Supplementary notes to the flora of Cyprus III.

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RALF HAND (ed.)

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Abstract

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As in two former instalments the present notes summarize contributions by various authors, focussing on the chorology and ecology of Cypriot vascular plants. This third instalment includes data on 84 taxa. *Aira elegantissima* subsp. *ambigua, Euphorbia taurinensis, Plantago major* subsp. *intermedia, Ranunculus repens* and *Trifolium grandiflorum* are new for the island or at least documented for the first time in detail. *Tordylium maximum* is not an element of the island's flora; the only record is based on a misidentified specimen. Taxonomic considerations result in the validation of the new combinations *Limonium cyprium* and *Phlomis cypria* subsp. *occidentalis*.

Introduction

The present instalment continues to summarize supplements to the flora of Cyprus, contributed by various botanists. Explanations and criteria for the inclusion of data in this series have been published in Willdenowia 30: 53-54. It should be stressed that apart from Meikle's (1977, 1985) detailed standard flora and the floristic treatments on Cyprus published since, all known papers widely scattered in the taxonomic literature have been considered when accepting specimen based records as supplementary. A database containing such records is being updated continuously. Instalment IV is already in preparation; contributions are welcome and should be sent to the editor.

Contributors to the present instalment (apart from the editor) are Prof. Dr Gabriel Alziar (Nice/France), Dr Karl Peter Buttler (Frankfurt/Germany), Dr Pinelopi Delipetrou (Athens/Greece), Georgios Hadjikyriakou (Trachoni/Cyprus), Dr Kostas Kadis (Lakkia/Cyprus), Christodoulos Makris (Lemesos/Cyprus), John Orphanos (Nisou/Cyprus), John Papadopoulos (Kampos/Cyprus), Prof. Dr Hildemar Scholz (Berlin/Germany) and Birgit Seitz (Berlin/Germany).

Spermatophyta

Cupressaceae

Juniperus excelsa M. Bieb.

Grecian Juniper is rare in Cyprus, replacing *Juniperus foetidissima* Willd., typical for the highest elevations of the Troodos, in the area around the mountains Madari and Papoutsa (Meikle 1977, Tsintides & al. 2002). Obviously, the following collection site seems to be the lowest known point of its altitudinal range on the island.

Division 2: Agios Theodoros, rivulet above road, 4.4 km before the turn-off to Askas, N of Papoutsa, rocky slope, alt. c. 1100 m, 10.5.1999, *Hand 3183*. (ed.)

Ranunculaceae

Ranunculus peltatus subsp. ***sphaerospermus*** (Boiss. & Blanche) Meikle

+ Division 3: Livadi Akrotiriou, marshy place inundated during springtime, about sea level, 29.4.1997, *Hadjikyriakou 2627*. G. Hadjikyriakou

Ranunculus bullatus subsp. ***cytheraeus*** (Halácsy) Vierh. & Rech. f.

+ Division 3: Trachoni Lemesou village, rocky place with *Sarcopoterium spinosum*, alt. c. 50 m, 10.11.1988, *Hadjikyriakou 110*. G. Hadjikyriakou

Ranunculus repens L.

First records from Cyprus. The island is far outside of the species' main distribution range in Europe and W Asia but there are similarly isolated occurrences in N Africa and Turkey (Davis 1965, Meusel & al. 1965).

+ Division 2: Karydi, Spilia village, streamside, on diabasic rocks, alt. c. 950 m, 6.1991, *Orphanos 582 & 583,* det. Alziar; ibid., 6.1991, *Orphanos in Hadjikyriakou 1769*.

+ Division 3: North of Alassa dam, gravelly place along the riverbed, alt. c. 200 m, 24.9.1997, *Hadjikyriakou 2810*.
Periodically, parts of the locality at Alassa dam are covered by water, due to increase of the water level of the dam.
G. Hadjikyriakou, J. Orphanos & G. Alziar

Ranunculus millefoliatus subsp. ***leptaleus*** (DC.) Meikle

+ Division 2: Geratzin stream, Flegeia valley, rocky slope in *Pinus brutia* forest, alt. c. 600 m, 12.1.1999 (leaves only), *Hadjikyriakou 3926;* ibid., 4.4.1999 (fruits and leaves), *Hadjikyriakou 4264*. G. Hadjikyriakou

Papaveraceae

Hypecoum pendulum L.

Meikle (1977) cites three collections from Cyprus.

+ Division 3: Kantou - Sotira villages, cultivated field, alt. c. 250 m, 12.4.1991, *Hadjikyriakou 1081*. G. Hadjikyriakou

Cruciferae

Eruca sativa Mill.

+ Division 1: Pegeia, river valley NE of crossing at Coral Bay, dry river bed, alt. c. 50 m, 21.3.1999, *Hand 2610*. (ed.)

Calepina irregularis (Asso) Thell.

Collected from Lefkara by Kennedy in 1941 (eastern part of division 2) and from Myrtou (division 6) by Druce in 1928 (or 1930; see Meikle 1977). The cited specimens below have been collected from the northwestern part of division 2. Investigations at the collecting localities showed that the taxon occurs in small groups here and there, along roads and streams.

Division 2: Kourvoula, Xeros valley, along forest road on diabasic rocks, alt. c. 400 m, 2.4.1998, *Hadjikyriakou 3047;* Kampos - Tsakkistra villages, roadside on diabasic rocks, alt. c. 750 m, 10.4.1998, *Hadjikyriakou 3107;* Mavres Sykes, Limnitis valley, along stream in *Pinus brutia* and *Platanus orientalis* forest, on diabasic rocks, alt. c. 600 m, 4.4.1999, *Hadjikyriakou 4258*. G. Hadjikyriakou

Coronopus squamatus (Forssk.) Asch.

+ Division 3: Paramali village, shallow pool on limestone, alt. c. 150 m, 28.3.2002, *Hadjikyriakou 5324 & Delipetrou*. G. Hadjikyriakou & P. Delipetrou

Hymenolobus procumbens (L.) Schinz & Thell.

+ Division 3: Agios Nikolaos Akrotiri, margins of marshy place, about sea level, 17.2.2001, *Hadjikyriakou 5180*. G. Hadjikyriakou

Alyssum umbellatum Desv.

Meikle (1977) cites only one record from Chorteri (division 2); an additional record from the environs of Tripylos peak is mentioned by Hand (2001).

Division 2: Madari, rocky slope with screes, diabasic rocks, alt. c. 1600 m, 15.5.1991, *Hadjikyriakou 1211;* N of Tripylos peak, roadside on diabasic rocks, alt. c. 1250 m, 24.4.1998, *Hadjikyriakou 3180*. G. Hadjikyriakou

Arabis cypria Holmboe

According to Meikle (1977) this endemic of Cyprus is restricted to divisions 7 and 8, but the specimens cited below have been compared with specimens from Pentadactylos mountain range and they match in all respects – especially leaves and hairiness – with the following specimens collected in division 7 where only *Arabis cypria* is said to occur: St Hilarion, 9.3.1936, *Syngrasides 1151;* St Hilarion, 3.4.1939, *Kennedy 360;* St Hilarion, 3.4.1949, *Kennedy 410;* Kyparissovouno, 283.1954, *Syngrasides 2030;* above Flamoudi, 9.5.1967, *Merton 756*. These specimens from division 7 are deposited in the Herbarium of the Agricultural Research Institute Nicosia (CYP).

It seems likely that *Arabis cypria* is commoner in division 2 than records suggest, so further investigation is necessary. Also its taxonomic status should be reexamined.

Meikle (1977) also mentions a specimen collected from Nikos that seems to be *Arabis cypria*. The following specimens have been collected from the area of Nikos on 6.3.1997: *Hadjikyriakou 2310, 2311, 2312 & 2313,* and from Kalopanagiotis dam NW of Nikos at the same day: *Hadjikyriakou 2307*. Close examination showed that they are *A. purpurea* Sm.

+ Division 2: Machairas - Kionia, rocky slope, on diabasic rocks, alt. c. 1100 m, 12.4.2001, *Hadjikyriakou 5244*.

+ Division 2/6: 500 m N of Xyliatos dam, crevices of igneous rocks, alt. c. 500 m, 16.3.1992, *Hadjikyriakou 1281;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2289;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2290;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2291;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2292;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2293;* ibid., alt. c. 500 m, 1.3.1997, *Hadjikyriakou 2294;* 500 m S of Xyliatos dam, crevices of igneous rocks, alt. c. 550 m, 1.3.1997, *Hadjikyriakou 2295;* ibid., alt. c. 550 m, 1.3.1997, *Hadjikyriakou 2296;* ibid., alt. c. 550 m, 1.3.1997, *Hadjikyriakou 2297;* ibid., alt. c. 550 m, 1.3.1997, *Hadjikyriakou 2298;* 1.5 km S of Xyliatos dam, crevices of igneous

rocks, alt. c. 600 m, 1.3.1997, *Hadjikyriakou 2299;* ibid., alt. c. 600 m, 1.3.1997, *Hadjikyriakou 2300*. G. Hadjikyriakou

Cistaceae

Helianthemum salicifolium var. ***glabrum*** Meikle

Collected once, by Syngrasides in 1939 (Meikle 1977), but not recollected since.

