REPORT ON SPECIES OF PLANTS REQUIRING PROTECTION IN GREECE AND MEASURES FOR SECURING THEIR PROTECTION

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This report has been divided in three parts. The first part deals with a list of species and other taxa of the Greek flora requiring protection. The second part deals with the destruction of rare plants and its causes and the third part deals with suggested remedies.

PART 1.

A list of species and other taxa of the Greek flora requiring protection.

A list of the species and other taxa of the Greek flora which, in my opinion, require protection is annexed to this report. In order to explain the comparatively great number of plants which appear in this list, I would mention that the flora of this country is one of the richest of Europe, containing about 6,000 taxa, a number considerably larger than that of France, Belgium and Switzerland put together, in spite of the fact that the total expanse of these countries is more than six times that of Greece. In addition, as mentioned below, this country has a very large number of endemics, in fact, in proportion to her size, Greece has more endemics than any other European country.

For the compilation of this list, I have reviewed the flora of the following districts of Greece:

1. Continental Greece (Sterea Hellas).
2. Peloponnese.
3. Thessaly.
4. Epirus.
5. The island of Euboea (including the Sporades islands).
6. The Ionian islands.
7. The island of Crete.
8. The Cyclades.

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9. The larger islands of the Aegean sea (Mytilene, Chios, Samos and Ikaria and also Thassos and Samothrace).

10. The Dodecanese islands.

11. Macedonia, but only the following areas: In Western Macedonia a portion of the banks of Lake Prespa, the Mt. Vitsi district including Lake Castoria, Florina and Pissodéri, Mt. Grammos and the Nestorion district, Mt. Vourinon and the Kozani district, Mt. Vermion and the Verroia area, Mt. Kaimaktsalan including the Edessa district, the Ptolemais area and finally the Grevena area up to Samarina in the west and Murgana bridge in the south.

In central Macedonia: The Salonica region including Kilkis, Mt. Cholomon, the Cassandra area and Mt. Athos on the Chalkidikí peninsula, the Katerini district, the Pieria mountains and the Servia area.

In eastern Macedonia, Mt. Phalakron (Boz-Dagh), the Drama area, including the Granitis area to the west and Sidironeri to the north and further Mt. Boz-Dagh of Serres, Mt. Ali-Baba and the Leila forest in the Serres area, the Cavalla district, including the Lekani district south of Komotini.

12. Finally, in Thrace, chiefly the area extending from Alexandroupolis to Soufli in the north and Makri in the west.

The majority of the species and other taxa set out in the enclosed list are endemics and are marked E. As is well known, Greece has a very large number of such species. Dr. Turrill, on page 436 of his monumental work « Plant life of the Balkan peninsula » published in 1927, states that Greece has 526 endemics out of which Crete has 131, peninsular Greece 260, Thessaly 51, Epirus 12, Corfu 3, Mt. Athos 16, the Cyclades 33, Southern Macedonia 19 and the Thracian islands 1. To these numbers however should be added, in the first place, a number of endemics from the Dodecanese and Grecian Thrace, which areas are not comprised in Dr. Turrill’s list and secondly about 150 new endemics which have been discovered in this country since Dr. Turrill’s work was published. Thus, for instance, the endemics of Crete are now, according to Peter Davis: [« Notes on the summer Flora of the Aegean » (1952), p. 102], 212 instead of 131 as mentioned by Dr. Turrill. To this number, I would add a handsome and rare new species of Serratula which I discovered in the early summer of 1957 in eastern Crete and which has been recently described by Dr. Turrill as Serratula cichoracea var. cretica TURRILL.

Further, as regards the rest of Greece, Prof. Rechinger, during various explorations which he conducted after Dr. Turrill’s work was
published, has discovered and described a considerable number of new endemics. Peter Davis has also discovered a number of such plants some of which have been described by himself and some by Prof. Rechinger. Finally, I have also discovered many new endemic species, a description of 15 species and one variety of these has already been published by Dr. Turrill and Prof. Rechinger.

It is obvious that in protection against extinction, priority should be afforded to rare endemics, seeing that, as by definition they are not to be found in any other country, it follows that their extinction in Greece would mean also their final extinction for the whole world. The number of endemic taxa comprised in the list is 248. In addition the list includes a number of non-endemic taxa which require protection on account of their rarity, not only in Greece, but also, as far as I know, in the other countries in which they are still to be found.

I would like to point out at this stage that this list does not claim to be an exhaustive one. It is probable that other species and in particular a considerable number of sub-species and varieties could be added with advantage. I believe however that it covers the majority of the plants that require protection.

In compiling this list, I have consulted in regard to Crete, the Cyclades, Euboea, the larger islands of the Aegean sea, the Dodecanese, Thassos, Samothrace and Mt. Athos: a) Prof. Rechinger’s work «Flora Aegaea» (1940), the Supplement to this work (1949) and various papers which Prof. Rechinger has issued after the publication of the above supplement; b) Halacsy’s classic work «Conspectus Florae Graecae» (3 vol. and 2 supplements), which deals with certain of the above territories; c) the above mentioned paper of Peter Davis; d) F.C. Stern, «A Study of the genus Paeonia» and finally the monographs of Stefani, Forsyth Major and Barbey on Samos and Karpathos.

