



Recent progress in plant taxonomy and floristic studies in Greece

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ABSTRACT: A survey of developments in plant taxonomy, floristics, and phytogeography in Greece during 2005 to 2016 is presented. Species diversity in different areas and on different scales is summarised in five maps. A list of new taxa described during this period is provided, together with their type citations and taxonomic comments where relevant; almost all of the taxa are based on Greek plant material.

KEYWORDS: *Flora Hellenica*, *Flora Hellenica Bibliography*, *Flora Hellenica Database*, floristics, phytogeography, species diversity, Greece

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INTRODUCTION

Flora Hellenica was envisaged to be a comprehensive Flora for the whole of Greece as politically constituted today. Two volumes were published (STRID & KIT TAN 1997, 2002). Some years after publication of the second volume, it became apparent that there would not be the necessary economic resources and manpower to complete this series, which was planned to result in nine volumes. We therefore decided to concentrate on regional studies, updating the *Flora Hellenica Bibliography* and building up the *Flora Hellenica Database*.

The *Flora Hellenica Bibliography* (STRID 2006) listed 13,276 books and articles relevant to the taxonomy, distribution, and ecology of the vascular plants of Greece, with entries dating from 1753 (LINNAEUS 1753) to early 2005. Since that publication, the supporting database has been continuously updated, and on 19 January 2017 it included 14,925 entries. Floristic data, i.e., floristic information on specific taxa from specific localities, were found in 2,833 of them.

The *Flora Hellenica Database* was initiated in 1988 and currently comprises 971,930 records. Of these, 457,730 are based on herbarium material, 300,867

on literature reports, and the rest on field notes, photographs, etc. Each record in the database generally contains the data provided in a good herbarium label, including geographical coordinates (degrees and minutes of latitude and longitude).

In this article, we analyse some of the developments in Greek plant taxonomy, floristics, and phytogeography during the period 2005 to 2016, after publication of the *Bibliography*.

MATERIAL AND METHODS

Data on publications has mostly been extracted from the *Flora Hellenica Bibliography*, which is an Access database prepared by the first author (Arne Strid). In addition, we have used the *Flora Hellenica Database*, as well as personal knowledge of unpublished data and other information. The maps (Figs. 1-5) are based on geo-referenced records in the database.

RESULTS

From 1 January 2006 up to the time of writing (19 January 2017), 350,565 records have been added to the

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Flora Hellenica Database. After publication of the *Flora Hellenica Bibliography* in 2006, 1,649 items have been added to the supporting database, and from almost all of these, relevant taxonomic and floristic data have been extracted for registration in the *Flora Hellenica Database*. As a result, we can now draw a reasonably detailed picture of the floristics and phytogeography of Greece. The collections in the most important relevant public herbaria (ATH, ATHU, B, C, G, LD, UPA, W, and WU) have been rather thoroughly assessed. It is estimated that probably 75% of all relevant herbarium material has been accounted for in the database. The databasing of published floristic records is more or less complete, although registration has sometimes been selective when many records for the same species were available from a small area. The amount of unpublished and unregistered data in private hands, photograph archives, etc., is difficult to estimate. However, it is our impression that available data are sufficient for producing reasonably correct distribution maps for practically all species of vascular plants in Greece. Twice as many records would increase the density of dots on a given map but only rarely change the general distribution pattern, although one can expect an occasional surprising range extension for a few species.

General floristic data for Greece. Taxonomic, biogeographical, and ecological data on the vascular plants of Greece were summarised in a checklist (DIMOPOULOS *et al.* 2013, 2016). A publication separate from *Flora Hellenica*, it summarises the 5,760 species or 6,622 taxa (species and subspecies) of native and naturalised vascular plants currently known in Greece. Maps and tables obtained from the total dataset are found in these two publications. Data on distribution (in Greece and in general), endemic and/or range-restricted status, life-form, and habitat are given in tabular form, and there are extensive synonym lists and comments, as well as a photograph appendix. Endemism is high by continental European standards: 1,275 species or 22.1% were classified as Greek endemics. The checklist introduced the concept of ‘range-restricted species’, defined as those where the linear distance between the farthest points of occurrence is less than 500 km, regardless of whether or not the distribution area crosses a national border. Altogether, 1,704 species, or 29.6% of the flora, were classified as range-restricted.

The largest set of floristic data has been provided by E. Willing. His extensive collections are deposited in the Berlin herbarium (B). His field work during 2005–2016 covered almost the whole of mainland Greece, as well as N and C Peloponnisos and the island of Evvia. Floristic lists are available online (<http://www.willing-botanik.de/>), and these were used for extracting records for the *Flora Hellenica Database*. However, not all the records were critically evaluated.

Compiled and edited by Kit Tan, another important set of Greek floristic data was provided in the series *New floristic records in the Balkans*, published in the journal *Phytologia Balcanica* from the year 2006 to the present.

A Red Data Book in two volumes (PHITOS *et al.* 2009a, b) provides information in Greek on a number of rare, endemic, or otherwise interesting species. LAFRANCHIS & SFIKAS (2009) is a two-volume well-illustrated semi-popular guide to a substantial part of the Greek flora. Kit TAN *et al.* (2009) is a completely revised and updated edition of a previous work, *Wild Flowers of Greece*, and provides detailed information on c. 150 species (and 121 plates), as well as descriptions of areas rich in botanical diversity. GREY-WILSON (2010) is an illustrated account of the bulbous plants of Greece. An annotated re-issue of the classical *Flora Graeca* (SIBTHORP & SMITH 1806–1840) was published in five volumes by STRID & STRID (2009–2012, 2013). A two-page spread is provided for each of the 966 species, with a reproduction of the original colour plate on the right-hand page and description, comments, and a distribution map on the facing left-hand page. STEARN *et al.* (2012) is an updated monographic work on the peonies of Greece.

Aegean islands. A well-illustrated book, ‘Flowers of Crete’ was published by FIELDING *et al.* (2005) with an updated online supplement. FLOHE (2006) is another illustrated semi-popular account of the Cretan flora. ‘Wild edible plants of Crete’ were described by STAVRIDAKIS (2006). ALIBERTIS (2007) is an account of healing, aromatic, and edible plants of Crete. FOURNARAKI (2010) provided a discussion of the threatened plants of Crete, with special reference to conservation, seed ecology, and gene-banking.

The first of two volumes of *Flora von Rhodos und Chalki* by KLEINSTEUBER *et al.* appeared in 2016. It is a detailed account of the flora of Rhodes and the adjacent island of Chalki. Additions to the flora of Kalimnos were published by ZERVOU *et al.* (2009), and a more complete treatment was given in a PhD thesis by ZERVOU (2011). The flora and vegetation of Lesbos was the basis of a PhD thesis by BAZOS (2005). New records and comments on the flora of the Kastellorizo island group were published by CONSTANTINIDIS (2013). Biogeographical patterns, mainly on small islands, were analysed by PANITSA *et al.* (2006, 2008, 2010).

Important floristic publications for other Central and East Aegean islands include SNOGERUP *et al.* (2006) for Andros, KOUGIOUMOUTZIS *et al.* (2012b) for Anafi, KOUGIOUMOUTZIS *et al.* (2014) for Kimolos, KOUGIOUMOUTZIS *et al.* (2015) for Folegandros, TSAKIRI *et al.* (2016) for Chalki, and CATTANEO & GRANO (2015, 2016) for Chalki and Astipalea, respectively.

Biel carried out extensive field work on several Aegean islands, most importantly on Samothraki in the N Aegean, the latter resulting in a complete Flora

of Samothraki (BIEL & KIT TAN 2014). New records for other Aegean islands, notably Amorgos, Serifos, Sifnos, and Thasos, were published together with Kit Tan in the series 'New floristic records in the Balkans'. Dinter produced privately distributed excursion reports with many floristic records for Samos (DINTER 2006, 2009a), Kos (DINTER 2009b), Thasos (DINTER 2011), Karpathos (DINTER 2012), and Rhodes (DINTER 2015). DÜLL & KALHEBER (2011) prepared a checklist for the flora of the East Aegean islands of Samos, Ikaria, and Fourni. A floristic and phytosociological investigation of the island of Antikithera and nearby islets was published by TZANOUDAKIS *et al.* (2006). Additions to the flora of the Northern Sporades were contributed by CATTANEO & GRANO (2012a, 2012b, 2014) and CATTANEO, GRANO & PASTA (2014). The Atlas of the Aegean Flora (STRID 2016a, b) is a two-volume work providing descriptions and distribution maps for 3,316 species on the Aegean islands. Photographs of 421 species are included in an appendix.

Peloponnisos. The literature treating the flora of Peloponnisos during the past decade is fairly extensive. Some of the more important works are: KALPOUTZAKIS & CONSTANTINIDIS (2005) for E Peloponnisos; MAROULIS & ARTELARI (2005) for Mt. Erimanthos; VALLIANATOU (2005) and VALLIANATOU & YANNITSAROS (2010) for Salamis, Egina, and other islands of the Saronic Gulf; VALLIANATOU & YANNITSAROS (2009) for the island of Patroklos in the Saronic Gulf; KALPOUTZAKIS & CONSTANTINIDIS (2006) for S Peloponnisos; IATROÚ *et al.* (2007) for the Akrokorinthos area (N Peloponnisos); KOUGIOUMOUTZIS *et al.* (2012a) for the Methana peninsula (NE Peloponnisos); BALIOUSIS (2013, 2016) for Mt. Likeo and Mt. Aphrodisio, respectively; KOKKORIS (2014) for Mt. Panachaiko; MERMYGKAS & YANNITSAROS (2015) for Mt. Saitas (N Peloponnisos); and CONSTANTINIDIS & KALPOUTZAKIS (2015) for Mt. Parnon and the Moutsos wetland protected area.

An analysis of distribution patterns and conservation perspectives of the endemic flora of Peloponnisos was published by TRIGAS *et al.* (2012).

Professional and amateur botanists including V. Christodolou, K. Giannopoulos, M. Issigoni, D. Katsiotis, K. Polymenakos, G. Sfikas, G. Vold, and G. Zarkos have done much for the floristic exploration of Peloponnisos. Many of their new records were published in the series *New floristic records in the Balkans*.

Greek mainland. Floristic publications for Sterea Ellas include KOKMOTIS & GEORGIADIS (2005) on the mountains Elikon, Xerovouni, and Neraidolakkoma; SARIKA *et al.* (2005) on the Amvrakikos Gulf; ZOTOS *et al.* (2006) on Lakes Trichonis and Lysimachia; APLADA *et al.* (2007) on Mt. Parnitha; KARABLIANIS (2007) on the Akarnanika Mountains; and APLADA (2013) on Mt. Giona. The flora of the Pindos is treated in publications

by TSALIKI *et al.* (2005) on the oak woodland in the region of Bourazani; GERASIMIDIS & KORAKIS (2009) on Mt. Mitsikeli; and TSIFTIS *et al.* (2015) on orchids of the North Pindos National Park.

The flora and vegetation on Mt. Vermio was surveyed by CHOCHLIOUROU (2005). KRIGAS & KOKKINI (2005) listed the native vascular flora of the urban and suburban area of Thessaloniki. KORAKIS *et al.* (2006) provided floristic records from the Dadia-Lefkimi-Soufli National Park in Northeast Greece. SCHULER (2007) made a number of contributions to knowledge of the flora of Northern and Central Greece. KAROUSOU *et al.* (2008) published a work on the flora of Mt. Stratonikon in Northern Greece, and TSIFTIS (2009) contributed a detailed survey of the orchids of Eastern Macedonia.

Ionian islands. The most important development with respect to the flora of the Ionian islands is the online publication (2016 onwards) of *Flora Ionica – An inventory of ferns and flowering plants of the Ionian Islands, Greece* (<https://floraionica.univie.ac.at>), which summarises several years of careful and critical work by a group of mainly Austrian botanists led by W. Gutermann. Comments and references to previous taxonomic and floristic publications are included.

Neighbouring countries. A series of additions and amendments to knowledge of the flora of Albania was published by BARINA and co-authors (BARINA & PIFKÓ 2008, 2011; BARINA *et al.* 2013, 2015), and there are scattered floristic contributions for the country by other authors as well, including M. Desfayes, S. Malo, A. Mullaj, L. Shuka, Kit Tan, and G. Vold. Results of a study based on extensive field work were published by MEYER (2011). VANGJELI (2015) published a work entitled *Excursion Flora of Albania*. The most complete and recent account of the Albanian flora is that of PILS (2016). As a result of recent botanical exploration in Albania, several Greek plants have lost their endemic status, the list of such plants including the following taxa: *Acanthus greuterianus*, *Allium meteoricum*, *Bellevalia hyacinthoides*, *Centaurea finazzeri* subsp. *kozanii*, *Centranthus longiflorus* subsp. *junceus*, *Cerastium brachypetalum* subsp. *pindigenum*, *Erysimum cephalonicum*, *Euphorbia deflexa*, *Galium breviramosum*, *Galium speciosum*, *Hypericum rumelicum* subsp. *apollinis*, *Malcolmia graeca* subsp. *hydraea*, *Minuartia pseudosaxifraga*, *Nepeta argolica* (probably subsp. *vourinensis*), *Soldanella pindicola*, and *Trifolium parnassi*.

Volume 1(6) of MICEVSKI'S *Flora na Republika Makedonija* appeared in 2005. MATEVSKI *et al.* (2007) edited a series of papers devoted to K. Micevski on the occasion of his 80th birthday. Scattered taxonomic and floristic publications include STEVANOVIC *et al.* (2009, 2010), RANĐELOVIC *et al.* (2012), TEOFILOVSKI *et al.* (2012), and NIKETIC *et al.* (2014).

In the case of Bulgaria, the literature is fairly comprehensive. Ana Petrova edited papers dealing with the current state of Bulgarian biodiversity (PETROVA 2005) and proceedings of the 7th National Botanical Conference in Sofia (PETROVA 2012), as well as the *Atlas of Bulgarian endemic plants* (PETROVA 2006). A red list of Bulgarian vascular plants was prepared by PETROVA & VLADIMIROV (2009). A local Flora of the Plovdiv region was published by ČESHMEDZIEV & VASSILEV (2009). The 3rd and 4th editions of *Conspectus of the Bulgarian vascular flora*, with distribution maps according to regions, was edited by ASSYOV *et al.* in 2006 and 2012, respectively (ASSYOV *et al.* 2006, 2012). Volume 11 (Dipsacaceae to Asteraceae) of *Flora Reipublicae Popularis Bulgaricae* was published in 2012, edited by KOŽUHAROV and ANČEV (KOŽUHAROV & ANČEV 2012). TSONEVA *et al.* (2012) published the *Atlas of aquatic and wetland plants in Bulgaria*. A survey of invasive alien species was published by PETROVA *et al.* (2013). A new edition of the *Red data book of the Republic of Bulgaria, Volume 1. Plants and fungi* was edited by Peev and published in 2015 (PEEV 2015). There are numerous papers revising small taxonomic groups, describing new species, and reporting new floristic records.

Many new species have been described from the western and Mediterranean regions of Turkey after completion of the *Flora of Turkey* project, and there are numerous floristic reports. A survey of Heldreich's Turkish collections was published by BAYTOP & KIT TAN (2008) and an account of plant collectors in Anatolia by BAYTOP (2010). Works presenting revisions of taxonomic groups include those of DOĞAN & AKAYDIN (2007) on *Acantholimon*, TEKŞEN & AYTAC (2011) on *Fritillaria*, UZUNHISARCIKLI & VURAL (2012) on *Alcea* and *Althaea*, TAEB *et al.* (2012) on annual *Astragalus*, YILDIZ & ÇIRPICI (2013) on sections of *Silene*, TEKŞEN & ERKUL (2015) on *Gagea*, ZAKHAROVA *et al.* (2016) on *Hellenocarum*, and YILDIZ *et al.* (2016) on *Cirsium*.

Evaluation of species diversity on different scales in Greece. The five maps included in this paper demonstrate species diversity in different areas and on different scales.

Fig. 1. This figure is an update of a map first published by STRID (2016b: 10). In the relatively short time since this publication appeared, a number of floristic additions necessitated several changes. The first volume of the Rhodos Flora (KLEINSTEUBER *et al.* 2016) and floristic exploration by B. Biel on Amorgos, Serifos, Sifnos, Thasos, and other Aegean islands gave several additions, as did studies of the floras of Chalki and Astipalea (CATTANEO & GRANO 2015, 2016). The online *Flora of Tilos* by SERVAIS & SEBA (2016, continuously updated) provided information about many species on that small but botanically rich island (see http://www.tilo-botanica.eu/Tilo_Botanica/Liens.html). A previously overlooked publication (LIVANIOU-TINIAKOU *et al.* 2003) has added c. 50 species for the island of Serifos.

