Present state of the phytosociological research on the Greek mountains, syntaxonomy and future perspectives

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HISTORICAL REVIEW

In Greece phytosociological research started in 1937 when ECONOMOPOULOS used the Forest Site-Types method of CAJANDER at the University forest of Pertoulion in order to define the Forest site-types on the basis of undergrowth composition.

In 1953 and 1954, Oberdorfer carried out phytosociological studies in North Eastern and North Central Greece according to the Braun-Blanquet method. These studies concerned hilly, submountainous and mountainous areas mainly covered by phrygana vegetation. Oberdorfer therefore, must be considered the first plant sociologist who carried out phytosociological releves using the Braun-Blanquet approach.

However, the most productive phytosociological period begins with Quezel's visit to Greece in 1963. Quezel's phytosociological studies either carried out alone or with collaborators, (mainly M. Barbero), started with his first publication (Quezel 1964) about the vegetation occuring above the timberline on the high mountains of Southern Greece. His most recent publications in 1989 deal with the "mattorals" of the Eastern Mediterranean and the grasslands above the timberline of Mt. Falakron.

Prof. Quezel must be considered the most important plant sociologist of Greece since many new Classes, Orders, Alliances, Associations, Subassociations and Communities (Groupements) have been described either by P.Quezel, by P. Quezel et M. Barbero or by P. Quezel *et al.*

Besides Quezel, Prof. Dafis has made significant contribution to the study of the Greek vegetation using the Braun-Blanquet method as well as Ellenberg's method. His main studies concerned the deciduous oak and chestnut forests of Northeastern Chalkidiki (1966), the beech forests of Chalkidiki, Ossa, Pieria, Pilion and Central Pindhos (1969) and the *Picea abies* forests of Rodhopi mountains (Dafis & Smiris 1981).

Materials and Methods

In order to make an inventory of all the vegetation researchers that have worked in Greece, the studied areas as well as the number of releves made, all available published and unpublished phytosociological data (mainly candidate theses currently in progress) have been taken into account. Syntaxonomical descriptions without releves or synoptic tables have not been taken into account.

Following Article 3 of the Code of Phytosociological Nomenclature (Barkman *et al.* 1986), we have not included syntaxa the rank of which has not been indicated (community, community type, gesellschaft, peuplement). In order to make the syntaxonomical arrangement of the described vegetation types, as simple as possible we have also excluded subassociations.

The syntaxonomic status of these vegetation units will be clarified by the overall numerical treatment of the available releves currently in progress at the Laboratory of Plant Ecology in the University of Patras.

The mountain vegetation of Greece is presented in this paper under three different headings: 1. Vegetation above the timberline, 2. Forest vegetation and 3. Phrygana vegetation.

Results

Based on the available phytosociological literature, it can be concluded that the total number of releves carried out on the mountains of Greece comes to 6580, of which 3679 concern forest vegetation, 1281 concern non- forest vegetation mainly of the above the timberline altitudinal levels but also of the lowlands, and 1620 concern both forest and above the timberline vegetation.

As concerns the distribution of the above mentioned releves into the phytogeographical regions of Greece (division followed by Strid 1986 in the Mountain flora of Greece), the following results became evident from the analysis of their distribution patterns (Table 1):

North Eastern, North Central and Sterea Ellas seem to be the focus of attention of the vegetation scientists as these three phytogeographical regions account for more than 50% of the total number of releves (1760, 1126 and 1014 releves respectively).

The percentage and number of releves carried out in the various phytogeographical regions of Greece as shown in the Map, are not at all correlated with the existing number of high mountains. As an example we can refer to North Eastern Greece where only 9 mountains exist with an altitude of more than 1500 m, compared to Peloponnisos where 18 mountains exceed 1500m altitude. In these two phytogeographical regions, the vegetation is inversely well documented in phytosiological releve data. However, the most evident contrast is observed in Southern and Northern Pindhos, which are very interesting floristically and are considered well explored from a botanical point of view. They are however, characterized by 40 and 35 mountains exceeding 1500 m respectively, and the lowest numbers of releves (201 and 354 respectively).