As regards the rest of Greece (but with the exception of Macedonia and Thrace), I have been assisted by the above work of Halacsy and also by the works of Maire, Beauverd, Haussknecht, Formaneck and others.

In regard finally to Macedonia and Thrace, I have consulted two papers of Prof. Rechinger concerning Mt. Vermion, Mt. Phalakron (Boz-Dagh) of Drama, Mt. Boz-Dagh of Serres, Mt. Ali-Baba and some other parts of eastern Macedonia and was also assisted by Hayek’s work «Prodromus Florae Balcanicae» (3 vol.).

Apart from the above authorities I have relied to a great extent on my personal experience from my botanical expeditions to various parts of Greece during the last ten years. The number of these
expeditions, not including many hundreds of excursions in Attica, amounts to over one hundred and seventy and includes eighteen excursions to Crete, four to the island of Samos, four to the island of Mytilene, two to the island of Chios, three to the island of Rhodes, five to the island of Euboea, also to the islands of Corfu, Cephalonia, Zante, Cythera, Ikaria, Thassos, Samothrace, Naxos, Syra, etc. These expeditions include also the ascent of over sixty different mountains including three ascents on Mt. Olympus, two on Mt. Camila and six on the rest of the Pindus mountains, two on the White mountains, five on Mt. Chelmos, three on Mt. Vermion, two on Mt. Vitsi, five on Mt. Tymphrestos, three on Mt. Taygetus, three on Mt. Kyllene, three on Mt. Cholomon, two on Mt. Athos, two on Mt. Smolikas, etc.

PART 2.

Destruction of rare plants in Greece and its causes.

Judging from the records appearing in Halacsy and from my own explorations, over 150 species which had been recorded in Greece from the end of the XVIIIth up to the middle of the XIXth century have now become extinct. The most notable instance of a spectacular and rare plant which has now completely disappeared is Bibersteinia orphanidis Boiss., which was discovered about the middle of the XI Xth century on Mt. Kyllene in the Peloponnes.

The causes of the extinction of these species and the considerable reduction of many others, can be classed under two main headings viz: I. Causes due to the direct influence of Man, and II. Causes due to grazing animals.

I. — Destruction due to the direct influence of Man.

The main causes of such destruction are: a) the rapid extension of cities and towns beyond the limits of their older boundaries. This applies chiefly to the cities of Athens and Salonica as a result of which endemic and other rare plants which used to be found in the adjacent areas have now been replaced by ruderal flora.

b) Military constructions and the so-called forest roads. The latter, apart from the destruction of the forests themselves tend by the increase of traffic to destroy various rare annual and perennial herbs.

On account of recent military constructions on the peak of Mt. Parnes, near Athens, several species are threatened by total extinction, including Colchicum cantacuzenium Heldr., Convolvulus cochlearis Gris. and Fritillaria guicciardi Heldr. et Sart. In the
same way the flora of Mt. Chortiatis near Salonica is threatened more and more every year by the military installations established near the summit of that mountain.

\[c)\] The destruction of forests and brushwood which is accompanied by the extermination of many annual and perennial species to be found in the above.

The destruction of forests and brushwoods is caused: \(i)\) By shepherds in order to increase or improve available pasturage. \(ii)\) By the population or the Government for the purpose of obtaining arable land. A signal case of such destruction on a large scale was the destruction by the Government of the famous Kotza Orman forest in western Macedonia, one of the few lower plain forests on the Balkan peninsula. \(iii)\) By cutting forests for timber and charcoal making.

\[d)\] The menace from indiscriminate plant collecting is comparatively small, with the exception of plants used for medicinal purposes or for tea. One of these is *Origanum Dictamnus* L. which has now survived only in inaccessible places. Another notable exception is the picking of *Helichrysum Virgineum* (S. and S.) Boiss. an everlasting, which is to be found only on the peak of Mt. Athos. The picking is done by the monks for the decoration of the icons in the monasteries. This habit threatens to destroy entirely this rare and attractive plant.

Plant collecting is chiefly done by foreign botanists, whose number is necessary restricted on account of the expenditure entailed for a journey to Greece. Nevertheless these foreign botanists represent a considerable risk to a number of rare plants which are to be found in certain favourite localities like, for instance, Mt. Olympus and the White Mountains in Crete.

II. — Destruction due to grazing animals.

The chief cause of the destruction of most of the rare plants in this country are the grazing animals. The number of cows, horses and mules is comparatively small and the main grazing animals (cattle) are goats and sheep. The destruction which has been caused and is caused every day to the vegetation in Greece by the goat is incalculable. In fact, I believe that there is no country in respect of which the aphorism set forth by Mr. Roger Heim in his introduction to *Derniers Refuges*: « La Chèvre arrache les dernières touffes végétales aux étendues appauvries » is more appropriate. I would mention however that sheep also constitute a serious menace to the reforestation of the land.
In this connection I should like to quote from Dr. Turrill’s above work the following paragraph (p. 205): « It is however necessary to emphasize here that it is not the mere destruction of the trees which causes the permanent deforestation of large areas, but the prevention of young growth and natural reforestation. It is certain that the feeding of flocks of sheep and goats is the chief cause of this and that if their indiscriminate wanderings and the practice of transhumance were prevented, much land would revert to forest ».

I am here, however, chiefly concerned with the destruction occasioned by both goats and sheep to annuals and other perennial herbs and shrubs.