+ Division 6: Mammari village, phrygana vegetation, on flat rocky place (kafkalla), alt. c. 200 m, 3.4.1997, *Kadis in Hadjikyriakou 2524;* Kokkinotrimithia - Mammari, phrygana vegetation, on flat rocky place (kafkalla), alt. c. 200 m, 3.5.1997, *Hadjikyriakou 2661 & Kadis*. G. Hadjikyriakou & K. Kadis

Helianthemum ledifolium subsp. ***lasiocarpum*** (Jacq. & Hérincq) Nyman

A rare subspecies, collected from Cape Andreas (division 8) by Sintenis & Rigo in 1880 (see Meikle 1977). Also mentioned by Alziar (2000) from Xylophagou - Agia Thekla (division 4).

+ Division 2: Pente Litharka, Omodos village, phrygana vegetation, alt. c. 1100 m, 24.5.1998, *Hadjikyriakou 3454*.

Division 4: Fanos - Kavo Gkreko, grassy place among shrubs, alt. c. 100 m, 1.4.2003, *Hadjikyriakou 5598*. G. Hadjikyriakou

Helianthemum aegyptiacum (L.) Mill.

+ Division 6: Mammari village, phrygana vegetation, on flat rocky place (kafkalla), alt. c. 200 m, 3.4.1997, *Kadis in Hadjikyriakou 2527*. G. Hadjikyriakou & K. Kadis

Caryophyllaceae

Dianthus strictus var. ***troodi*** (Post) S. S. Hooper

+ Division 3: Episkopi, Kourion archaeological site, area of the basilica, stony waste ground, alt. 80 m, 13.10.1998, *Buttler 32454 & Diguet,* det. Hand.
Mentioned without cited specimens for this division by Tsintides (1998).
K. P. Buttler & R. Hand

Gypsophila pilosa Huds.

Meikle (1977) cites only two records, but he is of the opinion that the taxon may be found elsewhere on the island. Meikle's opinion is confirmed by the collections of Della & Iatrou (1995) and Hand (2001).

+ Division 6: West of Anthoupolis, Lakatameia, disturbed place on conglomerate, alt. c. 250 m, 6.5.1997, *Hadjikyriakou 2680*. G. Hadjikyriakou

Silene discolor Sm.

+ Division 3: Kouklia, coastal slopes c. 4 km SE, phrygana, limestone, alt. c. 20 m, 25.3.1999, *Hand 2649*. (ed.)

Silene colorata var. ***decumbens*** (Biv.) Rohrb.

+ Division 1: Pafos, between amphitheatre and cape, pasture, alt. c. 10 m, 9.4.1998, *Hand 2145*. (ed.)

Elatinaceae

Elatine macropoda Guss.

Meikle (1977) cites two records from Akamas (division 1); additionally, Hand (2000) mentions collections from two other localities in the Akamas area. At Erimides, already mentioned by Meikle, the species could be confirmed in 1999 *(Hadjikyriakou 4141 & 4142)*.

+ Division 4: Potamos Liopetriou, shallow pool on limestone rocks (kafkalla), about sea level, 11.3.1999, *Hadjikyriakou 4116*. G. Hadjikyriakou

Guttiferae

Hypericum hircinum L.

Robson in Meikle (1977) cites collections from two localities only: namely Lapithos and Agios Amvrosios of Keryneia (division 7). The gathering from Lapithos *(Merton 2235)* is mentioned again in a later revision (Robson 1985) and determined as belonging to subsp. *albimontanum* (Greuter) N. Robson. The collections cited below are all from localities adjacent to Tripylos peak and cedar area, where it is locally common. The ovate to narrowly ovate leaves and the capsule length measuring (7)8-12 mm suggest that these populations belong to *H. hircinum* subsp. *majus* (Aiton) N. Robson but further investigation of fresh material is needed. The occurrence of this taxon in Cyprus has already been mentioned as questionable in a checklist by Chilton (1997) but without further information.

+ Division 2: Mavroi Kremmoi - Alonoudi, Roudias valley, riverbed, on diabasic rocks, alt. c. 700 m, 29.5.1990, *Hadjikyriakou 892;* Alonoudi bridge, Roudias valley, riverbed, on diabasic rocks, alt. c. 500 m, 23.6.1990, *Hadjikyriakou 921;* ibid., 14.11.1990, *Hadjikyriakou 1005;* Argaki tou Matsima, Limnitis valley, moist place along forest road, on diabasic rocks, alt. c. 850 m, 14.5.1997, *Hadjikyriakou 2700;* ibid., 4.7.1997, *Hadjikyriakou 2754;* Paspallas, Limnitis valley, moist place along forest road, on diabasic rocks, alt. c. 800 m, 16.7.1997, *Papadopoulos in Hadjikyriakou 2778;* Argaki tou Nourou, Limnitis valley, moist place along streams, on diabasic rocks, alt. c. 900 m, 17.11.1998, *Hadjikyriakou 2836;* Gefyrin ton Choletron, Agia valley, moist place along streams, on diabasic rocks, alt. c. 600 m, 22.7.1997, *Papadopoulos in Hadjikyriakou 2874*.
G. Hadjikyriakou & J. Papadopoulos

Hypericum lanuginosum Lam.

Holmboe (1914) mentions that he found a small form of the typical *Hypericum lanuginosum* in rocky places near Kykko monastery (division 2), in the shade of cedar trees, growing in a small number *(JH 1023)*. Furthermore, he describes a new subsp. *millepunctatum,* which grows on dry slopes above Lapithos (division 7) on calcareous soil *(SR 616, JH 836).* Robson in Meikle (1977) cites *H. lanuginosum* subsp. *millepunctatum* Holmboe as a synonym of *H. lanuginosum* var. *lanuginosum,* noting that the latter: "is found only in the mountains above Lapithos (Division 7), where it is represented by the typical variety". In a later revision, Robson (1996) did not accept any infraspecific entities within the rather variable species, a taxonomic view that is followed here. In the latter work he mentions the Sintenis & Rigo collection *(SR 616)* as lectotype of Holmboe's subspecies *millepunctatum* (at W, isolectotype at K), furthermore the gathering *Economides ARI 1239* (K), collected on 24.6.1968 at Roudkias near Kykko. This specimen and the collections cited below confirm the occurrence of the species in the Troodos range.

Division 2: Konyzi, E of Cedar Valley, rocky place in open pine forest, alt. c. 1000 m, 295.1990, *Hadjikyriakou 870;* Cedar Valley, along forest road in rock crevices of diabasic rocks, alt. c. 1050 m, 23.6.1990, *Hadjikyriakou 923;* Paradisi, 500 m S of Kykko monastery (I suspect that this is the place mentioned by Holmboe) along forest road in rock crevices of diabasic rocks, alt. c. 900 m, 23.2.1998, *Hadjikyriakou 2937; i*bid., 24.6.1998, *Hadjikyriakou 3535*; Prasinouin, west of Kambos village, Limnitis valley, in crevices of rocky outcrops, within an abandoned, ancient copper mine, alt. c. 800 m, 28.4.1998, *Hadjikyriakou 3222;* ibid., 18.6.1998, *Hadjikyriakou 3522*.

The specimens cited above have been collected from places rich in gossans, i.e. decomposed rocks of sulphide mineralization within the Sheeted Dyke Complex

(Diabase), especially those collected from Prasinouin at the abandoned, ancient copper mine. Although there are collections from calcareous rocks, the relation of *H. lanuginosum* with sulphide mineralized igneous rocks seems to need further investigation. G. Hadjikyriakou

Tiliaceae

Corchorus olitorius L.

According to Meikle (1977) it has been collected from three localities only.

+ Division 1: Chrysochou village, cultivated fields, alluvium, alt. c. 30 m, 14.8.1999, *Hadjikyriakou 4848*. G. Hadjikyriakou

Zygophyllaceae

Tribulus terrestris L.

+ Division 3: Lemessos, coast 200 m W to 800 E of the Armenochori junction, E of Eleni Hotel, sandy places behind the coastal promenade, alt. 3 m, 11.10.1998, *Buttler 32448 & Diguet*.
Mentioned without cited specimens for this division by Coulot (2000).
K. P. Buttler

Rutaceae

Haplophyllum buxbaumii (Poir.) G. Don

+ Division 3: Vavla village - Agios Minas monastery, roadside, alt. c. 300 m, 2.6.1999, *Hadjikyriakou 4602*. G. Hadjikyriakou

Leguminosae

Ononis reclinata L.

