On the vegetation of Patras Area

by

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Introduction

The present paper is the outcome of my studies on the vegetation of Patras, southwest of Greece, during the last few years. Efforts have been centred to present in these few pages, so far as possible, a general picture of the more important communities developed on this area.

For the purposes of this survey the investigated area has been subdivided into separate geographical regions, latitudinally into Northern, Western, Southern, and Eastern. Most of the work has been centred on the coastal plant communities of ammophilous vegetation of the North and West, the xeromorphous low shrubby vegetation of the South, known as Phrygana, and the evergreen sclerophyll Macchia vegetation that extends along the coastal zone from Patras to Corinth.

The system of studying the vegetation follows that used by BRAUN-BLANQUET (1951) in constructing tables for the sociability, abundance, cover and frequency of individuals of the species of vascular plants (see attached tables). Symbols are here used to show sociological behaviour of species. The same table is often used for two or more different places. Where the vegetation is divided into layers of different heights, the average height of the tallest components has been given.

Vegetation

The principal feature of the Patras region is the enormous area covered by olive groves, orange-trees, and vineyards, and the relatively small proportion occupied by natural vegetation. Three types of vegetation can be distin-

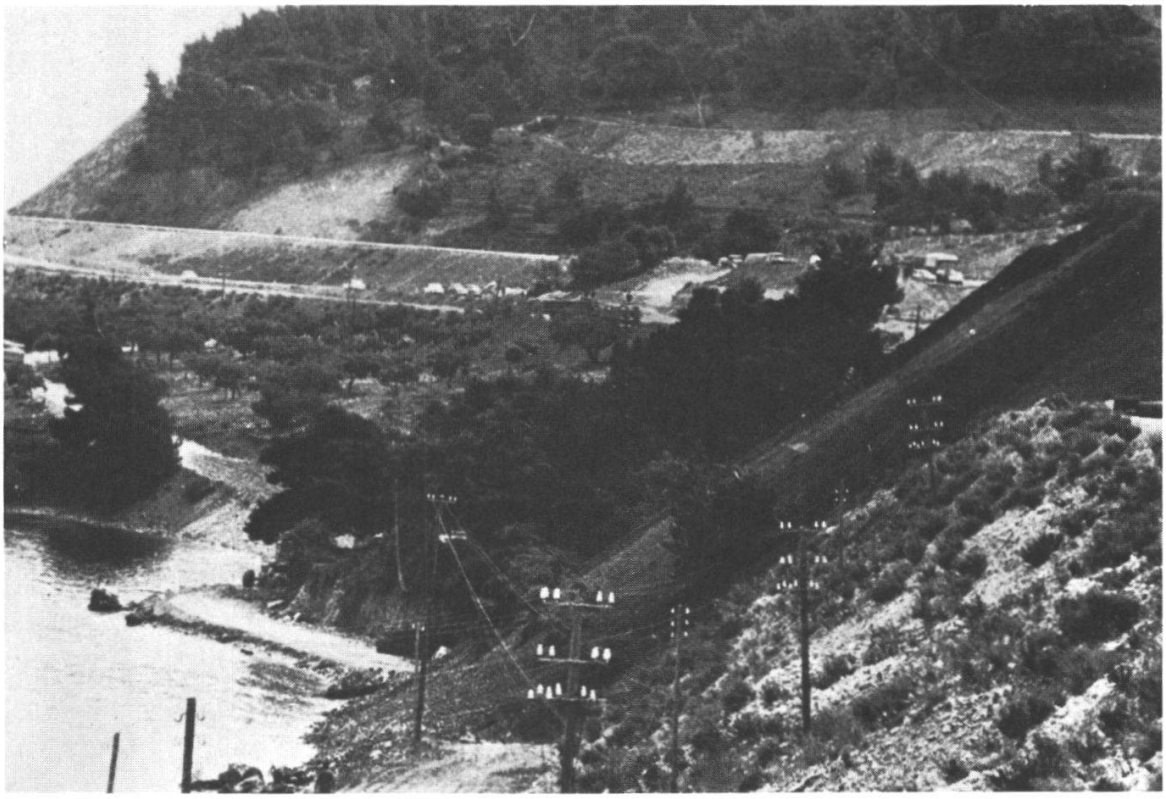

Fig. 1. Aspect of the Phrygana and Macchia vegetation at Psathopyrgos. The Phrygana vegetation in the frontside is dominated by the low shrubs *Coridothymus capitatus* and *Pistacia lentiscus*, while the Macchia vegetation at the extremely backtopside by the evergreen sclerophyll trees, *Quercus coccifera* var. *calliprinos*, *Phillyrea media* and *Pistacia lentiscus*. The soil erosion at the middle is due particularly to the lack of vegetation.

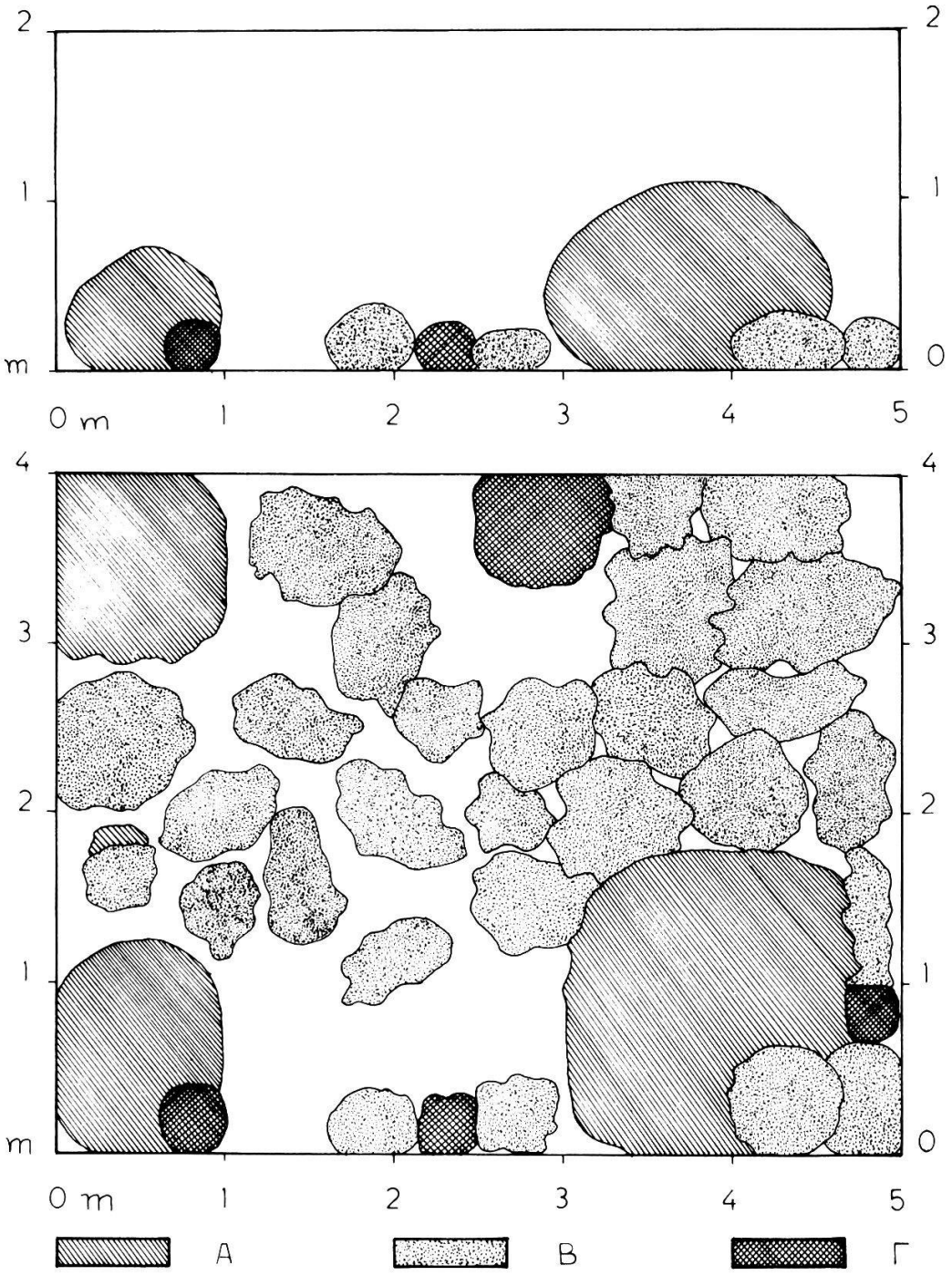

Fig. 2. Phrygana vegetation at Riganocampos, southwest of Patras.
above: section of one of the unit areas
below: view from above (same area as above)
A *Genista acanthoclada* var. *graeca*
B *Poterium spinosum*
C *Coridothymus capitatus*