Within even the last 6-7 years I have noticed a considerable deterioration in the flora and generally in the landscape of many areas in this country as a result of intensive grazing. This is not to be wondered at, seeing that after the recuperation of Greece from the mass destruction of cattle during the occupation and during the guerilla war, the number of cattle is increasing every year. In my journeys on the mountains of Greece, which constitute the exclusive pasture during the summer months, I have heard time after time from shepherds the complaint that the grazing areas are becoming narrower every year and are no longer sufficient to satisfy their needs. The result of this is that even less accessible areas on the mountains, like ravines and ledges, which in the past used to remain undisturbed from grazing and where rare plants succeeded in surviving, are at present being attacked by grazing animals. This is significant and tends to show that if, so far, certain plants have escaped extermination, this is now only a question of time. The destruction also caused by transhumance which is conducted on a considerable scale in this country is very considerable.

Although in all the Mediterranean countries the problem of destruction caused by grazing animals is an acute one, in Greece it has acquired alarming proportions and unless drastic measures are employed, the destruction of a great part of the wild vegetation of the country will become irreparable in a few scores of years. At the time of the dictatorship of General Metaxas, shortly before the second world war, the Greek Government had started enforcing measures for the total suppression of the goat. Nothing however has been done in this connection by the post-war Governments.

How salutary can prove the effects of prohibition of grazing in Greece, is eloquently testified by Mount Athos. Thanks to an ancient monastic law excluding from that territory all female animals, no flocks of sheep and goats or cattle are tolerated, with the result that
the condition of the wild vegetation is immeasurably better here than in any other district in Greece.

In the same way, the fine work of reforestation which is conducted by the « Athens Society of the Friends of the Trees » in the area of the Kaisariani Monastery would have been doomed to failure without the strict prohibition of grazing in that area which is pursued thanks to this Society.

PART 3.

Suggested remedies.

The main remedy against the destruction of rare flora, as described above, lies in the creation of protected areas. It should be mentioned in this connection that a compulsory law (No. 856) was published in September 1937, which provided for the setting up of five national reserved areas for the protection of fauna and flora and for other purposes. Each of these areas were to be established by Royal Decree. Two such Royal Decrees have been issued up to the present, one for a reserve on Mt. Olympus (R.D. of 9-30 June 1938) and another for a reserve on Mt. Parnassus (R.D. of the 25 July-5 August 1938). These laws have never been enforced so that these reserved areas have remained « on paper ». Unfortunately, considerable destruction caused both to the fauna and flora of these areas, since the time that their establishment as reserved areas was originally planned, has considerably impaired their value.

I would mention that the above two areas are far from being sufficient and that for the preservation of a very considerable number of rare species which are not to be found on the above mountains, further protected areas should be established on the following mountains:

1. On Mount Pindus. This reserve of about 45,000 hectares should include Mt. Ganila (highest peak 2,484 m) and the Vikos gorge and extent to the west 30 metres so to comprise Vallia Kalda north of Metsovon. The landscape of this district is of outstanding beauty. It includes several ponds and streams at an altitude from 1,300 m to 1,800 m. Its fauna comprises, inter alia, the brown bear (*Ursus arctos*), wild goat (*Capra aegagrus*), wild cat (*Felis catus*) roe deer (*Capreolus capreolus* and wild boar *Sus scrofa*). Its forests of *Fagus silvatica* L., *Pinus leucodermis* Ant., *Pinus nigra* Arn., are some of the finest in Greece, but unless they are soon adequately protected, they are doomed to destruction. Fine specimens of *Aesculus hippocastanum* L., *Tilia tomentosa* Moench and *Corylus*
colurna Lan., are still to be found. The flora in annuals and perennials is very rich including Sempervivum shlehanii Schott., Artemisia petrosa Baumg., Anthyllis dinarica Beck., Saxifraga, S. stribrnyi, S. oppositifolia, S. rocheliana, Viola albanica Hal., Linum pycnophyllum Boiss. et Helder., Gentiana verna var. pontica Soltof., Fritillaria pontica, Lilium albanicum Gris., Lilium chalceldonicum L., Lilium martagon L., Campanula Hawkinsonia Haussk. et Helder., Ramondia Serbica Panc., Centaurea epirota Hal., Crepis turcica Deg. et Balld., Achillea abrotanoides Vis., Soldanella pindicola Haussk., Dianthus pindicola Viehr., Dianthus cruentus Gris., Rosa pomerera Herm., Epipogon aphyllum Sw. For all these reasons this area could justly claim to become the national park of Greece and would acquire very considerable touristic value.

2. On Mt. Phalakron (Mt. Boz-Dagh) of Drama in Eastern Macedonia, a reserve about 30,000 hectares skirting the villages Volakas, Haghios Petros, Mirsineron, Dendrakia, Xiropotamos and Pyrgos, including a zone from 1,200 m up to the highest peak (2,300 m) and also the fine cliffs and precipices to the east and north. This area is the home of many rare plants allied to those of the Rhodope massif, such as Haberlea rhodopensis Friv., Saxifraga Ferdinandi Coburgi Keller and Sund, Scabiosa graminifolia L. var. viridis Hausm., Scabiosa rhodopensis Stoj. et Stef., Fritillaria drenovskii Degen et Stoyanoff, Salvia forskhahlei L., Lathrea rhodopea Dingl., Linum Thracicum (Gris.) Deg., Centaurea Nyssanea Vel. ssp. Orbelica (Vel.) Hay., C. parilica Stojan. and Stef., C. parilica var. incanescens Stoj. and Stef. and others.