According to Meikle (1977) *Ononis reclinata* is represented by two taxa in Cyprus: var. *minor* Moris (= *O. mollis* Savi, *O. reclinata* subsp. *mollis* (Savi) Bég.), common in many parts of the island, and var. *monophylla* (Bég.) Pamp., which has been collected only twice at the same site in the Akamas peninsula in the NW of Cyprus. The occurrence of the latter could be confirmed by two collections and seems, indeed, to be restricted to the mentioned peninsula. The differentiating characters of both taxa have been described by Meikle (1977) in detail. One character, the form of the calyx lobes, shows only a slight overlap concerning the maximum width. Measurements can be added to Meikle's treatment: 0.2-0.6 mm in var. *minor* (material from the editor's gatherings) and 0.5-1.8 mm in var. *monophylla* (specimens cited below). The latter has a disjunct area comprising, apart from Cyprus, Libyan Cyrenaica and possibly Egypt. Some specimens of var. *minor* from NW Cyprus approach var. *monophylla* in having some corollas exceeding the calyx lobes and several unifoliate, sometimes broadly obovate leaflets, intermediate to the extremely different leaflets of typical plants.

The nominal variety *reclinata,* sometimes difficult to tell apart from the sympatrically and also pan-Mediterranean var. *minor* (cf. Meikle 1977), is not known from Cyprus. Valdés (1992) recommends to treat them as species. Devesa (2000) prefers subspecies rank though there are no obvious differences either in distribution or in ecology. He remarks that the latter may be a neotenic and cleistogamic form. Var. *monophylla* is morphologically clearly different. Obviously, several infraspecific taxa of *O. reclinata* occur sympatrically in Libya, the only other part of the area of var. *monophylla* (Béguinot 1912, Pampanini 1930, Jafri 1980). Almost nothing is known

about the ecology there and even morphology needs further studies (Jafri 1980). Until a complete revision has been undertaken, retaining the taxa of the *O. reclinata* group as varieties of a variable species seems to be the best solution.

Ononis reclinata var. *monophylla*

Division 1: Baths of Aphrodite, c. 1.5 km SW, at the trail, beginning of the ascent to the gorge, phrygana, alt. c. 200 m, 5.4.1998, *Hand 2081;* ibid., along coastal track S/SE of Agios Georgios island, alt. c. 50 m, 14.4.1998, *Hand 2170*. (ed.)

Ononis spinosa subsp. ***leiosperma*** (Boiss.) Širj. var. ***leiosperma***

+ Division 1: Neo Chorio, coast c. 400 m SE Loutra tis Aphroditis (= Baths of Aphrodite), bay W of the island, steep slope, garigue, alt. 10 m, 5.10.1998, *Buttler 32478 & Diguet,* det. Hand. K. P. Buttler & R. Hand

Ononis spinosa subsp. ***leiosperma*** var. ***tomentosa*** (Boiss.) Širj.

Meikle (1977) already mentions the taxon for Asomatos but none of the Cypriot specimens he saw had ripe fruits and nothing could be said about the testa sculpturing, the diagnostic character for separating subsp. *antiquorum* (L.) Briq. In the cited specimen below the seeds have smooth testas, typical for subsp. *leiosperma*.

Division 3: Asomatos, Fasouri reed beds, meadow c. 2 km SW of Asomatos, alt. 0 m, 3.11.2002, *Hand 3711*. (ed.)

Trifolium echinatum M. Bieb.

+ Division 1: Pegeia, beside the steps to S part of Coral Bay beach, wet waste ground, alt. c. 10 m, 26.4.1999, *Hand 2905*. (ed.)

Trifolium repens L.

This doubtfully native species has been documented only twice for Cyprus in the Troodos area around Chionistra (Meikle 1977). At the Foini site the plants were in full flower at the beginning of November. Flowering season in Cyprus seems to be as extended as in Central Europe (Meikle gives June-July). Furthermore, a new locality has been found almost 30 km W from Chionistra, within Pafos forest.

Division 2: Foini, picnic site ENE Moni Panagias Trooditissas, along creek Argaki tou Xerokolymbou above the road, partly humid ground along creek, alt. c. 1350 m, 4.11.2002, leg. *Hand 3734;* Mavres Sykes, Limnitis valley, along forest road, on diabasic rocks, alt. c. 600 m, 27.4.1998, *Hadjikyriakou 3213*.
G. Hadjikyriakou & R. Hand

Trifolium nigrescens subsp. ***petrisavii*** (Clem.) Holmboe

+ Division 3: Pano Archimandrita, c. 2 km WNW, valley with eroded clay slopes, open pasture, alt. c. 300 m, 12.4.1999, *Hand 2811*. (ed.)

Trifolium grandiflorum Schreb. [Syn.: *Trifolium speciosum* Willd.]

It is cited by Meikle (1977), with some doubt, as *Trifolium speciosum* Willd., based on Sibthorp's (1813) record without localization. Georgiades (1994) collected the plant between Lakki - Polis Chrysochous and Lakki - Loutra tis Afroditis (= Baths of Aphrodite; division 1). He mentions that it grows only on calcareous rocks and is characterized as a casual adventive. The characteristics of the habitat at the collection site cited below suggest that *T. grandiflorum* is not an introduced naturalized species but indigenous to Cyprus.

+ Division 2: Kremmos tou Astraka, Platys valley, rocky place with low shrubs in openings of *Pinus brutia* forest, on diabasic rocks, alt. c. 1000 m, 6.5.1998, *Hadjikyriakou 3327*. G. Hadjikyriakou

Lotus tenuis Willd. [Syn.: *Lotus corniculatus* var. *tenuifolius* L.]

+ Division 3: Episkopi, between coastal track and slope below Kourion ruins, brackish ground, alt. c. 5 m, 28.10.2002, *Hand 3665*. (ed.)

Glycyrrhiza glabra L.

Mentioned by Meikle (1977) from two localities only; also mentioned by Georgiades (1994).

+ Division 3: Agios Antonios church in Lemesos town, waste land, alt. c. 5 m, 16.8.1999, *Hadjikyriakou 4853;* ibid., 30.9.1999, *Hadjikyriakou 4906;* ibid., 27.5.2000, *Hadjikyriakou 5069;* ibid., 27.6.2000, *Hadjikyriakou 5092*. G. Hadjikyriakou

Alhagi graecorum Boiss.

+ Division 3: Livadi Akrotiriou, sandy soil in cultivated fields, about sea level, 30.8.1996, *Hadjikyriakou 1911*. G. Hadjikyriakou

Alhagi maurorum Medik. var. ***maurorum***

According to Meikle (1977) collected from one locality only.

+ Division 1: Polis Chrysochous - Lakki, on sand dunes near the sea, 19.10.1998, *Hadjikyriakou 3802;* Prodromi near Polis Chrysochous, roadside and waste land, c. 10 m, 23.6.1999, *Hadjikyriakou 4667*. G. Hadjikyriakou

Vicia sativa var. ***amphicarpa*** Boiss.

Taxonomy, ranking and nomenclature of geocarpic plants in the *Vicia sativa* group are controversial. Meikle (1977) and, more recently, Romero Zarco (1999) discuss possible solutions but a revision is still in urgent need.

+ Division 1: Pegeia, NW, N of the road to Kathikas open *Pinus brutia* forest, alt. c. 400 m, 3.3.1998, *Hand 1846;* Kannaviou, serpentine rock between road and river Ezousa half-way towards Melamiou junction, rock with sparse phrygana (exactly on the border between divisions 1 and 3), alt. c. 350 m, 24.03.1998, *Hand 2003*.
+ Division 3: Nata, c. 2 km NE, on slope, alt. c. 130 m, 09.03.1998, *Hand 1906.* (ed.)

Rosaceae

Potentilla reptans L.

+ Division 1: Tala, above Adonis Baths waterfall in Mavrokolympos valley, wet sites along brook, alt. c. 300 m, 26.10.2002, *Hand 3639.* (ed.)

Callitrichaceae

Callitriche brutia Petagna

Meikle (1977) mentions only a single collection of the species from the Akamas peninsula. It has been reconfirmed in the same area by Alziar (2000). Additional observations of the limnicolous annual without cited specimens come from division 5 (Viney 1994) and 7 (Perring 1999). At the following site *Callitriche brutia* was accompanied by *Crassula vaillantii* (Willd.) Roth, *Elatine macropoda* Guss., *Limosella aquatica* L. and *Zannichellia palustris* L.

