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Floristic records from Dadia-Lefkimi-Soufli National Park, NE Greece

Abstract

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The Dadia–Lefkimi–Soufli National Park in North-Eastern Greece is a protected area distinguished as particularly significant not only at the national but also at the European level. The long-term but mild human exploitation coupled with the heterogeneity of the habitats and the maintenance of nature have resulted in the conservation of an important biodiversity of biota, characterized by the existence of unique and rare species of flora and fauna. The present study provides an initial recording of the flora in the area based on fieldwork, and consisting of a total of 351 vascular taxa. Collective data on the chorology, life-form and the habitats of plant taxa are presented.

Introduction

The Dadia–Lefkimi–Soufli National Park is situated on the North - Eastern tip of Greece, close to the Turkish and Bulgarian borders. It is a representative example of preservation of the natural environment in a healthy state, as it has undergone only a small degree of ecosystems mismanagement and low levels of human annoyance. These conditions, in conjunction with the Park's geographical location is situated between two continents, as well as the heterogeneity of the landscape, which has been generated by traditional human activities, have created an ideal place for the existence of many species of flora and fauna (Adamakopoulos & al. 1995; Kati 2001; Kati & al. 2003; Grill & Cleary 2003).

The area is well known for its avifauna, which is rich in both species and populations. It is extraodinary that 36 out of the 38 species of birds of prey in Europe have been observed here, while the population of the world endangered black vulture (*Aegypius monachus*) comprises here the last colony of the species in the Balkans.

Furthermore, there is an abundant variety of significant plant species in the area, such as *Minuartia greuteriana* (Kamari 1995), characterized as Rare or *Eriolobus trilobatus* (Browicz 1982; Korakis & al. 2006), characterized as Vulnerable in the Red Data Book (Phitos & al. 1995), as well as other taxa that reveal the chorological significance of the region, such as *Salix xanthicola* (Christensen 1991), *Cistus laurifolius* (Tutin & al. 1968), and several south-east Balkan or Anatolian floristic elements.

The considerable ecological significance of the area became known between 1970s and in 1980 with the unanimous decision of the Minister of Coordination and the Minister of Agriculture was declared a protected area. In this initial decision, the range designated as being under strict protection included two core areas of 7,293 ha in total and a peripheral zone with a special protection status. In 2003, with the unanimous decision of the Ministers of Development, the Environment, and of Agriculture, in accordance with the ordinance of legislation 1650/1986, the Protected Area of Dadia was incorporated into and declared as the Dadia – Lefkimi – Soufli National Park, with an area covering 43,286 ha.

Investigated area

The investigated area is located in the middle of the Evros Prefecture, comprising the South - Eastern outskirts of Rodopi mountain range (Fig. 1). The area belongs to the collinar and sub-montane zone, with an altitude of between 10 and 652 m. The highest peak

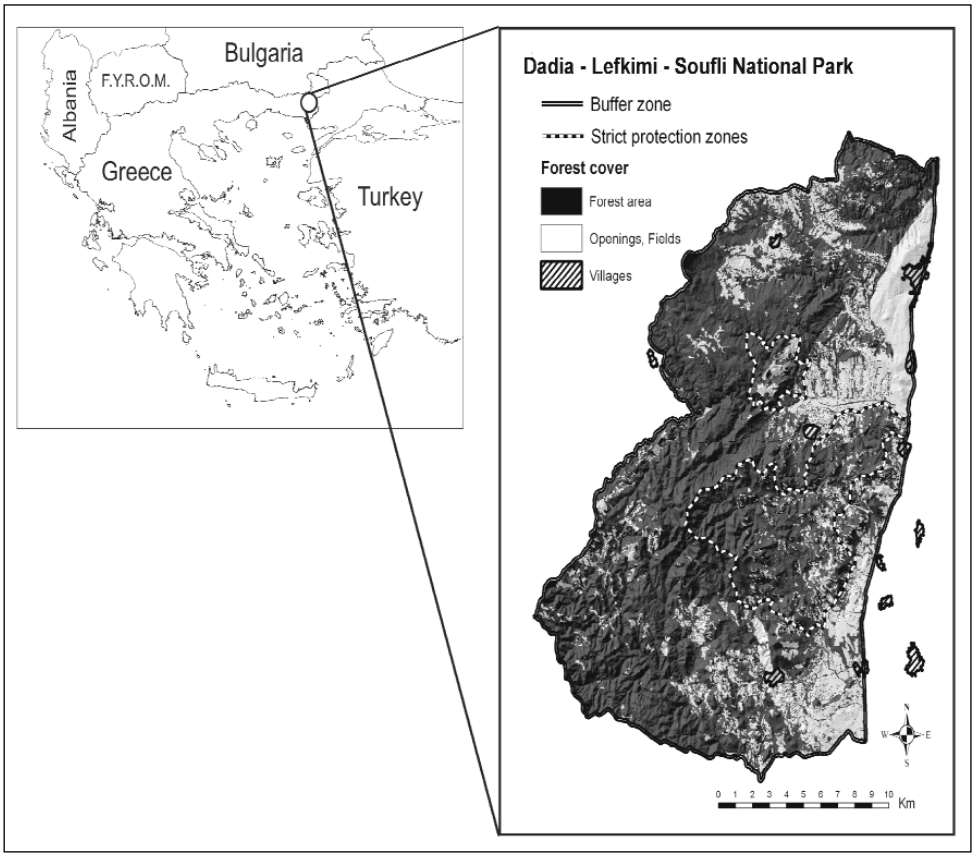

Fig. 1. The study area of Dadia – Lefkimi – Soufli National Park in NE Greece.

in the designated region is that of Anonimo (652 m) in the NW, while in the southern section, near Lefkimi village, there is the Kapsalo peak (604 m). However, further west of the investigated area, a mountain range exists with higher peaks: Sapka (1044 m) and Silo (1065 m). The extreme alternations from gentle to steep inclines, as well as the multi-complex hydrographic network with smaller and larger streams, are characteristic features of the relief of the area.

The National Park has a varied and complex geology. Many rock types occur in the study area such as old metamorphic rocks (gneisses, amphibolites, crystalline schists, quartziles and phyllites), later formations such as clays, limestones, sandstones and conglomerates and recent alluvial deposits of silts, sands and clays along the Evros river and the adjacent plains to the east of the National Park (Adamakopoulos & al. 1995).

The climate can be characterized as Mediterranean with short summers and mild winters (Csb according to Köppen Adamakopoulos & al. 1995), whereas the bio-climate has the characteristics of the mild meso-Mediterranean type with a dry period which varies from 40 to 75 days ($40 < x < 75$). According to Mavrommatis (1980) the area belongs to the sub-humid bio-climatic level with harsh winters.

The vegetation of the investigated area appears in the form of mosaics with forests, meadows and agricultural land. These, in combination with the other natural characteristics, constitute ecosystems of particular significance. The forest vegetation mostly belongs to the thermophilous deciduous oak woods sub-zone (*Quercion confertae*) of the sub-Mediterranean zone (*Quercetalia pubescentis*) (Dafis 1973; Athanasiadis 1986). It is composed of pine forests, where *Pinus halepensis* subsp. *brutia* dominates, while occasionally *Pinus nigra* subsp. *nigra* var. *caramanica* occur within a small area. Extensive clumps of oak forests consisting mainly of *Quercus frainetto* and to a lesser extent of *Quercus petraea* subsp. *medwediewii*, *Quercus cerris* and *Quercus pubescens*, also occurs in the investigated area. The formation of evergreen scrub appears in the area, particularly in the southern section, and includes species such as *Arbutus andrachne, Phillyrea latifolia, Erica arborea* and *Juniperus oxycedrus* subsp. *oxycedrus.* In the streams of the area, the riparian vegetation is, predominantly composed by *Alnus glutinosa* galleries accompanied by *Salix alba* and *Fraxinus angustifolia*.

Material and methods

The study is based on collections and fieldwork during the years 1999-2000. The collection sites are the same as those appearing in the research project “Identification and description of the types of habitats in areas of interest for nature conservation” (Natura 2000 Network). In addition, for the completion of the list, certain literature references were used (Kamari 1995; Phitos & al. 1995; Kati & al. 2000). The collected material is deposited in the herbarium of the Laboratory of Forest Botany and Geobotany, Aristotle University of Thessaloniki (TAUF).