TABLE 1

DISTRIBUTION OF THE TOTAL NUMBER OF MOUNTAIN RELEVES IN THE PHYTOGEOGRAPHICAL REGIONS OF GREECE
(Division followed by Strid 1986 in the Mountain Flora of Greece)

PHYTOGEOGRAPHICAL REGION	Nb. of releves	Percentage (%)
North East (NE)	1760	26.75
North Central (NC)	1126	17.11
Sterea Ellas (StE)	1094	16.63
Peloponnisos (Pe)	663	10.08
Crete (Cr)	645	9.80
East Central (EC)	595	9.04
Northern Pindhos (NPi)	354	5.38
Southern Pindhos (SPi)	201	3.05
Ionian islands (Ii)	142	2.16
TOTAL	**6580**	**100**

A glance at Fig. 1 showing the degree of phytosociological exploration of the mountains of Greece, does not give a positive or optimistic impression since it shows there are large mountain ranges which have not been investigated thoroughly or more presicely, they have been partially investigated (Taygetos, Parnon, Chelmos, Parnassos, Giona, etc), whilst there are many other mountains that have been scarcely explored and others which have been entirely neglected.

SYNTAXONOMIC REVIEW OF THE MOUNTAIN VEGETATION OF GREECE

1. *THE VEGETATION FROM ABOVE THE TIMBERLINE*

1.1 Inland escarpments and exposed rocks

ASPLENIETEA TRICHOMANIS (Br.-Bl. 1934) corr. Oberdorfer 1977
Potentilletalia speciosae Quezel 1964
Silenion auriculatae Quezel 1964
Campanula aizoon - Campanula rupicola Quezel 1964
Viola poetica - Saxifraga spruneri Quezel 1964
Satureja parnassica - Sedum magellense Quezel 1964
Minuartia stellata - Valeriana olenaea Quezel 1964
Saxifraga boryi - Potentilla speciosa var. minor Quezel 1964
Campanula oreadum - Saxifraga sempervivum Quezel 1967
Potentilla deorum - Saxifraga scardica Quezel 1967
Asplenium fissum - Saxifraga glabella Quezel 1967
Viola chelmea - Valeriana crinii Quezel & Katrabassa 1974
Aquilegia ottonis - Saxifraga spruneri Quezel & Katrabassa 1974