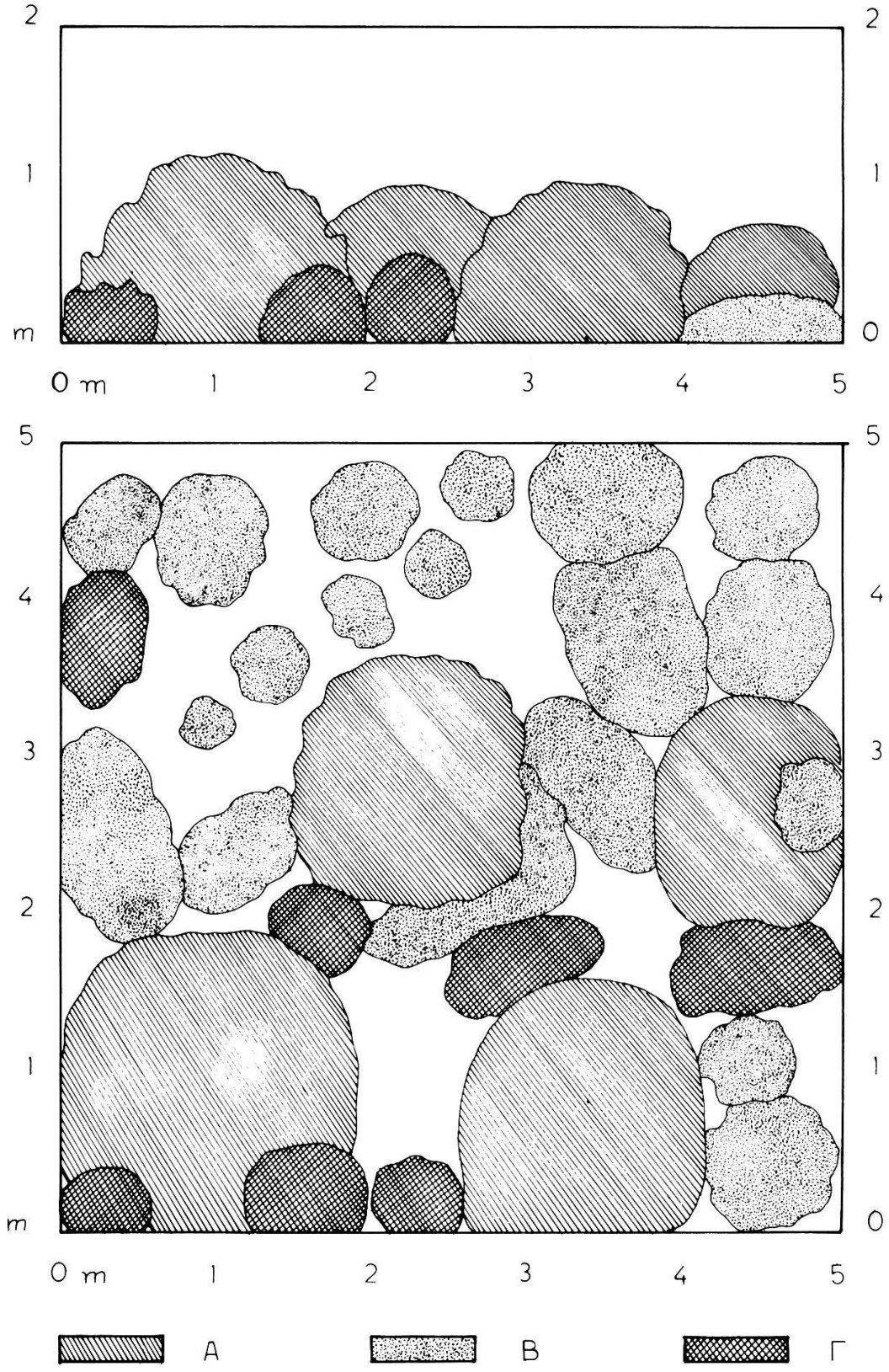

Fig. 3. Phrygana vegetation at Riganocampos, southwest of Patras.
above: section of another unit area
below: view from above (same area as above)
A *Genista acanthoclada* var. *graeca*
B *Poterium spinosum*
C *Coridothymus capitatus*

guished: a) the ammophilous vegetation of the sea-coasts, b) the xeromorphous vegetation of low shrubs, known as "Phrygana", and c) the evergreen sclerophyll shrubby vegetation of "Macchia".

According to BRAUN-BLANQUET's system of classification, the ammophilous vegetation may be classified under the classes *Cakiletea maritimae* Tx. et Prsg. 1950 and *Ammophiletea* Br.-Bl.et Tx. 1933, the Phrygana vegetation under the class *Thero-Brachypodietea* Br.-Bl. 1947, and the Macchia vegetation under the class *Quercetea ilicis* Br.-Bl. 1947 (BRAUN-BLANQUET 1933, BRAUN-BLANQUET et al. 1951, TÜXEN 1950).

In the following text each of the mentioned type of vegetation will be discussed:

a. Coastal ammophilous vegetation

Most of the north coastal Patras area consists of bare sand-flats with large quantities of pebbles and cobbles. However there are some places along them with considerable changes in the composition of soil particles and the amount of decaying leaves and other plant materials. These places are covered by individuals of *Salsola kali*, *Euphorbia peplis*, or by plant groups of *Cakiletea* class, which, as they become higher and more sandy are colonized by the rhizomatous geophyte *Agropyrum junceum* ssp. *mediterraneum**, and the chamaephyte *Polygonum maritimum*. Such changes in the vegetation result in an enormous effect upon the sand dune formation. It has been found that, as a result of the environmental modification, changes have also taken place in the vegetation. Under such conditions the flat sandy shores with *Cakiletea* plant groups develop on low sandy dunes with plant groups of *Agropyretum mediterraneum* association, at or near coastal areas exposed to sea winds, as are those of west and southwest shores of the investigated area.

The advent of the rhizomatous geophyte *Agropyrum junceum* ssp. *mediterraneum* on the low dunes promotes further growth in height of the dunes which, as this rising takes place, results in changes in the environment so that

* *Agropyrum junceum* exists in two ecosubspecies, ssp. *mediterraneum* and ssp. *boreoatlanticum* (SIMONET and GUINOCHET 1938), which differ in physiognomy and also in their ecological requirements, the former being characteristic of less fine sandy soils than the later. Further, ssp. *mediterraneum* is widespread throughout the Mediterranean, whilst ssp. *boreo-atlanticum* is restricted to the north-west and to some extent to the west coasts of Europe.

different other ammophilous species, e. g. the rhizomatous geophytes *Sporobolus pungens*, *Galilea mucronata*, and *Ammophila arenaria*, as well as the bulb geophyte *Pancratium maritimum*, can enter the area.

Coastal sand belts, therefore, may extend vertically from about sea level with *Cakiletea* plant groups (Table I) up to the extreme upper limit of the higher dunes with plant groups of the *Ammophiletum arundinaceae* association (Table III), where they will abut on normal land vegetation or cultivations.

In conclusion it may be noted that the north coast beaches possess the poorest ammophilous vegetation, whilst the west coast beaches, with their high sand dunes, have the richest.

The main coastal area at the north is dominated by *Salsola kali*, *Matthiola tricuspidata*, *Euphorbia peplis*, *Polygonum maritimum*, and *Eryngium maritimum*, accompanied by *Cakile maritima*, *Atriplex hastata*, *Cynodon dactylon*, *Beta maritima* at sand-flat beaches, and by *Agropyrum junceum* ssp. *mediterraneum*, *Euphorbia paralias*, and *Anthemis tomentosa* ssp. *eu-tomentosa* at low level dunes. All the above mentioned species constitute the dominant pioneer community *Salsola kali-Matthiola tricuspidata*, that occurs on the beach, between Patras and Corinth (Table I). The soil throughout this area consists, particularly, of coarse sand and gravel.

The main coastal area at the west and southwest is dominated by plant groups of *Agropyretum mediterraneum* or *Ammophiletum arundinaceae* association (Tables II and III). There are some interesting high level sand dunes at Kalogrea beach and Kounoupelaki beach (Table III, nos 1 - 8 and 15 - 19), though the main interest of this area is provided by the Kaiafa and Zacharo coast (Table II, nos 13 - 17 and 18 - 22, and LAVRENTIADES 1964). Most of the area at Kalogrea and Kounoupelaki beach is covered by heigh level dunes, where the dominant species is the rhizomatous geophyte *Ammophila arenaria* (Table III). The soil throughout is very sandy, and it is rare to find even one gravel.

b. Phrygana vegetation

This is one of the most widespread type of vegetation in Greece, occuring with much the same range of variation in nearly all the islands and coasts of Greece, where it represent valuable potential vegetation (RECHINGER u. RECHIN-

GER-MOSER 1951, KNAPP 1965, ECONOMIDOU 1969, LAVRENTIADES 1969).

It is confined to strongly arid areas and so occurs most frequently on the low level hill groups around Patras and between Patras and Corinth (Fig. 1).

