

## An annotated check-list of the vascular flora of the “Parco Nazionale delle Foreste Casentinesi, Monte Falterona e Campigna” (Northern Apennines Central Italy)

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*Check-list commentata della flora vascolare del Parco Nazionale delle Foreste Casentinesi, Monte Falterona e Campigna (Appennino settentrionale, Italia Centrale)* – Viene presentato un catalogo delle piante vascolari che costituiscono la flora del Parco Nazionale delle Foreste Casentinesi, ricavato analizzando fonti di vario tipo (lavori sia pubblicati che inediti, campioni di erbario, dati vegetazionali, ecc.) e utilizzato come base per la costruzione di un sistema di divulgazione interattivo. Pur trattandosi di una check-list redatta su base prevalentemente bibliografica, diversi risultano nell'elenco i nuovi dati per l'area dovuti a osservazioni e raccolte inedite del gruppo di lavoro od a controllo e rideterminazione di materiale d'erbario. In totale le specie censite risultano 1357, di cui 1125, suddivise in 97 famiglie, sono da considerare indigene confermate da dati posteriori al 1960, mentre le restanti sono distinguibili in aliene per il territorio del Parco (in gran parte coltivate), dubbie, non ritrovate o in qualche caso escluse. Lo studio ha permesso di quantificare l'entità della fitodiversità del Parco che si conferma molto elevata, ed è dovuta al fatto che il territorio in oggetto ospita ecosistemi forestali di grande valore tra i meglio conservati d'Europa ed ha una posizione geografica che lo rende “trait d'union” fra due contingenti floristici molto differenziati, uno di tipo settentrionale e l'altro di tipo meridionale. Le elaborazioni effettuate sulla corologia delle specie di interesse fitogeografico mostrano infatti che diverse entità hanno qui il loro limite distributivo, meridionale o settentrionale, in Italia. L'endemismo presente è comunque essenzialmente di tipo nord-appenninico e peninsulare, mentre la categoria corologica percentualmente più consistente è quella delle Europee *s.l.* Le caratteristiche floristiche dei vari ambienti sono state analizzate sia in generale che rispetto alle entità di interesse conservazionistico, ed a questo proposito si è notato che gli habitat erbacei, in particolare i prati aridi, quelli di quota e gli ambienti rupestri, contengono il maggior valore conservazionistico, ospitando da soli più della metà delle piante rilevanti. Il singolo ambiente che ospita il maggior numero di entità di interesse conservazionistico (30%) risulta però quello dei boschi mesofili e ciò è una ulteriore conferma dell'importanza della flora forestale del Parco. In ultimo, viene sottolineato come questa check-list deve essere considerata un utile punto di partenza, implementabile e migliorabile, e non certo di arrivo, ai fini della conoscenza della flora vascolare di questo splendido territorio.

**Key words:** Central Italy, Chorology, conservation, Foreste Casentinesi National Park, Northern Apennines, vascular flora.

### Introduction

Every protected area needs a high degree of knowledge so that conservation and development policies of the territory can be applied in the best way possible.

This is especially true in the case of the Parco Nazionale delle Foreste Casentinesi, which contains extremely valuable forest ecosystems, among the best conserved and richest in biodiversity in Europe. In recent years, the Park's research policies have permitted the applica-

tion of several actions, which are, moreover, in accordance with the general conservation guidelines laid down by supranational organisms, like the GSPC, Global Strategy for Plant Conservation (<http://www.bgci.org/files/Worldwide/GSPC/globalstrategyeng.pdf>) and the derived European strategy (EPCS, European Plant Conservation Strategy, <http://www.plantaeuropa.org/pe-publications-EPCS.htm>; Società Botanica Italiana, 2004). The organisations that issued these directives have, among their objectives, given first priority to understanding and documenting plant diversity, as this is the basis of all subsequent actions related to conservation, education and awareness. The Park, sponsor of several research projects regarding the naturalistic aspects, and consequently the flora (see paragraph on flora exploration) has, among other things, launched a project to trace, collect and update all the information related to flora species reported in the territory, with the aim of creating a digital vascular flora database. Among the already achieved results from this project, an interactive system based on dichotomous keys and iconography accessible on the Internet ([http://dbiodbs.units.it/carso/chiavi\\_pub21?sc=150](http://dbiodbs.units.it/carso/chiavi_pub21?sc=150)) has also been created, in collaboration with the University of Trieste and its Dryades project, for the recognition of the plants in the Park. Among the future results there will be a book on the flora. Moreover, the Park has also sponsored the publication of a scientific vascular flora check-list, which is the subject of this paper. By sponsoring this research, apart from answering knowledge and operational needs, the Park takes an active stand on the conservation strategies recommended on a global level.

## Historical background

The Foreste Casentinesi, considered in their broadest sense, have a very old history. The earliest records go back to 1012, when, according to an uncertain tradition (Padula, 1988, 1995; AA.VV., 2003), a benefactor, called Maldolo, a count and a feudal lord of the bishop of Arezzo, gave S. Romualdo a small strip of land in Campo Amabile (Ca' Maldoli, from where the first monastic community and later the entire Order of the Camaldoli monks probably derive their name). It is, however certain that the monks extended their property to most of the territorial area, widely cultivated silver fir trees and prevented the growth of beech trees,

looked after the forest and drew up strict forest laws. They can therefore be considered as the initiators of the traditional cultivation of fir woods regarded as a model to be followed till very recently. The subsequent events - the enlargement of the Camaldoli property in the Tuscan part, the change from the original Conti Guidi rule on the Romagna parts to the rule of the "Opera del Duomo di Firenze", right up to the forests' management by the Lorena Family and after by the Italian State - have been subjects of thorough and exhaustive historical research published in several works to which we refer for further information (Cacciamani, 1965; Clauser, 1965; Siemoni, 1975; Gabbrielli & Settesoldi, 1977; Gabbrielli, 1978; Padula, 1983; AA.VV., 2003).

## An outline of the physical environment

### *The territory*

The Park (<http://www.parcforestecasentinesi.it>) extends over an area of 36,400 hectares, divided more or less equally between Romagna and Tuscany (Fig. 1). It is situated across the Apennines and therefore has upland and submontane characteristics. The municipalities concerned are 12, of which 5 are in the province of Arezzo (Bibbiena, Stia, Pratovecchio, Poppi, Chiusi della Verna), 2 in the province of Florence (Londa, S. Godenzo) and 5 in the province of Forlì (Bagno di Romagna, Portico-S. Benedetto, Premilcuore, Santa Sofia, Tredozio). The highest peak is reached at Mt. Falco (1657 m), the summit of the Mt. Falterona range (1654 m), while the minor altitudes are around 500m above sea level, with even lower peaks. The Romagna territory is characterized by narrow, steep, embedded valleys and includes the mountainous parts of the Tramazzo, Montone, Rabbi and Bidente Valleys. The Tuscan part is characterised by more gentle slopes and includes a small part of Mugello, a part of Casentino (which encompasses the upper Arno valley, whose springs are situated on the southern slopes of Mt. Falterona), and a continuation towards the east reaching the elevations of the famous Franciscan Sanctuary of La Verna. Besides the River Arno, the main waterways of the Tuscan area are the Archiano, Oia, Staggia, Fiumicello and Corsalone torrents. More detailed information about orography, morphology, hydrography, etc. can be found in Padula & Crudele (1988), Padula (1995), Vianelli (1996), AA.VV. (2003).

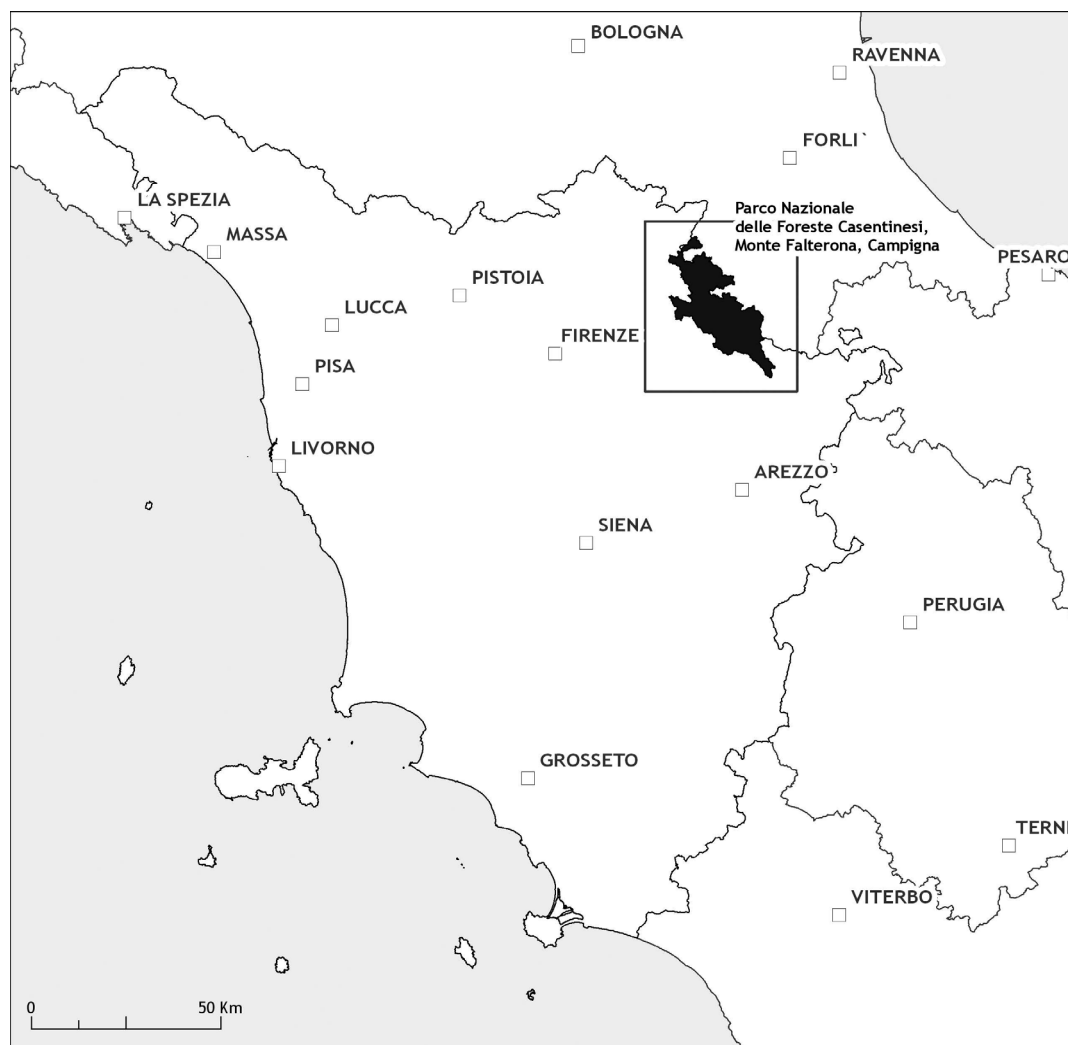


Fig. 1 – Study area: location and boundaries.

### *Geology and pedology*

Four main geological formations are present in the area (Carta Geologica d'Italia, 1969a, 1969b; Carmignani & Lazzarotto, 2004). Most of the Tuscan side is formed of sandstone (known as “Macigno”), divided in two types, Chianti sandstone, particularly at higher altitudes, formed of siliceous sandstone with low percentages of limestone, and Mugello sandstone, formed of silty schists and at lower levels of marl and fine siliceous and calcareous sandstone. The La Verna elevations, in the south-eastern Tuscan part of the Park, are formed of solid “Alberese” limestone which emerge above a chaotic series of clayey rocks (known as “Liguridi”). The Romagna side is more homogenous because sandstone-marly flysch formations are more widespread, formed of sandstones, siltstones and marls with intercalations of calcareous clasts and marly limestone. In the study area there are also other geological formations, though with limited surfaces

(Carta Geologica d'Italia, 1969a, 1969b).

On sandstone there are average deep soils, well drained, poor in carbonates and stones, with a neutral to acid pH (Bini et al., 1982). On marly-sandy substrata (Bini et al., 1982) there are usually fine soils, more or less rich in carbonates, stony, potentially clayey and with a neutral pH. On the lithological typologies, referable to the Alberese limestone, soils are rich in alkaline or subalkaline carbonates and provide good drainage (Bini et al., 1982). Thorough pedological surveys carried out on the Park's territory are reported by Sanesi (1962), Padula (1988, 1995), who point out that the most evolved soils in the forest are acid brown soils, with acid mull humus and high biological activity. In areas with lithological-morphological peculiarities, or more often, in areas with greater anthropic disturbance, there are also less fertile soils, like brown podzolic and brown marble soils.

### *Climate*

Several temperature and rainfall stations, like Camaldoli, Campigna, Corniolo, Badia Prataglia, Stia and La Verna, are found within the Park's territory or in neighbouring areas. Padula (1988) reports the data of some of them which carefully analyse, not only temperatures and rainfall, but also other factors like the direction and intensity of winds, the influence of clouds, fog or mist, etc. The annual average temperatures at the highest stations (Campigna and Camaldoli, at an altitude of about 1100 m) range between 8 °C and 8.4 °C, while rainfalls are very high, over 1750 mm per year. Using Thornthwaite & Mather's (1957) phytoclimatic classification, Bigi & Rustici (1984) identify an intermediate mesothermic climate variety (temperatures) and a perhumid type of climate (rainfall) without summer deficit for Campigna and Camaldoli. Towards the crests the difference in altitude accounts for lower temperature readings and probably much higher rainfall readings, while at lower altitudes there is an opposite trend. Overall the climate of the area can be defined as a mountain type climate, not distinctly oceanic nor continental, with mesic temperatures and heavy rainfall, which reach their maximum in the months between October and February and their minimum between June and August. Winters are relatively severe, summers relatively cool and humid and the annual temperature range is quite mild.

### **Plant environment**

From a physiognomic point of view the vegetation of the whole area is characterised by large forest extensions, but different and particular typologies can also be found. Several studies related to vegetation exist, which do not examine individual plants, but the different plant communities as a whole, with particular attention to ecology, flora composition, quantitative relations between species, structural characteristics and spatial distribution (Hofmann, 1965, 1969; Ferrari et al., 1979, 1982; Ubaldi, 1980, 1988, 1992; Ubaldi & Speranza, 1985; Ubaldi et al., 1987, 1993, 1995; Zanotti et al., 1995; Ravaglioli et al., 2009). The park has recently sponsored the creation of a computerised map of the vegetation of the whole territory with a scale of 1:10,000 (Ubaldi, 2004; Viciani, 2004). A derived map with a scale of 1:50,000 (Verdecchia et al., 2009) and descriptive notes (Viciani & Agostini, 2009)

have been published. From the information acquired through these studies, the main vegetation types in the area can be very briefly described as follows (for the sake of brevity the names of plants have been printed without authors, which can be found in the flora list).

### *Beech woods and fir woods*

Beech woods (*Fagus sylvatica*) are the most characteristic and typical type of vegetation of the mountain belt in the study area and in all the Apennines. Beech trees find their optimum ecological conditions at altitudes between 900 and 1000m and at the highest peaks reached here, and they tend to form populations in which they become absolutely dominant. Beech woods have sometimes been substituted by fir woods of silver firs (*Abies alba*), which grow spontaneously in beech areas, but historically have been preferred by man for forestry reasons.

Beech woods are divided in typologies that differ ecologically and floristically depending on altitude, (thermophilic, mesothermic, microthermic beech woods), on the nature of the substratum and soil characteristics (acidophilous, eutrophic, basophilous beech woods), on particular habitat conditions (inclination, exposure, rockiness, water available, etc.). Particularly in some areas of the Romagna side, like in the Sasso Fratino Reserve and most part of the Campigna Forest, and in the La Verna Forest, there are fir-beech woods which, apart from beech trees, host several trees of different "noble" broadleaf species, like common ash (*Fraxinus excelsior*), maple trees (*Acer platanoides*, *A. pseudoplatanus*, *A. opalus* in the broad sense), broadleaved limes (*Tilia platyphyllos*), wych elms (*Ulmus glabra*). This mountain vegetation, rich in tree species, is very rare on the Apennines and its relict presence is of great naturalistic interest. In the lower mountain beech woods and in the nearby mesophilic mixed woods, single yews (*Taxus baccata*) and hollies (*Ilex aquifolium*), rare and protected species in Emilia-Romagna, can be found. Moreover, some coenoses dominated by noble broadleaves of conservation interest are located in these contexts (Ravaglioli et al., 2009).

### *Oak woods and mixed woods of deciduous broadleaf trees*

They are found on the hills and low mountains up to an altitude of about 900-1000m, and above this altitude they are usually replaced by beech woods. The main trees forming the woods are deciduous oaks

(*Quercus cerris* and *Q. pubescens*, rarely *Q. petraea*), chestnut trees (*Castanea sativa*), common and hop-hornbeams (*Carpinus betulus* and *Ostrya carpinifolia*), the Italian maple (*Acer opalus* in the broad sense), trees which have very different bioecological characteristics and which can live in different temperature, humidity and substratum conditions.

As for the beech woods, the different ecology and flora, and consequently the type of vegetation found, depend on variations in altitude and exposure, light intensity, humidity, type of geological substratum, soil development, etc. On the basis of such factors, oak woods and broadleaf mixed woods can be subdivided into two big groups, mesophylic and thermophilic formations, which can in turn be divided into subgroups. Mesophylic coenoses are much more widespread because the area's geographical position and altitude (almost never below 600 m a.s.l.) do not favour the development of communities that have high temperature needs. When determining the distribution of such coenoses, microhabitat and microclimatic factors (sharp inclinations, exposure to the south, rocky soils and surfaces, site dryness, etc.) and the level of anthropic disturbance have much more influence than low altitudes and the climate in general.

Usually the tree layer is less homogenous than in beech woods, and the shrubby and herbaceous layers are richer in species, even though it has to be kept in mind that the forms of forest management have influenced and are influencing massively and in many cases determine most of the communities' woody flora composition.

### *Reforestation with conifers*

Both old and recent reforestations with conifers are present in all the Park's territory. The vegetation layout and the naturalness of the populations vary a lot from one place to another. There can be completely artificial formations, with dense monospecific tree plantations, with no renovation and spontaneous flora, or already diversified coenoses, with prolific renovation of spontaneous woody species and nemoral herbaceous flora, similar to the one in the neighbouring broadleaf woods, and a range of intermediate cases in between. The most used and widespread forest conifer in mesic environments is the silver fir, but the Norway spruce, (*Picea abies*) and the Douglas-fir (*Pseudotsuga menziesii*) are also quite common. Other conifers, widely used in different environments, ranging from mesic to relative-

ly xeric environments, are those belonging to the European black pine group (*Pinus nigra*, *P. laricio*), traditionally used for the reforestation of abandoned pastures, farming land and degraded land on hills and mountains.

### *Chestnut woods*

Chestnut woods are a spontaneous element of the mixed mesophilic Apennine woods on siliceous substrata, but as is common knowledge, man has always used them to get chestnuts and wood. So, a lot of mixed woods have been transformed into chestnut woods cultivated for the fruits, and chestnut trees have frequently been planted also in areas not suitable for their ecological characteristics. The typical chestnut fruit wood (also known as "selva castanile") endures, or rather endured intense anthropic action. The shrubby layer used to be constantly cut to facilitate the harvesting of chestnuts, trees used to be kept very distant from each other with a resulting quantity of light reaching the ground which favoured a rich herbaceous layer. Very often the fallen leaves were also removed and used for domestic or zootechnical purposes, so it looked more like a meadow planted with trees (the so-called "wood-park") rather than a real forest coenosis. With the spread of the chestnut cryptogamic diseases (the chestnut wood was hard-hit especially in the less suitable sites) and the depopulation of the mountain and submontane areas, a lot of these forests were abandoned and converted into wood coppices or high forest stands, thus transformed into semi natural woods (very often mixed), which have kept most of the herbaceous flora elements of the mixed oak woods, whose space they occupy. Despite this, fruit chestnut woods are still quite widespread both on the Romagna and the Tuscany sides of the park, especially close to built-up areas, even though they usually cover small surfaces.

### *Hygrophilous riparian woods*

Hygrophilous woods are formations whose presence does not directly depend on the climate, but on a particular humidity of the land, caused by shallow ground water. Great humidity over long periods of time favours the development of a flora that is adapted to such ecological conditions, and distinct vegetation types can be identified. The riparian and riverbed tree formations are located along the waterways, at the bottom of small and deep valleys, especially at low altitudes. Generally they follow a strictly linear formation,

even though in some cases they can cover quite large surfaces of the low valley plains, as in the case of the Lama plain. The main tree species is the common or black alder (*Alnus glutinosa*), and other sporadic species are the white willow (*Salix alba*), the black and grey poplar (*Populus nigra*, *P. canescens*), the grey alder (*Alnus incana*, of remarkable interest because it is found at the extreme south of its distribution area) and several mesophilic species from neighbouring woods in sites where the riverbed is wider and more open. Where the wood thins out (eg. Bidente di Pietrapazza), shrub willows like *Salix purpurea*, *S. elaeagnos* and *S. apennina* are also frequent.

### Shrublands

The shrublands present in the study area should be generally considered as secondary vegetation stages derived from the colonization of grassy clearings of deciduous broad-leaf woods, since primary subalpine heaths cannot develop because of the mild altitudes. Very small coenoses, which can be interpreted as residual stretches, relicts of subalpine vegetation types, can only be found on the peak of Mt. Falco. The shrub species are generally heliophilous, but they often live at the edge of and in the underwood of deciduous forests forming the so-called mantle. Their presence in the woods is more attributable to forestry exploitation than to a natural trend. As regards altitude, mountain shrublands can be distinguished from hill and submontane ones. Mountain shrublands are located at higher altitudes, very often on the crests above the forests, on acidic and nutrient-poor soils. There can be coenoses which look like low heaths and are dominated by bilberries (*Vaccinium myrtillus*) and/or common heathers (*Calluna vulgaris*), and bushes with a predominance of common broom (*Cytisus scoparius*) and/or brackens (*Pteridium aquilinum*). In all typologies, common junipers (*Juniperus communis*) are frequent, and sometimes so are raspberries (*Rubus idaeus*). As noted above, the *Vaccinium* heaths of the northern slope of Mt. Falco, deserve a particular mention, because some subalpine species vegetate there, like the *Hypericum richeri* and the *Anemone narcissiflora*. These plants, together with the lingonberry (*Vaccinium vitis-idaea*) and the club-mosses (*Lycopodium clavatum*, *L. annotinum*), found in the same area, give the impression of a relict and rather impoverished vegetation, which brings to mind the one found in the high heaths of the Tuscan-Emilia Apennines, and which probably can live here because of the

crest climatic effect.

At lower altitudes and on potentially neutral and generally nutrient-rich soils, shrub thickets are different and are made up of blackthorn (*Prunus spinosa*), blackberry (*Rubus sp. pl.*), hawthorn (*Crataegus monogyna*), dog rose (*Rosa canina*, in the broad sense), common juniper (*Juniperus communis*), wild pear (*Pyrus pyraster*), bloodtwig dogwood (*Cornus sanguinea*) and other arboreal species (*Fraxinus ornus*, *Ulmus minor*, *Quercus sp. pl.*, etc.). In low altitudes and in relatively hot and arid positions on basic soils, the Spanish broom (*Spartium junceum*) is quite often dominant.

### Grasslands and pastures

In all the parts of the Park and at all altitudes there is meadowland destined for grazing. Even this land is of secondary origin as it was derived from the destruction of pre-existing forest formations, which, almost in every case, took place a long time ago. Such pythocoenoses are referable to distinct vegetation typologies. Here we can distinguish between mountain, hill, submontane grasslands and steppe characteristics on the eroded slopes.

Mountain grasslands are quite acidophilic and oligotrophic. They are also called “nardeti”, as one of the main components is *Nardus stricta*, together with *Festuca sp. pl.*, *Deschampsia flexuosa*, *Agrostis capillaris* and other herbaceous species. Very often these coenoses are in close contact with the *Vaccinium myrtillus* and *Calluna vulgaris* heaths or with the *Cytisus scoparius* and *Pteridium aquilinum* formations and they form characteristic mosaics.

The grasslands and pastures at submontane and hill altitudes grow on potentially neutral soils and are very different because exploitation and anthropic disturbance has affected them in a stronger way. The main constituents are *Bromus erectus* and *Brachypodium rupestre*, and subordinately *Sanguisorba minor*, *Festuca arundinacea*, *Onobrychis viciifolia*, *Galium lucidum*, *Ononis spinosa*, *Lotus corniculatus*, *Dactylis glomerata*, *Achillea collina*, *Galium verum*, etc., together with many other species which can distinguish less developed vegetation types, more directly linked to post-farming aspects, to hay meadows (with *Arrhenatherum elatius*) and more developed seminatural dry grasslands (with *Teucrium chamaedrys*, *Dorycnium pentaphyllum*, *Centaurea jacea* subsp. *gaudinii* (= *C. bracteata*), *Hippocrepis comosa*, *Scabiosa columbaria*, *Knautia arvensis*, *Thymus longicaulis*, *Briza media*, *Asperula purpurea*, etc.).

### Small grasslands on steep rocky slopes

Although they cover small surfaces, these vegetation types typical of rocks and superficial soils are very particular, rich in species of great phytogeographic value.

At high altitudes the most characteristic are located on the exposed cliffs to the north near the peak of Mt. Falco. As has already been said, in this area there are formations that can be described as remnants of sub-alpine vegetation types, relicts of colder periods where these coenoses and the species forming them were much more widespread. On the few square metres of rocky grasslands on Mt. Falco, rather than distinct vegetation typologies, there are fragmented and mosaic coenoses characterised by species like *Saxifraga paniculata*, *S. oppositifolia* subsp. *latina*, *S. moschata*, *Festuca violacea* subsp. *puccinellii*, *Vaccinium vitis-idaea*, *Hieracium dentatum*, *H. villosum*, *Allium victorialis*, *Doronicum columnae*, *Seseli libanotis*, *Asperula aristata*, *Alchemilla saxatilis*, *Gentiana verna*, *Senecio doronicum*, *Coicya monensis* subsp. *cheiranthos* (= *Rhynchosinapis cheiranthos*), *Linum alpinum*, and other species widespread also on the neighbouring acidic mountain meadows. As already pointed out by other authors (Padula, 1988, 1995; Contarini, 1996; Sirotti, 1998), these floristic elements, together with the remarkable geographic isolation of this peak, surrounded by much lower elevations, give the small Mt. Falco area great naturalistic and conservation significance.

The rocky grasslands of the steep areas at lower altitudes on the Romagna side are also of noteworthy interest, particularly in the Sasso Fratino Reserve, recently explored, (Gonnelli et al., 2007b) which has particular species like *Carex macrolepis*, *Leucopoa dimorpha* (= *Festuca dimorpha*), *Sesleria pichiana*, *Brachypodium genuense*, etc.

In the submontane area, on the eroding slopes with outcropping marly and marly-clay substrata, and therefore in relatively unstable soil conditions and arid positions, there are coenoses generally dominated by *Sesleria italica* and other perennial plants (*Astragalus monspessulanus*, *Globularia bisnagarica*, *Coronilla minima*, *Linum tenuifolium*, *Asperula purpurea*, *Festuca inops*, *Leontodon villarsii*, *Helianthemum nummularium*, etc.) which look like a discontinuous grassland. In even more arid positions, due to the low altitude and exposure to the south, such phytocoenoses are also made up of a good percentage of annual plants; the following are among the most characteristic *Micropus erectus* (= *Bombacilaena erecta*), *Arenaria serpyllifolia*, *Coronilla scorpi-*

*oides*, *Medicago minima*, *Trifolium scabrum*, *Bupleurum baldense*, *Minuartia hybrida*, *Euphorbia exigua*, *Catapodium rigidum*, *Althaea hirsuta*, *Aegylops sp. pl.*, *Petrorhagia prolifera*, *Vulpia ciliata*, *Gastridium ventricosum*, *Brachypodium distachyum* (= *Trachynia distachya*), to which other more widespread perennial plants can be added like *Festuca inops*, *Bromus erectus*, *Thymus longicaulis*, etc.

### Other vegetation types

In the territory under study there are also several other types of pythocoenoses covering very small surfaces, but which recur quite often and which belong to well-defined vegetation types. Among these the following can be mentioned:

- Herbaceous hygrophilous formations of high altitude streams, where the most widespread and striking species is *Caltha palustris*, to which other hygrophilous species are added (*Cardamine amara*, *Myosotis scorpioides*, *Galium palustre*, *Epilobium sp. pl.*, *Veronica beccabunga*, *Juncus sp. pl.*, *Carex sp. pl.*, etc.).
- Herbaceous hygrophilous formations with *Petasites albus*, *P. hybridus*, *Equisetum sp. pl.*, etc., closely linked to edaphic conditions of particular humidity or water stagnation, which are located near ditches, streams, cascades, puddles, inside or on the borders of mesophilic forest formations. In these floristic contexts a very rare species of the Park, *Tozzia alpina* can also be found. A recent study carried out in a degree thesis (Falzea, 2006) has found and characterised, from a vegetation point of view, several mesohygrophilous and hygrophilous or submerged coenoses of water bodies and waterways of the Foreste Casentinesi, of remarkable conservation interest.
- Mesophilic helio-nitrophilous tall herb fringe communities which utilize forest nutrient-rich soil when there is no tree covering or when trees diminish due to natural causes (snapping, breaking) or more frequent anthropic actions (cutting, construction of runways or roads, etc.). The dominating species on the mountain heights is usually *Epilobium angustifolium*, together with others like *Urtica dioica*, *Rubus idaeus*, *R. hirtus*, *R. ulmifolius*, *Atropa belladonna*, *Senecio fuchsii* (= *S. ovatus*), *Cirsium sp. pl.*, *Sambucus ebulus*, *Chaerophyllum sp. pl.*, etc.

Cultivated land is also present, though limited, at low altitudes and in adjacent areas. In locations with less intense exploitation there are also several spontaneous species pertaining to post-cultivation pastures and hay meadows, as well as some commensal species, which were once quite common, but which today have become rare and of naturalistic interest (*Agrostemma githago*, *Centaurea cyanus* = *Cyanus segetum*, *Consolida regalis*, *Delphinium fissum*, *Legousia speculum-veneris*, etc.).

### Flora Exploration

There have been several flora researchers who have done field trips and collected specimens in the territory under study. As early as 1557, the famous botanist Ulisse Aldrovandi passed through Falterona and La Verna while travelling across the Sibillini mountains (Pampanini, 1924; Pichi Sermolli, 1998), and as stated in *De Plantis libri* (Cesalpino, 1583; Pichi Sermolli, 1998), at least one specimen (*Eryngium amethystinum*) in Andrea Cesalpino's Herbarium, probably the oldest in the world, dated 1563, comes from La Verna. Zangheri (1966b) reports that, in 1729 and later in 1733 Pier Antonio Micheli visited the same places. According to the same sources, Cesare Maioli, a naturalist from Forlì, collected plants at San Benedetto in Alpe between the end of the 18<sup>th</sup> and the beginning of the 19<sup>th</sup> century. More substantial and important are Antonio Bertoloni's collections and those of his followers and collaborators (particularly Amidei in the study area) intended for research for the publication of his "Flora italica" (Bertoloni, 1833-54). Later both Filippo Parlatore and Teodoro Caruel travelled across the Apennine crest looking for plants primarily in the Mt. Falterona-Campigna area, the former while preparing his "*Flora italiana*" (Parlatore, 1848-94), the latter for his "*Prodromo*" of the Tuscan flora (Caruel, 1860-64, 1866, 1870). In the second half of the 19<sup>th</sup> century C. Siemoni made several collections in the Campigna area, and woody species of forest interest were reported in an anonymous manuscript (Anonimo, 1878). In the first decades of the 20<sup>th</sup> century Del Testa (1903) and Pampanini (1917) visited some of the high Romagna valleys (Bidente, Savio) and in the same period of time Pasquale Baccarini made several collections in the Mt. Falterona-Campigna area (as well as in La Verna) with the aim of publishing a flora of those places. Unfortu-

nately, this project was not completed, but there are still several specimens at the *Herbarium Centrale Italicum* (FI) and handwritten cards taken from Zangheri (1966b). In 1934, one of the stops of the seventh international phytogeographical excursion was along the Passo del Muraglione-Mt. Falco-Campigna-Camaldoli itinerary and several participants made collections and observations, some of which later appeared as exsiccata references and notes (Lüdi, 1935, 1946; Rytz, 1935; Wangerin, 1935).

Of fundamental importance for the botanic knowledge of the ridge and the Romagna side are Zangheri's works (1966a, 1966b). He not only critically put together all the previous flora data, but also made a great number of excursions and collections in every part of the area between the 1920's and the 1960's.