3. On Mt. Vourinon in Western Macedonia an area of about 4,500 hectares comprising the summit of this mountain (1,800 m) the catchment area of the water supply of the town of Siatista, and the ravine separating Mt. Vourinon from Mt. Asprovouni. This area is rich in rare serpentine endemics such as Onosma elegantissimum Rech. et Goulimy, Inula serpentinica Rech. et Goulimy, Stachys goulmy Rech. fil., Anthyllis serpentincola Rech. et Goulimy, Plantago serpentinica Rech. et Goulimy, a Lilium not yet determined and several others. On an excursion to Mt. Vourinon about two years ago, I found the vegetation of the catchment area in excellent condition thanks to the prohibition of grazing in force during the last 5-6 years which was strictly enforced by the Town council of Siatista.

4. On Mount Grammos in Western Macedonia an area of about 30,000 hectares to include Souflikas peak (2,146 m) and Kato Arena peak (2,075 m) and an extensive forest of Fagus silvatica and Pinus
nigra and various oaks, where the brown bear (*Ursus arctos*) and possibly the Lynx (*Lynx vulgaris*) have survived. The flora of this district is practically unknown as it has never been botanised as far as I know. In a short excursion which I made there at the end of August 1957, I recorded the following plants many of which are unknown from the rest of Greece: *Hypericum repens* L., *Scabiosa graminifolia* L., *Trifolium Velenovski* VAND., *Asperula doerfleri WETTST.*, *Helianthemum canum* L. (BAUMG.) var. *speciosum JANCH.*, *Linum capitatum* Kit., *Achillea atrata* L. ssp. *multifida* (DC.) *HEIM.*, *Hieracium Waldsteinii* FREYN., etc. At that time of the year I found this area very heavily grazed, but on the less accessible rocks many alpines had survived.

5. On the higher zone of Mt. Dirphys and Xerovouni (1,100-1,750 m) covering about 16,000 hectares.


7. On Mt. Chelmos in the Peloponnese an area of about 5,000 hectares so as to comprise the Styx valley (1,300-1,600 m) and the Zarouchla forest. The above valley is a botanical paradise and is

The preservation of the flora of this district is of great importance because, in addition to endemics having a very restricted area of distribution, it also contains species of Asia Minor, Macedonia, Thrace, which have not been recorded in the intervening areas and which raise many phytogeographical problems.

8. The higher zone (1,500-2,450 m) of the White Mountains in western Crete, about 9,000 hectares, which contains a large portion of the Cretan endemics. It is also the home of the last survivors of the Cretan Ibex (*Capra aegagrus cretensis* BRISSON). The flora of the White Mountains is too well known to require a description.

In addition to the above larger reserved areas, I suggest that the following smaller reserved areas should also be established.


10. On Mount Prophet Heliat (about 1,200 hectares), in the island of Rhodes where *Paeonia Rhodia* STERN., *Asyneuma giganteum* (BOISS. et BORMS.), *Romulea temskyana*, *Crocus nubigena* (HERB.) BAKER, *Colchicum macrophyllum* BURTT., *C. balansae* PLANCH., etc., are to be found.

The establishment of a protected area on Mt. Prophet Helias is the more so indicated as this mountain is one of the « sights » of the island of Rhodes which tends increasing every year to become one of the more important touristic centres of the Eastern Mediterranean.
11. On the higher zone (800-1,500 m) of Mt. Kavussi in Eastern Crete (1,450 hectares) comprising also Kliros peak, which zone contains several rare local endemics (Campanula hierapetra Rech. fil., Helichrysum doerfleri, Minuartia wettsteinii Mattf., Aristolochia cretica Lam. and others).

12. An area of about 5,000 hectares on the higher zone of Mt. Pilion in Thessaly where Siphonostegia syriaca Boiss. var. Pelia Beauv., Salvia eichleriana Heldr., Veronica drakiensis Bvrd. et S. Top., Verbascum pelium Hal., Campanula Sophiciæ and other rare local endemics have their home.

13. A zone on Mt. Kaimaktsalan in northern Macedonia (about 3,000 hectares) comprising the Papalazos rocks and the ravine of the Papadias river, Tservena Voda, the Gheles and the Floros streams. This zone contains many rare plants, inter alia, Aconitum divergens Pand., A. variegatum L. ssp. judenbergense (Rech.) Gay., Silene Lerchenfeldiana Baumg., etc.

I would like to emphasize that the above does not include a considerable number of endemics and other rare species to be found on other mountains such as Mt. Parnon and Mt. Kyllene in the Peloponnese, Mt. Lastos in the island of Carpathos, the Phengari mountain in the island of Samothrace, Mt. Boz-Dagh of Serres in eastern Macedonia, the Pieria mountains in central Macedonia, Mt. Vermion in western Macedonia, Mount Ida in Crete, Mt. Olymbos in the island of Mytilene, Mt. Oeta, Mt. Tymphrestos and Mt. Ghiona in continental Greece, the protection of which would also be highly desirable.