Numerous examples of this type of vegetation development in Patras region or along the coasts between Patras and Athens could be quoted. But one of the best representation of this type of vegetation occurs southward of Patras, at the foot of the mountain Panachaikon.

There exist a vast area, locally called "Riganocampos", which at present is dominated by the low xeromorphous shrubs, *Poterium spinosum*, *Coridothymus capitatus*, and *Genista acanthoclados* (Table IV). The more or less calcareous parent rock (limestone) is overlain by neogenic to quaternary formations, consisting of conglomeratic sandy marls and pelits. Such soils are extremely arid for other plants, except the xeromorphous plants, to grow in them. The vegetation here is homogeneous and covers the 70 - 80 per cent and more rarely the 90 per cent of the total area (Table IV, and Fig. 2 and 3). Its aspect is given by *Poterium spinosum* or *Poterium spinosum-Coridothymus capitatus-Genista acanthoclados* or *Poterium spinosum-Coridothymus capitatus*. In some areas too, aspect may be given by *Phlomis fruticosa* (Table IV, nos 7 - 12). The height of *Poterium spinosum*, *Coridothymus capitatus*, and *Genista acanthoclados* ranges between 0.30 - 0.35 m, 0.30 - 0.35 m, and 0.75 - 0.85 m, respectively, although in *Coridothymus capitatus* and *Genista acanthoclados* may reach 0.60 and 1.00 m, respectively (Fig. 2.). The list of species found is an indication of the occurrence at this area of the association *Poterium spinosum-Coridothymus capitatus*, which is common at the lower levels wherever the rocks have a high calcium content. It seems likely that this association has a phytogeographical relationship to similar associations found in some islands of Greece (KNAPP 1965, LAVRENTIADES 1969).

A similar development of limestone vegetation in areas of low-level alluvial deposits occurs frequently in the eastern lowlands, near Vernadeika. This area is located 30 - 50 m above sea level and of a distance of one to two Kilometers from the sea. The vegetation here covers 90 - 100 per cent of the total area of quandrats (Table V, nos 16 - 25). The principal feature of this vegetation is the densely crowded prevailing shrubs, *Pistacia lentiscus*, *Calycotome villosa*, *Smilax aspera*, *Quercus coccifera* var. *calliprinos*, and *Myrtus communis*, which grow 1.5 - 2.0 m tall and straight and usually lose their lower branches as a

result of insufficient light. The formed dense patches by the mentioned species include inside few spontaneously growing common species of the local vascular plants, especially those occurring chiefly or only on calcareous rocks with some quantities of black humus. The most important species among these are *Brachypodium pinnatum* and *Teucrium flavum*, which appear to have a specific need for high calcium status and humus. These plant groups are surrounded by a mantle, which is formed by the low shrubs, *Cistus incanus*, *Anthyllis vulneraria*, *Coridothymus capitatus*, *Teucrium flavum*, *Dorycnium hirsutum*, *Cuscuta globularis* (on *Coridothymus* plants), and others. The height of this mantle ranges between 0.30 - 0.50 m. In some ravines too may also occur the hygrophilous species, *Erianthus ravennae*, *Arundo donax* and *Carex glauca*.

In the north-east, *Coridothymus capitatus-Anthyllis hermaniae* communities are often well represented (Fig. 1), and may pass into mixtures of Phrygana and Macchia vegetation on wet and deep ground. A list from such vegetations is given on Table V (nos 16 - 34). These Phrygana and Macchia complexes illustrate the close relationships which can exist between vegetation types normally found separately, and emphasise the lack of clear distinction between these classical sub-divisions of calcareous-forming vegetation. The aspect here is given by *Pistacia lentiscus*, a shrub of about 1.5 to 2.0 m and even more 2.50 m in height. In some areas too the aspect may be also given by *Pistacia lentiscus-Myrtus communis-Calycotome villosa* or *Calycotome villosa-Myrtus communis-Coridothymus capitatus*, and more rarely by *Pistacia lentiscus-Calycotome villosa*. The height of mentioned plants which grow on this area ranges around the following values:

Coridothymus capitatus	0.30 - 0.40 m
Cistus incanus	0.70 - 0.75 m
Anthyllis vulneraria	0.60 - 0.70 m
Pistacia lentiscus	1.50 - 2.00 m (up to 2.50 m)
Myrtus communis	0.65 - 1.50 m.

c. Macchia vegetation

Extensive areas of Macchia vegetation occur in the slippery slopes of series of hills which run along the north coasts of Peloponnesos, between Patras and Corinth, and these must be regarded as the typical representa-

tives of this vegetation.

In some places quite large areas may be covered by a growth of *Quercus coccifera* var. *calliprinos*, *Phillyrea media*, *Pistacia lentiscus*, *Smilax aspera*, *Rubia peregrina*, and *Ruscus aculeatus*, e. g. by Psathopyrgos and Achaia Clauss, but generally the areas are very small in comparison with those of southwest Peloponnesos.

Data from 34 list quandrats on exposed north and northwest and sheltered north and north-west slopes in the hills of eastern areas of Patras, and between Patras and Aegion (Table V), revealed the fact that the dominant species with the highest frequency in the Macchia vegetation are *Pistacia lentiscus*, *Quercus coccifera* var. *calliprinos*, *Phillyrea media*, *Smilax aspera*, *Rubia peregrina*, and *Ruscus aculeatus*. Although the dominant vegetation of Macchia belt is provided by the above mentioned evergreen sclerophyll species, herbs may play a considerable part in the general physiognomy.

This is particularly true of the Macchia vegetation, which extends on the coastal slippery slopes of hills at Psathopyrgos, where there is an extensive development of certain herbs growing exclusively in such habitats. The dominant species here *Pistacia lentiscus*, *Quercus coccifera* var. *calliprinos*, *Phillyrea media*, *Smilax aspera*, *Rubia peregrina*, *Ruscus aculeatus*, *Arbutus andrachne*, *Coronilla emerus*, *Colutea arborescens*, and others, form a uniform vegetation, followed by the herbs *Brachypodium ramosum*, *Teucrium chamaedrys*, *Asplenium adiantum nigrum* ssp. *onopteris*, *Selaginella denticulata*, *Hypericum empetrifolium* and others. An *Arbutus andrachne* association with rich representation of *Hypericum empetrifolium*, *Selaginella denticulata*, *Brachypodium ramosum*, *Teucrium chamaedrys*, *Asplenium adiantum nigrum* ssp. *onopteris* appears to be equivalent to the general Macchia association occurring elsewhere (Table V, nos 1 - 15). The altitudinal range of 150 m to 200 m, excluding list 16 - 34, makes this a submontane association. Soils are mesotrophic. These consist of slide rocks and deposits of variable humus content. The underlying original parent stone is limestone.

In most places there is a considerable accretion though some erosion also occurs. The occurrence of soil erosion near Psathopyrgos is due not only to soil texture but also to the lack of vegetation (Fig. 1). The underlying motherstone is fairly deep calcareous and also resembles that of most lowland slopes. Apart from the high degree of soil calcium carbonate content, the other important characteristic common to this Macchia vegetation soil is the

abundance of humus derived particularly of decaying leaves. It is usually 0.10 to 0.20 m deep. In some places too there is a considerable amount of stones 0.10 to 0.15 m in diameter, which may cover 25 per cent of the total area. Humus affects the water content and the pH value of soil. It increases the water capacity and decreases the pH value. It has, therefore, secondary effects upon the composition and the cover of vegetation.

The richness of the vegetation depends to a large extent upon the origin and depth of the humus. In places where there is abundant humus, there is extreme vegetative development giving rise to *Bryophytes* and to the plants *Selaginella denticulata, Polypodium vulgare, Ceterach officinarum* that appear especially around the roots of evergreen sclerophyll trees. To what extent the vegetation is dependent upon the humus is difficult to say. A study of this relationship should be of considerable interest.

Apart from the effect of soil moisture and the humus upon the vegetation development and vegetation cover, there may be the influence of light. Light intensity effects upon the germination of seeds of many sunloving plants. It is evident that many herb plants are absent from the shady ground because they cannot withstand the intensity of competition from tall shrubs and trees. It has been found that the sunloving plants *Cercis siliquastrum, Calycotome villosa, Olea europea* var. *oleaster, Cistus incanus* are very rare or absent from the shady grounds, while they are abundant at the sunny areas. On the other hand the herb vegetation is much richer at sunny areas than in shadow ones.