Division 1: Pegeia, SW of the village, vernal pools in rocks at the edge of the plateau above road junction near Agia Paraskevi, alt. c. 120 m, 16.3.1998, *Hand 1945*. (ed.)

Onagraceae

Epilobium parviflorum Schreb.

+ Division 1: Tala, above Adonis Baths waterfall in Mavrokolympos valley, wet sites along brook, alt. c. 300 m, 26.10.2002, *Hand 3638* (ed.)

Epilobium tetragonum L.

The only record for Cyprus is, for the reasons explained by Meikle (1977), somewhat dubious. The following collection comes from a site surprisingly close to the coast. The stems of the plants are glabrous below, sparingly crispate-pubescent above. The leaves, glabrous to sparingly hairy at the margins and nerves, have decurrent bases and are not shortly petiolate as in the closely related controversial *Epilobium lamyi* F. W. Schultz. Therefore, and according to other characters, the plants match *E. tetragonum* s. str., e.g. in the sense of Jäger & Werner (2002) to name but one of the Central European floras.

+? Division 2: Pomos, Livadi valley, from the middle part of the dam to picnic site above, open *Pinus brutia* forest, wet ground on track, alt. c. 150-200 m, 18.5.1999, *Hand 3301*. (ed.)

Aizoaceae

Mesembryanthemum crystallinum L.

First collected near Larnaka by Kotschy in 1862 (Meikle 1977); recollected by Takis Tsintides in 1988 and 1999, between Larnaka and Dekelia, E of Larnaka town. Mentioned also by Della & Iatrou (1995). Investigations showed that it is restricted to this area.

Division 4: Sanacosta restaurant, between Larnaka and Dekeleia, E of Larnaka, sandy and gravelly beach, sea level, 29.4.1989, *Hadjikyriakou 273;* Chryso Psari, between Larnaka and Dekeleia, E of Larnaka, sandy and gravelly beach, sea level, 2.6.1989, *Hadjikyriakou 296*. G. Hadjikyriakou

Glinus lotoides L.

Recorded by Kotschy in 1862 (Meikle 1977) from division 5. Also mentioned by Della & Iatrou (1995) from division 4.

Division 4: Achna dam, wet places along the margins of the dam, alt. c. 50 m, 1.8.1999, *Hadjikyriakou 4784*. G. Hadjikyriakou

Umbelliferae

Anthriscus caucalis M. Bieb.

Recorded by Kotschy from Prodromos and Galata (division 2) in 1862, and by Sintenis from Prodromos in 1880 (Meikle 1977). Not recorded since. Investigations at the collection site showed that the species occurs in small groups here and there, along agricultural tracks and field margins.

Division 2: Tsakkistra village, roadside on diabasic rocks, alt. c. 800 m, 27.2.1998, *Hadjikyriakou 2967;* ibid., 10.4.1998, *Hadjikyriakou 3106;* ibid., 4.5.1998, *Hadjikyriakou 3271*. G. Hadjikyriakou

Cachrys crassiloba (Boiss.) Meikle

Meikle (1977) cites specimen 632 collected by Kotschy between Kouklia and Geroskipou (division 1 or 3) with a question mark. Investigations at the environs of Kouklia and Mandria villages showed that the otherwise montane *Cachrys crassiloba* grows well in the area.

Division 3: Kouklia village, roadside, on alluvium, alt. 20 m, 30.9.1996, *Hadjikyriakou 1918;* Kouklia - Asprokremmos dam, field margins, on alluvium, alt. c. 50 m, 3.9.1998, *Hadjikyriakou 3709*. G. Hadjikyriakou

Bupleurum trichopodum Boiss. & Spruner

Mentioned by Meikle (1997) and Kalheber in Hand (2001) for Cyprus.

+ Division 2: Prasinouin, Limnitis valley, rocky place on diabasic rocks, alt. c. 700 m, 28.4.1998, *Hadjikyriakou 3228*. G. Hadjikyriakou

Crithmum maritimum L.

+ Division 2: Pomos, S of the harbour at Akro Pomos, shaded rocks at the coast, alt. c. 2 m, 31.10.2002, *Hand 3678*. (ed.)

Tordylium carmeli (Labill.) Al-Eisawi [Syn.: *Synelcosciadium carmeli* (Labill.) Boiss.] and ***T. maximum*** L.

The inclusion of *Tordylium maximum* in the flora of Cyprus is based on a single gathering from division 1: Holmboe (1914: 141) collected the species "On heaps of rubbish near the monastery of Hag. Neophytos *(JH 741)*" in 1905. Meikle (1977) did not check the specimen but accepted it as the only record for the island though he remarked that Cyprus is far outside the natural range of the species and that it may be an alien. The collection is still extant at the Oslo herbarium (O). It is in flowering state and clearly belongs to *T. carmeli*. Both taxa mentioned are superficially similar in flower but the umbels of *T. maximum* never have less than six rays to name only one important difference. Al-Eisawi & Jury (1988) included the monotypic genus *Synelcosciadium* in *Tordylium,* a view that is followed here. Apart from Cyprus, *T. carmeli* occurs from Syria south to N Palestine only (Al-Eisawi & Jury 1988). The combination *T. carmeli* was already published by Al-Eisawi (1982) and superfluously repeated in Al-Eisawi & Jury (1988) as "comb. nov."

The Holmboe record becomes the first for Cyprus as the next gathering of *T. carmeli* is that of Haradjian from 1913 (see Meikle 1977). Consequently, *T. maximum* has to be deleted from the flora of Cyprus.

Fig. 1 shows the distribution of *T. carmeli* in Cyprus based on specimens cited in Hand (2000), the only historical record mentioned by Meikle (1977) and the revised specimen by Holmboe (1914). One of the records for Kannaviou *(Hand 2449)* in Hand (2000) does not refer to division 3 but division 2. Completing the remarks in the first instalment of the present series it should be mentioned that some plants of *T. carmeli* reach a height of c. 200 cm, not only 100 cm or 150 cm as stated by Al-Eisawi & Jury (1988) and Meikle (1977), respectively.

Fig. 1. Distribution of *Tordylium carmeli* in Cyprus. Border lines of the phytogeographical divisions following Meikle (1977, 1985).

Rubiaceae

Crucianella latifolia L.

+ Division 2: Kannaviou, slope of way N of road to Panagia, not far from Agia junction, alt. c. 350 m, 5.5.1998, *Hand 2406;* Agios Nikolaos, slope E (above) of the village, at the start of the track to Omodos, former vineyards, alt. c. 900 m, 14.5.1999, *Hand 3242*. (ed.)

Compositae

Carthamus boissieri Halácsy

+ Division 6: Orounta, c. 500 m S of the village, at base of steep slope of Peristerona valley, field, alt. c. 270 m, 5.11.2002, *Hand 3752*. (ed.)

Lactuca saligna L.

+ Division 3: Asomatos, Fasouri reed beds, meadow c. 2 km SW of Asomatos, alt. 0 m, 3.11.2002, *Hand 3714*. (ed.)

Plumbaginaceae

Limonium cyprium (Meikle) Hand & Buttler, **comb. & stat. nov.**
≡ *Limonium albidum* subsp. *cyprium* Meikle in Ann. Musei Goulandris 6: 88. 1983.

Meikle (1985) described in detail the Cyprus endemic *Limonium albidum* subsp. *cyprium* known at that time only from the N coast between Kyrenia and Cape Andreas. Indeed, the taxon is very similar to *L. albidum* (Guss.) Pignatti, an endemic of the S Italian island of Lampione. Plants from the nearby islands of Lampedusa and Linosa formerly also included in *L. albidum* have been separated as *L. lopadusanum* by Brullo (1980; see also Brullo & Pavone 1981 on the cytology of the group), being part of a group of closely related taxa occurring around Sicily (*L. albidum* or *L. intermedium* group). Meikle's (1985) description is matching the specimens cited below. However, some plants of the Lara population are more robust than those at the N coast. The inflorescence of a single plant is 21 cm high and thereby exceeds the measurements given in the Cyprus flora ((2)5-10 cm). Compared to three *L. albidum* collections from Lampione in the Berlin herbarium (B) and the descriptions of *L. albidum* and *L. lopadusanum* in Brullo (1980; including a photograph of the *L. albidum* lectotype), the plants from Cyprus show a somewhat intermediate general appearance between these taxa in respect to leaf size and form as well as to the structure of the inflorescence (variably straight to flexuous branches). But some important details can be added to Meikle's (1985) treatment: generally 1 stem per rosette, 3-4 spikelets per cm, 1-5 flowers per spikelet, spikelet 4.0-4.3 mm long, inner bracteole 3.2-3.8 mm long, calyx 2.9-3.5 mm long. All taxonomically important parts of the spikelets and flowers are smaller than in *L. albidum* and *L. lopadusanum* (see for comparison the measurements by Brullo 1980).