The nomenclature follows Strid & Tan (1997 - 2002) Greuter & al. (1984 – 1989), Strid (1986), Strid & Tan (1991), Tutin & al. (1968 - 1980, 1993). Life-form classification follows the Raunkier system and was based mainly on the works of Garcke (1972) and Pignatti (1982). For the chorological types Pignatti’s (1982) classification in combination

with Tutin & al. (1968 - 1980, 1993) and Davis (1965 - 1988) were used. Families, genera and species are arranged alphabetically in the list of taxa.

Collection localities provided in coordinates (N / E), as well as concise notes on species habitats are given below. The collection sites are coded with numbers corresponding to the list of taxa as well as to the map (Fig. 2).

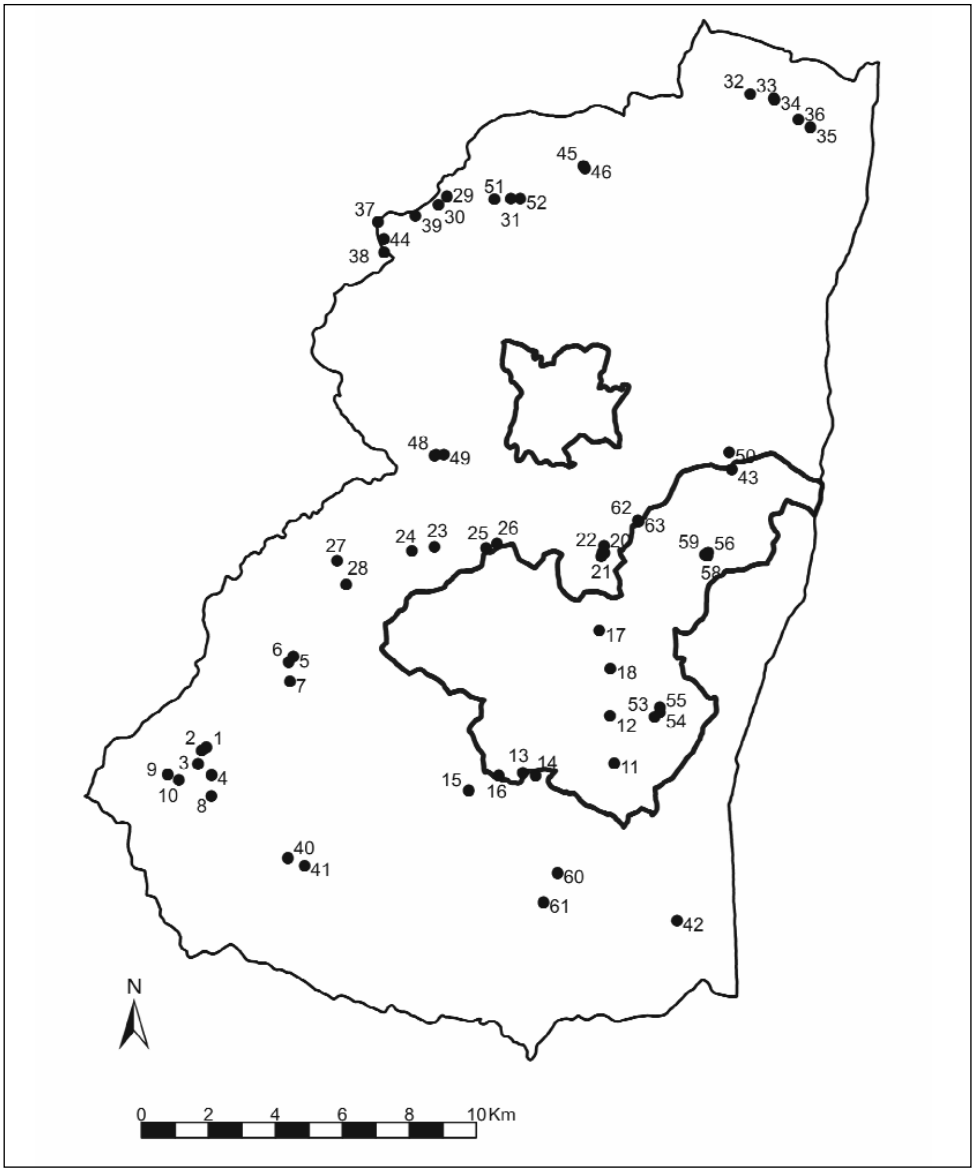

Fig 2. Collecting localities (Numbers refer to study areas).

Collection sites

1: 41º 03′ 53′′ / 26 º 04′ 19′′ **-** 2.7 Km S of the old village of Pessani – 250 m a.s.l. (= above sea level) – 25/5/99.
2: 41 º 03′ 50′′ / 26 º 04′ 13′′ -2.7 Km S of the old village of Pessani – 250 m a.s.l. – 25/5/99.
3: 41 º 03′ 37′′ / 24 º 04′ 08′′ -3.3 Km S of the old village of Pessani – 250 m a.s.l. - 25/5/99.
4: 41 º 03′ 26′′ / 26 º 04′ 25′′ - 3.5 Km S of the old village of Pessani – 250 m a.s.l. – 25/5/99.
5: 41 º 05′ 19′′ / 26 º 06′ 13′′ - 1.7 Km E of the old village of Pessani – 250 m a.s.l. – 26/5/99.
6: 41 º 05′ 14′′ / 26 º 06′ 07′′ -1.5 Km E of the old village of Pessani – 380 m a.s.l. – 26/5/99.
7: 41 º 04′55′′ / 26 º 06′ 08′′ - 1.7 Km E of the old village of Pessani – 380 m a.s.l. – 26/5/99.
8: 41 º 03′ 06′′ / 26 º 04′ 24′′ - 4.1 Km S of the old village of Pessani – 210 m a.s.l. – 26/5/99.
9: 41 º 03′ 28′′ / 26 º 03′ 29′′ - 3.9 Km S of the old village of Pessani – 220 m a.s.l. – 28/5/99.
10: 41 º 03′ 22′′ / 26 º 03′ 43′′ - 3.9 Km S of the old village of Pessani – 255 m a.s.l. – 28/5/99.
1-10: Low, evergreen, usually closed scrub formations dominated by *Arbutus andrachne, Phillyrea latifolia, Cistus* spp. and *Erica arborea* on rocky metamorphic substrate.

11: 41 º 03′ 28′′ / 26 º 13′ 00′′ - 4.3 Km NE of the village of Lefkimi - 150 m a.s.l. – 29/5/99.
12: 41 º 04′ 14′′ / 26 º 12′ 56′′ - 4.6 Km W of the village of Lira - 150 m a.s.l. – 29/5/99.
13: 41 º 03′ 21′′ / 26 º 11′ 03′′ - 3.8 Km N of the village of Lefkimi - 150 m a.s.l. – 29/5/99.
14: 41 º 03′ 18′′ / 26 º 11′ 19′′ **-** 3.6 Km N of the village of Lefkimi - 175 m a.s.l. – 29/5/99.
15: 41 º 03′ 05′′ / 26 º 09′ 53′′ **-** 4.1 Km NW of the village of Lefkimi - 170 m a.s.l. – 29/5/99.
16: 41 º 03′ 19′′ / 26 º 10′ 32′′ - 3.9 Km N of the village of Lefkimi - 245 m a.s.l. – 29/5/99.
17: 41 º 05′ 37′′ / 26 º 12′ 45′′ **-** 3.9 Km S of the village of Dadia - 230 m a.s.l. – 29/5/99.
18: 41 º 05′ 00′′ / 26 º 12′ 58′′ **-** 4.8 Km NW of the village of Lira - 215 m a.s.l. – 29/5/99.
11-18: *Pinus halepensis* subsp. *brutia* forest on acid sandy soils, mostly poor in nutrients with sparsely developed herbaceous layer.

19: 41 º 06′ 52′′ / 26 º 12′ 54′′ - 1.7 Km S of the village of Dadia - 150 m a.s.l. – 22/6/99.
20: 41 º 06′ 59′′ / 26 º 12′ 54′′ **-** 1.5 Km S of the village of Dadia - 150 m a.s.l. – 22/6/99.
21: 41 º 06′ 49′′ / 26 º 12′ 50′′**-** 1.8 Km S of the village of Dadia - 150 m a.s.l. – 22/6/99.
22: 41 º 06′ 53′′ / 26 º 12′ 52′′ **-** 1.7 Km S of the village of Dadia - 110 m a.s.l. – 22/6/99.