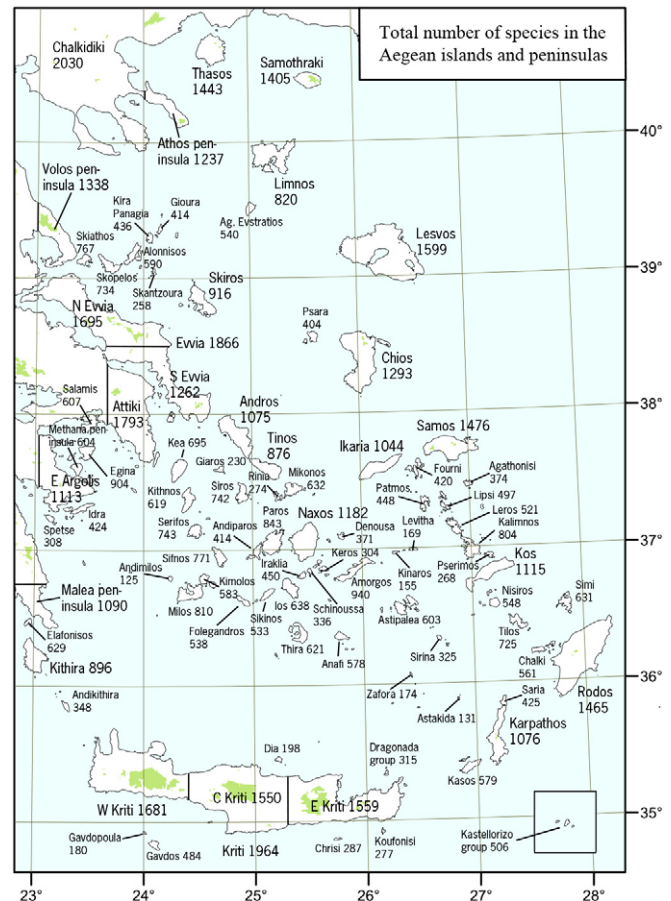


Figure 1. Total number of species in the Aegean islands and peninsulas.

Fig. 2. In general, mainland areas tend to be richer in species than islands of the same size. Altogether, 1,965 species have been recorded from Crete, the largest Greek island, which has an area of 8,336 sq. km. We can compare this with species numbers ranging from 2,200 to 2,858 in outlined areas of the same size on Peloponnisos and the mainland. The highest numbers are found in northern parts of the mainland, which are characterised by great habitat diversity. Habitat-rich mainland areas can be assumed to have provided refuge during periods of climate change for species which have become extinct on islands, where possibilities for migration are more restricted.

Fig. 3. Calculating species numbers per 20' × 20' grid squares gives somewhat similar results. The top 10 squares with the highest species numbers between 1,542 and 1,898 are all in mountainous areas stretching from northern Peloponnisos to the northern and northwest borders.

Figs. 4-5. When a smaller size grid square of 10' × 10' is used, the results are somewhat mixed. On this scale, the numbers to a large extent reflect the degree of floristic exploration, which is rather uneven. The best

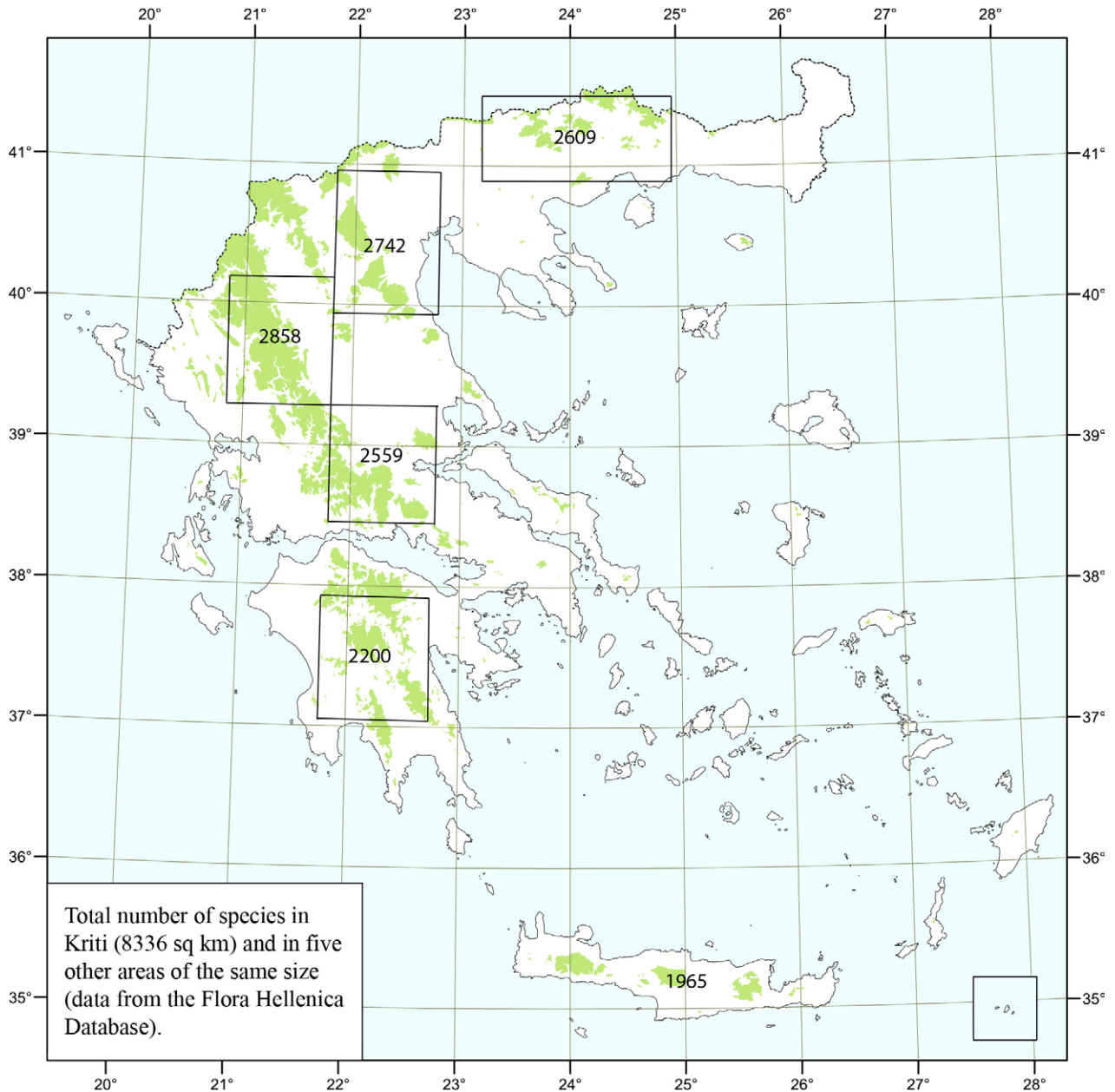


Figure 2. Total number of species in Crete and in five other areas.

explored square (one in the western part of Crete) holds 9,544 records; at the other end of the spectrum are some squares with less than 100 records (Fig. 5). Sites that are known to be botanically rich and interesting have naturally attracted numerous collectors, while areas believed to be botanically uninteresting and trivial have been largely ignored. This inflates the true differences between squares. To his great credit, E. Willing (an investigator willing by name and willing by nature) is one of the few collectors to have covered the Greek mainland more evenly, with a botanising stop every 5 km. Without his considerable efforts, the differences would have been even more pronounced. Nevertheless,

some conclusions are possible. High species numbers are found in grid squares in mountainous areas on the mainland and Peloponnisos and also on some of the more interesting islands such as Crete, Naxos, Samos, Samothraki and Corfu. Low species numbers are found in extensively cultivated lowland areas such as the Thessalian plain. Under-explored areas include the far northeast and, somewhat surprisingly, a diagonal running from northeast to southwest Peloponnisos.

New taxa described from Greece during the period 2005-2016. Approximately 180 taxa at species and subspecies level have been described from Greece during

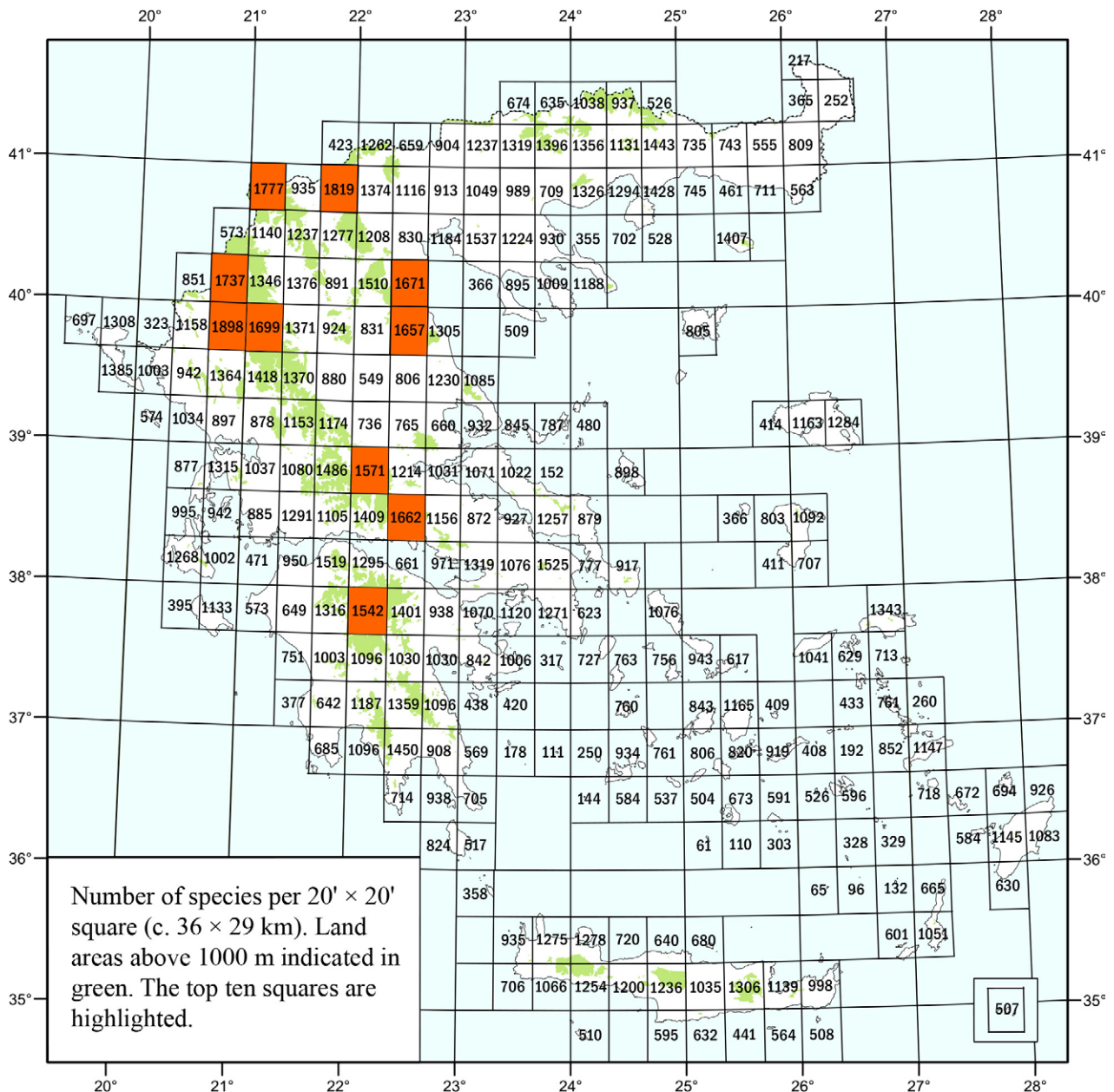


Figure 3. Number of species per 20' x 20' square (c. 36 x 29 km).

this 11-year period. Taxonomically, they range from distinct to highly dubious. Many of them are only known from the type and we have had no opportunity to confirm their identification. However, we predict that less than one third of them will merit taxonomic recognition in the future. In genera such as *Allium*, *Limonium*, and *Ophrys*, there has been a tendency by some workers to describe poorly characterised local populations or samples of intrapopulational variability as separate species. *Ophrys* in particular has suffered from thoughtless splitting with deviating individuals being described as new species. Taxonomically sound concepts were restored in a monograph by PEDERSEN & FAURHOLDT (2007). In *Limonium*, a monograph by BRULLO & ERBEN (2016) has

added a large number of new species often based on a single gathering by one of the authors. Unfortunately, more than 900 Greek *Limonium* collections at LD – collections already carefully identified and annotated by H. Runemark – were ignored. In addition, more than 200 well-collected and well-annotated specimens at ATH were not consulted. Many of the new *Limonium* species described in 2016 will probably be relegated to synonymy after critical examination.

The following is a list of the new taxa described from Greece, together with their type citations. Almost all the types originate from Greece. We may have missed a few taxa which occur in Greece but have their types based on non-Greek material, e.g., from FYROM (Former

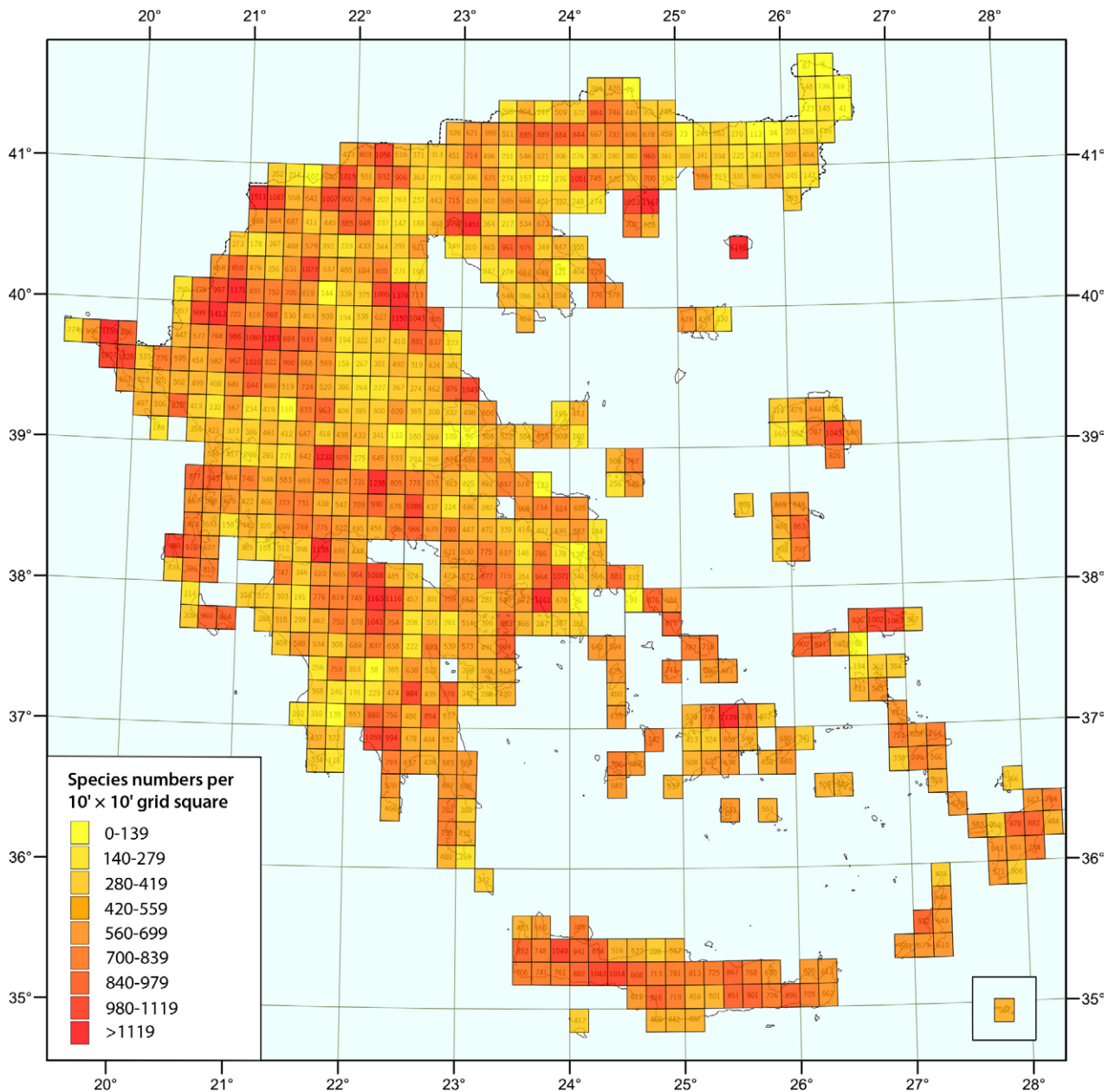


Figure 4. Number of species per $10' \times 10'$ square.

