gölbaşı, E of Emir Göl. 1000 m, Huber-Morath 15950.

In its slender habit, long spines and the form of its inflorescence the new subspecies bears a superficial resemblance to *C. creticum* (Lam.) d'Urv., but is clearly distinguished from that species by lacking a dense unicellular tomentum on the lower leaf surface, leaf shape (the lamina having a much shorter terminal lobe) and its acute phyllaries which are like those of *C. alatum* subsp. *alatum* (*C. desertorum* Fischer ex Link) with which it shows some intergradation. The two species are both ecologically and geographically separated, although *C. alatum* subsp. *pseudocreticum* occupies an area in Turkey between that of subsp. *alatum* and the more coastal *C. creticum* subsp. *creticum*. *C. alatum* was described and figured from the Lower Don, and Gmelin's figure depicts a plant with thick fusiform roots. In Turkish material the roots (when present) are slenderly cylindrical except in one specimen of subsp. *pseudocreticum* in which they are slightly swollen; the constancy of this character needs investigation.

Cirsium baytopae Davis & Parris, **sp. nov.** (Sect. *Epitrachys*).

C. bulgarico DC. affinis, involucri parviori, phyllariis valde recurvis, medianis versus apicem haud margine angusta membranacea differt.

Herba biennis (?), c. 60–90 cm alta. *Caulis* ramosus, exalatus, sulcatus, parce arachnoideus. *Folia* supra spinoso-strigosa, setis 0.3–1.4 mm longis, ceterum glabra, subtus arachnoidea vel lanata. *Folia basalia* petiolata, oblonga, pinnatisecta, lobis lateralibus fere ad basim $\pm$ aequae bifidis, 4–9-binatis, anguste triangularibus vel lanceolatis; folia mediana et superiora ad basim semiamplexicaula cetera ut basalia; lobis lateralibus et terminalibus in spinam apicalem usque ad 2.5–9 mm longam attenuatis. *Rami* laterales 3–7, 1–6-cephali in corymbos foliis summis involucrialibus 0–3, involucri brevioribus. *Involucrum* erectum, globoso-ovoideum vel late depresso-oblongo-obovoideum, 15–20 mm longum, 17–23 mm latum. *Phyllaria* arachnoidea, 10–11-seriata, valde recurva, ad marginem minute spinulosa, mediana 11–14 mm longa, spina apicali 1.5–2 $\times$ 0.2–0.25 mm inclusa. *Corollae* purpureae, 17–18 mm, limbo 6.4–7.3 mm longo, ad medium inaequaliter quinquefido, tubo angusto 10.3–10.7 mm longo. *Achenia* 5.5–5 $\times$ 2.5 mm, $\pm$ oblonga, pallide brunnea; pappus sordide albus, 9–14 mm longus, setis interioribus in apice scabris et leviter incrassatis, setis ceteris plumosis. *Fl.* Jul.

Turkey. A1(A) Tekirdağ: Gungormez, near Saray, under *Quercus*, 15 vii 1973, *A. Baytop* ISTE 26339 (holo. E; iso. ISTE).

Related to *C. bulgaricum* DC. (commoner in N Anatolia than SE Europe), but differing in its smaller involucre (15–20 mm long instead of 25–35 mm) with all the phyllaries markedly recurved, the median ones lacking a narrow membranous margin towards the apex. An immature specimen from Bulgaria (determined as *C. bulgaricum*) resembles the type of *C. baytopae* in leaf and phyllary characters and may represent the latter species. The type gathering of *C. baytopae* consists of 3 plants, all very similar.

Cirsium boluense Davis & Parris, **sp. nov.** (Sect. *Epitrachys*).

Species affinis *C. ligulari* Boiss. et *C. sintenisii* Freyn, sed phyllariis medianis longioribus et angustioribus, appendice lanceolata margine haud scarioso-fimbriata differt.

Herba biennis (?), c. 50–75 cm alta. *Caulis* superne sparse ramosus, exalatus, sulcatus, parce arachnoideus. *Folia* supra spinoso-strigosa, setis 0.5–1 mm, ceterum glabra; subtus parce arachnoidea. *Folia basalia* petiolata, oblonga, pinnatisecta, lobis lateralibus fere ad basim $\pm$ aequae bifidis, 10–11-binatis, lanceolatis; folia mediana ad basim semi-amplexicaulauriculata, ceterum foliis basalibus similia; folia superiora breviora lobis paucioribus, lobis lateralibus et terminalibus in spinam apicalem usque ad 4–9 mm longam attenuatis. *Rami* laterales 4–9, 1.5–8.5 cm longi, 1-cephali, paniculati, foliis summis involucrialibus 3–6, lineari-lanceolatis sparse spinosis et multispinulosis, involucri aequalibus vel parum longioribus. *Involucrum* erectum, late depresso-hemisphaerico-campanulatum, 30–40 mm longum, 35–45 mm latum. *Phyllaria* parce arachnoidea, 6–7-seriata, mediana erecto-falcata, 33–35 mm longa, inter basin et appendicem apicalem sensim angustata appendice straminea attenuato-lanceolata complanata c. 14.0 mm

longa $\times$ 0.6–1 mm lata, spinulas in quoque margine 5–11 divergentes 0.3–0.5 mm longas ferentia, spina apicali c. 4×0.2 –0.3 mm in pagina interiore haud spinulosa. *Corollae* purpureae, 26–32.5 mm, limbo 13–14 mm ad medium inaequaliter quinquefido, tubo angusto 13–19 mm. *Achenia* 5–5.5 $\times$ 2–2.5 mm, $\pm$ oblonga, pallide brunnea; pappus sordide albus, 24.5–26 mm longus setis interioribus in parte inferiore plumosis, in apice scabris et leviter incrassatis, setis ceteris plumosis. *Fl.* Aug.

Turkey. A3 Bolu: Ala Da., Kartal Kaya [Tepe], 2000 m, 11 viii 1960, *Khan, Prance & Ratcliffe* 459 (holo. E).

Related to *C. ligulare* Boiss. & *C. sintenisii* Freyn (both present in N & SW Anatolia) but differing in having a linear-lanceolate rather than elongate-obovoid appendage, which lacks the scarious-fimbriate margin of these two species. Neither has been collected in the Ala Dağ area.

***Cirsium cassium* Davis & Parris, sp. nov. (Sect. *Epitrachys*).**

Species valde affinis *C. phyllocephalo* Boiss. & Bl. sed aliquantum phyllariis ad basim angustioribus longioribus spina apicali multo longiore differt.

Herba biennis vel perennis (?), quidem 60 cm alta. *Caulis* ramosus, exalatus, purpurascens, sparsim arachnoideus. *Folia* supra sparse spinoso-strigosa (setis 5 vel plus in quoque 2 mm quadro) setis 0.3–1.3 mm longi, cetera utrinque glabra. *Folia basalia* et mediana ignota; folia superiora ad basim semiamplexicauli-auriculata, oblonga, pinnatisecta, lobis lateralibus fere ad basim subaeque bifidis, c. 3–5-binatis, anguste triangularibus; lobis lateralibus et terminalibus in spinam apicalem 3–6 mm longam attenuatis. *Rami* laterales quidem 4, c. 2–6-cephali in corymbos laxos, foliis summis $\pm$ involucribus sparsim spinosis, multispinulosis, c. 7, involucri multo longioribus. *Involucrum* erectum, $\pm$ globosum c. 25 mm longum, 25 mm latum (spinis exclusis). *Phyllaria* glabrata, c. 12-seriata, phyllariis medianis ad basim lanceolatis c. 7–12 mm longis, aliquantum purpurascentia $\pm$ erectopatentia in spinam apicalem c. 3.5–5 mm longam, c. 0.15 mm lata attenuatis. *Corollae*, *achenia* et pappus immaturae. *Fl.* Sept.

Turkey. C5 Hatay: Djebel Akra im Cassius, 1000 m, *Bertschinger* 4321 (holo. in herb. Hub.-Mor.).

Very closely related to *C. phyllocephalum* Boiss. & Bl. (from Lebanon) but differing in having somewhat longer and narrower phyllaries with the base lanceolate (4–6.5 $\times$ 1–1.5 mm) rather than ovate-lanceolate (4–5 $\times$ 1.3–1.5 mm) or the apical spine much longer (4–5 mm rather than 1.5–2 mm). Measurements given are those from the median phyllaries. Known only from the type collection.

***Cirsium cilicicum* Davis & Parris, sp. nov. (Sect. *Cirsium*).**

Species affinitatis incertae, a *C. libanotico* DC., *C. hygrophilo* Boiss. et *C. leucopsidi* DC. spinis phyllariorum medianorum multo longioribus inter alia differt.