In the Macchia vegetation of the slopes that are located by the coastal village Psathopyrgos three principal layers can be easily recognized that may be further subdivided: a) The herb layer, b) the shrub layer, and c) the tree layer. The herb layer is dominated by the species *Hypericum empetrifolium, Teucrium chamaedrys* and *Brachypodium ramosum*, the shrub layer by *Quercus coccifera* var. *calliprinos, Phillyrea media, Coronilla emerus, Pistacia lentiscus, Hypericum empetrifolium* and *Ruscus aculeatus*, and the tree layer, that extends to 3 - 3.5 m in height, by the evergreen sclerophyll trees *Quercus coccifera* var. *calliprinos, Phillyrea media, Pistacia lentiscus, Coronilla emerus, Arbutus andrachne, Pistacia terebinthus, Colutea arborescens*, and others. The average height of the prevailing species found in each layer is given below:

Macchia vegetation at Psathopyrgos, near Patras

List of dominant species	Layers		
	Tree layer in meters	Shrub layer in meters	Herb layer in meters
Arbutus andrachne	3.0 - 4.0	.	. .
Pistacia terebinthus	2.5 - 3.5	.	. .
Colutea arborescens	2.5 - 3.0	.	. .
Quercus calliprinos	3.0 - 3.2	0.5 - 1.0	. .
Phillyrea media	3.0 - 3.5	. 1.0	. .
Coronilla emerus	2.0 - 3.0	. 1.0	. .
Pistacia lentiscus	2.5 - 3.0	. 1.0	. .
Quercus ilex	3.0 - 3.5	0.8 - 1.0	. .
Osyris alba	. .	. - 1.0	. .
Micromeria juliana	. .	0.4 - 0.5	. .
Ruscus aculeatus	. .	. 0.5	. .
Hypericum empetrifolium	. .	0.4 - 0.5	. .
Teucrium chamaedrys	. .	. .	0.30 - 0.40
Brachypodium ramosum	. .	. .	0.35 - 0.40
Asplenium onopteris	. .	. .	0.30 - 0.35
Cyclamen neapolitanum	. .	. .	0.20 - 0.25
Scilla maritima	. .	. .	0.15 - 0.20
Ceterach officinarum	. .	. .	0.15 - 0.20

Lianas are very few at this vegetation. The more important among these are *Smilax aspera*, which is frequently found under its varietas *mauritanica*, and it can grow to 1 - 2 m in height, the rarely found *Lonicera implexa*, and the heighly growing *Rubia peregrina*, which in some cases may be extend to 2 - 3 m in height, and the most rarely found climber *Calystegia sepium*, which occurs particularly around the edges of the vegetation. The occurrence of bulbous plants, *Scilla maritima*, *Cyclamen neapolitanum* and *Allium subhirsutum* is probably due to the large amount of humus that in many places forms 10 - 20 cm thick layer. It derives particularly from decaying leaves of *Arbutus unedo*, *Quercus coccifera* var. *calliprinos* and *Phillyrea media*.

As shown in Table V, vegetation cover varies between 75 per cent and 85 per cent. It seems likely that *Pistacia lentiscus*, *Rubia peregrina*, *Ruscus aculeatus*, *Smilax aspera*, *Phillyrea media*, *Teucrium chamaedrys*, *Brachypodium ramosum*, *Selaginella denticulata* and *Hypericum empetrifolium* are the most frequently found species, and *Arbutus andrachne* is more frequent than *Arbutus unedo*.

Next in order of abundance are the species *Cistus incanus*, *Asplenium adiantum nigrum* ssp. *onopteris*, *Pistacia terebinthus*, *Coronilla emerus*, *Scilla maritima* and *Colutea arborescens*. A study of the thickness of the trunk in the different species has revealed the fact that, in *Arbutus andrachne* it ranges between 5 - 7 cm in diameter, although in some cases may be waving around 15 - 20 cm in diameter, and in *Quercus calliprinos* between 4 - 5 cm in diameter, and more rarely between 6 - 7 cm.

Summarizing, it may be concluded that Macchia vegetation in Patras area, and generally of the north coast of Peloponnesos, can be considered as rich in shadeloving plants and poor in sunloving plants. That is probably due not only to soil conditions but also to the exposure, inclination, and climatic conditions. To what extent all these ecologial factors affect the vegetation is difficult to say. A study of this problem should be of considerable interest.

Résumé

Dans le présent travail sont examinées les plus importantes associations des plantes qui se rencontrent sur la région du Patras.

Sur les plages sablonneuses et caillouteuses du Nord se rencontrent associations ammophiles de la classe *Cakiletea maritimae*. Cette classe est représentée dans cette région par l'association *Salsola kali-Matthiola tricuspidata* (ass. nov., Tableau I). Sur les dunes littorales des côtes d'ouest du Patras se rencontrent groupements des plantes de l'association *Agropyretum mediterraneum* et de l'association *Ammophiletum arundinaceae*. L'association *Agropyretum mediterraneum* apparaît principalement sur les dunes d'une hauteur de 1 à 1.5 m (Tableau II), tandis que l'association *Ammophiletum arundinaceae* sur les dunes dont la hauteur dépasse les 1,5 mètres (Tableau III).

Sur sol calcaire meuble et profond, en particulier dans des terrains pierreux arides, en bordure des champs, sur le flanc des collines, dans le fond des ravins où la terre fine s'accumule entrainée par le ruissellement, se rencontrent de nombreux groupements xériques des phrygana. Ce type de la végétation est représentée par l'association *Poterium spinosum-Coridothymus capitatus* (Tableau IV) et par l'association *Coridothymus capitatus, Anthyllis hermaniae* (ass. nov., Tableau V).

Les groupements qui comprennent de nombreuses espèces ligneuses à feuilles toujours vertes, qui constituent la végétation ligneuse plus ou moins xérique des *Quercetea ilicis*, sont très bien développés le long du cordon des collines littorales qui intermédiaires entre de la région du Patras et de la région du Corinth. Ce type de la végétation est characterisé particulièrement par l'abondance des espèces dominantes: *Pistacia lentiscus, Phillyrea media, Quercus coccifera* var. *calliprinos, Smilax aspera, Rubia peregrina* et *Ruscus aculeatus* (Tableau V).

Zusammenfassung

Die vorliegende Abhandlung befasst sich mit der Untersuchung der Pflanzengesellschaften der Litoralzonen und der Phrygana- und Macchienvegetationsstufe der Umgebung von Patras in Griechenland. Es werden sowohl die Unterschiede in der floristisch-soziologischen Struktur erfasst,als auch die unterschiedlichen Standortsfaktoren untersucht.

Die untersuchten Vegetationen liessen sich in vier physiognomische Vegetationstypen einteilen, welche in den Tabellen I-V angeführt werden.

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Table I.-Class Cakiletea maritimae Tx. et Prsg. 1950
(Alliance Euphorbion peplis Tx. 1950).

	Number of stand examined	Ass. Salsola kali-Matthiola tricuspidata (ass. nov.). 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Presence
	Size of stand, square meters	4	4	4	8	6	12	6	4	24	24	9	9	4	6	6	3	10	8	12	24	
	Altitude of sand dune, meters	0,5	0,5	0,5	0,5	0,5	0,7	0,7	0,7	0,5	1	0,5	0,5	0,5	0,5	0,5	0,5	1	1,2	1,2	1,1	
	Distance from sea, meters	5	5	5	5	5	15	15	15	12	10	10	10	10	10	10	10	10	8	7	12	
	Orientation of stand	NE	NE	NE	NE	NE	NW	NW	NE	—	—	NW	NW	NW	NW	NW	NW	N	N	N	N	
	Inclination of stand	16	12	12	12	12	11	12	11	0	0	2	2	2	1	1	1	2	2	2	28	
	Cover of vegetation %	20	25	20	30	25	20	25	30	25	30	30	25	30	35	30	35	60	30	20	35	
	Number of species	6	7	9	5	7	10	10	11	8	8	6	7	6	9	6	6	6	10	6	7	
	Characteristic species of the Association:																					
H^2	Matthiola tricuspidata R. Br.	+.2	+	1.2	1.1	1.2	+	.	.	+	2.2	+.2	.	+.2	2.2	+.2	+.2	.	.	.	.	III
T	Salsola kali L.	+	+	+	2.2	.	1.2	1.2	.	+.2	1.1	2.2	2.2	1.1	1.1	1.1	2.2	+	2.2	2.2	+	V
T	Anthemis tomentosa L.[1]	+.2	+.2	1.1	.	+.2	.	.	.	+	2.2	.	.	.	.	.	+.2	.	+.2	.	.	II
T	Beta maritima L.	+	+	+.2	+.2	1.2	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	II
Gr	Cynodon dactylon Pers.	.	2.2	1.2	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	II
T	Atriplex hastata L.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	.	.	+.2	.	.	I
	Characteristic species of the Alliance:																					
T	Euphorbia peplis L.	.	.	.	.	.	+.2	+	+	.	.	1.1	1.1	1.1	1.1	1.1	1.1	.	+.2	+.2	+	III
Ch h	Polygonum maritimum L.	+.2	+	.	1.1	.	.	.	+.2	1.2	+	.	+	.	+.2	.	.	.	1.2	1.2	1.2	III
	Differential species of the Alliance:																					
T	Glaucium flavum Cr.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Class :																					
T	Salsola kali L.	+	+	+	2.2	.	1.2	1.2	.	+.2	1.1	2.2	2.2	1.1	1.1	1.1	2.2	+	2.2	2.2	+	V
T	Cakille maritima Scop.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	+.2	.	.	I
	Companion species of the Ammophiletea Class :																					
Gr	**Agropyrum junceum Beauv.**[2]	.	.	.	.	.	.	.	.	2.2	.	.	.	.	.	.	.	3.3	+	+	2.2	II
H	Eryngium maritimum L.	.	.	.	.	+.2	+	.	+	1.1	1.2	+.2	.	+.2	+.2	(pl)	.	+	+	.	+.2	III
H	Euphorbia paralias L.	.	.	.	.	.	.	.	.	.	.	(+)	.	.	.	.	.	.	+	+	.	I
Ch h	Medicago marina L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	.	.	I
Gr	Sporobolus pungens Kunth.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	.	.	I
	Indifferent companion species :																					
T	Pholiurus incurvatus Hitchc.	.	.	+	.	.	.	+	.	.	+	.	.	.	+	.	.	.	.	.	.	I
H	Inula viscosa L.	.	.	.	.	.	.	+.2	+	.	.	.	.	.	+	.	+	.	.	.	.	I
T	Xanthium strumarium L.	.	.	+	.	.	.	.	.	.	.	.	(+)	.	.	.	.	.	.	.	(pl)	I
Gr	Agropyrum sp.	.	.	.	.	.	+	+	1.1	.	.	.	.	.	.	.	.	.	.	.	.	I
H(Ch)	Holcus lanatus L.	.	.	.	.	.	+	+	+.2	.	.	.	.	.	.	.	.	.	.	.	.	I
H^2	Chondrilla juncea L.	.	.	.	.	.	+	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Polygonum aviculare L.	.	.	.	.	.	.	+	+.2	.	.	.	.	.	.	.	.	.	.	.	.	I
T Ch h	Medicago litoralis Rohde.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Lagurus ovatus L.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H^2	Echium italicum L.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Polycarpon tetraphyllum L.[3]	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Phleum arenarium L.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Ch h	Crithmum maritimum L.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	I
Gr	Agropyrum littorale Dum.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	I