Flora data related to the Tuscan part (particularly the high Casentino Apennines) are generally disseminated in several publications. An exhaustive history of flora exploration in the La Verna area was written by Pichi Sermolli (1998), to which we refer. As regards Casentino in general, a certain amount of plant information of the Arno high valley is found in Tramontani (1812), in his "*Istoria naturale del Casentino*". Information about the Casentino flora species is found in the first plant catalogue of Tuscany, "*Prodromo della Flora Toscana*" by T. Caruel (1860-64), already quoted above. The catalogue is based on previous works and collections by Cesalpino, Targioni, Micheli, Savi, Bertoloni, Amidei, Chierici and many other botanists. Moreover, the author consulted the *Herbarium Centrale Italicum* in Florence (FI), the Herbarium of Pisa (PI), Calandrini's Herbarium and the herbaria offered by Savi and Targioni-Tozzetti. Marcucci (1881, 1889), then, edited a list of Casentino spontaneous plants by critically going through the *Prodromo* (Caruel, 1860-64) and consulting his own herbarium. It is a list of plants collected up to 1889 only in Casentino, published in a new edition of the "*Guida del Casentino*" ("Casentino Guide") by Beni (1983), in which the author leaves out several species which were registered as species coming from Casentino in previous publications but were actually from the Romagna region.

Several species of the study area have been reported by Baroni (1897-1908), who put together all the information with which many botanists had enriched the Tuscan flora after the publication of the *Prodromo* (Caruel, 1860-64, 1866, 1870). In his "*Supplementi al Prodromo della Flora Toscana del Prof. T. Caruel*" Baroni



included Marcucci's data (1881; 1889), consulted the collections of the Botanical Museum of Florence and made use of all the information received from botany lovers and famous botanists like Sommier, Levier, Arcangeli, Beccari. Later Fiori (1923-29) in “Flora analitica d'Italia” provided a lot of information about the study area, and also made some small but important collections like the one at La Verna (Fiori, 1925). The only existing authentic territorial flora is the one by Sabato & Valenziano (1975) and it covers a part of the park area in the province of Florence. Having always had a strong propensity for forestry, the whole territory has, at different periods of time, undergone both management and scientific forestry research (Padula, 1972, 1974, 1978; Bernetti, 1980; Massei, 1981; Bianchi, 1983; Paganucci, 1983; D.R.E.A.M., 1987; Borchi, 1993; Mercurio, 1994), from which botanical information can also be inferred.

Information about flora populations is also found in specialized studies (e.g. Paoli & Ciuffi-Cellai, 1973; Foggi, 1990) or in general naturalistic studies, (a complete and relatively recent example of which is the one by Padula & Crudele, 1988), or in iconographical studies (Ferrarini, 1998), or also in vegetation studies (Hofmann, 1965, 1969; Ferrari et al., 1979, 1982; Ubaldi, 1977, 1980, 1988, 1992; Ubaldi & Speranza, 1982, 1985; Ubaldi et al., 1983, 1987, 1990, 1993, 1995; Ubaldi & Corticelli, 1995; Zanotti et al., 1995; Ravaglioli et al., 2009; Viciani & Agostini, 2009).

With the establishment, first of the “Parco del Crinale Romagnolo”, and later of the “Parco Nazionale delle Foreste Casentinesi, Monte Falterona, Campigna” in 1993, wildlife research studies have been facilitated and increased. Particularly in the vascular flora field, there have been the first attempts to produce a complete floristic list (Agostini, 1992), several degree theses (Giacinti Baschetti, 1998; Falzea, 2006; Mazza, 2006), research on the ferns of the Park (Gonnelli et al., 2001, 2002; Rossi & Agostini, 2003; Gonnelli, 2005a), on high altitude plants of conservation interest (Contarini, 1996; Sirotti, 1998; Semprini & Milandri, 2001; Rossi, 2001), and on orchids (Sirotti et al., 2005). The park has moreover sponsored the creation of a vegetation map (Verdecchia et al., 2009; Viciani & Agostini, 2009), with the carrying out of several phytosociological relevés which, to a certain extent, have contributed to enhance vegetation as well as flora knowledge.

The “Corpo Forestale dello Stato”, both in the past (Padula, 1972, 1974, 1978, 1983, 1995; Padula &

Crudele, 1988) and recently with the personnel of the Territorial Office for Biodiversity of Pratovecchio, has also encouraged management and scientific research from which flora information can be inferred. Such research includes several degree theses (Montanari, 2005; Vazzano, 2006), contributions on particular aspects and on the flora of the Sasso Fratino Reserve (Bottacci et al., 2003; Gonnelli et al., 2006), on the presence of some rare plants (Gonnelli et al., 2003a, 2003b, 2007a, 2007b), on monument trees (Bottacci et al., 2007), etc.

Lastly, we have to mention the large amount and precious data coming from the exsiccata of the area around La Verna collected by Siemoni and Ricceri (a small part also by Gualazzi and Piaggi) between 1989 and 1998 and kept in a private herbarium in La Verna, the *Herbarium Alvernae* (Miozzo, 1999; Padula, 2008), and the botanical explorations carried out over a long period of time in the park's territory by M. Padula, former administrator of the “Foreste Casentinesi”, who has collected a large number of plant specimens, which are kept in his personal herbarium.

## Materials and methods

The flora information present in the list has been obtained by analysing both published and unpublished works, shown with the relative references in the bibliography. The data are updated to 2008, even though sometimes more recent information is reported. The information was selected when it expressly or reasonably referred to localities that are wholly or in part within the study area. The references used are many and can be divided in various typologies:

- *Floras and various types of flora lists*; these include substantial contributions taken from works like the “*Prodromo della Flora Toscana*” (Caruel, 1860-64), the supplements to the *Prodromo* (Baroni, 1897-1908), Zangheri's fundamental works (1966a, 1966b) on the ridge and the Romagna part, Sabato & Valenziano's flora (1975) for the area in the province of Florence, the data on the government property related to Padula's works (Padula, 1978, 1982, 1988, 1995), the exhaustive studies on Pteridophyta (Gonnelli, 2005a) and Orchids (Sirotti et al., 2005) of the Park, the recent flora of Sasso Fratino Reserve (Gonnelli et al., 2006 – the last updating, Gonnelli et al., 2009, was not considered), as well as minor con-

- tributions like the data in the “*Schedae ad Floram Italicam Exsiccatam*” (Fiori et al., 1905-1908; Fiori & Bèguinot, 1909-1914; 1914-1927), accurate studies on small areas (Fiori, 1925; Conzarini, 1996) or on species of conservation interest (Sirotti, 1998; Semprini & Milandri, 2001; Gonnelli et al., 2001, 2002, 2003a, 2003b), or the plant catalogue of La Verna photographed by Fra’ Ginepro (Ferrarini, 1998), etc.
- *Data related to herbaria and arboretums*, like the catalogue of the herbarium of La Verna, made up of specimens collected by Siemoni, Ricceri, Gualazzi and Piaggi in the years 1989-1998 (Siemoni et al., 1989-1998; Miozzo, 1999; Padula, 2008), the part of the M. Padula Herbarium regarding the Tuscan mountainside (Padula, 2008), obtained with the owner’s concession, in a degree thesis on the Casentino (Zingarelli, 2006), where the data have been grouped in municipalities, or the dendrological collection of the Siemoni Arboretum of Badia Prataglia (Crudele et al., 2002). Regarding some doubtful species or those in a critical taxonomical or distributive situation, both the specimens at the *La Verna Herbarium* and other material at the *Herbarium Centrale Italicum* of Florence (FI) were checked and the results were included in the species’ notes.
  - *Information acquired through degree theses and projects financed by scholarships*, from the least recent ones, e.g. Matteini (1968), which gives a list of plants from La Verna based both on old bibliographical information as well as on the study of recent collections, like those by Pichi Sermolli, Contardo, Tosi, Cortini, ecc. (cfr. Pichi Sermolli, 1998), to the most current ones, e.g. the scholarship by Sirotti et al. (1995), or the theses by Mazza (2006) and Falzea (2006), both about flora in humid areas.
  - *Flora data found in works about vegetation*: both published ones, e.g. those by Hofmann (1965; 1969), Ferrari et al. (1979; 1982), etc., and unpublished ones e.g. those by Sirotti & Fariselli (2002) and Viciani & Gabellini (2002), which give flora data derived from the phytosociological surveys carried out for the editing of the Park’s vegetation map (Viciani & Agostini, 2009).
  - *Various studies with botanical information* (in a broad sense) like systematic surveys (e.g. Nepi, 1989), distributive studies on rare and/or invasive species (e.g. Alessandrini & Bonafede, 1996; Semprini & Milandri, 2001; Frignani et al., 2006), flora reports (e.g. Norcini & Zoccola, 1995, 1996; Barasi, 1998), palynological research (e.g. Paoli & Ciuffi Cellai, 1972), ethnobotany research (e.g. Camangi et al., 2003), etc.
- Being a check-list which aims at collecting the greatest amount of information, it has been decided to use also unpublished data. Generally, published data were considered reliable when published after 1960. When possible, museum research was done to clarify some doubts, especially at the *Herbarium Centrale Italicum* of Florence (FI) and on the exsiccata at the La Verna Herbarium (*Herbarium Alvernae*). When the only information was derived from unpublished sources, like degree theses, phytosociological surveys or others, and there was no specimen that could be checked, the data were considered as data to be confirmed. A lot of clarifications for single cases were reported in the notes to the species in the flora list.
- While a lot of information is given in the database, like double names, according to Pignatti (1982) and Conti et al. (2005), synonyms, class and family affiliation, biological and phytogeographic information (biological forms, chorology, phenology), environmental information (frequency in the Park, favourite habitat), conservation/normative information (inclusion in red lists, interest lists and protection lists), etc., for brevity, in the lists below, after the species’ name considered as valid, mainly according to Conti et al. (2005) and Euro+Med PlantBase, the following information has been given:
- Raunkiaer biological form (Raunkiaer, 1934), according to the abbreviations used by Pignatti (1982);
  - Chorological category based on Pignatti (1982), simplified in order to achieve meaningful analysis results.
  - Abbreviation of the habitat around which the entity gravitates primarily (the whole environment is reported in the database):
    - arb: generally non acid shrubs and bushes
    - bru: acidophilic heaths and shrubs
    - br: mesophilic woods (beechwoods, mixed woods, etc.) and their borders and clearings
    - bu: humid woods, riparian tree coenoses and their borders and clearings
    - bx: relatively thermo-xerophilic woods and their borders and clearings

- pa: high altitude semi-mesophilic grassland
- pd: grasslands in the steep rocky areas close to the crest
- pu: humid and hay meadows, tall herb edge communities, riparian herbaceous coenoses
- px: generally dry grasslands
- ro: rocks, both heliophilous and sciaphilous rocky environments, walls, stony ground soils, talus slopes
- ru: ruderal and sinanthropic environments, including uncultivated land in the first post-cultivation stages and weeds in cultivated land
- st: ponds, water bodies with water plants
- Possible (r) abbreviation indicating taxon rarity in the study area.
- Possible (if) abbreviation indicating the phytogeographic importance of taxon presence in the study area.
- Possible (RNT) abbreviation indicating the inclusion of taxon in the attention list of the "Repertorio Naturalistico Toscano" (updated till 2000) which includes species that are considered of conservation interest in Tuscany (<http://web.rete.toscana.it/sgr/webgis/consulta/viewer.jsp>).
- Any indication of inclusion in the annexes of the regional protection laws (l.r. 2/1977 for Emilia-

Romagna, l.r. 56/2000 for Tuscany: All.A for the species of regional interest, All.C for protected species, All.C1 for the species with limited harvesting), and/or indication of inclusion in the national and regional Red Lists of Italian plants (Conti et al., 1992; 1997) showing the national status (lrNaz), in Emilia-Romagna (lrEM) and Tuscany (lrT) with the abbreviations I.U.C.N. (1994).

- General sites (Fig. 2) and bibliographical references of the authors who report them, with reference to any possible different names used.
- Possible notes.

The indigenous species were kept separate from the "inquirendae", that is, from the doubtful species, not found after 1960 and alien (cultivated and foreign) to the Park's territory, and they have all been printed in italics and not considered in the subsequent data analysis. To simplify consultation, the lists have been divided in *Lycopodiophyta*, *Equisetophyta*, *Polypodiophyta*, *Pinophyta*, *Magnoliophyta* *Dicotyledones* and *Magnoliophyta* *Monocotyledones*; each group is then subdivided in families according to Pignatti (1982), which is less updated but still very much used in practice than more recent classifications like the one by the Angiosperm Phylogeny Group (2003). Families and genera are listed in alphabetical order.

## FLORISTIC LIST

### LYCOPODIOPHYTA

#### LYCOPODIACEAE

**Huperzia selago** (L.) Bernh. ex Schrank et C. F. P. Mart. subsp. **selago** - Ch rept, Cosmopol/wide distrib., pa, r, if, l.r.56/2000 All.A, lrEM: VU, lrT: LR. Prato alla Penna, Prato al Soglio, Poggio allo Spillo (Sirotti, 1998), M. Falco, M. Falterona (Sirotti, 1998; Gonnelli et al., 2002; Gonnelli, 2005a), Badia Prataglia-Lama (Norcini & Zoccola 1996, Gonnelli et al., 2001; Gonnelli, 2005a), Sasso Fratino (Gonnelli et al., 2006). Species of considerable phytogeographical interest; the Park sites represent the southern limit of continuous distribution of this species, which can also be found on the Monti della Laga (Marchetti, 2004).

**Lycopodium annotinum** L. - Ch rept, Boreal, bru, r, if, lrEM: VU. Prato alla Penna (Zangheri, 1966, 1966b; Sirotti, 1998), Camaldoli (Sirotti, 1998), M. Falco (Sirotti, 1998; Rossi & Agostini, 2003; Gonnelli, 2005a), Clearings of beech forests at higher elevations (Padula,

1988). The presence of the species in this part of the Apennines has been recently confirmed in the area of Monte Falco (Rossi & Agostini, 2003). The mention of Zangheri (1966a, 1966b) for Prato alla Penna has not been confirmed. The park sites represent the southern limit of this species in Italy. Very rare and protected: Dir CEE 92/43 All 5; Cat IUCN: DD (EN) (Gonnelli, 2005a).

**Lycopodium clavatum** L. - Ch rept, Cosmopol/ampia distrib, bru, r, if, l.r.56/2000 All.A, lrEM: VU. Falterona (Marcucci, 1889; Baroni, 1897-1908; Sirotti, 1998; Gonnelli et al., 2002; Gonnelli, 2005a), Prato alla Penna (Zangheri, 1966a, 1966b; Sirotti, 1998), Monte Peschiena (Zangheri, 1966a, 1966b), Camaldoli, Sodo dei Conti (Sirotti, 1998), M. Falco (Gonnelli et al., 2002, Togni 2002; Gonnelli, 2005a), Sodo De' Conti, Prato alla Penna (Padula 1988). Currently, the presence of the species has been confirmed in only two sites in the area of Mount Falterona and M. Falco (Gonnelli et al., 2002; Togni, 2002). The citation for Prato alla Penna and for the sites of Mt. Peschiena have not been confirmed. The Park sites

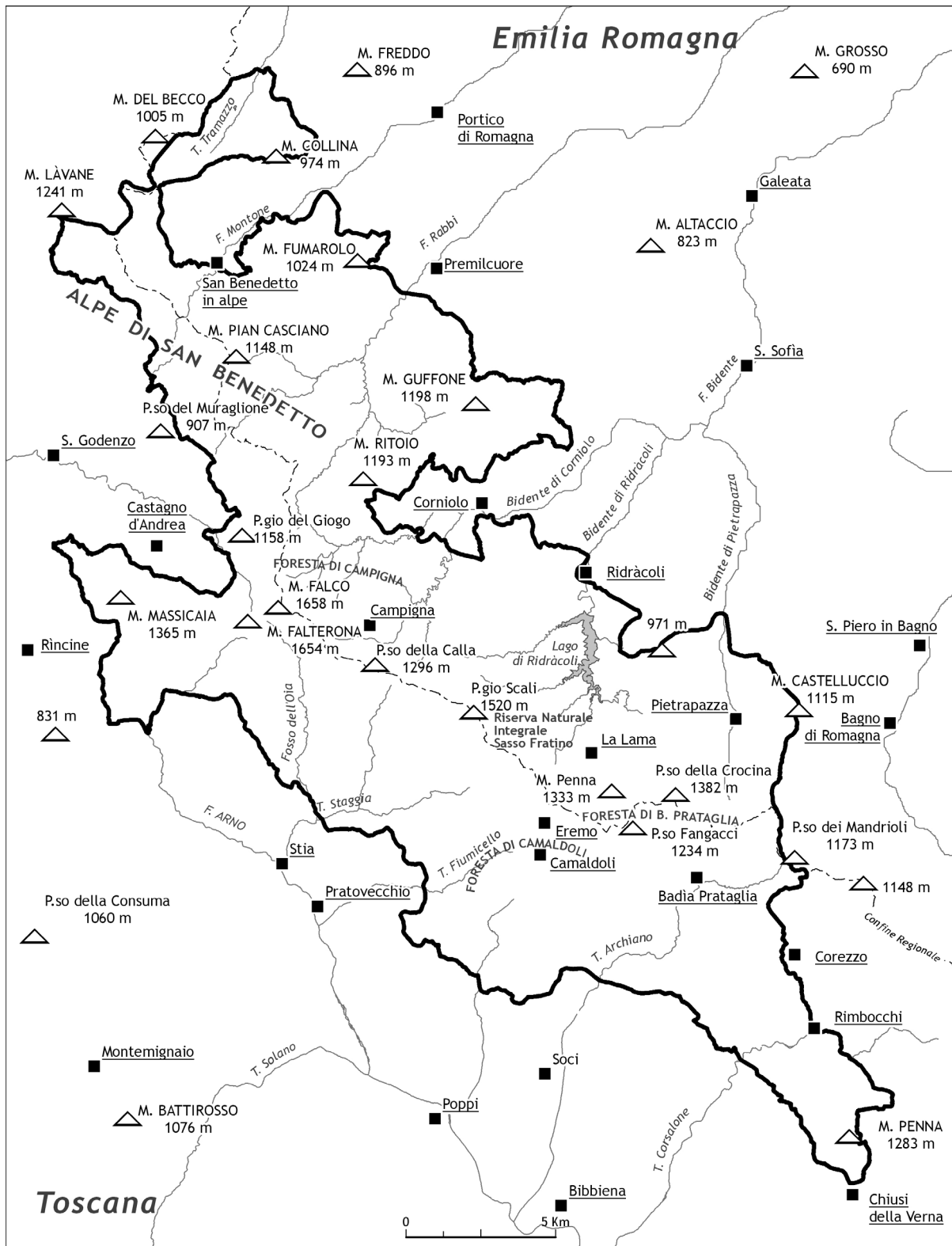


Fig. 2 – The main sites of the Park territory.

are at the southern limit of the species distribution in Italy, as the sites of Monte Nerone and Monte dei Fiori near Ascoli Piceno have not been recently confirmed. Very rare and protected (Gonnelli, 2005a).

## EQUISETOPHYTA

### EQUISETACEAE

**Equisetum arvense** L. - G rhiz, Boreal, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli 2005a; Bottacci et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Zangheri, 1966a sub var. *nemorosum*; Ferrari et al., 1982), Passo dei Mandrioli (Zangheri, 1966b), PNFC wetlands (Falzea, 2006; Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2001; Bottacci et al., 2003; Gonnelli, 2005a; Montanari, 2005; Gonnelli et al., 2006).

**Equisetum palustre** L. - G rhiz, Boreal, pu. Passo della Calla, M. Falco (Zangheri, 1966a, 1966b), La Verna (Siemoni et al., 1989-1998), Camaldoli (10/2000, Herb. Padula), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. (Gonnelli, 2005), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Lama (Zangheri, 1966a), PNFC wetlands (Falzea, 2006; Mazza, 2006).

**Equisetum ramosissimum** Desf. - G rhiz, Boreal, pu. La Verna (Siemoni et al., 1989-1998), Badia, Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005a).

**Equisetum telmateja** Ehrh. - G rhiz, Boreal, pu. La Verna (Matteini, 1968 sub *Equisetum maximum*; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006; Mazza, 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2001; Gonnelli, 2005a; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

## POLYPODIOPHYTA

### ADIANTACEAE

**Adiantum capillus-veneris** L. - G rhiz, Cosmopol/wide distrib., ro, r, if. Stia (Marcucci, 1889; Gonnelli, 2005a), Vallesanta, (Gonnelli, 2005a), Castagno d' Andrea, (Gonnelli, 2005a), Ridracoli (Bonafede et al., 2001; Gonnelli, 2005a) Rabbi Valley, (Gonnelli, 2005a), Casa Petrella (Siemoncini et al., 2006).

### ASPIDIACEAE

**Dryopteris affinis** (Lowe) Fraser-Jenk. subsp. **borreri** (Newman) Fraser-Jenk. - G rhiz, Cosmopol/wide distrib., bu, r, if, l.r.56/2000 All.A. Badia Prataglia Lama, (Bonafede et al., 2001; Gonnelli, 2005a) Campigna Forest (Bonafede et al., 2001; Gonnelli, 2005a), Sopra Villaneta (Bonafede et al., 2001).

**Dryopteris affinis** (Lowe) Fraser-Jenkins subsp. **cambrensis** Fraser-Jenk. - G rhiz, Cosmopol/wide distrib., bu, r, if, l.r.56/2000 All.A. Poggio Scali (Sirotti, 1998), Badia Prataglia-Lama (Gonnelli et al., 2001; Bonafede et al., 2001; Gonnelli, 2005), Sasso Fratino (Gonnelli et al., 2006). According to Gonnelli (2005a) only this subspecies is present in the Tuscan territory of the Park, while in the Emilia-Romagna area the subsp. *borreri* (Newman) Fraser-Jenk. is also present.

**Dryopteris carthusiana** (Vill.) H.P. Fuchs - G rhiz, Boreal, D, NR. Falterona (Marcucci, 1889 sub *Polystichum spinulosum*; Baroni, 1897-1908 sub *Nephrodium spinulosum*). Probably the citations must be referred to *Dryopteris dilatata* and/or *D. expansa* (cfr. Ferrarini et al., 1986; Gonnelli, 2005). According to Bonafede et al. (2001) this species is not present in this part of the Apennines.

**Dryopteris dilatata** (Hoffm.) A. Grey - G rhiz, Boreal, bu, l.r.56/2000 All.A. Campigna (Zangheri, 1966a, 1966b) sub *D. austriaca*, Sodo dei Conti (06/2000, Herb. Padula), Al Pentolino (Zangheri, 1966b), Badia Prataglia-Lama (Gonnelli et al., 2001; Gonnelli, 2005), Par. Naz., vers. tosc. (Viciani & Gabellini, 2002), Camaldoli, M. Falco (Gonnelli, 2005), Sasso Fratino (Hofmann, 1965 sub *D. austriaca*; Gonnelli et al., 2001; Gonnelli et al., 2006).

**Dryopteris expansa** (K. Presl) Fraser-Jenkins et Jermy - G rhiz, Boreal, bu, r, if, l.r.56/2000 All.A. Poggio Scali (Sirotti, 1998), M. Falco (Sirotti, 1998; Gonnelli, 2005), Badia Prataglia-Lama (Gonnelli et al., 2001; Gonnelli, 2005), Par. Naz., vers.tos. (Viciani & Gabellini, 2002), Camaldoli (Gonnelli, 2005), Sasso Fratino (Gonnelli et al., 2001, 2006). Species of considerable phytogeographical interest. The sites of the Park, together with those of M. Amiata, are at the southern limit of the species distribution along the Apennines.

**Dryopteris filix-mas** (L.) Schott - G rhiz, Cosmopol/wide distrib., br. La Verna (Marcucci, 1889 sub *Polystichum filix mas*; Baroni, 1897-1908 sub *Nephrodium filix-mas*; Matteini, 1968 sub *P. filix mas*; Siemoni et al., 1989-1998), Passo della Calla, Passo dei Mandrioli (Zangheri, 1966a), Alto Archiano (Tassini, 1976 sub *P. filix mas*), M. Falco (07/1980, Herb. Padula), Camaldoli (07/1984, Herb. Padula; Padula et al., 1988), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Ferrari et al., 1979;

1982; Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Massei, 1981; Gonnelli et al., 2001; Bottacci et al., 2003; Gonnelli, 2005a; Montanari, 2005; Gonnelli et al., 2006).

**Gymnocarpium dryopteris** (L.) Newman - G rhiz, Boreal, bu, r, if, l.r.56/2000 All.A. Falterona (Marcucci, 1889 sub *Polypodium dryopteris*; Baroni, 1897-1908 sub *P. dryopteris*; Gonnelli, 2005a), M. Falco (Zangheri, 1966a sub *Thelypteris dryopteris*; Zangheri, 1966b sub *P. dryopteris*; Gonnelli, 2005a), Par. Naz., vers. tosc. (Viciani & Gabellini, 2002), Campigna, La Viottola, Fonte del Porcareccio, Abetina della Cornacchia (Gonnelli et al., 2001), Monte Falco, Falterona, Campigna Forest and La Lama (Gonnelli, 2005a), Sasso Fratino nei pressi della fonte del porcareccio (Gonnelli et al., 2006).

**Gymnocarpium robertianum** (Hoffm.) Newman - G rhiz, Boreal, ro, r, if. Badia Prataglia-Lama (Gonnelli et al., 2001; Gonnelli, 2005a), Fosso del Satanasso (Gonnelli et al., 2003b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2001, 2003b; Gonnelli, 2005a; Gonnelli et al., 2005, 2006). The Park sites, localized mainly in the steep marly-arenaceous areas, are the only ones of the Tuscan-Romagna Apennines (Gonnelli et al., 2001).

**Polystichum aculeatum** (L.) Roth - G rhiz, Eurasian, bu. Falterona (Marcucci, 1889 sub *Aspidium aculeatum*; Baroni, 1897-1908 sub *A. aculeatum*, Zangheri, 1966b sub *Dryopteris aculeata*), Camaldoli (Marcucci, 1889 sub *A. aculeatum*; Baroni, 1897-1908 sub *A. aculeatum*), La Verna (Marcucci, 1889 sub *A. aculeatum*; Baroni, 1897-1908 sub *A. aculeatum*; Matteini, 1968 sub *Polystichum lobatum*, *P. aculeatum* var. *lobatum*; *Herbarium Alvernae*, N. Siemoni, 25/5/1995 sub *P. lonchitis*; 08/2004, Herb. Padula), M. Falco, Passo dei Mandrioli (Zangheri, 1966a sub *P. lobatum*; Zangheri, 1966b sub *D. aculeata*), Passo della Calla (Zangheri, 1966a sub *P. lobatum*; Zangheri, 1966b sub *D. aculeata*), Alto Archiano (Tassini, 1976), Sasso Fratino, (Hofmann, 1965), Campigna (Ferrari et al., 1982), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Padula, 1982; Bottacci et al., 2003; Gonnelli et al., 2001, 2006; Gonnelli, 2005a; Montanari, 2005). The exsiccatum of the *Herbarium Alvernae* originally identified as *P. lonchitis* must be attributed to a young frond of *P. aculeatum* (Gonnelli, oss pers).

**Polystichum lonchitis** (L.) Roth - G rhiz, Boreal, ro, r, if. Fra Falterona e Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b sub *Dryopteris lonchitis*; Padula, 1988; 09/1985, Herb. Padula; Sirotti, 1998; Gonnelli, 2005a), M. Falterona (Zangheri, 1966b sub *D. lonchitis*; Sirotti, 1998; Gonnelli, 2005a), Badia Prataglia-Lama

(Gonnelli et al., 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002) Monte Falco (Padula, 1988), Sasso Fratino (Tigliè 1974; Gonnelli et al., 2001, 2005, 2006; Gonnelli, 2005a).

**Polystichum setiferum** (Forsskal) Woynar - G rhiz, Boreal, bu. Passo del Muraglione (Zangheri, 1966a), Pian Cancelli (Zangheri, 1966a), Passo del Muraglione (Zangheri, 1966b sub *Dryopteris aculeata* var. *setifera*), La Verna (Matteini, 1968), Campigna (Ferrari et al., 1982), Badia Prataglia-Lama (Gonnelli et al., 2001), Pratovecchio (01/2001, Herb. Padula), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco, Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2001; Gonnelli, 2005a; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Polystichum x bicknelli** (Christ) Hahne - G rhiz, European, bu, r. Badia prataglia-Lama, (Gonnelli et al., 2001), Sasso Fratino (Gonnelli et al., 2001; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). Hybrid between *P. setiferum* and *P. aculeatum*, present in some sites of the Park.

#### ASPLENIACEAE

**Asplenium adiantum-nigrum** L. - H ros, Eurasian, ro. Casentino (Marcucci, 1889), Camaldoli (Baroni, 1897-1908), Badia Prataglia-Lama (Gonnelli et al., 2001), M. Falterona, La Verna, Vallesanta (Gonnelli, 2005a). Acquacheta (Bonafede et al., 2001; Gonnelli, 2005a), Campigna (Bonafede et al., 2001; Gonnelli, 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Asplenium onopteris** L. - H ros, Cosmopol/wide distrib., bx. Badia Prataglia-Lama (Gonnelli et al., 2001; Gonnelli, 2005a), Pratovecchio (01/2001, Herb. Padula), Par. Naz., vers. tosc. (Viciani & Gabellini, 2002), Vallesanta (Gonnelli, 2005a), Acqua Cheta (Bonafede et al., 2001; Gonnelli, 2005a), Rincine-M. Massicaia (Sabato & Valenziano, 1975; Gonnelli, 2005a), Sasso Fratino at Fornino (Gonnelli et al., 2006).

**Asplenium ruta-muraria** L. - H ros, Boreal, ro, r, if, l.r.56/2000 All.A. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Gonnelli, 2005), M. Penna, Camaldoli (Sirotti, 1998; Gonnelli et al., 2001; Gonnelli, 2005a), Badia Prataglia-Lama (Gonnelli et al., 2001, 2005), Camaldoli and Eremo Camaldoli (Gonnelli et al., 2001; Gonnelli, 2005a), La Verna, (Gonnelli, 2005a), Valle Santa, (Gonnelli, 2005a), Cemetery at Casa Nuova dell'Alpe (Sirotti 2007 *in verbis*). Present in few sites in the Park area, can be detected on the walls of Eremo di Camaldoli and of La Verna, in Vallesanta, and in the grass

coenosis with outcropping rocks of the northern slopes of Monte Penna in the Lama Forest. In the limestone massif of La Verna the susp. *dolomiticum* could be also present (Gonnelli, 2005a).

**Asplenium septentrionale** (L.) Hoffm. - H ros, Boreal, ro, r, if, l.r.56/2000 All.A. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b; Sirotti 1998; Gonnelli, 2005a). Rincine-M. Massicaia (Sabato & Valenziano, 1975). This species has not been recently detected (Gonnelli, 2005a).

**Asplenium trichomanes** L. subsp. **quadrivalens** D.E. Meyer - H ros, Cosmopol/wide distrib., ro, l.r.56/2000 All.A. Casentino (Marcucci, 1889), La Verna (Baroni, 1897-1908; Siemoni et al., 1989-1998), Badia Prataglia-Lama (Gonnelli et al., 2001), M. Falco (06/1998, Herb. Padula, Bonafede et al., 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002; Gonnelli, 2005a; Botacci et al., 2003), Poppi, Bibbiena (Camangi et al., 2003), Poggio scali, la Lama (Bonafede et al., 2001), Acquacheta, (Bonafede et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pian delle Fontanelle (Zangheri 1966a), Passo del Muraglione (Zangheri, 1966a), La Lama (Zangheri, 1966a), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2001, 2006; Gonnelli, 2005a; Bottacci et al., 2003; Montanari, 2005). All the reports have been attributed to subsp. *quadrivalens* as it is the only one present in the Park area according to Gonnelli (2005a).

**Asplenium viride** Huds. - H ros, Boreal, ro, r. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), M. Falco (Zangheri, 1966a, 1966b; Padula, 1988; Padula, 1995; Contarini, 1996; Sirotti, 1998; Bonafede et al., 2001, Gonnelli et al., 2002, 2003b, 2005), M. Falterona (Sirotti, 1998; Gonnelli et al., 2003b), M. Penna (Sirotti, 1998; Gonnelli et al., 2003), Fosso del Satanasso (Gonnelli et al., 2003b), Camaldoli, Passo della Calla (Sirotti, 1998), Badia Prataglia-Lama (Gonnelli et al., 2001), From Passo dei Mandrioli to M. Falterona (Gonnelli, 2005a), Monte Falco (Padula, 1988), Sasso Fratino, (Gonnelli et al., 2003b, 2005a, 2005b, 2006). For La Verna the presence must be confirmed (Gonnelli, 2005a), as the reports are ancient (Caruel, 1870; Amidei in Marcucci, 1881 and Baroni, 1897-1908).

**Ceterach officinarum** Willd. subsp. **officinarum** - H ros, Eurasian, ro. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Badia Prataglia-Lama (Gonnelli et al., 2001), S. Benedetto in Alpe (Zangheri, 1966a, 1966b), Bibbiena (03/2001, Herb. Padula), Par. Naz. (Gonnelli, 2005), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).