Herba perennis, glaberrima, verosimiliter 50–100 cm alta. *Caules* exalati, sulcati, ubique foliosi, infra inflorescentiam simplices. *Folia caulina* venis lateralibus subtus vix prominentibus, mediana oblonga, 8–13 $\times$ 4–6 cm

(spinis exclusis), basi rotundato-amplexicaulia longe spinosa, haud vel ad 0.5-1.5 cm decurrentia, ad medium 4-5-pinnatilobata, lobis primariis 4-5-binatis in lobulis 2-4 triangularibus vel late lanceolatis ad medium fissis, lobulis margine breviter spinulosis apice in spinam validam 6-15 mm longam eburneam attenuatis, sinibus inter lobos spinulosis quadratis vel U-formantibus; folia superiora angustiora ad inflorescentiam pauca longe spinosopinnatifida, summa patentia capitulis 1-2-plo longiora. Capitula erecta c. 5 brevipedunculata in corymbum densum hemisphaericum 6-8 cm latum disposita, infra corymbum terminalem cum vel sine capitulis solitariis axillariibus. Involucrum hemisphaericum, 16-18 mm longum, c. 20 mm latum; phyllaria c. 5-seriata, cornea, minute papillosa, mediano ovato-oblonga superne subciliolata, vitta nigrescenti oblongo-ovata 2 mm longa gibbosa in spinam 5-7 mm longam rectam validam subulatam erecto-patentem abrupte terminata. Corollae 18 mm longae, limbo 10.5 mm longo ad 6 mm inaequaliter fisso, tubo angusto 7.5 mm longo. Achenia 3 mm longa, $\pm$ oblonga, in sectione rhomboidea, pallide grisea, apice oblique truncata; pappus c. 13 mm longus, setis intimis superne paulo incrassatis.

Turkey. C5 Içel: Ad inclytias angustias Gullek Boghas in regione montana, alt. 3800 ped., 1853, Th. Kotschy s.n., Iter Cilicicum in Tauri alpes Bulgar Dag (holo. W).

A distinctive and puzzling plant. It appears to belong to the general affinity of the three species cited in the diagnosis but differs from all of them (and in other characters individually) in the exceptionally long phyllary spines that start abruptly at the truncate tip of the vittae. The only one of these known to grow in the Cilician area is *C. libanoticum* subsp. *lycaonicum* (Boiss. & Heldr.) Davis & Parris from which it differs in leaf and inflorescence. In these two characters *C. cilicicum* resembles some forms of the more western *C. leucopsis*, which is distinguished by its strongly winged stems and hairy leaves. *C. hygrophilum* is Persian, and differs markedly in leaf shape and in having capitula subtended by numerous long-spined involucral leaves. The possibility that the long phyllary spines represent transgressive variation in a hybrid segregate has been considered, but on present distribution this seems unlikely. As achenes and pollen grains appear to be fertile, there seems no reason for not treating *C. cilicicum* as a good species. We are grateful to Dr H. Riedl and Professor K. H. Rechinger for sending us the type sheet on loan from Vienna, where it has lain undetermined since it was collected at the Cilician Gates over 120 years ago.

***Cirsium hakkaricum* Davis & Parris, sp. nov. (Sect. *Epitrachys*).**

Species affinis *C. haussknechtii* Boiss. et *C. lappaceo* (Bieb.) Fischer; a primo involucri basi rotundatis recedit, a secundo lobis foliorum medianorum triangularibus dentatis differt.

Herba perennis multicaulis, c. 60-90 cm alta. Caules crassi, ad apices ramosi, exulati, sulcati, floccoso-arachnoidei. Folia supra sparse spinosostrigosa (setis c. 5 in quoque 2 mm quadro), setis 0.3-1.2 mm longis, sparsissime arachnoidea; subtus arachnoidea. Folia basalia ignota; folia mediana ad basim semiamplexicauli-decurrentia, oblonga, pinnatisecta, venis lateralibus et costa crassis albidis, lobis lateralibus inaequaliter bifidis,

dentatis, c. 4-7-binatis, triangularibus ad anguste triangularibus; lobis lateralibus et terminalibus in spinam apicalem 4-9 mm longam attenuatis, folia superiora breviora, lobis paucioribus, cetera ut in foliis medianis. *Rami* laterales breves, 7-11, multicephali in paniculis racemosis, foliis summis involucribus 3-7, sparsim spinosis, multispinulosis, involucrium $\pm$ aequantibus. *Involucrum* erectum, ovoïdo-cylindraceum vel obovoïdeum, 10-15 mm longum, 10-20 mm latum. *Phyllaria* arachnoidea, c. 8-seriata, $\pm$ erecta; phyllaria mediana 5-8 mm longa, ad basim ovato-lanceolata spina apicali 0.4-0.5 mm longa, 0.1-0.15 mm lata inclusa. *Corollae* roseo-purpureae, c. 14-15 mm longae, limbo 6.5-7 mm longo ad medium inaequaliter quinquefido, tubo angusto 7-8 mm longus. *Achenia* immatura; pappus c. 10 mm longus, setis interioribus in parte superiore scabris versus apicem leviter incrassatis; setis ceteris plumosis. *Fl.* Aug.

Turkey C9/10 Hakkari: Cilo Da. above Diz deresi, 2438 m, rocky slope, 7 viii 1954, Davis & O. Polunin, D. 23953 (holo. E).

Related to both *C. haussknechtii* Boiss. (of E, rarely C Anatolia) and *C. lappaceum* (Bieb.) Fischer of Transcaucasia, NE and adjacent E, Inner and S Anatolia and NW Iran. Differing from the former in having the base of the involucre rounded rather than obconical, and from the latter in having the lobes of the median leaves triangular rather than broadly triangular to lanceolate, with well developed teeth on the distal lobule of the lobes, and usually more heads per stem. The setae on the upper leaf surface of *C. hakkaricum* are more sparse (c. 5 per 2 mm square) than those of *C. haussknechtii* and *C. lappaceum* (usually more than 8 per 2 mm square). Known only from the type collection, the flowers of which appear to be functionally female.

***Cirsium poluninii* Davis & Parris, sp. nov. (Sect. *Epitrachys*).**

C. polycephalo DC. affinis sed involucre depresso-ovoïdeo vel depresso-hemisphaerico, inflorescentia corymbosa et floribus purpureis differt.

Herba biennis (?), 40-80 cm. *Caulis* crassus, ramosus, exalatus, sulcatus, parce arachnoideus. *Folia* supra spinoso-strigosa, setis 0.3-0.9 mm, cetera glabra; subtus parce arachnoidea. *Folia* basalia ignota; folia mediana ad basim semiamplexicauli-auriculata, oblonga, pinnatisecta, lobis lateralibus fere ad basim $\pm$ aequae bifidis, 4-9-binatis, triangularibus vel lanceolatis, folia superiora breviora, lobis paucioribus, cetera ut mediana; lobis lateralibus et terminalibus in spinam apicalem usque ad c. 5 mm longam attenuatis. *Rami* laterales 5-6, 1-2-cephali, in corymbis laxos vel confertos dispositi, foliis summis involucribus involucrium $\pm$ aequantibus. *Involucrum* erectum, depresso-ovoïdeum vel hemisphaericum, 15-20(-25) mm longum, 15-22 mm latum. *Phyllaria* parce arachnoidea, 8-9-seriata, versus apicem plerumque parum recurva (praesertim interiora), spinulas in quoque margine 9-20 divergentes ad 0.2 mm longas ferentia, sensim ad spinam apicalem complanatam attenuata, phyllaria mediana 8-10 mm longa, in pagina interiori, sparse spinulosa, spina apicali c. 0.5 mm longa, 0.15 mm lata inclusa. *Corollae* purpureae, 16.5-22 mm; limbo 8.2-10.2 mm longo ad medium inaequaliter quinquefido, tubo angusto 8.6-11.5 mm longo. *Achenia* c. 4.5×2 mm, $\pm$ oblonga, pallide brunnea; pappus sordide albus, 13.5-16.5

mm longus, setis interioribus in dimidio superiore scabris, versus apicem leviter incrassatis; setis ceteris plumosis. *Fl.* Jul.-Sept.

Turkey. A2(A) Bursa: Ulu Da., 1200 m, *Sorger* 68-52-3. A6 Tokat: Niksar to Karakuş, 1100 m, bank by road, 5 ix 1954, *Davis & O. Polunin*, *D.* 24925 (holo. E).

Related to *C. polycephalum* (occurring in the vicinity of the Bosphorus) and differing from it in having depressed-ovoid to depressed-hemispherical involucre rather than broadly campanulate-obconical to campanulate-obovoid, in corymbs rather than corymbose panicles, and in having purple instead of white flowers. The type collection bears spinules on the inner surface of the phyllaries, but these are very sparse in *Sorger* 68-52-3.

***Cirsium libanoticum* DC., Prodr. 6:647 (1838) subsp. *arachnoideum* Davis & Parris, subsp. nov.**

A subsp. *libanotico* alis caulium angustioribus brevius spinosis (spinis ad 6-10 mm (haud 10-20 mm) longis minus validis), ramis inflorescentiae ascendentibus breviter spinosis sed haud omnino alatis, foliis subtus sparse vel conspicue arachnoideis pilis tenuissimis unicellularibus, involucris basi minus rotundatis spinis phyllariorum brevioribus (0.5-1 mm (haud 1-1.5(-2) mm longis) recedit.

Turkey. B6 Maraş: d. Elbistan, Kapidere, 31 vii 1952, *Davis, Dodds & Çetik*, *D.* 20424 (holo. E; iso. K); Malatya: d. Doğanşehir, Eskiköy, Kurnoz mezresi civari, c. 2000 m, *M. Şahin (Peşmen 2444)*. C5 Adana: 3-4 km N of Pozanti, wooded area west of main road, 2200 m, *Aberdeen Univ. Exped.* M1 930 (atypical).

Iraq. Sikreen, nr Sersang, 900 m, damp bank of irrigation channel, 8 vii 1959, *R. W. Haines* s.n. Haji Omran, on Persian border, mountainside, vii 1957, *A. al-Rawi*. Sersang, semi-shaded streamside, 1070 m, 6 ft. tall, 16 vii 1955, *R. W. Haines* 421. Kani Sawaran range, nr Alana, 1900 m, *A. al-Rawi* 24669. Syria. SE of Damascus, irrigation ditch in desert, 700 m, *Dinsmore* 20302. It may also grow in W Iran.