1. ssp. tomentosa Hayek.
2. ssp. mediterraneum.
3. var. alsinefolium Hayek.

Table II. -Association Agropyretum mediterraneum Br.-Bl. 1933 .

	Number of stand examined	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	presence
	Size of stand, square meters	32	24	48	48	80	60	80	60	36	60	50	50	12	12	12	18	18	48	48	48	48	48	
	Altitude of sand dune, meters	1	1	0,5	0,7	0,7	0,7	1	0,5	0,8	0,8	1	1	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,2	1,2	1,3	
	Distance from sea, meters	15	15	10	15	15	15	15	16	15	15	20	25	20	20	20	20	20	30	30	30	30	15	
	Orientation of stand	N	E	0	0	E	SW	SW	E	0	0	0	0	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	
	Inclination of stand	19	11	0	0	10	8	8	8	0	0	0	0	24	25	20	15	12	14	10	8	15	15	
	Cover of vegetation %	30	40	20	40	20	20	40	30	40	20	45	40	50	40	40	45	35	30	30	30	50	40	
	Number of species	12	16	9	9	7	6	11	6	10	8	8	9	8	9	9	10	10	7	7	6	6	7	
	Characteristic species of the Association :																							
Gr	Agropyrum junceum Beauv.[1]	1.1	+	1.2	2.2	+	+	1.2	.	2.2	+.2	+.2	1.2	+.2	+.2	+.2	+.2	1.2	+.2	+.2	.	+.2	1.2	V
Gr	Galilea mucronata Parl.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	+.2	1.2	+.2	1.2	.	.	.	.	.	II
Gr	Sporobolus pungens Kunth.	+.2	+	2.2	3.3	2.2	1.2	1.2	2.2	2.2	+.2	3.3	2.2	.	+.2	.	.	.	+.2	1.1	1.2	+.2	.	IV
Ch h	Diotis maritima Sm.	1.2	2.2	.	.	.	.	.	.	.	.	.	.	4.4	3.3	3.2	3.2	3.3	.	.	.	.	.	II
H	Echinophora spinosa L.	.	.	+.2	+	+.2	.	+.2	+.2	+.2	+	.	.	.	+	+.2	+	+.2	.	.	.	.	.	III
Ch h	Convolvulus soldanella L.	.	.	.	.	+.2	1.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Alliance :																							
Ch h	Medicago marina L.	.	.	+.2	+.2	+.2	.	+.2	+.2	+.2	.	.	.	2.2	1.2	+.2	+.2	1.2	+.2	.	.	.	.	III
Gb	Pancratium maritimum L.	.	.	.	+	.	.	,	.	.	.	.	.	2.2	1.2	+.2	+.2	1.2	.	.	.	.	.	II
	Characteristic species of the Class :																							
H	Euphorbia paralias L.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	+.2	+	+	+.2	1.2	2.2	2.2	2.2	2.2	III
H	Eryngium maritimum L.	.	.	+	1.2	1.2	2.2	2.2	+.2	2.2	+	+.2	+.2	+	.	.	.	+.2	1.1	1.1	+.2	1.1	+.2	IV
	Companion species of the Cakiletea maritimae Class :																							
T	Xanthium strumarium L.	.	.	+.2	+.2	+	.	+.2	+	2.2	+.2	+.2	1.2	.	.	.	.	.	.	.	.	.	.	III
T	Euphorbia peplis L.	(+)	.	(+.2)	.	.	.	+.2	+.2	.	.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	II
T	Cakile maritima Scop.	.	.	1.2	.	.	.	+.2	.	(+)	1.2	+	.	.	.	.	.	.	.	.	.	.	.	II
T	Anthemis tomentosa L.[2]	.	.	.	.	.	.	+.2	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	I
T	Salsola kali L.	.	+	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	I
Ch h	Polygonum maritimum L.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	I
	Companion species of the high level dunes :																							
T	Daucus pumillus Ball.	1.2	1.2	.	.	.	.	.	.	.	.	.	.	+.2	1.2	1.2	1.2	1.2	.	+.2	.	.	.	II
Gr	Ammophila arenaria L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	2.2	1.2	+.2	3.3	3.2	II
Ch l	Centaurea sonchifolia L.	1.1	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	I
H[2]	Silene nicaeensis All.	+.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Vulpia fasciculata Fritsch.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Indifferent companion species:																							
H	Silybum marianum L.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+	+	+	+	II
Gr	Holoschoenus romanus Fritsch.	2.2	1.2	.	+.2	.	+.2	.	.	(+.2)	.	.	.	.	.	.	.	.	.	.	.	.	.	II
T	Scleropoa rigida Gris.	.	.	+.2	.	.	+.2	+.2	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H	Inula viscosa L.	.	.	.	+	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	+	I
T	Pholiurus incurvatus Hitchc.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	I
P	Tamarix parviflora DC.	.	.	.	.	.	.	.	.	.	+.2	.	(+)	.	.	.	.	.	.	.	.	.	.	I
T	Lagurus ovatus L.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Hedypnois rhagadioloides Willd.	1.1	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H	Lotus cytisoides L.	+	(+.2)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Nigella aristata S.S.	+.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H[2]	Chondrilla juncea L.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Pinus halepensis Mill.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	I
H	Alkana tinctoria Tsch.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	I
Gr	Cynodon dactylon Pers.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	I
Gr	Juncus maritimus Lam.	.	.	.	.	.	.	,	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	I
H[2]H	Scolymus hispanicus L.	.	.	.	.	.	.	.	.	.	.	.	(+)	.	.	.	.	.	.	.	.	.	.	I
T	Bromus maximus Desf.	.	(+.2)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I

1. ssp. mediterraneum.
2. ssp. tomentosa Hayek.

Table III. -Association Ammophiletum arundinaceae Br.-Bl.(1921)1933.