23: 41 º 07′ 02′′ / 26 º 09′ 17′′ - 0.8 Km S of the recreational area of Katrantzides - 245 m a.s.l. – 28/5/99.

19-23: Pure *Pinus nigra* subsp. *nigra* var. *caramanica* stands occupying plane sites, on siliceous soils. Canopy generally open, with closely developed herbaceous layer.

24: 41 º 06′ 59′′ / 26 º 08′ 49′′ - 0.8 Km S of the recreational area of Katrantzides - 210 m a.s.l. – 28/5/99.

25: 41 º 07′ 00′′ / 26 º 10′ 23′′ - 2.1 Km SE of the recreational area of Katrantzides - 215 m a.s.l. – 28/5/99.

26: 41 º 07′ 04′′ / 26 º 10′ 37′′ **-** 2.4 Km SE of the recreational area of Katrantzides - 215 m a.s.l. – 28/5/99.

27: 41 º 06′ 51′′ / 26 º 07′ 12′′ **-** 2.7 Km SW of the recreational area of Katrantzides - 325 m a.s.l. – 28/5/99.

28: 41 º 06′ 28′′ / 26 º 07′ 23′′ - 2.8 Km SW of the recreational area of Katrantzides - 325 m a.s.l. – 28/5/99.

24-28: Mixed *Quercus frainetto* - *Pinus halepensis* subsp. *brutia* forests that occupy more mesic biotopes than pure pinewoods. Multistorey structure and well developed shrub and herbaceous layers.

29: 41 º 12′ 42′′ / 26 º 09′ 44′′ **-** 3.4 Km W of the village of Giannouli - 530 m a.s.l. – 27/5/99.

30: 41 º 12′ 34′′ / 26 º 09′ 33′′ - 3.6 Km W of the village of Giannouli- 550 m a.s.l. – 27/5/99.

31: 41 º 12′ 38′′ / 26 º 10′ 45′′ - 1.9 Km W of the village of Giannouli - 175 m a.s.l. – 27/5/99.

32: 41 º 14′ 14′′ / 26 º 16′ 16 ′′ - 5.4 Km NW of the town of Soufli - 180 m a.s.l. – 27/5/99.

33: 41 º 14′ 09′′ / 26 º 16′ 46′′ - 4.9 Km NW of the town of Soufli - 250 m a.s.l. – 27/5/99.

34: 41 º 14′ 08′′ / 26 º 16′ 47′′ - 4.8 Km NW of the town of Soufli - 240 m a.s.l. – 27/5/99.

35: 41 º 13′ 40′′ / 26 º 17′ 32′′ - 3.8 Km N of the town of Soufli - 220 m a.s.l. – 27/5/99.

36: 41 º 13′ 48′′ / 26 º 17′ 17′′ - 4.1 Km N of the town of Soufli - 215 m a.s.l. – 27/5/99.

37: 41 º 12′ 19′′ / 26 º 08′ 15′′ - 5.5 Km W of the village of Giannouli **-**590 m a.s.l. – 21/6/99.

38: 41 º 12′ 04′′ / 26 º 08′ 00′′ - 5.5 Km SW of the village of Giannouli - 580 m a.s.l. – 21/6/99.

39: 41 º 12′ 24′′ / 26 º 09′ 03′′ - 4.4 Km W of the village of Giannouli - 550 m a.s.l. – 21/6/99.

40: 41 º 02′ 04′′ / 26 º 06′ 00′′ - 8.1 Km W of the village of Lefkimi - 150 m a.s.l. - 22/6/99.

41: 41 º 01′ 56′′ / 26 º 06′ 21′′ - 7.6 Km W of the village of Lefkimi - 140 m a.s.l. – 22/6/99.

42: 41 º 00′ 54′′ / 26 º 14′ 13′′ - 1.9 Km SW of the village of Provatonas - 95 m a.s.l. – 22/6/99.

43: 41 º 08′ 10′′ / 26 º 15′ 40′′ - 3.2 Km NE of the village of Dadia - 140 m a.s.l. – 21/6/99.

44: 41 º 12′ 02′′ / 26 º 08′ 22′′ - 5.4 Km SW of the village of Giannouli - 450 m a.s.l. – 21/6/99.

29-44: Pure coppice oak forests of *Quercus frainetto* and exceptionally *Quercus petraea* subsp. *medwediewii* (site 44). Generally low-height young stands that occupy dry to mesic sites on granite and gneiss.

45: 41 º 13´ 08´´ / 26 º 12´ 40´´ - 1.1 Km SW of the village of Giannouli - 195 m a.s.l. – 21/6/99.
46: 41 º 13´ 06´´ / 26 º 12´ 42´´ - 1.1 Km SW of the village of Giannouli - 195 m a.s.l. – 21/6/99.
47: 41 º 08´ 32´´ / 26 º 09´ 22´´ - 4.1 Km SE of the village of Kotronia - 380 m a.s.l. – 22/6/99.
48: 41 º 08´ 33´´ / 26 º 09´ 11´´ - 4.0 Km SE of the village of Kotronia - 380 m a.s.l. – 22/6/99.
49: 41 º 08´ 32´´ / 26 º 09´ 32´´ - 4.3 Km SE of the village of Kotronia - 385 m a.s.l. – 22/6/99.
50: 41 º 08´ 27´´ / 26 º 15´ 37´´ - 3.3 Km NE of the village of Dadia - 150 m a.s.l. – 22/6/99.
45-50: *Alnus glutinosa, Fraxinus angustifolia* and *Salix alba* galleries developing on alluvial deposits along streams and riversides.

51: 41 º 12´ 38´´ / 26 º 11´ 06´´ - 1.5 Km W of the village of Giannouli - 240 m a.s.l. - 17/5/00.
52: 41 º 12´ 38´´ / 26 º 11´ 18´´ - 1.2 Km W of the village of Giannouli - 235 m a.s.l. – 17/5/00.
51-52: Low scrub dominated by *Juniperus oxycedrus* subsp. *oxycedrus.*

53: 41 º 04´ 12´´ / 26 º 13´ 53´´ - 3.3 Km W of the village of Lira - 115 m a.s.l. – 18/5/00.
54: 41 º 04´ 16´´ / 26 º 14´ 00´´ - 3.2 Km W of the village of Lira - 115 m a.s.l. – 18/5/00.
55: 41 º 04´ 21´´ / 26 º 14´ 00´´ - 3.1 Km W of the village of Lira - 115 m a.s.l. – 18/5/00.
53-55: Mesic grassland.

56: 41 º 06´ 50´´/ 26 º 15´ 07´´ - 2.8 Km SE of the village of Dadia - 160 m a.s.l. – 17/5/00.
57: 41 º 06´ 48´´ / 26 º 15´ 06´´ - 2.9 Km SE of the village of Dadia - 180 m a.s.l. – 17/5/00.
58: 41 º 06´ 47´´ / 26 º 15´ 06´´ - 2.9 Km SE of the village of Dadia - 170 m a.s.l. – 17/5/00.
59: 41 º 06´ 48´´ / 26 º 15´ 03´´ - 2.8 Km SE of the village of Dadia - 160 m a.s.l. – 17/5/00.
60: 41 º 01´ 43´´ / 26 º 11´ 44´´ - 0.7 Km N of the village of Lefkimi - 280 m a.s.l. – 19/5/00.
61: 41 º 01´ 15´´ / 26 º 11´ 25´´ - 0.5 Km S of the village of Lefkimi - 220 m a.s.l. – 19/5/00.
62: 41 º 07´ 23´´ / 26 º 13´ 38´´ - 0.6 Km S of the village of Dadia - 150 m a.s.l. – 19/5/00.
63: 41 º 07´ 22´´ / 26 º 13´ 39´´ - 0.7 Km S of the village of Dadia - 150 m a.s.l. – 19/5/00.
56-63: Dry, rocky grassland.