Yugoslav Republic of Macedonia) or Turkey. Hybrids have not been included.

Acanthaceae

Acanthus greuterianus Snogerup, B. Snogerup & Strid in Willdenowia 36: 324 (2006)

Type: Nomos Kozanis, Eparchia Eordeas, near the village of Pirgi (SE of Limni Vegoritis), 600 m, rocky limestone hill, edge of a cultivated field, $40^{\circ}40'N$, $21^{\circ}51'E$, 31.05.1989, *Strid et al.* 29920 (holo. C; iso. ATH, G, LD, UPA).

Related to a group of Anatolian and Irano-Turanian species including *A. hirsutus* Boiss. and *A. syriacus*

Boiss. *Acanthus greuterianus* is now known from additional collections in NW Greece and has recently been recorded from the Albanian side of the Prespa lakes (PILS 2016: 20).

Alliaceae

Allium aeginiense Brullo, Giusso & Terrasi in Candollea 63: 199 (2008)

Type: Meteore (Kalambaka) substrati conglomeratici presso il Monastero di Megalo Meteoro, 08.07.2004, *Brullo, Giusso & Guarino s.n.* (holo. CAT).

The description of this species was based on a single collection from a small population, and there are no other

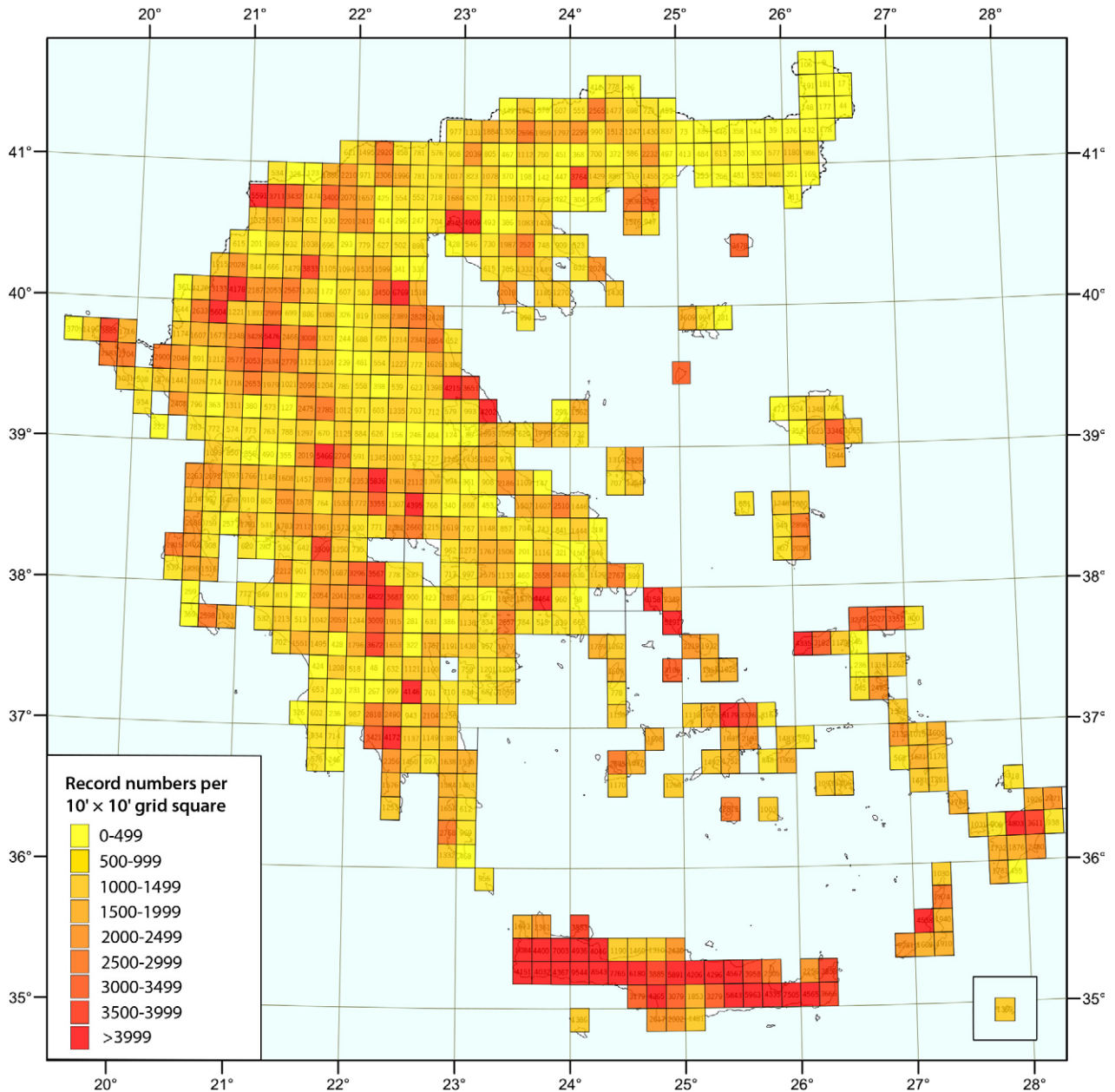


Figure 5. Number of records per $10' \times 10'$ square.

reports. It was related by the authors to *A. hirtovaginum* P. Candargy, a species described from the E Aegean island of Lesbos whose identity remains uncertain because the type material is lost. Strangely enough, in the description of *A. aeginiense* the illustration (Fig. 5) is stated to represent *A. hirtovaginum*, but no collection details were provided. *Allium aeginiense* must be regarded as a doubtful species.

Allium apergii Trigas, Iatrou & Tzanoud. in J. Biol. Res.-Thessalon. 14: 226 (2010)

Type: island of Evvia, municipality of Karistias, Mt. Ochi, summit of Profitis Ilias, $38^{\circ}03'N$, $24^{\circ}28'E$, open rocky habitats with low vegetation cover, alt. 1200-1300 m, 23.07.2000, P. Trigas 4359 (holo. UPA).

A tetraploid member of *Allium* sect. *Codonoprasum*, related to *A. paniculatum* L., *A. luteolum* Halácsy and *A. occultum* Tzanoud. & Trigas. *Allium apergii* is so far known only from a single gathering.

Allium apolloniensis Biel, Kit Tan & Tzanoud. in Willdenowia 36: 367 (2006)

Type: Cyclades, island of Sifnos, Nomos Kikladon, 0.2 km south of Chersonisos, rocky phrygana slope above harbour near Aspri Vigla, on limestone and marble, 40 m, $37^{\circ}02'N$, $24^{\circ}39'E$, 24.10.2004, Biel 04.547 (holo. C; iso. B, herb. Biel).

A tetraploid, autumn-flowering species related to *A. tardans* Greuter & Zahar. and *A. platakisii* Tzanoud. &

Kypriot. The species is known from other collections on the island of Sifnos and is likely to occur elsewhere in the Cyclades.

Allium balcanicum Brullo, Pavone & Salmeri in Fl. Medit. 25 (special issue): 226 (2015)

Type: M. Timfristòs, presso Karpenision, 12.09.1989, G. Bartolo, S. Brullo & P. Minissale s.n. (holo. CAT).

Using an extremely narrow species concept, BRULLO *et al.* (op. cit. 2015) divided the moderately variable species *A. cupanii* into 12 (!) species, although most are not clearly separable. *Allium balcanicum* is to be regarded as a regional variant in the central part of the Balkan Peninsula.

Allium brussalisii Tzanoud. & Kypriot. in Bot. J. Linn. Soc. 158: 141 (2008)

Type: Prov. Attiki, Mt. Parnitha, above Acharnes, 300-600 m, rocky places among scrub in openings of *Pinus halepensis* forest, 31.08.2005, Tzanoudakis 13501 (holo. UPA).

A diploid species of the *A. paniculatum* group: so far known only from the lower southern slopes of Mt. Parnitha.

Allium cephalonicum Brullo, Pavone & Salmeri in Fl. Medit. 25 (special issue): 231 (2015)

Type: Isola de Cephalonia, Monte Enos, a circa 1000 m, nelle formazioni pulvinari orofile, 18.07.2011, S. Brullo & G. Giacalone s.n. (holo. CAT).

One of the 12 local or regional variants of *A. cupanii* which the authors have separated; known only from a single collection.

Allium cithaeronis Bogdanović, C. Brullo, Brullo, Giusso, Musarella & Salmeri in Candollea 66: 378 (2011)

Type: Sterea Ellas, Mont Kithairon in stazioni cacuminali a ca. 1400 m di quota, 38°11'63"N, 23°14'46"E, 03.07.2007. Brullo & Musarella 50.07 (holo. CAT; iso. ATH, CAT, FI, G, UPA, ZA).

A diploid species of *Allium* sect. *Scorodon*. It was later discovered on the nearby mountains Gerania and Parnitha in Sterea Ellas (see POLYMENAKOS & KIT TAN 2014: 291).

Allium makrianum C. Brullo, Brullo, Giusso & Salmeri in Phytotaxa 49: 270 (2010)

Type: Isola di Chios, versante settentrionale, nei cespuglieti spinosi presso Vikion a circa 700 m di quota, 11.10.2007, S. Brullo & Giusso del Galdo s.n. (holo. CAT).

A dubious species, described from a single specimen and related by the authors to *A. archeotrichon* Brullo, Pavone & Salmeri from Rhodes. Similar plants (*Raus* & *Sipman* 33127, 33185 & 33246, all at B) were collected at other localities on Chios in September 2013.

Allium melanogyne Greuter in Willdenowia 39: 342 (2009)

Type: Nomos of Evros, Eparchia of Soufli, 1 km S of Dhadhia (41°07'N, 26°13'E), grassland on mica schist hill, 100 m, 13.06.1992, Greuter *et al.* 23311 (holo. PAL-Gr; iso. B, SEV).

Under cultivation, plants from the *locus classicus* (Strid 55643; ATH, G, herb. Strid) are indistinguishable from *A. nigrum* L. in floral characters, although they retain their somewhat narrower leaves. *Allium melanogyne* is possibly a wild form of *A. nigrum* adapted to a semi-natural habitat, whereas *A. nigrum* is typically a 'weed' of traditional agriculture, found in olive groves and vineyards.

Allium occultum Tzanoud. & Trigas in Phytotaxa 202: 136 (2015)

Type: Skiros island, Mt. Kochilas, rocky calcareous slopes south of the summit, phrygana with *Sarcopoterium spinosum* and *Thymbra capitata*, 590 m, 38°49.183' N, 24°36.547' E, 10.07.2014, Trigas 5812 (holo. ACA; iso. ATHU, UPA).

A tetraploid species of *Allium* sect. *Codonoprasum*, closely related to *A. apergii* (q.v.).

Allium optima Greuter in Bocconeia 25: 106 (2012)

Type: Nom. Lakonia, Ep. Epidhavros Limiras, Bay of Palea Monemvasia, alt. 0-2 m, 36°44'00"N, 23°02'00"E, 08.06.1995, Iatrou *et al.*, Iter Medit. VII N° 1792 (holo. PAL-Gr).

A second small population was reported from the nearby bay of Limin Jerakas (Greuter, op. cit. p. 102). *Allium optima* is related by its author to *A. pallens* L.

Allium orestis Kalpoutz., Trigas & Constantin. in Nordic J. Bot. 30: 196 (2012)

Type: Nom. Arkadias, Ep. Kinourias, Mt. Parnonas, 8.5-8.7 km along the forest road from the village of Kastania on the way to Kontolinas monastery, 1060 m. *Castanea sativa* forest, siliceous substrate. 07.08.2010, Kalpoutzakis 3682 (holo. ACA; iso. ATH, ATHU, B).

In addition to the type collection, a few other gatherings were reported from the lower slopes of Mt. Parnonas and Mt. Taigetos at 800-1240 m. The species was also found by P. Trigas (pers. comm.) in *Castanea* woodland on Mt. Ochi (S Evvia).

Allium tzanoudakisianum Brullo, Pavone & Salmeri in Fl. Medit. 25 (special issue): 230 (2015)

Type: Naxos, Monopetra, su calcare, 27.08.1994, S. Brullo & F. Scelsi s.n. (holo. CAT).

A local variant of *A. cupanii*, which was divided into 12 species. It was reported from several Aegean islands as well as E Peloponnisos, and certainly does not deserve specific rank. The type locality 'Monopetra' does not occur in the Greek Gazetteer, nor maps of Naxos.

Amaryllidaceae

Acis ionica Bareka, Kamari & Phitos in Willdenowia 36: 360 (2006)

This is not a new species, but clearly identical to *Leucojum ionicum* Kit Tan, Mullaj, Sfikas & Strid (as published in TAN *et al.* 107: 40, 2004). The description and type of the latter were available to the authors of *Acis ionica* (as demonstrated in their citation of specimens), but they surprisingly did not realise that it is the same species. *Leucojum ionicum* is an autumn-flowering species occurring in coastal areas of W Greece and S Albania. It has long been known from the Ionian islands of Cephalonia and Lefkas, but was misidentified as *L. valentinum* Pau. The latter is endemic to Spain.

Galanthus samothracicus Kit Tan & Biel in Phytol. Balcan. 19: 377 (2013)

Type: Nomos Evrou, Eparchia Samothrakis, island of Samothraki, NE of Therma, gravelly sand along the banks of the Tsivdogianni stream, 20 m, 40°29'N, 25°36'E, 10.02.2011, *Biel 11.046* (holo. C; iso. ATH, herb. Biel).

Reported in large populations in damp or wet places near streams and springs at low altitudes in the southwest and northeast parts of the island. The species differs from *G. nivalis* L. in details of the leaves and flowers, as well as the winter-flowering habit. Almost similar plants from Mt. Athos, also winter-flowering, are of uncertain taxonomic status.

Apiaceae

Oenanthe tricholoba Greuter in Bocconeia 25: 114 (2012)

Type: Nom. Arkadia, Ep. Mantinia: 6 km NNE of Tripolis, Tripolis-Pirgos road, by the branching of the road to Nestani, alt. 650 m, 37°33'30"N, 22°24'10"E, 31.05.1995, *Kamari et al.*, *Iter Medit.* VII N° 325 (holo. PAL-Gr; iso. B, BEO, BRNM, MA, SALA, UPA, W, etc.).

Similar to *O. pimpinelloides* L., which is widespread and variable in Peloponnisos.

Seseli halkense Cattaneo, Kit Tan & Biel in Phytol. Balcan. 22: 438 (2016)

Type: Nomos Dodekanisou, Eparchia Rodou, island of Chalki, crevices of vertical N-facing limestone cliffs at Klisoura, 200-400 m, 36°13'N, 27°32'E, 02.08.2016, *Cattaneo CK35* (holo. C; iso. ATH, herb. Cattaneo).

A recently described Greek endemic related to *S. crithmifolium* (DC.) Boiss. Occurring also on the neighbouring island of Tilos. In the absence of fruiting material and based on the plant's characteristics, W. Greuter (pers. comm. to C. Cattaneo in 2016) suggested that it might be assigned to the genus *Cachrys* or *Prangos*. Material collected in fruit revealed its affinities with *Seseli*.

Smyrniium dimartinoi Raimondo, Mazzola & Spadaro in Fl. Medit. 25: 138 (2015)

Type: Sicily, Val dei Conti, near Ficuzza (Palermo), 37°53'48"N, 13°23'07"E, 600 m a.s.l., undergrowth on nitrified sandstone soil, 20.06.2013, *F. M. Raimondo s.n.* (holo. PAL; iso. PAL-Gr, FI).

Reported from Sicily and Crete. Very similar to *S. perfoliatum* subsp. *rotundifolium* (Mill.) Bonnier & Layens.

Asteraceae

Achillea grandifolia subsp. *hellenica* Kit Tan, Zarkos, V. Christodoulou & G. Vold in Phytol. Balcan. 22: 117 (2016)

Type: Nomos Achaïas/Korinthias, Eparchia Kalavriton/Korinthias, NE slopes of Ntourntouvana (Dourndouvana), stony ground along forest road to the summit, in open *Abies cephalonica* woodland, 1320-1350 m, in fruiting state, 37°55'N, 22°15'E, 12.08.2015, *Kit Tan & G. Vold 31957* (holo. C; iso. ATH).

A Greek endemic occurring mainly from the mountains of Sterea Ellas southwards to Taigetos. *Achillea grandifolia* subsp. *grandifolia* is found in N Greece, the central part of the Balkan Peninsula, and N and W Turkey. The two subspecies intergrade in the Pindos Mountains.