																					Presence
	Number of stand examined	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	Size of stand, square meters	24	24	24	48	48	48	48	48	18	18	18	18	18	16	20	20	24	20	25	
	Altitude of sand dune, meters	3	2,5	2	1,5	2	2,5	3	2,5	8	7,5	8	8	7	8	2	1,5	2	3	3	
	Distance from sea, meters	50	60	70	100	80	100	100	100	50	55	60	60	50	45	10	9	8	9	10	
	Orientation of stand	0	0	0	0	NW	SW	NW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	0	
	Inclination of stand	0	0	0	0	45	43	45	23	28	5	5	45	14	12	33	45	32	30	0	
	Cover of vegetation %	30	30	30	35	20	60	30	30	30	30	30	30	35	55	30	45	30	30	30	
	Number of species	10	10	11	17	15	16	15	19	11	11	10	12	10	11	9	8	9	8	8	
	Characteristic species of the Association :																				
Gr	Ammophila arenaria Lk.	+.2	.	.	1.2	+.2	3.3	2.2	3.3	+.2	+.2	+.2	1.2	1.1	.	.	.	.	.	.	III
Ch l	Centaurea sonchifolia L.	.	1.2	1.2	+	.	.	+	+.2	1.2	+.2	1.2	.	.	+.2	.	.	.	.	.	III
TH^2	Echium hispidum S.S.	.	1.1	.	.	.	+	+	+.2	+.2	1.1	+.2	+.2	+.2	2.2	.	.	.	.	.	III
T	Daucus pumillus Ball.	.	.	.	.	.	.	.	.	1.2	2.2	2.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	.	III
T	Malcolmia sp.	.	.	.	.	.	.	.	.	+	+	+.2	.	.	1.2	.	.	.	.	.	II
H^2	Silene nicaensis All.	.	.	.	.	.	.	.	.	+.2	+.2	+.2	.	.	.	.	.	.	.	.	I
H^2	Verbascum pinnatifidum Vahl.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	.	.	+.2	+.2	II
T	Ononis variegata L.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	+.2	+.2	+.2	+.2	II
H^2	Euphorbia terracina L.	+.2	1.2	1.1	.	+	+.2	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	II
H	Inula crithmoides L.	+	.	.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Tamarix parviflora DC.	.	+	+.2	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
T	Vulpia fasciculata Fritsch.	.	.	.	.	.	1.1	1.1	1.1	.	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Alliance :																				
Ch h	Medicago marina L.	1.2	1.2	1.2	1.2	1.2	2.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	3.3	2.2	3.2	1.2	.	2.2	V
Gb	Pancratium maritimum L.	1.1	.	.	1.1	1.1	+	1.2	1.2	+.2	.	.	+.2	.	1.1	+.2	+.2	+.2	+.2	1.1	IV
	Characteristic species of the Class :																				
H	Euphorbia paralias L.	+	.	.	1.2	+.2	.	+.2	+.2	1.2	+.2	+.2	1.1	+.2	+	3.3	3.3	2.2	3.3	2.2	V
H	Eryngium maritimum L.	1.1	.	.	+	.	+	+.2	+.2	1.1	.	.	+.2	.	.	+.2	+.2	+.2	+.2	.	III
	Companion species of the Agropyretum mediterraneum association:																				
Gr	Agropyrum junceum Beauv.[1]	.	.	.	+	.	+.2	1.2	+.2	+.2	1.2	.	+.2	1.2	1.2	+.2	+.2	1.2	1.2	1.2	IV
Gr	Galilea mucronata Parl.	.	.	.	+.2	+.2	1.2	+.2	1.2	.	.	+.2	+	1.2	+.2	1.2	+.2	.	+.2	+.2	IV
H	Echinophora spinosa L.	+.2	1.1	.	2.2	+.2	1.2	+.2	+	.	+.2	1.1	+	1.2	.	+	.	1.2	.	.	IV
Gr	Sporobolus pungens Kunth.	1.2	.	.	.	.	+.2	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	II
Ch h	Convolvulus soldanella L.	.	.	.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Companion species of the Cakiletea maritimae Class. :																				
T	Euphorbia peplis L.	1.2	.	.	.	(+.2)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Xanthium strumarium L.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Indifferent companion species:																				
T	Haynaldia villosa Schur.	.	+.2	1.1	.	+	+.2	+	+	.	.	.	.	.	.	.	.	.	.	.	II
H	Inula viscosa L.	.	.	.	1.1	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	I
T	Hypochoeris glabra L.	.	+	+.2	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Scleropoa rigida Gris.	.	.	.	.	.	1.1	+	+	.	.	.	.	.	.	.	.	.	.	.	I
T	Pholiurus incurvatus Hitchc.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	+.2	.	.	I
H^2	Chondrilla juncea L.	.	1.1	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Lagurus ovatus L.	.	.	+	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Hlr	Erianthus ravennae Pal.	.	.	.	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	I
H	Lotus cytisoides L.	.	.	.	.	.	.	.	.	.	.	.	+.2	1.2	.	.	.	.	.	.	I
H	Cichorium glabratun Presl.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	+	.	.	.	.	.	I
	Medicago sp.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Gr	Holoschoenus romanus Fritsch.	.	.	.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Pinus halepensis Mill.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Hedypnois rhagadioloides Willd.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	I
H	Carlina corymbosa L.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	I
P Ch l	Coridothymus capitatus Rchb.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	I
T	Erodium laciniatum Willd.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	I
Gb	Scilla sp.	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H^2	Centaureum umbellatum Gilib.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I

1. ssp. mediterraneum.