Unquestionably, *L. cyprium* is morphologically very close to the S Italian taxa cited, but it has developed discontinuities in several floral characters and consequently the rank of species seems appropriate.

The Cyprus flora is relatively poor in coastal *Limonium* species, e.g. in comparison to Crete (Jahn & Schönfelder 1995). The genus is absent from many parts of the coast especially from areas dominated by igneous rock. *L. cyprium* may be a relic species of the *L. intermedium* group and the latter may have been displaced by other taxa in the area between S Italy and Cyprus – a hypothesis that may explain the curious disjunction unparalleled by other elements of the island's flora.

+ Division 1: Agios Georgios, Akrotiri Drepano, rocky coast (limestone), upper edge of the rocks towards sea, alt. 5 m, 3.10.1998, *Buttler 32365 & Diguet,* det. Hand; ibid.,

bay of Lara, E side of spit directing southwards, rocky coast (limestone), upper edge of the rocks towards sea, alt. 15 m, 3.10.1998, *Buttler 32368 & Diguet,* det. Hand. K. P. Buttler & R. Hand

Asclepiacaceae

Vincetoxicum canescens (Willd.) Decne.

A very rare species that has been collected at two localities in the environs of Chionistra (Meikle 1985). The following collections are from two different sites, and the population at each locality consists of very few plants.

Division 2: 2 km W of Pedoulas village on the road to Kykko Monastery, screes near the road, on diabasic rocks, alt. c. 1100 m, 4.6.1989, *Hadjikyriakou 297;* Madari peak, screes on diabasic rocks, alt. c. 1500 m, 10.6.1995, *Hadjikyriakou 1647*; ibid., alt. c. 1600 m, 2.7.2002, *Hadjikyriakou 5495*. G. Hadjikyriakou

Boraginaceae

Cynoglossum montanum subsp. ***extraeuropaeum*** Brand

The taxon has a very restricted range in Cyprus and has been collected repeatedly "between the Nicosia road and the site of the former Olympus Camp Hotel" in the Troodos settlement, the only site in the country (Meikle 1985). The following collection means a slight expansion of its distribution area. The plant may not be so rare as it seems since most collectors concentrate their activities on finding the superficially similar *Cynoglossum troodi* H. Lindb., which is a microendemic of the same area.

Division 2: Troodos, forest at the Troodos Environment Centre, at the edge of the village, alt. c. 1750 m, 4.6.2002, leg. *Charalambous in Hand 3561,* det. Hand. (ed.)

Convolvulaceae

Calystegia sepium (L.) R. Br.

+ Division 2: Katydata village, moist place with *Phragmites australis* near the road, lavas, alt. 200 m, 15.9.1998, *Hadjikyriakou 3718;* Diplopotama Platys valley, streamside, among *Rubus sanctus*, under *Platanus orientalis,* diabasic rocks, alt. 600 m, 30.9.1998, *Hadjikyriakou 3746*. G. Hadjikyriakou

Convolvulus betonicifolius Mill.

+ Division 4: Between Faneromeni and Alyki Larnakas, cultivated field, alt. c. 8 m, 7.9.1988, *Hadjikyriakou 74*. G. Hadjikyriakou

Cuscuta campestris Yunck.

Meikle (1985) cites only one collection from division 8.

+ Division 2: Fylagra, Pelendri village, roadside, on *Polygonum equisetiforme,* gabbro rocks, alt. c. 650 m, 23.11.1998, *Hadjikyriakou 3853*.

+ Division 4: Larnaka, cultivated field, on *Alhagi graecorum,* alluvium, alt. c. 3 m, 4.6.1999, *Hadjikyriakou 4610*. G. Hadjikyriakou

Cuscuta planiflora Ten.

Mentioned by Meikle (1985) and Chrtek & Slavík (1993).

+ Division 3: Zakaki – Alyki Akrotiriou, marshy place, on *Linum bienne,* alluvium, about sea level, 9.4.1999, *Hadjikyriakou 4271*. G. Hadjikyriakou

Scrophulariaceae

Linaria pelisseriana (L.) Mill.

Meikle (1985) cites two records for Cyprus. Also collected by Kalheber (Hand 2001).

+ Division 2: Kourvoula Xeros valley, grassy slope, on diabasic rocks, alt. c. 400 m, 2.4.1998, *Hadjikyriakou 3050*; ibid., alt. c. 300 m, 4.4.1999, *Hadjikyriakou 4252 & Makris;* Mavres Sykes, stream margins with herbaceous vegetation, on diabasic rocks, alt. c. 600 m, 27.4.1998, *Hadjikyriakou 3206*.

G. Hadjikyriakou & C. Makris

Linaria albifrons (Sm.) Spreng.

Meikle (1985) cites three collections for Cyprus.

+ Division 2: Kremmos tou Astraka, Platys valley, rocky place on diabasic rocks, alt. c. 1000 m, 6.5.1998, *Hadjikyriakou 3320;* Kourvoula Xeros valley, grassy slope, on diabasic rocks, alt. c. 300 m, 4.4.1999, *Hadjikyriakou 4251 & Makris*.

G. Hadjikyriakou & C. Makris

Limosella aquatica L.

Although records suggest that it is rare in Cyprus, it is likely to be commoner, since vernal pools occur in abundance at many areas in the lowlands, especially on the rocks locally known as "kafkalla". Several gatherings in the collections by Hadjikyriakou and Hand are from new sites in division 1 or confirmations of those mentioned by Meikle (1985).

+ Division 3: S of Sotira village Lemesos, shallow pools on limestone, alt. c. 300 m, 30.3.2002, *Hadjikyriakou 5332 & Delipetrou*. G. Hadjikyriakou & Delipetrou

Labiatae

Lavandula stoechas L.

Its main range of occurrence in Cyprus is between 200 and 600 m of altitude, but Kotschy's record from Cape Gata, Akrotiri area (specimen no. 603 from 1862), which is close to the sea, surprised Meikle (1985) who suggests that "Kotschy's record from Cape Gata requires confirmation". The cited collection below confirms it after 130 years. *Lavandula stoechas* grows well in the fenced area of Akrotiri military base, with other low shrubs in an area of about 1 km².

Division 3: Kavo Gata, among low shrubs, on alluvium, alt. c. 10 m, 12.5.1995, *Hadjikyriakou 1747*. G. Hadjikyriakou

Origanum cordifolium (Benth.) Vogel

The endemic *Origanum cordifolium* was known so far to occur in the SW part of Troodos mountain range, between Pano Panagia and Kykko Monastery. Investigations showed that it occurs also in the NW part of Troodos mountain range, between Kykko monastery and Xeros, namely the Xeros valley. The range of occurrence S of Kykko monastery is between 500-900 m alt. and N of Kykko monastery between 250-600 m alt.

Division 2: Kafizides, Xeros valley, along forest road, on diabasic rocks, alt. c. 250 m, 21.7.1992, *Hadjikyriakou 1386;* Agiasma, Xeros valley, rock crevices on diabase, alt. c. 650 m, 14.8.1992, *Hadjikyriakou 1389;* Kamenon Paidi, Xeros valley, streamside on diabase, alt. c. 480 m, 19.9.1997, *Hadjikyriakou 2794*.

G. Hadjikyriakou

Phlomis cypria Post

The Cypriot endemic *Phlomis cypria* comprises two taxa, which have been classified as varieties by Meikle (1985). According to that author "there is evidence of incipient speciation, and one can recognize certain trivial differences apparently peculiar to the plants". The nominal taxon is restricted to limestone of the W Pentadactylos range, var. *occidentalis* Meikle to ser-

Table 1. Characters of *Phlomis cypria* taxa.

	subsp. ***cypria***	subsp. ***occidentalis***
Leaf shape (of majority of leaves below inflorescence)	shortly and broadly oblong, 3-4 cm × 1.5-2 cm	narrowly oblong, 3-7 cm × 1-2.3 cm
Ratio leaf length/width	1.5-2.0	2.1-3.9
Leaf apex	rounded or very obtuse, broad	tapering to a narrow, obtuse or subacute apex
Leaf base	often slightly cordate to rounded	often rounded to cuneate
Colour of leaf indumentum	whitish or greyish tomentose with no or slight contrast between both tomentose sides	often yellowish tomentose with strong contrast between lower side and darker upper side

pentine, diabase and pillow lava of the W Troodos mountains and adjacent areas of W Cyprus (see Fig. 2), a type of distribution paralleled by many Cypriot taxa with or without a clear speciation. The trivial differences are the shape of the leaves (see also figures in Holmboe 1914, Meikle 1985) and the colour of the indumentum. Based on Meikle's description and the examination of further material (specimens cited below) the differences are summarized in Table 1.