A variable taxon, specimens of which have been variously determined as *C. apiculatum* DC. (reduced by Boissier to a synonym of *C. libanoticum*), *C. hygrophilum* Boiss. and even *C. palustre* L. It is just possible that some introgression has occurred between subsp. *arachnoideum* (or even subsp. *lycaonicum*) and *C. creticum* (Lam.) d'Urv. *sensu lato*, although the latter species is now rare in the area. *C. libanoticum* subsp. *libanoticum* is apparently confined to the Lebanon, Anti-Lebanon, Syria (Homs) and possibly Iran, being largely replaced in the Taurus by subsp. *lycaonicum* (Boiss. & Heldr.) Davis & Parris (p. 430), and further east by subsp. *arachnoideum*.

***Cirsium pseudobracteosum* Davis & Parris, sp. nov. (Sect. *Epitrachys*).**

C. bracteosi DC. affinis sed foliis minus profunde pinnatisectis lobis magis numerosis dentatis differt.

Herba perennis multicaulis, c. 50-90 cm alta. *Caules* ramosi, exalati, glabri, sulcati. *Folia* supra sparsissime spinoso-strigosa, setis 0.4-1.4 mm

longis raro absentibus cetera utrinque glabra; venis lateralibus subtus albidus prominentibus. *Folia basalia* oblonga, pinnatifida, vel pinnatisecta, lobis lateralibus inaequaliter bifidis, dentatis, 5-11-binatis, triangularibus, lobis lateralibus et terminalibus in spinam apicalem 5-13 mm longam attenuatis; folia mediana et superiora ad basim semiamplexicauli-auriculata, folia superiora lobis paucioribus, cetera ut folia basalia. *Rami laterales* 2-6, 1-6-cephali in paniculis foliis summis $\pm$ involucralibus, 3-7, sparsim spinosis, plerumque involucri multo longioribus. *Involucrum* erectum, ovoideum vel lata obovoideum, 15-20 mm longum, 15-35 mm latum. *Phyllaria* sparsim arachnoidea, 5-8-seriata, $\pm$ erecta; phyllaria mediana 8-14 mm longa, spina apicali 1-3 mm longa 0.2-0.4 mm lata inclusa. *Corollae* roseo-purpureae vel purpureae, 12.6-14.9 mm longae, limbo 4.6-6.4 mm longo ad medium inaequaliter quinquefido, tubo angusto 7-8.6 mm longo. *Achenia* 5-5.5 $\times$ 2-2.5 mm, $\pm$ oblonga, pallide brunnea striis atrobrunneis; pappus sordide albus, setis interioribus apicem versus scabris et leviter incrassatis; setis ceteris plumosis. *Fl.* Jul.-Aug.

Turkey. B9 Van: Şatak, Kavuşahap Da. by stream, 2743 m, 31 vii 1954, Davis & O. Polunin, D. 23050 (holo. E); steppe between Gevaş and Van, Hub.-Mor. 11268 (setae lacking). Bitlis: distr. Kotum, Karz Da. above Kamer, 2300 m, D. 24569. C9/10 Hakkari: Cilo Da. in gorge between Cilo Y. and Diz deresi, 2438 m, D. 24275.

Iraq. Road between Bardanas and Qandil Ra., on roadside, 2500 m, *A. al-Rawi* BAG 24613. Ser Kurawa, *Astragalus* zone, overgrazed, metamorphic rock, 2800 m, Gillett BAG 9769.

Iran. Ad fontem Dscheschme-Pias in m. Kuh-Daēna, 3 viii 1842, Kotschy 784.

C. pseudobracteosum has for long been confused with *C. bracteosum* but differs from it in having leaves less deeply pinnatisect, with more numerous lobes which are toothed at the margin, and narrower sinuses between the lobes. Several of the specimens examined bore only female flowers.

Cirsium simplex C. A. Meyer, Verz. Pfl. Cauc. 70 (1831) subsp. *satdaghense* Davis & Parris, subsp. nov.

Planta floribus albidis ut in subsp. *armeno* (DC.) Petrak, sed foliis basalibus et caulinis ad $\frac{3}{4}$ pinnatifidis, sinubus quadratis, lobis lanceolatis basi breviter 1-lobatis lateraliter spinoso-dentatis, spinis terminalibus loborum 5-12 mm longis validius armatis recedit.

Turkey. C10 Hakkari: Sat Da. (above Yüksekova), 2800 m, wet spring, 27 viii 1967, Duncan & Tait 52 (holo. E).

A gathering from Ararat (Büyük Ağrı Da., 2400 m, B. V. D. Post 2143) resembles the new taxon in its long stoutish spines, but the leaves are lobed only to halfway, with narrower sinuses; it is more or less intermediate between the Sat Da. plant and subsp. *armenum* (DC.) Petrak in which the leaves are subentire to sinuate-lobed to one third, and the spines usually so weak as to be almost pectinate; the purple-flowered subsp. *simplex* seems to be confined to Caucasia, and except for flower colour closely resembles subsp. *armenum*.

Gnaphalium

A. J. C. GRIERSON

THE TYPIFICATION OF *GNAPHALIUM SUPINUM*. There are three specimens of the species known as *Gnaphalium supinum* in the Linnean Herbarium: the first, 989.81, is inscribed "*procumbens varietas an praecedentis*" in Linnaeus' handwriting to which J. E. Smith has added "i.e. *sylvatici*" and, above this, "*supinum*"; the second, 989.82 is without inscription and was pinned to the previous sheet; lastly 989.83 bears the word "*procumbens*" in Linnaeus' hand and came to him from Scopoli.

Smith, then, was responsible for associating the epithet "*supinum*" with these sheets for, whatever his intentions, Linnaeus never published the name *Gnaphalium procumbens* (though Philippi in 1895 did so for a Chilean species).

From the literature, both pre- and post-Linnaean authors appear to have been confused about this species but it is necessary first to consult Linnaeus' description of it in *Syst. Nat.* ed. 12,3:234 (1768):

"*supinum* Gnaphalium caule herbaceo simplicissimo procumbente, floribus sparsis.

Gnaphalium foliis angustissimis, caule non ramoso, spica brevi nuda subfusca terminato. *Hall. helv.* 700 act. 6 p. 109 n. 77.

Gnaphalium supinum, lavandulae folio. *Bocc. Mus.* 107 t. 85.

Gnaphalium oblongo folio, *Scheuch. Alp.* 2. p. 134.

Habitat in Alpibus Helveticis, Italicis.

Simillimum Gnaph. sylvatico sed humile et caule dum floret decumbente."

Examining the diagnosis, Linnaeus was correct in describing the stem of this species as herbaceous, always simple and bearing few flowers, i.e. capitula, (1-3(-8)), but not in saying that the stem is procumbent for the habit is quite erect. And then, in his final comparative sentence, he states that it is similar to *G. sylvaticum*, which it is in its spicate arrangement of capitula and brownish phyllaries, but again he emphasises the decumbent stem. Obviously Linnaeus took his epithet from Boccone and one must, especially in the absence of specimens bearing the correct name in the Linnean Herbarium, examine the illustration that he cited. Boccone's *Museo di piante rare della Sicilia, Malta, Corsica, Italia Piemonte & Germania* t.85 (1697) shows a plant (labelled merely "*Gnaphalium supinum*") with decumbent stems and dense corymbs of capitula. This can only be identified with *G. uliginosum* L., a conclusion that is borne out by Boccone's remark (p. 107) that the plant was found within three miles of Pisa—scarcely a montane habitat to which the species usually known as *G. supinum* is restricted.

One must next examine the other synonyms cited by Linnaeus taking the older one first: J. J. Scheuchzer's *Ouresiphoides* (mountain-haunting) *helveticus sive Itineris alpini* p. 61 (1708) and in the complete edition of his journeys p. 134 (1723) reads "41 *Gnaphalium oblongo folio* Ger. emac. [i.e. Gerard's Herball] *Gnaphalium supinum oblongo folio* Park. quibus jungit Rajus [Ray] *Gnaphalium majus lato oblongo folio* C.B. [C. Bauhin] in vallibus Alpibus siccioribus passim crescit. Mihi videtur esse *Helichrysum alpinum minimum capillaceo folio* Tourn".

Apart from the addition of the word "supinum" to the name, Parkinson's account of this plant (*Theatrum Botanicum* 686 fig. 5, 1640) reads very like that of Gerard (*Herball* Ed. 2, 643 fig. 13, 1633) and the text figure is certainly a copy. The latter said that his plant is the same as Clusius' "*Gnaphalium Plateau 2*" and, when one consults L'Escluse's *Rariorum Plantarum Historia* (p. 329, fig. 1601) the illustration is again the same, and, although in Latin, the text has a familiar ring to it.

Neither Parkinson's *Theatrum* nor Gerard's *Herball* were in Linnaeus' own library but Clusius' *Historia* was. Linnaeus, however, made no reference to *G. Plateau 2* in his *Species Plantarum* (1753) although he cited other *Gnaphaliums* from this work among his synonymy. Ray (in *Historia Plantarum* 1:296, 1686) added the synonym *G. majus lato oblongo folio* taken from C. Bauhin's *Pinax* (p. 263, 1623). Again Ray's text is almost word for word that of Clusius but Ray added a habitat note "*Desertis quibusdam & siccioribus colliculis nascentem aliquando observabam*".