Table IV. -Association Poterium spinosum - Coridothymus capitatus
(Class Thero-Brachypodietea Br.-Bl.1947).

	Number of stand examined	1	2	3	4	5	6	7	8	9	10	11	12	presence
	Size of stand, square meters	9	9	9	9	9	9	9	9	9	9	9	9	
	Altitude above sea level, meters	60	60	60	65	65	75	50	55	60	60	60	70	
	Orientation of stand	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	
	Inclination of stand	12	17	12	13	13	14	10	12	16	18	14	14	
	Cover of vegetation %	70	75	50	85	80	90	90	80	85	90	95	75	
	Number of species	22	22	22	24	23	25	24	24	30	26	27	31	
	Characteristic species of the Association :													
P Ch l	Poterium spinosum L.	3.3	3.3	2.2	4.4	3.3	3.2	2.2	3.3	1.2	3.2	3.2	2.2	V
P Ch l	Coridothymus capitatus Rchb.	2.2	2.2	2.2	1.2	1.2	2.2	1.2	2.2	1.2	1.2	+.2	2.2	V
T	Phleum tenue Schrad.	1.1	+.2	+	+	.	1.1	+	+.2	1.2	+.2	+.2	1.2	V
H	Dactylis glomerata L.	1.1	+.2	+.2	1.1	1.1	.	1.1	+.2	1.2	1.1	1.1	1.1	V
H^2	Centaurium umbellatum Gilib.	1.2	1.2	+.2	+.2	1.2	.	+.2	+	+.2	.	+	+.2	V
T	Onobrychis caput-galli Lmk.	1.1	.	+.2	.	.	.	+.2	+.2	+.2	.	+.2	+.2	III
N P	Genista acanthoclados DC.[1]	+.2	+.2	+.2	1.2	2.2	3.3	.	.	.	.	.	.	III
Ch	Helianthemum vulgare Lam.[2]	1.1	1.1	1.1	1.1	1.2	+.2	.	.	.	.	.	.	III
H	Aristella bromoides Bertol.	+.2	+.2	1.1	+.2	1.2	.	.	.	.	.	.	.	III
Gp	Cuscuta globularis Bertol.	+.2	.	+.2	.	+.2	+.2	.	.	.	.	.	.	II
H	Hypericum perfoliatum L.	1.1	1.1	1.2	.	.	.	.	.	.	.	.	.	II
T	Trifolium campestre Schreb.	.	.	+	+	+.2	1.2	1.2	1.2	1.2	1.2	1.2	+.2	V
N P	Phlomis fruticosa L.	.	.	.	.	.	.	2.2	2.2	3.3	3.3	3.3	+.2	III
T	Gaudinia fragilis Beauv.	.	+	.	.	1.1	.	1.2	1.2	1.2	1.2	1.1	1.1	IV
T	Aegilops Heldreichii Holzm.[3]	+.2	.	+	.	.	+	.	+.2	+.2	.	+.2	+.2	III
TH^2	Vicia tenuifolia Roth.[4]	.	.	.	.	.	.	+	1.2	1.2	1.2	1.2	.	III
T	Bromus patulus M.K.[5]	.	.	.	.	.	1.1	.	+	+	+	+	+.2	III
T	Plantago bellardi All.	.	.	.	.	.	.	.	.	+.2	+.2	.	+.2	II
T	Aegilops triaristata Willd.	.	.	.	.	.	+	+.2	+.2	+.2	.	.	+.2	III
T	Avena barbata Gott.	.	.	.	.	.	.	+.2	.	+.2	+.2	1.2	+.2	III
	Characteristic species of the Alliance :													
T	Brachypodium distachyum Beauv.	1.1	+.2	+.2	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.1	1.2	V
Ch l	Fumana thymifolia Verl.[6]	1.1	1.1	+.2	1.1	1.2	1.2	+.2	.	.	.	.	+.2	IV
H	Andropogon hirtus L.	.	+.2	+.2	1.2	+.2	+.2	+.2	+.2	.	1.2	.	.	IV
T	Trifolium scabrum L.[7]	.	.	.	.	+.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	IV
T	Filago gallica L.	.	+.2	+.2	+.2	+	+	.	.	.	.	.	+.2	III
H^2	Tragopogon porrifolius L.	+.2	.	.	.	+.2	.	.	+	.	.	+.2	+	III
T	Trifolium angustifolium L.	.	.	.	+.2	.	.	.	+.2	.	.	+.2	+.2	II
T	Galium divaricatum Lam.[8]	.	1.2	.	.	.	.	.	+.2	.	.	+.2	.	II
T	Bupleurum semidiaphanum Boiss.	.	.	.	.	.	.	.	.	.	.	.	+	I
T	Tremastelma palaestinum Janch.[9]	+	.	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Order and Class :													
Gb	Allium arvense Gruss.	.	.	+.2	+.2	1.1	1.1	+	1.1	+.2	+	+.2	1.1	V
T	Arenaria serpyllifolia L.	1.1	1.1	+.2	1.1	1.2	1.2	.	.	.	.	.	1.2	III
Ch	Tunica saxifraga Scop.	.	.	.	+	.	1.2	+	+.2	+.2	+.2	.	+.2	III
H^2H	Anthyllis vulneraria L.	+	+	.	.	.	.	.	+.2	+.2	.	+	+.2	III
T	Sideritis purpurea Talbot.	.	+.2	+.2	+.2	+.2	+	.	.	.	.	.	.	III
T	Bromus sterilis L.	.	.	+	.	.	.	.	.	+.2	+.2	+	.	II
T	Hedypnois rhagadioloides Willd.[10]	.	.	.	+	.	.	+	.	+.2	.	.	+.2	II
T	Scleropoa rigida Griseb.	.	.	.	.	.	.	.	.	+.2	+	+.2	.	II
TH^2H	Reichardia picroides Roth.[11]	.	.	.	.	.	.	.	.	.	.	.	+	I
T	Linum strictum L.	.	.	.	+	.	.	.	.	.	.	.	.	I
T	Filago spathulata Presl.	.	.	.	.	.	.	..	.	.	.	.	+	I
	Companion species :													
H	Poa bulbosa L.var.vivipara Koel.	+.2	+.2	+.2	1.1	1.1	1.1	+.2	1.2	+.2	1.2	+.2	1.2	V
	Bryophyta	1.2	1.2	.	1.2	1.2	1.2	2.2	2.2	2.2	.	2.2	1.2	V
H	Dactylis hispanica Roth.	.	.	.	.	.	1.1	.	.	1.1	1.1	1.1	.	II
T	Gastridium lendigerum Gadu.	.	.	.	.	.	+.2	.	.	.	1.2	1.1	+.2	II
T	Trifolium arvense L.	.	.	.	.	.	.	.	.	1.2	1.2	+.2	.	II
T	Aira capillaris Host.	1.1	.	.	.	+.2	.	.	.	.	.	.	.	I
H^2	Pallenis spinosa Cas.	.	.	+	+	.	.	.	.	.	.	.	.	I
	Lichenes	.	.	.	+.2	.	+.2	.	.	.	.	.	.	I
T	Linum gallicum L.	.	.	.	.	+.2	.	.	.	.	+	.	.	I
T	Pholiurus incurvatus Hitchc.	.	.	.	.	.	+.2	.	.	.	+	.	.	I
H	Oryzopsis miliacea L.	1.2	.	.	.	.	.	.	.	.	.	.	.	I
T	Bromus molliformis Lloyd.	.	+.2	.	.	.	.	.	.	.	.	.	.	I
T	Lagurus ovatus L.	.	+.2	.	.	.	.	.	.	.	.	.	.	I
H	Micromeria juliana Benth.	.	.	.	+.2	.	.	.	.	.	.	.	.	I
P	Pirus amygdaliformis Will.	.	.	.	.	.	.	+	.	.	.	.	.	I
T	Rodigia commutata Spreng.	.	.	.	.	.	.	+	.	.	.	.	.	I
T	Anthemis arvensis L.	.	.	.	.	.	.	+.2	.	.	.	.	.	I
NP	Asparagus acutifolius L.	.	.	.	.	.	.	.	.	+	.	.	.	I
T	Lathyrus setifolius L.	.	.	.	.	.	.	.	.	+	.	.	.	I
T,H	Crepis foetida L.	.	.	.	.	.	.	.	.	+	.	.	.	I
P	Clematis flammula L.	.	.	.	.	.	.	.	.	.	+	.	.	I
P	Cupressus sempervirens L.	.	.	.	.	.	.	.	.	.	+	.	.	I
T	Lotus tetragonolobus L.	.	.	.	.	.	.	.	.	.	.	.	+	I