**Phyllitis scolopendrium** (L.) Newman - H ros, Boreal, bu, l.r.2/1977, lrEM: VU. La Verna (Marcucci, 1889 sub *Scolopendrium officinale*; Baroni, 1897-1908 sub *S. vulgare*; Matteini, 1968 sub *S. vulgare*; Siemoni et al., 1989-1998; 08/2004, Herb. Padula, Gonnelli, 2005a), Campigna (Zangheri, 1966a, 1966b), M. Falco, Passo della Calla, Il Poggione, Poggio allo Spillo, M. Penna, Passo dei Mandrioli (Sirotti, 1998), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. (Alessandrini & Bonafede, 1996; Gonnelli, 2005a), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Sasso Fratino (Hofmann, 1965; Massei, 1981; Padula, 1988; Bottacci et al., 2000; Gonnelli et al., 2001; Gonnelli et al., 2005; Montanari, 2005; Gonnelli et al., 2006).

#### ATHYRIACEAE

**Athyrium filix-foemina** (L.) Roth. - H ros, Cosmopol/wide distrib., br. Camaldoli (Marcucci, 1889 sub *Asplenium filix-foemina*; Baroni, 1897-1908 sub *A. filix-foemina*; 08-10/2000, Herb. Padula), From Passo del Muraglione to M. Falco, Campigna (Zangheri, 1966b sub *Asplenium filix-foemina*), Piancancelli Campigna (Zangheri, 1966a), Giogana di Poggio Scali (07/1969, Herb. Padula), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005), Lama Forest, Poggio Scali, (Bonafede et al., 2001), Monte Falco (Bonafede et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988; Padula et al., 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003; Gonnelli et al., 2001, 2006; Montanari, 2005).

**Cystopteris fragilis** (L.) Bernh. - H caesp, Cosmopol/wide distrib., ro. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Marcucci, 1889; Baroni, 1897-1908; 10/2000, Herb. Padula), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; 08-09/2004, Herb. Padula), Burraia, M. Falco (Zangheri, 1966a; Padula, 1988; 07/1980, 06/1998, Herb. Padula), Passo della Calla, Prato alla Penna (Zangheri, 1966a), Prato alla Penna (Zangheri, 1966a), Fonte dè Conti (Zangheri, 1966a), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. (Gonnelli, 2005a, 2005b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Gonnelli et al., 2001; Gonnelli, 2005a; Gonnelli et al., 2005, 2006; Bottacci et al., 2003; Montanari, 2005).

**Matteuccia struthiopteris** (L.) Tod. - H caesp, Boreal, bu, r, if. Lama Forest (Padula, 1995; Gonnelli et al., 2001; Gonnelli, 2005a), Sasso Fratino, (Norcini & Zoccola, 1995; Gonnelli et al., 2001, 2006; Gonnelli, 2005a). In the Ital-

ian Peninsula this fern is present only at Sasso Fratino and in the Lama stream (Gonnelli, 2005a).

## BLECHNACEAE

**Blechnum spicant** (L.) Roth - H ros, Boreal, bu, r, if, lrEM: VU. Burraia (Zangheri, 1966a, 1966b; Sirotti 1998), Fangacci (Zangheri, 1966b), Canale di Pentolino (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Prato al Soglio, M. Gabrendo (Sirotti, 1998), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli 2005a). Campigna, (Bonafede et al., 2001; Gonnelli, 2005a), Prato Bertone (Zangheri, 1966a), La Lama, (Bonafede et al., 2001).

## HYPOLEPIDACEAE

**Pteridium aquilinum** (L.) Kuhn - G rhiz, Cosmopol/wide distrib., br. Casentino (Marcucci, 1889 sub *Pteris aquilina*; Baroni, 1897-1908 sub *P. aquilina*), La Verna (Matteini, 1968 sub *P. aquilina*; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Camaldoli (08/2000, Herb. Padula), Camaldoli (Padula et al., 1988), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Passo del Muraglione (Zangheri, 1966a), Campigna (Zangheri, 1966a), PNFC wetlands (Falza, 2006; Mazza, 2006), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

## OPHIOGLOSSACEAE

**Botrychium lunaria** (L.) Swartz - G rhiz, Cosmopol/wide distrib., pa, r, if. l.r.56/2000 All.A. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b; Sirotti, 1998; Gonnelli, 2005a), M. Falco (Zangheri, 1966a, 1966b; 05/1981, Herb. Padula; Sirotti, 1998; Gonnelli, 2005b), Passo della Calla (Zangheri, 1966a, 1966b; Sirotti, 1998), M. Gabrendo, Burraia, M. Falco, (Sirotti, 1998; Bonafede et al., 2001; Gonnelli, 2005a; Zangheri, 1966b), M. Penna (Sirotti, 1998; Gonnelli et al., 2001; Gonnelli, 2005a), Badia Prataglia-Lama (Gonnelli et al., 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), La Verna (Gonnelli, 2005a), Monte Falco, Sodo De' Conti (Padula, 1988), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Sasso Fratino (Gonnelli et al., 2007a).

**Ophioglossum vulgatum** L. - G rhiz, Boreal, pu, r, if. l.r.56/2000 All.A, lrEM: EN, lrT: LR. Valli del Rabbi e del Montone (Sirotti, 1998; Semprini & Milandri, 2001; Gonnelli, 2005a). Rare and localized in the North-Western part of the Park in the upper Rabbi Valley, in the area of Monte Mazzucca and of Acquacheta (Gonnelli, 2005a).

## POLYPODIACEAE

**Polypodium interjectum** Shivas - H ros, Eurasian, ro. La Verna (Siemoni et al., 1989-1998; Gonnelli, 2005a), Badia Prataglia-Lama (Gonnelli et al., 2001; Gonnelli, 2005a), Vallesanta (Gonnelli et al., 2001), Parco Nazionale (Gonnelli et al., 2001; Gonnelli, 2005a), Sasso Fratino (Gonnelli et al., 2006).

**Polypodium vulgare** L. - H ros, Boreal, ro. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; 09/2004, Herb. Padula), Badia Prataglia-Lama (Gonnelli et al., 2001), Passo del Muraglione (Zangheri, 1966a), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Gonnelli, 2005), Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Gonnelli et al., 2006).

## THELYPTERIDACEAE

**Phegopteris connectilis** (Michx.) Watt. - G rhiz, Boreal, bu, r, if, l.r.56/2000 All.A. M. Falco (Zangheri, 1966a sub *Thelypteris phegopteris*; Zangheri, 1966b sub *Polypodium phegopteris*; Gonnelli, 2005a), Falterona (Zangheri, 1966b sub *P. phegopteris*), Badia Prataglia-Lama (Gonnelli et al., 2001, Gonnelli, 2005a), Monte Falco, Campigna Forest (Padula, 1988 sub *Thelypteris phegopteris*), Par. Naz., vers. romagn. (Agostini, 1992 sub *P. polypodioides*), Sasso Fratino (Gonnelli et al., 2006). Species of considerable phyto-geographical interest. The Park sites are the southern limit of the species distribution in Italy.

## PINOPHYTA

## CUPRESSACEAE

**Calocedrus decurrens** (Torr.) Florin - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (9/1980 leg. Sartini Herbario Museo Siemoni, Padula 1988, Zoccola *in verbis* 2006).

**Chamaecyparis lawsoniana** (Murray) Parl. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Camaldoli culta. (01/1979, Herb. Padula, 4/1978 leg. Padula Herbario Museo Siemoni), Pratovecchio culta. (11/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (Zoccola, 2006 *in verbis*), Le Grigiole (2/1970 leg. Padula Herbario Museo Siemoni), nei pressi dell'Aia delle Guardie, presso Casanova Ex Vita Mayer), La Capannina (Oia Valley) (DREAM, 2006), Campigna-Lama Forests (Padula, 1988). According to Anonimo (1878) the species was introduced in 1860.

**Cupressus arizonica** Greene - P scap, Cultivated, A. Camaldoli (02/1979, Herb. Padula, 2/1979 leg. Padula Herbario Museo Siemoni), Pratovecchio culta. (01/2001, Herb. Pa-



- dula), Bibbiena (04/2005, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Lama Forest (Vazzano, 2006).
- Cupressus macnabiana* Murr. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), La Lama (Zoccola, 2007 *in verbis*). According to Anonimo (1878) the species was introduced in 1860.
- Cupressus sempervirens* L. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878 sub *C. pyramidalis* and sub *C. horizontalis*), Casentino (Marcucci, 1889 and sub *Cupressus sempervirens* var. *horizontalis*; *C. sempervirens* var. *fastigiata*; Baroni, 1897-1908), Pratovecchio culta. (01/1979, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003).
- Juniperus communis* L. - P caesp, Boreal, arb. Foreste Casentinesi (Anonimo, 1878), Casentino (Marcucci, 1889), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974), Stia (02/1975, Herb. Padula), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chitignano (04/2002, Herb. Padula), Chiusi della Verna (05/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Ferrari et al., 1982; Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tigliè, 1974; Gonnelli et al., 2006).
- Juniperus oxycedrus* L. subsp. *oxycedrus* - P caesp, South European-Mediterranean, arb, r, l.r.56/2000 All.A. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino (Baroni, 1897-1908), Bidente di Ridracoli Valley (Semprini & Milandri, 2001).
- Juniperus oxycedrus* L. subsp. *macrocarpa* (Sibth. & Sm.) Neill - P caesp, Mediterranea, E. La Verna (Marcucci, 1989 sub *J. macrocarpa*). For La Verna Marcucci (1889) reported the presence of *J. macrocarpa*, report very unlikely and by Matteini (1968) already interpreted as an error. Probably the citation must be attributed to *J. oxycedrus* subsp. *oxycedrus*.
- Juniperus sabina* L. - P caesp, Cultivated, A, D. Campigna loc. Lama (Zangheri, 1966a, 1966b). Currently this species seems to be no longer present.
- Juniperus virginiana* L. - P caesp, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Badia Prataglia (Sirotti, 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (Padula, 1988; Zoccola, 2006 *in verbis*). According to Anonimo (1878), this species was introduced in the Apennines in 1855.
- Thuja plicata* D. Don ex A. B. Lambert - P scap, Cultivated, A. Camaldoli culta. (04/1971, Herb. Padula sub *Thuja gigantea*), Badia Prataglia (03/1980, 09/2005, Herb. Padula sub *T. gigantea*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (3/198? leg. Sartini Herbarium Museo Siemoni), La Lama (2/1970 leg. Padula Herbario Museo Siemoni sub *T. gigantea*), La Lama (Zangheri, 1966a; Padula, 1988), Metaletto, Fiume d'Isola (Zoccola, 2006 *in verbis*).
- GINKGOACEAE
- Ginkgo biloba* L. - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- PINACEAE
- Abies alba* Mill. - P scap, South European Orophile, br, l.r.2/1977, l.r.56/2000 All.A. Foreste Casentinesi (Anonimo, 1878 sub *Abies pectinata*; Padula, 1995), Camaldoli (Caruel, 1860-64 sub *A. pectinata*; Marcucci, 1889 sub *A. pectinata*; Padula et al., 1988, 01/1979, Herb. Padula), La Verna (Marcucci, 1889 sub *A. pectinata*; Fiori, 1925; Matteini, 1968; Siemoni et al., 1989-1998), Metaletto (05/1970, Herb. Padula), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Lama Forest at Fornino (Checcacci et al., 2001), Campigna Forest (Zangheri, 1966a, 1966b), S. Benedetto in Alpe (Zangheri, 1966a, 1966b), Camaldoli (26-1-79 leg. Bini Herbario Museo Siemoni), Campigna (3-1-73 leg. Padula Herbario Museo Siemoni), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1974; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*). Native in Tuscan-Romagna Apennines and widely used in afforestation, it tends to spread spontaneously in beech and mesophilous mixed forests, especially on soils derived from limestone.
- Abies cephalonica* Loudon - P scap, Cultivated, A. Metaletto (Sirotti 1998; 05/1982, 10/2003, Herb. Padula), Badia Prataglia (Sirotti, 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (Padula, 1988), Lama Forest (Vazzano, 2006), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).
- Abies concolor* (Gord & Glend.) Lindl. ex Hildebr. - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- Abies nebrodensis* (Lojac.) Mattei - P scap, Cultivated, A. Badia Prataglia, loc Capanno in a small *Arboretum* (04/2001, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- Abies pinsapo* Boiss. - P caesp, Cultivated, A. Pratovecchio culta. (01/1998, Herb. Padula), Badia Prataglia (Sirotti 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al.,

- 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).
- Cedrus atlantica* (Endl.) Carriere - P scap, Cultivated, A. Camaldoli (Sirotti, 1998, 10/1980 leg. Bini Herbario Museo Siemoni), Metaledo culta. (02/1979, 10/1980, Herb. Padula), Bibbiena (01/2002, Herb. Padula), Stia (08/2003, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Casa Nuova, Casa Asqua, loc Aia delle Guardie, Fosso di Monte Mezzano (DREAM, 2006), Lama Forest (Padula, 1988; Vazzano, 2006).
- Cedrus deodara* (D. Don) G. Don fil. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Stia (01/1971, 11/1979, Herb. Padula), Poppi (08/2001, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Borro dell'Impalatoio (area between Poggio Raggi Guanto and Borro del Fossatone) (DREAM, 2006), Lama (Padula, 1988). According to Anonimo (1878) the species was introduced in 1855.
- Cedrus libani* A. Richard - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Campigna Forest (Zangheri, 1966a), Camaldoli (Padula, 1988). Reported by Anonimo (1878) for Foreste Casentinesi, where currently, according to Padula (1988), is no longer present.
- Larix decidua* Mill. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Metaledo (05/1979, Herb. Padula), Camaldoli culta. (10/1979, Herb. Padula, 10/79 leg. Bini Herbario Museo Siemoni), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Fangacci di Badia (Zoccola, 2006 *in verbis*), Campigna (Zangheri, 1966a), La Verna (Gonnelli, 2006 *in verbis*), Casa Guangualleri (ex Vita mayer), fir forest at Vitareta (DREAM, 2006), Casanova dell'Alpe (Sirotti, 2006 *in verbis*), Campigna M. Gabrendo (Zangheri, 1966a), Campigna-Lama Forests, Camaldoli (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*). According to Anonimo (1878) this species was introduced in 1840.
- Picea abies* Karst. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo 1878 sub *Abies picea*), La Verna (Matteini, 1968 sub *Picea excelsa*, Herb Alvernae), Camaldoli (01/1979, Herb. Padula, 1/1979 leg. Bini Herbario Museo Siemoni), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Poggio Capannina (Giacinti Baschetti, 1997/98 sub *P. excelsa*), Poggio Berci, Poggio Corbello, Pian dei Chiari (Oia Valley), Casanova, Monte la Capanna, Monte Tufone (Ex Vita Mayer), Vitrignesi, Monte Faggiolo, Capanna Maremmana, Costa Campamoli, Poggio Tondo, Passo dei Mandrioli, Podere Campiano (DREAM, 2006), Campigna Forest (Zangheri, 1966a, 1966b), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *P. excelsa*), Sasso Fratino (Massei, 1981; Padula, 1982; Gonnelli et al., 2006), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), along the road Braccina-Fiumicello (Simoncini & Zoccola, 2007 *in verbis*). According to Anonimo (1878) it was introduced in 1835.
- Picea canadensis* Britt. - P caesp, Cultivated, A. Campigna Forest at Fangacci (Padula, 1988). Planted in the area of Fangacci (Campigna), according to Padula (1988) a single tree maybe remained.
- Picea pungens* Engelm. - P scap, Cultivated, A. Bibbiena (03/2005, Herb. Padula), Camaldoli (Gonnelli, 2006 *in verbis*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Fangacci di Campigna (Padula, 1988), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), along the road Braccina-Fiumicello (Simoncini & Zoccola, 2007 *in verbis*).
- Picea smithiana* (Wall.) Boiss. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Lama (Padula, 1988 sub *P. morinda*). According to Anonimo (1878), it was introduced in 1855.
- Pinus wallichiana* Jackson - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878 sub *Pinus excelsa*), Badia Prataglia (Sirotti, 1998), Pratovecchio culta. (02/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*). According to Anonimo (1878), it was introduced in 1850.
- Pinus leucodermis* Antoine - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002 sub *P. heldreichii* var. *leucodermis*), Capanno (Zoccola, 2006 *in verbis*).
- Pinus mugo* Turra - P rept, Cultivated, A.M. Falterona (08/1970, Herb. Padula), Poggio Sodo dei Conti (10/1977, Herb. Padula), Prato al Soglio (09/1979, Herb. Padula, 6/1977 leg. Crudele Herbario Museo Siemoni), Prato al Soglio, Sodo De' Conti (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).
- Pinus murrayana* Balf. - P scap, Cultivated, A. Badia Prataglia culta. (05/1975, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002 sub *P. contorta* subsp. *murrayana*), Al Capanno (Ciancio et al. 1981-1982, Zoccola, 2006 *in verbis*).
- Pinus nigra* Arnold - P scap, Cultivated and Naturalized, A. La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Badia Prataglia (Sirotti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli, Chiusi della Verna (05/2003, Herb. Padula), Camaldoli (Padula et al., 1988), Pratovecchio (06/1979, 12/2001, 04/2003, 01/2004, Herb. Padula), Poppi (01-

03/2004, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002 sub *P. nigra* subsp. *nigra*), La Lama (5/1978 leg. Padula Herbario Museo Siemoni sub *P. nigra* subsp. *nigra*), PNFC eroded slopes (Giacinti Basschetti, 1998), Campigna (Zangheri, 1966a, 1966b), Campigna-Lama Forests (Ferrari et al., 1982; Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), along the road Braccina-Fiumicello (Simoncini & Zoccola, 2007 *in verbis*). Pines of *Pinus nigra* group are widely used for afforestation. They often become naturalized and spread especially in pastures and open areas on calcareous substrates.

*Pinus nigra* J.F. Arnold subsp. *laricio* Maire - P scap, Cultivated e Naturalized, A. Camaldoli (05/2003, Herb. Padula sub *Pinus laricio*), Poppi (03/2004, Herb. Padula sub *P. laricio*), Pratovecchio (03-04/2003, 10/2004, Herb. Padula sub *P. laricio*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Lama Forest (Vazzano, 2006), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).

*Pinus pinaster* Aiton - P scap, Cultivated and Naturalized, A. Foreste Casentinesi (Anonimo, 1878), Casentino culta. (Marcucci, 1889), Poppi (03/1978, 06-12/1982, Herb. Padula), Pratovecchio (04/1978, Herb. Padula), Sasso Fratino (Padula, 1982; Padula, 1988; Gonnelli et al., 2006). Used for afforestation, it often colonizes open areas and low-altitude degraded forests on siliceous substrates. According to Anonimo (1878) it was introduced in 1853.

*Pinus strobus* L. - P scap, Cultivated, A. Camaldoli (06-09/1982, Herb. Padula), Bibbiena (04/2005, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Loc Casanova, Fosso del Puntone, Fosso della Vezatosa (Zona Ex Vita Mayer), Casa Sambuchelli (Oia Valley), Pianelli (camping Falterona-Montalto) (DREAM, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

*Pinus sylvestris* L. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (02-09/1978, 05/1981, Herb. Padula), Pratovecchio culta. (04/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Casa la Capanna, fosso degli Acquai, Casanova (Ex Vita Mayer), Fosso delle Caldine, Casa Sambuchelli (Oia Valley), Poggio Corniolo di Camaldoli (DREAM, 2006), La Lama (Zangheri, 1966a, 1966b), Campigna-Lama Forests (Padula, 1988), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), along the road Braccina-Fiumicello (Simoncini & Zoccola, 2007 *in verbis*). According to Anonimo (1878), the species was introduced in 1855.

*Pseudotsuga menziesii* (Mirbel) Franco - P scap, Cultivated, A. La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (Camangi et al., 2003), Bibbiena (Camangi et al., 2003; 04/2005, Herb. Padula), Pratovecchio culta. (05/1978, 11/2003, Herb. Padula), Marena (05/2005, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Poggio Becci, Poggio Corbello, Pegaiola, Rifugio dell'Oia (Oia Valley), Casanova, Casa Sambuchelli, La Casina, Fosso degli Acquai (Ex Vita Mayer), Casa Campamoli, Case Metà d'Olmo, Casa Asqua, Vivaio Cerreta, Vetriceta, Fosso dell'Acqua Fradda, Villaggio di S. Francesco, Valle dell'Olmo - Valagnesi, Camaldoli, Montefatucchio (DREAM 2006), Campigna Forest (Zangheri, 1966a), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).

#### TAXACEAE

*Taxus baccata* L. - P scap, Eurasian, br, l.r.2/1977, l.r.56/2000 All.A, lrEM: VU. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966b), Falterona (Zangheri, 1966b), Metaletto (09/1978, Herb. Padula), Stia (03/1980, Herb. Padula), Badia Prataglia (Sirotti, 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna (9/1978 Leg. Di Julio Herbario Museo Siemoni), La Lama (3/1970 leg. Padula Herbario Museo Siemoni), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Sasso Fratino (Hofman, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). In the *Arboretum Siemoni* at Badia Prataglia var. *fastigiata* is also present (Crudele et al., 2002).

#### TAXODIACEAE

*Cryptomeria japonica* D. Don - P scap, Cultivated, A. Badia Prataglia culta. (01/1979, Herb. Padula, 1/1979 leg. Venturini Herbario Museo Siemoni), Metaletto (Sirotti 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC wetlands, at Metaletto pond (Mazza, 2006).

*Sequoia sempervirens* (D. Don.) Endl. - P scap, Cultivated, A. La Lama (Zangheri, 1966a sub *S. wellingtonia*), Badia Prataglia culta. (09/1976, Herb. Padula; Sirotti, 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Al Capanno (Zoccola, 2006 *in verbis*).

*Sequoiadendron giganteum* (Lindley) Bucholz - P scap, Cultivated, A. Badia Prataglia (09/1976, Herb. Padula, 2/1979 leg. Venturini Herbario Museo Siemoni), Arbore-

tum Siemoni Badia Prataglia (Crudele et al., 2002), Lama (9/1970 leg. Padula Herbario Museo Siemoni, Padula 1988, Zoccola, 2006 *in verbis*).

*Taxodium distichum* (L.) Rich. - P scap, Cultivated, *A. Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

## MAGNOLIOPHYTA DICOTYLEDONES

### ACERACEAE

**Acer campestre** L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino culta. (Marcucci, 1889), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia, culta. (05/2001, Herb. Padula), Poppi (04/2002, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), La Lama (12-5-78 leg. Venturini Herbario Museo Siemoni), La Seghettina (5-6-75 leg. Padula Herbario Museo Siemoni), Rincine-M. Massicaia (Sabato & Valenziano, 1975), S. Benedetto in Alpe, (Zangheri, 1966b, 1966b), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Ferrari et al., 1982; Padula, 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Tigliè, 1974; Padula, 1982; Norcini & Zoccola, 1995; Gonnelli et al., 2006). Also cultivated.

**Acer x coriaceum** Bosc ex Tausch - P scap, European, br, r, if. Lama Forest at Fornino (Checcacci et al., 2001), Valle-santa torrente Gargabuio (Gonnelli, 2006 sub *Acer peronai*), Sasso Fratino (Checcacci et al., 2001; Gonnelli et al., 2006). Interesting plant considered hybrid between *Acer monspessulanum* and *A. opalus*. In Italy the species is reported for few sites of Tuscan-Romagna Apennines and of Pratomagno.

**Acer lobelii** Ten. - P scap, Cultivated, *A. Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Acer monspessulanum** L. - P caesp, South European-Mediterranean, bx, r. Foreste Casentinesi (Padula, 1995), Chiusi della Verna (09/2003, Herb. Padula), S. Paolo in Alpe, (Zangheri, 1966a, 1966b), Lama Forest, at Fornino (Checcacci et al., 2001), Between Calvane and Ridracoli (Giacinti Baschetti, 1998), Bidente di Ridracoli and Bidente di Pietrapazza Valleys (Semprini & Milandri, 2001), Vallesanta at fosso del Gargabuio (Gonnelli, 2006 *in verbis*), Sasso Fratino at Fornino (Gonnelli et al., 2006).

**Acer negundo** L. - P scap, Cultivated and Naturalized, *A. Metaletto* culta (10/2003, Herb. Padula), La Lama (Zangheri, 1966a). Alien species cultivated and naturalized especially along rivers and streams but only at low elevations.

**Acer opalus** Mill. subsp. *opalus* - P scap, European, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Prataglia

(Baroni, 1897-1908), S. Benedetto in Alpe, S. Giacomo in Meleto (Zangheri, 1966b), Capria Valley (Padula, 1974), La Verna (Matteini, 1968; 07/2004, Herb. Padula sub *Acer opulifolium*), Alto Archiano (Tassini, 1976), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. opulifolium*), Badia Prataglia (10/1974, 08/2003, Herb. Padula sub *A. opulifolium*), Lama Forest at Fornino (Checcacci et al., 2001 sub *A. opalus*), Fonte Solforosa (1-6-79 leg. Betti, Herbario Museo Siemoni), Badia Prataglia (10-10-74 leg. Crudele Herbario Museo Siemoni), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *A. gr. opalus*), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002 sub *A. opulifolium*), Sasso Fratino (Tigliè, 1974 sub *A. opalus*; Massei, 1981 sub *A. opalus*; Padula, 1982 sub *A. opalus*; Bottacci et al., 2003; Montanari, 2005 sub *A. opulifolium*; Gonnelli et al., 2006). The ancient reports can be referred either to the subsp. *opalus* or to the subsp. *obtusatum* or to intermediates. Indeed, as already noted by several authors (Fiori, 1906; D'Errico, 1956; Pignatti, 1982; Viciani, 2001) the Apennines between Tuscany, Romagna, Umbria and Marche is the territory where the subsp. *opalus* and the subsp. *obtusatum* meet. In the study area it is possible to find plants with characteristics well related to one or the other subspecies, and plants with intermediate characteristics, for which *ad hoc* names (*Acer opalus* var. *ambiguum* Fiori, *A. italum* Lauth var. *ambiguum* Fiori) have also been proposed. From an ecological point of view, the typical subspecies is more frequent at higher altitudes, the subsp. *obtusatum* at lower ones.

**Acer opalus** Mill. subsp. *obtusatum* (Waldst. & Kit.) Gams - P scap, South-European, br. La Verna (Siemoni et al., 1989-1998 sub *Acer obtusatum*), La Lama (Zangheri, 1966b sub *A. opalus* var. *obtusatum*), Par. Naz., vers. romagn. (Agostini, 1992 sub *A. obtusatum*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. obtusatum*), Chiusi della Verna, La Verna (08/2002, Herb. Padula sub *A. obtusatum*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002 sub *A. obtusatum*), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Gonnelli et al., 2006).

**Acer platanoides** L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Dalla Calla a Poggio Scali (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (05/2002, Herb. Padula), La Lama (9/78 leg. Padula Herbario Museo Siemoni), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Pian del Pero (Zangheri, 1966a, 1966b), Passo della Calla, Poggio Scali (Zangheri, 1966b), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn.

(Agostini, 1992; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Acer pseudoplatanus** L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Camaldoli (Caruel, 1860-64; Marcucci, 1889; Padula et al., 1988), Campigna Forest, Fosso Abetia, Poggio Palaio, La lama, Prato alla Penna, Passo Porcareccio (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Pratovecchio (04/1978, 07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Calvano (06/2004, Herb. Padula), Poppi (05/2003, Herb. Padula), Le Cullacce (9/78 leg. Crudele Herbario Museo Siemoni), Lama Forest at Fornino (Checcacci et al., 2001), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006; Mazza, 2006), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). At Badia Prataglia in the *Arboretum Siemoni* the cv. *purpurascens* is also present (Crudele et al., 2002).

**Acer saccharinum** L. - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

#### ADOXACEAE

**Adoxa moschatellina** L. - G rhiz, Boreal, br. Capo d'Arno (Caruel, 1860-64; Marcucci, 1889), fra Falterona e Camaldoli (Baroni, 1897-1908), Poggio Scali, Passo della Calla, Passo dei Mandrioli, Campigna Forest, Prato Bertone (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia, Poppi (04/2003, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).

#### AMARANTHACEAE

**Amaranthus retroflexus** L. - T scap, Naturalized, A. Casentino (Marcucci, 1889; Baroni, 1897-1908), Pratovecchio (09/1997, Herb. Padula), Poppi (08/2002, Herb. Padula).

#### ANACARDIACEAE

**Cotinus coggygia** Scop. - NP, European, arb, r, l.r.56/2000 All.A. Campigna-Lama (Padula, 1988), Foreste Casentinesi (Padula, 1995).

#### APIACEAE

**Aegopodium podagraria** L. - G rhiz, Boreal, br. Camaldoli, Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a, 1966b), Poggio Scali (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006).

**Aethusa cynapium** L. - T scap, Boreal, ru, r. Prataglia (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), La Lama (Zangheri, 1966a, 1966b).

**Ammi majus** L. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna, La Lama (Zangheri, 1966a, 1966b).

**Angelica sylvestris** L. - H scap, Boreal, bu. Casentino (Marcucci, 1889), Badia Prataglia (Baroni, 1897-1908; 08/1999-2003, Herb. Padula), Camaldoli (Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2005, 2006).

**Anthriscus caucalis** M. Bieb. - T scap, Eurasian, NR. La Verna (Caruel, 1860 sub *Anthriscus vulgaris*; Marcucci, 1889 sub *A. vulgaris*; Matteini, 1968 sub *A. vulgaris*). The report by Matteini (1968) is not new and based on Marcucci (1889).

**Anthriscus sylvestris** (L.) Hoffm - H scap, Eurasian, ru. Campigna (Zangheri, 1966a, 1966b), La Verna (Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002) Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), Poggio Scali (Zangheri, 1966b sub *Anthriscus sylvestris* subsp. *nitida*). Zangheri (1966b) reported an ancient Wangerin's citation of *A. sylvestris* subsp. *nitida* at Poggio Scali, but, according to Conti et al. (2005), in Italy only the subsp. *sylvestris* is present, so we prefer to refer this datum to *Anthriscus sylvestris* s.l.

**Bifora testiculata** (L.) Roth - T scap, Mediterranean, ru, r. Giampereta (Marcucci, 1889 sub *Bifora flosculosa*; Baroni, 1897-1908), fra Mandrioli e Pratovecchio (Baroni, 1897-1908), S. Giacomo in Meleto (Zangheri, 1966a, 1966b).

**Bunium bulbocastanum** L. - G bulb, European, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889), Moggiona, Poggio Penna, Prataglia (Baroni, 1897-1908 sub *Carum bulbocastanum*), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), S. Benedetto in Alpe (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).