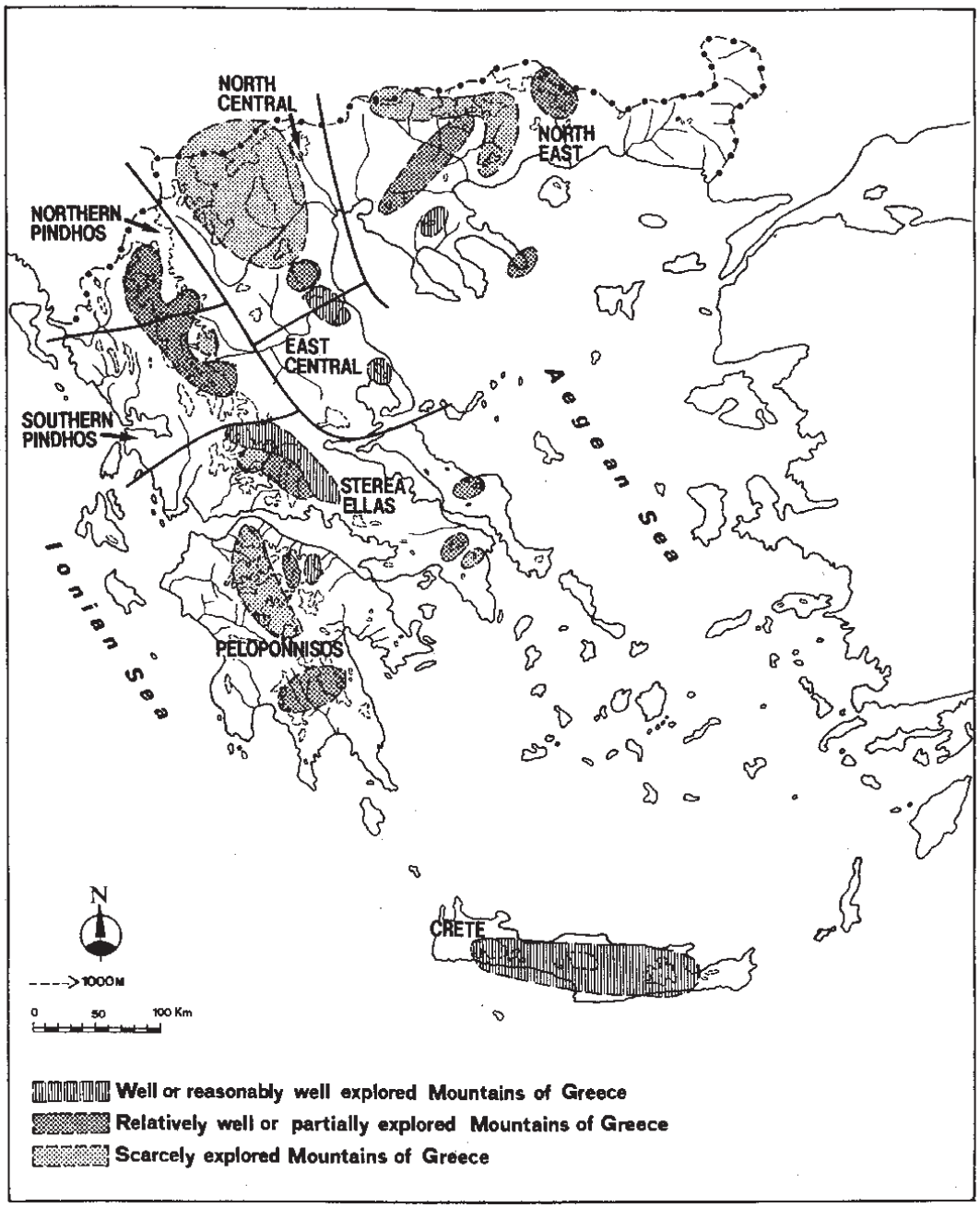

Fig. 1 – The phytosociological investigation on the mountains of Greece.

Sileno parnassicae - Sedetum magellensi Dimopoulos 1993
Minuartio stellatae - Saturejetum parnassicae Dimopoulos 1993
Galion degenii Quezel 1967
Achillea clavennae - Minuartia stellata var. epirota Quezel 1967
Asplenium fissum - Sedum magellense Quezel 1967
Gnaphalium roeseri var. pichleri - Asplenium fissum Quezel 1967
Trifolium praetutianum - Valeriana epirotica Quezel 1967
Silene pindicola - Cardamine plumieri Quezel 1967
Galio degenii - Centaureetum ossaeae Raus 1987
Ramondion nathaliae Horvat ex Simon 1958
Ramonda nathaliae - Campanula formanekiana Quezel 1967
Onosmetalia frutescentis Quezel 1964
Campanulion versicoloris Quezel 1964
Asperula arcadiensis - Hypericum vesiculosum Quezel 1964
Stachys candida - Galium boryanum Quezel 1964
Sideritis roeseri - Alkanna graeca Quezel 1964
Asperula chlorantha - Daphne jasminea Quezel 1964
Androsacetalia vandellii Br.-Bl. (1931) corr. Br.-Bl. 1948
Silenion lerchenfeldianae Horvat & Pawlowski 1949
Silene lerchenfeldiana - Centaurea deustiformis Quezel 1969
Campanuletalia jacquinii Zaffran 1990
Campanulion jacquinii Zaffran 1990
Hieracio cretici - Gypsophiletum nanae Zaffran 1990
Hieracio pallidi - Arenarietum creticae Zaffran 1990
Asplenio lepidi - Centaureetum lancifoliae Zaffran 1990
Nepeto sphacioticae - Arabidetum creticae Zaffran 1990
Origano dictamni - Staehelinetum fruticosae Zaffran 1990
Asplenio haussknechtii - Alyssetum lassitici Zaffran 1990
Petrumaruletalia pinnati Zaffran 1990
Scutellarion sieberi Zaffran 1990
Teucrio brevifolii - Stachydetum tournefortii Zaffran 1990
Teucrio divaricati - Centaureetum redemptae Zaffran 1990
Inulo candidae - Asperuletum taygeteae Zaffran 1990
Teucrio cuneifolii - Lutzietum creticae Zaffran 1990
Eryngio ternati - Calaminthetum creticae Zaffran 1990
Asterion creticae Zaffran 1990
Anthemido paleaceae - Violetum scorpiuroidis Zaffran 1990
Anthemido tomentellae - Staehelinetum fruticosae Zaffran 1990
Serratulo creticae - Valerianetum asarifoliae Zaffran 1990