Achillea occulta Constantin. & Kalpoutz. in Bot. J. Linn. Soc. 147: 250 (2005)

Type: Nomos Lakonias, Eparchia Epidavrou-Limiras, Mt. Koulochera. The upper part of the mountain, from the chapel of Profitis Ilias to the northeast upper parts, mostly along the crest line and the northeast slopes. Steep calcareous rocks, slopes and thickets with *Acer sempervirens* and *Amelanchier*. Alt. c. 1000-1100 m, lat. 36°49'N, long. 22°59'E, 31.05.2003, *Th. Constantinidis & E. Kalpoutzakis 10691* (holo. ACA; iso. B, FI, UPA).

A distinctive local endemic first collected on Mt. Koulochera by the participants of the 7th *Iter Mediterraneum* held in Peloponnisos during May and June of 1995. Because of its striking resemblance to some *Anthemis* species, Greuter already designated it '*Achillea pseudanthemis*'. It was also collected by Kit Tan and G. Vold and cultivated in the Copenhagen Botanic Garden successfully for three years.

Anthemis samariensis Turland in Willdenowia 38: 63 (2008)

Type: Greece, Kriti (Crete), Nomós Hanión, Eparhía Sfakión, head of side valley of Farángi Samariás (Samaria gorge) between Mt. Melindaouú and Avlimanákou Korifí, W of Petradé (35°18'51"N, 23°59'34"E), 1775 m, crevice of N-facing vertical calcareous cliff, 2.07.2007, *N. J. Turland 1486* (holo. UPA; iso. B, K, MO, UPA).

A distinctive species belonging to the *A. cretica* L. complex. A second population was noted c. 2 km south of the type locality, and in 2013 another small population of c. 10 individuals was found by V. Papiomitoglou on Mt. Kedros to the southwest.

Centaurea athoa subsp. *chelmea* Kit Tan, Zarkos, V. Christodoulou & G. Vold in *Phytol. Balcan.* 21: 388 (2015)

Type: Nomos Achaïas/Korinthias, Eparchia Kalavriton/ Korinthias, NE slopes of Ntourntouvana, stony ground along forest road in open *Abies cephalonica* woodland, 1125 m, 37°55'N, 22°16'E, 12.08.2015, *Kit Tan & G. Vold 31936* (holo. C; iso. ATH).

Centaurea athoa subsp. *athoa* was described from Mt. Athos and also reported from W & S Anatolia; *C. athoa* subsp. *parnonia* (Halácsy) E. Gamal-Eldin & Wagenitz is known from Mt. Parnonas and Mt. Taigetos in S Peloponnisos. *Centaurea athoa* subsp. *chelmea* differs from subsp. *parnonia* in its longer and less densely arachnoid basal leaves as well as other characters, and has its own distribution area in north-central Peloponnisos.

Centaurea carystea Trigas & Constantin. in *Bot. J. Linn. Soc.* 147: 250 (2005)

Type: Evvia island, Mt. Ochi, western part of Profitis Ilias summit, north of the mountain shelter. Stony plain with rocks in open, steppe-like vegetation, 38°03'N, 24°28'E, c. 1200 m a.s.l., 26.06.2004, *P. Trigas 3117* (holo. ACA; iso. UPA).

A yellow-flowered member of *Centaurea* sect. *Acrolophus*, related to *C. pelia* DC. and *C. mantoudii* T. Georgiadis. It is known only from the type and one other gathering from the same locality.

Centaurea hymettia Kit Tan, Zografidis & Bancheva in *Phytol. Balcan.* 20: 58 (2014)

Type: Nomos & Eparchia Attikis, southern slopes of Mt. Imittos, along dirt road overlying marble, 650 m, 37°53'N, 23°47'E, 06.06.2013, *Zografidis s.n.* (holo. C; iso. ATH, SOM).

A local endemic of Mt. Imittos, allied to *C. laureotica* Halácsy, which occurs further south in Attikis.

Centaurea samothracica Kit Tan & Strid in *Phytol. Balcan.* 15: 186 (2009)

Type: island of Samothraki southern side, by the chapel of Panagia Kremniotissa, 300 m. Crevices of dark igneous rocks. 20.06.2005, *Strid 55795* (holo. ATH; iso. G, LD, herb. Kit, herb. Strid).

A pink-flowered member of *Centaurea* sect. *Acrolophus*, related to *C. chalcidicaea* Hayek and probably endemic to Samothraki. It was also collected at the same locality by B. Biel.

Cirsium zarkosii Kit Tan, G. Vold & Christodoulou in *Phytol. Balcan.* 20: 128 (2014)

Type: Nomos & Eparchia Korinthias, Mt. Killini, dry meadow overlying limestone, 1500 m, 37°57'N, 22°25'E, 27.07.2013 (beginning of flowering), *Kit Tan, G. Vold & Zarkos 31643* (holo. C; iso. ATH, LD, herb. Strid).

An interesting species of *Cirsium* sect. *Epitrachys* on account of its numerous small capitula and pale greenish-yellow facies. With affinities to *C. hypopsilum* Boiss. & Heldr., which was found at the same locality.

Erigeron uniflorus subsp. *parnassensis* A. G. Game ex M.J.Y. Foley in *Willdenowia* 40: 192 (2010)

Type: [Greece, Sterea Ellas, Nomos of Fokis], Mt. Parnassos, rocky, grazed and overgrazed grassland, c. 2500 m, 18.07.1976, *Akeroyd, Mellors & Preston 389* (LANC).

Described from a single specimen and possibly a form of *E. glabratus* Bluff & Fingerh. which occurs in the same area (*Gustavsson 491*, LD).

Filago wagenitziana Bergmeier in *Willdenowia* 40: 185 (2010)

Type: Kriti (Crete), Grenzgebiet der Nomoi Chania und Rethimno, südl. Asi Gonia, 760 m, Quarzit, sandiger Lehm, wechsel trocken, teilbeschattet unter *Platanus* und *Castanea*, 19.04.2008, *Bergmeier 08-128* (holo. GOET; iso. B, UPA).

A small and inconspicuous but distinctive species described from the type and a few other gatherings from the same locality. It was already collected in 2002, c. 70 km to the west at Stomiou bay, 1.5 km NNE of the monastery Ag. Chrisoskalitissas (*Strid 52485*; ATH, G, GOET, LD, herb. Strid). The species is probably more widespread in W Crete.

Hieracium bohatschianum subsp. *onosmoidiforme* Gottschl. & Melikoki in *Willdenowia* 43: 62 (2013)

Type: Prefecture of Chalcidice, Mt. Cholomon, 40°30'13.6"N, 23°33'13.5"E, slope of road, rocky position, 547 m, 06.06.2011, *K. Melikoki 6.12.3* (holo. TAUF; iso. ATHU, B, C, FI, LD, PAL, UPA, W, herb. Gottschlich).

Polatschek 16038 (W) from the same area was cited as a paratype.

Hieracium greuteri Gottschl. in *Willdenowia* 36: 352 (2006)

Type: Greece, Peloponnisos, Nom. Achaia, Chelmos, 2.5 km SW Solos, oberes Flusstal des Krathis-Potamos, Aufstieg zur Styx-Schlucht, 1200-1500 m, 29.06.2002, *L. Meierott 02GR319* (holo. B; iso. UPA, herb. Gottschlich).

A local endemic related to *H. olympicum* Boiss.

Hieracium sparsum subsp. *cholomonense* Gottschl. & Melikoki in Willdenowia 43: 59 (2013)

Type: Prefecture of Chalcidice, Mt. Cholomon, 40°26'14.7"N, 23°30'18.4"E, *Quercus frainetto* forest, 890 m, 06.07.2011, K. Melikoki 12.4.2 (holo. TAUF; iso. B, C, herb. Gottschlich).

Several paratypes were cited, all from Mt. Cholomon.

Hieracium transiens subsp. *levimaculatum* Gottschl. & Melikoki in Willdenowia 43: 61 (2013)

Type: Prefecture of Chalcidice, Mt. Cholomon, 40°25'56.6"N, 23°33'34.5"E, *Quercus frainetto* forest, 751 m, 08.06.2011, K. Melikoki 7.3.3 (holo. TAUF; iso. B, C, herb. Gottschlich).

K. Melikoki 7.11.1 (ATHU, B, C, TAUF, W, herb. Gottschlich) from the same area was cited as a paratype.

Klasea moreana Greuter in Bocconea 25: 110 (2012)

Type: Nom. Lakonia, Ep. Epidhavros Limiras, Mt. Korakia N of the village Richea, alt. 500-700 m, 36°51'35"N, 23°00'00"E, 08.06.1995, Iatrou *et al.*, Iter Medit. VII N° 1901 (holo. PAL-Gr; iso. B, BRNM, SALA, UPA).

Endemic to SE Peloponnisos, closely related to *K. cretica* (Turrill) Holub from E Crete. The differences between the two taxa are small and both are probably better treated as subspecies of *K. flavescens* (L.) Holub.

Petasites anapetrovianus Kit Tan, Ziel., Vladimirov & Stevanović in Phytol. Balcan. 16: 243 (2010)

Type: Nomos Ioanninon, Eparchia Dodonis, Mt. Peristeri, along road to Tsoukarella peak after junction to village of Groumelitsa, calcareous rocky scree slopes, 1900-1950 m, 39°40' N, 21°06' E, 04.07.2008, Kit Tan, G. Vold & V. Vladimirov 30600 (holo. C; iso. ATH, KRA, SOM, all gynomorphous plants).

Also noted on Mts. Iti (*Landström 2504*) and Vardousia (*Gustavsson 9357*), both collections are at LD. Listed as a Greek endemic in DIMOPOULOS *et al.* (2013), later reported from S Albania (PILS 2016: 36). The latter documentation was based on a single sterile specimen collected by Z. Barina some 10 years earlier from Mt. Grammozi and never re-collected. Flowering material is necessary to confirm identification.

Taraxacum limnoticum A. J. Richards in Phytol. Balcan. 21: 150 (2015)

Type: Nomos Lesvou, Eparchia Limnou, N of Myrina, dunes with open phrygana at beach of Ormos Avionas, 3-10 m a.s.l., 39°53'42"N, 25°03'55"E, 27.03.2014, ca. 50 plants, Biel Li14.013 (holo. ATH; iso. C, PRA, SOM).

A Greek endemic close to *T. hellenicum* Dahlst and reported from several localities on the northern and central Aegean islands and from north-central and northeastern parts of the Greek mainland.

Taraxacum umbrosum Sonck, Kirschner & Štěpánek in Ann. Bot. Fenn. 52: 163 (2015)

Type: [FYROM] Galičica Mts., subalpine sites in the pass in the Galičica Mts., along the road between Oteševo and Lake Ohrid. 1500-1600 m a.s.l., 07.1987, R. Bělohávková & D. Fišerová. Cultivated from achenes no. JŠ 2810/5 as no. JŠ 3767 (holo. PRA, no. det. 28031; iso. distributed as *Taraxacum* Exs. no. 530, 1002-1004 in BM, H, M, S).

An agamosperous taxon intermediate between sect. *Erythrosperma* and sect. *Erythrocarpa*. It occurs in the western and southern parts of FYROM and SW Bulgaria, and is widespread in the mountains of NW and C Greece.

Boraginaceae

Alkanna chrysanthiana Kit Tan in Phytol. Balcan. 15: 291 (2009)

Type: Greece, Nomos Messinias, Eparchia Kalamon, Mani Peninsula, coastal slope near Stoupa, 15-30 m, 36°52'N, 22°15'E, flowers creamy-white, drying pale yellow, 04.2002, Sfikas 13461 (holo. herb. Sfikas).

Related to *A. sartoriana* Boiss. & Heldr., a rare, white-flowered local endemic from NE Peloponnisos.

Omphalodes runemarkii Strid & Kit Tan in Phytol. Balcan. 11: 69 (2005)

Type: Nomos Lakonias, Eparchia Epidavrou-Limiras, Mt. Koulochera, near a small gravel road c. 500 m before the telecommunications tower on the summit, 1100 m, garigue and small outcrops of rugged limestone, 36°49' N, 23°00' E, 06.04.2005, Strid, Kit Tan & G.Vold 55423 (holo. ATH; iso. B, C, G, GB, LD, UPA, herb. Kit).

A distinctive species occurring at a few other localities in the same area at 750-1100 m. Dense and low in stature with large flowers, it has horticultural potential, as it is surprisingly hardy, growing even in southern Scandinavia.

Onosma pseudoebuica Teppner & Rain. Karl in Phytol. (Horn) 53: 187 (2013)

Type: Euböa, Xiron-Gebirge, an der Straße zwischen Ag. Anna und Vasilika, ca. 3.5 Straßenkm N Pappades, ca. 340 m, 38°56'55"N, 23°2'14" E, 14.05.2007, Karl s.n. (holo. ATH; iso. ATH, B, C, GZU, UPA, W, WU).

Known from a few other localities in N Evvia and part of the mainland facing it. Possibly an allotetraploid derived from *O. euboica* Rech. f. and *O. heterophylla* Griseb.

Brassicaceae

Aethionema saxatile subsp. *corinthiacum* Kit Tan, G. Vold, Zarkos & Christodoulou in Phytol. Balcan. 19: 394 (2013)

Type: Nomos & Eparchia Korinthias, Mt. Gerania, Sousaki, 130 m, 37°56'N, 23°05'E, 27.07.2013 (fruiting), *Kit Tan, G. Vold & Zarkos 31653* (holo. ATH, iso. C).

A compact form with succulent greyish-green leaves found in a botanically interesting place (an extinct volcano) with *Hedysarum grandiflorum* and *Centaurea ebenoides*. Also known from two other localities in Corinthia.

Cardamine calliphaea Kit Tan, G. Vold & Giannopoulos in *Nordic J. Bot.* 31: 282 (2013)

Type: Nomos Ilias, Eparchia Olimbias, railway track near Lake Kaiafas, 6 m, 37°29'N, 21°36'E, 25.04.2011, *Kit Tan, G. Vold & Giannopoulos 30945* (holo. C; iso. ATH, LD, herb. Giannopoulos).

Recorded from a few other localities on mainland Greece (eparchia Mesolongiou). *Cardamine calliphaea* is a lowland species, related to *C. glauca* Spreng. ex DC. and *C. plumieri* Vill., two mountain species from NW Greece.

Microthlaspi mediterraneo-orientale Tahir Ali & Thines in *Taxon* 65: 94 (2016)

Type: Rhodes, Archangelos, 36°11'N, 28°06'E, elevation 460 m, in cracks of limestone rocks, 20.03.2013, *V. Kummer Mp-G-Rh-11-1* (FR sub FR-0117884).

Previously known as *Thlaspi natolicum* Boiss. [= *Noccaea natolica* (Boiss.) Al-Shehbaz], a taxon closely related to *Thlaspi perfoliatum* L. [= *Noccaea perfoliata* (L.) Al-Shehbaz]. There seems to be no good reason for treating the species as a new taxon under *Microthlaspi*.

Campanulaceae

Campanula saonissia Biel & Kit Tan in *Phytol. Balcan.* 17: 265 (2011)

Type: Samothraki, E-NE of Pachia Ammos, steep rocky slope above coast, granitic gravel with phrygana dominated by *Satureja montana*, 140 m, 40°24' N, 25°37' E, 19.05.2010, *Biel 10.672* (holo. C).

A distinctive species reported from several localities on the island of Samothraki. *Campanula saonissia* is a *nomen novum* for *C. samothracica* Biel & Kit Tan (see *Phytol. Balcan* 16: 351, 2010), the latter being a later homonym for *C. samothracica* (Degen) Greuter & Burdet in *Willdenowia* 11: 40 (1981).

Legousia snogerupii Biel & Kit Tan in *Phytotaxa* 201: 64 (2015)

Type: Nomos Kikladon, Eparchia Thiras, island of Amorgos, large E-exposed cliff precipices of Krikelas, 650 m, 36°54'N, 26°03'E. Seed collected in the wild, 04.07.1958 *Runemark & Snogerup 12293*; specimen cultivated in the Botanical Garden of the University of Lund under accession no. R1729-2, 29.04.1959, *Runemark* (holo. LD).

Known from more than 10 localities on different SE Aegean islands. A distinctive species with affinities to *L. speculum-veneris* (L.) Chaix and *L. pentagonia* (L.) Druce.

Caryophyllaceae

Bolanthus creutzburgii subsp. *zaffranii* Phitos, Turland & Bergmeier in *Fl. Medit.* 21: 317 (2011)

Type: Crete, Nomos Chanion, Eparchia Selinou, coast 2 km ENE of Paleochora, 35°14'23.6"N, 23°42'20.1"E, sea level, semi-consolidated sandy-stony beach, 04.04.2009, *E. Bergmeier, Th. Constantinidis, R. Lansdown & N. Turland* sub *N. Turland 1841* (holo. UPA; iso. MO, PAL).

A coastal form of a high-altitude Cretan endemic.