Floristic catalogue

PTERIDOPHYTA

EQUISETACEAE
Equisetum arvense L. – G rhiz, Circumbor. – 45, 47

POLYPODIACEAE
Asplenium adiantum-nigrum L. – H ros, Paleotemp. - 40
Asplenium onopteris L. – H ros, Subtrop. – 32, 35
Asplenium trichomanes L. subsp. *trichomanes* – H ros, Cosmop. - 3
Notholaena marantae (L.) Desv. subsp. *marantae* – H ros, Paleosubtrop. – 3, 6
Pteridium aquilinum (L.) Kuhn – G rhiz, Cosmopol. – 7, 21, 24, 26

GYMNOSPERMAE

CUPRESSACEAE
Juniperus oxycedrus L. subsp. *oxycedrus* – P caesp/P scap, Euri-Medit – Common in forest understorey and scrub

PINACEAE
Pinus halepensis subsp. *brutia* (Ten.) Holmboe – P scap, NE Medit – Abundant, consisting pure and mixed stands
Pinus nigra subsp. *nigra* var. *caramanica* (Bosc ex Loudon) Rehder – P scap, E-Medit – Locally dominant consisting a few small stands, scattered elsewhere

DICOTYLEDONEAE

ACERACEAE
Acer campestre L. – P scap, Europeo-Caucas. – 37, 42, 43
Acer monspessulanum L. – P scap, Euri-Medit. – 23, 25, 36, 40, 49
Acer platanoides L. – P scap, Europeo-Caucas. - 26
Acer tataricum L. – P scap, Pontic-Pannonian - 42

ANACARDIACEAE
Cotinus coggygria Scop. – P caesp, S-Europ.-Turan. - 26
Pistacia terebinthus L. subsp. *terebinthus* – P caesp, Euri-Medit. – 3, 4, 7, 8, 10
Rhus coriaria L. – P caesp, S-Medit. - 4

ARALIACEAE
Hedera helix L. subsp. *helix* – P lian, Submedit.-Subatl. – 16, 26, 40, 45 - 49

ARISTOLOCHIACEAE
Aristolochia clematitis L. – G rad, Submedit. – 47
Aristolochia rotunda L. subsp. *rotunda* – G bulb, Euri–Medit. – 9, 32, 45, 46, 49

Asclepiadaceae
Periploca graeca L. – P lian, NE-Medit. – 3, 13, 45, 46, 49, 50

Betulaceae
Alnus glutinosa (L.) Gaertner – P scap, Paleotemp. – 45, 46 - 50
Carpinus orientalis Miller – P caesp, Pontico. – Common in forest understorey
Ostrya carpinifolia Scop. – P caesp, Circumbor. - 21, 34

Boraginaceae
Alkanna tinctoria Tausch subsp. *tinctoria* – H scap, Steno-Medit. – 50
Anchusa officinalis L. – H scap, Pontica. – 60, 61
Myosotis sicula Guss. – T scap, N-Medit. – 53, 54
Myosotis sylvatica Hoffm. – H scap, N-Medit. - 51
Onosma heterophylla Griseb. aggr. – Ch suffr, Balkan. - 10
Symphytum tuberosum L. – G rhiz, SE-Europ. - 37

Campanulaceae
Campanula cervicaria L. – H scap, Europ. – 1- 6, 8, 9
Campanula glomerata L. subsp. *glomerata* – H scap, Euras. – 17, 19, 38
Campanula lingulata Waldst. & Kit – H bienn, SE-Europ. – 10, 12, 25 - 28
Campanula persicifolia L. subsp. *persicifolia* – H scap, Eurasiat. – 19, 25, 26, 28, 29, 32-37, 39 - 41, 44
Campanula rapunculus L. – H bienn, Paleotemp. – 7, 8
Legousia falcata (Ten.) Janchen – T scap, Steno-Medit. – 8
Legousia speculum-veneris (L.) Chaix – T scap, Euri-Medit. – 60, 62

Caprifoliaceae
Lonicera implexa Aiton – P lian, Steno-Medit. – 5, 7
Sambucus ebulus L. – G rhiz, Euri-Medit. - 50

Caryophyllaceae
Cerastium brachypetalum subsp. *roeseri* (Boiss. & Heldr.) Nyman – T scap, Euri-Medit. – 35
Cerastium brachypetalum subsp. *tenoreanum* (Ser.) Soó – T scap, SE-Europ. - 51
Dianthus cruentus Griseb. – H caesp, Balkan. – 6, 8, 11, 37, 38
Minuartia greuteriana Kamari – H caesp, Endem. – (Kamari, 1995)
Moenchia mantica (L.) Bartl. – T scap, N-Medit. – 34, 52, 56, 61
Petrorhagia prolifera (L.) P.W. Ball & Heywood – T scap, Euri-Medit. - 58
Scleranthus perennis L. subsp. *perennis* – H caesp, Eurosib. – 52, 57, 60, 62
Silene atropurpurea (Griseb.) Greuter & Burdet – H caesp, SE-Balkan. – 9, 40, 41
Silene conica subsp. *subconica* (Friv.) Gavioli = *Silene subconica* Friv. – T scap, Paleotemp. – 60
Silene coronaria (L.) Clairv. – H scap, Medit-Turan. – 32, 37
Silene italica (L.) Pers. subsp. *italica* – H ros, Euri-Medit – 11, 12, 15, 20, 32, 39, 40 - 43
Silene viridiflora L. – H ros, Sudeurop-Centroasiat. – 44

Silene vulgaris subsp. *bosniaca* (G. Beck) Greuter, Burdet & Long – H scap, E-Medit. – 47, 49
Stellaria holostea L. – Ch scap, Europeo-Caucas. – 56, 57, 59

Celastraceae
Evonymus europaeus L. – P caesp, Eurasiat. – 26

Cistaceae
Cistus creticus L. subsp. *creticus* – NP, E-Steno-Medit. – In scrub and forest, common
Cistus laurifolius L. – P caesp, Steno-Medit. - 19
Cistus salviifolius L. – NP, Steno-Medit. – 1, 2, 4, 8, 11, 28, 31
Fumana ericoides (Cav.) Gand. – Ch suffr, Steno-Medit. - 62
Helianthemum nummularium (L.) Miller subsp. *nummularium* – Ch suffr, Europeo-Caucas. – 52, 56
Tuberaria guttata (L.) Fourr. – T scap, - Euri-Medit. – 11, 51, 52, 56 - 59, 62, 63

Compositae
Achillea grandifolia Friv. – H scap, Balkan. – 36, 37, 40 - 42
Achillea millefolium L. – H scap, Eurosib. – 17, 21
Anthemis arvensis L. subsp. *arvensis* – T scap, Medit.-Atl. – 51, 52, 56, 59 - 63
Anthemis tinctoria subsp. *parnassica* (Boiss. & Heldr.) Franzén – H scap, Balkan.-An. – 34, 35, 37, 39 - 41, 43, 44
Carlina frigida Boiss. & Heldr. – H scap, Balkan. – 34
Centaurea cyanus L. – T scap, Subcosmop. – 3, 6, 9, 11, 12, 33 - 35, 56, 58, 60, 61
Centaurea napulifera subsp. *pseudaxillaris* (Stefanov & Georgief) Dostál – H scap, Balkan. – 37
Eupatorium cannabinum L. – H scap, Paleotemp. – 47, 49
Filago vulgaris Lam. – T scap, Paleotemp. - 6
Hieracium bauhini Schultes ex Besser – H scap, SE-Europ.-Siber. – 5, 6, 8, 10, 12, 13, 17, 25, 28, 33, 37, 39 - 41, 51, 52
Hieracium cymosum subsp. *heldreichianum* Nägeli & Peter – H scap, Balkan. – 27, 38, 43, 52, 53, 56, 57
Hieracium hoppeanum subsp. *testimoniale* Nägeli & Peter – H ros, NE-Medit. – 19, 20, 37, 39, 41
Hieracium latifolium Froelich ex Link aggr. – H scap, Europ.-Caucas. – 40, 44
Hieracium murorum L. – H scap, Europ. – 24 - 29, 30, 32, 33, 41, 44
Hieracium olympicum Boiss. – H scap, E-Balkan. – 44
Hieracium piloselloides Vill. – H scap, Europeo-Caucas. – 20, 21 - 23, 41
Inula salicina subsp. *aspera* (Poiret) Hayek – H scap, Europeo-Caucas. - 37, 42, 43, 47
Lapsana communis L. – T scap, Paleotemp. – 7, 13, 15, 28, 29, 31, 32, 34, 36 - 39, 41, 44
Leontodon cichoriaceus (Ten.) Sanguinetti – H ros, Medit-Mont. – 20, 43, 52
Leontodon hispidus L. subsp. *hispidus* – H ros, Europeo-Caucas. – 58, 62
Mycelis muralis (L.) Dumort. – H scap, Europeo-Caucas. – 30, 34, 36, 38, 44
Pulicaria dysenterica (L.) Bernh. – H scap, Euri-Medit. – 45, 46, 48
Scorzonera parviflora Jacq. – H scap, Centroeurop. – 1, 2, 3, 5, 7, 9, 10