ASTRAGALETEA CRETICI Zohary et Orshan 1966
Order ?
Alliance ?
Astragaletum cretici Zohary et Orshan 1966

1.2 Screes

DRYPETEA SPINOSAE Quezel 1964
Drypetalia spinosae Quezel 1964
Silenion caesiae Quezel 1964
Galium apricum - Minuartia juniperina Quezel 1964
Scrophulario myriophyllae - Thamnosciadietum juncei Dimopoulos 1993
Sclerohorton junceum - Euphorbia deflexa Quezel 1964
Geranium macrorrhizum - Senecio thapsoides Quezel 1964
Corydalis bulbosa - Astragalus hellenicus Quezel 1964
Scutellaria alpina - Lamium pictum Quezel 1973
Asperula muscosa - Rhynchosinapis nivalis Quezel 1967
Alyssum handelii - Achillea ambrosiaca Quezel 1967
Geranium aristatum - Aspidium lonchitis Quezel 1967
Achillea abrotanoides - Arenaria conferta Quezel 1967
Campanulion hawkinsianae Quezel 1967
Viola albanica - Alyssum scardicum Quezel 1967
Cardamine glauca - Silene haussknechtii Quezel 1967

SATUREJETEA SPINOSAE Zohary & Orshan 1966
Scutellarietalia hirtae Zaffran 1990
Scutellarion hirtae Zaffran 1990
Alysso fragillimo - Silenetum variegatae Zaffran 1990
Scabioso sphacioticae - Centranthetum sieberi Zaffran 1990
Hyperico trichocaulon - Herniarietum parnassicae Zaffran 1990
Peucedano alpini - Cynoglossetum sphaciotici Zaffran 1990

1.3 Open, stepped-garland grasslands and hedgehog heaths

DAPHNO - FESTUCETEA Quezel 1964
Daphno - Festucetalia Quezel 1964
Stipo - Morinion Quezel 1964
Scabiosa taygetea - Onosma leptanthum Quezel 1964
Galium lucidum - Ribes uva-crispa Quezel 1964
Juniperus foetidissima - Onobrychis ebenoides Quezel 1973
Juniperetum foetidissimae Dimopoulos 1993
Aceri monspessulano - Prunetum mahaleb Dimopoulos 1993
Eryngio - Bromion Quezel 1964
Sideritis theezans Quezel 1964
Astragalus cylleneus - Cirsium cylleneum Quezel 1964
Astracantho thracicae - Marrubietum cyllenei Dimopoulos 1993
Astragalus creticus - Marrubium velutinum Quezel 1964

Marrubio thessali - Astragaletum angustifolii Quezel 1967
Festuca varia - Marrubium velutinum ssp. haussknechtii Quezel 1967
Sesleria nitida - Bornmullera baldacci Quezel 1967
Buxus sempervirens - Bornmullera tymphaea Quezel 1967

Astragalo - Seslerion Quezel 1964
Acantholimon echinus - Rindera graeca Quezel 1964
Aster cylleneus - Globularia stygia Quezel 1964
Convolvulus cochlearis - Astragalus lacteus Quezel 1964
Minuartia stellata - Erysimum pussilum Quezel 1964
Paronychia chionaea - Thymus ciliato-pubescens Quezel 1964
Anthyllido aureae - Achilleetum ageratifoliae Quezel 1967
Sideritido scardicae - Linetum flavi Quezel 1967
Festuco cyllenicae - Asperuletum boissieri Dimopoulos 1993
Seslerio coerulantis - Thymetum boissieri Quezel 1967
Sesleria coerulans - Viola stojanowii Quezel 1973
Agropyro sancti - Centaureetum parilicae Quezel 1989
Violo delphinanthae - Saxifragetum fernandi coburgi Quezel 1989
Astragalo pungentis - Caricetum kitaibelianae Karagiannakidou 1995
Thymo cherlerioidis - Seslerietum tenerrimae Karagiannakidou 1995
Bellardiochloo variegatae - Festucetum paniculatae Karagiannakidou 1995
Festucetum macedonicae - penzesii Karagiannakidou 1995