Minuartia dirphyia Trigas & Iatrou in *Nordic J. Bot.* 23(4): 416 (2005)

Type: Nom. Evvias, Ep. Chalkidos, northern slopes of Mt. Dirphys, rocky slopes with *Juniperus oxycedrus* subsp. *oxycedrus* and *Genista acanthoclada* on ophiolitic substrate, 900-1000 m, 09.09.2000, *Trigas & Iatrou 2998* (holo. UPA).

A local endemic resembling *M. wettsteinii* from E Crete and *M. parnonia* (Kamari) Iatrou *et al.* from Mt. Parnonas in SE Peloponnisos.

Minuartia kamariana Greuter in *Bocconea* 25: 113 (2012)

Type: Nom. Lakonia, Ep. Epidhavros Limiras, between Metamorfoosi and Richea, summit area of Mt. Koulochera, alt. 800-950 m, 36°49'40"N, 22°58'50"E, 06.06.1995, *Kamari et al.*, *Iter Medit.* VII N° 1721 (holo. PAL-Gr; iso. B, BRNM, MA, SALA, UPA).

A local endemic close to *M. attica* (Boiss. & Spruner) Vierh. and *M. pichleri* (Boiss.) Maire & Petitm.

Paronychia manfrediana Kit Tan & Strid in *Phytol. Balcan.* 14: 41 (2008)

Type: Nomos Evrou, Eparchia Soufliou, Pessani, c. 17 km from Dadia along road to Loutros, rocky serpentine outcrop in mixed deciduous woodland, 400 m, 41°06'N, 26°06'E, 06.06.2001, *P. Lassen, A. Strid, Kit Tan & G. Vold* sub *Strid et al. 53075* (holo. WU; iso. G, UPA, herb. Kit, herb. Strid).

Additional collections have been made from the same area. With affinities to *P. macedonica* Chaudhri from north-central Greece.

Sagina stridii Kit Tan, Zarkos & Christodoulou in *Phytol. Balcan.* 18: 226 (2012)

Type: Nomos & Eparchia Korinthias, Mt. Killini, path from plateau to the summit of Simio, 2000 m, 37°56'N, 22°24'E, 24.06.2012, *Zarkos & Christodoulou s.n.* (holo. C).

A distinctive species of snowbed meadows, reported from Mts. Chelmos and Killini and cultivated at

Copenhagen. It was also discovered on Mt. Vardousia in Sterea Ellas but not identified to species (21.07.2010, *Polymenakos s.n.*; photos, confirmed by Kit Tan, June 2014).

Chenopodiaceae

Kali dodecanesicum C. Brullo, Brullo, Giusso & Ilardi in *Phytotaxa* 218: 63 (2015)

Type: Dodecanese, Rhodes, sandy coast near Kattavia, 38°58'35"N, 27°44'25"E, 22.08.2013, S. Brullo & V. Ilardi *s.n.* (holo. CAT; iso. PAL).

A form of *Salsola kali* L., reported from the islands of Rhodes and Kos.

Crassulaceae

Sedum eriocarpum subsp. *cycladicum* Kit Tan & Polymenakos in *Phytol. Balcan.* 22: 101 (2016)

Type: Nomos Kikladon, Eparchia Naxou, island of Naxos, 1 km N of the town of Naxos, calcareous slope, ca. 150 m, 29.05.1982, *Franzén & Andersson 1021* (holo. LD).

Endemic to the Cyclades. Reported also from Tinos, Siros, Mikonos, and some small islands in the central Aegean area; more or less intermediate between *S. eriocarpum* Sm. subsp. *eriocarpum* and subsp. *delicum* (Vierh.) 't Hart.

Cyperaceae

Carex castroviejoi Luceño & Jim. Mejías in *Acta Bot. Malac.* 34: 231 (2009)

Type: Epirus, Ioannina, Parque Valia Kalnta, 1698 m, 39°52'N, 21°11'E, taludes pedregosos en dominio del *Pinus heldreichii* y *Fagus sylvatica*, 29.06.2008, M. Luceño, P. Vargas & F.J. Fernández 3108ML (holo. UPOS).

A fairly distinctive species in the *C. flava* complex, reported from several other collections in the serpentine mountains of NW Greece. Also occurring on Mts. Vermio and Voras and possibly extending to Albania and FYROM.

Carex egorovae A.M. Molina, Acedo & Llamas in *Bot. J. Linn. Soc.* 156: 406 (2008)

Type: Iraq, MAM, Shariffa near Anadia, shady meadow, 4000 ft, 22.04.1958 (sub *Carex divulsa* Stokes subsp. *leersii* (Kneuck.) W. Koch), *O. Polunin 5110* (holo. K; iso. K).

Reported from several localities in SW Asia and SE Europe, including one on the N Aegean island of Thasos. Closely resembling *C. divulsa* Stokes.

Carex otomana A.M. Molina, Acedo & Llamas in *Bot. J. Linn. Soc.* 156: 404 (2008)

Type: [Kazakhstan] Asia centralis, Alma-Ata, Tyan-Shan montes 'Zailijki Alatau', in valle fluminis 'Malaia

Almatinka', loco Medeo dicto, 1400-1750 m, 30.05.1974 (sub *Carex polyphylla* Kar. & Kir.), V. Vasák, *Iter centrali-asiaticum 1974* (holo. W 11223).

Described from Central Asia and reported from a large area including the Balkans. One specimen from Mt. Vrondous (NE Greece) was cited in the publication. Very close to *C. divulsa* subsp. *leersii* (Kneuck.) W. Koch.

Fabaceae

Astragalus angustifolius subsp. *aegeicus* Brullo, Giusso & Musarella in *Bocconeia* 24: 32 (2012)

Type: Isola di Lesbos, Mt. Olymbos, ca. 950 m, 28.06.2003, *Brullo & Giusso del Galdo s.n.* (holo. CAT; iso. PAL).

A regional variant of *A. angustifolius* Lam., reported from the E Aegean islands of Lesbos, Samos, and Chios.

Astragalus angustifolius subsp. *balcanicus* Brullo, Giusso & Musarella in *Bocconeia* 24: 31 (2012)

Type: Voras Gebinge [sic!] Kali Pediode [sic!], hochebene nordlich Aridea alpine matten an den Randern des Hochrmanes [sic!], 1800 m, 11.07.1984, *Erben s.n.* (holo. M).

A regional variant of *A. angustifolius*, occurring in mountains of the central Balkan Peninsula.

Astragalus angustifolius subsp. *odonianus* Brullo, Giusso & Musarella in *Bocconeia* 24: 33 (2012)

Type: Thasos, affioramenti calcarei sotto Mt. Ipsaria [sic!], ca. 950 m, 26.06.2003, *Brullo & Giusso del Galdo s.n.* (holo. CAT; iso. PAL).

A local variant of *A. angustifolius*, known only from the type gathering collected on the N Aegean island of Thasos.

Onobrychis citrina Kit Tan, Stevanović & G. Vold in *Phytol. Balcan.* 22: 282 (2016)

Type: Nomos Kozanis, Eparchia Voiou, deforested southern side of Mt. Siniatsiko, rocky limestone slopes and road embankments between Siatista and Galatini, 1100-1150 m, 40°17'N, 21°33'E, 17.06.2016, *Kit Tan & G. Vold 32118* (holo. C; iso. ATH, BEOU, LD, herb. Strid).

Also collected in Kilkis, Serres, and other places near the Greek-Bulgarian border. Distinguished from *O. degenii* Dörfler from FYROM by leaf shape, as well as by indumentum and fruit characters.

Trifolium michaelis Greuter in *Bocconeia* 25: 115 (2012)

Type: Nom. Arkadia, Ep. Megalopolis, NW foothills of the Taijetos range, c. 0.5 km W of Neochori, alt. c. 1100 m, 37°11'00"N, 22°13'45"E, 11.06.1995, *Kamari et al.*, *Iter Medit. VII N° 2188* (holo. PAL-Gr; iso. B, UPA).

A dwarf form of the widespread and polymorphic *T. pallidum* Waldst. & Kit.

Geraniaceae

Geranium kikianum Kit Tan & G. Vold in Nordic J. Bot. 29: 2 (2011)

Type: Nomos Messinias, eparchia Kalamon, foothills of Mt. Taigetos, Kefalovrisi to Platanaki, wet places by stream in *Pinus nigra* forest, schistose rock, 1400-1450 m a.s.l., 21.06.2008, *Kit Tan & G. Vold* 29696 (holo. C; iso. ATH, LD, herb. Kit).

A Greek endemic first collected in this area by Zahn in 1899 and 1901, and cited as *G. macrorrhizum* L. by HALÁCSY (1912: 133). On rediscovery more than a hundred years later, it was found to be a quite different species with smaller and deflexed petals. It was also found to have an unusual volatile oil without any monoterpenoids, substances present in notable amounts in *G. macrorrhizum* (ZELJKOVIĆ *et al.* 2017). The nearest localities for *G. macrorrhizum* are in the mountains of Sterea Ellas.

Hyacinthaceae

Bellevalia juliana Bareka, Turland & Kamari in Pl. Biosyst. 149: 704 (2015)

Type: Crete, Nomos Lassithiou, Eparchia Mirabellou, 800 m E of Kato Pines (35°16'20"N, 25°43'01"E), 155 m, abandoned cultivated terrace on rocky limestone slope facing E, 21.03.2009, *N.J. Turland* 1691 (holo. UPA; iso. B, PAL).

A local endemic of E Crete, resembling *B. romana* (L.) Sweet, which is widespread on the Ionian islands and in western mainland Greece, with scattered localities in Peloponnisos.

Loncomelos ulixis Speta in Phytion (Horn) 46: 5 (2006)

Type: Insel Lefkas, Megalirachi (Berg SW Nikiana), 300-580 m. 08.04.1993, *Speta s.n.* (collected as bulb; a cultivated specimen originating from this gathering (holo. LI).

Recombined as *Ornithogalum ulixis* (Speta) Raus and reported from a few other localities on the Ionian islands. Doubtfully distinct from *O. pyrenaicum* L.

Hypericaceae

Hypericum boehlingraabei Kit Tan, Iatroú, Vold & Strid in Phytol. Balcan. 16: 227 (2010)

Type: Nomos & Eparchia Korinthias, Mavro Oros, crevices of shaded conglomerate rock at summit, with *Arenaria cretica* and *Gypsophila nana*, 1680-1720 m, 38°02'N, 22°25'E, 21.07.2009, *Kit Tan & G. Vold* 30773 (holo. C; iso. ATH, LD, herb. Kit, herb. Strid).

A distinctive endemic with a superficial resemblance to *H. taygeteum* Quézel & Contandriopoulos from S Peloponnisos. Growing in rock crevices and shady overhangs, not uncommon on Mavro Oros and Mt.

Korakofolia at 1200-1700 m. Recently found on Mt. Killini (11.06.2016, *Kit Tan, G. Vold & Zarkos* 32083).

Iridaceae

Crocus flavus subsp. *atticus* Kit Tan, Zograf. & Mermygkas in Phytol. Balcan. 20: 123 (2014)

Type: Nomos & Eparchia Attikis, Mt. Parnitha, Dhekalia to Ag. Merkourios, NW of Hani Katsimidiou, 600 m, 38°08'N, 23°45'E, 08.02.1969, *Stamatiadou* 4405 (holo. ATH).

A collection from the same area (02.03.2014, *Zografidis s.n.*, ATH, C, LD) was designated as paratype. Formerly misidentified as *C. olivieri* J. Gay. *Crocus flavus* Weston subsp. *flavus* is scattered on the Greek mainland from 39°N northwards.

Crocus georgei Rukšāns in Int. Rock Gard. 76: [40] (2016) as '*C. georgii*'.

Type: Peloponnisos, above Langadia (37.687578°N, 22.031690°E), on scree and under dwarf shrubs at an altitude of 1140 m, 06.03.2016, *Rukšāns* 16GRS-010 (holo. GAT).

Based on a single small gathering, and hardly distinct from *C. nivalis* Bory & Chaub.

Crocus laevigatus subsp. *pumilus* Rukšāns in Alpine Gardener 81: 193 (2013)

Type: Crete, Omalos Plateau, alt. 940 m, ex culturae in horto J. Rukšāns, 23.10.2012 (holo. GAT; iso. GB).

No more than a local variant of *C. laevigatus*, described as being characterised by small unscented flowers.

Crocus macedonicus Rukšāns in Alpine Gardener 81: 192 (2013)

Type: Macedonia, NE Ossa, ex culturae in horto J. Rukšāns, 08.12.2012 (holo. GAT 20314).

Also reported from the Vertiskos area in NE Greece. Close to *C. pallasii* Goldb., which is widespread in SW Asia, extending to the E Aegean islands and Attica (Mt. Imittos). *Crocus macedonicus* is reported as being with 2n=16, whereas in *C. pallasii* s. str. 2n=14 (KARABLIANIS *et al.* 2013).

Crocus orphei Karampl. & Constantin. in Turkish J. Bot. 38: 1196 (2014)

Type: Greece, Macedonia, Mt. Falakro, in openings and margins of mixed *Fagus* and *Pinus* forest, 1210 m, 30.03.2010, *Th. Karamplianis & S. Tsiftsis* 1843 (holo. ATHU).

A member of the *C. reticulatus* group, so far known only from Mt. Falakro, where it was collected by N. Jacobsen already in 1998 and cultivated as G98-77 in the Göteborg Botanical Garden under the name *C. reticulatus* Steven ex Adams.

Crocus rhodensis Rukšāns in Int. Rock Gard. 64: [34] (2015)

Type: Island of Rhodes, Profitis Ilias, 14.02.2015, Rukšāns (holo. GB; iso. GAT).

A local form of *C. biflorus* Mill., doubtfully distinct from *C. biflorus* subsp. *nubigena* (Herb.) B. Mathew. It has also been reported from the neighbouring island of Simi (based on photos sent to Rukšāns).

Crocus speciosus subsp. *hellenicus* Rukšāns in Alpine Gardener 81: 190 (2013)

Type: Ioanninon, Vikos canyon, nr. Monodendri. 12.10.2012, Rukšāns (holo. GAT 19551).

Crocus speciosus M. Bieb. was divided into nine allopatric subspecies not all clearly or taxonomically distinct.

Crocus vaclavii Rukšāns in Alpine Gardener 81: 190 (2013)

Type: Macedonia, Athos, seaside wet meadow at 5-10 m above sea level, coarse gravelly soil formed from decomposed granite. 03.03.2013, Rukšāns (holo. GAT 23107; iso. GB).

A local member of the *C. biflorus* group, related to *C. alexandri* Ničić ex Velen. It was collected by Hartmann on 06.02.1914, "Bei Karyes, in den Hasselnusspflanzungen". BORNMÜLLER (1944: 344) stated that "Die Hartmannschen Exemplare gehören der Varietät *Alexandri*".

Iris hellenica Mermygkas, Kit Tan & Yannits. in Phytol. Balcan. 16: 264 (2010)

Type: Nomos Achaïas, Eparchia Kalavriton, NNW part of Mt. Saitas, rocky limestone slopes in openings of *Abies cephalonica* forest, 1400-1430 m, 37°51'N, 22°15'E, 08.05.2010, Mermygkas 1622 (holo. ATH; iso. ATHU, C).

Known from a few other localities in the mountains of N Peloponnisos (Killini, Chelmos) and on Mt. Iti in Sterea Ellas. According to A. Strid, plants in cultivation from Chelmos (*Strid* 57366) are indistinguishable from *I. germanica* L. However, plants from Saitas were noted to retain their characters in cultivation. *Iris germanica* is presumed to be a hybrid of ancient origin, and the native distribution is unknown due to long-established cultivation and subsequent naturalisation.

Isoetaceae

Isoetes haussknechtii Troia & Greuter in Willdenowia 45: 395 (2015)

Type: Nomos Arkadia, Eparchia Mantinea, 6 km NNE of Tripoli, Tripoli-Pyrgos road, by the branching of the road to Nestani, 37°33'30"N, 22°24'10"E, 650 m, 31.05.1995, Kamari et al. 322 (holo. PAL-Gr 49913; iso. B, BEO, BRNM, MA, SALA, UPA, W).

In addition to the type collection in central Peloponnisos, this species was reported from two localities on the island of Lesbos and one in S Pindos. The collections from Lesbos were tentatively reported as *I. heldreichii* Wettst. by BAZOS & YANNITSAROS (1999: 427). As interpreted by Troia & Greuter (op. cit. 2015), the true *I. heldreichii* is known only from the type locality in nom. Karditsa, where it was gathered by Heldreich and Haussknecht in 1885 and is now presumably extinct. The recently described *I. haussknechtii* differs from *I. heldreichii* only in being terrestrial with shorter and usually more numerous leaves. The two taxa thus probably represent terrestrial and aquatic forms of the same species.