Convolvulaceae
Calystegia sepium (L.) R. Br. subsp. *sepium* - H scand, Paleotemp. – 50
Convolvulus cantabrica L. – H scap, Euri-Medit. – 4, 11

Cornaceae
Cornus mas L. - P scap, SE-Europ.-Pont. – 13, 16, 25, 26, 40 - 42, 49

Crassulaceae
Sedum amplexicaule subsp. *tenuifolium* (Sm.) Greuter & Burdet – Ch succ, E-Medit. – 3, 6, 9, 10
Sedum cepaea L. – T scap, S-Europ. – 41, 42

Cruciferae
Alyssum chalcidicum Janka – H caesp, S-Balkan. - 60
Alyssum corymbosoides Formánek – H caesp, S-Balkan. – 6, 8, 32 - 34
Alyssum murale Waldst. & Kit. – Ch suffr, E-Medit. – 60, 63
Erysimum drenowskii Degen – H scap/caesp, S-Balkan. – 60, 61
Rorippa pyrenaica (All.) Reichenb. – H scap, S-Europ. - 53

Dipsacaceae
Knautia ambigua Boiss. & Orph. – H scap, Balkan. - 35
Knautia macedonica Griseb. – H scap, Balkan. – 30, 46
Knautia orientalis L. – T scap, SE-Balkan. – 1, 3
Scabiosa triniifolia Friv. – H scap, Balkan. – 17, 19, 20, 22

Ericaceae
Arbutus andrachne L. – P caesp, E-Steno-Medit. – Dominant in evergreen scrubland
Erica arborea L. – P caesp, Steno-Medit. – Abundant in evergreen scrubland and *Juniperus* formations

Euphorbiaceae
Euphorbia amygdaloides L. subsp. *amygdaloides* – H scap, Submedit. – 23, 24, 26, 29, 30, 31, 37, 40, 41, 44, 47
Euphorbia platyphyllos L. – T scap, Euri-Medit. - 58

Fagaceae
Quercus cerris L. – P scap, Submedit. – 17, 22, 37
Quercus frainetto Ten. – P scap, SE-Europ. – Dominant forest species, forming pure and mixed stands
Quercus petraea subsp. *medwediewii* (A. Camus) Menitsky – P scap, SE-Europ. – 21, 25, 26, 37 - 39, 41, 44
Quercus pubescens Willd. – P scap, SE-Europ. – Common in oakwoods

Gentianaceae
Centaurium erythraea Raf. subsp. *erythraea* – T scap, Paleotemp. – 20, 38, 47

Geraniaceae
Erodium cicutarium (L.) L'Hér. – T caesp, Euri-Medit. – 51, 52, 57, 59, 61, 63
Geranium lucidum L. – T scap, Euri-Medit. – 35, 36
Geranium molle L. – T scap, Subcosmop. – 51
Geranium robertianum L. – T scap, Euri-Medit. – 28,
Geranium sanguineum L. – G rhiz, Euras. – 1, 7, 9, 14, 21, 24, 45

Guttiferae
Hypericum aucheri Jaub. & Spach – H scap, SE-Balkan. – 2, 56, 57, 59, 62
Hypericum cerastoides (Spach) N. K. B. Robson – H caesp, Balkan. – 1, 14, 22
Hypericum olympicum L. – H scap, Balkan.-An. – 5, 7, 11 - 13, 19, 20, 25, 27, 38
Hypericum perforatum L. – H scap, Subcosmop. – 37, 40, 47
Hypericum rochelii Grisb. & Schenk – H caesp, Balkan – 6, 8, 11, 14, 19, 24, 25, 26, 34, 35
Hypericum rumeliacum Boiss. – H caesp, Balkan. – 1, 3, 4

Labiatae
Ajuga genevensis L. – H scap, Subpontica-Substeppica – 22, 53, 54
Ajuga laxmannii (L.) Bentham – H scap, Submedit. - 5
Ajuga reptans L. – H rept, Europ.-Caucas. - 22
Hyssopus officinalis L. subsp. *officinalis* – Ch sufrr, Eurasiat. - 48
Lycopus europaeus L. – H scap, Paleotemp. – 45, 47, 48
Marrubium vulgare L. – H scap, Euri.-Medit.-Sudsiber. – 61
Melissa officinalis L. – H scap, Euri-Medit. – 49
Mentha spicata L. – H scap, Euri-Medit. – 46
Origanum vulgare subsp. *hirtum* (Link) Ietswaart – H scap, Euras. – 8, 12, 16, 19, 20 - 22, 24, 27, 38, 51
Prunella laciniata (L.) L. – H scap, Euri-Medit. – 19, 20
Prunella vulgaris L. – H scap, Circumbor. – 24, 45 - 48
Satureja pilosa Velen. – Ch sufrr, SE-Balkan. – 56, 57, 60, 63
Satureja vulgaris (L.) Fritsch – H scap, Circumbor. – 6, 11, 25
Stachys cretica subsp. *bulgarica* Reich. – H scap, Balkan. - 61
Stachys germanica L. subsp. *germanica* – H scap, Euri-Medit. – 12, 47
Teucrium capitatum L. – Ch sufrr, Steno-Medit. – 61
Teucrium chamaedrys L. – Ch sufrr, Euri-Medit. – 1, 2, 8, 13 - 16, 22 - 24, 27, 28, 31, 37
Thymus atticus Èelak. – Ch rept, NE-Stenomedit. – 8, 19, 20, 22
Thymus comptus Friv. – Ch rept, E-Balkan. – 60, 61
Thymus longedentatus (Degen & Urum.) Ronniger - Ch rept, E-Balkan. – 34
Thymus longicaulis C. Presl subsp. *longicaulis* – Ch rept, Euri-Medit. – 2
Thymus longicaulis subsp. *chaubardii* (Reichenb. fil.) Jalas - Ch rept, Balkan-An. – 6, 9, 19, 23, 26, 29, 30, 33, 37, 62, 63

Leguminosae
Astragalus glycyphyllos L. aggr. – H rept, Europ-Subsiber. – 28
Bituminaria bituminosa (L.) Stirton – H scap, Euri-Medit. – 13

Chamaecytisus triflorus (Lam.) Skalická – Ch suffr, Eurosib. – 1, 2, 9, 10, 24, 26, 27, 29, 30, 34, 39, 40, 41, 57
Colutea arborescens L. – P caesp, Euri-Medit. – 8
Cytisus agnipilus Velen. – Ch suffr, Balkan. – 31
Dorycnium hirsutum (L.) Ser. – Ch suffr, Euri-Medit. – 15, 24, 28, 30
Dorycnium pentaphyllum subsp. *herbaceum* (Vill.) Rouy - Ch suffr, SE-Europ.-Pont. – 19, 38, 40, 52
Genista carinalis Griseb. – Ch suffr, E-Balkan. – 1, 10, 12, 17, 25, 30, 31, 38 - 41, 43, 52
Genista sericea Wulfen – Ch suffr, Submedit. – 56, 57, 59, 60, 62, 63
Genista tinctoria L. – Ch suffr, Eurasiat. - 19
Lathyrus aphaca L. - T scap, Euri-Medit. – 5, 13, 27, 35
Lathyrus digitatus (MB.) Fiori – G rhiz, Medit.-Pont. – 2, 3, 9
Lathyrus laxiflorus (Desf.) O. Kuntze – H scap, Medit.-Pont. – 13, 15, 16, 23 - 25, 28, 30, 31, 36, 41, 42
Lathyrus niger (L.) Bernh. subsp. *niger* – G rhiz, Europeo-Caucas. – 24, 26, 32, 40 - 42
Lotus corniculatus L. – H scap, Cosmop. – 57
Melilotus officinalis (L.) Lam. – H bienn, Subcosmop. - 45
Ononis spinosa subsp. *leiosperma* (Boiss.) Širj – Ch suffr, Euri-Medit. – 48
Ornithopus compressus L. – T scap, Euri-Medit. – 11
Trifolium angustifolium L. – T scap, Euri-Medit. – 3, 5, 6, 8, 11, 34 - 36
Trifolium arvense L. – T scap, Paleotemp. – 4, 8, 9, 17, 20, 41, 55 - 57, 59, 62, 63
Trifolium campestre Schreber – T scap, W-Paleotemp. – Common in evergreen scrub and grassland
Trifolium cherleri L. – T scap, Euri-Medit. – 58, 60
Trifolium heldreichianum (Gibelli & Belli) Hausskn. – G rhiz, Balkan. – 30, 39
Trifolium hybridum L. – H caesp, S-Europ. – 26, 35
Trifolium lappaceum L. – T scap, Euri-Medit. – 34
Trifolium medium L. – G rhiz, Eurasiat. – 23, 25, 26, 28, 34, 36
Trifolium ochroleucon Hudson – H caesp, Pontico-Eurimedit. – 21, 24, 25, 27, 37, 41
Trifolium pignantii Fauché & Chaub. – H scap, Balkan. - 32
Trifolium repens L. – H rept, Subcosmop. – 53 - 55
Trifolium stellatum L. – T scap, Euri-Medit. – 60, 61
Vicia grandiflora Scop. – H scap, SE-Europ.-Pont. – 35, 37
Vicia sativa L. T scap, Subcosmop. - 1
Vicia tenuifolia subsp. *dalmatica* (A. Kerner) Greuter – H scap, SE-Europ. – 26, 37