Bruckenthalion Horvat 1949
Genisto carinalis - Brunckenthalietum spiculifoliae Karagiannakidou 1995

Alliance ?
Thymo teucrioidis - Fumanetum bonapartei Bergmeier 1990

SATUREJETEA SPINOSAE Zaffran 1990

Centaureetalia ideae Zaffran 1990

Verbascion spinosi Zaffran 1990
Anthemido pussilae - Crepidetum sibthorpianae Zaffran 1990
Leopoldio spreizenhoferi - Linetum caespitosum Zaffran 1990
Anchuso caespitosae - Picnomonetum acarnae Zaffran 1990
Zelcovo abeliceae - Aceretum sempervirentis Zaffran 1990
Thymo leucotrichii - Asphodelinetum liburnicae Zaffran 1990
Galio incurvum - Melicetum rectiflorae Zaffran 1990

Asracanthion creticae Zaffran 1990
Herniario parnassicae - Arenarietum saponarioidis Zaffran 1990
Euphorbio herniariifoliae - Silenetum dictaeae Zaffran 1990
Vincetoxico canescens - Zelcovetum abeliceae Zaffran 1990

Crepido mungieri - Phlometum lanatae Zaffran 1990
Tragopogo lassithicus - Violetum heldreichianae Zaffran 1990

1.4 Dense, closed chionophilous grasslands

CARICETEA CURVULAE Br.-Bl. 1948
Trifolietalia parnassi Quezel 1964
Trifolion parnassi Quezel 1964
Astragalus tymphresteus - Trifolium ottonis Quezel 1964
Plantago laneolata var. capitata - Trifolium alpestre Quezel 1964
Alopecuro gerardi - Crocetum sieberi Quezel 1964
Alopecuro gerardi - Gnaphalietum hoppeani Quezel 1967
Alopecuro gerardi - Crocetum veluchensis Quezel 1967
Astragalus cephalonicus - Nepeta nuda Quezel 1964
Plantago recurvata - Convolvulus radicosus Quezel 1964
Nardus stricta - Poa violacea Quezel 1967
Nardus stricta - Luzula spicata Quezel 1964
Poa violacea - Silene roemeri Quezel 1967
Poa violacea - Minuartia recurva Quezel 1967
Anthemido carpaticae - Plantaginetum holostei Raus 1987
Poion violaceae Horvat 1937
Vaccinium myrtillus - Cytisus hirsutus ssp. polytrichus Quezel 1969
Hypericum barbatum - Silene ventricosa Quezel 1969
Dianthus myrtinervius - Veronica kindlii Quezel 1969

1.5 Tall herb communities (Mountain- and Oro- Mediterranean vegetation zones)

BETULO-ADENOSTYLETEA Br.-Bl.1931
Betulo-Adenostyletalia Br.-Bl. 1931
Cirsion appendiculati Horvat, Pawlowski & Walas 1937
Cirsium appendiculatum - Doronicum orphanidis Quezel 1969
Saxifraga rotundifolia - Adenostyles orientalis Quezel 1967
Heracleum pollicianum var. oeteum - Betonica jacquini Quezel 1964
Cirsium tympheum - Veratrum album var. flavum Quezel 1967
Geion coccinei Horvat 1949
Deschampsia caespitosa - Geum coccineum Quezel 1969
Caricetalia davallianae Br.-Bl. 1949
Associations without any other phytosociological classificattion
Scirpus graecus - Cirsium mairei Quezel 1964
Blysmus compressus - Veronica balcanica Quezel 1967
Blysmus compressus - Juncus thomasii Quezel 1964
Pinguicula hirtiflora - Soldanella pindicola Quezel 1967