The plant to which the above authors were referring is clearly not the montane *G. supinum* but must be *G. luteo-album* L. and, certainly, Linnaeus cited Bauhin's polynominal among the synonymy of this species.

Although Scheuchzer's herbarium does not contain any specimen inscribed *Gnaphalium oblongo folio*, there is a sheet of *G. supinum* labelled "*Elichrysium alpinum minimum et humillimum incanum lavandulae folio Mihi*" and as synonyms "*Gnaphalium umbellatum minimum* I.B 3: 162" [i.e. J. Bauhin's *Historia Plantarum Universalis* 1651—it is impossible to identify this illustration] and "*Gnaphalium supinum lavandulae folio* Bocc. Mus. 107". Scheuchzer usually copied very carefully into his *Itinera* the polynomials and synonyms that he used in his herbarium but not in this case. Generally, too, he prepared drawings immediately after making his field excursions and added notes that he later used when writing the *Itinera*, but none of these exist in relation to this species. It is interesting to note that Scheuchzer later treated *Gnaphalium oblongo folio* as a synonym under *Elichrysium alpinum minimum capillaceo folio* Tourn. in his unpublished catalogue, *Historia Plantarum Helveticarum* (vol. 3 Ms Z viii 22b p. 60r).

The reference to Haller's *Enumeratio Methodica Stirpium Helvetiae Indigenarum* 2:700 (1742) which Linnaeus cited, itself gives five synonyms, although three of them are doubtful ones:

An *Gnaphalium supinum lavandulaefolio* Bocc. 107 t.85? Non recedit

An *Elichrysium alpinum minimum, capillaceofolio* I.R.H.? (i.e. Tournefort's

Institutiones rei herbariae 454, 1700).

Gnaphalium oblongo folio Scheuch. It. 2. p. 134.

Gnaphalium umbellatum minimum Eiusd. It. 4 p. 335, ex loco natali, nomen longissime recedit. This name originated with Bauhin—see above.

Helichrysium spicatum minimum Vaill. p. 389.

Haller also lists the following localities: "In Gotthardo M. & in Furcae M. descensu ad Vallesios. Ibidem Scheuch. In Speluga I. Gesnerus". The situation in Haller's herbarium is similar to that obtaining in Scheuchzer's, for, although it contains five sheets of this species, none of them bears the polynomial which Linnaeus cited. In his *Historia Stirpium Indigenarum Helvetiae Inchoata* 65 (1768), Haller transferred both Boccone's and Scheuchzer's polynomials and placed them as synonyms of his *Filago caule*

simplicissimo spica pauciflora terminato. This, as he cited the Linnaean diagnosis for *G. alpinum* L. as a synonym, must now be equated with *Antennaria dioica* (L.) Gaertn.

The Tournefortian synonym, although he queried it, is correct if we believe that Haller was referring to *G. supinum* because the specimen bearing the cited polynomial in Tournefort's herbarium is certainly this species.

Gnaphalium is undoubtedly a "difficult" genus and it is interesting to observe how other botanists at or immediately after Linnaeus' time tackled this species. Scopoli described *G. fuscum* (Fl. Carn. ed 2, 2:152, t.57, 1772) and from his illustration it is obviously the plant that one knows as *G. supinum*. He concluded his description by remarking "Quo referam, nescio, distinctum video ab omni alia tam indigena, quam a Linnaeo proposita specie; faciant de hoc alii, quod voluerit, ego novum nomen dedi." (I do not know to which this should be referred, it seems distinct from all other indigenous ones and from those which Linnaeus has proposed: let others make of it what they will, I have given it a new name).

Scopoli was one of Linnaeus' correspondents and possibly the specimen in the Linnean herbarium from Scopoli was sent seeking advice about its identity. Unfortunately, none of Scopoli's letters among the collections at the Linnean Society of London contain any mention of a *Gnaphalium*.

Villars (Hist. Pl. Dauph. 3:192, 1789), concluding the description of *G. supinum* for this work, remarked on the doubts that existed vis-à-vis this species and *G. sylvaticum* but, more especially, *G. uliginosum*.

What can one conclude about the typification of *G. supinum*? Obviously Linnaeus took the epithet from a mistaken source and was only partly correct in his description of the characters of this species; the rest relates to Boccone's illustration. It seems better, however, to maintain this name, which has been widely used, rather than to reject it and take up another that is scarcely known, i.e. *G. fuscum* Scop., in its place.

Accepting that stability of nomenclature is a worthwhile objective, the following points must be borne in mind:

- (a), In 1768 Linnaeus was unlikely to describe a new *Gnaphalium* merely by reference to synonyms that had been in existence prior to 1753.
- (b), He must have had reason for going back to these synonyms and probably that reason was a plant specimen.
- (c), The inscription on the sheet No. 989.81 in the Linnean Herbarium "*procumbens varietas an praecedentis*" parallels his published note "*Simillimum Gnaph. sylvatico . . .*" and is just the sort of remark that one would write on a specimen before finally deciding that it represented a new species.

If one agrees with these deductions then (c) provides a sufficiently sound reason for choosing Sheet No. 989.81 as lectotype of *G. supinum*. The only possible alternative would be to select one of Haller's specimens but they are linked to the Linnean description only by their geographical localities and Linnaeus himself never examined the specimens.

Whatever possessed Linnaeus to describe the plant as procumbent is baffling and the fact that he did so can only be regarded as a careless error for, in all the editions of his *Philosophia Botanica* (which effectively was the botanical dictionary of the day) that were published during his lifetime, the

word was defined as follows: "procumbens, horizontaliter supra terram". Granting that he first erroneously applied the term procumbent to his plant, supine might readily be accepted as a near synonym for it and, possibly, the fact that there already was a "*Gnaphalium supinum*" drew Linnaeus into identifying his plant with Boccone's and accepting the latter's epithet.

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Gnaphalium supinum* and *G. stewartii

It has escaped notice that *G. stewartii* Clarke, which was described from the West Himalayan region and is also found in Afghanistan, is native in E and NE Turkey where it has generally been confused with *G. supinum* L. The critical means of separating the two species were recently set out by Drury (New Zealand J. Bot. 8: 222-248, table 1, 1970) but several other points of difference (some of them requiring a low-power microscope for observation) have emerged as the following table shows:

<i>G. stewartii</i>	<i>G. supinum</i>
Flowering stems up to 15 cm tall bearing a spike of 10-15 capitula.	Flowering stems 1-3(-8) cm tall bearing 1-3 capitula (up to 8 in Europe).
Female corollas narrowly tubular and minutely lobed at the apex, lobes c. 15 μ m long.	Female corollas widening slightly towards the apex, lobes c. 200 μ m long.
Achenes c. 1.5 mm long, sparsely covered with short obtuse hairs.	Achenes c. 1.35 mm long, more copiously covered with elongate acute hairs.
Pappus hairs noticeably ciliate at the base.	Pappus hairs not or only slightly ciliate at the base.

In Turkey the geographical areas of the two species overlap to some extent in Gümüşane as well as in Rize where both species may occur on the same mountain: İkizdere, Çarankaya yayla, Davis 20946 is *G. stewartii* (at least at E but at BM it is *G. supinum*) and Davis 20969, from the same locality, is *G. supinum*. In general, however, *G. supinum* has a more northerly and westerly distribution (it has one station on A2A Bursa, Ulu Da) than *G. stewartii* which is centred further south and east (B5 Kayseri, B8 Erzurum, B9 Bitlis).

A third species, *G. leucopilinum* Schott & Kotschy from S Anatolia (C5 & C10), superficially resembles *G. supinum* but has short spathulate leaves (they are longer and linear-oblongate in *G. supinum*) and has short obtuse achenial hairs.

Hieracium

A. HUBER-MORATH

***Hieracium beypazariense* Huber-Morath, sp. nov.**

Caulis ad 60 cm altus, pilis simplicibus eglanduliferis numerosis vel densis longis pallidis vestitus. *Folia* plus minusve glauca, pilis simplicibus eglanduliferis numerosis vel densis longis pallidis vestita; basalia mox emarcida; caulina 8-10, 30-80 × 8-20 mm, oblonga, lanceolato-oblonga vel oblanceolato-oblonga, obtusa vel acuta, integra vel remote denticulata, inferiora in petiolum alatum attenuata, superiora sessilia semiamplexicaulia. *Capitula* 10-23; pedunculi ad 35 mm longi, pilis stellatis sparsis, pilis simplicibus eglanduliferis numerosis longis pallidis obsiti. *Involucrum* 11-13 mm; squamae late lineari-lanceolatae, plus minusve obtusae, pilis stellatis sparsis, pilis simplicibus eglanduliferis numerosis longis pallidis, pilis glanduliferis minutis paucis vel numerosis vestitae. *Ligulae* glabrae. *Styli* obscuri. *Cypselae* immaturae, rubro-brunneae.

Turkey. A3 Ankara: Beypazari, Kapakli-Kindirali arasi, *Pinus silvestris* forest, c. 1550 m, 21 vii 1972, Y. Akman 1028 (holo. in hb. Hub.-Mor.; iso. ANK); Bolu: Ala Da., Kartal Kaya, 2000 m, 11 viii 1960, Khan, Prance & Ratcliffe 489 (E).

A very distinct species in Series *Italica* (Fries) P. D. Sell & C. West.

Inula

A. J. C. GRIERSON

***Inula thapsoides* (Bieb. ex Willd.) Spr. subsp. australis Grierson, subsp. nov.**
a subspecie typica caulibus non vel parce alatis, foliis breviter decurrentibus, leviter pilosis, et subtus venis prominentibus differt.