Linaceae
Linum elegans Boiss. – Ch suffr, Balkan. – 52
Linum hologynum Reichenb. – H scap, Balkan. – 53, 54
Linum trigynum L. – T scap, Euri-Medit. – 1, 3, 4

Loranthaceae
Loranthus europaeus Jacq. – P ep, Europ.-Caucas. – 2, 39

Lythraceae
Lythrum salicaria L. – H scap, Subcosmop. – 47 - 49

Oleaceae
Fraxinus angustifolia Vahl – P scap, SE-Europ.-Pont. – 47 - 50
Fraxinus ornus L. – P scap, Euri-Medit.-Pont. – Common in evergreen scrub and forest understorey
Jasminum fruticans L. – P caesp, E-Medit. – 3 - 5, 7 - 9, 16, 42
Ligustrum vulgare L. – NP, Europeo-W-Asiat. – 42, 46
Phillyrea latifolia L. – P caesp, Steno-Medit. – Abundant in evergreen scrub, scattered in forest understorey

Onagraceae
Epilobium lanceolatum Sebastiani & Mauri – H scap, W-Europ. – 49

Orobanchaceae
Orobanche amethystea Thuill. subsp. *amethystea* – T par, Submedit.-Subatl. - 3

Plantaginaceae
Plantago arenaria Waldst. & Kit. – T scap, SE-Europ. – 59
Plantago major L. subsp. *major* – H ros, Subcosmop. – 45, 47
Plantago media L. – H ros, Eurasiat. - 60

Polygonaceae
Rumex acetosella subsp. *acetoselloides* (Balansa) den Nijs – H scap, Europ. – 51, 52, 57, 58, 60

Primulaceae
Lysimachia nummularia L. – H scap, Europeo-Caucas. – 47
Lysimachia punctata L. H scap, SE-Europ.-Pont. – 31, 37, 45 - 49

Rafflesaceae
Cytinus hypocistis (L.) L. G par, Medit.-Macarones. - 1

Ranunculaceae
Clematis vitalba L. – P lian, SE-Europ.-Caucas. – 45 - 50
Ranunculus constantinopolitanus (DC.) d' Urv. – H scap, E-Balkan.-Pont. – 29, 32, 35, 36, 40, 45, 46
Ranunculus psilostachys Griseb. – H scap, Balkan. – 13
Thalictrum minus subsp. *saxatile* DC. ex Ces. – H scap, Submedit.-Subatl. - 7

Rhamnaceae
Paliurus spina-christi Miller – P caesp, SE-Europ.-Pont. – 1, 16, 42, 46, 60, 61

Rosaceae
Agrimonia eupatoria L. subsp. *eupatoria* – H scap, Subcosmop – 16, 28, 48
Aremonia agrimonoides (L.) DC. subsp. *agrimonoides* – H ros, NE-Medit. – 14, 16, 23, 25, 30, 31, 36, 45, 48

Crataegus monogyna Jacq. subsp. *monogyna* – P caesp, Paleotemp. – 16, 21, 23, 24, 43
Eriolobus trilobatus (Poiret) Roemer (taxonomy follows Browicz 1982) – P scap, E-Medit. – (Korakis & al. 2006)
Filipendula vulgaris Moench – H scap, Centroeurop-S-Siber. – 36, 53, 54
Fragaria vesca L. – H rept, Eurosib. - 29
Geum urbanum L. – H scap, Circumbor. – 45 - 47
Potentilla detommasii Ten. – H scap, SE-Europ. – 2, 6
Potentilla micrantha Ramond ex DC. – H ros, Euri-Medit. – 14, 24, 25, 28, 30, 32, 35, 40, 43, 46, 47, 49
Potentilla recta L. – H scap, NE-Medit-Pont. – 9, 20, 51, 52, 55, 60, 63
Potentilla reptans L. – H ros, Paleotemp. – 45, 47, 48
Prunus spinosa L. – P caesp, Europ.-Caucas. – 52
Pyrus spinosa Forsskål – P caesp, Steno-Medit. – 8, 42
Rosa agrestis Savi – P caesp, Euri-Medit. – 46, 47, 49
Rosa canina L. – P caesp, Paleotemp. – 13, 14, 16, 21, 27, 31
Rosa gallica L. – NP, Centroeurop.-Pont. – 24, 28, 30, 42
Rosa pendulina L. – NP, Sudeurop. – 42
Rosa pulverulenta Bieb. – P caesp, Medit.-Mont. – 51, 52
Rubus canescens DC. – NP, N-Medit. – Common in the understorey of *Quercus*, *Alnus* and *Pinus* stands
Rubus sanctus Schreber agg. – NP, Euri-Medit. - 50
Sanguisorba minor subsp. *muricata* (Spach) Briq. – H scap, Subcosmop. – 5, 14, 19, 20, 22, 51, 52, 55
Sorbus domestica L. – P scap, Euri-Medit. – 20, 21, 25, 26, 28, 31, 35 - 37, 41
Sorbus torminalis (L.) Crantz – P scap, Paleotemp. – 5, 23, 24, 26, 28, 40, 42, 44, 49

Rubiaceae
Asperula rumelica Boiss. – H scap, SE-Europ. – 20
Crucianella angustifolia L. – T scap, Euri-Medit. – 17
Cruciata laevipes Opiz – H scap, Eurasiat. – 45
Galium aparine L. – T scap, Eurasiat. – 26, 58
Galium lucidum All. – H scap, Euri-Medit. – 23
Galium mollugo L. agg. – H scap, Euri-Medit. – Common in the scrub and forest
Galium verum L. subsp. *verum* – H scap, Eurasiat. – 12 -14, 16, 20 - 22, 28, 30, 38, 40, 41, 49
Sherardia arvensis L. – T scap, Subcosmop. – 51, 58

Rutaceae
Dictamnus albus L. – Ch suffr, Europeo-S-Siber. - 9

Salicaceae
Populus alba L. – P scap, Paleotemp. - 50
Populus nigra L. subsp. *nigra* – P scap, Paleotemp. - 50
Salix alba L. – P scap, Paleotemp. – 50
Salix amplexicaulis Bory – NP, NE-Medit. – 50
Salix xanthicola K.I. Chr. – NP, SE-Balkan. – Close to 1 - 4

Santalaceae
Comandra umbellata subsp. *elegans* (Sprengel) Piehl – Ch suffr, E-Medit. - 10

Scrophulariaceae
Digitalis lanata Ehrh. – H scap, Centroeurop-Balkan. – 3, 11, 14
Gratiola officinalis L. – H scap, Circumbor. – 47, 48, 49
Linaria pelisseriana (L.) Miller – T scap, Medit.-Atl. – 51, 56, 58, 59, 63
Scrophularia nodosa L. – H scap, Circumbor. – 4
Verbascum adrianopolitanum Podp. – H bienn, SE-Balkan. – 19
Veronica austriaca L. – H scap, SE-Europ. – 2 - 5, 7, 9, 31
Veronica chamaedrys L. subsp. *chamaedrys* – H scap, Euro-Sib. – 23, 26, 29, 32, 37, 40, 41