2. FOREST VEGETATION

2.1 Forests of Greece with Abies cephalonica, Abies borisii-regis, Pinus nigra subsp. pallasiana, Pinus heldreichii, Pinus sylvestris, Fagus sylvatica and Quercus frainetto

QUERCETEA ILICIS Br.-Bl. 1936
Quercetalia ilicis Br.-Bl. 1931 ex Br.-Bl. 1936 em. Riv.-Mart. 1974
Quercion ilicis Br.-Bl. 1931 ex Br.-Bl. 1936 em. Riv.-Mart. 1974
Helictotricho convoluti - Abietetum cephalonicae Barbero & Quezel 1976 corr. Dimopoulos et al. 1996
Cicero graeci - Pinetum pallasianae Dimopoulos et al. 1996
Quercetum frainetto - brachyphyllae Ellenberg & Glavac 1974

QUERCETEA PUBESCENTIS (Oberd. 1948) Doing Kraft 1955
Quercetalia pubescentis Br.-Bl. 1932
Abieto-Pinion Barbero & Quezel 1976
Lilio chalcedonici - Abietetum cephalonicae Barbero & Quezel 1976
Abies cephalonica - Lonicera graeca Barbero & Quezel 1976
Pinus nigra ssp.pallasiana - Campanula stenosiphon Barbero & Quezel 1976
Crataego pycnolobae - Pinetum pallasianae Barbero & Quezel 1976 corr. Dimopoulos et al. 1996
Abies cephalonica - Abies borisii-regis Barbero & Quezel 1976
Crataego pycnolobae - Juniperetum oxycedri Dimopoulos et al. 1996
Abietion cephalonicae Knapp 1965
Abies cephalonica - Scilla nivalis Knapp 1965
Abies cephalonica - Cyclamen linearifolium Knapp 1965
Quercion frainetto Horvat 1954
Abies borisii-regis - Trifolium speciosum Barbero & Quezel 1976
Huetio - Quercetum frainetto Raus ex Raus 1980
Symphyto ottomani - Quercetum frainetto Gamisans & Hebrard 1980
Digitali viridiflorae - Quercetum frainetto Gamisans & Hebrard 1980
Verbasco glabrati - Quercetum frainetto Gamisans & Hebrard 1979
Quercetum frainetto-cerris macedonicum Oberdorfer 1948 em. Horvat 1959
Quercetum frainetto Dafis 1966
Quercetum montanum Dafis 1973
Melitto - Quercion Barbero & Quezel 1976
Cytiso villosi - Castanetum sativae Barbero & Quezel 1976
Geranio peloponnesiaci - Quercetum frainetto Barbero & Quezel 1976
Ostryo - Carpinion orientalis Horvat (1954) 1958
Abies borisii-regis-Aesculus hypocastanum Barbero & Quezel 1976
Fagus sylvatica-Physospermum aquilegifolium Quezel 1967
Dryopterido pallidae - Ostryetum carpinifoliae Bergmeier 1990

Pino-Chamaecytision Barbero & Quezel 1976
Staehelino uniflosculosae - Pinetum pallasianae Grebenscikov 1956
Trifolio alpestri - Pinetum pallasianae Gamisans & Hebrard 1979

ERICO - PINETEA Horvat 1959
Erico - Pinetalia Horvat 1959
Orno - Ericion Horvat 1956
Seslerio robustae - Pinetum pallasianae Barbero et Quezel 1976 corr. Bergmeier1990