Of course the effective protection of all these reserves would be considerably strengthened if it could be arranged for the owners of the animals grazing in the areas adjoining each reserve to be jointly responsible for any trespassing in the reserve by such animals. In this way every shepherd would be prompted to act himself as a guard of the protected area knowing that for any such trespassing committed by another shepherd, he would be himself personally responsible. Another effective measure would be the automatic progressive enlargement of the reserved area concerned to the detriment of the surrounding grazing areas every time that there was a case of trespassing, as the knowledge that the violation of the reserved areas would entail the reduction of the grazing area, would also deter many would-be offenders from attempting such violation.

I do not of course underestimate the difficulties which will be encountered in establishing the above protected areas, seeing that,
as goats and sheep are the only means of subsistence of an important portion of the Greek population, any action aiming to restrict the grazing area will provoke very strong opposition.

Another serious difficulty is the considerable expense involved, seeing that the enforcement of the protection desired will require the service of a considerable number of rangers, many of whom would have to be mounted, the fencing of large areas, the payment of compensation to the owners of grazing animals and possibly expropriation of private property included in the reserved areas. All these mean considerable expenditure and it is doubtful whether the Greek budget is capable of meeting this.

Of course the reserves suggested above are aimed to protect the alpine and subalpine flora against grazing animals. There are however a considerable number of rare species growing in the lower regions which would be protected by the above reserves. I will quote as examples: *Crocus goulimyi* Turr., *Tulipa goulimyi* Sealy and Turrill, *Linaria hellenica* Turrill, *Fritillaria conica* Boiss., *F. Davisii* E., *F. tuntasia* Heldr., *Orchis sepulchralis* B. et H., *Viola methodiana*, *Ammanthus maritimus* Boiss. et Heldr., *A. filicaulis* Boiss. et Heldr., *A. tomentellus* Gand., *Paonia Decora*, *Triadenia maritima* (Sieb.) Heldr. et Sartor., *T. Webbii* Spach and many other rare endemics particularly in the Cyclades, Crete, Rhodes and Euboea.

I do not venture to make any suggestions in this report regarding the establishment of reserved areas for the protection of such species, as I am afraid that there is no possibility that this can be obtained in the near future.

On the other hand, I believe that the prohibition of grazing by goats and sheep in the whole district of Attica could be enforced without serious difficulty. This would considerably help in protecting not only the flora of Mt. Parnes, Mt. Penteli and Mt. Hymettus, but also such of the flora of the Kifissos valley and of the Laurium peninsula as has survived.

For the protection of the flora of Mount Parnes and Mount Chortiatis from the military installations which, as already mentioned, have been established there, the only remedy which appears to be practicable is to obtain from the above authorities that they should themselves undertake this protection by the erection of a proper fence and to accept that such areas be visited from time to time by a representative of the Hellenic Society for the Protection of Nature which would report on the condition of the flora concerned.

Finally, the protection of rare plants from indiscriminate plant collecting, can to a certain extent be secured, first, by diffusing as
widely as possible a list of the plants protected in each district, the
collecting of which would be prohibited and secondly by prohibiting
plant collecting in certain areas without a permit from the Hellenic
Society for the Protection of Nature.

Inside the reserved areas the enforcement of the prohibition would
be secured by the rangers. Outside such areas it is difficult to enforce
any measures effectively, as I do not believe that it would be expedient
or effective that this work should be done by the police. Perhaps the
customs authorities on the Greek frontier could check that no dried
plants are exported by botanists who are not supplied with the above-
mentioned permit. I believe however that in the case of conscientious
foreign plant collectors, the knowledge that the picking of certain
plants is forbidden would act as a sufficient deterrent.

List of plants requiring protection.

Note 1: In order to facilitate the use of this list, the families have been
placed in alphabetical order. The same applies for the genera of each family
and the species of each genus.

Note 2: The capital letter E. following the name of each taxon means
that it is endemic of Greece.

ACANTHACEAE.

Acanthus hirutus Boiss.

AMARYLLIDACEAE.

Galanthus elwesii. E.
Galanthus reginae Amalica Orph., E.
Sternbergia macrantha (J. Gay.) ex Baker.

ARACEAE.

Biarum fraasiarnim Schott., E.

ARISTOLOCHIACEAE.

Aristolochia cretica Lam., E.
Aristolochia tournefortii Janb., E.

BERBERIDACEAE.

Leontice altaica Pall.

BORRAGINACEAE.

Alkanna calliensis Heldr., E.
Macrotopia cephalotes DC., E.
Myosotis cadmea Boiss., E.
Onosma elegantissimum Rech. et Goulimy, E.
Onosma halacysyi Hay., E.
Onosma tagygetum Boiss. et Heldr., E.

CAMPANULACEAE.

Asyneuma giganteum (Boiss.) Bornm., E.
Campanula amorgina RECH. fil., E.
Campanula erucifolia FEER. E.
Campanula goulmyi TURR., E.
Campanula hierapetrae RECH. fil., E.
Campanula psaridis HELDR., E.
Campanula reiseri HAL., E.
Campanula podocarpa BOISS.
Campanula rupestris SIBT. et SM. var. spathulifolia TURN., E.
Campanula sartorii BOISS. et HELDR., E.
Campanula saxatilis L., E.
Campanula sulphurea BOISS.
Diosphaera asperuloides ORPH., E.