Turkey. B8 Bitlis: Kambos Da., 1800 m, McNeill 636. B9 Van: Gevaş, 1800 m, Davis & O. Polunin 22670 (holo. E). Bitlis: S shore of Van Gölü between Avata and Garzit, 1640 m, Huber-Morath 11308; Kotum, Karz Da., 2200 m, D. 24573. C10 Hakkari: Zab Gorge near Kalolans, D. 23867.

Endemic? Possibly also in NW Persia but specimens from further east in Khorassan and Mazanderan have strongly decurrent leaves.

Logfia

A. J. C. GRIERSON

***Logfia davisii* [Holub ex] Grierson, sp. nov.**

Affinis *L. arvensi* (L.) Holub sed caulibus plerumque simplicibus capitulis magis numerosis subglobosis, disco nudo receptaculi multo parviore, paleis magis saccatis, floribus interioribus feminis 0-2 (haud 15-18), pappo brevioribus differt.

Caulis 10-25 cm, erectus, plerumque simplex, dimidio superiore glomerulis capitulorum praeditus. *Indumentum* patenter lanatum, griseo-virescens. *Folia* 8-15 mm longa, 1-2 mm lata, lineari-lanceolata, mox emarcida; folia

subtendentia ovato-lanceolata, virescentia, 8-9 mm longa, 3.5 mm lata. *Capitula* c. 5 mm longa, 4.5 mm lata, globoso-ovoidea, superne valde angustata, virescenti-alba, 10-16 in glomerulos 10-15 mm latos conferta. *Paleae* medianae 3-4 mm longae, 1.3-1.5 mm latae, sub anthesi conduplicatae, ad basin manifeste saccatae, achenium occultantes, deinde patenter stellatae, lanatae cuspidate glabra hyalina 0.2 mm longa exclusa; pars centralis (discus) receptaculi minuta, solum 4-5 floribus provisa. *Flores* exteriores femini 7-8 in paleis conduplicatis; flores interiores 0.2 femini, 2.7 mm; flores centrales c. 4 hermaphroditi, 2-2.5 mm. *Achenia* 0.9-1 mm longa, olivacea vel pallide brunnea, ea disci receptaculi sparsim papillosa. *Pappus* c. 2 mm longus. *Floret* Mai-Jul. Dry open places, hillsides, pastures, 500-1800 m. Turkey. B7 Diyarbakir: Maden to Ergani, 1000 m, *Davis* 29066. C6 Adana: between Karakilisse and Guyuk Sou (Göksu), 10 vii 1906, *B. Post.* C7 Urfa: Nimrud Da., *Sinten* 1888:797. C10 Hakkari: 32 km from Yüksekova to Şemdinli, 1750 m, meadows, 15 vi 1966, *Davis* 45080 (holo. E); Zap river, 2 km below Yüksekova turning, *Trelawny* 1321. Palestine. Woods above 'Ain Fit, 500 m, *Meyers & Dinsmore* 1784.

As a latin description from Dr Holub has not been forthcoming in time for publication, the above is with slight modifications a latinization of his English description submitted for the *Flora of Turkey*.

Picris

H.-W. LACK*

Picris cyprica Lack, sp. nov.

Differt a *P. pauciflora* Willd. pedunculis infra capitulum non constrictis, acheniis minoribus, sculptura acheniorum dissimili; differt a *P. integrifolia* Desf. acheniis minoribus, characteribus indumenti (pili ancoriformes tri- et quadri-hamati absentes), forma et sculptura acheniorum dissimili.

Annua, 10-70 cm alta. *Indumentum* ex pilis ancoriformibus bihamatis consistens. *Caules* erecti vel ascendentes, raro decumbentes, a basi paucivel multi-ramosi, hispidi. *Folia basalia* florendi tempore iam desiccata, 2-10 cm $\times$ 5-20 mm, anguste oblonga vel obovata, integra vel sinuata, utrinque hispida. *Folia caulina* inferiora similia, sed minora, folia superiora minuta, integra, anguste obovata, indumentum subtus densius. *Pedunculi* in statu florescentiae semper graciles, in statu fructificationis interdum incrassati, infra capitulum non constricti, hispidi vel hispidissimi. *Involucrum* 6-10 mm longum, 6-10 mm latum (fructifer 8-11 mm latum). *Ligulae* involucri duplo longiores. *Phyllaria exteriora* squamiformia, interiora 6-10 $\times$ 2-3 mm, e basi ovata in apicem angustata, margine membranaceo, praesertim secus nervum medianum prominentem et dilatatum hispidissima. *Receptaculum* laeve. *Capitulum* homocarpum. *Achenia* 2-3.5 mm longa, castanea, fusiformes, semper valde curvata, transverse rugosa, hilum et apex minusculus. *Pappus* plumosus, achenio duplo vel triplo longior, facillime annulatim deciduus. Turkey. C3 Antalya: between Belek and Serik, *Tengwall* 563 (K); Manavgat, Manavgat-Akseki, 22 km nach Manavgat, *Huber-Morath* 17797; Antalya, Alanya-Gazipaşa, am Meer, 26 km östlich Alanya, bei Keşerly Köy, *Huber-*

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Morath 10055. C4 İcel: near Anamur, 1872, *Péronin* 48 (holo. PRC; iso. BM, K, P). Cyprus. In M. Pentedactylos, 1880, *Sintenis & Rigo* 292 (BR p.p., W). Cap St. André, *Sintenis & Rigo* 292 (K, P). Ad pagum Prodromo, 1862, *Kotschy* 728 (W). Lissos, *Haradjian* 895 (K). Kyrenia range, 9 miles W end of forest road, *Atherton* 140 (K). Above Kyrenia pass, *Casey* 1312 (K). Limassol, collines de Polemidia, *Deflers* 705, MPU.

Tanacetum

A. J. C. GRIERSON

Tanacetum argenteum (Lam.) Willd. subsp. *canum* (C. Koch) Grierson, comb. et stat. nov.

Syn.: *Hemipappus canus* C. Koch in *Linnaea* 24:341 (1851).

T. argenteum subsp. *canum* var. *pumilum* Grierson, var. nov. a varietate typica ramis caudicium brevibus, densius caespitosis, pedunculis 2-6(-20) cm altis, capitula 1-5(-10) ferentibus differt.

Turkey. C3 Antalya: d. Gebiz, Bozburun Da., 2100 m, *Davis & Karamanoğlu*, D. 15682 (holo. E); d. Gebiz, Bozburun Da. at Tozlu Cukur Yayla, 1900 m, D. 15529; *ibid.*, D. 15589.

Another specimen, D. 14134 (C3 Antalya, Takhtali Da., 2200-2300 m) with stems 10-20 cm tall and 3-10 capitula in each corymb is possibly intermediate between this variety and var. *canum*.

Tanacetum chiliophyllum (Fisch. & Mey.) Schultz Bip. var. *monocephalum* Grierson, var. nov. a varietate typica foliis angustioribus, ambitu 1-1.75 cm latis, capitulis solitariis vel paucis (usque ad 3) differt.

Turkey. B8 Van: 24 km from Gürpınar (Havasar) to Hoşap, 2000 m, *Davis* 44703 (holo. E). B9 Van: Başkale, İspiriz Da., 3200 m, D. 23771. Bro Van: Özalp to Saray, 2250 m, D. 44295; Ağrı: 3 km E of Doğubayazıt, 1750 m, D. 43914.

This variety has been confused with *T. uniflorum*, a taller, more robust plant, the leaves of which have fewer and more distant primary segments and acute secondary ones (those of var. *monocephalum* are quite obtuse). The capitula of *T. uniflorum* are larger (c. 1 cm diam.) and have longer ligules (0.75-1 cm long).

II: NEW COMBINATIONS AND NAMES

Achillea aleppica DC. subsp. *densa* (Blakelock) Hub.-Mor., comb. et stat. nov.
Syn.: *Achillea densa* Blakelock in *Kew Bull.* 1949:41 (1950).

A. aleppica DC. subsp. *zederbaueri* (Hayek) Hub.-Mor., comb. et stat. nov.
Syn.: *Achillea zederbaueri* Hayek apud *Penther & Zederbauer* in *Ann. Nat. Hofmus. Wien* 20:423 (1907).

A. nobilis L. subsp. *densissima* (O. Schwarz ex Bässler) Hub.-Mor., comb. et stat. nov.

Syn.: *Achillea densissima* O. Schwarz ex Bässler in *Feddes Rep.* 68:151 (1963).

Anthemis anthemiformis (Freyn & Sint.) Grierson, **comb. nov.**

Syn.: *Achillea anthemoides* Freyn & Sint. in Bull. Herb. Boiss. 3:346 (1895) non Willd. (1803); *Achillea anthemiformis* Freyn & Sint. in Bull. Herb. Boiss. 5:626 (1897); *Anthemis anthemoides* (Freyn & Sint.) Heimerl in Öst. Bot. Zeitschr. 71:210 (1922).

A. arenicola Boiss. var. **tenuisecta** Grierson, **var. nov.**

Syn.: *Anthemis tenuisecta* Boiss., Fl. Or. 3:301 (1875) non Ball (1873).

A. arenicola Boiss. var. **urosperma** (Eig) Yavin, **comb. et stat. nov.**

Syn.: *Anthemis urosperma* Eig in Pal. J. Bot., Jer. ser. 1:169 (1938).