QUERCO - FAGETEA Br.-Bl. et Vliegeger in Vlieger 1937
Fagetalia sylvaticae Pawlovski 1928
Fagion hellenicum Quezel 1967
Abies borisii-regis - Campanula abietina Barbero & Quezel 1976
Fagion moesiacae hellenicum (Dafis 1973) Ellenberg & Glavac 1974
Fagetum submontanum hellenicum Dafis 1968
Fagetum montanum hellenicum Dafis 1968
Fagetum subalpinum hellenicum Dafis 1968
Luzulo sylvaticae - Fagetum sylvaticae Barbero & Quezel 1976
Adoxo moschatellinae - Fagetum sylvaticae Quezel 1967
Aceri - Fagetum moesiacae Grebenscikov 1950
Abieti - Fagetum moesiacae Jovanovic 1959
Cardamino - Fagetum moesiacae Wraber 1960
Galio odorati - Fagetum sylvaticae Glavac et al. 1974
Fagion sylvaticae Luquet 1926
Orthilio secundae-Fagetum (Barbero et Quezel 1976) Bergmeier 1990
Lathyro alpestris-Fagetum Bergmeier 1990
Luzulo - Fagetum Stefanovic 1964 ex Horvat et al. 1974
Geranio striati - Fagetum sylvaticae Quezel & Contandriopoulos 1965
Tilio - Acerion Klika 1955
Tilio tomentosae - Castanetum Dafis 1973
Rusco hypoglossi - Aesculetum hippocastani Raus et Bergmeier 1990

VACCINIO - PICEETEA Br.-Bl. 1939
VACCINIO - PICEETALIA Br.-Bl 1939
Vaccinion - Piceion Br.-Bl.1938
Pinus heldreichii - Daphne blangayana Barbero et Quezel 1976
Vaccinio - Pinetum sylvestris Penev 1960

2.2 Forests and scrubs of Greece with Quercus ilex, Quercus coccifera, Crataegus sp., Buxus sempervirens, Pinus brutia, Pinus halepensis, Cupressus sempervirens, Castanea sativa, Quercus macrolepis

QUERCETEA ILICIS Br.-Bl. 1936
Quercetalia ilicis Br.-Bl. 1931 ex Br.-Bl. 1936 em. Riv.-Mart. 1974

Oleo - Ceratonion Br.-Bl. 1936
Oleo - Lentiscetum aegeicum Ludwig, Krause & Seidel 1963
Ceratonia siliqua - Quercus coccifera Knapp 1965
Quercion ilicis Br.-Bl. 1931 ex Br.-Bl. 1936 em. Riv.-Mart. 1974
Querco cocciferae - Phillyreetum latifoliae Barbero & Quezel 1976
Querco cocciferae - Carpinetum orientalis Oberdorfer 1948
Orno - Quercetum ilicis Horvatic (1956) 1958
Arbuto andrachne - Quercetum ilicis Oberd. ex Krause, Ludwig et Seidel 1963
Genisto acanthocladae - Quercetum cocciferae Dimopoulos et al. 1996
Cyclamino creticae - Quercion ilicis Barbero & Quezel 1980
Chamaecytiso creticae - Quercetum ilicis Barbero & Quezel 1980
Lauro nobilis - Quercetum ilicis Barbero & Quezel 1980
Oenantho pimpinellifoliae - Quercetum brachyphyllae Barbero & Quezel 1980
Ceratonio - Pistacion creticum Zohary & Orshan 1966
Ceratonieto - Pistacietum Zohary & Orshan 1966
Quercion ilicis creticum Zohary & Orshan 1966
Quercetum ilicis creticum Zohary & Orshan 1966
Quercetum cocciferae Zohary & Orshan 1966
Quercetum macrolepidis Zohary & Orshan 1966
Quercetum pubescentis creticum Zohary & Orshan 1966
Pinetum brutiae creticum Zohary & Orshan 1966
Juniperetum macrocarpae Zohary & Orshan 1966
Pistacio - Rhamnetalia Rivas-Martinez 1974
Ceratonio - Rhamnion oleoidis Barbero & Quezel 1979
Prasio majoris - Ceratonietum siliquae Barbero & Quezel 1980
Pistacio lentisci - Quercetum brachyphyllae Barbero & Quezel 1980
Juniperion lyciae Rivas-Martinez 1974
Junipero lyciae - Pinetum brutiae Barbero & Quezel 1980
Irido cretensis - Pinetum brutiae Barbero & Quezel 1980
Acero sempervirentis - Cupression sempervirentis Barbero & Quezel 1980
Luzulo nodulosae - Cupressetum orientalis Barbero & Quezel 1980
Acero sempervirentis - Berberidetum creticae Barbero & Quezel 1980
Andrachno - Quercion cocciferae Barbero & Quezel 1980
Aristolochio creticae - Quercetum cocciferae Barbero & Quezel 1980