Other differing characters could not be found. The contradictions concerning leaf shape of the nominal taxon mentioned by Holmboe (1914) may be explained by the fact that the cited specimen collected by Post in summer has young leaves as in a specimen collected a few weeks later at the same site (see below).

However, the minor morphological differences between the two taxa and compared to similar *Phlomis* species from the E Mediterranean area speak against species rank. But because of their allopatric areas and differing ecology they should be ranked as subspecies, not only as varieties.

Phlomis cypria subsp. ***occidentalis*** (Meikle) Hand, **comb. & stat. nov.**
≡ *Phlomis cypria* var. *occidentalis* Meikle in Ann. Musei Goulandris 6: 93. 1983.

Fig. 2. Distribution of *Phlomis cypria* according to records by Alziar 2000, Meikle 1985 and in the text. – Circles: subsp. *cypria*; dots: subsp. *occidentalis*; half dots refer to observations of the latter by Tsintides 1998 and Tsintides & al. 2002. Border lines of the phytogeographical divisions following Meikle (1977, 1985).

Phlomis cypria subsp. *cypria*

Division 7: Kornos, facing south above Vasilia, 4.4.1941, *Davis 3046* (B); St Hilarion, 31.7.1898, *Post* (B).

Phlomis cypria subsp. *occidentalis*

Division 1: Neo Chorio, at the track below (SW) fire lookout Smigies, alt. c. 300 m, 19.4.1998, *Hand 2226*.

Division 2: Kannaviou, Argaki tis Agias valley upstream the road to Panagia, on rocks somewhat above second bridge, alt. c. 450 m, 21.4.1998, *Hand 2250;* Pano Panagia, track 2.3 km before the Vrysia bridge, alt. c. 750 m, 26.4.1998, *Hand 2316*; Vretsia, rocks at Gefyra Roudia, alt. c. 400 m, 28.4.1998, *Hand 2348*; Pano Panayia, alt. 800 m, 22.4.1991, *Alziar & al. 4. Iter Optima 1143* (B); piste de Stavros-tis-Psokas à Lysso, alt. 450 m, 24.4.1991, *Alziar & al. 4. Iter Optima 1290* (B). (ed.)

Plantaginaceae

Plantago major subsp. ***intermedia*** (DC.) Arcang. [Syn.: *P. uliginosa* F. W. Schmidt]

According to Meikle's (1985) description, only the nominal taxon occurs in Cyprus. The specimen cited below fits all characters typical for subsp. *intermedia* in the sense of Central European floras (e.g. Jäger & Werner 2002). The capsules have 17-18 seeds measuring 0.7-0.9 × 0.4-0.5 mm to name but a few diagnostic characters. This taxon has never been mentioned before for Cyprus but it is not rare in neighbouring areas, e.g. Turkey (Tutel 1982) and Israel (Feinbrun-Dothan 1978, sub *P. major* subsp. *pleiosperma*).

In some (peripheral?) parts of their mostly sympatric areas subsp. *major* and subsp. *intermedia* are difficult to determine, e.g. in the British Isles (Kay 2002) and Egypt (Snogerup & Boulos 2002). Subsp. *intermedia* is the more hygrophilous taxon but there is no really clear-cut ecological difference either in Central Europe or in Turkey (Tutel 1982) or Cyprus. In the latter two countries *P. major* subsp. *major* generally prefers moister situations than in northern parts of its area. Data of a recent study suggest that the two taxa are genetically differentiated even in sympatry, have low gene flow and a distinct population structure (Wolff & Morgan-Richards 1999). The authors recommend to treat both taxa as separate species. But this study is based on a relatively small sample size, i.e. plants from 30 locations only, many of them in NW Europe. Until additional evidence from an area-wide revision can be supplied *intermedia* should be treated as subspecies.

+ Division 2: Platanistasa, Peristerona valley c. 3.8-4.0 km below junction to Stavros tou Agiasmati, partly dry river bed, alt. c. 480 m, 2.11.2002, *Hand 3698*. (ed.)

Plantago bellardii All.

+ Division 2: Kannaviou, Argaki tis Agias valley above the road to Panagia, downstream the second bridge, alt. c. 450 m, 21.4.1998, *Hand 2239;* Pano Panagia, surrounding of Vrysia bridge, 2 km towards Alonoudhi bridge, *Pinus brutia* forest alt., c. 650 m, 28.3.1999, *Hand 2659*. (ed.)

Chenopodiaceae

Bassia indica (Wight) A. J. Scott [Syn.: *Kochia indica* Wight]

Viney (1994) and Della & Iatrou (1995) described the rapid expansion of this neophytic species in the Mesaoria (divisions 5 and 6) and the Larnaca area but few specimens have been cited. There is also a mention for division 4 by Chrtek & Slavík (2001).

Division 6: Lefkosia, Chilonos street near Pediaios river, ruderal site, alt. 155 m, 5.11.2002 *Hand 3747;* Orounta, c. 500 m S of the village at road, open ground, alt. c. 300 m, 5.11.2002, *Hand 3750*. (ed.)

Suaeda maritima (L.) Dumort. subsp. ***maritima***

Meikle (1985) based his description of the seeds on British material because all Cypriot specimens seen were sterile. Consequently, he treated the species in the sense of an aggregate. The specimen cited below has ripe seeds fitting the description by Meikle (1985). The diameter of the seeds is about 1.1 mm so that the plant should be subsp. *maritima* if the treatment of Ball & Akeroyd (1993) is followed.

Division 1: Chlorakas, near small fishermen's harbour, rocky coast, alt. c. 1 m, 24.10.2002, *Hand 3630*. (ed.)

Salsola tragus L. subsp. ***tragus*** [Syn.: *S. kali* L. sensu Meikle]

According to the revision by Rilke (1999) the plants treated as *Salsola kali* by Meikle (1985) obviously all belong to the newly circumscribed taxon *S. tragus*. Rilke (1999) was able to check some of the cited specimens in the Cyprus flora. The taxon was known from division 2 only by an ephemeral occurrence inland but is also indigenous in the coastal strip.

Division 2: Gialia, sandy beach W of the village, W of the coastal road, alt. c. 3 m 10.4.1999, *Hand 2783*. (ed.)

Salsola inermis Forssk.

+ Division 1: Pegeia, rocks in the Sea Caves area SE of Agios Georgios, alt. c. 5 m, 13.5.1998, *Hand 2460*. (ed.)

Euphorbiaceae

Euphorbia taurinensis All.

First records for Cyprus. Obviously, the species has been overlooked in former times. The taxonomic treatment follows that by Radcliffe-Smith (1982), who questioned the species status of *E. reuteriana* Boiss., a taxon occurring nearby in Syria, Lebanon and Palestine. By comparing a selection of specimens in the Berlin herbarium (B) from several parts of the area (France, Italy, Bulgaria, Greece, Turkey, Lebanon, but only one collection with ripe seeds from the latter country) it becomes obvious that the taxon is highly variable in many characters (e.g. leaf form, length of gland horns, seed sculpturing). Probably, E Mediterranean plants called *reuteriana* even do not deserve infraspecific rank as presumed by Radcliffe-Smith (1982). Zohary's (1972) description of *E. reuteriana*, mentioned as the taxon occurring in Palestine exclusively, does not include details differentiating it from *taurinensis*. Specimens with seed pits closer together than usual are to be found here and there in the whole area. In respect to size and density of the seed pits most specimens checked show an intermediate state between the seeds depicted by Radcliffe-Smith (1982) and Zohary (1972; as *E. reuteriana*). This is also true for the specimen *Hand 2926*.

The species has been recorded around Lemesos town at altitudes between 50 and 610 m. It is common at the localities of collection and this suggests that it is an indigenous species with a wider distribution on Cyprus.

+ Division 3: Parekklisha village, low shrubs on rocky slope, 18.2.1996, *Makris in Hadjikyriakou 1737;* Episkopi Lemesou village, within shrubs on rocky place, 6.3.1996, *Makris in Hadjikyriakou 1753;* Polemidia forest, roadside and low shrubs, 20.2.1997, *Hadjikyriakou 2227;* 2 km N of Episkopi Lemesou village, within shrubs on rocky place, 10.3.1997, *Hadjikyriakou 2317;* 1.5 km N of Episkopi Lemesou village, within shrubs and scattered pines on rocky place, 10.3.1997, *Hadjikyriakou 2319;* Dierona, c. 7.3 km towards Akrounta, rivulet above road, macchia in open *Pinus brutia* forest, alt. c. 610 m, 28.4.1999, *Hand 2926*. G. Hadjikyriakou, R. Hand & C. Makris

Orchidaceae

Spiranthes spiralis (L.) Chevall.