Lamiaceae

Ballota nigra subsp. *anomala* Greuter in Bocconea 25: 108 (2012)

Type: Nomos Messinia, Eparchia Kalamata, 6-8 km NE of Ano Amfia along road to Poliana, alt. 600-800 m, 37°08'20"N, 22°07'30"E, 14.06.1995, Kamari et al., Iter Medit. VII N° 2554 (holo. PAL-Gr; iso. B, BEO, BRNM, MA, SALA, UPA, W).

Differing from *B. nigra* subsp. *uncinata* (Fiori & Bég.) Patzak only by the presence of 2-3(-4) intercalary calyx teeth. The *Flora Hellenica Database* contains 35 records of *B. nigra* subsp. *uncinata* from Peloponnisos and several of *B. nigra* not identified to subspecies.

Nepeta hystrix Greuter in Bocconea 25: 113 (2012)

Type: Nom. Messinia, Ep. Kalamata, 6-8 km NE of Ano Amfia along road to Poliana, alt. 600-800 m, 37°08'20"N, 22°07'30"E, 14.06.1995, Kamari et al., Iter Medit. VII N° 2511 (holo. PAL-Gr; iso. B, BEO, BRNM, MA, SALA, UPA, W).

A local endemic close to *N. italica* L. and *N. cadmea* Boiss.

Satureja pilosa subsp. *origanita* Dardioti & Kokkini in Bot. Chron. (Patras) 18: 109 (2005)

Type: Nomos Evrou, Dadia forest, stony ground in *Pinus* forest openings, alt. 100 m, 09.11.1996, Dardioti 1364 (holo. TAU).

Reported from several localities in NE Greece and not clearly separable from *S. pilosa* Velen. s. str., which occurs in south and central Bulgaria.

Liliaceae

Gagea omalensis J.-M. Tison in Pl. Syst. Evol. 299: 431 (2012)

Type: Crete, Omalos, plaine entre le village et le col de Xyloskalo (1100 m), pelouses riches, talus, champs, 08.04.1999, J.-M. Tison 107877 (holo. HAL).

Known only from the type locality, where it was re-collected by A. Strid in April 2002.

Gagea pseudopeduncularis J.-M. Tison in Pl. Syst. Evol. 299: 432 (2012)

Type: Attica, Agia Triada, crête du Mont Parnes (1300 m), garrigues sur sol calcaire karstique, très localisé, 15.04.1999, J.-M. Tison 107886 (holo. HAL).

Also collected on the island of Egina by M. Issigoni (conf. J.-M. Tison, May 2013). Previous records of *G. peduncularis* (J. Presl & C. Presl) Pascher from Mt. Parnitha and elsewhere in the area should be re-examined.

Orchidaceae

Anacamptis papilionacea subsp. *thaliae* Kreutz, J. Essink & L. Essink in Ber. Arbeitskreis. Heimische Orchid. 26(2): 43 (2010)

Type: Rhodes, Umgebung von Maritsa, 26.03.2009, J. & L. Essink s.n. (holo. L).

A regional variant of *A. papilionacea*, reported from Rhodes and parts of SW Anatolia facing it.

Epipactis pinovica S. Hertel, Tsiftsis & Z. Antonop. in J. Eur. Orch. 46: 704 (2014)

Type: Mt. Pinovo, north of Aridea, 1420 m a.s.l., 03.08.2013, S. Tsiftsis s.n. (holo. TAU).

A small population was also reported from Mt. Olimbos.

Himantoglossum caprinum subsp. *rumelicum* H. Baumann & R. Lorenz in J. Eur. Orch. 37: 945 (2005)

Type: Menikion-Gebirge, Mikropolis, 13.07.1987, B. & H. Baumann s.n. (holo. STU).

Synonymous with *H. jankae* Somlyay, Kreutz & Óvari as published in Phytotaxa 73: 9 (2012). This species is widespread in SE Europe and N Turkey, and has long been treated as conspecific with *H. caprinum* (M. Bieb.) Spreng. The latter is now considered restricted to the Crimea and SW Asia. The type of *H. jankae* is Degen s.n. (07.07.1918, holo. BP) from the Budapest area. All Greek material previously identified or recorded as *H. caprinum* should now be referred to *H. jankae*.

Ophrys achillis P. Delforge in Naturalistes Belges 94 (Orchid. 26): 238 (2013)

Type: Insula Scyros, Aspous, alt. s.m. 20 m, 05.03.2011, Delforge 11101 (holo. herb. Delforge).

Hardly distinguishable from *O. fusca* subsp. *iricolor* (Desf.) K. Richt.

Ophrys amphidami P. Delforge in Naturalistes Belges 94 (Orchid. 26): 295 (2013)

Type: Insula Cythera, prope Phratsia, alt. s.m. 300 m, 06.04.2013, C. Parvais (holo. herb. Delforge sub Delforge 11390).

A small-flowered individual of *O. tenthredinifera* Willd.

Ophrys apollonae Paulus & M. Hirth in J. Eur. Orch. 41: 647 (2009)

Type: Rhodes, 6 km südlich Apollona, 170 m, lichter Kiefernwald, 36°10,328'N, 27°57,492'E, 20.2.2007, H.F. Paulus & M. Hirth (holo. herb. M. Hirth, Freiburg sub no. 210.705).

Morphologically indistinguishable from *O. omegaifera* H. Fleischm. subsp. *omegaifera* but stated by authors to differ in pollinator-visitor.

Ophrys bilunulata subsp. *kalirachiensis* Paulus, M. Hirth & Dimadis in J. Eur. Orch. 48: 66 (2016)

Type: Nomos Grevena, east of Kalirachi, 40°04'50.54"N, 21°18'40.83"E, 865 m, M. Hirth & H.F. Paulus (holo. herb. M. Hirth, Freiburg sub no. 211.501).

Referable to *O. fusca* Link subsp. *fusca*.

Ophrys candica subsp. *cytherea* B. Baumann & H. Baumann in J. Eur. Orch. 37: 718 (2005)

Type: Island of Cythera, Avlemonas, 01.04.1999, B. Baumann & H. Baumann (holo. STU).

Synonymous with *O. fuciflora* subsp. *candica* Soó.

Ophrys cephaloniensis Paulus in J. Eur. Orch. 46: 250 (2014)

Type: Cephalonia, oberhalb Valsamata, Südwestrand des Mt. Roudi, 750 m, 38°11'06.60"N, 20°35'55.37"N, 01.04.2010, H.F. Paulus (WU — 2 Blüten derselben Pflanze in Alkohol).

Based on a single plant with an unusual combination of floral characters. Photographs published with the description indicate *O. scolopax* but with large whitish sepals similar to *O. apifera* Huds. Possibly a hybrid.

Ophrys cretensis subsp. *samica* A. Alibertis in J. Eur. Orch. 43: 754 (2011)

Type: Cephalonia, prope Sami, alt. 20 m, 26.03.2011, A. Alibertis (holo. NHMC, sub no. 43-11856 conservatur).

Resembling *O. sphegodes* subsp. *mammosa* (Desf.) Soó.

Ophrys cythnia P. Delforge & Onckelinx in Naturalistes Belges 95 (Orchid. 27): 203 (2014)

Type: Insula Cythnos, loco dicto Isodia tis Theotokou, UTM 35SKB7046, alt. s.m. 200-310 m, 28.03.2014, P. Delforge & C. Onckelinx 11402 (holo. herb. Delforge).

A form of *O. lutea* Cav., more or less intermediate between subsp. *lutea* and subsp. *galilaea* (H. Fleischm. & Bornm.) Soó.

Ophrys dicipulus Valahas in Afr. J. Pl. Sci. 7: 305 (2013)

Type: Attica Prefecture, Aghia Paraskevi, NNW foot of Mt. Hymettus on shallow soil 24 cm, pH 5.8, on top of rocky limestone in openings of pine forest. 38.0040 N, 23.8335 E, 281 m, 05.04.2011, Valahas (holo. ATH, iso. ACG).

Falling within the range of variation of *O. scolopax* subsp. *heldreichii* (Schltr.) E. Nelson.

Ophrys dictynnae P. Delforge in Naturalistes Belges 86 (Orchid. 18): 112 (2005)

Type: Crete, Provincia Iraklio, prope Antiskari, alt. s.m. 300 m, *P. Delforge s.n.* (holo. herb. Delforge sub ana900227t).

Synonymous with *O. tenthredinifera* Willd.

Ophrys eos Devillers & Devillers-Tersch. in Naturalistes Belges 90 (Orchid. 22): 289 (2009)

Type: Thessaly, 10 km south of Elassona, 17.04.2000, *H.F.Paulus* (holo. WU).

Replaced synonym of *O. vernixia* subsp. *orientalis* Paulus, which is also a synonym of *O. speculum* Link.

Ophrys ferrum-equinum subsp. *convexa* B. Baumann & H. Baumann in J. Eur. Orch. 37: 948 (2005)

Type: Insel Amorgos, 15.04.2002, *B. Baumann & H. Baumann* (Blütenanalyse STU).

Described from a single plant, the flowers with a convex labellum.

Ophrys fusca subsp. *laureotica* Kalog., Delipetrou & A. Alibertis in J. Eur. Orch. 43: 369 (2011)

Type: Nomos Attikis, Levreotiki, 500 m S of Agios Konstantinos village, pine forest margins, alt. 130 m, 19.01.2011, *Kalogeropoulos* (holo. NHMC sub no. 43-11471).

An early-flowering variant of *O. fusca* Link, precise taxonomic status uncertain.

Ophrys fusca subsp. *sancti-isidorii* A. Saliaris, Saliaris & A. Alibertis in J. Eur. Orch. 42: 329 (2010)

Type: Chios, prope Kalamoti, alt. 66 m, 31.01.2010, *Saliaris* (holo. NHMC sub no. 11298).

A local variant of *O. fusca* Link, taxonomic status uncertain.

Ophrys heldreichii subsp. *pusilla* B. Baumann & H. Baumann in J. Eur. Orch. 37: 951 (2005)

Type: Insel Karpathos, Pigadia, 23.03.1995, *B. Baumann & H. Baumann* (Blütenanalyse STU).

Described from a single small-flowered individual of *O. scolopax* subsp. *heldreichii* (Schltr.) E. Nelson.

Ophrys hellenica Devillers & Devillers-Tersch. in Naturalistes Belges 94 (Orchid. 26): 158 (2013)

Type: Aetolia, prope Douneika, 21.04.1990 (holo. herb. Devillers-Terschuren sub. no. 90-2-50 L1).

Similar to *O. lutea* Cav. subsp. *lutea*.

Ophrys heracleotica Gavalas, Kreutz & Z. Antonop. in Ber. Arbeitskreis. Heimische Orchid. 27(2): 272 (2011)

Type: Cyclades, Iraklia, 26.03.2010, *Z. Antonopoulos* (holo. L).

A local variant of *O. lutea* Cav.

Ophrys hippocratis P. Delforge in Naturalistes Belges 90 (Orchid. 22): 184 (2009)

Type: Insula Coos, prope Ag. Stephanos (UTM: 35SMA9868), alt. 60 m, 05.03.2009, *P. Delforge 10901a* (holo. herb. Delforge).

Intermediate between *O. scolopax* subsp. *heldreichii* (Schltr.) E. Nelson and *O. fuciflora* (F.W. Schmidt) Moench, and perhaps a hybrid of these two.

Ophrys holoserica subsp. *cerigona* B. Baumann & H. Baumann in J. Eur. Orch. 39: 115 (2007)

Type: Insel Cerigo [Kithira], Diakofti, Garigue, ca. 5 m, 06.04.2006, *B. Baumann & H. Baumann* (holo. STU).

A local form of *O. fuciflora* (F.W. Schmidt) Moench, probably referable to subsp. *candica* Sóo.

Ophrys holoserica subsp. *graeca* B. Baumann & H. Baumann in J. Eur. Orch. 37: 718 (2005)

Type: S Peloponnisos, Githeon, 29.04.1989, *H. Baumann & H. Baumann* (holo. STU).

Synonym of *O. fuciflora* subsp. *candica* Sóo.

Ophrys lychnitis H.F. Paulus & M. Wirth. in J. Eur. Orch. 48: 374 (2016)

Type: Island of Paros, area opposite entrance of the old airport, phrygana on limestone, 80 m, 09.03.2015 (holo. herb. M. Hirth sub no. 211517).

Synonym of *O. tenthredinifera* Willd.

Ophrys lycomedis P. Delforge in Naturalistes Belges 94 (Orchid. 26): 296 (2013)

Type: Insula Scyros, Skopoi, alt. s.m. 40 m, 13.03.2011, *P. Delforge 11103* (holo. herb. Delforge).

Resembling *O. tenthredinifera* Willd.

Ophrys malvasiana S. Hertel & Weyland in J. Eur. Orch. 41: 687 (2009)

Type: Lakonia, 11 km südl. Monemvasia, 115 m, wiesige Stelle unter Büschen, 26.04.2009, *H. Weyland* (holo. SZB sub no. 51073).

A form of *O. fuciflora* (F.W. Schmidt) Moench, possibly subsp. *fuciflora*.

Ophrys mammosa subsp. *falsomammosa* B. Baumann & H. Baumann in J. Eur. Orch. 37: 725 (2005)

Type: Crete, Sivas, 25.03.1999, *B. Baumann & H. Baumann* (holo. STU).

Synonymous with *O. sphegodes* subsp. *mammosa* (Desf.) Soó ex E. Nelson.

Ophrys mammosa subsp. *parviflora* Kreutz & H. Heitz in Ber. Arbeitskreis. Heimische Orchid. 29(2): 149 (2013).

Type: Epirus, zwischen Ieromnimi und Kastri (Ioannina), 04.05.2012, C.A.J. Kreutz (holo. WAG).

A small-flowered form of *O. sphegodes* subsp. *mammosa* (Desf.) Soó ex E. Nelson.

Ophrys mammosa Desf. subsp. *ustulata* G. Thiele & W. Thiele in J. Eur. Orch. 39: 279 (2007)

Type: Konitsa, Strasse E90, km 72.5, feuchte Wiesensenke, DK 73.98.54, 770 m, 05.05.2006, G. & W. Thiele (herb. G. & W. Thiele sub no. 01/2006).

Synonym of *O. sphegodes* subsp. *mammosa* (Desf.) Soó ex E. Nelson.

Ophrys mavromata A. Alibertis & Triantafyll. in J. Eur. Orch. 47: 288 (2015)

Type: Cephalonia, near Komitata, 26.04.2015, A. Alibertis s.n. (holo. NHMC sub no. 43-12500).

Resembling *O. helenae* Renz in its large conspicuous flowers with uniformly dark velvety purplish-brown labellum. However, *O. mavromata* has two small dull-bluish spots, sometimes merged to form an H- or Π-shaped pattern at the centre of the labellum. Plants with similar features were collected and photographed by A. Strid in the same area in April 2004 (Strid 54923; G, herb. Strid). *Ophrys mavromata* may merit subspecies rank and should be looked for on the other Ionian islands.

Ophrys meropes P. Delforge in Naturalistes Belges 90 (Orchid. 22): 184 (2009)

Type: Insula Coos, prope Mastihari (UTM: 35SNA0776), 60 m, 24.03.2009, P. Delforge 10909a (holo. herb. Delforge).

Intermediate between *O. fusca* Link and *O. omegaiifera* H. Fleischm.

Ophrys mycenensis S. Hertel & Paulus in J. Eur. Orch. 42: 457 (2010)

Type: Arkadien, E Kosmas, alt. s.m. 900 m, UTM 34S 0656841/4110103, 27.03.210, Stefan Hertel (holo. REG).

A form of *O. scolopax* Cav. subsp. *scolopax*.

Ophrys oestriifera subsp. *lemnosiana* B. Baumann & H. Baumann in J. Eur. Orch. 37: 727 (2005)

Type: Insel Limnos, 21.4.1998, B. Baumann & H. Baumann (holo. STU).

Synonym of *O. scolopax* subsp. *cornuta* (Steven) E.G. Camus.

Ophrys oestriifera subsp. *stavri* Kalog., Delipetrou & A. Alibertis in J. Eur. Orch. 44: 66 (2012)

Type: Nomos Attikis, c. 2.5 km SE of Agia Marina village on the road to Kato Souli village, 38.1733°N, 24.0495°E, 121 m, E. Kalogeropoulos (holo. NHMC sub no. 43-12263).

A form of *O. scolopax* Cav. hardly distinguishable from subsp. *scolopax*.

Ophrys olympiotissa Paulus in J. Eur. Orch. 43: 503 (2011)

Type: Provinz Larisa, südöstlich Tsaritsani bei Ellassona, N39°51'22.12", O N22°14'53.95", 450 m, H.F. Paulus s.n. (holo. WU).

Possibly a form of *O. ferrum-equinum* Desf.