- Bupleurum baldense** Turra - T scap, South European-Mediterranean, px, IrEM: CR. Camaldoli (Caruel, 1860-64 sub *Bupleurum aristatum*; Marcucci, 1889 sub *B. aristatum*), Partina (Marcucci, 1889 sub *B. aristatum*; Baroni, 1897-1908 sub *B. aristatum*), Prataglia. (Baroni, 1897-1908 sub *B. aristatum*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (09/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *B. baldense* subsp. *baldense*).
- Bupleurum falcatum** L. subsp. *cernuum* (Ten.) Arcangeli - H scap, Eurasian, px, r. Casentino (Baroni, 1897-1908), M. Falco (Zangheri, 1966b; 07/1980, Herb. Padula; Padula, 1988), M. Penna (Gonnelli et al., 2003b), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *B. falcatum*), Sasso Fratino (Gonnelli et al., 2003b, 2006).
- Bupleurum praealtum** L. - T scap, South-European, bx, r. Campigna (Zangheri, 1966a), Corniolino (Zangheri, 1966a, 1966b sub *B. junceum*).
- Bupleurum rotundifolium** L., T scap, Eurasian, ru, r, RNT. Partina, Bibbiena, M. del Faggione (Marcucci, 1889; Baroni, 1897-1908), Giogana (Zangheri, 1966b), S. Giacomo in Meleto (Zangheri, 1966a, 1966b). Zangheri's citations (1966b) at Giogana refer to ancient Siemoni's data and must be confirmed.
- Bupleurum subovatum** Link - T scap, Mediterranean, D, NR. Partina, Bibbiena (Marcucci, 1889 sub *Bupleurum protractum*; Baroni, 1897-1908 sub *B. protractum*), La Verna (Baroni, 1897-1908 sub *B. protractum*).
- Carum carvi** L. - H scap, Eurasian, pa, r. Fra Passo della Calca e Poggio Scali, Pian Tombesi (Zangheri, 1966a, 1966b), La Lama (Zangheri, 1966b).
- Caucalis platycarpus** L. - T scap, South European-Mediterranean, ru. S. Giacomo in Meleto (Zangheri, 1966a sub *C. lappula*), S. Giacomo in Meleto, La Lama (Zangheri, 1966b sub *C. daucooides*). The citation of Zangheri (1966b) for La Lama refers to ancient data of Baccarini.
- Chaerophyllum aureum** L. - H scap, Mediterranean Orophile, pu. Prataglia (Caruel, 1860-64; Marcucci, 1889), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Cotozzo (Baroni, 1897-1908), M. Falco, Burraia (Zangheri, 1966a, 1966b), Prato alla Penna (Zangheri, 1966a), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Chaerophyllum hirsutum** L. - H scap, European Orophile, br, r. Poggio Scali (Zangheri, 1966b), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998).
- Chaerophyllum temulum** L. - T scap, Eurasian, ru. Prataglia (Baroni, 1897-1908), La Verna (Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Passo dei Mandrioli (Zangheri, 1966b), Campigna (Ferrari et al., 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Ch. temulentum*).
- Cnidium silaifolium** (Jacq.) Simonk subsp. *silaifolium* - H scap, South-European, bx. Camaldoli, Bibbiena (Marcucci, 1889 sub *Cnidium apioides*; Baroni, 1897-1908 sub *C. apioides*), Le Cullacce, Isola di S. Sofia (Zangheri, 1966a, 1966b). All the records can be referred to the typical subspecies, as it is the only one present in Italy (Conti et al., 2005).
- Conium maculatum** L. subsp. *maculatum* - H scap, Cosmopol/wide distrib., ru, r. Giampereta (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), fra Consuma e Falterona (Baroni, 1897-1908), Passo del Muraglione (Zangheri, 1966a), La Lama (Zangheri, 1966b). All the records have been referred to the subsp. *maculatum*, as it is the only one present in Italy (Conti et al., 2005). Almost all the data (except Zangheri, 1966a) are ancient, as also the Zangheri's citation (1966b) at La Lama is based on Parlato.
- Daucus carota** L. subsp. *carota* - H bienn, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), La Lama (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (09-12/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).
- Eryngium amethystinum** L. - H scap, Mediterranean, px. Casentino (Marcucci, 1889; Fl. Ital. Ex., vol. XIX, ott. 1912, n° 1708, Fiori), La Verna (Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 07/2004, Herb. Padula), Bibbiena, Gressa (Baroni, 1897-1908), Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (09/2003, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998): M. Calvano (Viciani, 2008 *in verbis*).
- Eryngium campestre** L. - H scap, South European-Mediterranean, px. Camaldoli (Caruel, 1860-64), Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Massei, 1981).
- Foeniculum vulgare** Mill. - H scap, Mediterranean, px. Casentino (Marcucci, 1889 sub *Foeniculum officinale*), Stia (08/2001, Herb. Padula), Poppi (08/2001, Herb. Padula

- sub *F. vulgare* subsp. *piperitum*; Camangi et al., 2003), Bibbiena (Camangi et al., 2003), Corniolino, Saiaccio; Zangheri, 1966b). The data include also the subsp. *piperitum* (Ucria) Bèg.
- Heracleum sphondylium** L. s.l. - H scap, Eurasian, bu. Camaldoli (Caruel, 1860-64 sub *Heracleum panaces*), Campigna (Zangheri, 1966a, 1966b), La Verna (Marcucci, 1889 sub *H. panaces*; Baroni, 1897-1908 sub *H. panaces*; Matteini, 1968 sub *H. sphondylium* and *H. sphondylium* var. *dubium*; Siemoni & Ricceri, 1989-1998 sub *H. sphondylium* subsp. *ternatum* - essicatum Siemoni 1989 H. Alvernae), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani e Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Foreste Casentinesi (Gonnelli, 2005c sub *H. sphondylium* subsp. *ternatum*), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2005; Montanari, 2005; Gonnelli et al., 2006). In the study area the subsp. *ternatum* (Velen.) Brummit is surely present, but also other subspecies could be present, in particular the subsp. *sibiricum* (L.) Simonk.
- Laserpitium latifolium** L. - H scap, European, px, r, if. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Oenanthe pimpinelloides** L. - H scap, South European-Mediterranean, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Opopanax chironium** (L.) Koch - H scap, Mediterranean, px, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Marcucci, 1889; Fiori, 1925; Matteini, 1968; Siemoni et al., 1989-1998; 04/2003, 07/2004, Herb. Padula).
- Orlaya daucoides** (L.) Greuter - T scap, Mediterranean, ru. Casentino (Caruel, 1860-64 sub *Caucalis daucoides*; Marcucci, 1889 sub *C. daucoides*), Giampereta (Marcucci, 1889 sub *Orlaya platycarpus*; Baroni, 1897-1908 sub *O. platycarpus*), Freggina (Marcucci, 1889 sub *C. daucoides*; Baroni, 1897-1908 sub *C. daucoides*), Prataglia (Baroni, 1897-1908 sub *O. platycarpus*), La Verna (Matteini, 1968 sub *Daucus platycarpus*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *O. kochii*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *O. kochii*).
- Orlaya grandiflora** (L.) Hoffm. - T scap, European, ru. Casentino (Caruel, 1860-64; Marcucci, 1889), La Verna (Matteini, 1968 sub *Daucus grandiflora*; Siemoni et al., 1989-1998), Campigna, Isola di S. Sofia (Zangheri, 1966a), La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Pastinaca sativa** L. - H bienn, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), Chitignano (Baroni, 1897-1908), Pratovecchio (09/1985, 08/2002, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Peucedanum austriacum** (Jacq.) Koch - H scap, South-European, ro, r. a Verna (Marcucci, 1889 and sub *Peucedanum sulcatum*; Baroni, 1897-1908; Matteini, 1968 sub *P. austriacum* var. *montanum*; Siemoni & Ricceri, 1989-1998; N. Siemoni, s.d., Herb. Alvernae sub *O. oreoselinum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Peucedanum cervaria** (L.) Lapeyr. - H scap, Boreal, bx. Frequent at medium and low altitudes in the area (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Peucedanum oreoselinum** (L.) Moench - H scap, European, E. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* originally indentified as *P. oreoselinum* was found to be *P. austriacum*.
- Peucedanum ostruthium** (L.) W.D.J. Koch - H scap, European Orophile, NR. Fra Falterona e Camaldoli (Zangheri, 1966b). Zangheri (1966b) reported a citation by Sommier (1890) which must be confirmed.
- Peucedanum verticillare** (L.) Mert. & W.D.J. Koch - H scap, European Orophile, bu, r. La Lama (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Vallesanta (Gonnelli, 2006 *in verbis*), PNFC eroded slopes (Giacinti Baschetti, 1998). The Zangheri's citation (1966b) at La Lama is based on ancient reports by Baccarini and Siemoni.
- Pimpinella major** (L.) Huds. - H scap, European, bu. Camaldoli (Caruel, 1860-64 sub *Pimpinella magna*; Marcucci, 1889 sub *P. magna*), Campigna e Prato Betone (Zangheri, 1966a, 1966b), Sasso Fratino (Gonnelli et al., 2006).
- Sanicula europaea** L. - H scap, European Orophile, br. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli (Padula et al., 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988; Padula et al., 1988), PNFC wetlands (Mazza, 2006), Poggio Puledro, S. Giacomo in Meleto (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978, 1982; Bottacci, et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Scandix pecten-veneris** L. - T scap, South European-Mediterranean, ru, r. Prataglia (Parlatore, 24/8/1867, FI), Grogana in Casentino (Siemoni, 10-20/5/1871, FI; Zangheri, 1966b), Dintorni di Corniolo (A. Contardo, 10/5/1968, FI). Zangheri (1966b) reported an ancient citation by Baccarini at Grogana, probably based on exsiccata by Parlatore and Siemoni.

*Seseli libanotis* (L.) Koch - H scap, European, pd, r. M. Falco (08/1985, 06/2000, Herb. Padula; Padula, 1988), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

*Smyrniium olusatrum* L. - H bienn, South European-Mediterranean, NR. Prato Bertone (Zangheri, 1966b). Zangheri (1966b) reported an ancient citation by Baccarini.

*Smyrniium perfoliatum* L. - H bienn, Mediterranean, br, r. Camaldoli (05/1983, Herb. Padula).

*Tordylium apulum* L. - T scap, Mediterranean, px. Giogana, at low altitudes in the area (Zangheri, 1966b), Chiusi della Verna (04/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975). The Zangheri's citation (1966b) at Giogana is based on Baccarini.

*Tordylium maximum* L. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889), Prataglia, Mandrioli, fra Moggiona e Camaldoli (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), La Lama (Zangheri, 1966a), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

*Torilis arvensis* (Huds.) Link subsp. *arvensis* - T scap, Cosmopol/wide distrib., ru. At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

*Torilis arvensis* (Huds.) Link subsp. *purpurea* (Ten.) Hayek - T scap, Cosmopol/wide distrib., ru. Prataglia (Baroni, 1897-1908 sub *Caucalis purpurea*), S. Benedetto in Alpe (Zangheri, 1966a, 1966b).

*Torilis japonica* (Houtt.) DC. - T scap, Cosmopol/wide distrib., ru. Pratovecchio, Prataglia, Bibbiena (Baroni, 1897-1908 sub *Caucalis anthriscus*), S. Paolo in Alpe, Passo del Muraglione (Zangheri, 1966b sub *Torilis anthriscus*), La Verna (Siemoni et al., 1989-1999), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

*Torilis nodosa* (L.) Gaertn. - T scap, Mediterranean, ru. Prataglia (Baroni, 1897-1908 sub *Caucalis nodosa*), At low altitudes in the area (Zangheri, 1966b).

*Trochiscanthes nodiflora* (All.) Koch - H scap, European Orophile, D. La Verna, Monte Penna (Siemoni et al., 1989-1998; Padula, 2008). Reported only at La Verna, but probably by mistake: the exsiccatum of the *Herbarium Alvernae* (N. Siemoni, 20/06/1989) identified as *T. nodiflora* is without fruits (very important for a certain identification), and in our opinion is to be referred to *Aegopodium podagraria* L.

*Turgenia latifolia* (L.) Hoffm. - T scap, South European-Mediterranean, D, NR. Giogana in Casentino (Siemoni, 10-20/5/1871, FI), Moggiona (Marcucci, 1889; Baroni, 1897-1908 sub *Caucalis latifolia*), Mandrioli (Baroni, 1897-1908 sub *C. latifolia*), La Lama (Zangheri, 1966b sub *C. latifolia*). All the data are ancient and must be con-

firmed, as also the Zangheri's citation (1966b) is based on Baccarini and Siemoni.

#### APOCYNACEAE

*Vinca major* L. - Ch rept, Cultivated and Naturalized, A, D. Giogana (Zangheri, 1966b), La Verna (Ferrarini, 1998). The citation of Zangheri (1966b) is based on Baccarini and Siemoni. *Vinca major* must be considered an introduced and naturalized plant: Alessandrini & Bonafede (1996) reported that *V. major* is present only in anthropised sites, but in the *Herbarium Padula* some exsiccata of *V. major* collected in apparently seminatural environments are present in areas close to the Park boundaries (Pratovecchio, Bibbiena, 05/2001, 01/2003, Herb. Padula).

*Vinca minor* L. - Ch rept, European, br, r, l.r.2/1977, l.r.56/2000 All.A. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falterona-Passo della Calla (Alessandrini & Bonafede, 1996), Pratovecchio (03/2002, Herb. Padula), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).

#### AQUIFOLIACEAE

*Ilex aquifolium* L. - P caesp/P scap, South European-Mediterranean, br, l.r.56/2000 All.C1. Camaldoli (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), M. Falco (Zangheri, 1966a), Campigna-Lama (Ferrari et al., 1979, 1982, La Verna (Siemoni et al., 1989-1998), Badia Prataglia (Sirotti, 1998; 12/1975, Herb. Padula), Sasso Fratino, (Tigliè, 1974; Massei, 1981; Padula, 1982; Gonnelli et al., 2006), Foreste Casentinesi (Padula, 1995), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).

#### ARALIACEAE

*Hedera helix* L. - P lian, South European-Mediterranean, br. Casentino (Marcucci, 1889), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Badia Prataglia (10/1982, 01/1983, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982, Pratovecchio (01/2001, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).

#### ARISTOLOCHIACEAE

*Aristolochia pallida* Willd. - G bulb, South European-Mediterranean, arb, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

*Aristolochia rotunda* L. - G bulb, South European-Mediterranean, bx. Pratovecchio (Siemoni, 1891, FI), La Verna



(Baccarini, 1911, FI), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (04/2004, Herb. Padula). In the study area the presence of this species was reported also by Nardi (1984).

**Asarum europaeum** L. - H rept, Boreal, br, l.r.56/2000 All.A. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Baroni, 1897-1908; Siemoni et al., 1989-1998; 08/2002, Herb. Padula), Campigna Forest (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Padula, 1982; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).

#### ASCLEPIADACEAE

**Vincetoxicum hirundinaria** Medik. - H scap, Eurasian, px. La Verna (Caruel, 1860-64 sub *Vincetoxicum officinale*; Marcucci, 1889 sub *V. officinale*; Matteini, 1968 sub *Cynanchum vincetoxicum*; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Gonnelli et al., 2005, 2006).

#### ASTERACEAE

**Achillea collina** Becker - H scap, South-European, pu. Prato Bertone (Zangheri, 1966a sub *A. millefolium* var. *collina*), Campigna, Falterona (Zangheri, 1966b sub *A. millefolium* var. *collina*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

**Achillea millefolium** L. - H scap, Boreal, pa. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Falterona (Marcucci, 1889; Baroni, 1897-1908), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Passo della Calla (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; 06/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006). Probably several past citations of *A. millefolium* must be considered "sensu lato". For this area Zangheri (1966b) reported the var. *collina* and the var. *asplenifolia* (the latter does not seem to be not present here, cfr. Pignatti, 1982, and probably corresponds to *A. millefolium*). Sirotti & Fariselli (2002) reported *A. roseo-alba*, an other entity of this group, but also these data must be confirmed.

**Achillea setacea** Waldst. & Kit. subsp. *setacea* - H scap, South-European, px, r, RNT. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Adenostyles glabra** (Mill.) DC. subsp. *glabra* - H scap, South European Orophile, br. La Verna (Caruel, 1860-64 sub *Adenostyles alpina*; Marcucci, 1889 sub *A. alpina*; Matteini, 1968 sub *A. alpina* var. *australis*, *A. alpina* var. *glabra*; Siemoni et al., 1989-1998; Ferrarini, 1998 sub *A. alpina* var. *australis*; 07/2005, Herb. Padula), Falterona (Marcucci, 1889 sub *A. alpina*; Baroni, 1897-1908 sub *A. alpina*; Zangheri, 1966b sub *A. alpina*, Gonnelli et al., 2002), Campigna, Sodo de' Conti, Prato Bertone (Zangheri, 1966a, 1966b), Giogana di Poggio Scali (07/1968, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *A. alpina* var. *australis*), Alto Archiano (Tassini, 1976 sub *A. alpina*), Campigna-Lama (Ferrari et al., 1979; 1982 sub *A. alpina*; Padula et al., 1988 sub *A. alpina*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. australis*), Sasso Fratino, (Hofmann, 1965, 1991; Tiglié, 1974 sub *A. alpina*; Padula, 1982 sub *A. alpina*; Norcini & Zoccola, 1995, Bottacci et al., 2003, Montanari, 2005 sub *A. australis*; Gonnelli et al., 2005, 2006), PNFC wetlands (Falzea, 2006 sub *A. australis*). In the study area all the reports of *Adenostyles* must be referred to *A. glabra*, which according to Conti et al. (2005) includes *A. alpina* and *A. australis*. Emphasizing the differences between the synonymized entities, all the reports could be referred to *A. australis*.

**Andryala integrifolia** L. - T scap, Mediterranean, NR. Bibbiena (Marcucci, 1889 sub *Andryala sinuata*), Prataglia (Baroni, 1897-1908 sub *A. sinuata*).

**Antennaria dioica** (L.) Gaertner - Ch rept, Boreal, pa. Falterona (Baroni, 1897-1908), M. Falco, Sodo dei Conti, Burraia (Zangheri, 1966a, 1966b sub *A. dioica* var. *gallica*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco (Semprini & Milandri, 2001).

**Anthemis arvensis** L. - T scap, Cosmopol/wide distrib., ru. Prataglia (Caruel, 1860-64; Marcucci, 1889), Campigna (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Anthemis cotula** L. - T scap, South European-Mediterranean, ru. San Benedetto in Alpe (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Arctium lappa** L. - H bienn, Eurasian, ru. Casentino (Marcucci, 1889 sub *Lappa officinalis*; Baroni, 1897-1908 sub *L. officinalis*), Campigna, Passo della Calla, Prato Bertone (Zangheri, 1966a, 1966b sub *Arctium vulgare* and *A. lappa*; 07/1999, Herb. Padula), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

- Arctium minus** (Hill) Bernh. - H bienn, South European-Mediterranean, ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).
- Arctium nemorosum** Lej. - H bienn, European, pu. Passo della Calla, Campigna, Prato Bertone, Passo Porcareccio (Zangheri, 1966a sub *A. vulgare*), Burraia di Campigna, Pentolino (Zangheri, 1966b), Poggio Corsoio sotto M. Falco (Zangheri, 1966b sub *A. vulgare* var. *pubens*). For Burraia and Pentolino Zangheri (1966b) reported ancient citations by Baccarini. At Poggio Corsoio Zangheri (1966b) reported also the presence of *A. vulgare* var. *pubens*, which is considered an hybrid (Pignatti, 1982) between *A. minus* and *A. nemorosum*.
- Arctium tomentosum** Mill. - H bienn, Eurasian, NR. La Verna (Marcucci, 1889 sub *Lappa tomentosa*; Baroni, 1897-1908 sub *L. tomentosa*; Matteini, 1968 sub *Arctium lappa* var. *tomentosum*; Sirotti 1998). All the reports, also the recent ones, are based on Marcucci (1889) so the presence of the species must be confirmed.
- Artemisia alba** Turra - Ch suff, South-European, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Chiusi della Verna (09/2003, Herb. Padula).
- Artemisia vulgaris** L. - H scap, Boreal, ru. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).
- Artemisia verlotiorum** Lamotte - H scap, Naturalized, A. La Verna (Siemoni et al., 1989-1998). Naturalized especially at low altitudes and in disturbed environments.
- Bellidiastrum michelii** Cass. - H ros, South European Orophile, pd, r, if, l.r.56/2000 All.A. Falterona (Caruel, 1860-64; Marcucci, 1889), Sodo dei Conti (Marcucci, 1889), Burraia, Piancancelli, Poggio Martino (Zangheri, 1966a sub *Aster bellidiastrum*), M. Falco (Zangheri, 1966a, 1966b sub *A. bellidiastrum*; Padula, 1988 sub *A. bellidiastrum*; Sirotti, 1998 sub *A. bellidiastrum*), Piancancelli, Campigna (Zangheri, 1966b sub *A. bellidiastrum*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *A. bellidiastrum*). The historical data suggest that this species was more widespread in the past; today it is present only on eroded slopes and at M. Falco.
- Bellis perennis** L. - H ros, Boreal, pu. Casentino (Caruel, 1860-64; Marcucci, 1889), M. Falco, Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Pratovecchio (03/2001, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (04/2003, Herb. Padula), PNFC wetlands (Falzea, 2006).
- Bellis sylvestris** Cyr. - H ros, Mediterranean, px. Casentino (Caruel, 1860-64; Marcucci, 1889), Poggio Scali, Pian del Pero, Sodo de' Conti (Zangheri, 1966b), Campigna (Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *B. sylvestris* var. *verna*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Bombycilaena erecta** (L.) Smoljan - T scap, Eurasian, px. Camaldoli (Caruel, 1860-64 sub *Micropus erectus*; Marcucci, 1889 sub *M. erectus*; Baroni, 1897-1908 sub *M. erectus*), Bibbiena (Marcucci, 1889 sub *M. erectus*), Moggiona, Mandrioli, La Verna (Baroni, 1897-1908 sub *M. erectus*), Poggio Scali (Zangheri, 1966b sub *M. erectus*), Falterona (Baroni, 1897-1908 sub *M. erectus*; Zangheri, 1966b sub *M. erectus*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *M. erectus*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Calendula arvensis** L. - T scap, South European-Mediterranean, ru. Casentino (Caruel, 1860-64; Marcucci, 1889), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (11/2002, 03/2005, Herb. Padula).
- Carduus chrysanthus** Ten. - H scap, Endemic Apennines, D. PNFC eroded slopes, Rio d'Olmo (Giacinti Baschetti, 1998). This report could be of phytogeographic interest, as this territory could represent the northern limit of the distribution area in Italy for this species. The data come from a degree thesis, and we could not check the exsiccata, so the report must be confirmed.
- Carduus crispus** L. - H bienn, Boreal, D. La Verna (Ferrari, 1998). The only record is a photo by Fra' Ginepro (Ferrari, 1998, and it could be very interesting as this species is not reported for Tuscany (Conti et al., 2005). Anyway, on a close examination of the photo, we are not certain that this corresponds to *C. crispus*; indeed, when comparing this photo with other images, it seems to be much more similar to *C. personata*, widespread in the area, for the shape of the leaves.
- Carduus micropterus** (Borbàs) Teyber subsp. **perspinosus** (Fiori) Kazmi - H bienn, Endemic Apennines, px, RNT. Everywhere in the area (Zangheri, 1966b sub *C. nutans* var. *perspinosus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. nutans* var. *perspinosus*).
- Carduus nutans** L. - H bienn, European, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Falterona, Burraia (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). In the past *C. micropterus* subsp. *perspinosus* has been considered a variety of *C. nutans*, and it is possible that some records must be referred to this taxon. According to Zangheri (1966b) in the area *C. micropterus* subsp. *perspinosus* is more widespread than typical *C. nutans*.

- Carduus personata** (L.) Jacq. - H scap, South European Orophile, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Bibbiena (Baroni, 1897-1908), Piancancelli, Campigna, La Lama, Prato Bertone (Zangheri, 1966a, 1966b), Sasso Fratino, (Gonnelli et al., 2003a, 2005, 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Carduus pycnocephalus** L. - H bienn, South European-Mediterranean, ru. La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Carlina acanthifolia** All. - H ros, South European Orophile, px, l.r.56/2000 All.A. La Verna (Baroni, 1897-1908 sub *Carlina utzka*; Matteini, 1968; Ferrarini, 1998), San benedetto in Alpe (Zangheri, 1966a, 1966b), Campigna (Ferrari et al., 1982 sub *C. utzka*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *C. utzka*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Carlina acaulis** L. - H ros, European, pa. Mandrioli (Marcucci, 1889; Baroni, 1897-1908), Falterona, Poggio Scali, Prato Bertone (Zangheri, 1966b), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. simplex*), Poggio Sodo dei Conti (09/1998, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). The study area population can be referred to the subsp. *caulescens* (Lam.) Schuebl. et G. Martens *pro max. parte*, but the presence of the typical subspecies is not excluded.
- Carlina corymbosa** L. - H scap, Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Carlina macrocephala** Moris - H scap, Endemic Apennines (?), pa, r, l.r.56/2000 All.A, l.r.Naz: LR, l.r.T: LR. Camaldoli (Marcucci, 19/7/1864, FI), Prataglia (Parlatore, 9/8/1867, FI), Tra M. Cucco e Fonte del Prete, App. del Casentino (Parlatore, 25/7/1867, FI), Camaldoli, M. del Faggione (Marcucci, 1889 sub *Carlina nebrodensis*; Baroni, 1897-1908 sub *C. nebrodensis*), M. Falterona (Fiori, 27/6/1903, FI; Forasassi, 8/7/1952; 20/7/1953; 7/87/1953, FI; Bendini, 3/11/1958, FI), Passo del Muraglione (Zangheri, 1966a, 1966b sub *C. macrocephala* var. *nebrodensis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. macrocephala* var. *nebrodensis*). The tuscan plants have been so identified according to Fiori (Sch. Fl. It. Ex. Vol. XII, 1905, n. 185), but according so some other authors this species is present only in Sardinia (Conti et al., 2005). All the exsiccata of the *Herbarium Centrale Italicum* (FI) were revised by Meusel & Kaerstner in 1973, and these authors attributed them to *C. macrocephala*; the same authors, in a later paper (Meusel & Kaerstner, 1994), confirmed the presence of *C. macrocephala* and referred the plants of this area to a new variety, the var. *toscanensis* Meusel & Kaerstner.
- Carlina vulgaris** L. - H scap, Boreal, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Chiusi della Verna (08/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).
- Carthamus lanatus** L. - T scap, South European-Mediterranean, ru. Moggiona (Baroni, 1897-1908 sub *Carduncellus lanatus*), Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Centaurea arrigonii** Greuter - H scap, Endemic Apennines, px, if, RNT, l.r.56/2000 All.A.C. Badia Prataglia (Marcucci, 1889 sub *Centaurea dissecta*; Baroni, 1897-1908 sub *C. dissecta*), Moggiona (Baroni, 1897-1908 sub *C. maculosa*), Campigna (Zangheri, 1966a, 1966b sub *C. dissecta* var. pl.; Ferrari et al., 1982 sub *C. parlatoris*), Prato Bertone, La Lama (Zangheri, 1966a, 1966b sub *C. dissecta* var. pl.), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. dissecta*), Alto Archiano (Tassini, 1976 sub *C. dissecta*), La Verna (Siemoni et al., 1989-1998 sub *C. ambigua*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *C. ambigua*), Par. Naz., vers. romagn. (Agostini, 1992 sub *C. ambigua*; Sirotti & Fariselli, 2002 sub *C. ambigua*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *C. ambigua*), M. Calvano (Viciani, 2008 *in verbis*). According to Arrigoni (2003), all the reports of *C. ambigua* s.l. and *C. dissecta* s.l. for the study area must be referred to *C. intermedia*, (current valid name: *C. arrigonii*). Also the citations of *C. parlatoris* by Ferrari et al. (1982) at Campigna and an ancient report of *C. maculosa* (Baroni, 1897-1908) at Moggiona are attributed to *C. arrigonii*.
- Centaurea deusta** Ten. - H bienn, Endemic Apennines, NR. Moggiona (Baroni, 1897-1908 sub *Centaurea alba*).
- Centaurea jacea** L. - H scap, Eurasian, px. l.r.56/2000 All.C. La Lama (Zangheri, 1966b sub *C. nigra*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna (Ferrari et al., 1982 sub *C. cfr. pratensis*), La Verna (Siemoni et al., 1989-1998 sub *C. pratensis*), Pratovecchio (07/2003, Herb. Padula), PNFC wetlands (Mazza, 2006). Many data are intended "sensu lato". In the study area, besides the subsp. *gaudini*, the subsp. *angustifolia* Greml. (= *C. pannonica*) is probably present. Also a doubtful report of *C. nigra* L. by Zangheri (1966a; 1966b) is attributed to *C. jacea*.

- Centaurea jacea** L. subsp. **gaudini** (Boiss. & Reut.) Greml. - H scap, South-European, px, l.r.56/2000 All.C. Bibbiena (Marcucci, 1889 sub *Centaurea amara*), Camaldoli (Marcucci, 1889 sub *C. amara*; Baroni, 1897-1908 sub *C. amara*), La Verna (Marcucci, 1889 sub *C. amara*; Matteini, 1968 sub *C. jacea* var. *amara*), Everywhere in the area (Zangheri, 1966b sub *C. bracteata*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *C. bracteata*).
- Centaurea nigrescens** Willd. subsp. **pinnatifida** (Fiori) Dostál - H scap, Endemic Apennines, px. l.r.56/2000 All.C. Casentino (Marcucci, 1889; Baroni, 1897-1908), Bibbiena (Marcucci, 1889 sub *Centaurea transalpina*; Baroni, 1897-1908 sub *C. transalpina*), Campigna (Zangheri, 1966a, 1966b sub *C. transalpina*), Everywhere in the area (Zangheri, 1966b sub *C. vochinensis* var. *pinnatifida*), La Verna (Simoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). All the reports were attributed to the subsp. *pinnatifida*, the only surely present in the study area (cfr. Zangheri, 1966b; Pignatti, 1982; Conti et al., 2005).
- Centaurea scabiosa** L. - H caesp, Eurasian, px. l.r.56/2000 All.C. Bibbiena (Marcucci, 1889), M. Fallito (Baroni, 1897-1908), La Verna (Marcucci, 1889; Matteini, 1968; Simoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Calvano (Viciani, 2008 *in verbis*).
- Chondrilla juncea** L. - H scap, South European-Mediterranean, px, r. Casentino (Caruel, 1860-64), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Cichorium intybus** L. - H scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. intybus* var. *silvestre*), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003).
- Cirsium acaule** (L.) Scop. - H ros, Eurasian, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Simoni et al., 1989-1998; Ferrarini, 1998), Chiusi della Verna (08/2002, Herb. Padula).
- Cirsium arvense** (L.) Scop. - G rad, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), Campigna, Passo dei Mandrioli (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Simoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Cirsium bertolonii** Spreng. - H scap, Endemic Apennines, D. Sasso Fratino (Bottacci et al., 2003). This species, much sought-after by Gonnelli et al. (2006) was not found; if confirmed, this area could be the southern distribution limit in Italy.
- Cirsium creticum** (Lam.) d'Urv. - H bienn, Mediterranean, D. Giogana (Zangheri, 1966b sub *Cirsium polyanthemum*), La Verna (Tosi, 12/8/1960, FI, det. Matteini, 1968 sub *C. polyanthemum*). The Zangheri's citation (1966b) is based on ancient data by Siemoni, and the Matteini's report (1968) is based on an exsiccatum by Tosi dated 1960 and present in FI. In our opinion, it is a *Cirsium* sp. plant not easily identifiable, but which surely does not correspond to *C. creticum*.
- Cirsium eriophorum** (L.) Scop. - H bienn, European, pa. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Campigna, Prato Bertone (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Ferrarini, 1998), Prato alla Penna (09//2001, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Probably many reports of *C. eriophorum* are intended "sensu lato" and referable to the entire group, which in the study area includes *C. morisianum* Rchb. and *C. tenoreanum* Petrak.
- Cirsium erisithales** (Jacq.) Scop. - H scap, South European Orophile, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Campigna, Passo della Calla (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979; 1982), M. Falco (Padula, 1988), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Cirsium palustre** (L.) Scop. - H bienn, Eurasian, E. La Verna (Simoni et al., 1989-1998). This is an erroneous report: the exsiccatum of the *Herbarium Alvernae* (N. Simoni, Croce delle Lecche, 29/6/1989) corresponds to *Carduus personata*.
- Cirsium tenoreanum** Petrak - H bienn, Endemic Apennines, ru. Par. Naz., vers. romagn. (Agostini, 1992), La Verna (Simoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Cirsium vulgare** (Savi) Ten. - H bienn, Cosmopol/wide distrib., ru. Falterona (Caruel, 1860-64 sub *Cirsium lanceolatum*; Marcucci, 1889 sub *C. lanceolatum*), Camaldoli (Marcucci, 1889 sub *C. lanceolatum*; Baroni, 1897-1908 sub *C. lanceolatum*), Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b sub *C. lanceolatum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Simoni et al., 1989-1998), Par. Naz., vers. ro-

- magn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).
- Cota altissima** (L.) J. Gay - T scap, Eurasian, ru. Bibbiena (Marcucci, 1889 sub *Anthemis cota*; Baroni, 1897-1908 sub *A. cota*), Passo della Calla (Zangheri, 1966a sub *A. cota*), La Verna (Marcucci, 1889 sub *A. cota*; Matteini, 1968 sub *A. cota*; Siemoni et al., 1989-1998 sub *A. cota*).
- Cota tinctoria** (L.) J. Gay - H bienn, European, px. Casentino (Marcucci, 1889 sub *Anthemis tinctoria*; Baroni, 1897-1908 sub *A. tinctoria*), Passo della Calla, Poggio allo Spillo, Campigna, La Lama (Zangheri, 1966a, 1966b sub *A. tinctoria*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *A. tinctoria*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *A. tinctoria*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. tinctoria*).
- Cota triumfetti** (L.) J. Gay - H scap, South-European, px. Camaldoli (Marcucci, 1889 sub *Anthemis triumfetti*; Baroni, 1897-1908 sub *A. triumfetti*), Campigna, Poggio allo Spillo (Zangheri, 1966b sub *A. triumfetti*), La Verna (Marcucci, 1889 sub *A. triumfetti*; Baroni, 1897-1908 sub *A. triumfetti*; Matteini, 1968 sub *A. tinctoria* var. *triumfetti*).
- Crepis foetida** L. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Corniolo, Passo del Muraglione (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Crepis leontodontoides** All. - H ros, Mediterranean Orophile, arb. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), San Benedetto in Alpe, M. Falco, Fonte dei Conti, Campigna (Zangheri, 1966a), Falterona, La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Crepis neglecta** L. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Fiori, 1925), Corniolo, Campigna Forest (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Crepis pulchra** L. - T scap, South European-Mediterranean, ru. Moggiona (Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b).
- Crepis setosa** Haller fil. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Crepis vesicaria** L. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Gogana (Zangheri, 1966b), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Crupina vulgaris** Cass. - T scap, Eurasian, px. Moggiona, Bibbiena (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Bidente di Pietrapazza (Sirotti, 2004 *in verbis*).
- Cyanus montanus** (L.) Hill - H scap, European Orophile, px, r, if, l.r.56/2000 All.C. La Verna (Caruel, 1860-64 sub *Centaurea montana*; Marcucci, 1889 sub *C. montana*; Matteini, 1968 sub *C. montana*), Campigna, (Ferrari et al., 1982 sub *C. montana*; Ubaldi 1983 sub *C. montana*; Semprini & Milandri, 2001 sub *C. montana*), Poggio allo Spillo (Sirotti, 1998 sub *C. montana*), Fosso del Satanasso (Gonnelli et al., 2003b sub *C. montana*).
- Cyanus segetum** Hill. - T scap, Cosmopol/wide distrib., ru, r, if, l.r.56/2000 All.A,C. Casentino (Marcucci, 1889 sub *Centaurea cyanus*; Baroni, 1897-1908 sub *C. cyanus*), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. cyanus*), La Verna (Siemoni et al., 1989-1998 sub *C. cyanus*). In the past this species was very frequent but today it is rare.
- Cyanus triumfetti** (All.) Dostal ex A. & D. Löve - H scap, European, px, r, if, l.r.56/2000 All.C. M. Penna, Camaldoli; Pian delle Fontanelle (Sirotti, 1998 sub *Centaurea triumfetti*).
- Doronicum columnae** Ten. - G rhiz, South European Orophile, pd, l.r.56/2000 All.A. La Verna (Caruel, 1860-64 sub *Doronicum caucasicum*; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; Viciani, 2008 *in verbis*), fra Falterona e Camaldoli (Baroni, 1897-1908), Passo dei Mandrioli, Poggio Scali, Pian delle Fontanelle, Poggio Giogo, San Benedetto in Alpe (Zangheri, 1966a, 1966b), Falterona (Zangheri, 1966b), M. Falco (Zangheri, 1966a, 1966b; Padula, 1988; Sirotti, 1998; 07/1980, 06/1986, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Padula, 1988), Macereti e rupi arenacee di crinale (Alessandrini & Bonafede, 1996), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002) Sasso Fratino, (Tiglié, 1974; Hofmann, 1965 sub *D. cordatum*; Bottacci et al., 2003, Montanari, 2005; Gonnelli et al., 2005, 2006).
- Echinops ritro** L. - H scap, Mediterranean, E. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* (N. Siemoni, Scogliera delle Stimmate, 3/8/1989), firstly identified as *E. ritro*, is referable to *E. sphaerocephalus*.