Umbelliferae
Daucus carota L. subsp. *carota* – H scap, Subcosmop. – 20, 21, 23, 24, 28, 32, 36, 53 – 55
Eryngium campestre L. – H scap, Euri-Medit. – 51, 52, 58 - 61, 63
Heracleum sphondylium subsp. *ternatum* (Velen.) Brummit – H scap, Balkan. – 50
Laser trilobum (L.) Borkh. H scap, SE-Europ. – 24
Myrrhoides nodosa (L.) Cannon – T scap, Steno-Medit. – 35, 36
Oenanthe pimpinelloides L. – H scap, Medit.-Atl. – 43, 45 - 47
Oenanthe tenuifolia Boiss. & Orph. – H scap, Balkan. – 34, 53, 55
Orlaya daucoides (L.) Greuter – T scap, Steno-Medit. – 1, 8, 35
Orlaya grandiflora (L.) Hoffm. – T scap, Centro-Europ. – 3, 4, 7
Physospermum cornubiense (L.) DC. – H scap, Submedit.-Subatl. – 24, 26, 40
Smyrnium perfoliatum L. – H bienn, Euri-Medit. – 32, 35, 36, 37
Torilis arvensis subsp. *neglecta* (Schultes) Thell. – T scap, Subcosmop. – 50, 60

Urticaceae
Urtica dioica L. – H scap, Subcosmop. – 26, 50
Urtica urens L. – T scap, Subcosmop. – 46

Violaceae
Viola hirta L. – H ros, Europ. – 46
Viola kitaibeliana Schultes – T scap, Medit-Caucas. – 51
Viola reichenbachiana Jordan ex Boreau – H scap, Eurosib. – 14, 21, 39, 42
Viola riviniana Reichenb. – H scap, Europ. – 29

Vitaceae
Vitis vinifera subsp. *sylvestris* (C. C. Gmelin) Hegi – P lian, ? – 46 - 49

Zygophyllaceae
Zygophyllum album L. – NP, Stenomedit. - 26

MONOCOTYLEDONAE

Cyperaceae
Carex acuta L. – G rhiz, Eurasiat. – 47 - 49

Carex flacca subsp. *serrulata* (Biv.) Greuter – G rhiz, Euri-Medit – Common in *Pinus*, *Quercus* and mixed forests
Carex muricata L. – H caesp, Eurasiat. – 40
Carex pendula Hudson – H caesp, Eurasiat. - 50
Cyperus longus L. – G rhiz, Paleotemp - 47

Gramineae
Aegilops neglecta Req. ex Bertol. – T caesp, Medit.-Turan. – 3, 51, 60
Aira elegantissima Schur – T scap, Euri-Medit. – 1, 5, 6, 9, 11, 17, 19, 33, 51, 52, 56, 58, 59, 62, 63
Anthoxanthum odoratum L. – H caesp, Eurasiat. – Common in scrub, open forest and dry grassland
Avena barbata Pott ex Link – T scap, Eurimedit.-Turan. – 3
Avena sterilis L. – T caesp, Eurimedit.-Turan. – 58, 63
Brachypodium distachyon (L.) P. Beauv. – T scap, Steno-Medit.-Turan. - 3
Brachypodium pinnatum (L.) P. Beauv. – H caesp, Eurasiat. – 13, 14, 23, 25, 30, 31, 40, 50
Brachypodium sylvaticum (Hudson) P. Beauv. – H caesp, Paleotemp. – Common in *Pinus* and *Quercus* herb layer
Briza maxima L. – T scap, Paleo-Subtrop. – 1, 3, 5, 8, 9, 11, 19, 31, 33, 34, 56 - 58
Briza media subsp. *elatior* (Sibth. & Sm.) Tutin – H caesp, Euro-Siber. – 10, 17, 38, 44
Briza minor L. – T scap, Subcosmop. - 24
Bromus intermedius Guss. – T scap, Euri-Medit. – 3
Bromus ramosus Hudson – H caesp, Eurasiat. – 24, 37
Bromus rigidus Roth – T scap, Paleo-Subtrop. – 50 bordering fields
Bromus rubens L. – T scap, S-Medit.-Turan. – 60, 61
Bromus sterilis L. – T scap, Eurimedit.-Turan. – 8, 11, 12, 25, 27, 28, 35
Calamagrostis epigejos (L.) Roth – H caesp, Eurosib. – 47, 48
Chrysopogon gryllus (L.) Trin. – H caesp, S-Europ.-S-Siber. – 3, 6, 8, 19, 20, 56, 57, 59, 62, 63
Cynosurus cristatus L. – H caesp, Europ.-Caucas. - 45
Cynosurus echinatus L. – T scap, Euri-Medit. – 3, 11, 19 - 21, 25, 33, 43
Dactylis glomerata L. subsp. *glomerata* H caesp, Paleotemp. – Common in open forest and grassland
Danthonia alpina Vest – H caesp, SE-Europ. - 21
Festuca heterophylla Lam. – H caesp, Europeo-Caucas. – 23, 28, 29, 30, 37, 39, 42
Festuca valesiaca Schleicher ex Gaudin – H caesp, SE-Europ.-Sudsiber. – 10, 30, 34, 37 - 39, 41, 53 – 55
Festuca varia Haenke – H caesp, Sudeurop. – 41, 45, 46, 61, 62
Helictotrichon aetolicum (Rech. Fil.) Holub – H caesp, Balkan. – 53 - 55
Helictotrichum convolutum (C. Presl) Henrard subsp. *convolutum* – H caesp, Orof. NE-Medit. – 52, 56
Holcus lanatus L. – H caesp, Circumbor. – 19, 20, 21, 47, 48, 50
Hordeum murinum L. subsp. *murinum* – T scap, Circumbor. – 50 bordering fields and roadside
Lolium rigidum Gaudin – T scap, Paleosubtrop. – 11, 17

Melica ciliata L. – H caesp, Eurimedit-Turan. – 6, 57
Melica uniflora Retz. – H caesp, Paleotemp. – 40, 42, 45, 46
Micropyrum tenellum (L.) Link – T scap, Euri-Medit. – 6, 59
Phleum montanum C. Koch – H caesp, Europ. – 1, 34, 37, 38
Phragmites australis (Cav.) Trin. ex Steudel – G rhiz, Subcosmop. - 50
Poa bulbosa L. – H caesp, Paleotemp. – 3, 6, 8, 9, 11, 19, 20, 51, 53, 57 - 60, 63
Poa compressa L. – H caesp, Circumbor. - 47
Poa nemoralis L. – H caesp, Circumbor. – 30, 34, 37, 45, 46
Poa trivialis subsp. *sylvicola* (Guss.) H. Lindb. Fil. – H caesp, Euri-Medit. – 29, 32, 35, 37, 38,
Stipa bromoides (L.) Dörfler – H caesp, Steno-Medit. – 8, 11, 12, 14, 17, 32, 41
Taeniatherum caput-medusae (L.) Nevski – T scap, Euro-Turan. – 56, 60
Vulpia ciliata Dumort. subsp. *ciliata* – T caesp, Euri-Medit. – 56, 63

Iridaceae
Gladiolus illyricus Koch – G bulb, SE-Europ.-Caucas. – 3, 9
Iris reichenbachii Heuffel – G rhiz, Balkan. – 2, 3, 9
Iris sintenisii Janka – G rhiz, NE-Medit. – 30, 31

Juncaceae
Juncus articulatus L. – G rhiz, Circumbor. – 47, 48
Juncus inflexus L. – G rhiz, Paleotemp. - 50
Juncus minutulus V. Krecz. & Gontsch. – T caesp, Cosmop. – 53 - 55
Luzula campestris (L.) DC. – H caesp, Europeo-Caucas. – 20, 33
Luzula forsteri (Sm.) DC. – H caesp, Euri-Medit. – 15, 21, 23 - 26, 32, 35, 39, 40, 42, 43, 52 - 55, 57

Liliaceae
Allium flavum subsp. *tauricum* (Besser ex Reichenb.) K. Richter – G bulb, E-Steno-Medit. – 19
Asparagus acutifolius L. – Ch frut, Steno-Medit. – 37, 23, 27, 42, 43
Asphodeline liburnica (Scop.) Reichenb. – G rhiz, NE-Steno-Medit. – 1, 2, 4 -7, 9, 20, 22
Asphodelus ramosus L. – G rhiz, Euri-Medit. – 1, 3, 4, 5, 7, 11, 58, 63
Fritillaria pontica Wahlenb – G bulb, Balkan. – 2, 7, 9, 30, 40
Muscari botryoides (L.) Miller – G bulb, Sub-Medit. – 6, 9, 24
Muscari comosum (L.) Miller – G bulb, Euri-Medit. – 3, 5, 9, 10, 24, 51, 57, 58, 62
Muscari neglectum Guss. ex Ten. – G bulb, Euri-Medit. – 1 - 4, 8, 23, 32, 37, 38
Ruscus aculeatus L. – Ch frut, Euri-Medit. – 16, 35, 40, 42, 43
Smilax aspera L. – P lian, Paleotemp. – 24, 48
Tamus communis L. – G rad, Euri-Medit. – 1, 4, 5, 13, 24, 32, 36, 47, 49