CAPRIFOLIACEAE.
Lonicera hellenica ORPH.

CARYOPHYLLACEAE.
Arenaria graveolens SCHREB., E.
Arenaria nana BOISS.
Arenaria rotundifolia MAB.
Dianthus arpadiansis ADE et BORN., E.
Dianthus chalcicicus HAL., E.
Dianthus epiroticus HAL., E.
Dianthus mercuri HELDR., E.
Dianthus rhodius RECH. f., E.
Dianthus rupicola BIV.
Dianthus serratifolius S. et S., E.
Gypsophila fruticulosa CH. et B., E.
Heliospermum pusillum HAL., E.
Hernia nigrimonium F. HERM., E.
Minuartia erythrosepala var. fabirarum (DEG. & HAL.) HAY., E.
Minuartia pichleri BOISS. et HELDR., E. (GRS.) MATT., var. denudata (PENZL.) GRAEBN., E.
Minuartia wettsteinii MATT., E.
Silene barbeyana HELDR., E.
Silene corinthiaca BOISS. et HELDR., E.
Silene echinosperma BOISS. et HELDR., E.
Silene fuscata LINK., E.
Silene goulimy TURBILL., E.
Silene guicciardi BOISS. et HELDR., E.
Silene holzmanni HELDR. et BOISS., E.
Silene ionica HAL., E.
Silene laconica BOISS. et ORPH., E.
Silene oligantha BOISS. et HELDR., E.
Silene salamandra PAMP. BOISS. et HELDR., E.
Silene smithii SER., E.
Silene succulenta FORSK., E.
Tunica phitiotica BOISS et HELDR., E.

CHENOPODIACEAE.
Beta nana BOISS. et HELDR., E.
CISTACEAE.

*Fumana aciphyllia* Boiss., E.
*Helianthemum thessalum* Boiss. et Orph.

COMPOSITAE.

*Achillea ambrosiaca* Boiss. et Heldr., E.
*Achillea barbeyana* Heldr. et Heim., E.
*Achillea lingulata* W. K.
*Achillea olympica* Heim., E.
*Anthemis cylindrosa* Hal., E.
*Anthemis scopulorum* Rech. fil., E.
*Anthemis xriedemanniana* Boiss.
*Aster cylindrosus* Boiss. et Orph., E.
*Carthana corymbosa* Heldr.
*Carthana sittensis* Rech. fil., E.
*Centaurea atropurpurea* DC., E.
*Centaurea baldacci* Deg., E.
*Centaurea cadmea* Boiss., E.
*Centaurea emmanuelis loewii* Deg.
*Centaurea halacysti* Doerfl., E.
*Centaurea kalamitana* Freyn. et Sint., E.
*Centaurea lactucea* Boiss.
*Centaurea musarum* Boiss. et Orph.
*Centaurea nyssanea* Vel. ssp. *orbiculata* (Vel.) Hay.
*Centaurea ossaea* Hal., E.
*Centaurea parvula* Stojan. & Stef. var. *incanescens* Stoj. et Stef.
*Centaurea princeps* Boiss. et Heldr.
*Centaurea reuteriana* Boiss.
*Centaurea subsericans* Hal., E.
*Centaurea thassia* Hay., E.
*Centaurea tragacanthoides* Rech. fil., E.
*Centaurea transiens* Hal., E.
*Centaurea vermis* Rech. fil., E.
*Cephalorynchus glandulosus* Boiss., E.
*Crepis bithynica* Boiss.
*Crepis crocifolia* Boiss. et Heldr., E.
*Crepis divaricata* Boiss. et Heldr., E.
*Crepis flexiscapa* Rech. fil., E.
*Helichrysum amorginum* Boiss., E.
*Helichrysum doerfleri* Rech. fil., E.
*Helichrysum heldreichii* Boiss. et Orph., E.
*Helichrysum virgineum* (S. & S.) Boiss., E.
*Hieracium gandryi* Boiss. et Orph., ssp. *sibthorpioides* Z., E.
*Hieracium koracin* Boiss., E.
*Hypochaeris tenuiflora* Boiss., E.
*Inula serpentinicola* Rech. et Goulimy, E.
*Jurinea taygetea* Hal., E.
*Lactuca amorgina* Heldr. et Orph., E.
*Lylolepides *diae* Rech. fil., E.
*Matricaria macrotis* Rech. fil., E.
*Onopordum corymbosum* Hal., E.
**Scorzonera dependens** Rech. fil., E.
**Senecio euboeus** Boiss. et Heldr., E.
**Serratula eichoracea** DC. var. cretica Turrill, E.
**Tragopogon lasiaticum** Rech. fil., E.
**Tragopogon pichleri** Boiss.

**Convolvolaceae.**

**Convolvulus cochlearis** Griseb.
**Convolvulus lanatus** Vahl., E.

**Crassulaceae.**

**Sedum albescens** Haw., E.
**Sedum hierapetrae** Rech. fil., E.
**Sempervivum schlehanii** Schott.
**Tillea vaillanti** Willd., E.