- Echinops sphaerocephalus** L. - H scap, Eurasian, ru, r. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998 sub *E. ritro*; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Erigeron acris** L. - H scap, Boreal, ru. Poggio Scali (Carruel, 1860-64; Marcucci, 1889 sub *E. acer*), fra La Verna e Chiusi (Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b sub *E. acer*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Erigeron canadensis** L. - T scap, Naturalized, A. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998 sub *Conyza canadensis*).
- Eupatorium cannabinum** L. - H scap, Eurasian, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna, Passo dei Mandrioli (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli, Poppi (10/200, Herb. Padula), Sasso Fratino (Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Filago arvensis** L. - T scap, South European-Mediterranean, D, NR. Monte Penna e Poggio allo Spillo (Zangheri, 1966b). Zangheri (1966b) reported a citation by Baccarini based on exsiccata collected by Parlatore in 1867.
- Filago gallica** L. - T scap, South European-Mediterranean, NR. Campigna Forest (Zangheri, 1966b). Zangheri (1966b) reported a citation by Baccarini.
- Filago minima** (Sm.) Pers. - T scap, Eurasian, px. Falterona (Marcucci, 1889; Baroni, 1897-1908), Mandrioli (Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Filago pyramidata** L. - T scap, South European-Mediterranean, px. Bibbiena (Marcucci, 1889 sub *Filago germanica* subsp. *spathulata*), Corniolo (Zangheri, 1966b sub *F. germanica* subsp. *spathulata*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Filago vulgaris** Lam. - T scap, Eurasian, ru. Casentino (Marcucci, 1889 sub *Filago germanica*), Bibbiena (Baroni, 1897-1908 sub *F. germanica*), Poggio allo Spillo, Lama, S. Benedetto in Alpe (Zangheri, 1966a, 1966b sub *F. germanica*), Campigna (Zangheri, 1966a, 1966b sub *F. germanica*; Ferrari et al., 1982 sub *F. germanica*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *F. germanica*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *F. germanica*), Badia Prataglia (09/2005, Herb. Padula sub *F. germanica*).
- Galatella linosyris** (L.) Rchb. F. - H scap, South European-Mediterranean, D. PNFC eroded slopes (Giacinti Baschetti, 1998 sub *A. linosyris*). The presence of this species on eroded clay slopes of the Park (Giacinti Baschetti, 1998) comes from a degree thesis and is probable, but we could not check any exsiccatum, so the report must be confirmed.
- Galinsoga parviflora** Cav. - T scap, Naturalized, A. Camaldoli (10/2002, Herb. Padula).
- Glebionis segetum** (L.) Fourr. - T scap, South European-Mediterranean, ru. M. Falco (Zangheri, 1966a, 1966b sub *Chrysanthemum segetum*; 07/1980, Herb. Padula sub *C. segetum*; Padula, 1988 sub *C. segetum*), La Verna (Matteini, 1968 sub *C. segetum*).
- Gnaphalium sylvaticum** L. - H scap, Boreal, pa. Falterona (Marcucci, 1889; Baroni, 1897-1908), Camaldoli (Baroni, 1897-1908; 08/1980, Herb. Padula), Burraia, Poggio Scali, Fonte dei Conti, Poggio Giogo (Zangheri, 1966a, 1966b sub *G. sylvaticum* var. pl.), Poggio allo Spillo, Prato Bertone (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), M. Falco (Zangheri, 1966a; 07/2001, Herb. Padula), Stia (09/2001, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Gnaphalium uliginosum** L. - T scap, Boreal, pa, r, if, l.r.56/2000 All.A. Lungo l'Archiano, Bibbiena (Baroni, 1897-1908), Sodo dei Conti, Prato alla Penna (Zangheri, 1966a, 1966b sub *G. uliginosum* var. *ramosum*).
- Helianthus tuberosus** L. - G bulb, Naturalized, A. Bibbiena (Marcucci, 1889), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Helichrysum italicum** (Roth.) Don subsp. *italicum* - Ch suff, South-European, px. San Benedetto in Alpe, Corniolo (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Alto Archiano (Tassini, 1976), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998; 07/2004, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (01/2001, Herb. Padula), Stia (09/2001, Herb. Padula), Falterona (08/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003).
- Helminthotheca echioides** (L.) Holub - T scap, South European-Mediterranean, ru. La Verna (Siemoni et al., 1989-1998 sub *Picris echioides*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. echioides*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *P. echioides*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *P. echioides*), Stia (09/2003, Herb. Padula sub *P. echioides*).
- Hieracium bifidum** Kit. ex Hornem. - H ros, South European Orophile, pa, r, RNT. M. Falco (Zangheri, 1966a, 1966b), Passo della Calla (Zangheri, 1966a, 1966b), Cri-

nale di Campigna at Pentolino (Zangheri, 1966b sub *H. incisum*). Zangheri's citation (1966b) at Campigna, Pentolino is based on ancient data by Baccarini.

***Hieracium brevifolium*** Tausch - H scap, European, D. La Verna (Siemoni et al., 1989-1998). This report is based on an exsiccatum of the *Herbarium Alvernae* (Siemoni and Ricceri, Fondo della Melosa, 10/8/1999), which in our opinion could be referred to *H. racemosum*. The real presence of this taxon, intermediate between *H. umbellatum* and *H. racemosum*, must be confirmed (see also Conti et al., 2005).

***Hieracium dentatum*** Hoppe - H scap, South European Orophile, ro, r, if. M. Falco (Zangheri, 1966a, 1966b; Contarini, 1996; Sirotti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). This taxon, intermediate between *H. villosum* and *H. bifidum* (Conti et al., 2005) is reported only at M. Falco.

***Hieracium lachenalii*** C.C. Gmel. - H scap, Eurasian, br. La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998). The exsiccatum of the *Herbarium Alvernae* (Siemoni & Ricceri, Massi della Fossa, 26/9/1996), corresponds well to the identification, but this entity of *H. murorum* group is problematic (see also Gottschlich, 2004).

***Hieracium lactucella*** Wallr. - H ros, Boreal, pa, r. Badia Prataglia (Marcucci, 1889 sub *Hieracium auricula*; Baroni, 1897-1908 sub *H. auricula*), M. Falco (Zangheri, 1966a, 1966b sub *H. auricula* var. *alpicolum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *H. auricula* subsp. *chlorolepis*).

***Hieracium murorum*** L. - H scap, Boreal, br. Casentino (Caruel, 1860-64; Marcucci, 1889 sub *Hieracium sylvaticum*), M. Falco, Passo della Calla, Campigna (Zangheri, 1966a), Giogana, Poggio Scali, Calla, Fonte dei Conti, Lama (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979; 1982), Alto Archiano (Tassini, 1976), Camaldoli (Padula et al., 1988), M. Falterona (Gonnelli et al., 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *H. sylvaticum*), Sasso Fratino (Hofmann, 1965 sub *H. sylvaticum*; Bottacci et al., 2003 sub *H. sylvaticum*; Montanari, 2005; Gonnelli et al., 2006). In the past, the endemic taxon *H. grovesianum* Arv.-Touv. (*H. murorum*-*H. lachenalii* group) was considered by Baccarini very common in the area, but in a recent revision of the exsiccata of the *Herbarium Centrale Italicum* (among which there are also Baccarini's specimens) Gottschlich (2004) excluded *H. grovesianum* from the study area. So, it is probably correct to consider these reports referred to *H. murorum* as Zangheri (1966b) did.

***Hieracium pilosella*** L. - H ros, European, px. Casentino

(Caruel, 1860-64; Marcucci, 1889), Burraia (Zangheri, 1966a), M. Falco (Zangheri, 1966a, 1966b; 07/1980, Herb. Padula), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Gonnelli et al., 2006).

***Hieracium piloselloides*** Vill. - H scap, European, px. Giogana (Zangheri, 1966b sub *Hieracium florentinum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998 sub *H. florentinum* sub *H. subcymigerum*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

***Hieracium praealtum*** Vill. - H scap, European, px. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Hieracium piloselloides* var. *praealtum*).

***Hieracium racemosum*** Waldst. et Kit. - H scap, European, br, lrEM: DD. Camaldoli (Caruel, 1860-64 sub *Hieracium crinitum*; Marcucci, 1889 sub *H. crinitum*), La Verna, Prataglia (Baroni, 1897-1908 sub *H. crinitum*), Falterona (Baroni, 1897-1908 sub *H. crinitum*; Zangheri, 1966b sub *H. crinitum*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Conti et al. (2005) included all the data concerning the entities of *H. racemosum* group in the nominal species. According to Pignatti (1982), we prefer to separate the two extremes of morphological variation, i.e. *H. racemosum* and *H. virgaurea*. Probably *H. racemosum* "sensu stricto", medioeuropean, is not present in the study area.

***Hieracium schmidtii*** Tausch - H ros, European, px. La Verna (Siemoni et al., 1989-1998 sub *Hieracium pallidum*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *H. pallidum*). Reported at La Verna (*Herbarium Alvernae*, Siemoni et Ricceri, Bosco delle Fate, 20/6/1996), according to Giacinti Baschetti (1998) is frequent on eroded slopes.

***Hieracium villosum*** Jacq. - H scap, South European Orophile, ro, r, if, l.r.56/2000 All.A. M. Falco (Zangheri, 1966a, 1966b; Padula, 1988, 1995; Contarini, 1996; 06/2000, Herb. Padula; Sirotti, 1998), Falterona (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Present only on M. Falco cliffs, as the report by Zangheri (1966b) for Falterona is based on an ancient citation by Rytz.

- Hieracium villosum** Jacq. var. **zangherii** Vignolo-Lutati - H scap, Endemic Apennines, ro, r, if. M. Falco (Zangheri, 1966a), Herb. Gonnelli (2005). This variety was described by Vignolo-Lutati in Zangheri (1966a) at M. Falco. In this site the typical subspecies and this variety seem to be present, but this problem is under study.
- Hieracium virgaurea** Coss. - H scap, Endemic Apennines, br, l.r.56/2000 All.A. Campigna e Pian del Pero (Zangheri, 1966a, 1966b), Falterona, Prato Bertone, Poggio Scali (Zangheri, 1966b), Campigna and Pian del Pero (Zangheri, 1966a, 1966b sub *H. virga-aurea* var. *italicum*), Passo della Calla, (Zangheri, 1966a, 1966b sub *H. virga-aurea* var. *ageratoides*), Par. Naz., vers. romagn. (Agostini, 1992). See note of *H. racemosum*.
- Hypochoeris achyrophorus** L. - T scap, Mediterranean, px. Bibbiena (Marcucci, 1889 sub *Seriola aetnensis*; Baroni, 1897-1908 sub *S. aetnensis*), La Verna (Fiori, 1925 sub *Hypochoeris aetnensis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975) sub *H. aetnensis*.
- Hypochoeris radicata** L. - H ros, European, ru. Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Inula conyza** DC. - H bienn, Eurasian, bx. Campigna, San Paolo in Alpe (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Alto Archiano (Tassini, 1976), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (07/2002, Herb. Padula), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).
- Inula salicina** L. - H scap, European, pu. San Benedetto in Alpe (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Lactuca muralis** (L.) Gaertner - H scap, European, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998 sub *Mycelis muralis*), Passo della Calla, Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *M. muralis*), Campigna-Lama (Ferrari et al., 1979, 1982 sub *M. muralis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *M. muralis*), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Camaldoli (Padula et al., 1988 sub *M. muralis*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *M. muralis*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *M. muralis*), M. Penna (08/2002, Herb. Padula), Sasso Fratino, (Hofmann, 1965 sub *M. muralis*; Bottacci et al., 2003 sub *M. muralis*; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006 sub *M. muralis*).
- Lactuca saligna** L. - T scap, South European-Mediterranean, ru. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998).
- Lactuca serriola** L. - H bienn, South European-Mediterranean, ru. Selvapiana (Zangheri, 1966a, 1966b sub *L. scariola*), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Lapsana communis** L. - T scap, Eurasian, br. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Passo della Calla, Campigna, San Paolo in Alpe-Corniolo, San Benedetto in Alpe (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Penna (07/2005, Herb. Padula), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).
- Leontodon cichoraceus** (Ten.) Sanguin. - H ros, Mediterranean Orophile, pa, r. Da Fontefredda alla Lama (Zangheri, 1966b), Burraia (Zangheri, 1966a, 1966b; Sirotti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Agostini, 1992), M. Gabrendo, La Lama (Sirotti, 1998).
- Leontodon crispus** Vill. - H ros, South-European, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Leontodon hispidus** L. - H ros, European, px. Casentino (Marcucci, 1889), Falterona (Marcucci, 1889 sub *Leontodon hispidus* var. *glabratum*; Baroni, 1897-1908 sub *L. hastilis* var. *glabratus*), Camaldoli (Marcucci, 1889 sub *L. hispidus* var. *glabratum*; Baroni, 1897-1908 sub *L. hastilis* var. *glabratus*), Badia Prataglia (Marcucci, 1889 sub *L. hispidus* var. *glabratum*; Baroni, 1897-1908 sub *L. hastilis* var. *glabratus*), M. Falco, Burraia, Passo della Calla (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Leontodon rosani** (Ten.) DC. - H ros, Mediterranean, px. La Verna (Caruel, 1860-64 sub *Leontodon villarsii*; Marcucci, 1889 sub *L. villarsii*; Matteini, 1968 sub *L. villarsii*; Siemoni et al., 1989-1998 sub *L. villarsii* and sub *L. hirtus*), San Benedetto in Alpe, Campigna (Zangheri, 1966a sub *L. villarsii* var. *rosani*), Everywhere in the area (Zangheri, 1966b sub *L. villarsii* var. *rosani*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *L. hirtus*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *L. villarsii*), Par. Naz., vers. romagn. (Si-



- rotti & Fariselli, 2002 sub *L. villarsii*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *L. villarsii*).
- Leontodon saxatilis** Lam. subsp. *saxatilis* - T scap, Mediterranean Orophile, px. Bibbiena (Baroni, 1897-1908 sub *Thrinchia hirta*), Selvapiana, Passo del Muraglione (Zangheri, 1966a), Burraia, Prato Bertone (Zangheri, 1966b sub *Leontodon leysseri*), Campigna (Zangheri, 1966b sub *L. leysseri*; Ferrari et al., 1982 sub *L. leysseri*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *L. taraxacoides*).
- Leucanthemum heterophyllum** (Willd.) DC. - H scap, South European Orophile, pa, r, if, RNT. M. Falco (Contarini, 1996; Sirotti, 1998), Chiusi della Verna (08/2002, Herb. Padula). According to Pignatti (1982) *L. maximum* is partially a synonym of *L. heterophyllum*, while according to Zangheri (1966b:211) it must be referred to *Chrysanthemum vulgare* var. *pallens* (= *Leucanthemum pallens*). In the area, presence and distribution of various entities of *L. vulgare* group are not clear.
- Leucanthemum pachyphyllum** Marchi et Illuminati - H scap, South European Orophile, D. La Verna (Siemoni et al., 1989-1998). In our opinion the exsiccatum of the *Herbarium Alvernae* (N. Siemoni, Calcio del Diavolo, 3/8/1989) is not clearly referable to *L. pachyphyllum* and probably must be attributed to an other entity of *L. vulgare* group.
- Leucanthemum pallens** (Perreym.) DC. - H scap, South European-Mediterranean, px. Poggio allo Spillo presso Badia Prataglia (Marcucci, 1889 sub *Leucanthemum maximum*; Baroni, 1897-1908 sub *L. maximum*), Passo del Muraglione, Bagno di Romagna (Zangheri, 1966a sub *C. leucanthemum* var. *pallidum* Fiori), Everywhere in the area (Zangheri, 1966b sub *C. leucanthemum* var. *pallidum* and var. *pallens*), Campigna (Ferrari et al., 1982). See the note for *L. heterophyllum*.
- Leucanthemum vulgare** Lam. - H scap, Boreal, px. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Everywhere in the area (Zangheri, 1966b sub *Chrysanthemum leucanthemum* var. *vulgare*), La Verna (Matteini, 1968 sub *C. leucanthemum*; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. leucanthemum*), Alto Archiano (Tassini, 1976 sub *C. leucanthemum*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). This taxon must be intended *sensu lato* as, probably, several entities of the group (in particular, *L. pallens*) have been reported with this name.
- Matricaria chamomilla** L. - T scap, Cosmopol/wide distrib., ru. At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).
- Onopordum acanthium** L. - H bienn, Mediterranean, NR. Moggiona (Baroni, 1897-1908).
- Pallenis spinosa** (L.) Cass. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Asteriscus spinosus*), At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *A. spinosus* var. *pallens*), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Petasites albus** (L.) Gaertner - G rhiz, European Orophile, bu. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Pian delle Fontanelle, Burraia, Passo della Calla, Passo dei Mandrioli, Campigna (Zangheri, 1966a, 1966b), Falterona (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Sasso Fratino, (Hofmann 1965, Massei 1981, Gonnelli et al., 2003a; Norcini & Zoccola, 1995; Montanari, 2005; Gonnelli et al., 2006), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), PNFC wetlands (Falzea, 2006).
- Petasites hybridus** (L.) Gaertn. - G rhiz, Eurasian, pu. Camaldoli (Baroni, 1897-1908 sub *Petasites officinalis*), Campigna, San Benedetto in Alpe (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Picnomon acarna** (L.) Cass. - H scap, Mediterranean, NR. Gressa presso Bibbiena (Baroni, 1896-1908, based on Sommier 1890 sub *Cirsium acarna*).
- Picris hieracioides** L. - H scap, Boreal, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Passo dei Mandrioli, San Benedetto in Alpe (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. hieracioides* var. *spinulosa*), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Podospermum canum** C. A. Mey - H scap, Eurasian, px, r, if, RNT, l.r.56/2000 All.A. La Verna (Siemoni et al., 1989-1998).
- Podospermum laciniatum** (L.) DC. - H bienn, Eurasian, px, r. La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Prenanthes purpurea** L. - H scap, European, br. Camaldoli (Marcucci, 1889), La Verna (Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna, Passo dei Mandrioli, Burraia (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto

- Archiano (Tassini, 1976), Camaldoli (Padula et al., 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino, (Hofmann, 1965, 1991; Massei, 1981; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Pulicaria dysenterica** (L.) Bernh. - H scap, South European-Mediterranean, pu. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (08/1997, Herb. Padula), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006). An exsiccatum of the *Herbarium Alvernae* (N. Siemoni, Pozza Marcia, 3/8/1995), firstly identified as *P. vulgaris* Gaertn., is in our opinion referable to *P. dysenterica*.
- Pulicaria vulgaris** Gaertner - T scap, Eurasian, D. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* (N. Siemoni, Pozza Marcia, 3/8/1995), firstly identified as *P. vulgaris* Gaertn., is in our opinion probably referable to *P. dysenterica*.
- Reichardia picroides** (L.) Roth - H scap, Mediterranean, px. Casentino (Caruel, 1860-64 sub *Picridium vulgare*; Marcucci, 1889 sub *P. vulgare*), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998). The report by Zangheri (1966b) at Giogana was based on ancient citations by Baccarini.
- Rhagadiolus stellatus** (L.) Gaertn. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Fino alla sommità dell'Appennino (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Robertia taraxacoides** (Loisel.) DC. - H ros, Endemic Apennines, ro, r, if, l.r.56/2000 All.A. La Verna (Ferrarini, 1998 sub *Hypochaeris robertia*). This species of phytogeographic interest is reported only at La Verna by Ferrarini (1998). Probably the plant lives not in the Verna forests but in the nearby open rocky areas (Croce della Calla, Calcio del Diavolo, etc.).
- Senecio aquaticus** Hill. - H bienn, European, pu. Casentino (Caruel, 1860-64 sub *Senecio erraticus*), Bibbiena (Marcucci, 1889 sub *S. erraticus*), M. Falco (Zangheri, 1966a, 1966b sub *S. erraticus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. erraticus*), PNFC wetlands (Falzea, 2006 sub *S. erraticus*).
- Senecio doronicum** (L.) L. - H scap, South European Orophile, pa, r, if. M. Falco (Zangheri, 1966a, 1966b sub *Senecio doronicum* subsp. *glabratus*; Padula, 1988; Sirotti, 1998 sub *S. doronicum* subsp. *glabratus*; 07/1977-1980-2001, Herb. Padula), Piancancelli (Padula, 1988; Sirotti, 1998), M. Falterona (Sirotti, 1998 sub *S. doronicum* subsp. *glabratus*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Senecio erucifolius** L. - H scap, Eurasian, ru. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Bibbiena (Marcucci, 1889), M. Falco (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998), La Verna (Ferrarini, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Senecio germanicus** Wallr. - H scap, European, D. La Verna (Caruel, 1860-64 sub *Senecio nemorensis*; Marcucci, 1889 sub *S. nemorensis*; Matteini, 1968 sub *S. nemorensis*; Siemoni et al., 1989-1998 sub *S. nemorensis*; Ferrarini, 1998 sub *S. nemorensis*), Alto Archiano (Tassini, 1976 sub *S. nemorensis*), PNFC wetlands (Falzea, 2006; Mazza, 2006 sub *S. nemorensis*). Probably all the reports must be referred to *S. ovatus*: these entities were considered in the past two varieties or subspecies of *S. nemorensis* (Fiori, 1923-29; Pignatti, 1982). According to hitherto known, in the study area only *S. ovatus* is present.
- Senecio jacobaea** L. - H scap, Eurasian, pd, r. Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Senecio ovatus** (P. Gaertn., B. Mey & Scherb.) Willd. - H scap, European, br. Campigna Forest, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *Senecio nemorensis* subsp. *fuchsii*), M. Falterona (Zangheri, 1966b sub *S. nemorensis* subsp. *fuchsii*), La Verna (Matteini, 1968 sub *S. nemorensis* var. *cacaliaster*; 08/2002, Herb. Padula), Alto Archiano (Tassini, 1976 sub *S. nemorensis* var. *fuchsii*, *S. nemorensis* var. *cacaliaster*), Campigna-Lama (Ferrari et al., 1979; 1982 sub *S. nemorensis* subsp. *fuchsii*), Camaldoli, Campigna (Padula et al., 1988 sub *S. nemorensis* subsp. *fuchsii*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965 sub *S. fuchsii*; Massei 1981 sub *S. nemorensis* subsp. *fuchsii*; Bottacci et al., 2003 sub *S. fuchsii*; Montanari, 2005; Gonnelli et al., 2005 sub *S. fuchsii*; Gonnelli, 2006).
- Senecio squalidus** L. - H bienn, South European Orophile, ro. Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *S. nebrodensis* var. *rupestris*; Siemoni et al., 1989-1998 sub *S. rupestris*), Pratovecchio (Caruel, 1860-64), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b sub *S. rupestris*), Burraia, Poggio Scali (Zangheri, 1966a sub *S. rupestris*), M. Falco, Passo della Calla, Passo dei Fangacci, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *S. rupestris*), Campigna (Zangheri, 1966a, 1966b sub *S. rupestris*; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. rupestris*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

- bellini, 2002 sub *S. rupestris*), M. Penna (07/2005, Herb. Padula sub *S. rupestris*), Sasso Fratino (Bottacci et al., 2003 sub *S. rupestris*; Gonnelli et al., 2005 sub *S. rupestris*; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falza, 2006 sub *S. rupestris*).
- Senecio sylvaticus** L. - T scap, European, br. Casentino (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (10/2002, Herb. Padula).
- Senecio viscosus** L. - T scap, European, D, NR. Poggio allo Spillo (Zangheri, 1966b). Zangheri's report (1966b) is based on an ancient citations by Baccharini.
- Senecio vulgaris** L. - T scap, Cosmopol/wide distrib., ru. Everywhere in the area (Zangheri, 1966b).
- Serratula tinctoria** L. - H scap, Boreal, bru. At low altitudes in the area (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Solidago virgaurea** L. - H scap, Boreal, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Solidago virgaurea* var. *vulgaris*; Siemoni et al., 1989-1998; Ferrarini, 1998), Burraia, Passo della Calla, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Poggio Sodo dei Conti (07/1980, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Sonchus arvensis** L. - H scap, Cosmopol/wide distrib., ru. La Lama (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Sonchus asper** (L.) Hill - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sonchus oleraceus** L. - T scap, Cosmopol/wide distrib., ru. Campigna, la Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio-Stia (11/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sonchus tenerrimus** L. - T scap, Mediterranean, D, NR. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968). Matteini's report (1968) is based on a citation by Marcucci (1889) and in the *Herbarium Centrale Italicum* (FI) exsiccata of this area are not present.
- Stachelina dubia** L. - Ch frut, Mediterranean, px, r. Casentino (Marcucci, 1889; Baroni, 1897-1908), Bagno di Romagna (Zangheri, 1966a, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Tanacetum parthenium** (L.) Sch. Bip. - H scap, Naturalized, A. Bibbiena (Marcucci, 1889 sub *Pyrethrum parthenium*; Baroni, 1897-1908 sub *P. parthenium*), Passo della Calla, Campigna, Pian del Pero (Zangheri, 1966a, 1966b sub *Chrysanthemum parthenium*).
- Tanacetum corymbosum** (L.) Sch. Bip. subsp. *achilleae* (L.) Greuter - H scap, South European-Mediterranean, px, l.r.56/2000 All.A. Passo della Calla, Campigna (Zangheri, 1966a, 1966b sub *Chrysanthemum corymbosum* subsp. *achilleae*), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *T. corymbosum*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). According to Zangheri (1966a, 1966b) and Conti et al. (2005) all the reports of *T. corymbosum* were referred to the subsp. *achilleae*, which is the only subspecies present in the area.
- Tanacetum vulgare** L. - H scap, Eurasian, ru, l.r.56/2000 All.A. Casentino (Marcucci, 1889; Baroni, 1897-1908), Piancancelli, Pian delle Fontanelle, Campigna (Zangheri, 1966a, 1966b sub *C. vulgare*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. vulgare*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino Gonnelli et al., 2006).
- Taraxacum laevigatum** (Willd.) DC. "sensu auct." - H ros, Eurasian, pa. M. Falco, Campigna (Zangheri, 1966a), M. Falco, Campigna, Calla, Poggio Scali (Zangheri, 1966b sub *T. officinale* subsp. *laevigatum*), La Verna (Siemoni et al., 1989-1998).
- Taraxacum officinale** Weber "sensu auct." - H ros, Boreal, ru. Falterona (Caruel, 1860-64; Marcucci, 1889), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (04/2004, Herb. Padula), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006). The name *T. officinale* must be considered "sensu lato"; *T. officinale* "sensu stricto" is probably not present in Italy.
- Tephrosia longifolia** (Jacq.) Griseb. & Schenk subsp. **brachychaeta** Greuter - H ros, Endemic Apennines, br, if. M. Falco, Pian delle Fontanelle, Burraia, Passo della Calla, Poggio Scali, La Lama (Zangheri, 1966a, 1966b sub *Senecio brachychaetus*), La Verna (Matteini, 1968 sub *S. helenitis* var. *brachychaetus*), Giogana (07/1969, Herb. Padula sub *S. helenitis* var. *brachychaetus*; 06/2002, Herb. Padula sub *S. brachychaetus*), Campigna-Lama (Ferrari et al., 1979; 1982 sub *S. ovirensis*), Par. Naz., vers. tos. (Viciani & Gabellini sub *S. brachychaetus*), Pratovecchio (06/2002, Herb. Padula sub *S. brachychaetus*), Sasso Fratino (Gonnelli et al., 2006 sub *T. italica*).

**Tragopogon crocifolius** L. - T scap, Mediterranean, px, r, RNT. La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes a Moggiona (Giacinti Baschetti, 1998).

**Tragopogon dubius** Scop. - H bienn, South-European, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Tragopogon porrifolius** L. - H bienn, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna, Calla, Pentolino (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Passo della Calla (07/1999, Herb. Padula).

**Tragopogon pratensis** L. - H scap, Boreal, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Tragopogon samaritani** Heldr. et Sart. - H bienn, South European Orophile, px, r, RNT. La Verna (Siemoni et al., 1989-1998).

**Tussilago farfara** L. - G rhiz, Eurasian, pu. Pratovecchio, Stradella (Caruel, 1860-64), Casentino (Marcucci, 1889), M. Falco, Passo dei Mandrioli, Pian delle Fontanelle (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (03/2003, Herb. Padula), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006; Mazza, 2006).

**Urospermum dalechampii** (L.) Schmidt - H scap, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Montone and Rabbi Valleys (Sempriani & Milandri, 2001).

**Xanthium orientale** L. subsp. **italicum** (Moretti) Greuter - T scap, South-European, ru. Bibbena (07/1999, Herb. Padula sub *Xanthium italicum*), Pratovecchio (10/2004, Herb. Padula sub *X. italicum*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Xeranthemum inapertum** (L.) Mill. - T scap, South-European, E. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* (N. Siemoni, Fondo della Melosa, 14/7/1989), is in our opinion referable to *X. cylindraceum*.

**Xeranthemum cylindraceum** Sm. - T scap, Eurasian, px. Pratovecchio (Caruel, 1860-64), between Mandrioli and Stia (Marcucci, 1889; Baroni, 1897-1908), Bibbiena (Baroni, 1897-1908), San Benedetto in Alpe, Corniolo (Zangheri, 1966a, 1966b sub *X. foetidum*), La Verna (Matteini, 1968 sub *X. foetidum*; Siemoni et al., 1989-1998 sub *X. inapertum*), Par. Naz., vers. romagn. (Sirotti & Farisel-

li, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). See the note of *X. inapertum*.

#### BALSAMINACEAE

**Impatiens noli-tangere** L. - T scap, Eurasian, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889; 08/2000, Herb. Padula), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2004, Herb. Padula), Gogana di Poggio Scali (Zangheri, 1966a, 1966b; 07/1969, Herb. Padula), Burraia, Passo della Calla, Passo dei Mandrioli, Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Padula, 1978, Massei, 1981; Padula, 1982; Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).

#### BERBERIDACEAE

**Berberis vulgaris** L. - NP, Eurasian, arb, r, if, RNT. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 09/1995, 08/2000, 10/2002-/2004, Herb. Padula; Gonnelli, 2007 *in verbis*), M. Penna della Verna (07/2003, Herb. Padula; 06/2008 Viciani *in verbis*). Very rare in the Park area and in Tuscany (only few sites on the Apuan Alps). Zangheri (1966b) reported that it was collected at La Lama in 1880 by Siemoni, where it was previously planted. According to Anonimo (1878), in the Foreste Casentinesi it was introduced in 1870.

#### BETULACEAE

**Alnus cordata** (Loisel.) Desf. - P scap, Cultivated, A. Badia Prataglia (11/1974, Herb. Padula), Campigna (Zangheri 1966a), Camaldoli (10/79 leg. Padula Herbario Museo Siemoni), Pratovecchio culta. (03/1979, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Montemezzano, Casa Maseto (ex Vita Mayer), Fosso d el Roncaccio, Il Bacio (Vallesanta), Casa Asqua, Costa Cerreta, Rifugio dell'Oia, Passo della Calla, tra Bocca pecorina e Vitareta, nei pressi di Moggiona, lungo la road to Asqua (DREAM, 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), along the road Braccina-Fiumicello (Simoncini & Zoccola, 2007 *in verbis*).

**Alnus glutinosa** (L.) Gaertner - P scap, Eurasian, bu. Foreste Casentinesi (Anonimo 1878, Padula, 1995), Casentino (Marcucci, 1889; Baroni, 1897-1908), Badia (03/1978, Herb. Padula), Pratovecchio (10/1987, Herb. Padula), Par.

Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (02/2002, Herb. Padula), Bibbiena (09/2003, Herb. Padula), Campigna (Zangheri, 1966b), La Lama (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Camaldoli (10/74 leg. Padula Herbario Museo Siemoni), PNFC wetlands (Falzea, 2006; Mazza, 2006), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Norcini & Zoccola, 1995; Gonnelli et al., 2006).