Meikle (1985) cites only three localities. Hansen & al. (1990) observed the species in division 1 but did not collect specimens.

+ Division 1: Pegeia forest, *Pinus brutia* forest with an understorey of low shrubs, alt. c. 350 m, 29.10.1988, *Hadjikyriakou 107*. G. Hadjikyriakou

Liliaceae

Gagea peduncularis (J. & C. Presl) Pascher

+ Division 1: Tala, slope SE (above) monastery Agios Neofytos, alt. c. 500 m, 21.2.1998, *Hand 1755*. (ed.)

Juncaceae

Juncus rigidus Desf.

+ Division 1: Pafos, below/SW lighthouse, rocky coast, alt. c. 2 m, 28.10.2002, *Hand 3654*.
+ Division 3: Akrotiri, SE edge of the salt lake, N of Moni Agiou Nikolaou, dry salt lake, alt. -1 m, 3.11.2002, *Hand 3719*. (ed.)

Araceae

Arum italicum Mill. subsp. ***italicum***

Meikle (1985) mentions two gatherings from Cyprus (divisions 2 and 7). In his monograph of the genus, Boyce (1993) presents a map for *Arum italicum* showing Cyprus far outside the area of the species. In a later work Cyprus is included ("Troodos"; Boyce 1995) for the nominal subspecies, probably referring to the same collection in division 2. Lapithos, the other site in division 7, is mentioned for *A. concinnatum* Schott, a superficially similar species. However, *A. italicum* is a rare species in Cyprus as all other members of the genus apart from *A. dioscoridis* Sm.

Division 2: Platanistasa, valley N of the turn-off N of the village, under trees, alt. c. 780 m, 10.05.1999, *Hand 3191*; seen also in the same year at the edge of the nearby village of Askas. (ed.)

Cyperaceae

Fimbristylis ferruginea (L.) Vahl

+ Division 3: Kouklia, lowermost pool below Asprokremnos dam, edge of the pool, alt. c. 25 m, 24.10.2002, *Hand 3621*. (ed.)

Gramineae

Aira elegantissima subsp. ***ambigua*** (Arcang.) Doğan [Syn.: *Aira elegans* Gaud., pro sp.]

Obviously, subspecies *ambigua* having a more easterly area than the nominal taxon (see Böhling & Scholz 2003) has not been mentioned previously for Cyprus. *Aira elegantissima* s.l. is also new for division 1.

+ Division 1: Baths of Aphrodite, at the Aphrodite Nature Trail, 6.4.2002, *Seitz & Heink*, conf. pro spec. et det. pro subsp. Scholz. H. Scholz & B. Seitz

Piptatherum miliaceum subsp. ***thomasii*** (Duby) Freitag [Syn.: *Oryzopsis miliacea* var. *thomasii* (Duby) K. Richt.]

The taxon has been mentioned in Flora of Cyprus for division 3 only (Bor in Meikle 1985) but disregarded. Bor's arguments for the non-acceptance of two distinct taxa are not very convincing. Many authors (e.g. Freitag 1975) agree that subsp. *thomasii* is well characterised by densely verticillate panicles with 15-30 or more often sterile branches on lower whorls, contrary to subsp. *miliaceum* with only loosely verticillate panicles and 3-5 spikelet-bearing branches below.

+ Division 2: Stavros tis Psokas, 5.8 km SW of the forest station, at the road towards Agia, rivulet in *Pinus* forest, wet site at the road, alt. 760 m, 7.10.1998, *Buttler 32399 & Diguet,* det. Scholz. K. P. Buttler & H. Scholz

Dactyloctenium aegyptium (L.) P. Beauv.

+ Division 3: Fasouri forest nursery, a weed in open spaces, alt. c. 3 m, 30.7.1996, *Hadjikyriakou 1907;* Municipal garden of Lemesos town, margins of open spaces with lawn, about sea level, 12.8.1999, *Hadjikyriakou 4823*. G. Hadjikyriakou

Crypsis schoenoides (L.) Lam.

+ Division 1: Evretou dam, wet places along the margins of the dam, alt. c. 200 m, 14.8.1999, *Hadjikyriakou 4846*.

+ Division 6: Magglis dam, Archaggelos Lakatameia, wet places along the margins of the dam, alt. c. 200 m, 9.6.1999, *Hadjikyriakou 4635*. G. Hadjikyriakou

Aristida caerulescens Desf.

Recorded by Bor in Meikle (1985) from only one locality.

Division 2: NE of Lefkara dam, burnt forest of *Pinus brutia,* on lavas, alt. c. 400 m, 12.4.2001, *Hadjikyriakou 5251*.

+ Division 6: E of Sia village, near the bridge which crosses the highway, roadside on lavas, alt. c. 300 m, 11.12.1998, *Hadjikyriakou 3862*. G. Hadjikyriakou

Digitaria sanguinalis (L.) Scop. subsp. ***sanguinalis***

In Bor's treatment of the species for the Flora of Cyprus (Meikle 1985) no information about the infraspecific taxa is to be found but the description fits the nominal subspecies. The following two specimens confirm its occurrence.

+ Division 1: Neo Chorio, Aphrodite Beach Hotel, coast c. 1.1 km SE Loutra tis Aphroditis (= Baths of Aphrodite), gardens, alt. 10 m, 8.10.1998, *Buttler 32413 & Diguet,* det. Hand, conf. Scholz.

Division 2: Trimiklini, Loumata valley, at the road c. 400 m above Saittas, road side, alt. c. 600 m, 2.11.2002, *Hand 3693,* conf. Scholz. K. P. Buttler, R. Hand & H. Scholz

Setaria adhaerens (Forssk.) Chiov.

+ Division 1: Neo Chorio, Aphrodite Beach Hotel, coast c. 1.1 km SE of Loutra tis Aphroditis (= Baths of Aphrodite), gardens, alt. 10 m, 8.10.1998, *Buttler 32414 & Diguet,* det. Scholz.

+ Division 2: Pano Panagia, Moni Chryssorogiatissas, flowerbed near the entrance, alt. c. 850 m, 27.10.2002, *Hand 3648,* det. Scholz. K. P. Buttler, R. Hand & H. Scholz

Pteridophyta

Aspleniaceae

Asplenium ceterach L.

Recently, Van den heede & al. (2002) elucidated the taxonomy of the species in Cyprus. According to their results *Asplenium ceterach* sensu Meikle (1985) comprises not only the

autotetraploid *A. ceterach* but also a hexaploid taxon and the pentaploid hybrid. The latter two have been described as *A. cyprium* Viane & Van den heede and *A.* ×*troodeum* Viane & Van den heede respectively. Unfortunately, all these taxa "cannot be distinguished macromorphologically …, but can be identified by measuring the exospore and stomatal guard cell length" (Van den heede & al. 2002). The authors apply the biological species concept and accept the hexaploids as new species (also known from Greece and Sicily). This practice has been criticized by other pteridologists so that one of the authors published subspecific names in November 2002 (Viane in Viane & Van den heede 2002). Unfortunately, these combinations are invalid because the basionyms are not mentioned. There is only a reference to the place of their publication. The basionyms of the new taxa and the diagnoses have been published in October 2002 (Van den heede & Viane 2002), the same descriptions being repeated in December 2002 (Van den heede & al. 2002). The only available name for the hexaploid taxon at subspecies level is that published by Pinter (in Pinter & al. 2002, subsp. *mediterraneum* Pinter) in November 2002.

The three known European-Mediterranean taxa of *A. ceterach* have widely overlapping areas. At least in Cyprus, where more intensive investigations by Van den heede & al. (2002) have been undertaken, it showed that no obvious ecological specialization exists. Generally, there are only micromorphological differences correlated to the ploidy level. Both groups working on *A. ceterach* at the moment do not give convincing reasons for their ranking system (Pinter & al. 2002, Van den heede & al. 2002) but follow the recent trend in European pteridology of accepting morphologically indistinguishable cytotaxa as subspecies – a disputable practice. By giving names to all cytotaxa of vascular plants with similarly minor differences an enormous inflation of names in the Mediterranean flora would arise.

Asplenium ceterach subsp. *mediterraneum*

The following specimen has a mean exospore length of 48.0 ± 4.0 µm and a mean guard cell length of 55.4 ± 4.6 µm (n = 50, ± s.d., measurements by W. Bujnoch) and therefore, it should be the hexaploid taxon according to the literature cited. The nominal tetraploid taxon also occurs in the N foothills of the Troodos range (locality 17 in Van den heede & al. 2002).

+ Division 6: Agrokipia, Kreatos, NE side not far from Moni Agios Panteleimona, shaded rock slide below summit, alt. c. 580 m, 5.11.2002, *Hand 3754,* det. Bujnoch. (ed.)