A. cretica L. The typification of this species was discussed by Grierson in Notes R.B.G. Edinb. 33:212 (1974).

A. cretica L. subsp. **absinthifolia** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Achillea absinthifolia* Boiss., Diagn. ser. 1(4):8 (1844) et ser. 2(3):25 (1856).

A. cretica L. subsp. **anatolica** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis anatolica* Boiss., Diagn. ser. 1(11):10 (1849).

A. cretica L. subsp. **argaea** (Boiss. & Bal.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis argaea* Boiss. & Bal. in Boiss., Diagn. ser. 2(6):97 (1859).

A. cretica L. subsp. **candicans** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis candicans* Boiss., Fl. Or. 3:293 (1875).

A. cretica L. subsp. **cassia** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis cassia* Boiss., Diagn. ser. 1(11):10 (1849).

A. cretica L. subsp. **iberica** (Bieb.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis iberica* Bieb., Fl. Taur.-Cauc. 2:328 (1808).

A. cretica L. subsp. **leucanthemoides** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis leucanthemoides* Boiss., Diagn. ser. 1(4):9 (1844).

A. cretica L. subsp. **pontica** (Willd.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis pontica* Willd., Sp. Pl. 3:2184 (1803) non Sm. (1813).

A. cretica L. subsp. **tenuiloba** (DC.) Grierson, **comb. et stat. nov.**

Syn.: *Lyonnetia tenuiloba* DC., Prodr. 6:15 (1838).

A. cretica L. subsp. **umbilicata** (Boiss. & Huet) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis umbilicata* Boiss. & Huet in Boiss., Diagn. ser. 2(3):24 (1856). See p. 435 for two further combinations.

A. kotschyana Boiss. var. **discoidea** (Bornm.) Grierson, **stat. nov.**

Syn.: *Anthemis kotschyana* Boiss. f. *discoidea* Bornm. in Feddes Rep. Beih. 89:331 (1944).

A. pauciloba Boiss. var. **microstephana** (Eig) Grierson, **comb. nov.**

Syn.: *Anthemis argentea* Eig var. *microstephana* Eig in Pal. J. Bot., Jer. ser. 1:193 (1938).

A. pauciloba Boiss. var. **sieheana** (Eig) Grierson, **comb. nov.**

Syn.: *Anthemis cassia* Boiss. var. *sieheana* Eig in Pal. J. Bot., Jer. ser. 1:191 (1938).

A. tinctoria L. var. **euxina** (Boiss.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis euxina* Boiss., Fl. Or. 3:282 (1875).

A. tomentosa L. subsp. **scopulorum** (Rech. f.) Grierson, **comb. et stat. nov.**

Syn.: *Anthemis scopulorum* Rech. f. in Öst. Bot. Zeitschr. 85:61 (1936).

Aster amellus L. subsp. **ibericus** (Stev.) Grierson, **comb. et stat. nov.**

Syn.: *Aster ibericus* Stev. in Bieb., Fl. Taur.-Cauc. 2:311 (1808).

- Carduus olympicus*** Boiss. subsp. ***hypoleucus*** (Bornm.) Davis, **comb. nov.**
Syn.: *Carduus hypoleucus* Bornm. in Beih. Bot. Centr. 20(2):161 (1906).
Carduus cronius Boiss. & Heldr. subsp. *hypoleucus* (Bornm.) Kazmi
in Mitt. Bot. Staatssamml. München 5:380 (1964).
- C. onopordioides*** Fisch. ex Bieb. subsp. ***turcicus*** (Kazmi) Davis, **comb. et stat. nov.**
Syn.: *Carduus turcicus* Kazmi in Mitt. Bot. Staatssamml. München 5:365 (1964).
- C. pycnocephalus*** L. subsp. ***cinereus*** (Bieb.) Davis, **comb. nov.**
Syn.: *Carduus cinereus* Bieb., Fl. Taur.-Cauc. 2:269 (1808).
Carduus arabicus Jacq. ex Murray subsp. *cinereus* (Bieb.) Kazmi in
Mitt. Bot. Staatssamml. München 5:451 (1964).
- C. pycnocephalus*** L. subsp. ***marmoratus*** (Boiss. & Heldr.) Davis, **comb. nov.**
Syn.: *Carduus marmoratus* Boiss. & Heldr. in Boiss., Diagn. ser. 2(3):43 (1856).
Carduus arabicus Jacq. ex Murray subsp. *marmoratus* (Boiss. & Heldr.)
Kazmi in Mitt. Bot. Staatssamml. München 5:450 (1964).

For the treatment of *C. pycnocephalus* (including *C. arabicus*), see observations under *Carduus pycnocephalus* subsp. *breviphyllarius* P. H. Davis (p. 413).

- Carlina involucrata*** Poiret subsp. ***libanotica*** (Boiss.) Meusel & Kästner, **comb. et stat. nov.**

Syn.: *Carlina libanotica* Boiss., Diagn. ser. 1(10):95 (1849).

- C. oligocephala*** Boiss. & Kotschy subsp. ***pallescens*** (Wettst.) Meusel & Kästner, **comb. et stat. nov.**

Syn.: *Carlina pallescens* Wettst. in Sitz.-Ber. Akad. Wiss. Wien 98:371 (1890).

- Centaurea antiochia*** Boiss. var. ***praealta*** (Boiss. & Bal.) Wagenitz, **comb. et stat. nov.**

Syn.: *Centaurea praealta* Boiss. & Bal. in Boiss., Diagn. ser. 2(5):112 (1856).

- C. lactucifolia*** Boiss. var. ***halkensis*** (Fors.-Maj. & Barbey) Wagenitz, **stat. nov.**

Syn.: *Centaurea halkensis* Fors.-Maj. & Barbey, Halki 4 (1894).

Centaurea lactucifolia Boiss. subsp. *halkensis* (Fors.-Maj. & Barbey)
Rech. fil. in Phytion 1:215 (1949).

- C. spinosa*** L. var. ***tragacanthoides*** (Rech. fil.) Wagenitz, **comb. et stat. nov.**

Syn.: *Centaurea tragacanthoides* Rech. fil. in Feddes Rep. 43:145 (1938).

- Cicerbita boissieri*** (Rouy) C. Jeffrey, **comb. nov.**

Syn.: *Lactuca boissieri* Rouy, Fl. Fr. 9:200 (1905).

- C. brevirostris*** (Schultz Bip. ex Vis. & Panč.) C. Jeffrey, **comb. nov.**

Syn.: *Lactucopsis brevirostris* Schultz Bip. ex Vis. & Panč. in Mem. Ist. Venet. 15:5 (1870).

- Cirsium creticum*** (Lam.) d'Urv. subsp. ***gaillardotii*** (Boiss.) Davis & Parris, **comb. nov.**

Syn.: *Cirsium gaillardotii* Boiss., Diagn. ser. 2(3):42 (1856).

Cirsium siculum Sprengel subsp. *gaillardotii* (Boiss.) Petrak in Öst.
Bot. Zeitschr. 60:461 (1910).

C. lappaceum (Bieb.) Fischer subsp. **tenuilobum** (C. Koch) Davis & Parris, **comb. et stat. nov.**

Syn.: *Epitrachys tenuiloba* C. Koch in Linnaea 24:400 (1851).

C. libanoticum DC. subsp. **lycaonicum** (Boiss. & Heldr.) Davis & Parris, **stat. nov.**

Syn.: *Cirsium lycaonicum* Boiss. & Heldr. in Boiss., Diagn. ser. 1(10):90 (1849).

Cirsium libanoticum DC. var. *lycaonicum* (Boiss. & Heldr.) Boiss., Fl. Or. 3:549 (1875).

See note under *C. libanoticum* subsp. *arachnoideum* Davis & Parris (p. 419).

C. pubigerum (Desf.) DC. var. **glomeratum** (Freyn & Sint.) Davis & Parris, **comb. nov.**

Syn.: *Cirsium depilatum* Boiss. & Bal. var. *glomeratum* Freyn & Sint. in Öst. Bot. Zeitschr. 42:235 (1892).

C. rhozocephalum C. A. Meyer subsp. **sinuatum** (Boiss.) Davis & Parris, **stat. nov.**

Syn.: *Cirsium rhozocephalum* C. A. Meyer var. *sinuatum* Boiss., Fl. Or. 3:342 (1875).

Crepis aurea (L.) Cass. subsp. **olympica** (C. Koch) Lamond, **comb. et stat. nov.**

Syn.: *Crepis olympica* C. Koch in Linnaea 23:691 (1851).

C. conyzifolia (Gouan) A. Kerner subsp. **djamilensis** (C. Koch) Lamond, **comb. et stat. nov.**

Syn.: *C. djamilensis* C. Koch in Linnaea 23:683 (1851).

Echinops pungens Trautv. var. **polyacanthus** (Iljin) Hedge, **comb. et stat. nov.**

Syn.: *Echinops polyacanthus* Iljin in Not. Syst. (Leningrad) 4:102 (1923).

E. pungens Trautv. var. **transcaucasicus** (Iljin) Hedge, **comb. et stat. nov.**

Syn.: *Echinops transcaucasicus* Iljin in Not. Syst. (Leningrad) 4:104 (1923).

Erigeron acer L. subsp. **pycnotrichus** (Vierh.) Grierson, **comb. et stat. nov.**

Syn.: *Trimorpha pycnotricha* Vierh. in Beih. Bot. Centr. 19(2):456 (1906).

E. caucasicus Stev. subsp. **venustus** (Botsch.) Grierson, **comb. et stat. nov.**

Syn.: *Erigeron venustus* Botsch. in Not. Syst. (Leningrad) 16:387 (1954).