***Alnus incana*** (L.) Moench - P scap, Boreal, bu, r, if. La Verna (Siemoni et al., 1989-1998; Sirotti 1998), M. Penna, Passo Fangacci, Prato al Soglio, M. Calvano (Sirotti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli (10/1974, Herb. Padula, 8/79 leg. Bini Herbario Museo Siemoni), Foreste Casentinesi (Padula, 1995), Badia Prataglia (Sirotti, 1998; 08/2003, Herb. Padula), Chiusi della Verna (06-07-10/2004, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Par. Naz. vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001), PNFC wetlands (Falzea, 2006), Lama Forest, Prato al Fiume di Camaldoli (Padula, 1988), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*), T. Rassina, along the road La Verna-Passo dello Spino, within Park boundaries (Gonnelli & Viciani, 2008 *in verbis*). The sites of the Park, together with the ones of Sasso di Simone, are at the southern limit of the species distribution in Italy. In the Park area this tree has been used for afforestation, so it is not always easy to distinguish the spontaneous coenoses by the artificial ones.

***Betula pendula*** Roth - P scap, Cultivated, A. Cultivated at Prataglia (Parlatore, 12/9/1863, FI sub *Betula alba*), Foreste Casentinesi (Anonimo, 1878 sub *B. alba*; Padula, 1995; Semprini & Milandri, 2001), Bibbiena (Marcucci, 1889 sub *B. alba*), Passo della Calla (Zangheri, 1966a, 1966b; Sirotti, 1998), La Verna (Matteini, 1968), Metaleto (05/1978, 10/1979, Herb. Padula, 10/79 leg. Bini Herbario Museo Siemoni), Badia Prataglia (12/1982, Herb. Padula), Camaldoli, Passo dei Lupatti, Prato al Soglio (Sirotti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Camaldoli, Lama Forest, Campigna (Padula, 1988), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Sasso Fratino (Tigliè, 1974; Gonnelli et al., 2006). Reported at Sasso Fratino by Tigliè (1974), this species is no longer present here (Gonnelli et al., 2006). According to Anonimo (1878) this species was introduced in 1835, as the presence of an ancient exsiccatum by Parlatore in FI can confirm.

#### BIGNONIACEAE

***Catalpa bignonioides*** Walt. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878 sub *Bignonia catalpa*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002). Ac-

ording to Anonimo (1878) it was introduced in 1850.

***Paulownia tomentosa*** (Thumb.) Steud. - P caesp, Cultivated, A, NR. Foreste Casentinesi (Anonimo, 1878 sub *P. imperialis*). Currently the presence of this species in the Park is not certain (Padula, 1988).

#### BORAGINACEAE

***Anchusa azurea*** Mill. - H scap, South European-Mediterranean, px. Prataglia (Baroni, 1897-1908 sub *Anchusa italica*), Giogana, At low altitudes in the area (Zangheri, 1966b sub *A. italica*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Ferrarini, 1998). Zangheri's report (1966b) at Giogana is based on a citation by Siemoni dated 1871.

***Borago officinalis*** L. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), At low altitudes in the area (Zangheri, 1966b), PNFC wetlands (Mazza, 2006).

***Brunnera macrophylla*** (Adams) I.M. Johnston - G rhiz, Naturalized, A. Badia Prataglia (Frignani et al., 2006). The area of Badia Prataglia (municipalities of Poppi and Chiusi della Verna) is the only Italian site where this exotic and potentially invasive species is present (Frignani et al., 2006).

***Buglossoides purpureoaeerulea*** (L.) Johnston - H scap, South-European, bx. Querceti e castagneti (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

***Cynoglossum creticum*** Mill. - H bienn, South European-Mediterranean, ru. Falterona (Marcucci, 1889 sub *Cynoglossum pictum*; Baroni, 1897-1908 sub *C. pictum*), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Giogana (06/2002, Herb. Padula).

***Cynoglossum officinale*** L. - H bienn, Eurasian, ru. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Burraia, M. Falco, Poggione, Prato Bertone, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Gabrendo (09/2001, Herb. Padula).

***Cynoglottis barrelieri*** (All.) Vural & Kit Tan - H scap, Mediterranean Orophile, px, r, if. La Verna (Caruel, 1860-64 sub *Anchusa barrelieri*; Marcucci, 1889 sub *A. barrelieri*; Matteini, 1968 sub *A. barrelieri*; Viciani, 2007 *in verbis*), Sasso Fratino (Montanari, 2005 sub *A. barrelieri*; Gonnelli et al., 2006), Matteini (1968) reported the presence of this species at La Verna on the basis of exsiccata by Fiori, Pichi Sermolli, Contardo, Tosi and Cortini dated from 1923 to 1962.

***Echium italicum*** L. - H bienn, South European-Mediterranean, ru. At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

- Echium vulgare** L. - H bienn, European, ru. Casentino (Marcucci, 1889), Pratovecchio, Prataglia (Baroni, 1897-1908), Passo della Calla (Zangheri, 1966a sub *E. vulgare* subsp. *pustulatum*), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Lithospermum officinale** L. - H scap, Boreal, arb. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Marcucci, 1889; Matteini, 1968), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Myosotis alpestris** F. W. Schmidt - H scap, South European Orophile, pa, r, l.r.56/2000 All.A. M. Falco (Padula, 1988; Sirotti 1998; Rossi, 2001).
- Myosotis arvensis** (L.) Hill - H scap, European, px. La Verna (Matteini, 1968 sub *Myosotis arvensis* Hill var. *intermedia*; Siemoni et al., 1989-1998), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006).
- Myosotis decumbens** Host subsp. *florentina* Grau - H scap, Endemic Apennines, br. La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Probably frequent in the area, but ancient data are not available as it was described after the Fiori's flora (1923-29).
- Myosotis discolor** Pers. - T scap, South European-Mediterranean, D. La Verna (Siemoni et al., 1989-1998). In our opinion, the exsiccatum of the *Herbarium Alvernae* (Leg. Siemoni et Ricceri, sine dat., sine loc.) identified as *M. discolor* is referable to *M. arvensis*.
- Myosotis laxa** Lehm. - T scap, Boreal, pu, r. La Verna (Siemoni et al., 1989-1998 sub *M. caespitosa*).
- Myosotis nemorosa** Besser - H bienn, Eurasian, pu. Passo dei Mandrioli, Campigna (Zangheri, 1966a, 1966b sub *M. palustris* subsp. *strigulosa*), Passo della Calla, Poggio Scali (Zangheri, 1966b sub *M. palustris* subsp. *strigulosa*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006).
- Myosotis ramosissima** Rochel in Schultes - T scap, European, px. Campigna (Zangheri, 1966a sub *M. hispida*), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Myosotis sicula** Guss. - T scap, South European-Mediterranean, D. Passo della Calla (05/1968, Herb. Padula), M. Falco (07/1980, Herb. Padula sub *M. alpestris* var. *gussonei*). The presence of *M. sicula* must be confirmed as its distribution on the Northern Apennines is dubious (Selvi, *in verbis*) and can be confused with *M. laxa*.
- Myosotis scorpioides** L. - H scap, Eurasian, pu. Camaldoli (Marcucci, 1889 sub *M. palustris*; Baroni, 1897-1908 sub *M. palustris*; 10/1999, 08/2004, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2006). According to Zangheri (1966b), all past citations of *M. palustris* (= *M. scorpioides*) must be referred to the subsp. *strigulosa*, currently considered a synonym of *M. nemorosa*; indeed, a recent floristic research concerning the Park wetlands confirmed also the presence of *M. scorpioides* sensu stricto.
- Myosotis sylvatica** Hoffm. - H scap, Eurasian, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *M. alpestris*; Siemoni et al., 1989-1998; Ferrarini, 1998), Falterona (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Burraia, Campigna, Passo della Calla, Prato alla Penna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-La Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Tigliè 1974; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006). We checked the exsiccatum in FI, and in our opinion the past record of *M. alpestris* at La Verna (Matteini, 1968) must be assigned to *M. sylvatica*, an other entity of the same group (Pignatti, 1982).
- Pulmonaria apennina** Cristof. & Puppi - H scap, Endemic Apennines, br, l.r.56/2000 All.A. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. vallarsae*), Campigna-Lama (Ferrari et al., 1979, 1982 sub *P. vallarsae*), La Verna (Ferrarini, 1998), Par. Naz., vers. romagn. (Agostini, 1992 sub *P. vallarsae*; Sirotti & Fariselli, 2002). See the next note.
- Pulmonaria hirta** L. - H scap, Mediterranean Orophile, br, l.r.56/2000 All.A. La Verna (Caruel, 1860-64 sub *P. officinalis*; Marcucci, 1889 sub *P. officinalis*; Matteini, 1968 sub *P. saccharata*; Siemoni et al., 1989-1998 sub *P. picta*), Falterona (Baroni, 1897-1908 sub *P. officinalis*), M. Falco, Poggio Scali, Campigna (Zangheri, 1966a, 1966b sub *P. officinalis*), Capria Valley (Padula, 1974 sub *P. officinalis*), Camaldoli (Padula et al., 1988 sub *P. occifinalis*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia (04/2003, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino, (Hofmann, 1965 sub *P. officinalis*; Tigliè, 1974 sub *P. officinalis*; Montanari, 2005 sub *P. vallarsae*; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006). In the study area, the several reports of *Pulmonaria* by different authors (with the names *P. officinalis*, *P. saccharata* and *P. vallarsae*) according to Puppi & Cristofolini (1991, 1996) must be referred to *P. picta*, more frequent, and to *P. apennina*. The correct name for *P. picta* is currently *P. hirta* (Selvi & Cristofolini, 2004).
- Symphytum bulbosum** K. F. Schimp. - G rhiz, South-European, br. Pratovecchio (Caruel, 1860-64 sub *Symphytum clusii*), Bibbiena (Marcucci, 1889 sub *S. clusii*), Cam-

pigna, Giogana (Zangheri, 1966a, 1966b sub *S. tuberosum* subsp. *bulbosum*), La Verna (Matteini, 1968 sub *S. tuberosum* var. *bulbosum*), Pratovecchio (04/2001, Herb. Padula).

**Symphytum officinale** L. - H scap, European, ru, r. Along the road Bocconi-Premilcuore, Campigna at La Lama (Zangheri, 1966b).

**Symphytum tuberosum** L. subsp. *angustifolium* (Kerner) Nyman - G rhiz, South-European, br. La Verna (Caruel, 1860-64 sub *Symphytum tuberosum*; Marcucci, 1889 sub *S. tuberosum*; Matteini, 1968 sub *S. tuberosum*; Siemoni et al., 1989-1998 sub *S. tuberosum*; Ferrarini, 1998 sub *S. tuberosum*; 06/2004, Herb. Padula sub *S. tuberosum* subsp. *nodosum*), M. Falco, Burraia, Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *S. tuberosum*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *S. tuberosum* subsp. *nodosum*, *S. tuberosum*), Sasso Fratino, (Hofmann, 1965; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006). All the reports of *S. tuberosum* were attributed to the subsp. *angustifolium*, as it is the only subspecies present in the study area (Conti et al., 2005).

## BRASSICACEAE

**Alliaria petiolata** (Bieb.) Cavara et Grande - H bienn, Eurasian, br. Casentino (Marcucci, 1889 sub *Sisymbrium alliaria*; Baroni, 1897 sub *S. alliaria*), Giogana (Zangheri, 1966b sub *Alliaria officinalis*), La Verna (Matteini, 1968 sub *A. officinalis*; Siemoni et al., 1989-1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Chiusi della Verna (04/2004, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Alyssoides utriculata** DC. - Ch suffr, Mediterranean Orophile, ro, r. La Verna (Caruel, 1860-64 sub *Vesicaria utriculata*; Marcucci, 1889 sub *V. barrelieri*; Matteini, 1968 sub *V. utriculata* var. *graeca*; Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Chiusi della Verna (08/2002, Herb. Padula).

**Alyssum alyssoides** L. - T scap, South European-Mediterranean, ro. Prataglia (Baroni, 1897-1908 sub *Alyssum calycinum*), fra Camaldoli e Falterona (Baroni, 1897-1908 sub *A. calycinum*; Zangheri, 1966b), Foresta Casentinese vers. Toscano (Zangheri, 1966b), La Verna (Baroni, 1897-1908 sub *A. calycinum*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Alyssum simplex** Rudolphi - T scap, Mediterranean, px. Casentino (Marcucci, 1889 sub *Alyssum campestre*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998 sub *A. minus*),

Campigna (Zangheri, 1966a sub *A. campestre*), Pratovecchio (05/2002, Herb. Padula sub *A. minus*), Chiusi della Verna (04/2004, Herb. Padula sub *A. minus*).

**Arabidopsis thaliana** (L.) Heynh. T scap, Cosmopol/wide distrib., px. Badia Prataglia (Marcucci, 1889 sub *Sisymbrium thalianum*; Baroni, 1897-1908 sub *S. thalianum*), Falterona (Baroni, 1897-1908 sub *S. thalianum*; Zangheri, 1966b), Passo del Muraglione a Poggio Ortica, M. Falco, Pian del Pero, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968 sub *Arabis thaliana*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (04/2004, Herb. Padula).

**Arabis alpina** L. subsp. *caucasica* (Willd.) Briq. - H scap, Mediterranean Orophile, pd. Falterona (Caruel, 1860-64; Marcucci, 1889 sub *Arabis albida*; Zangheri, 1966b, *A. alpina* subsp. *caucasica*), La Verna (Caruel, 1860-64; Marcucci, 1889 sub *A. albida*; Fiori, 1925; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 03/2002, 06/2004, Herb. Padula), Pratovecchio (05/2005, Herb. Padula), San Benedetto in Alpe, Poggio Giogo, Pian delle Fontanelle, M. Falco, Burraia, Passo della Calla, Passo dei Mandrioli (Zangheri, 1966a sub *A. alpina* subsp. *alpina* and sub *A. alpina* subsp. *caucasica*), Campigna (Zangheri, 1966b, *A. alpina* subsp. *caucasica*), PNFC eroded slopes (Giacinti Baschetti, 1998), Sasso Fratino (Hofmann, 1965; Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006). All past records of *A. alpina* s.l. have been attributed to the subsp. *caucasica*, the only certainly present in this area.

**Arabis auriculata** Lam. - H scap, Mediterranean Orophile, NR. La Verna (Fiori, 1925). The species was reported only by Fiori (1924; 1925), we checked the exsiccata (A. Fiori, 1-2/7/1923, dirupi orientali del M. Penna della Verna, suolo siliceo, alt. m 1150, FI) and, even if the flowers are lacking, we confirm this identification. The datum is considered to be confirmed only because it dates before 1960.

**Arabis collina** Ten. - H scap, Mediterranean Orophile, arb. Prataglia (Baroni, 1897-1908 sub *Arabis muralis*), San Paolo in Alpe (Zangheri, 1966a, 1966b sub *A. muralis*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

**Arabis hirsuta** (L.) Scop. - H bienn/H scap, European, px. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Badia Prataglia (Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (05/2004, Herb. Padula), Sasso Fratino (Hofmann, 1965; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC eroded slopes (Giacinti Baschetti,

- 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Arabis sagittata** (Bertol.) DC. - H bienn/H scap, South-European, bx. Passo del Muraglione a Poggio Puledro, San Benedetto in Alpe, Poggio Giogo sotto M. Falco (Zangheri, 1966a sub *Arabis hirsuta* subsp. *sagittata*), Campigna (Zangheri, 1966b sub *A. hirsuta* subsp. *sagittata*), La Verna (Siemoni et al., 1989-1998).
- Arabis turrita** L. - H bienn/H scap, South-European, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Prataglia (Baroni, 1897-1908; 04/2003, Herb. Padula), Campigna verso La Lama, Campigna Forest (Zangheri, 1966a, 1966b incl. *Arabis turrita* fo. *lasiocarpa*), Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a incl. *A. turrita* fo. *lasiocarpa*; Zangheri, 1966b), Passo della Calla (Zangheri, 1966b sub *A. turrita* fo. *lasiocarpa*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).
- Barbarea bracteosa** R. Br. - H scap, South European Orophile, pa. Stradella (Caruel, 1860-64), Falterona (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Burraia, Sodo alle Calle, Passo della Calla, Poggio Scali (Zangheri, 1966a, 1966b), Campigna, Camaldoli (Zangheri, 1966b).
- Barbarea stricta** Andr. - H scap, Boreal, pu, r. Campigna (Zangheri, 1966a).
- Barbarea verna** (Mill.) Asch. - H scap, European, pu. Campigna (Zangheri, 1966a, 1966b sub *Barbarea vulgaris* subsp. *verna*), La Lama (Zangheri, 1966b sub *B. vulgaris* subsp. *verna*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Bibbiena (05/2005, Herb. Padula sub *B. praecox*).
- Barbarea vulgaris** L. - H scap, Cosmopol/wide distrib., ru. Casentino (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Brassica montana** Pourr. - Ch suff, Mediterranean, D. Campigna (Zangheri, 1966a, 1966b sub *Brassica oleracea* subsp. *sylvestris*). Besides *B. oleracea*, cultivated in the area at low altitudes, Zangheri (1966a, 1966b) reported the presence of the subsp. *sylvestris* L. on Campigna cliffs. According to interpretation of Pignatti (1982) and Conti et al. (2005), it could be the subsp. *robertiana* (Gay) Rouy et Fouc. (=B. montana). We could not check the exsiccata to confirm this interpretation.
- Brassica oleracea** L. - Ch suff (Ch/Hcaesp), Cultivated, A. Casentino culta (Marcucci, 1889), Poppi, Bibbiena (Camangi et al., 2003).
- Diplotaxis tenuifolia** (L.) DC. - H scap, South European-Mediterranean, NR. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Lama (Zangheri, 1966b). Zangheri's citation (1966b) at La Lama is based on an ancient report by Siemoni.
- Bunias erucago** L. - T scap, Mediterranean, ru. La Lama (Zangheri, 1966b), Pratovecchio (04/2004, Herb. Padula).
- Calepina irregularis** (Asso)Thell. - T scap, Mediterranean, ru. Pratovecchio (Caruel, 1860-64 sub *Calepina corvini*), Casentino (Marcucci, 1889 sub *C. corvini*), La Verna (Siemoni et al., 1989-1998).
- Capsella bursa-pastoris** (L.) Medik. - H bienn, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966b), Sasso Fratino (Gonnelli et al., 2006).
- Capsella rubella** Reut. - T scap, South European-Mediterranean, ru. Poggio Giogo sotto M. Falco (Zangheri, 1966a), Pratovecchio (04/2001-2004, Herb. Padula).
- Cardamine amara** L. - H scap, Eurasian, pu. Capo d'Arno, Stradella (Caruel, 1860-64), Badia Prataglia (Marcucci, 1889; Baroni, 1897-1908; ), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), M. Falco, Burraia (Zangheri, 1966a, 1966b), Stradella (Campigna), La Lama (Zangheri, 1966b), Stia (04/1968, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli (05/2004, 05-06/2005, Herb. Padula), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).
- Cardamine bulbifera** (L.) Crantz - G rhiz, European, br. Falterona (Caruel, 1860-64 sub *Dentaria bulbifera*; Marcucci, 1889 sub *D. bulbifera*; Zangheri, 1966b sub *D. bulbifera*), La Verna (Caruel, 1860-64 sub *D. bulbifera*; Marcucci, 1889 sub *D. bulbifera*; Matteini, 1968 sub *D. bulbifera*; Siemoni et al., 1989-1998; Ferrarini, 1998), Stradella (Caruel, 1860-64 sub *D. bulbifera*), Camaldoli (Marcucci, 1889 sub *D. bulbifera*; Padula et al., 1988; 05/2001, Herb. Padula), fra Camaldoli e Falterona (Baroni, 1897-1908 sub *D. bulbifera*), Campigna al Fosso Abetio, Poggio Lastraiolo, (Zangheri, 1966a sub *D. bulbifera*), Campigna in vari luoghi (Zangheri, 1966b sub *D. bulbifera*), Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *D. bulbifera*), Alto Archiano (Tassinari, 1976 sub *D. bulbifera*), Campigna-Lama (Ferrari et al., 1979, 1982; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino, (Hofmann, 1965 sub *D. bulbifera*; Tigliè, 1974 sub *D. bulbifera*; Padula, 1978 sub *D. bulbifera*; Padula, 1982; Bottacci et al., 2003; Montanari 2005; Gonnelli et al., 2006) PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).



- Cardamine chelidonia** L. - H scap/T scap, Mediterranean Orophile, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889; 05/1976, 08/2004, Herb. Padula), La Verna (Marcucci, 188; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2004, Herb. Padula), Fangacci (Zangheri, 1966a), Campigna (Zangheri, 1966b), Passo della Calla, Prato Bertone (Zangheri, 1966a, 1966b), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002).
- Cardamine flexuosa** With. - H scap, Boreal, br. Burraia (Zangheri, 1966a), M. Falco, Campigna a Poggio Martino (Zangheri, 1966a, 1966b), Campigna (Ferrari et al., 1982).
- Cardamine heptaphylla** (Vill.) O. E. Schulz - G rhiz, South-European, br. La Verna (Caruel, 1860-64 sub *Dentaria pinnata*; Marcucci, 1889 sub *D. pinnata*; Matteini, 1968 sub *D. pinnata*, *D. pentaphyllos* var *pinnata*; Siemoni et al., 1989-1998; Ferrarini, 1998; 4/2001, Herb. Padula), Poggio Penna (Baroni, 1897-1908 sub *D. pinnata*; Zangheri, 1966b sub *D. pinnata*), Camaldoli (Baroni, 1897-1908 sub *D. pinnata*; Padula et al., 1988, 05/2004, Herb. Padula), Campigna (Zangheri, 1966b sub *D. pinnata*), Pian delle Fontanelle (M. Falco), Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *D. pinnata*), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (05/2005, Herb. Padula), Sasso Fratino (Hofmann, 1965 sub *D. pinnata*; Tigliè, 1974 sub *D. pinnata*; Padula, 1978 sub *D. pinnata*; Padula, 1982; Hofmann, 1991; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Cardamine hirsuta** L. - T scap, Cosmopol/wide distrib., px. Pratovecchio (Caruel, 1860-64; 04/2004, Herb. Padula), Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Passo del Muraglione a Poggio Ortica, Passo della Calla, Campigna Forest, Campigna da Fontefredda a La Lama (Zangheri, 1966a), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (10/2000, Herb. Padula), Poppi (04/2004, Herb. Padula), Bibbiena (04/2005, Herb. Padula), PNFC wetlands (Falzea, 2006).
- Cardamine impatiens** L. - T scap, Eurasian, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Falterona (Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908; Padula et al., 1988), Campigna Forest a Fontefredda, Poggio Martino (Zangheri, 1966a), Campigna Forest in vari luoghi (Zangheri, 1966b), Passo della Calla (Zangheri, 1966a, 1966b), Giogana di Poggio Scali (07/1969, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006).
- Cardamine kitaibelii** Becherer - G rhiz, South European Orophile, br. Camaldoli (Baroni, 1897-1908 sub *Dentaria polyphylla*), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pian delle Fontanelle, Poggio Martino, Campigna Forest (Zangheri, 1966a, 1966b sub *D. polyphylla*), Sasso Fratino (Hofmann, 1965 sub *D. polyphylla*; Tigliè, 1974 sub *D. polyphylla*; Hofmann, 1991; Gonnelli et al., 2006), Campigna (Padula et al., 1988), Par. Naz., vers. romagn. (Semprini & Milandri, 2001).
- Cardamine pentaphyllos** (L.) Crantz - G rhiz, South European Orophile, br, r, if. Alto Archiano (Tassini, 1976 sub *Dentaria pentaphyllos*), Giogana di Poggio Scali (07/1969, Herb. Padula), Sasso Fratino (Tigliè, 1974 sub *D. digitata*; Bottacci et al., 2003), La Verna (Marcucci, 1889 sub *D. digitata*), Monte Zuccherodante, in the "wilderness" area of Fosso del Capanno (Semprini, 1998; Semprini & Milandri, 2001). The presence of this species, even if reported by several authors, was doubtful in the area, as in the past (particularly in Fiori, 1923-29) this name was used to refer to a single species divided in several varieties, currently considered separated species. Pignatti (1982) excluded the presence of *C. pentaphyllos* s.s. in Emilia-Romagna and Tuscany, and in the *Herbarium Centrale Italicum* (FI) we could not find any exsiccata referable to this species for the study area: probably all ancient records must be attributed to *C. kitaibelii* or to *C. heptaphylla*. Anyway, the floristic report by Semprini (1998) seems to ascertain the presence of this entity in an area close to the Park boundaries. So this site is to be considered of great phytogeographical importance.
- Cardamine trifolia** L. - H ros, South European Orophile, br, if. Poggio Penna (Baroni, 1897-1908; Zangheri, 1966b), Giogana, Fosso Abetio, Poggio Giogo, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna, La Lama, Poggiaccio di Campigna (Zangheri, 1966b), Alto Archiano (Tassini, 1976), Campigna-La Lama (Ferrari et al., 1979; 1982), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001), Par. Naz., vers.tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006). The Park sites, together with those

of Mt. Fumaiolo, are at the southern distribution limit of the species in Italy.

**Coincya monensis** (L.) Greuter & Burdet subsp. **cheiranthos** (Franco) Aedo, Leadlay & Muñoz Garm. - H scap, South-European, pd, r, if. M. Falco (Zangheri, 1966a sub *Brassica monensis*; Zangheri, 1966b sub *B. cheiranthus*; Padula, 1988 e 07/1980, Herb. Padula sub *Rhynchosinapis cheiranthos*; Agostini, 1992 sub *R. cheiranthos*; Padula, 1995 sub *R. cheiranthos*; Contarini, 1996 sub *R. cheiranthus*), Sodo de' Conti, Burraia, Falterona (Zangheri, 1966b sub *B. cheiranthus*).

**Diploxys muralis** (L.) DC. - T scap, South European-Mediterranean, ru. Prataglia (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (06/2004, Herb. Padula).

**Draba muralis** L. - T scap, Boreal, ro. Pratovecchio (Caruel, 1860-64; 04/2004, Herb. Padula), Casentino (Marcucci, 1889), San Benedetto in Alpe, Passo del Muraglione, Campigna, Poggio Scali, Burraia (Zangheri, 1966b), La Verna (Matteini, 1968), Poppi, Bibbiena (04/2004, Herb. Padula).

**Erophila verna** (L.) DC. - T scap, Boreal, px. Falterona (Baroni, 1897-1908 sub *D. verna*), M. Gemelli, Poggio Goggio (Zangheri, 1966a sub *Erophila verna* subsp. *stenocarpa*), Passo del Muraglione, Passo della Calla, Pian delle Fontanelle (Zangheri, 1966a sub *E. verna* subsp. *majuscula*), Campigna (Zangheri, 1966b sub *E. verna* subsp. *majuscula*), La Verna (Matteini, 1968 sub *D. verna*; Siemoni et al., 1989-1998), Poggio Sodo dei Conti (06/1989, Herb. Padula). In the Park area the subsp. *praecox* seems to be widespread and probably many past records must be attributed to this entity.

**Erophila verna** (L.) DC. subsp. **praecox** (Steven) P. Fourn. - T scap, Boreal, pa. M. Falco, M. Gemelli (Zangheri, 1966a sub *Erophila praecox* subsp. *praecox*), Campigna (Zangheri, 1966b sub *E. verna* subsp. *praecox*), La Verna (Matteini, 1968 sub *Draba verna* var. *glabrescens*), Poppi (04/2004, Herb. Padula), Bibbiena (04/2005, Herb. Padula).

**Erysimum pseudorhaeticum** Polatschek - H scap, Endemic Apennines, D. PNFC eroded slopes (Giacinti Baschetti, 1998). The sites reported by Giacinti Baschetti (1998) in a degree thesis are located in the Romagna side of the Park, at Mandrioli and Sasso, North of Corniolo, and in the area of San Paolo in Alpe. The records are plausible, but we could not check any exsiccata, so we consider the data to be confirmed.

**Hesperis matronalis** L. - H scap, European, br, if, l.r.56/2000 All.A. Camaldoli (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Campigna Forest, Pian Tombesi, Poggio Scali

(Zangheri, 1966a, 1966b), La Lama (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Giogana (06/2002, Herb. Padula), Sasso Fratino (Norcini & Zoccola, 1995; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).

**Lepidium campestre** (L.) R. Br. - T scap, European, ru. Pratovecchio, Prataglia (Caruel, 1860-64), Casentino (Marcucci, 1889), La Verna (Baroni, 1897-1908), Chiusi della Verna (05/2004, Herb. Padula), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Lepidium graminifolium** L. - H scap, South European-Mediterranean, NR. Casentino (Marcucci, 1889), Pratovecchio-La Lama (Zangheri, 1966b). Zangheri's report (1966b) is based on an ancient citation by Baccarini.

**Lepidium latifolium** L. - H scap, Eurasian, NR. Bagno di Romagna (Zangheri, 1966b). Zangheri's report (1966b) is based on an ancient citation by Marcucci.

**Lunaria rediviva** L. - H scap, European, bu, l.r.56/2000 All.A. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908; 05/1976, 07/2003, Herb. Padula), Giogana di Poggio Scali (07/1949, 07/1977, Herb. Padula), Passo della Calla, Prato Bertone (Zangheri, 1966a, 1966b), Campigna Forest al Fosso Abetio (Zangheri, 1966a), Campigna, La Lama (Zangheri, 1966b; Ferrari et al., 1982), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Badia Prataglia (04/2003, Herb. Padula), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann 1965, Bottacci et al., 2003; Gonnelli et al., 2006).

**Murbeckiella zanonii** (Ball) Rothm. - H scap, Endemic Apennines, pd, if, RNT, l.r.56/2000 All.A, l.r. LR. Falterona (Caruel, 1860-64 sub *Sisymbrium pinnatifidum*; Marcucci, 1889 sub *S. zanonii*; Zangheri, 1966b sub *S. zanonii*; Sirotti, 1998; Semprini & Milandri, 2001), Camaldoli (Marcucci, 1889 sub *S. zanonii*), La Verna (Marcucci, 1889 sub *S. zanonii*; Matteini, 1968 sub *S. zanonii*), M. Falco (Zangheri, 1966a, 1966b sub *S. zanonii*; Padula, 1988, 1995; Sirotti, 1998; 07/1977-2001, Herb. Padula), Pian delle Fontanelle, Campigna (Zangheri, 1966a, 1966b sub *S. zanonii*), Poggio Sodo dei Conti, Burraia (Zangheri, 1966a, 1966b sub *S. zanonii*; Sirotti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Gabrendo, tra Burraia e Sodo dei Conti, Le Crocicchie (Sirotti, 1998), Par. Naz., vers. romagn. (Agostini, 1992), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). The Park sites are at the southern distribution limit of the species, as the reports at Alpe della Luna (Raffaelli & Rizzotto, 1991) were non confirmed.