Orchidaceae
Anacamptis pyramidalis (L.) L.C.M. Richard – G bulb, Euri-Medit. – (Kati & al. 2000)
Cephalanthera epipactoides Fischer & C. A. Meyer – G rhiz, SE-Balkan.-W-Anat. – (Kati & al. 2000)
Cephalanthera longifolia (L.) Fritsch – G rhiz, Eurasiat. - 40

Cephalanthera rubra (L.) L.C.M. Richard – G rhiz, Eurasiat. – 14, 16, 25, 26, 28, 37
Dactylorhiza sulphurea subsp. *pseudosambucina* (Ten.) Franco – G bulb, Steno-Medit. – 5
Epipactis atrorubens (Bernh.) Besser – G rhiz, Europeo-Caucas. – 16, 25, 26
Epipactis helleborine (L.) Crantz – G rhiz, Paleotemp. – 37, 38
Epipactis microphylla (Erhr.) Swartz – G rhiz, Europeo-Caucas. – (Kati & al. 2000)
Himantoglossum hircinum subsp. *calcaratum* (G. Beck) Soó – G bulb, SE-Europ. – (Kati & al. 2000)
Limodorum abortivum (L.) Schwartz – G rhiz, Euri-Medit. – 5, 12, 15, 17, 25, 27, 30, 37 – 39
Neottia nidus-avis (L.) L.C.M. Richard – G rhiz, Eurasiat. – (Kati & al. 2000)
Ophrys sphegodes subsp. *mammosa* (Desf.) Soó – G bulb, SE-Europ. – (Kati & al. 2000)
Orchis coriophora subsp. *fragrans* (Pollini) Sudre – G bulb, Euri-Medit. – (Kati & al. 2000)
Orchis laxiflora subsp. *palustris* (Jacq.) Bonnier & Layens – G bulb, Euri-Medit. – 53 – 55
Orchis mascula L. – G bulb, Europeo-Caucas. – (Kati & al. 2000)
Orchis morio L. - G bulb, Europeo-Caucas. – (Kati & al. 2000)
Orchis papilionacea L. – G bulb, Euri-Medit. – 51, 52
Orchis mascula L. s.l. – G bulb, Europeo-Caucas. – (Kati & al. 2000)
Orchis provincialis Balbis – G bulb, Steno-Medit – (Kati & al. 2000).
Orchis purpurea Hudson – G bulb, Eurasiat. – (Kati & al. 2000).
Orchis tridentata Scop. – G bulb, Euri-Medit. – (Kati & al. 2000).
Orchis ustulata L. – G bulb, Europ.-Caucas. – (Kati & al. 2000).
Platanthera clorantha (Custer) Reichenb. – G bulb, Eurosib. – (Kati & al. 2000)
Serapias vomeracea (Burm.) Briq. – G bulb, Euri-Medit. – 53 - 55

Spectra and notes on the floristic catalogue

Based on the up-to-date recorded flora of the Dadia-Lefkimi-Soufli National Park a biological spectrum was made in which the Hemicryptophytes dominate. Therophytes, Phanerophytes and Geophytes follow with almost equal participation. This fact suggests the increased presence of temperate European and Balkan floristic elements under strong Mediterranean influence (Table 1 & Fig. 3).

The chorological spectrum reveals an expected relative dominance of the Mediterranean elements, due to the fact that the area lies in low altitude zone and is covered by Mediterranean and sub-Mediterranean vegetation types. Moreover, the European-eurasiatic taxa are strongly represented together with the narrowly distributed SE European - W.Asiatic/Pontic taxa which have a relatively high percentage value due to the fact that the area lies between the specific floristic regions (Table 2 & Fig. 4).

The area is of special interest since species appear with chorological distribution in the limits of the SE European/Medit./Balkan area from one side and the W Asiatic/Pontic/Turanian from the other.

Further research is needed, to complete the floristic data and reveal the existence of species with unconfirmed presence in Greece.

Table 1. Life-form data of the flora of Dadia-Lefkimi-Soufli National Park.

Life-forms	Number of taxa	%
Phanerophytes (P)	57	16
Chamaephytes (Ch)	28	8
Hemicryptophytes (H)	151	43
Geophytes (G)	53	15
Therophytes (T)	62	18
Total	351	100

Regarding the stenoendemites *Minuartia greuteriana* and *Salix xanthicola,* there is not any visible threat for their preservation at present. Nevertheless, based on information from local inhabitants, the population of *Eriolobus trilobatus* seems to decrease (Korakis & al. 2006). Research for the exact distribution of that species is currently in progress.

Table 2. Chorological data of the flora of Dadia-Lefkimi-Soufli National Park.

Geographical element	Number of taxa	%
Mediterranean/Submediterranean	122	34
Balkan	39	11
SE European	21	6
Medit./Balkan-W.Asiatic/Pontic	27	8
Eurasiatic/Euro-Caucasian	90	26
Circumboreal/Eurosiber.	25	7
Cosmopol./Subcosmopol.	20	6
Other types (incl. Subtrop.)	7	2
Total	351	100

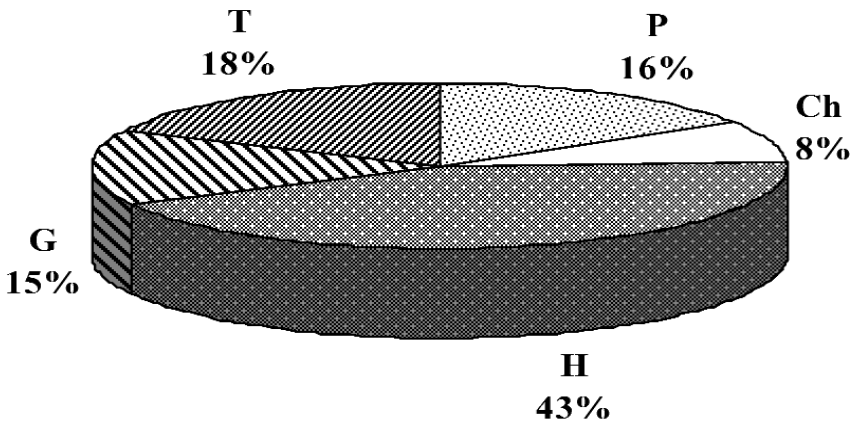

Fig. 3. Biological spectrum of the flora of Dadia-Lefkimi-Soufli National Park.

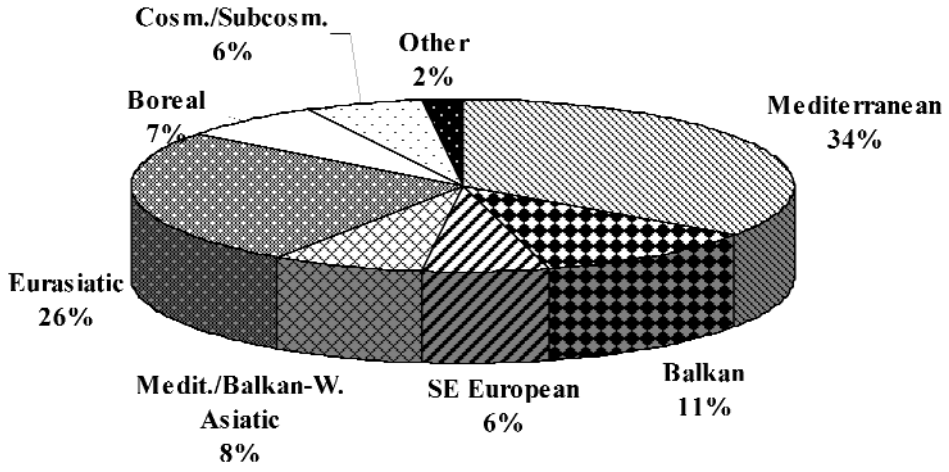

Fig. 4. Chorological spectrum of the flora of Dadia-Lefkimi-Soufli National Park.

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