**Cruciferae.**

**Alyssum euboeum** Hal., E.
**Alyssum idaeum** Boiss. et Hel., E.
**Alyssum lasiaticum** Hal., E.
**Alyssum rechingeri nyarady** E.
**Alyssum sphacioticum** Boiss. et Heldr., E.
**Alyssum taggeteum** Heldr., E.
**Arabis doerfleri** Hal., E.
**Arabis longistyla** Rech. fil., E.
**Aubrietia skyria** Hal., E.
**Brassica cadmea** Heldr., E.
**Brassicella nivalis** (Boiss. et Heldr.) Schulz., E.
**Crenularia orbiculata** Boiss.
**Erysimum rechingeri** Jav., E.
**Iberis epirotica** Hal., E.
**Malcolmia skyria** Rech. fil., E.
**Roripa icarica** Rech. fil., E.
**Thlaspis Epiroiticum** Hal., E.

**Cucurbitaceae.**

**Bryonia sicula** (Jan.) Guss. E.

**Cyperaceae.**

**Cyperus pygmaeus** Rotb., E.

**Dipsacaceae.**

**Cephalaria setulifera** Boiss. et Heldr., E.
**Knautia degeni** Borb.
**Pterocephalus papposus** L., E.
**Scabiosa breviscapa** Boiss. et Heldr., E.
**Scabiosa graminifolia** L. var. *viridis* Hausm.
**Scabiosa rhodopensis** Stoj. et Stef.
**Scabiosa taygetea** Boiss. et Heldr., E.

**Ericaceae.**

**Rhododendron flavum** G. Don.
EUPHORBIACEAE.

Euphorbia halaczyi Form., E.
Euphorbia melapetala gasparrini, E.
Euphorbia roeseri Orph., E.
Euphorbia semiverticillata Hal., E.

GERANIACEAE.

Erodium vetteri Barb. et May., E.

GLOBULARIACEAE.

Globularia meridionalis (Podp.), Schwarz.
Globularia stygia, E.

GRAMINEAE.

Antinoria insularis Parl., E.
Catapodium tuberculosum Moris, E.
Poa thessala Boiss. et Orph., E.
Scleropoa hemipoa De., E.
Trisetum laconicum Boiss. et Orph., E.

GUTTIFERAE.

Hypericum fragile Heldr. et Sart., E.
Hypericum thasium Gris., E.
Hypericum tymphrestum Boiss. et Sp., E.
Triadenia maritima (Siev.) Boiss., E.
Triadenia webbi Spach., E.

IRIDACEAE.

Crocus cancellatus Herb. var. cilicicus Kotschy.
Crocus goulimyi Turr., E.
Crocus nubigena (Herb.) Baker.
Gladiolus glaucus Heldr.
Iris planifera (Mill.) Fiori et Paoli.
Romulea tempskyana Freyn.

LABIATAE.

Amaracus vetteri (Briq. et Barb.) Hay., E.
Hyssopus officinalis L. ssp. pilifer (Gris.) Murb.
Majorana dubia (Boiss.) Hay., E.
Majorana leptoclados Rech. fil., E.
Micromeria calostachya Rech. fil., E.
Micromeria carpatha Rech. fil.
Nepeta camphorata Boiss. et Heldr., E.
Nepeta dirphya Heldr., E.
Nepeta heldreichii Hal., E.
Nepeta sphaciotica P. H. Davis, E.
Origanum dictannus L., E.
Origanum lirium Heldr., E.
Origanum tourneforti Sibth., E.
Salvia napifolia Jacq.
Scutellaria goulimyi Rech. fil., E.
Sideritis euboea Heldr., E.
Stachys goulimyi Rech. fil., E.
Stachys iberica MAB., E.
Stachys macrotricha RECH. et Goulimy, E.
Teucrium aroanium Orph. Boiss., E.
Teucrium kotschyanaum Poech., E.
Teucrium werneri RECH. fil., E.
Thymus ciliato pubescens Hal.
Thymus dolopicus Form., E.
Thymus drabiscensis Ronn., E.
Thymus tympresteus Hal., E.

Liliaceae.
Allium olympicum Boiss.
Allium pilosum S. et S., E.
Allium sipyleum Boiss., E.
Asphodeline taurica Kunth.
Fritillaria conica Boiss., E.
Fritillaria davisii Turr., E.
Fritillaria rhodokanakis Orph., E.
Fritillaria sphaciotica Gandgr., E.
Fritillaria tuntasia Heldr., E.
Lilium albanicum Griseb.
Leopoldia neumayrii Heldr., E.
Muscari pharmacusanum (Heldr.) Boiss., E.
Muscari theraeum (Heldr.) Boiss., E.
Tulipa goulimyi Sealy & Turrill, E.

Linaceae.
Linum euboeum Bornm., E.
Linum goulimyi Rech. fil., E.

Lythraceae.
Peplis erecta Requ.

Melanthaceae.
Colchicum balansae Planch.
Colchicum boissieri Orph., E.
Colchicum bowlesianum Burt., E.
Colchicum catacularium Heldr., E.
Colchicum parlatoris Orph., E.
Colchicum psaridis Heldr., E.

Orchidaceae.
Epipogon aphyllum Sw.
Orchis boryi Rchb.
Orchis comperiana Stev.
Orchis sepulchralis B. & H.