**Nasturtium officinale** R. Br. - H scap, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-

- 1908), Passo del Muraglione, Passo della Calla (Zangheri, 1966a, 1966b), Metaletto (04/2001, 05/2005, Herb. Padula), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn., (Semprini & Milandri, 2001; Sirotti & Fariselli, 2002).
- Raphanus raphanistrum** L. - T scap, Boreal, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Rapistrum rugosum** (L.) All. - T scap, South European-Mediterranean, ru. Everywhere in the area (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sinapis alba** L. - T scap, Naturalized, A. Rincine-M. Massicaia (Sabato & Valenziano, 1975). In the study area present only in uncultivated and abandoned fields.
- Sinapis arvensis** L. - T scap, Mediterranean, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (04/2001), Poppi (04/2004, Herb. Padula).
- Sisymbrium officinale** (L.) Scop. - T scap, Eurasian, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna, Burraia, Passo della Calla (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Bagno di Romagna (Zangheri, 1966a), Badia Prataglia (10/2001, 09/2005, Herb. Padula).
- Thlaspi alliaceum** L. - T scap, European, ru. Pratovecchio, Prataglia (Baroni, 1897-1908), Giogana, La Lama, S. Piero in Bagno (Zangheri, 1966b), Poppi (04/2004, Herb. Padula).
- Thlaspi arvense** L. - T scap, Eurasian, ru. Prataglia (Baroni, 1897-1908), La Verna (Matteini, 1968).
- Thlaspi perfoliatum** L. - T scap, Eurasian, ru. Casentino (Marcucci, 1889), Bibbiena (Baroni, 1897-1908), Pratovecchio, La Lama (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Chiusi della Verna, Poppi (04/2004, Herb. Padula).
- CAMPANULACEAE
- Campanula cochlearifolia** Lam. - H scap, South European Orophile, NR. La Verna (Caruel, 1860 sub *Campanula pusilla*; Marcucci, 1889 sub *C. pusilla*; Matteini, 1968 sub *C. rotundifolia* var. *cochlearifolia*). Reports for La Verna (Caruel, 1860; Marcucci, 1889; Matteini, 1968) are based on ancient exsiccata by Parlatore (1842, FI), Gemmi (1872, FI) and Tani (1928, FI). We checked these exsiccata and the identification was confirmed also by a genus *Campanula* expert (Podlech, *in schedis*); however, the exsiccata coming from La Verna are not present in the *specimina visa* of Podlech's paper, 1965). We consider the report to be confirmed only because all records are ancient.
- Campanula erinus** L. - T scap, Mediterranean, NR. Casentino (Marcucci, 1889), La Verna (Fiori, 1925).
- Campanula glomerata** L. - H scap, Eurasian, pd, r, if. M. Falco, Poggio Scali (Zangheri, 1966a, 1966b), Sasso Fratino (Gonnelli et al., 2006).
- Campanula latifolia** L. - H scap, European, br, r, if, RNT. Falterona (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Sirotti, 1998), La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Sirotti 1998), Giogana (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), Passo della Calla, Prato Bertone, Poggio allo Spillo (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982; Semprini & Milandri, 2001), Poggio Scali, Passo dei Mandrioli, M. Penna, Camaldoli, Prato al Soglio, Passo della Calla, between Burraia and Sodo dei Conti (Sirotti, 1998), Sasso Fratino (Hofmann, 1965).
- Campanula medium** L. - H bienn, Mediterranean Orophile, arb, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: LR, lrT: LR. Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Campanula persicifolia** L. - H scap, Eurasian, bx. M. del Faggione (Marcucci, 1889; Baroni, 1897-1908), Camaldoli (Marcucci, 1889), Falterona, Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Campanula rapunculus** L. - H bienn, Eurasian, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Prato Bertone (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (06-07/2001, 06-11/2002, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).
- Campanula rotundifolia** L. - H scap, European, pa. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Campanula rotundifolia* var. *macrorhiza*; Siemoni et al., 1989-1998; Ferrarini, 1998), Poggio Penna (Baroni, 1897-1908), Poggio allo Spillo (Baroni, 1897-1908; Zangheri, 1966b), Burraia (Zangheri, 1966b; 07/1976, Herb. Padula), Falterona (Zangheri, 1966b), Poggio Scali (Zangheri, 1966a; 08/1968, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002) Sasso Fratino, (Montanari, 2005; Gonnelli et al., 2005; 2006). The report of *C. rotundifolia* var. *macrorhiza* (currently *C. macrorhiza* J. Gay, species of Liguria and Piedmont) by Matteini (1968) at La Verna is based on an exsiccatum by Pichi Sermolli dated 1934 which is not present in the *Herbarium Centrale Italicum* (FI). The record is doubtful and is considered referred to *C. rotundifolia*.

- Campanula scheuchzeri** Vill. - H scap, South European Orophile, pa. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968 sub *Campanula rotundifolia* var. *scheuchzeri*; Siemoni et al., 1989-1998), Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b; Padula, 1988), Fangacci, Campigna (Zangheri, 1966a, 1966b), Burraia, Poggio Scali, Prato al Soglio (Padula, 1988), Falterona (Gonnelli et al. 2002), Prati di vetta delle Foreste Casentinesi (Agostini, 1992; Semprini & Milandri, 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poggio Scali (06/2002, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).
- Campanula trachelium** L. - H scap, Eurasian, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), fra Camaldoli e Falterona (Baroni, 1897-1908), Passo della Calla, Campigna (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (11/2002, Herb. Padula), M. Penna (08/2002, Herb. Padula), Sasso Fratino, (Hofmann, 1965; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Jasione montana** L. - H bienn, European, px. Abetia (Campigna) (Caruel, 1860-64), Poggio allo Spillo (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Upper Savio Valley (Semprini & Milandri, 2001).
- Legousia speculum-veneris** (L.) Chaix - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Specularia speculum*), Prataglia (Baroni, 1897-1908 sub *S. speculum*), Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *S. speculum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Poppi (05/2002, Herb. Padula).
- Phyteuma ovatum** Honck. subsp. **pseudospicatum** Pign. - H scap, Endemic Apennines, pa. l.r.56/2000 All.A. Camaldoli (Caruel, 1860-64 sub *Phyteuma halleri*; Marcucci, 1889 sub *P. halleri*), Capo d'Arno (Caruel, 1860-64 sub *P. halleri*), Badia Prataglia (Caruel, 1860-64 sub *P. halleri*; Marcucci, 1889 sub *P. halleri*; Baroni, 1897-1908 sub *P. halleri*), Falterona (Marcucci, 1889 sub *P. halleri*; Baroni, 1897-1908 sub *P. halleri*; Zangheri, 1966b sub *P. halleri*), M. Falco, Campigna, Burraia, Poggio Scali, Passo della Calla, Prato Bertone, Pian delle Fontanelle (Zangheri, 1966a, 1966b sub *P. halleri* fo. *albiflorum*), Giogana di Poggio Scali (07/1969, Herb. Padula, *P. halleri* var. *albiflorum*), Campigna-La Lama (Ferrari et al., 1979, 1982 sub *P. ovatum*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pian Tombesi (06/2002, Herb. Padula), Sasso Fratino, (Hofmann, 1965 sub *P. halleri*; Gonnelli et al., 2006). All the records have been referred to the subsp. *pseudospicatum* as it is the only subspecies present in this area (Pignatti, 1982; Conti et al., 2005).
- Phyteuma scorzonerifolium** Vill. - H scap, South European Orophile, pa. Camaldoli (Baroni, 1897-1908 sub *Phyteuma michelii* subsp. *scorzonerifolium*), M. Falco, Piancancelli, Burraia, Campigna (Zangheri, 1966a, 1966b sub *P. michelii* subsp. *scorzonerifolium*), Falterona (Zangheri, 1966b sub *P. michelii* subsp. *scorzonerifolium*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

## CANNABACEAE

**Humulus lupulus** L. - P lian, Boreal, bu. Bibbiena, Stia (Marcucci, 1889; Baroni, 1897-1908; (07/1999, 05/2002, 09/2003, 06/2003, Herb. Padula), La Lama (Zangheri, 1966b), Badia Prataglia (09/2004, Herb. Padula).

## CAPRIFOLIACEAE

**Lonicera alpigena** L. - P caesp, European Orophile, D, M. Penna, La Verna, M. Calvano (Sirotti, 1998). The reports by Sirotti (1998) are based on observations by Lovari & Siemoni (1991), and must be confirmed; there are not other recent reports or any exsiccata of this species in the *Herbarium Centrale Italicum* (FI). Moreover, we found that several identifications of *Lonicera* were erroneous (e.g.: several checked exsiccata previously identified as *L. nigra* were found to be *L. xylosteum* subsp. *nigra*).

**Lonicera caprifolium** L. - P lian, South-European, br. Prataglia (Caruel, 1860-64; Marcucci, 1889), Camaldoli (Baroni, 1897-1908; 06/1980, Herb. Padula), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (05/2005, Herb. Padula), Sasso Fratino, (Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).

**Lonicera etrusca** Santi - P lian, South European-Mediterranean, arb. At low altitudes in the area (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

**Lonicera xylosteum** L. - P caesp, European, br. From Pratovecchio to La Lama (Siemoni, 1880, FI sub *L. nigra*), La Verna (Baroni, 1897-1908; Contardo, 4/7/1953, FI; 7/6/1960, Tosi, FI; 26/5/1962, Cortini, FI; Matteini, 1968; Siemoni et al., 1989-1998; 08/2002-2004, Herb. Padula), S. Giacomo in Meleto, Corniolo (Zangheri, 1966a, 1966b), Alto Archiano (Tassini, 1976), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (05/2002, Herb. Padula), Bibbiena (05/2005, Herb. Padula), PNFC wetlands (Mazza, 2006). In this area the subsp. *nigra* Lois. seems to be widespread (Gonnelli, *in verbis*).

- Sambucus ebulus** L. - G rhiz, South European-Mediterranean, ru. Casentino (Caruel, 1860-64), Camaldoli (Marcucci, 1889), Poggio Giogo (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (07/1999, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula).
- Sambucus nigra** L. - P caesp, European, bu. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Padula et al., 1988), Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Norcini & Zoccola, 1995; Montanari, Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Falza, 2006; Mazza, 2006).
- Symphoricarpos albus** (L.) Blake - P caesp, Cultivated, A. Chiusi della Verna (09/1995, 06/1997, Herb. Padula).
- Viburnum lantana** L. - P caesp, South-European (also cultivated), bx, r. Foreste Casentinesi (Anonimo, 1876; Padula, 1995), Bagno di Romagna (08/1980, 10/1993, Herb. Padula), Badia Prataglia (09/2005, Herb. Padula).
- Viburnum tinus** L. - P caesp, Mediterranean (also cultivated), bx, r. Campigna-Lama (Padula, 1988, 1995), Fosso degli Altari e La Seghettina (Sirotti, 1998), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001). Rare in the Park area; also cultivated, it tends to spread in termophilous low altitude woods.
- CARYOPHYLLACEAE
- Agrostemma githago** L. - T scap, Eurasian, ru, r, l.r.56/2000 All.A,C. Bibbiena (Marcucci, 1889 sub *Lychnis githago*; Baroni, 1897-1908 sub *L. githago*), S. Benedetto in Alpe, Passo del Muraglione, Campigna (Zangheri, 1966a), La Lama (Zangheri, 1966b). The report of Zangheri (1966b) for La Lama is based on citations by Baccarini and exsiccata by Siemoni dated 1871. In the past this species was widespread but currently it is rare and not recorded since many years.
- Arenaria bertolonii** Fiori - Ch suffr, Endemic Apennines, pd, r, if, l.r.56/2000 All.A. M. Falterona (Zangheri, 1966a sub *Arenaria saxifraga*; Semprini & Milandri, 2001), M. Falco-Piancancelli (Zangheri, 1966a, 1966b sub *A. saxifraga*), Burraia, lungo il fosso dell'Abetio (Zangheri, 1966b sub *A. saxifraga*; Gonnelli et al., 2003), M. Falco, tra Burraia e Sodo dei Conti (Sirotti, 1998), Par. Naz. vers. romagn. (Agostini, 1992), Poggio del Rovino (Gonnelli et al., 2003b), Sasso Fratino (Gonnelli et al., 2003b, 2006).
- Arenaria serpyllifolia** L. - T scap, Cosmopol/wide distrib., px. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Siemoni et al., 1989-1998), Passo del Muraglione, Piancancelli (M. Falco), Campigna loc. Fotefredda, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a sub *Arenaria serpyllifolia* subsp. *serpyllifolia*), Campigna (Zangheri, 1966b sub *A. serpyllifolia* subsp. *serpyllifolia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Ponte Cesare (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Cerastium arvense** L. subsp. *arvense* - H scap, Cosmopol/wide distrib., pa. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tosc. (Viciani & Gabellini, 2001), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). All the citations of *C. arvense* s.l. have been referred to this subspecies.
- Cerastium arvense** L. var. *etruscum* Fiori - H scap, Endemic Apennines, px, r, if, l.r.56/2000 All.A. La Verna (Siemoni et al., 1989-1998).
- Cerastium arvense** L. subsp. *suffruticosum* (L.) Ces. - H scap, South European Orophile, pd, r, if. M. Falco, Campigna (Zangheri, 1966, 1966b), Prato Bertone (Zangheri, 1966a), M. Falco (Padula, 1988; 07/1980, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).
- Cerastium brachypetalum** Pers. - T scap, South European-Mediterranean, px. Giogana (Zangheri, 1966b sub *Cerastium brachypetalum* subsp. *strigosum*), Passo del Muraglione, Campigna (Zangheri, 1966a, 1966b sub *C. brachypetalum* subsp. *tauricum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Cerastium glomeratum** Thuill. - T scap, Cosmopol/wide distrib., ru. Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Cerastium glutinosum** Fr. - T scap, South European-Mediterranean, D. Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). The report is plausible, but the only record comes from a vegetation relevé and we could not check the specimen.
- Cerastium holosteoides** Fr. - H scap, Cosmopol/wide distrib., px. Falterona (Caruel, 1860-64 sub *Cerastium triviale*; Marcucci, 1889 sub *C. triviale*; Zangheri, 1966b sub *C. holosteoides* subsp. *triviale*), Passo del Muraglione, Piancancelli (M. Falco), Passo della Calla (Zangheri, 1966a, 1966b sub *C. holosteoides* subsp. *triviale*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. fontanum* subsp. *vulgare*), Campigna (Ferrari et al., 1982 sub *C. fon-*

- tanum* subsp. *triviale*), San Paolo in Alpe, Fiume d'Isola (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *C. triviale* and sub *C. holosteoides* subsp. *triviale*).
- Cerastium ligusticum** Viv. - T scap, Mediterranean, px. M. Falterona (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).
- Cerastium pumilum** Curt. - T scap, South European-Mediterranean, px, r. M. Falco, Burraia di Campigna (Zangheri, 1966a, 1966b).
- Cerastium semidecandrum** L. - T scap, Cosmopol/wide distrib., px. Campigna al Fosso Abetio (Zangheri, 1966a, 1966b), Campigna, Sodo de' Conti, Fontefreda, Burraia (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Cerastium sylvaticum** Waldst. & Kit. - H scap, European, br. Falterona, La Verna (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b sub *Cerastium sylvaticum*), Calla, Poggio Scali (Zangheri, 1966b sub *C. sylvaticum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Lama (Falzea, 2006).
- Dianthus armeria** L. - H scap, European, px, l.r.2/1977, l.r.56/2000 All.C1, lrEM: DD. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Burraia (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Passo del Muraglione, Campigna (Zangheri, 1966a, 1966b), Monte Gabrendo (Zangheri, 1966a), San Benedetto in Alpe (Zangheri, 1966a, 1966b; Sirotti & Fariselli, 2002), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti, 2002-2006 *in verbis*).
- Dianthus balbisii** Ser. - H scap, Mediterranean Orophile, px, l.r.2/1977, l.r.56/2000 All.C1. San Paolo in Alpe (Zangheri, 1966a sub *Dianthus carthusianorum* subsp. *balbisii*; Zangheri, 1966b sub *D. balbisii* subsp. *balbisii*), Pratovecchio (08/1998, Herb. Padula), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002). For past records the attribution to *D. balbisii* or *D. carthusianorum* is not certain.
- Dianthus carthusianorum** L. - H scap, European, px, l.r.2/1977, l.r.56/2000 All.C1. Passo della Calla (Zangheri, 1966b sub *Dianthus carthusianorum* subsp. *carthusianorum*), Par. Naz. Vers. tosc. (Viciani & Gabellini, 2002), between Giona and Pezza (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996), San Paolo in Alpe (Giacinti Baschetti, 1998). See previous note.
- Dianthus monspessulanus** L. - H scap, South European Orophile, px, l.r.2/1977, l.r.56/2000 All.C1, lrEM: LR. Falterona (Caruel, 1860-64; Marcucci, 1889), App. Cas. (Baroni, 1897-1908), San Benedetto in Alpe (Zangheri, 1966a sub *Dianthus hyssopifolius* subsp. *hyssopifolius*), Monte Guffone, Campigna (Zangheri, 1966a, 1966b sub *D. hyssopifolius* subsp. *hyssopifolius*), M. Falterona (Zangheri, 1966b sub *D. hyssopifolius* subsp. *hyssopifolius*), Campigna Forest, Lama Forest (Padula, 1988), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; 08/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), road to Sasso - Mandrioli, Monte Guffone, Ronco del Cianco, Monte Carpano (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Padula, 1988; Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Dianthus superbus** L. - H scap, Eurasian, D. La Verna (Matteini, 1968). This species was reported at La Verna by Matteini (1968) on the basis of ancient citations by Marcucci; in the *Herbarium Centrale Italicum* (FI) exsiccata of *D. superbus* collected at La Verna are not present.
- Dianthus sylvestris** Wulfen - H scap, Mediterranean Orophile, ro, l.r.2/1977, l.r.56/2000 All.A,C1, lrEM: LR. Capria Valley (Padula, 1974 sub *D. caryophyllus*), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, 07/2004, Herb. Padula), Corezzo (Giacinti Baschetti, 1998), Upper Rabbi Valley (Alessandrini & Bonafede, 1996), Ridracoli (Sirotti, 2004 *in verbis*). In Tuscany the subsp. *longicaulis* (Ten.) Greuter & Burdet is more frequent at low altitudes, while the subsp. *sylvestris* seems to be present at high altitudes.
- Herniaria hirsuta** L. - T scap, Eurasian, D. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b). The report by Zangheri (1966b) is based on Marcucci (1889).
- Holosteum umbellatum** L. - T scap, Eurasian, px, r. Pratovecchio (Baroni, 1897-1908), Campigna (Zangheri, 1966a), La Lama (Zangheri, 1966b). Zangheri's report (1966b) at La Lama is based on ancient citations by Baccarini and on exsiccata by Siemoni dated 1871.
- Minuartia hybrida** (Vill.) Shischk. - T scap, Eurasian, px. Falterona (Marcucci, 1889 sub *Alsine tenuifolia*; Baroni, 1897-1908 sub *A. tenuifolia*; Zangheri, 1966b), Passo del Muraglione (Zangheri, 1966a, 1966b), Prataglia (Baroni, 1897-1908 sub *A. tenuifolia*; Zangheri, 1966b), La Verna (Matteini, 1968 sub *A. tenuifolia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Minuartia verna** (L., Hiern) - Ch suff, Eurasian, px. Falterona (Marcucci, 1889 sub *Alsine verna*; Baroni, 1897-1908 sub *A. verna*; Zangheri, 1966b sub *Minuartia verna* var. *grandiflora*), M. Falco (Zangheri, 1966a sub *Minuartia verna* subsp. *verna*, incl. *M. verna* var. *montana*; Zangheri,

- 1966b sub *M. verna* subsp. *verna*; 07/1980, Herb. Padula; Padula, 1988), La Verna (Matteini, 1968 sub *A. verna*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Moehringia trinervia** (L.) Clairv. - T scap, Eurasian, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Campigna Forest (Zangheri, 1966a), Campigna (Zangheri, 1966b), Sasso Fratino (Hofmann 1965), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Moenchia erecta** (L.) P. Gaertn., B. Mey. & Scherb. subsp. *erecta* - T scap, South European-Mediterranean. NR. Campigna (Zangheri, 1966b), La Verna (Caruel, 1860-64 sub *Cerastium glaucum* var. *quaternellum*), Bibbiena (Marcucci, 1889 sub *C. quaternellum*; Baroni, 1897-1908 sub *C. quaternellum*). All the reports are ancient as also Zangheri's citation (1966b) at Campigna is based on Baccarini.
- Moenchia mantica** (L.) Bartl. subsp. *mantica* - T scap, Mediterranean, NR. La Verna (Marcucci, 1889 sub *Cerastium manticum*; Matteini, 1968 sub *C. manticum*). The report by Matteini (1968) is based on Marcucci (1889).
- Petrorhagia dubia** (Raf.) G. López & Romo - T scap, Mediterranean, px, r. Falterona (Zangheri, 1966b sub *P. velutina*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. velutina*). The report by Zangheri (1966b) at Falterona is based on ancient data by Parlatore.
- Petrorhagia prolifera** (L.) P.W. Ball et Heywood - T scap, South European-Mediterranean, px. Falterona (Caruel, 1860-64 sub *Dianthus prolifera*; Marcucci, 1889 sub *D. prolifera*; Zangheri, 1966b sub *Tunica prolifera*), Passo del Muraglione, San Benedetto in Alpe (Zangheri, 1966a sub *Kohlruschia prolifera*, incl. *T. prolifera*), La Verna (Marcucci, 1889 sub *D. prolifera*; Baroni, 1897-1908 sub *D. prolifera*; Matteini, 1968 sub *T. prolifera*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia (11/2005, Herb. Padula), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Petrorhagia saxifraga** (L.) Link - H caesp, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *Tunica saxifraga*), Prataglia (Baroni, 1897-1908 sub *T. saxifraga*), Passo del Muraglione, Campigna (Zangheri, 1966a, 1966b sub *T. saxifraga*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002).
- Sagina apetala** Ard. subsp. *apetala* - T scap, South European-Mediterranean, NR. Burraia di Campigna (Zangheri, 1966b sub *S. procumbens* subsp. *apetala*). Zangheri's report (1966b) is based on Baccarini.
- Sagina procumbens** L. subsp. *procumbens* - H caesp, Cosmopol/ampia distrib, ru. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Prataglia (Baroni, 1897-1908), Passo del Muraglione, M. Falco (Zangheri, 1966a, 1966b), from Campigna to Passo Calla (Zangheri, 1966a), Passo della Calla (Zangheri, 1966b). All the records have been referred to the typical subspecies as it is the only present in this area (Conti et al., 2005).
- Sagina subulata** (Swartz) Presl - H caesp, South European-Mediterranean, px. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Prataglia (Baroni, 1897-1908), Poggio Spillo (Baroni, 1897-1908; Zangheri, 1966b sub *Sagina subulata* subsp. *subulata*), Passo del Muraglione, M. Falco, Piancancelli (Zangheri, 1966a, 1966b), Sodo de' Conti, Burraia e Sodo alle Calle (Zangheri, 1966a), Campigna (Zangheri, 1966b incl. *S. subulata* subsp. *subulata*), Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b sub *S. subulata* subsp. *subulata*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Saponaria ocymoides** L. - H scap, South European Orophile, px, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Corniolino (Zangheri, 1966a, 1966b), M. Pianaccione (Giacinti Baschetti, 1998), between Corniolino and Campigna (Sirotti, 2006 *in verbis*).
- Saponaria officinalis** L. - H scap, Boreal, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Bibbiena (07/1999, Herb. Padula), Pratovecchio (07/2001, 10/2002, Herb. Padula), Badia Prataglia (09/2005, Herb. Padula), Passo del Muraglione, San Paolo in Alpe (Zangheri, 1966a, 1966b), La Lama-Campigna (Zangheri, 1966a), Par. Naz. vers. romagn. (Sirotti, 2004 *in verbis*), PNFC wetlands (Mazza, 2006).
- Scleranthus annuus** L. - T scap, Eurasian, px. Camaldoli (Marcucci, 1889), Campigna, Passo della Calla, Sodo de' Conti (Zangheri, 1966a, 1966b), Poggio Martino, M. Falco, Prato Bertone, Prato alla Penna (Zangheri, 1966a), La Verna (Matteini, 1968).
- Scleranthus perennis** L. - H caesp, Boreal, px, r. l.r.56/2000 All.A. Camaldoli (Caruel, 1860), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Silene armeria** L. - T scap, European, px, r. La Verna (Matteini, 1968; Siemoni et al., 1989-1998).
- Silene dioica** (L.) Clairv. - H scap, Eurasian, br. Falterona (Caruel, 1860-64 sub *Lychnis sylvestris*; Marcucci, 1889 sub *L. sylvestris*), Camaldoli (Caruel, 1860-64 sub *L. sylvestris*; Marcucci, 1889 sub *L. sylvestris*; 09/2005, Herb. Padula), La Verna (Caruel, 1860-64 sub *L. sylvestris*; Marcucci, 1889 sub *L. sylvestris*; Matteini, 1968 sub *L. rubra*; Siemoni et al., 1989-1998; Ferrarini, 1998), Pian delle Fontanelle (M. Falco), Campigna Forest, Prato Bertone, Passo dei Mandrioli (Zangheri, 1966a sub *Melandryum ru-*

- brum*), Campigna (Zangheri, 1966b sub *Melandryum diurnum*), Giogana di Poggio Scali (07/1969, Herb. Padula), Alto Archiano (Tassini, 1976 sub *L. rubra*), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), Sodo dei Conti, La Lama, Prato al Fiume (Falzea, 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).
- Silene flos-cuculi** (L.) Clairv. - H scap, Boreal, pu. Casentino (Marcucci, 1889 sub *Lychnis flos-cuculi*; Baroni, 1897-1908), La Verna (Matteini, 1968 sub *L. flos-cuculi*; Siemoni et al., 1989-1998 sub *L. flos-cuculi*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (04/1990, 04/2001, 05/2002, Herb. Padula sub *L. flos-cuculi*), Campigna (Zangheri, 1966a, 1966b sub *L. flos-cuculi*), Sasso Fratino (Gonnelli et al., 2006).
- Silene gallica** L. - T scap, Cosmopol/wide distrib., ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Silene italica** (L.) Pers. - H ros, South European-Mediterranean, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Giacinti Baschetti, 1998), Badia Prataglia (Baroni, 1897-1908), Poggio Giogo, Burraia (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b sub *Silene italica* subsp. *italica*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Passo Mandrioli, between Passo Mandrioli and Cancellino, Villaggio San Francesco, Chiusi della Verna between La Beccia and Poggio allo Spicchio, between Val della Meta and T. Archiano (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002).
- Silene latifolia** Poir. subsp. *alba* (Mill.) Greuter & Burdet - H bienn, Eurasian, ru. Bibbiena (Baroni, 1897-1908 sub *Lychnis alba*), La Verna (Matteini, 1968 sub *L. alba*; Siemoni et al., 1989-1998 sub *Silene alba*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *S. alba*), Pratovecchio (10/2002, Herb. Padula sub *S. alba*).
- Silene nutans** L. - H ros, Eurasian, arb. App. Cas. (Baroni, 1897-1908), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Campigna (Zangheri, 1966a sub *Silene nutans* subsp. *nutans*; Zangheri, 1966b), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Silene viridiflora** L. - H ros, Eurasian, br, r. Prataglia (Baroni, 1897-1908), Passo della Calla (Zangheri, 1966a), from Pratovecchio to Giogana (Zangheri, 1966b). Zangheri's reports (1966b) are based on ancient citations by Baccarini.
- Silene vulgaris** (Moench) Garcke subsp. *vulgaris* - H scap, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889 sub *Silene inflata*; Baroni, 1897-1908 sub *Silene cucubalus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Passo del Muraglione (Zangheri, 1966a sub *S. vulgaris* subsp. *vulgaris*), La Verna (Siemoni et al., 1989-1998 sub *S. cucubalus*; Ferrarini, 1998; Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Pratovecchio (06/2001, Herb. Padula), Chiusi della Verna (10/2002, 07/2004, Herb. Padula), Campigna (Zangheri, 1966a sub *S. vulgaris* subsp. *angustifolia*; Zangheri, 1966b sub *S. cucubalus* subsp. *cucubalus*; Ferrari et al., 1982), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). We refer to the typical subspecies also one report of *S. vulgaris* subsp. *angustifolia*, currently subsp. *tenoreana* (Colla) Soldano & Conti, at Campigna as this subspecies is generally considered present in coastal environments (Pignatti, 1982).
- Spergularia rubra** (L.) Presl - Ch suff, Cosmopol/wide distrib., px. Falterona (Marcucci, 1889 sub *Lepigonum rubrum*; Baroni, 1897-1908; Zangheri, 1966b sub *S. campestris*), Passo del Muraglione, Poggio Giogo sotto M. Falco, Burraia, Prato alla Penna (Zangheri, 1966a, 1966b sub *S. campestris*), Sodo alle Calle, Poggio Palaio (Zangheri, 1966a), Campigna. (Zangheri, 1966b sub *S. campestris*).
- Stellaria alsine** Grimm - H scap, Boreal, pu, if, r. M. Falco a Fonte de' Conti (Zangheri, 1966a, 1966b).
- Stellaria graminea** L. - H scap, Eurasian, pa, l.r.56/2000 All.A. Tra Falterona e Camaldoli (Baroni, 1897-1908), M. Falco a Fonte de' Conti e Piancancelli, Campigna (Zangheri, 1966a, 1966b), Burraia (Zangheri, 1966a), Passo della Calla (Zangheri, 1966a; Sirotti, 1998), Falterona (Zangheri, 1966b; Sirotti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Poggio Scali, Passo Porcareccio, Prato al Soglio, Giogo Seccheta, Poggio Lastraiolo (Sirotti 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), M. Falco (Sirotti, 1998; 07/2001, Herb. Padula), Stia (07/2005, Herb. Padula), Fonte del Porcareccio (Falzea, 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Stellaria holostea** L. - Ch scap, European, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; 12/2004, Herb. Padula), Prato alla Penna (Baroni, 1897-1908), San Benedetto in Alpe, M. Falco a Pian delle Fontanelle (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), M. Penna (07/2005, Herb. Padula), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Stellaria media** (L.) Vill. - T rept, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), La Verna (Matteini, 1968 sub *Stellaria media* var. *oligandra*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Pratovecchio



(03/2001, Herb. Padula), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Passo del Muraglione (Zangheri, 1966a sub *S. media* subsp. *media*), la Calla (Zangheri, 1966b), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Stellaria nemorum** L. subsp. **montana** (Pierrat) Berher - H scap, European, br. Falterona (Marcucci, 1889; Zangheri, 1966b sub *S. nemorum* subsp. *glochidisperma*; Beni, 1983), Camaldoli (Marcucci, 1889; Beni, 1983), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Beni, 1983; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-La Lama (Ferrari et al., 1979, 1982 sub *S. nemorum*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 incl. *Stellaria nemorum* subsp. *glochidisperma*), Sasso Fratino (Hofmann, 1965; Padula, 1982; Gonnelli et al., 2006), M. Falco, Fonte de' Conti-Piancancelli, Campigna Forest (Zangheri, 1966a, 1966b sub *S. nemorum* subsp. *glochidisperma*), Pian del Pero (Zangheri, 1966a sub *S. nemorum* subsp. *glochidisperma*), Fonte del Porcareccio (Falzea, 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). Even if some authors do not mention the subspecies, the taxon present in the Park is always the subsp. *montana*.

#### CELASTRACEAE

**Euonymus europaeus** L. - P caesp, Eurasian, bx. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Pratovecchio (11/1987, Herb. Padula), Campigna-Lama (Padula, 1988), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (10/1999, 05/2002, Herb. Padula), M. Penna (05/2003, Herb. Padula), Sasso Fratino, (Tiglié, 1974, Massei, 1981).

**Euonymus latifolius** (L.) Mill. - P caesp, Mediterranean Orophile, br. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Badia Prataglia (Marcucci, 1889; Baroni, 1897-1908; 11/1987, 10/1988, 05/1989, Herb. Padula), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; 08-09/2004, Herb. Padula), Alto Archiano (Tassini, 1976), Campigna-Lama (Padula, 1988), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Bibbiena (08/2002, Herb. Padula), M. Penna (05/2003, Herb. Padula), Sasso Fratino, (Hofmann, 1965; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).

#### CHENOPODIACEAE

**Atriplex hortensis** L. - T scap, Cultivated, A, D. Prato Bertone (Zangheri, 1966b). Reported by Zangheri (1966b) on the basis of ancient citations by Baccarini.

**Atriplex patula** L. - T scap, Boreal, ru. Bibbiena (Marcucci,

1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998).

**Chenopodium album** L. - T scap, Cosmopol/wide distrib., ru. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), M. Falterona, La Lama, Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Pratovecchio (07/2003, Herb. Padula).

**Chenopodium bonus-henricus** L. - H scap, Boreal, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Chenopodium murale** L. - T scap, Cosmopol/wide distrib., ru. Everywhere in the area, Passo del Muraglione (Zangheri, 1966b).

**Chenopodium polyspermum** L. - T scap, Eurasian, ru. Bibbiena (Baroni, 1897-1908), Everywhere in the area, Passo del Muraglione (Zangheri, 1966b), PNFC wetlands (Falzea, 2006).

#### CISTACEAE

**Cistus salvifolius** L. - NP, Mediterranean, bru. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Fumana ericifolia** Wallr. - Ch suff, Mediterranean, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *F. ericoides*). In a recent paper Marchetti et al. (2009) point out that in Italy all the records of *F. ericoides* must be referred to *F. ericifolia*.

**Fumana procumbens** (Dunal) G. et G. - Ch suff, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (07/2004, Herb. Padula).

**Helianthemum apenninum** (L.) Mill. - Ch suff, European, D. Alto Archiano (Tassini, 1976). Tassini (1976) reported this species in a degree thesis; in the *Herbarium Centrale Italicum* (FI) exsiccata of this area are not present, and also from an ecological point of view the record is unreliable.

**Helianthemum nummularium** (L.) Mill. subsp. **obscurum** (Celak) Holub - Ch suff, European, px. Burraia, S. Benedetto in Alpe (Zangheri, 1966a sub *H. ovatum*), Campigna (Zangheri, 1966a sub *H. ovatum*; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b sub *H. ovatum*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (11/2001, 04/2002, Herb. Padula). Past citations of *H. nummularium* s.l. have been referred to the subsp. *obscurum*, the only subspecies present in this area.

*Helianthemum salicifolium* (L.) Mill. - T scap, South European-Mediterranean, D, NR. In Casentino Apennines (Baroni, 1897-1908).

*Tuberaria guttata* (L.) Fourr. - T scap, South European-Mediterranean, px. Bibbiena (Marcucci, 1889 sub *Helianthemum guttatum*; Baroni, 1897-1908 sub *H. guttatum*), Moggiona (Baroni, 1897-1908 sub *H. guttatum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

#### CONVOLVULACEAE

*Calystegia sepium* (L.) R. Br. - H scand, Eurasian, bu. Casentino (Marcucci, 1889 sub *Convolvulus sepium*), Badia Prataglia (Marcucci, 1889 sub *C. major*; Baroni, 1897-1908 sub *C. sepium*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

*Convolvulus arvensis* L. - G rhiz, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897), Passo dei Mandrioli (Zangheri, 1966a), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (07/1997, Herb. Padula), La Verna (Siromoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

*Convolvulus cantabrica* L. - H scap, South European-Mediterranean, NR. Casentino (Marcucci, 1889; Baroni, 1897-1908), Giogana (Zangheri, 1966b). Zangheri's report (1966b) is based on an ancient citation by Siromoni dated 1871.