ACERETEA ORIENTALE Zohary et Orshan 1966
Order ?
Alliance ?
Cupresso - Aceretum orientale Zohary et Orshan 1966

RHAMNO - PRUNETEA SPINOSAE Riv.- God. et Bor. Carb. 1961
Prunetalia spinosae Tx.1952

Berberidion vulgaris Br.-Bl.1950
Cotoneastro nebrodensis - Buxetum sempervirentis Bergmeier 1990
Berberido creticae - Prunion cocomiliae Bergmeier 1990
Berberido creticae - Crataegetum orientalis Bergmeier 1990

3. PHRYGANIC VEGETATION

CISTO - MICROMERIETEA Oberdorfer 1954
Cisto - Micromerietalia Oberdorfer 1954
Coridothymion Oberdorfer 1954
Alypo - Coridothymetum Oberdorfer 1954
Micromerion Oberdorfer 1954
Astragalo - Sarcopoterietum spinosi Oberdorfer 1954
Micromerietum julianae Oberdorfer 1954
Xeranthemion Oberdorfer 1954
Orchido - Chrysopogonetum Oberdorfer 1954
Cistion orientale Oberdorfer 1954
Calicotomo - Cistetum villosae Oberdorfer 1954
Ericetum verticillatae Oberdorfer 1954
Hyperico empetrifolii - Micromerion graecae Barbero & Quezel 1989
Helichryso orientale - Phagnalenion graeci Barbero & Quezel 1989
Micromerio graecae - Hypericetum empetrifolii Barbero & Quezel 1989
Phlomido fruticosae - Euphorbienion acanthothamni Barbero & Quezel 1989
Dorycnio hirsuti - Micromerietum graecae Barbero & Quezel 1989
Salvio fruticosae - Phlomidetum lanatae Barbero & Quezel 1989
Hyperico empetrifolii - Micromerienion graecae Barbero & Quezel 1989
Erico manipuliflorae - Lavanduletum stoechidis Barbero & Quezel 1989
Origano vulgare - Ericetum arboreae Barbero & Quezel 1989

CLASS ?
Poterietalia spinosi Zohary & Orshan 1966
Alliance ?
Hyparrhenio - Thymetum Zohary & Orshan 1966
Anthyllo - Poterietum Zohary & Orshan 1966

EUPHORBIETEA DENDROIDIS Zohary et Orshan 1966
Order ?
Alliance ?
Euphorbietum dendroidis Zohary et Orshan 1966

PRESENT STATE AND FUTURE PERSPECTIVES

From our inventory, it is apparent that many gaps in the phytosociological knowledge of the Greek vegetation still exist. This applies for all Classes. There is a considerable need of a complete overview of the plant communities occuring in Greece. The existence of such an overview is a dire need for planning nature conservation. The first analysis of the main syntaxonomic problems related to the Greek mountain vegetation has shown that these are connected with the beech forests, the *Abies cephalonica* and *Pinus nigra* subsp. *pallasiana* forests, and the deciduous oak forests. In order to solve the remaining syntaxonomical questions it has been decided to find a working group consisting of vegetation scientists from the Universities of Patras and Thessaloniki and the Greek Biotope/Wetland Centre of Goulandris Natural History Museum.

The following 5 members from Greece together with Dr. K. Sykora from the Netherlands participate in a "phytosociological committee": University of Patras: Prof. Th. Georgiadis, Dr. P. Dimopoulos, University of Thessaloniki: Adj. Prof. D. Babalonas, Greek Biotope/Wetland Centre: Prof. S. Dafis, Dr. E. Papastergiadou. The collection and input of all the available releves data in a Greek phytosociological data base using the TURBOVEG software has started. In cooperation with Dr. K. Sykora (Agricultural University Wageningen, the Netherlands) the first classifications of large data sets concerning coastal vegetation, scree and rock vegetation from above the timberline are currently in progress.

The University of Patras will work on the mountain vegetation of Greece, while the University of Thessaloniki and the Greek Biotope/Wetland Centre will work on the coastal, wetland vegetation (sand dunes, salt marshes etc) as well as on the vegetation from metalliferous soils.

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