1. var. graeca Varh.
2. " litorale Hal.
3. " subventricosum Hayek.
4. " stenophylla Boiss.
5. " velutinus A. u. G.
6. " glutinosa Born.
7. var. lucanicum Hal.
8. " asperum K.Maly.
9. " lyratum Hayek.
10. ssp. cretica Hayek.
11. var. spicatum Pers.

Table V. —Associations of Maccia Vegetation, at Psathopyrgos (near Patras).

(Class Quercetea ilicis Br.-Bl. 1947).

	Number of stand examined	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	Presence
	Size of stand, square meters	24	24	24	24	24	24	24	24	24	36	24	24	24	24	24	15	15	15	15	15	20	20	15	10	12	18	18	18	18	24	24	24	14	16	
	Altitude above sea level, meters	150	150	160	170	170	180	180	200	200	210	150	150	170	175	180	40	35	35	35	40	40	40	35	40	45	50	50	50	60	55	40	50	55	50	
	Orientation of stand	.	.	.	.	.	.	.	.	.	.	NW	NW	NW	NW	NW	N	N	N	N	N	N	N	N	N	N	NW	NW	NW	NW	NW	W	W	W	W	
	Inclination of stand	50	50	50	40	40	50	53	46	48	50	50	52	60	52	50	10	13	15	15	15	15	15	15	15	15	42	46	50	46	21	40	30	33	30	
	Cover of vegetation %	75	80	80	95	85	85	85	85	30	85	85	80	80	80	80	100	95	90	100	95	95	95	100	100	100	100	100	100	95	90	100	100	100	100	
	Number of species	17	16	14	16	15	15	16	16	19	16	18	16	21	16	16	18	16	18	19	18	16	16	17	18	15	18	24	20	19	24	20	22	19	24	
	Characteristic species of the Association: Dorycnium hirsutum (L.) Ser..																																			
Gc	Ruscus aculeatus L.	+.2	1.2	+	+.2	.	.	+.2	+.2	+.2	+.2	.	+.2	.	+.2	+.2	.	+.2	+.2	+.2	+.2	+.2	.	.	+.2	.	.	+	+.2	+.2	.	+.2	+.2	.	.	IV
Ch h	Selaginella denticulata (L.) Lk.	1.2	.	+.2	+.2	+.2	1.2	+.2	+.2	+.2	1.2	4.4	.	3.3	3.3	2.2	.	.	.	.	+.2	1.2	+.2	.	.	.	1.2	2.2	1.2	1.2	1.2	.	.	.	.	IV
NP	Cistus incanus Rchb.	+.2	+.2	+.2	+.2	+.2	+	1.2	+.2	+.2	.	+.2	.	+.2	1.2	.	+.2	1.2	.	+.2	1.2	1.2	+.2	.	.	.	.	+.2	.	.	.	.	+.2	.	.	III
Ch	Crucianella latifolia L.	+.2	.	.	.	+	.	.	.	+.2	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+	1.2	.	.	1.1	1.1	.	+.2	.	II
H	Brachypodium ramosum (L.) R.S	1.2	1.2	2.2	1.2	1.2	1.2	1.2	1.2	1.2	2.2	1.2	3.3	3.3	3.3	1.2	1.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	+.2	III
NP	Hypericum empetrifolium Willd.	+.2	+.2	+.2	1.2	+.2	+.2	1.2	1.2	+.2	1.2	1.2	1.2	1.2	1.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III
H	Asplenium adiantum nigrum L.[1]	+	+.2	.	+.2	+.2	.	+.2	+	+.2	+.2	+.2	.	+.2	+.2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
Ch	Teucrium chamaedrys L.	+.2	+.2	1.2	1.2	+.2	+.2	1.2	+.2	1.2	1.2	+.2	+.2	+.2	1.1	1.1	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	III
P	Arbutus andrachne L.	+	+.2	.	+	.	+	2.2	+.2	2.2	3.3	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	II
P	Coronilla emerus L.	+	+.2	+.2	+.2	.	.	1.1	.	.	1.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Colutea arborescens L.	.	.	.	.	.	+.2	.	1.2	+.2	.	+.2	.	2.2	1.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	II
Gb	Cyclamen neapolitanum Ten.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	+.2	+.2	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Gb	Urginea maritima Baker.	.	+	.	+	+	+.2	+.2	+	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	II
H	Ceterach officinarum DC.	+.2	.	.	.	+	.	+	+	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Osyris alba L.	.	+	.	.	+.2	.	.	.	+.2	+.2	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	I
NPCh	Coridothymus capitatus Rchb.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2	1.2	+.2	+.2	+.2	1.2	2.2	1.2	.	+.2	.	.	.	.	.	.	.	.	.	II
NP	Anthyllis hermaniae L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2	1.2	+.2	1.2	+.2	+.2	+.2	1.2	.	+.2	.	.	.	.	.	.	.	.	.	II
HCh	Brachypodium pinnatum Beauv.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	1.2	1.2	2.2	1.2	1.2	3.2	1.2	1.2	.	.	.	+.2	.	+.2	1.2	.	.	II
NP	Myrtus communis L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.2	.	+.2	.	.	.	2.2	2.2	3.3	4.4	.	.	.	.	.	.	.	.	.	I
H	Teucrium flavum L.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	+.2	.	+.2	1.2	+.2	1.2	1.2	.	.	.	.	.	.	.	.	.	.	.	.	II
H	Cymbopogon hirtus Janch.[2]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	.	.	.	+.2	.	.	+.2	.	.	.	.	.	.	.	.	.	.	I
Gp	Cuscuta globularis Bertol.[3]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	I
P	Crataegus monogyna Jacq.[4]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H	Aristella bromoides Bertol.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	.	.	.	+.2	.	.	.	.	+.2	1.1	+.2	.	+.2	.	.	+.2	+.2	II
Gc	Calystegia sepium R.Br.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	+	+	.	.	.	.	.	.	1.1	1.1	1.1	1.1	+.2	1.1	1.1	1.1	1.1	II
H	Daucus guttatus S.S.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	1.1	+.2	+.2	+.2	+.2	+.2	+.2	II
H	Knautia integrifolia Bertol.[5]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+.2	.	.	+	.	+	I
H	Melica ciliata L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1.1	1.1	.	+	+.2	.	.	+.2	I
H	Ballota acetabulosa Benth.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	.	.	+	+.2	+.2	I
H	Mentha pulegium L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+	+	.	.	.	+.2	I
T	Gallium divaricatum Lam.[6]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	1.2	.	.	.	.	.	.	I
H	Salvia triloba L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	+.2	.	I
Gb	Allium subhirsutum L.[7]	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+.2	+.2	.	+.2	I
H[2]	Geranium purpureum Vill.	.	.	.	.	.	.	.	.	.	.	3.3	1.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Alliance:																																			
NP	Asparagus maritimus Mill.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	+	+	+.2	1.1	+.2	+.2	1.2	1.2	+.2	.	+.2	+	+.2	1.1	1.2	+.2	.	.	+.2	III
P	Calycotome villosa LK.	.	.	+	+.2	.	.	.	.	.	+	+	2.2	.	.	.	+.2	.	+	1.2	+.2	2.2	2.2	2.2	+.2	.	.	+.2	.	.	.	.	+.2	.	.	III
H	Oryzopsis miliacea L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	+.2	.	+.2	.	.	.	+.2	+	.	1.1	1.2	1.1	1.1	+.2	1.1	.	+.2	.	II
P	Olea europaea L.[8]	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	+	+	.	2.2	+.2	+	+.2	+.2	+.2	+.2	.	.	II
P	Pistacia terebinthus L.	+.2	+	.	+	.	+.2	.	+	.	.	2.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(+)	.	.	.	.	II
P	Quercus ilex L.	.	.	.	+	.	.	2.2	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	I
NP	Lonicera implexa Ait.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	+	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	I
P	Arbutus unedo L.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
	Characteristic species of the Order and Class:																																			
P	Pistacia lentiscus L.	3.3	3.3	1.2	3.2	1.2	+.2	+.2	.	2.2	+.2	2.2	+.2	1.2	.	.	4.4	4.4	3.3	4.4	4.4	4.4	2.2	3.3	3.3	+.2	3.2	3.3	4.4	4.4	3.3	4.4	2.2	4.4	4.4	V
P	Rubia peregrina L.	+.2	+.2	1.1	1.1	1.1	1.2	1.2	+.2	+.2	.	+.2	+.2	1.1	.	.	+.2	1.2	1.1	+.2	+.2	+.2	+.2	+.2	.	.	1.1	1.2	1.1	1.1	1.1	+.2	1.1	+.2	1.1	V
NP	Smilax aspera L.[9]	1.1	.	+	.	+	.	+.2	.	.	+	1.1	1.2	1.2	+	1.1	2.2	3.2	2.2	2.2	2.2	2.2	1.1	2.2	1.2	+.2	1.1	1.1	1.1	1.1	+.2	1.1	+.2	1.1	+.2	V
P	Quercus coccifera L.[10]	3.2	3.3	3.3	3.3	3.3	3.3	.	2.2	.	2.2	3.3	+.2	3.2	3.3	3.3	+.2	.	+.2	+.2	.	+.2	.	.	.	.	2.2	3.3	.	.	2.2	.	2.2	+.2	3.3	IV
P	Phillyrea media L.[11]	2.2	3.3	3.3	.	3.2	3.3	1.2	2.2	3.3	2.2	3.3	3.3	.	3.3	3.3	+.2	+.2	+	+.2	.	.	.	1.2	+.2	.	.	.	.	.	+.2	.	2.2	1.2	.	IV
NP	Clematis flammula L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	.	.	.	+	.	.	.	.	.	.	+.2	.	.	.	I
	Companion species:																																			
H	Micromeria juliana Benth.	.	.	.	.	.	+.2	.	.	.	.	.	.	+	.	.	.	.	+	+.2	+.2	.	.	+	+	.	+.2	+.2	.	.	.	.	.	.	+.2	II
TH[2]	Carduus pycnocephalus L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	+.2	+.2	.	.	.	.	+	+.2	+.2	.	+.2	.	.	.	.	II
T	Prasium majus L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+.2	.	.	+.2	.	.	.	.	+.2	1.2	+.2	+.2	II
T	Briza maxima L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	+.2	.	+	.	.	.	.	+.2	.	+.2	I
Hlc	Erianthus ravennae Beauv.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+.2	.	.	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	I
NP	Ephedra campylopoda C.A.Mey.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	+.2	I
H	Galium mollugo L.[12]	.	.	.	.	.	.	.	.	.	+	+.2	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Vicia salaminia Heldr. et Sart.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+.2	.	I
T	Nigella damascena L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	.	.	.	.	.	.	+	I
H	Poterium sanguisorba L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	+.2	.	.	.	.	I
T	Orlaya platycarpa Koch.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+.2	1.1	.	.	I
NP	Rubia olivieri Rich.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Cercis siliquastrum L.	.	.	.	.	.	.	.	.	.	+	2.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H[2]	Campanula ramosissima S.S.[13]	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	I
T	Legouzia falcata Fritsch.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	I
P	Vitex agnus castus L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	I
P	Spartium junceum L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	+.2	.	.	.	.	.	.	.	.	.	I
H	Dactylis glomerata L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	.	.	I
T	Sonchus asper Hill.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	+.2	.	.	.	.	.	I
H	Rubus sp.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	1.1	.	.	.	.	.	.	I
TH	Crepis foetida L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Juniperus phoenicea L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+.2	.	.	I
H	Melica minuta L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+.2	I
H(Ch)	Silene cucubalus Wib.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
H[2]	Anthyllis vulneraria L.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Lathyrus aphaca L.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Gastridium lentigerum Gadu.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Ch	Dorycnium hirsutum (L.) Ser.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Torilis arvensis (Huds.) Lk.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Lagoecia cuminoides L.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Trifolium campestre Schreb.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
Gt	Arisarum vulgare Targ.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
NP	Clematis vitalba L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
P	Pirus amygdaliformis Vill.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.	.	.	.	.	I
Chh	Teucrium polium L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	I
Gr	Carex glauca Murr.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	I
Gr	Arundo donax L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	.	.	.	.	.	.	.	.	.	I
T	Arabis muralis Bert.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	I
T	Cynosurus echinatus L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	.	.	I
H	Hypericum crispum L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	I
H	Poa bulbosa L.[14]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	I
H	Althaea rosea (L.) Cav.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	I
H	Dactylis hispanica Roth.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	I
T	Haynaldia villosa Schur.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	.	I
P	Pinus (plantule)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	(+)	.	.	I
NP	Phlomis fruticosa L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	I
T	Lolium temulentum L.[15]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.	I
T	Avena barbata Gott.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	I
T	Hedypnois rhagadioloides Willd.[16]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	I
T	Trifolium scabrum L.[17]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	.	I
T	Picnomon acarna Cass.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+.2	I
H[2]	Pallenis spinosa Cass.[18]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	I
H	Psoralea bituminosa L.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	I
T	Agrostemma githago L.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I
T	Papaver argemone L.[19]	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I

1. ssp. onopteris Heufl.
2. var. pubescens Hayek.
3. on Coridothymus capitatus Rchb.
4. var. halacsyi Hayek.
5. f. lyrata Hayek.
6. var. asperum K.Maly.
7. f. ciliatum Hayek.
8. var. oleaster DC.
9. and ssp. mauritanica A.u.G.
10. var. calliprinos Boiss.
11. and more widespread Phillyrea latifolia L.
12. var. angustifolium Leers.
13. var. glabrescens Haussk.
14. var. vivipara Koel.
15. f. macrochaeton A.Br.
16. ssp. cretica Hayek.
17. var. lucanicum Hal.
18. f. plumosa Rchb.
19. var. uniflorum G.B.