Ophrys oreas Devillers & Devillers-Tersch. in Naturalistes Belges 90 (Orchid. 22): 290 (2009)

Type: Rhodes, Profitis Ilias, 580 m, 36°16'N, 27°55'E, 04.04.2009 (holo. herb. Devillers-Terschuren sub no. 09-01-44-01).

A fairly well-defined species, resembling *O. scolopax* Cav. and *O. fuciflora* (F.W. Schmidt) Moench and known only from Mt. Profitis Ilias on Rhodes.

Ophrys penelopeae Paulus in J. Eur. Orch. 46: 293 (2014)

Type: Cephalonia, Kokolata, südöstl. Argostoli, 20 m, DH 52.82, 27.03.2005, M. Hirth & H.F. Paulus (holo. WU).

Synonymous with *O. lutea* subsp. *galilaea* (H. Fleischm. & Bornm.) Soó.

Ophrys polyxo J. Mast, M.-A. Garnier, Devillers-Tersch. & Devillers in Naturalistes Belges 86 (Orchid. 18): 156 (2005)

Type: Greece, Rhodes, prope Laerma, 170 m.s.m., 01.04.2005, J. Mast de Maeght & M.-A. Garnier (holo. herb. J. & P. Devillers-Terschuren sub no. 05-MM1-1).

Possibly a form of *O. scolopax* subsp. *heldreichii* (Schltr.) E. Nelson.

Ophrys praemelena S. Hertel & Presser in Ber. Arbeitskreis. Heimische Orchid. 27(1): 169 (2010)

Type: Epirus, N Igoumenitsa, alt. s.m. 90 m, UTM 34S 0435862/4378195 (WGS 84), 28.03.2009, S. Hertel (holo. REG).

Synonymous with *O. lutea* subsp. *melena* Renz.

Ophrys ptolemaea P. Delforge in Naturalistes Belges 90 (Orchid. 22): 185 (2009)

Type: Insula Coos, apud Akra Chones (UTM: 35SMA9568), alt. s.m. 80 m, 02.04.2009, P. Delforge 11911 (holo. herb. Delforge).

Based on a variant of *O. scolopax* subsp. *heldreichii* (Schltr.) E. Nelson.

Ophrys reinhardiorum Paulus in Ber. Arbeitskreis. Heimische Orchid. 25(1): 19 (2008)

Type: Südwestflanke des Olymp, Strasse Katythea-Kryovrissi, 800 m, ca. 4 km westl. Kryovrissi, Wiesengelände, *H.F. Paulus* (holo. WU).

Conspecific with *O. reinholdii* Spruner ex H. Fleischm.

Ophrys saliarisii Paulus & M. Hirth in J. Eur. Orch. 41: 671 (2009)

Type: Rhodes, nahe Laerma, 195 m, 08.04.2007, *M. Hirth* (holo. herb. M. Hirth, Freiburg).

A form of *O. fuciflora* (F.W. Schmidt) Moench, referable to subsp. *fuciflora* or subsp. *candica* Sóo.

Ophrys samiotissa M. Hirth & Paulus in J. Eur. Orch. 43: 865 (2011)

Type: Samos, M. Timeo Stavrou, plattiger Kalkmergel, 50 m, UTM WGS84, MB87.92, 03.04.2010, *M. Hirth* (holo. herb. M. Hirth, Freiburg sub no. 211024).

Possibly a local form of *O. fuciflora* (F.W. Schmidt) Moench.

Ophrys sappho Devillers-Tersch., Devillers, Dedroog, Baeten & Flausch in Naturalistes Belges 91 (Orchid. 23): 245 (2010)

Type: Lesbos, prope Pigi (39°09'29"N, 26°25'03"E), alt. s.m. 85 m, 06.05.2010 (holo. herb. Devillers-Terschuren sub no. 10-01-A1-16).

A form of *O. scolopax* Cav. based on a single population.

Ophrys scolopax subsp. *nestoris* A. Alibertis & Brüttsch in Orchidophile (Asnières) 191: 285 (2011)

Type: Peloponnisos, Messenia, prope Gargalianoi, 250 m, 17.04.2008, *A. Alibertis* (holo. NHMC).

A form of *O. scolopax* Cav.

Ophrys scyria P. Delforge & Onckelinx in Naturalistes Belges 94 (Orchid. 26): 238 (2013)

Type: Insula Scyros, prope Ormos Gyrismata, 5-10 m, 21.03.2011, *Delforge 11107* (holo. herb. Delforge).

Related to *O. omegaifera* H. Fleischm., with characters more or less intermediate between subsp. *omegaifera* and subsp. *israelitica* (H. Baumann & Kunkele) G. Morschek & K. Morschek.

Ophrys taigetica Presser & S. Hertel in Ber. Arbeitskreis. Heimische Orchid. 27(1): 160 (2010)

Type: Peloponnisos, SW Sparti, alt. s.m. 1300 m, UTM 34S0618718/4100976 (WGS 84), 14.05.2008, *H. Presser* (holo. REG).

Possibly conspecific with *O. sphegodes* subsp. *aesculapii* (Renz) Soó.

Ophrys tenthredinifera subsp. *sanctae-marcellae* P. Saliaris, A. Saliaris & A. Alibertis in J. Eur. Orch. 43: 605 (2011)

Type: Chios, prope Lampsas-Volissos, alt. s.m. 39 m, 19.03.2011 (holo. NHMC sub no. 43-11852 conservatur).

A local form of *O. tenthredinifera* Willd., which is fairly widespread on the island.

Ophrys theophrasti Devillers & Devillers-Tersch. in Naturalistes Belges 90 (Orchid. 22): 289 (2009)

Type: Lesbos, prope Megahori, 15.04.1990 (holo. herb. Devillers-Terschuren sub no. 90-2-24-1).

A form of *O. fusca* Link.

Ophrys ulyssea P. Delforge in Naturalistes Belges 86 (Orchid. 18): 112 (2005)

Type: insula Cephalonia, prope Kampitsata (UTM: 34SDH 7720), alt. s.m. 90 m, 05.04.1991, *P. Delforge s.n.* (holo. herb. Delforge sub ana910405b).

A form of *O. tenthredinifera* Willd.

Orchis lactea subsp. *minuscula* A. Alibertis in Orchidophile (Ansière) 191: 286 (2011)

Type: Aetolia-Acarmania, prope Tryfos, 300 m, 18.04.2008, *A. Alibertis* (holo. NHMC sub no. 96590).

A small form of *O. lactea* Poir.

Platanthera lesbiaca Devillers-Tersch., Devillers, Dedroog, Baeten & Flausch in Naturalistes Belges 91 (Orchid. 23): 244 (2010)

Type: Lesbos, 3.2 km SE Agiasos, 01.06.1996, *Biel LE96 038-40* (holo. M).

Plants from the islands of Lesbos and Thasos tend to have relatively small flowers with a pronounced greenish tinge, thus resembling *P. chlorantha* subsp. *holmboei* (H. Lindb.) J.J. Wood, which was originally described from Cyprus. They probably represent local variation within *P. chlorantha*.

Serapias orientalis subsp. *moreana* H. Baumann & R. Lorenz in J. Eur. Orch. 37: 731 (2005)

Type: Laconia, Monemvasia, 40 m, phrygana, 14.04.2003, *K. & R. Lorenz* (holo. STU).

Synonymous with *S. orientalis* (Greuter) H. Baumann & Künkele subsp. *orientalis*.

Orobanchaceae

Phelipanche schultzioides M.J.Y. Foley in Bot. Chron. (Patras) 19: 7 (2008)

Type: Peloponnisos, Zarouchla, roadside north of the village, 13.06.2005, *Foley 2115* (holo. E).

Related to *Ph. schultzi* (Mutel) Pomel. Known from a few localities in Peloponnisos, probably endemic. It is parasitic on *Urtica dioica* and *Euphorbia rigida*.

Plumbaginaceae

Limonium aegaeum Erben & Brullo in Phytotaxa 240(1): 44 (2016)

Type: Isola Tinos, Ormos Panormou, 10.07.1994, *Brullo & Minissale s.n.* (holo. MSB-164252; iso. CAT, FI, herb. Erben).

Widespread on the central and southern Aegean islands and in Attica; closely related to *L. virgatum* (Willd.) Fourreau.

Limonium amopicum Erben & Brullo in Phytotaxa 240(1): 67 (2016)

Type: Karpathos, Amopi, 30.08.1996, *Brullo & Guarino s.n.* (holo. MSB-164249; iso. CAT, FI, herb. Erben).

Similar to *L. oligotrichum* Erben & Brullo, and both species are very close to *L. sitiicum* Rech. f.

Limonium archeothirae Erben & Brullo in Phytotaxa 240(1): 165 (2016)

Type: Santorini: Archaia Thira, Perissa (falesie calcaree mesozoiche), 11.06.2000, *Brullo & Giusso s.n.* (holo. MSB-164020; iso. CAT, FI, herb. Erben).

Closely related to *L. ocymifolium* (Poir.) Kuntze and possibly conspecific with it.

Limonium astypaleanum Erben & Brullo in Phytotaxa 240(1): 168 (2016)

Type: Astipalea, Porto, 07.06.1995, *Brullo & Minissale s.n.* (holo. MSB-164022; iso. CAT, FI, herb. Erben).

Closely related to *L. ocymifolium* (Poir.) Kuntze and possibly conspecific with it.

Limonium athinense Erben & Brullo in Phytotaxa 240(1): 56 (2016)

Type: Attica: Voula (Athens), 26.08.2002, *Brullo & Sciandrello s.n.* (holo. MSB-165818; iso. CAT, FI, herb. Erben).

Based on a single collection very similar to *L. fragile* Erben & Brullo; from the authors' description, both taxa fall within the range of variation of *L. roridum* (Sm.) Brullo & Guarino, which is widespread in the central and southern Aegean area.

Limonium atticum Erben & Brullo in Phytotaxa 240(1): 152 (2016)

Type: Attica: Akr. Kavouri, 26.08.2002, *Brullo & Sciandrello s.n.* (holo. MSB-164026; iso. CAT, FI, herb. Erben).

Reported from a few localities in Attica and on a small island (Angistri) off the larger neighbouring island of Aegina.

Limonium chersonesum Erben & Brullo in Phytotaxa 240(1): 122 (2016)

Type: Insel Kreta, Nordküste, ca. 22 km E von Iraklion (Heraklion), NNW von Limin Hersonisou (Chersonissos), E von Svourou Metodi, Akrotiri Hersonisos, Bereich des Kaps und unmittelbare Umgebung, Felsküste, Wegrander, 0–10 msm, 18.08 – 01.09.2001, *D. & H. Wittmann s.n.* (holo. M).

Probably referable to *L. roridum* (Sm.) Brullo & Guarino.

Limonium compactum Erben & Brullo in Phytotaxa 240(1): 32 (2016)

Type: Skyros, Aghnos Bay (Achilli), 29.08.2008, *Brullo & Giusso s.n.* (holo. MSB-165817; iso. CAT, herb. Erben).

Differing from *L. narbonense* Mill. only in the more densely arranged spikelets.

Limonium contractum Erben & Brullo in Phytotaxa 240(1): 116 (2016)

Type: Astipalea, Ormos Andreou (scisti), 07.06.1995, *Brullo & Minissale s.n.*, sheet 2 (holo. MSB-164016; iso. CAT, FI, herb. Erben).

Probably referable to *L. palmare* (Sm.) Rech. f.

Limonium crateriforme Erben & Brullo in Phytotaxa 240(1): 146 (2016)

Type: Karpathos, Agios Theodoros, 30.06.2002, *Brullo & Giusso s.n.* (holo. MSB-164251; iso. CAT, FI, herb. Erben).

Probably referable to *L. roridum* (Sm.) Brullo & Guarino.

Limonium dolihiense Erben & Brullo in Phytotaxa 240(1): 54 (2016)

Type: Ikaria, Kampos (litorale scistoso), 29.08.2003, *Brullo & Giusso s.n.* (holo. MSB-165819; iso. CAT, FI, herb. Erben).

Based on a single collection, taxonomic status uncertain.

Limonium fragile Erben & Brullo in Phytotaxa 240(1): 52 (2016)

Type: Karpathos, Akro Scopi, 30.08.1996, *Brullo & Guarino s.n.* (holo. MSB-164245; iso. CAT, FI, herb. Erben).

Closely related to *L. roridum* (Sm.) Brullo & Guarino, differing in the slightly more erect branches and somewhat smaller spikelets and flowers.

Limonium grabusae Erben & Brullo in Phytotaxa 240(1): 135 (2016)

Type: Insula Creta, Distr. Kissamos, Insula Grabusa, substr. calc., 25.07.1973, *Rechinger 45792* (holo. B).

Based on a single collection and similar to *L. sieberi* (Boiss.) Kuntze.

Limonium helenae Erben & Brullo in Phytotaxa 240(1): 163 (2016)

Type: Chios, Akrag. Elenis, 05.06.2005, *Brullo & Musarella s.n.* (holo. MSB-164250; iso. CAT, FI, herb. Erben).

One of the collections cited by the authors (*Snogerup 11804*; B, LD) was identified by R. Artelari as *L. roridum* (Sm.) Brullo & Guarino.

Limonium heraionense Erben & Brullo in Phytotaxa 240(1): 175 (2016)

Type: Korinthos, Akro Ireo (C. Melangavi) presso le rovine di Heraion, 01.09.2002, *Brullo & Sciandrello s.n.* (holo. MSB-464030; iso. CAT, FI, herb. Erben).

Allied to *L. frederici* (Barbey) Rech. f. from the S Aegean area.

Limonium ikaricum Erben & Brullo in Phytotaxa 240(1): 124 (2016)

Type: Ikaria, Aulaki-Eudilos (litorale granitico), 29.08.2003, *Brullo & Bacchetta s.n.* (holo. MSB-164019; iso. CAT, FI, herb. Erben).

Based on a single collection and with similarities to *L. roridum* (Sm.) Brullo & Guarino.

Limonium isidorum Erben & Brullo in Phytotaxa 240(1): 165 (2016)

Type: Samos, Agios Isidoros, litorale calcareo, 09.06.2005, *Brullo & Musarella s.n.* (holo. MSB-165816, iso. CAT).

Probably referable to *L. ocymifolium* (Poir.) Kuntze.

Limonium kirikosicum Erben & Brullo in Phytotaxa 240(1): 172 (2016)

Type: Ikaria, presso il porto Agios Kirikos, 30.08.2003, *Brullo & Bacchetta s.n.* (holo. MSB-164018; iso. CAT, FI, herb. Erben).

Referable to *L. roridum* (Sm.) Brullo & Guarino.

Limonium korakoniscum R. Artelari & Valli in Phytotaxa 217(1): 65 (2015)

Type: Island of Zakynthos, locality Korakonisi, on calcareous maritime cliffs and rocks, 10 m a.s.l., 14.09.2014, *A.-Th. Valli 1200* (holo. UPA; iso. B).

A local endemic related to *L. sieberi* (Boiss.) Kuntze.

Limonium meandrinum Erben & Brullo in Phytotaxa 240(1): 170 (2016)

Type: Karpathos, Apela, 02.07.2002, *Brullo & Giusso* (holo. MSB-164017; iso. CAT, FI, herb. Erben).

Possibly belonging to *L. roridum* (Sm.) Brullo & Guarino.

Limonium microcycladicum Erben & Brullo in Phytotaxa 240(1): 59 (2016)

Type: Schinoussa, Mersini Ainickolas, 31.08.1998, *Bartolo & Brullo s.n.* (holo. MSB-164246; iso. CAT, FI, herb. Erben).

Known from two collections and rather similar to *L. roridum* (Sm.) Brullo & Guarino, which occurs in the same area. According to the description, it is characterised by relatively broad, glaucous leaves and long spikes.

Limonium minoicum Erben & Brullo in Phytotaxa 240(1): 107 (2016)

Type: Crete, Tertsia (Ierapetra), rupi calcarenitiche, 27.06.2002, *Brullo & Giusso s.n.* (holo. MSB-164247; iso. CAT, herb. Erben).

Known from a small area of S Crete and differing from *L. creticum* R. Artelari only in its occasionally 3-veined leaves and marginally shorter spikes.

Limonium monolithicum Erben & Brullo in Phytotaxa 240(1): 69 (2016)

Type: Dodecanese: Rhodes, Akr. Phurni, 01.09.1996, *Brullo & Guarino s.n.* (holo. MSB-164028; iso. CAT, FI, herb. Erben).

Described as endemic to a small area of W Rhodes. Similar to *L. sitiaticum* Rech. f., exhibiting only minor differences in measurements of leaves, bracts, and calyces.

Limonium oligotrichum Erben & Brullo in Phytotaxa 240(1): 65 (2016)

Type: Karpathos, Damatria, 30.06.2002, *Brullo & Giusso s.n.* (holo. MSB-164029; iso. CAT, FI, herb. Erben).