Papilionaceae.
Anthyllis serpentinicola Rech. et Goulimy, E.
Astralagus agraniottii Orph., E.
Astralagus apollinneas Born. et Heldr., E.
Astralagus brachyceras Ledep., E.
Astragalus lacteus HELDR. et SART., E.
Astragalus lanatus LABILL., E.
Astragalus ptilodes BOISS., E.
Astragalus stella GOUL., E.
Cicer graecum ORPH., E.
Cytisus smyrnensis BOISS.
Genista sakellariadis BOISS. et ORPH., E.
Lathyrus blepharocarpus BOISS.
Lathyrus tuntasi HELDR., E.
Latus biflorus DESS., E.
Lotus wiedemannii (BOISS.) HAY., E.
Lupinus hispanicus BOISS. et REUT.
Onobrychis squarrosa Vw.
Oxytropis thessala TURRILL., E.
Trigonella aurantiaca BOISS., E.

PLANTAGINACEAE.

Plantago serpentinica RECH. et GOULIMY, E.

PLUMBAGINACEAE.

Armeria sancta JANKA.
Goniolimon sartorii BOISS., E.
Limonium caspium WILL.
Limonium corinthiacum BOISS. et HELDR., E.
Limonium densiflorum Guss., E.
Limonium doerfleri HAL., E.
Limonium hierapetrae RECH. fil., E.
Limonium pigadiensis RECH. fil., E.
Limonium sitiacum RECH. fil., E.
Limonium thouini Vw.

POLEMONIACEAE.

Polemonium coeruleum L.

POLYGALACEAE.

Polygala subuniflora BOISS. et HELDR., E.

RAMONDIACEAE.

Haberlea rhodopensis FRV.
Ramondia jankaea Helreichi BOISS., E.
Ramondia nathaliae PANc. et PETR.

RANUNCULACEAE.

Aconitum divergens PAND.
Aconitum variegatum L. ssp. judenbergense (RCHB.) GAY.
Adonis cyllena BOISS., HELDR. & ORPH., E.
Aquilegia ottonis ORPH. et BOISS., E.
Aquilegia tagetea ORPH., E.
Consolida tuntasiana (HAL.) HAY., E.
Delphinium Hirschfeldianum HAL. et HOLZM., E.
Nigella doerfleri VIERH., E.
Paeonia decora ANDERSS.
Paeonia rhodia W. T. STEARN., E.
Ranunculus cadmicus Boiss., E.
Ranunculus demissus DC., E.
Ranunculus incomparabilis JKA.
Ranunculus miliarakesi Hal., E.
Ranunculus miliarakesi Hal., E.
Thalictrum orientale Boiss.

Resedaceae.
Reseda arabica Boiss.

Rhamnaceae.
Rhamnus guicciardi Heldr. et Sart., E.

Rosaceae.
Alchemilla floribunda Murb., E.
Cotoneaster nummularia F. & M., E.
Rosa ferox MB.
Sanguisorba cretica Hay and var. sphaciotica (Gandog.) Hay., E.

Rubiaceae.
Asperula baenitzii Heldr., E.
Asperula coa Rech., fil., E.
Asperula doerfleri Wettst.
Asperula idaea Hal., E.
Asperula involucrata Berggren.
Asperula oetea Heldr., E.
Galiun thymifolium Boiss. et Heldr.

Saxifragaceae.
Saxifraga ferdinandi Coburgi Kell. & Sund.
Saxifraga heucherifolia Griseb. et Schenk.

Scrophulariaceae.
Antirrhinum siculum Ucria, E.
Celsia tomentosa Zucc., E.
Chaenorrhinum rubrifolium (Rob. et Cart.) Willk. & Lge., E.
Cyllinea Boiss. et Heldreich., E.
Linaria hellenica Turr., E.
Linaria purpurea (L.) Mill.
Scrophularia spinulescens Haussk. & Gegg.
Scropularia taggetea Boiss., E.
Verbascum cicutifolium Hal., E.
Verbascum cylindrocarpum Gris., E.
Verbascum delphicum Hal., E.
Verbascum euboicum Murb. et Rech. fil., E.
Verbascum foetidum Boiss. et Heldr., E.
Verbascum meteoricum Haussk., E.
Verbascum peleum Hal., E.
Verbascum propontideum Murb., E.
Verbascum reiseri Hal., A., E.
Verbascum symes Murb. & Rech., fil., E.
Veronica kavusica Rech., fil., E.
THYMELEACEA.

Daphne blagayana Frey.
Daphne euboeica Rech. fil., E.
Daphne jasminea S. et S.
Daphne oleoides Schreb. var. Kosaninii Stojan.

ULMACEAE.

Zelkova cretica Sm.

UMBELLIFERAE.

Bupleurum aegaeum Rech. fil., E.
Bupleurum asperuloides Heldr.
Bupleurum euboeum Beauv., E.
Caulis torgesiana Haussk., E.
Chaerophyllum euboeum Hal., E.
Eryngium amarginum Rech. fil., E.
Eryngium wiegandi Adam.
Ferulago insularis Wolff.
Malabaia psaridiana Heldr., E.
Oenanthe marginata Vis.
Peucedanum achaieum Hal., E.

VALERIANACEAE.

Valeriana alliaiacefolia. E.
Valeriana bertisca Paiye.
Valeriana crinii Orph.

VIOlaceae.

Viola delphinantha Boiss.
Viola Heldreichiana Boiss., E.
Viola methodiana Coust. et Gand., E.
Viola thasia W. Becker, E.