Galatella amani (Post) Grierson, **comb. nov.**

Syn.: *Aster amani* Post, Fl. Syria 15 (1895).

Helichrysum pamphylicum Davis & Kupicha, **nom. nov.**

Syn.: *Helichrysum niveum* Boiss. & Heldr. in Boiss., Diagn. ser. 1(11):30 (1849) non (L.) Less. (1832).

Hieracium argaeum (Zahn) Sell & West, **stat. nov.**

Syn.: *Hieracium pallidum* Biv. subsp. *argaeum* Zahn in Engler, Pflanzenreich 75 (IV.280):223 (1921).

H. bithynicum (Zahn) Sell & West, **stat. nov.**

Syn.: *Hieracium murorum* L. subsp. *bithynicum* Zahn in Engler, Pflanzenreich 76 (IV.280):317 (1921).

H. cryptonevum (Bornm. & Zahn) Sell & West, **stat. nov.**

Syn.: *Hieracium erythrocarpum* Peter subsp. *cryptonevum* Bornm. & Zahn in Engler, Pflanzenreich 79 (IV.280):1042 (1922).

- H. gentiliforme** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium sylvaticum* (L.) Grufberg subsp. *gentiliforme* Zahn in Ann. Nat. Hofmus. Wien 23:200 (1909).
- H. idae** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium sparsum* Friv. subsp. *idae* Zahn in Engler, Pflanzenreich 79 (IV.280):1021 (1922).
- H. karagoellense** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium erythrocarpum* Peter subsp. *karagoellense* Zahn in Engler, Pflanzenreich 79 (IV.280):1042 (1922).
- H. karakolense** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium leithneri* Heldr. & Sart. subsp. *karakolense* Bornm. & Zahn in Feddes Rep. Beih. 89:417 (1944).
- H. lasiochaetum** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium pallidum* Biv. subsp. *lasiochaetum* Bornm. & Zahn in Engler, Pflanzenreich 75 (IV.280):220 (1921).
- H. laxifurcans** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium erythrocarpum* Peter subsp. *laxifurcans* Bornm. & Zahn in Engler, Pflanzenreich 79 (IV.280):1037 (1922).
- H. leptodermum** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium maculatum* Sm. subsp. *leptodermum* Zahn in Engler, Pflanzenreich 76 (IV.280):519 (1921).
- H. macrogonum** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium muricellum* Fries subsp. *macrogonum* Zahn in Engler, Pflanzenreich 79 (IV.280):1063 (1922).
- H. mallopoderes** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium erythrocarpum* Peter subsp. *mallopoderes* Bornm. & Zahn in Engler, Pflanzenreich 79 (IV.280):1043 (1922).
- H. onosmopsis** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium tschamkorijense* Zahn subsp. *onosmopsis* Zahn in Engler, Pflanzenreich 79 (IV.280):1048 (1922).
- H. phrygiense** Sell & West, **nom. nov.**
Syn.: *Hieracium subrosulatum* Freyn & Sint. subsp. *phrygium* Bornm. & Zahn in Engler, Pflanzenreich 77 (IV.280):583 (1921) non *H. phrygium* Juxip (1960) pro *H. procerum* Fries subsp. *phrygicum* Zahn in Engler, Pflanzenreich 82 (IV.280):1371 (1923) superfl. nom. illegit. pro *H. procerum* Fries subsp. *kotschyianum* Naegeli & Peter.
- H. stellidorsum** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium erythrocarpum* Peter subsp. *stellidorsum* Bornm. & Zahn in Engler, Pflanzenreich 79 (IV.280):1044 (1922).
- H. subsilvularum** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium murorum* L. subsp. *subsilvularum* Zahn in Engler, Pflanzenreich 76 (IV.280):324 (1921).
- H. subvandasii** (Bornm. & Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium pallidum* Biv. subsp. *subvandasii* Bornm. & Zahn in Engler, Pflanzenreich 75 (IV.280):228 (1921).
- H. tossianum** (Zahn) Sell & West, **stat. nov.**
Syn.: *Hieracium murorum* L. subsp. *tossianum* Zahn in Engler, Pflanzenreich 76 (IV.280):304 (1921).

H. valdefrondosum (K. Maly & Zahn) Sell & West, **stat. nov.**

Syn.: *Hieracium crocatum* Fries subsp. *valdefrondosum* K. Maly & Zahn in Mag. Bot. Lapok 8:303 (1909); in Verh. Zool.-Bot. Ges. Wien 54:296 (1904) as a *nomen nudum*.

Jurinella moschus (Habl.) Bobrov subsp. **pinnatisecta** (Boiss.) Danin & Davis, **comb. et stat. nov.**

Syn.: *Jurinea depressa* (Stev.) C. A. Meyer var. *pinnatisecta* Boiss., Fl. Or. 3:583 (1875).

Lapsana communis L. subsp. **alpina** (Boiss. & Bal.) Sell, **comb. et stat. nov.**

Syn.: *Lapsana alpina* Boiss. & Bal. in Boiss., Diagn. ser. 2(6):117 (1859).

L. communis L. subsp. **grandiflora** (Bieb.) Sell, **comb. et stat. nov.**

Syn.: *Lapsana grandiflora* Bieb., Fl. Taur.-Cauc. 2:261 (1808).

Leontodon froedinii Rech. fil. var. **setulosus** (Hal.) Kupicha, **comb. nov.**

Syn.: *Leontodon asperum* (Waldst. & Kit.) Poir. var. *setulosus* Hal. in Öst. Bot. Zeitschr. 42:372 (1892).

L. oxylepis Boiss. & Heldr. var. **divaricatus** (Boiss.) Kupicha, **comb. et stat. nov.**

Syn.: *Leontodon divaricatus* Boiss., Diagn. ser. 1(11):41 (1849).

Leucocyclus formosus Boiss. subsp. **amanicus** (Rech. fil.) Hub.-Mor. & Grierson, **comb. et stat. nov.**

Syn.: *Achillea amanicus* Rech. fil. in Ark. Bot. ser. 2, 5(1):442 (1959).

Logfia arvensis (L.) Holub, **comb. nov.**

Syn.: *Filago arvensis* L., Sp. Pl., Addenda post Indicem (1753).

Mulgedium quercinum (L.) C. Jeffrey, **comb. nov.**

Syn.: *Lactuca quercina* L., Sp. Pl. 795 (1753).

Pilosella x auriculoides (A. F. Láng) Sell & West, **comb. nov.**

Syn.: *Hieracium auriculoides* A. F. Láng, Syll. Pl. Nov. Ratisb. 1:183 (1824).

P. x byzantina (Boiss.) Sell & West, **comb. nov.**

Syn.: *Hieracium pilosella* L. var. *byzantinum* Boiss., Fl. Or. 3:860 (1875).

Hieracium byzantinum (Boiss.) Zahn in Engler, Pflanzenreich 82 (IV. 280):1194 (1923).

P. caespitosa (Dum.) Sell & West subsp. **brevipila** (Naegeli & Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium pratense* Tausch. subsp. *brevipilum* Naegeli & Peter, Hier. Mittel-Eur. 1:312 (1885).

P. echioides (Lumn.) C. H. & F. W. Schultz subsp. **procera** (Fries) Sell & West, **comb. et stat. nov.**

Syn.: *Hieracium procerum* Fries, Symb. Hier. 43 (1848).

P. x florentoides (Arvet-Touvet) Sell & West, **comb. nov.**

Syn.: *Hieracium florentoides* Arvet-Touvet, Essai Pl. Dauph. 40 (1871).

P. hoppeana (Schultes) C. H. & F. W. Schultz subsp. **cilicica** (Naegeli & Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium hoppeanum* Schultes subsp. *cilicicum* Naegeli & Peter, Hier. Mittel-Eur. 1:121 (1885).

P. hoppeana (Schultes) C. H. & F. W. Schultz subsp. **lydia** (Bornm. & Zahn) Sell & West, **comb. nov.**

Syn.: *Hieracium hoppeanum* Schultes subsp. *lydium* Bornm. & Zahn in Engler, Pflanzenreich 82 (IV.280):1154 (1923).

P. hoppeana (Schultes) C. H. & F. W. Schultz subsp. **pilisquama** (Naegeli & Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium hoppeanum* Schultes subsp. *pilisquamum* Naegeli & Peter, Hier. Mittel-Eur. 1:124 (1885).

P. hoppeana (Schultes) C. H. & F. W. Schultz subsp. **testimonialis** (Naegeli ex Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium hoppeanum* Schultes subsp. *testimoniale* Naegeli ex Peter in Bot. Jahrb. 5:251 (1884).

P. hoppeana (Schultes) C. H. & F. W. Schultz subsp. **troica** (Zahn) Sell & West, **comb. nov.**

Syn.: *Hieracium hoppeanum* Schultes subsp. *troicum* Zahn in Engler, Pflanzenreich 82 (IV.280):1153 (1923).

P. officinarum C. H. & F. W. Schultz subsp. **micradenia** (Naegeli & Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium pilosella* L. subsp. *micradenia* Naegeli & Peter, Hier. Mittel-Eur. 1:164 (1885).

P. piloselloides (Vill.) Sell & West subsp. **megalomastix** (Naegeli & Peter) Sell & West, **comb. nov.**

Syn.: *Hieracium magyriticum* Naegeli & Peter subsp. *megalomastix* Naegeli & Peter, Hier. Mittel-Eur. 1:573 (1885).