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References

Al-Eisawi, D. M. 1982: List of Jordan vascular plants. – Mitt. Bot. Staatssamml. München **18:** 79-182.

— & Jury, S. L. 1988: A taxonomic revision of the genus *Tordylium* L. *(Apiaceae)*. – Bot. J. Linn. Soc. **97:** 357-403.

Alziar, G. 2000 ["1999"]: Compte rendu du 4ème Iter Mediterraneum. – Bocconea **11:** 5-83.

Ball, P. W. & Akeroyd, J. R. 1993: 23. *Suaeda* Forskål ex Scop. – Pp. 123-125 in: Tutin, T. G., Burges, N. A., Chater, A. O., Edmondson, J. R., Heywood, V. H., Moore, S. M., Valentine, D. H., Walters, S. M. & Webb, D. A. (ed.), Flora Europaea, ed. 2, **1.** – Cambridge, etc.

Béguinot, A. 1912: Intorno ad alcune *Ononis* della Tripolitania e Cirenaica. – Bull. Soc. Bot. Ital. **1912:** 129-134.

Böhling, N. & Scholz, H. 2003: The *Gramineae (Poaceae)* flora of the Southern Aegean islands (Greece). – Ber. Inst. Landschafts- Pflanzenökol. Univ. Hohenheim, Beih. **16.**

Boyce, P. 1993: The genus *Arum*. – Kew.

— 1995 ["1994"]: The genus *Arum (Araceae)* in Greece and Cyprus. – Ann. Mus. Goulandris **9:** 27-38.

Brullo, S. 1980: Taxonomic and nomenclatural notes on the genus *Limonium* in Sicily. – Bot. Not. **133:** 281-293.

— & Pavone, P. 1981: Chromosome numbers in the Sicilian species of *Limonium* Miller *(Plumbaginaceae).* – Anales Jard. Bot. Madrid **37:** 535-555.

Chilton, L. 1997: Plant list for Cyprus. – Retford.

Chrtek, J. & Slavík, B. 1993: Contribution to the flora of Cyprus 2. – Fl. Medit. **3:** 239-259.

— & — 2001 ["2000"]: Contribution to the flora of Cyprus 4. – Fl. Medit. **10:** 235-259.

Davis, P. H. 1965: 13. *Ranunculus* [p.p.]. – Pp. 146-195 in: Davis, P. H. (ed.), Flora of Turkey **1.** – Edinburgh.

Della, A. & Iatrou, G. 1995: New plant records from Cyprus. – Kew Bull. **50:** 387-396.

Devesa, J. A. 2000: 37. *Ononis*. – Pp. 590-646 in: Castroviejo, S. (ed.), Flora iberica **7(2).** – Madrid.

Feinbrun-Dothan, N. 1978: Flora Palaestina **3.** – Jerusalem.

Freitag, H. 1975: The genus *Piptatherum (Gramineae)* in Southwest Asia. – Notes Roy. Bot. Gard. Edinburgh **33:** 341-408.

Georgiades, C. 1994: I epigenis chlorida tis Kyprou, taxinomiki, cloridiki, phytogeographiki, oikofysiologiki meleti [The adventive flora of Cyprus, taxonomic, floristic, phytogeographic, ecophysiological study]. – Ph. D. Thesis, Athens University.

Hand, R. (ed.) 2000: Contributions to the flora of Cyprus I. – Willdenowia **30:** 53-65.

— (ed.) 2001: Supplementary notes to the flora of Cyprus II. – Willdenowia **31:** 383-409.

Hansen, K., Hansen, R.-B., Kreutz, C. A. J., Rückbrodt, U. & Rückbrodt, D. 1990: Beitrag zur Kenntnis und Verbreitung der Orchideenflora von Zypern mit Interims-Verbreitungskarten. – Mitt. Arbeitskreises Heimische Orchid. Baden-Württemberg **22(1):** 73-171.

Holmboe, J. 1914: Studies on the vegetation of Cyprus. – Bergen.

Jafri, S. M. H. 1980: Flora of Libya **86** [*Fabaceae*]. – Tripoli.

Jäger, E. J. & Werner, K. (ed.) 2002: Exkursionsflora von Deutschland, ed. 9, **4.** – Heidelberg & Berlin.

Jahn, R. & Schönfelder, P. 1995: Exkursionsflora für Kreta. – Stuttgart.

Kay, G. M. 2002: *Plantago*. – Pp. 534-536 in: Preston, C. D., Pearman, D. A. & Dines, T. D. (ed.), New atlas of the British & Irish flora. – Oxford.

Meikle, R. D. 1977, 1985: Flora of Cyprus **1-2.** – Kew.

Meusel, H., Jäger, E. & Weinert, E. (ed.) 1965: Vergleichende Chorologie der zentraleuropäischen Flora **1.** – Jena.

Pampanini, R. 1930: Prodromo delle flora Cirenaica. – Forlì.

Perring, F. 1999: North Cyprus 25th March - 5th April. – BSBI News **82:** 69-72.

Pinter, I., Bakker, F., Barrett, J., Cox, C., Gibby, M., Henderson, S., Morgan-Richards, M., Rumsey, F., Russell, S., Trewick, S., Schneider, H. & Vogel, J. 2002: Phylogenetic and biosystematic relationships in four highly disjunct polyploid complexes in the subgenera *Ceterach* and *Phyllitis* in *Asplenium (Aspleniaceae).* – Organisms Diversity Evol. **2:** 299-311.

Radcliffe-Smith, A. 1982: 5. *Euphorbia* L. – Pp. 571-630 in: Davis, P. H. (ed.), Flora of Turkey and the East Aegean Islands **7.** – Edinburgh.

Rilke, S. 1999: Revision der Sektion *Salsola* s. l. der Gattung *Salsola (Chenopodiaceae)*. – Biblioth. Bot. **149.**

Robson, N. K. B. 1985: Studies in the genus *Hypericum* L. *(Guttiferae)* 3. Sections 1. *Campylosporus* to 6a. *Umbraculoides*. – Bull. Nat. Hist. Mus. London, Bot. **12(4):** 163-325.

— 1996: Studies in the genus *Hypericum* L. *(Guttiferae)* 6. Sections 20. *Myriandra* to 28. *Elodes*. – Bull. Nat. Hist. Mus. London, Bot. **26(2):** 75-217.

Romero Zarco, C. 1999: 33. *Vicia*. – Pp. 360-417 in: Castroviejo, S. (ed.), Flora iberica **7(1).** – Madrid.
Sibthorp, J. 1813: Florae Graecae prodromus **2.** – Londini.
Snogerup, S. & Boulos, L. 2002: *Plantaginaceae*. – Pp. 108-120 in: Boulos, L. (ed.), Flora of Egypt **3.** – Cairo.
Tsintides, T. C. 1998: The endemic plants of Cyprus. – Nicosia.
—, Hadjikyriakou, G. N. & Christodoulou, C. S. 2002: Trees and shrubs in Cyprus. – Lefkosia.
Tutel, B. 1982: 1. *Plantago* L. – Pp. 505-521 in: Davis, P. H. (ed.), Flora of Turkey and the East Aegean Islands **7.** – Edinburgh.
Valdés, B. 1992: *Ononis mollis* Savi. – P. 152 in: Danin, A. (ed.), Check-list of the vascular plants collected during Iter Mediterraneum II. – Bocconea **3:** 43-216.
Van den heede, C. J., Pajarón, S., Pangua, E. & Viane, R. L. L. 2002: A new species and a new hybrid of *Asplenium (Aspleniaceae)* from Cyprus and evidence of their origin. – Belgian J. Bot. **13:** 92-116.
— & Viane, R. L. L. 2002: New species and new hybrids on *Asplenium* subgenus *Ceterach* (*Aspleniaceae*). – GEP News **9:** 1-4.
Viane, R. L. L. & Van den heede, C. J. 2002: Subspecific names for the recently described new Aspleniums from Cyprus. – GEP News **10:** 5-6.
Viney, D. E. 1994: An illustrated Flora of North Cyprus **[1].** – Koenigstein.
Wolff, K. & Morgan-Richards, M. 1999: The use of RAPD data in the analysis of population genetic structure: case studies in *Alkanna (Boraginaceae)* and *Plantago (Plantaginaceae)*. – Pp. 51-73 in: Hollingsworth, P. M., Bateman, R. M. & Gornall, R. J. (ed.), Molecular systematics and plant evolution. – London.
Zohary, M. 1972: Flora Palaestina **2.** – Jerusalem.

Address of the editor:
Ralf Hand, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Königin-Luise-Str. 6-8, D-14191 Berlin & Wartburgstr. 52, D-10823 Berlin, Germany; e-mail: ralfhand@gmx.de