Similar to *L. amopicum* Erben & Brullo, and very close to *L. sitiaticum* Rech. f.

Limonium pagasaeum Erben & Brullo in Phytotaxa 240(1): 34 (2016)

Type: Thessaly, Akro Pavogias (rupi scistose presso Volos), 13.10.2007, *Brullo & Giusso s.n.* (holo. MSB-165822; iso. CAT, FI, herb. Erben).

Known from a few collections in SE Thessaly. Stated to differ from *L. narbonense* Mill. in its octoploid chromosome number, more remotely arranged spikelets, and longer bracts and calyces.

Limonium parosicum Erben & Brullo in Phytotaxa 240(1): 119 (2016)

Type: Paros, Aliko (litorale calcareo), 28.08.2003, *Brullo & Bacchetta s.n.* (holo. MSB-164032; iso. CAT, FI, herb. Erben).

Falling within the variation of *L. roridum* (Sm.) Brullo & Guarino.

Limonium pusillum Erben & Brullo in Phytotaxa 240(1): 116 (2016)

Type: Astipalea (Stavros), 30.08.1994, *Brullo & Scelsi s.n.* (holo. MSB-604021; iso. CAT, FI, herb. Erben).

Possibly conspecific with *L. palmare* (Sm.) Rech. f.

Limonium quinnii M. B. Crespo & Pena-Martín in Phytotaxa 94(2): 31 (2013)

Type: Rhodes, Kallithea, Faliraki. Anthony Quinn Bay, 36°19'13"N, 28°12'28"E, in crevices of calcareous maritime cliffs, 3 m, 10.09.2011, *Crespo & Pena-Martín s.n.* (holo. ABH sub no. 58285; iso. ABH).

Related to *L. ammophilon* (Papatsou & Phitos) Domina and *L. roridum* (Sm.) Brullo & Guarino.

Limonium recticaule Erben & Brullo in Phytotaxa 240(1): 144 (2016)

Type: Crete, Hersonissos, 08.06.2000, *Brullo & Giusso s.n.* (holo. MSB-165815; iso. CAT, FI, herb. Erben).

Within the variation of *L. roridum* (Sm.) Brullo & Guarino.

Limonium rhodense M.B. Crespo & Pena-Martín in Phytotaxa 94: 35 (2013)

Type: Rhodes, between Mandriko and Kalavardha, S of Kamiros, 36°19'21"N, 27°52'42"E, on low maritime cliffs, 3 m, 10.12.2011, *Crespo & Pena-Martín s.n.* (holo. ABH).

Identical to and antedated by *L. ammophilon* (Papatsou & Phitos) Domina.

Limonium samium Erben & Brullo in Phytotaxa 240(1): 75 (2016)

Type: Samos, Potami, litorale roccioso, 01.07.2003, *Brullo & Giusso s.n.* (holo. MSB-64031; iso. CAT, FI, herb. Erben).

Closely related to *L. sitiicum* Rech. f. and stated to differ from *L. vanandense* (q.v.) in its longer spikelets, tuberculate bracts, and more densely hairy calyces.

Limonium sartorianum Erben & Brullo in Phytotaxa 240(1): 110 (2016)

Type: Andros, Kalamaki, Akr. Thiari, 30.08.2002, *Brullo & Sciandrello s.n.* (holo. MSB-164027; iso. CAT, FI, herb. Erben).

Similar to *L. sieberi* (Boiss.) Kuntze and stated to differ in its smooth, glandular upper leaf surface and slightly broader inner bracts.

Limonium schinousae Erben & Brullo in Phytotaxa 240(1): 150 (2016)

Type: Cyclades, Schinoussa, Merini Ainickolas, 31.08.1998, *Bartolo & Brullo s.n.* (holo. MSB-165814; iso. CAT, FI, herb. Erben).

Within the variation of *L. roridum* (Sm.) Brullo & Guarino.

Limonium sirinicum Erben & Brullo in Phytotaxa 240(1): 179 (2016)

Type: Cyclades, Sikinos, Alopronia (costa rocciosa), 27.08.1994, *Brullo & Scelsi s.n.* (holo. MSB-165813; iso. CAT, herb. Erben).

Based on a single collection and possibly conspecific with *L. doerfleri* (Halácsy) Rech. f.

Limonium sougiae Erben & Brullo in Phytotaxa 240(1): 133 (2016)

Type: West Kreta (Crete), Südküste, Soughia, 12 km E Paleohora, Küstenfelsen, schroffes vulkanisches Gestein, 4–6 m, 24.09.1997, *Walter s.n.* (holo. MSB-139263; iso. W).

Based on a single collection and possibly conspecific with *L. sieberi* (Boiss.) Kuntze.

Limonium spreitzenhoferi Erben & Brullo in Phytotaxa 240(1): 131 (2016)

Type: Cerigo [Kithira], auf den Felsen bei den Hausern im Hafen von Kapsali, 15.06.1880, *G.C. Spreitzenhofer 18* (holo. B!).

Similar plants from Kithira were identified as *L. sieberi* (Boiss.) Kuntze by Runemark (unpubl.) and by ARTELARI & GEORGIU (2003: 494–496).

Limonium thirae Erben & Brullo in Phytotaxa 240(1): 142 (2016)

Type: Santorini, Akro Koulombo (litorale roccioso), 11.06.2000, *Brullo & Giusso s.n.* (holo. MSB-164024; iso. CAT, FI, herb. Erben).

It could be assigned to *L. roridum* (Sm.) Brullo & Guarino.

Limonium vanandense Erben & Brullo in Phytotaxa 240(1): 73 (2016)

Type: Karpathos, Vananda, littorale roccioso calcareo, 03.07.2002, *Brullo & Giusso s.n.* (holo. MSB-164248; iso. CAT, herb. Erben).

Stated to differ from *L. sitiicum* Rech. f. only in its marginally shorter spikelets (7.5–8.2 mm vs. 8.5–10.0 mm) and calyces (5.5–6.2 mm vs. 6.3–7.3 mm).

Limonium vravronense Erben & Brullo in Phytotaxa 240(1): 154 (2016)

Type: Sterea Ellas: Vravra-Amolia, 28.08.2002, *Brullo & Sciandrello s.n.* (holo. MSB-164025; iso. CAT, FI, herb. Erben).

Stated to resemble *L. atticum* Erben & Brullo.

Limonium xerocampicum Erben & Brullo in Phytotaxa 240(1): 56 (2016)

Type: Crete [Crete], costa rocciosa presso Aghia Irini (Xerocampos), 24.08.1996, *Brullo & Guarino s.n.* (holo. MSB-165823; iso. CAT, FI, herb. Erben).

Known only from the type collection. Stated to differ from *L. roridum* (Sm.) Brullo & Guarino in being

somewhat smaller in all parts, with narrower leaves and fewer sterile branches. Possibly a depauperate form of the widespread *L. roridum*, adapted to the hot and dry climate of SE Crete.

Limonium xiliense Erben & Brullo in Phytotaxa 240(1): 126 (2016)

Type: Peloponnisos, Akr. Archangelos (Elika), 03.09.2002, *Brullo & Sciandrello s.n.* (holo. MSB-164244; iso. CAT, FI, herb. Erben).

Known from a few collections in a small area of S Peloponnisos.

Poaceae

Achnatherum fallacinum H. Scholz & Raus in Willdenowia 36: 374 (2006)

Type: Nomos Dodekanisou, Kasos island, Schlucht südl. Arvanitochori (35°23'10"N, 26°55'04"E), 150-200 m, Mergel-Steilküste und Geröll der Talsohle, 10.05.1983, *Raus 8152* (holo. B; iso. UPA).

Several published records of *A. bromoides* (L.) P. Beauv. from the Central and southern Aegean area may refer to *A. fallacinum*.

Arrhenatherum palaestinum subsp. *macedonicum* H. Scholz in Willdenowia 37: 213 (2007)

Type: W Macedonia, Nomos Kozani, Eparchia Askio, Mellia W flank, pass between Siatista and Galatini, 1120-1150 m, sparsely grazed *Stipa* steppe on calcareous substrate (*terra fusca*), 16.06.2006, *Böhling 13707* (holo. B).

Within the range of variation for *A. palaestinum* subsp. *palaestinum*.

Bromus parvispiculatus H. Scholz in Willdenowia 38: 414 (2008)

Type: Achaia, Ep. Patron, NW Platanovrysi, krautige Ruderalfluren, 11.04.2001, *R. & E. Willing 87413* (holo. B).

Differing from *B. hordeaceus* L. only in its smaller spikelets. Reported from W Greece and one locality in the western part of Crete.

Bromus squarrosus subsp. *consimilis* H. Scholz in Willdenowia 40: 199 (2010)

Type: Insula Samothraki, S Kamariotissa, Acker- und Feldränder, 30 m, 15.05.2010, *Biel SI105.69* p.p. (holo. B).

Based on a gathering of three flowering plants which were first noted in 2009.

Eragrostis minor subsp. *angusta* H. Scholz & Raus in Willdenowia 36: 728 (2006)

Type: Nomos Larisa, Eparchia Agia, Agiokambos, Meeresstrand, Feinkies bis Grobsand, Standort betreten

und leicht ruderalisiert, 1-3 m, 24.09.1980, *Binder et al. 737* (holo. B).

Reported from scattered localities on the Greek mainland and Peloponnisos.

Eragrostis multiglandulosa H. Scholz in Willdenowia 41: 324 (2011)

Type: Insel Samothraki, SW Kamariotissa, Lagune, Strandkies und Küstenkalkfels am SO-Ende, 2 m, 27.8.2007, *Biel 07.284a* (holo. B).

Differing from *E. cilianensis* (All.) Janch. in the presence of numerous glands evenly spaced on the leaves and lemmas. In July 2013 a second gathering was made from a population of c. 150 plants on the gravelly-sandy shore (Biel, pers. comm. 2017).

Lolium scholzii Greuter in Bocconea 25: 111 (2012)

Type: Nomos Messinia, Eparchia Kalamata, Tajetos Pass between Tripi and Artemisio, alt. 1200-1350 m, 37°04'00"N, 22°16'00"E, 10.06.1995, *Kamari et al.*, Iter Medit. VII N° 2056 (holo. PAL-Gr; iso. B, UPA).

Possibly a local variant of *L. rigidum* Gaudin.

Melica cretica subsp. *greuteri* W. Hempel in Feddes Rept. 122: 106 (2012)

Type: In cacumine Mt. Hymetti prope Athenas, 26.07.1888, *Bornmüller 3513* (holo. B, iso. FI).

A variant of *M. cretica* reported from scattered localities in Attica and on Crete, Evvia, and Athos.

Polygalaceae

Polygala rausiana U. Raabe, Kit Tan, Iatroú, Vold & Parolly in Willdenowia 39: 71 (2009)

Type: Nomos & Eparchia Korinthias, along road from Rozena to above Evrostina, 38°05'N, 22°24'E, burnt *Pinus halepensis* forest with *Cistus creticus* and *C. salviifolius* dominant, soil pockets in conglomerate rock, 700-800 m, 05.05.2007, *Kit Tan & G. Vold 29210* (holo. B; iso. ATH, C, G, LD, MSTR, UPA, WU, herb. Kit, herb. Parolly, herb. Raabe, herb. Sfikas, herb. Strid).

A distinctive species occurring at several localities in a small area of north-central Peloponnisos at altitudes between 600 and 1400 m. Also noted on Mt. Dourdouvana in 2015 (Zarkos, photos sent to Kit Tan).

Polygala sfikasiana Kit Tan in Phytol. Balcan. 15: 291 (2009)

Type: Greece, Nomos Lakonias, Eparchia Epidavrou-Limiras, NW slopes of Mt. Gaïdourovouni, 765 m, 36°55' N, 22°54' E, crest bluish-lilac, drying cream, 17.04.2006, *Sfikas 13711* (holo. herb. Sfikas).

Known only from the type collection.

Ranunculaceae

Ranunculus pindicola Dunkel in Willdenowia 45: 225 (2015)

Type: Ioannina, Metsovo, Zighos, 9-10 km vom Katara-Pass gegen Ioannina, W der Straße bei der Kapelle Profitis Ilias, 39°47'11.9"N, 21°09'30.8"E, 1335 m, Hochebene, Feuchtwiese mit *Narcissus radiiflorus*, 02.06.2011, F. G. Dunkel (holo. B; iso. C, M, STR, herb. Dunkel).

The only representative of the *R. auricomus* complex in Greece. A rare endemic, locally gregarious in wet meadows above Metsovo in the area of the Katara Pass.

Resedaceae

Reseda minoica Martín-Bravo & Jim. Mejías in Ann. Bot. Fenn. 50: 57 (2013)

Type: Turkey, Mersin, ca 5 km from Mersin (Kaleköy) to Findikpinari, limestone cliffs below the road, slopes and rocky ground on marl, 330 m, 36°46'98"N, 34°28'00"E, 28.04.2010, S. Martín-Bravo 102SMB10, P. Jiménez-Miias & R. Ortiz (holo. ANK; iso. ANK, E, ISTE, LA, MA, MO, K, UPOS, UPS).

Occurring in S Anatolia, as well as on Cyprus and islands of the S Aegean area, including Gavdos south of Crete.

Rubiaceae

Asperula lutea subsp. *griseola* Greuter in Bocconea 25: 107 (2012)

Type: Nom. Arkadia, Ep. Megalopolis, NW foothills of the Tajetos range, c. 0.5 km W of Neochori, alt. c. 1100 m, 37°11'00"N, 22°13'45"E, 11.06.1995, Kamari et al., Iter Medit. VII N° 2217 (holo. PAL-Gr; iso. B, BEO, BRNM, MA, SALA, UPA, W).

Greuter (op. cit. 2012) includes comments on the *A. lutea* group in Greece.

Asperula tymphaea T. Gregor, Meierott & Raus in Phytol. Balcan. 22: 256 (2016)

Type: Nomos Ioannina, Timfi, Osthang Astraka-Massiv, 39°57'50"N, 20°46'55"E, Kalkfels und-schutt, 2083-2116 m, 31.07.2009, Gregor 5616 & Meierott (holo. FR-0036776).

The description was based on a single population which differs from *A. aristata* only in one indumentum character (i.e., whole plant puberulent). There are numerous other collections of *A. aristata* s.l. from Mt. Timfi and c. 150 from elsewhere in NW and NC Greece, none of which were examined by the authors. One collection (Strid 26518 from the vicinity of Eptachori) is identical to *A. tymphaea*, and other collections are puberulent to various degrees, at least on the corolla. *Asperula tymphaea* clearly represents population variability rather than a separate species.

Scrophulariaceae

Verbascum delphicum subsp. *cervi* Zograf. in PhytoKeys 74: 109 (2016)

Type: Attica, Mt. Parnitha, limestone slope, 1100 m, 38°09'N, 23°43'E, 22.06.2015, A. Zografidis 109 (holo. ATH; iso. ATHU).

Probably endemic to Mt. Parnitha, with *V. delphicum* subsp. *delphicum* occurring on Evvia. The plant on Parnitha was collected already in 1854 by Heldreich (Heldreich 2902, B) and by Tuntas in 1900, 1907, and 1911 (material at GB and WU-HAL); see MURBECK (1933: 263). According to ZOGRAFIDIS (2016: 116), no material could be traced at B or WU.

Tamaricaceae

Tamarix minoa J.L. Villar, Turland, Juan, Gaskin, M.A. Alonso & M.B. Crespo in Willdenowia 45: 164 (2015)

Type: Crete, Nomos Chanion, Eparchia Apokoronou, Georgioupoli beach, by river mouth at E edge of village, 35°21'34.3"N, 24°15'59.6"E, 0 m, sandy river bank on beach with springs emerging beneath the *Tamarix* trees, 28.03.2009, N.J. Turland 1778 & P. Bareka (holo. UPA; iso. B, MO 6207620).

Known only from the type locality; with similarities to *T. africana* Poir. and *T. hampeana* Boiss. & Heldr.

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REZIME

Napredak u taksonomskim i florističkim istraživanjima u Grčkoj

Arne STRID i Kit TAN

Prikazan je razvoj taksonomije biljaka, floristike i fitogeografije u Grčkoj, u periodu od 2005. do 2016. godine. Diverzitet vrsta u različitim oblastima i na različitim skalama je sumiran na 5 karata. Prikazana je i lista novoopisanih vrsta, zajedno sa navođenjem tipskog materijala i taksonomskim komentarima. Skoro svi taksoni se baziraju na biljnom materijalu sakupljenom u Grčkoj.

KLJUČNE REČI: *Flora Hellenica*, *Flora Hellenica Bibliography*, *Flora Hellenica Database*, floristika, fitogeografija, diverzitet vrsta, Grčka