P. x ruprechtii (Boiss.) Sell & West, **comb. nov.**

Syn.: *Hieracium ruprechtii* Boiss., Fl. Or. 3:861 (1875).

Prenanthes glareosa (Schott & Kotschy ex Boiss.) C. Jeffrey, **comb. nov.**

Syn.: *Lactuca glareosa* Schott & Kotschy ex Boiss., Fl. Or. 3:812 (1875).

Rhagadiolus angulosus (Jaub. & Spach) Kupicha, **comb. nov.**

Syn.: *Garhadiolus angulosus* Jaub. & Spach, Ill. Pl. Or. 3:122 (1850).

R. hamosus (Boiss. & Hausskn.) Kupicha, **comb. nov.**

Syn.: *Garhadiolus hamosus* Boiss. & Hausskn. in Boiss., Fl. Or. 3:723 (1875).

Scorzonera cana (C. A. Meyer) Hoffm. var. **alpina** (Boiss.) Chamberlain, **comb. nov.**

Syn.: *Scorzonera jacquiniana* (W. Koch) Boiss. var. *alpina* Boiss., Fl. Or. 3:758 (1875).

S. cana (C. A. Meyer) Hoffm. var. **jacquiniana** (W. Koch) Chamberlain, **comb. et stat. nov.**

Syn.: *Podospermum jacquinianum* W. Koch, Syn. Fl. Germ. ed. 1:425 (1837).

S. cana (C. A. Meyer) Hoffm. var. **radicosa** (Boiss.) Chamberlain, **comb. et stat. nov.**

Syn.: *Scorzonera radicata* Boiss., Fl. Or. 3:759 (1875).

S. mollis Bieb. subsp. **szowitsii** (DC.) Chamberlain, **comb. et stat. nov.**

Syn.: *Scorzonera szowitsii* DC., Prodr. 7:117 (1838).

S. pygmaea Sm. subsp. **nutans** (Czeczott) Chamberlain, **comb. et stat. nov.**

Syn.: *Scorzonera nutans* Czeczott in Feddes Rep. Beih. 107:202 (1938).

S. suberosa C. Koch subsp. **cariensis** (Boiss.) Chamberlain, **comb. et stat. nov.**

Syn.: *Scorzonera cariensis* Boiss., Diagn. ser. 1(4):24 (1844).

Senecio bicolor (Willd.) Tod. var. **plattii** (Meikle) Matthews, **comb. nov.**

Syn.: *Senecio cineraria* DC. var. *plattii* Meikle in Kew Bull. 1954:142 (1955).

S. doriiformis DC. subsp. **orientalis** (Fenzl) Matthews, **stat. nov.**

Syn.: *Senecio nemorensis* L. var. *orientalis* Fenzl in Tchihat., Asie Min. Bot. 2:294 (1860).

Senecio doriiformis DC. var. *orientalis* (Fenzl) Hand.-Mazz. in Ann. Nat. Hofmus. Wien 27:437 (1913).

S. hypochionaeus Boiss. var. **argaeus** (Boiss. & Bal.) Matthews, **comb. et stat. nov.**

Syn.: *Senecio argaeus* Boiss. & Bal. in Boiss., Diagn. ser. 2(6):100 (1859).

S. integrifolius (L.) Clairv. subsp. **aucheri** (DC.) Matthews, **comb. et stat. nov.**

Syn.: *Senecio aucheri* DC., Prodr. 6:361 (1838).

Tanacetum alyssifolium (Bornm.) Grierson, **comb. nov.**

Syn.: *Chrysanthemum alyssifolium* Bornm. in Feddes Rep. Beih. 89:340 (1944).

T. argenteum (Lam.) Willd. subsp. **canum** (C. Koch) Grierson, see p. 427.

Syn.: *Hemipappus canus* C. Koch in Linnaea 24:341 (1851).

T. argenteum (Lam.) Willd. subsp. **flabellifolium** (Boiss. & Heldr.) Grierson, **comb. et stat. nov.**

Syn.: *Tanacetum flabellifolium* Boiss. & Heldr. in Boiss., Diagn. ser. 1(11):26 (1849).

T. argyrophyllum (C. Koch) Tzvel. var. **polycephalum** (Schultz Bip.) Grierson, **comb. et stat. nov.**

Syn.: *Tanacetum polycephalum* Schultz Bip., Tanacet. 47 (1844).

T. argyrophyllum (C. Koch) Tzvel. var. **subvirescens** (DC.) Grierson, **comb. nov.**

Syn.: *Pyrethrum myriophyllum* C. A. Meyer var. *subvirescens* DC., Prodr. 6:59 (1838).

T. balsamita L. subsp. **balsamitoides** (Schultz Bip.) Grierson, **comb. et stat. nov.**

Syn.: *Tanacetum balsamitoides* Schultz Bip., Tanacet. 51 (1844).

T. chiliophyllum (Fisch. & Mey.) Schultz Bip. var. **heimerlei** (Náb.) Grierson, **comb. et stat. nov.**

Syn.: *Chrysanthemum heimerlei* Náb. in Publ. Fac. Sci. Univ. Masaryk Brno 52:23 (1925).

T. cilicicum (Boiss.) Grierson, **comb. nov.**

Syn.: *Pyrethrum cilicicum* Boiss., Diagn. ser. 2(3):28 (1856).

T. depauperatum (Post) Grierson, **comb. nov.**

Syn.: *Pyrethrum depauperatum* Post in Bull. Herb. Boiss. 3:158 (1895).

T. eginense (Bornm.) Grierson, **comb. nov.**

Syn.: *Pyrethrum eginense* Hausskn. ex Bornm. in Mitt. Thür. Bot. Ver. 20:18 (1905).

T. germanicopolitanum (Bornm. & Heimerl) Grierson, **comb. nov.**

Syn.: *Pyrethrum germanicopolitanum* Bornm. & Heimerl in Feddes Rep. 28:70 (1930).

- T. haradjanii** (Rech. fil.) Grierson, **comb. nov.**
 Syn.: *Chrysanthemum haradjanii* Rech. fil. in Ann. Nat. Hofmus. Wien 57:92 (1950).
- T. haussknechtii** (Bornm.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum haussknechtii* Bornm. in Mitt. Thür. Bot. Ver. 20:19 (1905).
- T. heterotomum** (Bornm.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum heterotomum* Bornm. in Mitt. Thür. Bot. Ver. 20:17 (1905).
- T. kotschyi** (Boiss.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum kotschyi* Boiss., Diagn. ser. 1(6):88 (1845).
- T. nitens** (Boiss. & Noë) Grierson, **comb. nov.**
 Syn.: *Pyrethrum nitens* Boiss. & Noë in Boiss., Diagn. ser. 2(3):30 (1856).
- T. oltense** (Sosn.) Grierson, **comb. nov.**
 Syn.: *Chrysanthemum oltense* Sosn. in Monit. Jard. Bot. Tiflis 27:13 (1913).
- T. oxystegium** (Sosn.) Grierson, **comb. nov.**
 Syn.: *Chrysanthemum oxystegium* Sosn. in Monit. Jard. Bot. Tiflis 27:14 (1913).
- T. poteriifolium** (Ledeb.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum poteriifolium* Ledeb. apud Nordmann in Bull. Acad. Imp. Sci. Pétersb. 2:312 (1837).
- T. punctatum** (Desr.) Grierson, **comb. nov.**
 Syn.: *Matricaria punctata* Desr. in Lam., Encycl. 3:732 (1792).
- T. sorbifolium** (Boiss.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum sorbifolium* Boiss., Fl. Or. 3:343 (1875).
- T. tomentellum** (Boiss.) Grierson, **comb. nov.**
 Syn.: *Pyrethrum tomentellum* Boiss., Fl. Or. 3:354 (1875).
- T. zahlbruckneri** (Náb.) Grierson, **comb. nov.**
 Syn.: *Chrysanthemum zahlbruckneri* Náb. in Publ. Fac. Sci. Univ. Masaryk Brno 52:20 (1925).
- Tripleurospermum callosum** (Boiss. & Heldr.) E. Hossain, **comb. nov.**
 Syn.: *Chamaemelum callosum* Boiss. & Heldr. in Boiss., Diagn. ser. 1(11):22 (1849).
- T. fissurale** (Sosn.) E. Hossain, **comb. nov.**
 Syn.: *Chamaemelum fissurale* Sosn. in Monit. Jard. Bot. Tiflis, Ann. 11:15 (1915).
- T. kotschyi** (Boiss.) E. Hossain, **comb. nov.**
 Syn.: *Chamaemelum kotschyi* Boiss., Diagn. ser. 2(3):27 (1856).
- T. oreades** (Boiss.) Rech. fil. var. **tchihatchewii** (Boiss.) E. Hossain, **comb. et stat. nov.**
 Syn.: *Chamaemelum tchihatchewii* Boiss. in Tchihat., Asie Min. Bot. 2:256 (1860).

ADDENDUM

- Anthemis cretica** L. subsp. **albida** (Boiss.) Grierson, **comb. et stat. nov.**
 Syn.: *A. albida* Boiss., Diagn. ser. 1(4):10 (1844) in nota et Fl. Or. 3:298 (1875).
- A. cretica** L. subsp. **carpatica** (Willd.) Grierson, **comb. nov.**
 Syn.: *A. carpatica* Willd., Sp. Pl. 3:2179 (1803).
- A. montana* L. subsp. **carpatica** (Willd.) Rouy, Fl. Fr. 8:232 (1903).