*Cuscuta epithymum* (L.) L. - T par, Eurasian, px. La Verna (Matteini, 1968; Siromoni et al., 1989-1998), Passo del Muraglione (Zangheri, 1966a), Campigna Forest (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

*Cuscuta europaea* L. - T par, Eurasian, px. Prataglia, La Verna (Baroni, 1897-1908 sub *Cuscuta europaea*), Prato Bertone, Passo dei Mandrioli (Zangheri, 1966b), Campigna Forest, Bagno di Romagna (Zangheri, 1966a, 1966b).

#### CORNACEAE

*Cornus alba* L. - NP, Cultivated, A. *Arboretum Siromoni* Badia Prataglia (Crudele et al., 2002). In the *Arboretum Siromoni* this species is present with three cultivars: cv. *elegantissima*, cv. *sibirica*, cv. *spaechi* (Crudele et al., 2002).

*Cornus mas* L. - P caesp, South-European, br. Foreste Casentinesi (Anonimo 1878), Prataglia (Baroni, 1897-1908), Chitignano (Baroni, 1897-1908; 04/2001-2002, Herb. Padula), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siromoni et al., 1989-

1998), Monte Gemelli (Zangheri, 1966a, 1966b), Radracoli (Zangheri, 1966a), Between Pratovecchio and La Lama (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Falterona (09/2002, Herb. Padula), Chiusi della Verna (08/2002, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano, 1975), *Arboretum Siromoni* Badia Prataglia (Crudele et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Padula 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tiglié, 1974; Padula, 1978; Massei, 1981; Gonnelli et al., 2006).

*Cornus sanguinea* L. - P caesp, Eurasian, arb. Foreste Casentinesi (Anonimo, 1878), Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siromoni et al., 1989-1998; Ferrarini, 1998), S. Paolo in Alpe (Zangheri, 1966a), Campigna (Zangheri, 1966b), Poppi (08/2001, Herb. Padula), Capria Valley (Padula, 1974), Par. Naz. For. Cas., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia, (Sabato & Valenziano, 1975), *Arboretum Siromoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tiglié, 1974; Gonnelli et al., 2006).

#### CORYLACEAE

*Carpinus betulus* L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Campigna (Zangheri 1966a, 1966b; Ferrari et al., 1982), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Poggio Scali (Zangheri, 1966b), Capria Valley (Padula, 1974), Pratovecchio (03-09/1978, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula), Bibbiena (09/2003, Herb. Padula), Poppi (04/2004, Herb. Padula), *Arboretum Siromoni* Badia Prataglia (Crudele et al., 2000), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tiglié, 1974; Padula, 1978; Massei 1981; Padula, 1982; Norcini & Zoccola, 1995; Gonnelli et al., 2006).

*Corylus avellana* L. - P caesp, European, br. Foreste Casentinesi (Anonimo, 1878), Pratovecchio (Caruel, 1860-64; 09/1978, Herb. Padula), Camaldoli (Marcucci, 1889; Baroni, 1897-1908; 03/1978-2001, Herb. Padula, 9/1978 leg. Padula Herbario Museo Siromoni), Passo dei Mandrioli (Zangheri, 1966a, 1966b), La Lama (Zangheri, 1966a), Campigna (Zangheri, 1966a), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), La Verna (Siromoni et al., 1989-1998), Par. Naz.,

- vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2000), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tiglié, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Montanari, 2005; Gonnelli et al., 2006).
- Ostrya carpinifolia** Scop. - P caesp, South European, bx. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Camaldoli (Caruel, 1860-64; Marcucci, 1889-1908), Campigna (Zangheri, 1966b), Pian del Pero (Zangheri, 1966a), La Lama (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Pratovecchio (09/1978, 05/2001, Herb. Padula), Badia Prataglia (10/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Lama Forest at Fornino (Checcacci et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Lama (9/1979 leg. Padula Herbario Museo Siemoni), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006; Mazza, 2006), Campigna - Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tigliè, 1974; Padula, 1978, 1982; Massei, 1981; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- CRASSULACEAE
- Hylotelephium maximum** (L.) Holub - H scap, European, ro. Camaldoli (Marcucci, 1889 sub *Sedum maximum*; Baroni, 1897-1908 sub *S. maximum*), La Verna (Marcucci, 1889 sub *S. maximum*; Baroni, 1897-1908 sub *S. maximum*; Matteini, 1968 sub *S. telephium* subsp. *maximum*; 08/1997, 09/2004, Herb. Padula sub *S. telephium* subsp. *maximum*), Prataglia (Baroni, 1897-1908 sub *S. maximum*), Premilcuore, Pian delle Fontanelle-M. Falco, Corniolo, Poggio Scali (Zangheri, 1966a, 1966b sub *S. maximum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. telephium* subsp. *maximum*), Par. Naz., vers. romagn. (Semprini & Milandri, 2001 sub *S. maximum*), Poppi (04/2004, Herb. Padula sub *S. telephium* subsp. *maximum*), Sasso Fratino (Gonnelli et al., 2005 sub *Sedum maximum*; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).
- Sedum acre** L. - Ch succ, European, ro. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Sedum sexangulare* var. *acre*; Gualazzi & Piaggi, 1989-1998), La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Sedum album** L. - Ch succ, South European-Mediterranean, ro. La Verna (Matteini, 1968; Gualazzi & Piaggi, 1989-1998), San Benedetto in Alpe, Passo del Muraglione, Poggio Giogo near M. Falco (Zangheri, 1966a, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sedum cepaea** L. - T scap, South European-Mediterranean, br. Camaldoli, Prataglia (Baroni, 1897-1908), Alto Archiano (Tassini, 1976), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe, Corniolo, Passo del Muraglione at Poggio Puledro, Campigna at Poggio de' Ronchi (Zangheri, 1966a), Campigna (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sedum dasyphyllum** L. - Ch succ, South European-Mediterranean, ro. La Verna (Caruel, 1860-64 sub *S. dasyphyllum* var. *adenocladum*; Matteini, 1968; Siemoni et al., 1989-1998), Moggiona (Baroni, 1897-1908 sub *S. dasyphyllum* var. *adenocladum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poppi, Bibbiena (Camangi et al., 2003), Campigna (Zangheri, 1966a, 1966b).
- Sedum monregalense** Balbis - Ch succ, Endemic Apennines, ro, if, lrEM: LR. Falterona (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Ferrarini, 1998), Prataglia, fra la Consuma e Falterona (Baroni, 1897-1908), Poggio Penna (Baroni, 1897-1908; Zangheri, 1966b), Passo del Muraglione a Poggio Puledro, Piancancelli, Burraia, Poggio Scali, Zangheri, 1966a), Passo del Muraglione, Prato Bertone (Zangheri, 1966b), M. Falco, Campigna, Passo della Calla, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001), Sasso Fratino (Bottacci et al., 2003; Montanari 2005; Gonnelli et al., 2006).
- Sedum ochroleucum** Chaix - Ch succ, Mediterranean Orophile, ro, r. Passo del Muraglione a Poggio Puledro, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *S. reflexum* subsp. *anopetalum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Sedum anopetalum*).
- Sedum rubens** L. - T scap, South European-Mediterranean, ro, r. Passo del Muraglione (Zangheri, 1966a, 1966b), Moggiona (Baroni, 1897-1908), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Sedum rupestre** L. subsp. *rupestre* - Ch succ, European, ro. Camaldoli (Caruel, 1860-64; Marcucci, 1889), San Benedetto in Alpe, Premilcuore, Corniolo, Pian del Grado (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La

Verna (Gualazzi & Piaggi, 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Gonnelli et al., 2006). Past record of *S. rupestre* s.l. have been referred to the typical subspecies.

**Sedum sediforme** (Jacq.) Pau - Ch succ, Mediterranean, ro, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Sedum sexangulare** L. - Ch succ, European, ro. Chiuse (Marcucci, 1889 sub *Sedum boloniense*), Pratovecchio (06/1996-1999, Herb. Padula), Passo del Muraglione (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Sempervivum tectorum** L. - Ch succ, South European Orophile, ro, r, if, l.r.2/1977, lrEM: VU. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Ferrarini, 1998), Poppi, Bibbiena (Camangi et al., 2003), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996).

**Umbilicus rupestris** (Salisb.) Dandy - G bulb, South European-Mediterranean, ro, r, lrEM: EN. Casentino (Marcucci, 1889 sub *Umbilicus pendulinus*; Baroni, 1897-1908 sub *U. pendulinus*), Giogana (Zangheri, 1966b sub *Cotyledon umbilicus-veneris*), Rincine-M. Massicaia (Sabato & Valenziano, 1975). Zangheri's report (1966b) is based on citation by Siemoni dated 1871.

#### CUCURBITACEAE

**Bryonia dioica** Jacq. - G rhiz/H scand, South European-Mediterranean, bu, l.r.56/2000 All.A. Bibbiena (Marcucci, 1889), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna Forest (Zangheri, 1966a, 1966b).

#### DIPSACACEAE

**Cephalaria transsylvanica** (L.) Roem. & Schult. - H scap, European, NR. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968). The report by Matteini (1968) is based on Marcucci (1889).

**Dipsacus fullonum** L. - H bienn, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Dipsacus sylvestris*), Prataglia (Baroni, 1897-1908 sub *D. sylvestris*), La Verna (Matteini, 1968 sub *D. sylvestris*, *D. fullonum* var. *sylvester*; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975, Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Bagno di Romagna, Passo del Muraglione (Zangheri, 1966a sub *D. sylvester*), Campigna (Zangheri, 1966b sub *D. sylvester*), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Knautia arvensis** (L.) Coulter - H scap/H bienn, Eurasian, px. Casentino (Marcucci, 1889; Baroni, 1897-1908),

Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), La Lama (Zangheri, 1966b).

**Knautia drymeia** Heuffel - H scap, South-European, pd, r. Campigna (Ferrari et al., 1982), Sasso Fratino (Bottacci et al., 2003 sub *Knautia drymeia* subsp. *centrifrons*; Gonnelli et al., 2006).

**Knautia integrifolia** (L.) Bertol. - T scap, South European-Mediterranean, px. Prataglia (Baroni, 1897-1908 sub *Knautia hybrida*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe, Premilcuore (Zangheri, 1966a, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Knautia purpurea** (Vill.) Borbás - H scap, Mediterranean Orophile, px, r. PNFC eroded slopes (Giacinti Baschetti, 1998), M. Calvano (Viciani, 2008 *in verbis*, with collected exsiccata). All the records are recent and refer to La Verna area.

**Scabiosa columbaria** L. - H scap, Eurasian, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Falterona (Forasassi, 30/8/1953, FI), San Benedetto in Alpe, Passo del Muraglione, M. Falco (Zangheri, 1966a), la Calla (Zangheri, 1966b), Campigna (Zangheri, 1966b; Ferrari et al., 1982), La Verna (Sommier, 19/8/1895, FI; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Pratovecchio (12/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Scabiosa triandra** L. - H scap, South-European, px, r, if. La Burraia (Zangheri, 1966b sub *Scabiosa columbaria* subsp. *gramuntia*), La Verna (Siemoni et al., 1989-1998 sub *Scabiosa gramuntia*), Zangheri's report (1966b) is based on ancient citations by Baccarini.

**Sixalix atropurpurea** (L.) Greuter & Burdet subsp. **maritima** (L.) Greuter & Burdet - H bienn (T scap, H scap), Mediterranean, px. Casentino (Marcucci, 1889 sub *Scabiosa atropurpurea*), Pratovecchio (Baroni, 1897-1908 sub *S. atropurpurea*), La Verna (Matteini, 1968 sub *S. atropurpurea*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. maritima*). According to Zangheri (1966b) this taxon is present at low altitudes but does not reach the higher areas.

#### ERICACEAE

**Arbutus unedo** L. - P scap, Cultivated, A. Bibbiena (10/2000, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Calluna vulgaris** (L.) Hull - Ch frut, Boreal, bru. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falterona (02/2001, Herb. Padula), Stia (03/2001, Herb. Padula), Pratovecchio (10/2001, Herb. Padula), Par. Naz., vers. tos.

- (Viciani & Gabellini, 2002), Bibbiena (07/2002, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano 1975), Poggio Corsoio sotto Monte Falco, S. Benedetto in Alpe (Zangheri, 1966a, 1966b), PNFC eroded slopes Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Erica arborea** L. - P caesp, Mediterranean, bru. Alto Archiano (Tassini, 1976), Campigna-Lama Forests (Padula, 1995), Bibbiena (06/1982, Herb. Padula), Poppi (03/2004), Badia Prataglia (12/2004, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano, 1975), Bramasole (Sirotti, 1998), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Poggio Capannina (Sirotti, 2006 *in verbis*).
- Erica scoparia** L. - P caesp, Mediterranean, bru. Prataglia (Baroni, 1897-1908), Alto Archiano (Tassini, 1976), Bibbiena (06/1982, Herb. Padula), Campigna-Lama Forests (Padula, 1995), Marena (12/2001, Herb. Padula), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002, Pratovecchio (04/2002, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano, 1975), at Fornino (Zoccola, 2006 *in verbis*), PNFC eroded slopes (Giacinti Baschetti, 1998), Sasso Fratino (Tiglié, 1974; Gonnelli et al., 2006), Fonte solforosa in Lama Forest (Zoccola, 2008 *in verbis*). In the Romagna area this species is rare.
- Rhododendron ferrugineum** L. - NP, South European Orophile, D, NR. Appennino del Casentino (Baroni, 1897-1908). Baroni (1897-1908) reported dubiously the presence of this species in Casentino, quoting Caruel (1889), who had this information from Beni brothers from Stia. Probably it was an erroneous report.
- Vaccinium myrtillus** L. - Ch frut, Boreal, bru. Falterona (Caruel, 1860-64; Marcucci, 1889; Gonnelli et al., 2002), Da M. Falco a Poggio Scali (Zangheri, 1966b), Campigna, M. Falco, Sodo de' Conti, Poggio Martino Burraia Passo della Calla (Zangheri, 1966a, 1966b), Poggio Scali (08/1970, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (09/2001, 07/2005, Herb. Padula), Gonnelli et al., 2002, Rincine-M. Massicaia (Bassani, 2001; Sabato & Valenziano, 1975), Monte Falco (Padula, 1988), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Hofmann, 1965; Tiglié, 1974; Padula, 1978; Gonnelli et al., 2006).
- Vaccinium vitis-idaea** L. - Ch frut, Boreal, bru, r, if, l.r.56/2000 All.A, lrEM: LR. M. Falco (Zangheri, 1966a, 1966b; Padula, 1988, 1995; Contarini, 1996; Sirotti 1998; 08/1978, 07/1980, 08/1982, 08/2005, Herb. Padula; Semprini & Milandri, 2001), Poggio Sodo dei Conti (Zangheri, 1966a, 1966b; Sirotti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Massicaia (Bassani, 2001 sub *Vaccinium vitis-idea* subsp. *vitis-idea*), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001; Sirotti & Fariselli, 2002). Monte Falco is the southern distribution limit of this species in Italy.
- EUPHORBIACEAE
- Chamaesyce canescens** (L.) Prokh. - T rept, South European-Mediterranean, D, NR. Bibbiena (Marcucci, 1889 sub *Euphorbia chamaesyce*; Baroni, 1897-1908 sub *E. chamaesyce*).
- Euphorbia amygdaloides** L. - Ch suff, European, br. Pratovecchio (Caruel, 1860-64; 01/2003, Herb. Padula), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Caruel, 1860-64; Marcucci, 1889; 05/1976, Herb. Padula), San Benedetto in Alpe, Passo del Muraglione, Campigna Forest, Burraia, Passo de' Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia (03/2002, Herb. Padula), Sasso Fratino (Hofmann, 1965; Padula, 1982; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006; Falzea, 2006), Par. Naz. vers., romagn. (Sirotti & Fariselli, 2002).
- Euphorbia cyparissias** L. - H scap, European, px. Poggio Gogo presso M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (04/2002, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006; Falzea, 2006), Par. Naz. vers., romagn. (Sirotti & Fariselli, 2002).
- Euphorbia dulcis** L. - G rhiz, European, br. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (05/1976, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (06/2004, Herb. Padula), Pian delle Fontanelle (M. Falco), Campigna Forest, Prato alla Penna (Zangheri, 1966a sub *Euphorbia dulcis* var. *purpurata*), Campigna (Zangheri, 1966b sub *E. dulcis* var. *purpurata*), Sasso Fratino (Hofmann, 1965; Tiglié, 1974; Bottacci et al., 2003; Gonnelli et al., 2006), Campigna-Lama (Ferrari et al., 1979; 1982), PNFC wetlands (Mazza, 2006; Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Euphorbia exigua** L. - T scap, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Corniolo, Passo del Muraglione (Zangheri, 1966a incl. *Euphorbia exigua* var. *retusa*; Zangheri, 1966b sub *E. exi-*

*gua* var. *acuta* and *E. exigua* var. *retusa*), Sasso Fratino (Tigliè, 1974), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Euphorbia falcata** L. - T scap, South European-Mediterranean, ru. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Euphorbia helioscopia** L. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Pratovecchio (01/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Euphorbia peplus** L. - T scap, Cosmopol/wide distrib., ru. Badia Prataglia (Nimis, 05/2008 *in verbis*).

**Euphorbia platyphyllos** L. - T scap, South European-Mediterranean, ru. Passo del Muraglione, Corniolo (Zangheri, 1966a, 1966b sub *Euphorbia platyphylla* L.).

**Mercurialis annua** L. - T scap, Eurasian, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975, Camaldoli (10/2002, Herb. Padula), Pratovecchio (12/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003).

**Mercurialis perennis** L. - G rhiz, European, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908), Poggione (Zangheri, 1966a), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Giogana di Poggio Scali (07/1969, Herb. Padula), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Massei, 1981; Padula, 1978; Padula, 1982; Hofmann, 1991; Montanari, 2005; Gonnelli et al., 2006), Capo d'Arno, Stradella (Caruel, 1860-64), Badia Prataglia (Marcucci, 1889; Baroni, 1897-1908), Pian delle Fontanelle (M. Falco), Burraia, Poggio Scali (Zangheri, 1966a, 1966b), Stia (04/1968, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Camaldoli (05/2004, 05-06/2005, Herb. Padula), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

#### FABACEAE

**Anthyllis vulneraria** L. - H scap, South European-Mediterranean, px. Casentino (Caruel, 1860-64; Marcucci, 1889), Campigna (Zangheri, 1966a, 1966b sub *Anthyllis vulneraria* subsp. *praepropera*; Ferrari et al., 1982), S. Benedetto in Alpe, la Lama (Zangheri, 1966a sub *A. vulneraria* subsp. *polyphylla*; Zangheri, 1966b sub *A. vulneraria* subsp. *polyphylla* and *pseudo-vulneraria*), Campigna Forest (Zangheri, 1966a, 1966b sub *A. vulneraria* subsp. *carpathica* = *A. vulneraria* subsp. *affinis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Al-

to Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998; Giacinti Baschetti, 1998), Ridracoli, Monte Guffone, Ronco del Cianco, Poggio Capannina, Fiume d'Isola, Badia Prataglia, between Val della Meta and F. Archiano, between Chiusi della Verna and La Beccia, between Chiusi della Verna and Poggio allo Spicchio, Rimbocchi, Moggiona (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). All the records have been reported to the species *sensu lato*. Two subspecies are surely present in the area, the subsp. *polyphylla* (DC.) Nyman and the subsp. *rubriflora* (DC.) Archang.

**Astragalus glycyphyllos** L. - H rept, European, br. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Campigna Forest (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), M. Penna, tra Chiusi della Verna e Poggio dello Spicchio (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).

**Astragalus hamosus** L. - T scap, Mediterranean, px, r. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975). All the data referring to La Verna and Bibbiena are based on Marcucci (1889).

**Astragalus monspessulanus** L. - H ros, South European-Mediterranean, px. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Bagno di Romagna - loc. Scallacce (Zangheri, 1966a), Campigna (Zangheri, 1966b; Ferrari et al., 1982), Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998; Giacinti Baschetti, 1998), Passo Mandrioli, tra Passo Mandrioli e Cancellino, Moggiona, Frassineta, Rimbocchi, between Premilcuore and Valico Tre Faggi (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Chiusi della Verna (05/2003, Herb. Padula), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).

**Astragalus sempervirens** Lam. - Ch frut, Mediterranean Orophile, NR. La Verna (Caruel, 1860-64 sub *Astragalus aristatus*; Marcucci, 1889 sub *A. aristatus*; Matteini, 1968). All the records, ranging from Marcucci (1889) to Matteini (1968), are based on Caruel (1860-64) who respectively quoted Savi. In the *Herbarium Centrale Italicum* (FI) no exsiccatum collected at La Verna is present.

**Cercis siliquastrum** L. - P scap, South-European (Cultivated), D, NR. Between Bibbiena and La Verna (Marcucci,

- 1889; Baroni, 1897-1908), La Verna (Matteini, 1968). All the data are ancient and based on Marcucci (1889).
- Colutea arborescens** L. - P caesp, South European-Mediterranean, bx. Pratovecchio (Caruel, 1860-64; Marcucci, 1889; 07/2001, Herb. Padula), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), sotto Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Ferrarini, 1998), Chiusi della Verna (04/2004, Herb. Padula), road to San Paolo in Alpe, in mountains above Ridracoli (Giacinti Baschetti, 1998).
- Coronilla minima** L. - Ch suffr, Mediterranean, px. San Benedetto in Alpe (Zangheri, 1966a, 1966b), Capria Valley (Padula, 1974), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), M. Calvano (Viciani, 2008 *in verbis*).
- Coronilla scorpioides** (L.) Koch - T scap, South European-Mediterranean, px. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Moggiona, Corezzo (Giacinti Baschetti, 1998), Ronco del Cianco, Ridracoli, Castelletto, Tracollina (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Chiusi della Verna (Giacinti Baschetti, 1998; 05/2004, Herb. Padula).
- Cytisophyllum sessilifolium** (L.) O. Lang. - P caesp, South-European, arb. Casentino (Baroni, 1897-1908 sub *Cytisus sessilifolius*), San Benedetto in Alpe (Zangheri, 1966a sub *C. sessilifolius*), La Verna (Siemoni et al., 1989-1998 sub *C. sessilifolius*), Monte Fattucchio, tra C. Canvecchio e Gianpereta (Giacinti Baschetti, 1998 sub *C. sessilifolius*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *C. sessilifolius*), Valdonasso, Val del Rio, Sasso, M. Guffone, Ridracoli, Galvane, Ronco del Cianco, (Giacinti Baschetti, 1998 sub *C. sessilifolius*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *C. sessilifolius*), Chiusi della Verna (05-07/2002, 04-07/2004, 05/2003, Herb. Padula sub *C. sessilifolius*), Sasso Fratino (Gonnelli et al., 2006).
- Cytisus hirsutus** L. - Ch suffr, Boreal, bru. San Benedetto in Alpe (Zangheri, 1966a sub *Cytisus hirsutus* subsp. *hirsutus*; Zangheri, 1966b sub *Cytisus hirsutus* var. *leucotrichus*; Giacinti Baschetti, 1998), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Chamaecytisus hirsutus*), Ca' Ramazzotti, Fiumicello, Mandrioli (Giacinti Baschetti, 1998 sub *C. hirsutus*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *C. hirsutus*), Pratovecchio (05/2002-2004, Herb. Padula).
- Cytisus nigricans** L. subsp. **nigricans** - NP, European, bru, r, if, l.r.56/2000 All.A, l.r.T: VU. Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *Lembotropis nigricans*). This species is rare and present only in the Romagna area of the Park, in the Upper Tramazzo Valley.
- Cytisus scoparius** (L.) Link - P caesp, European, bru. Casentino (Caruel, 1860-64 sub *Sarothamnus vulgaris*; Marcucci, 1889 sub *S. vulgaris*), Passo del Muraglione, San Benedetto in Alpe (Zangheri, 1966a sub *S. scoparius*), Campigna (Zangheri, 1966a sub *S. scoparius*; Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Sasso Fratino (Tiglié, 1974), a monte di Castel dell'Alpe, tra Poggio Collina e Ronco dei Preti, Poggio Capannina (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Fiume d'Isola - Badia Prataglia (Giacinti Baschetti, 1998), Stia (06/1971, Herb. Padula), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Gonnelli et al., 2006).
- Cytisus villosus** Pourr. - P caesp, Mediterranean, bx, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Dorycnium herbaceum** Vill. - H scap, South-European, px. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Giogana (Zangheri, 1966b), Capria Valley (Padula, 1974 sub *D. pentaphyllum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982 sub *D. pentaphyllum*), La Verna (Siemoni et al., 1989-1998 sub *D. pentaphyllum*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *D. pentaphyllum*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). All the reports have been referred to this taxon which in this area is the only one surely present of the *Dorycnium pentaphyllum* group.
- Dorycnium hirsutum** (L.) Ser. - Ch suffr, South European-Mediterranean, px. Campigna (Zangheri, 1966a sub *Bonjeania hirsuta*; Zangheri, 1966b), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Moggiona (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), San Paolo in Alpe, M. Moriccione (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Emerus majus** Mill. - NP, European, bx. Pratovecchio (Caruel, 1860-64 sub *Coronilla emerus*; 04/2001, Herb. Padula sub *C. emerus*), La Verna (Caruel, 1860-64 sub *C. emerus*; Marcucci, 1889 sub *C. emerus*; Matteini, 1968 sub *C. emerus*; Siemoni et al., 1989-1998 sub *C. emerus*; Ferrarini, 1998 sub *C. emerus*), Prataglia (Baroni, 1897-1908 sub *C. emerus*), Capria Valley (Padula, 1974 sub *C. emerus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Hippocrepis emerus*), Alto Archiano (Tassini, 1976 sub *C. emerus*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *C. emerus*), Bibbiena (04/1994, Herb. Padula sub *C. emerus*), Poppi (02/2004, Herb. Padula sub *C. emerus*), Chiusi della Verna (04/2004, Herb. Padula sub *C. emerus*), Campi-

- gna (Zangheri, 1966a, 1966b sub *C. emerus*), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), Ponte Cesare, Valdonasso, a monte di Premilcuore (Giacinti Baschetti, 1998 sub *C. emerus*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *C. emerus*), PNFC wetlands (Mazza, 2006 sub *C. emerus*).
- Galega officinalis** L. - H scap, European, ru. Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2001, Herb. Padula), Bibbiena (07/2002, Herb. Padula), Campigna Forest (Zangheri, 1966a), Campigna-Pian del Pero (Zangheri, 1966b), Sasso Fratino (Gonnelli et al., 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).
- Genista germanica** L. - Ch suff, European, bru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poppi (03/2004, Herb. Padula), Badia Prataglia (09/2005, Herb. Padula), Campigna Forest (Zangheri, 1966a, 1966b), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Genista pilosa** L. - Ch suffr, European, bru. Bibbiena (Caruel, 1860-64), Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (10/2001, 04/2002, Herb. Padula), Giogana (Zangheri, 1966b).
- Genista tinctoria** L. - Ch suff, Eurasian, bru. La Verna (Caruel, 1860-64; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; Giacinti Baschetti, 1998), Casentino (Marcucci, 1889), tra Chiusi della Verna e Poggio dello Spicchio, Poggio dello Spicchio (Giacinti Baschetti, 1998), Burraia (Zangheri, 1966a sub *Genista tinctoria* subsp. *tinctoria*), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2003, Herb. Padula), Poppi (03/2004, Herb. Padula), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Hippocrepis comosa** L. - H caesp, European, px. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998; 08/2005, Herb. Padula), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Laburnum alpinum** (Mill.) Presl. - P caesp, South European Orophile, br. La Verna (Caruel, 1860-64 sub *Cytisus alpinus*; Matteini, 1968 sub *C. alpinus*; Siemoni et al., 1989-1998; 10/2004, Herb. Padula), Casentino (Marcucci, 1889 sub *C. alpinus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco (Zangheri, 1966a, 1966b), Pian Tombesi, Poggio Scali (Zangheri, 1966a, 1966b; Padula, 1988), Campigna Forest, La Lama (Zangheri, 1966b; Ferrari et al., 1979; 1982; Padula, 1988), Foreste Casentinesi (Padula, 1995), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2001, Herb. Padula), Passo della Calla (10/2001, 06/2002, Herb. Padula), Sasso Fratino (Hofmann, 1965 sub *C. alpinus*; Massei 1981; Padula, 1988; Bottacci et al., 2003; Gonnelli et al., 2006).
- Laburnum anagyroides** Medik. - P caesp, South-European, br. Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Moggiona, tra Chiusi della Verna e Poggio dello Spicchio (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2001, Herb. Padula), Bibbiena (05/2005, Herb. Padula), Campigna-Lama Forests (Padula, 1988), Foreste Casentinesi (Padula, 1995), Sasso Fratino (Tigliè, 1974; Padula 1982; Bottacci et al., 2003, Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), Poggio Capannina, Radracoli (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Padula, 1988; Sirotti & Fariselli, 2002).
- Lathyrus aphaca** L. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falterona (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Lathyrus clymenum** L. - T scap, Mediterranean, arb, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Lathyrus incospicuus** L. - T scap, South European-Mediterranean, ru, r. La Verna (Siemoni et al., 1989-1998).
- Lathyrus latifolius** L. - H scand, European, arb, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Lathyrus linifolius** (Riechard) Bassler - G rhiz, European, br. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *Lathyrus montanus*), Passo del Muraglione a Poggio Ortica (Zangheri, 1966a), Passo del Muraglione (Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b sub *L. montanus*), Sasso Fratino (Bottacci et al., 2003 sub *L. montanus*, Gonnelli et al., 2006).
- Lathyrus niger** (L.) Bernh. - G rhiz, European, br. Colle del Carnaio (Zangheri, 1966a, 1966b), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Lathyrus nissolia** L. - T scap, South European-Mediterranean, ru. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Chiusi della Verna (06/2004, Herb. Padula).
- Lathyrus pratensis** L. (Jacq.) Garcke - H scap, Eurasian, px. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Ver-



- na (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Chiusi della Verna (06/2004, Herb. Padula), San Benedetto in Alpe, Campigna Forest (Zangheri, 1966a, 1966b incl. *Lathyrus pratensis* var. *lusseri*), fra Campigna e Pian del Pero (Zangheri, 1966a sub *Lathyrus pratensis* var. *lusseri*), road to San Paolo in Alpe, Rio d'Olmo (Giacinti Baschetti, 1998), Par. Naz. vers. Romagn. (Sirotti & Fariselli, 2002).
- Lathyrus sphaericus** Retz. - T scap, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), Prato alla Penna-Campigna (Zangheri, 1966a, 1966b).
- Lathyrus sylvestris** L. - H scand, European, arb. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968; Ferrarini, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Stia (07/1999, Herb. Padula), Bibbiena (07/2002, Herb. Padula), Campigna (Zangheri, 1966a, 1966b sub *Lathyrus silvester*).
- Lathyrus venetus** (Mill.) Wohlf. - G rhiz, European, br. Prataglia (Caruel, 1860-64 sub *Lathyrus variegatus*; Marcucci, 1889 sub *L. variegatus*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Gonnelli et al., 2006), Poggio de' Ronchi-Campigna (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982, Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Lathyrus vernus** (L.) Bernh. - G rhiz, Eurasian, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), San Benedetto in Alpe, Poggio de' Ronchi (Campigna), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Burraia, Campigna (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982, La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Sasso Fratino (Hofmann 1965, Gonnelli et al., 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Lotus angustissimus** L. - T scap, South European-Mediterranean, pu, r. La Verna (Siemoni et al., 1989-1998).
- Lotus corniculatus** L. - H scap, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889), Badia Prataglia (Baroni, 1897-1908), M. Falco (Zangheri, 1966a sub *Lotus corniculatus* subsp. *corniculatus*, incl. *L. corniculatus* var. *hirsutus*; 07/1977, 08/1978, Herb. Padula), Passo del Muraglione, Burraia, Poggio Scali, Fontefredda-Campigna (Zangheri, 1966a sub *L. corniculatus* subsp. *corniculatus*), Campigna (Zangheri, 1966b incl. *L. corniculatus* var. *arvensis*, *L. corniculatus* var. *hirsutus*; Ferrari et al., 1982), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Chiusi della Verna (06/2004, Herb. Padula), Sasso Fratino (Bottacci et al., 2003, Gonnelli et al., 2006), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Lotus tenuis** Waldst. et Kit. ex Willd. - H scap, Eurasian, pu, lrEM: CR. Everywhere in the area (Zangheri, 1966b sub *L. corniculatus* var. *tenuifolius*), La Verna (Siemoni et al., 1989-1998).
- Medicago arabica** (L.) Huds. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Medicago maculata*; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (04/2001, Herb. Padula).
- Medicago falcata** L. - H scap, Eurasian, px. Casentino (Baroni, 1897-1908 sub *Medicago sativa* subsp. *falcata*), La Verna (Siemoni et al., 1989-1998 sub *M. sativa* subsp. *falcata*).
- Medicago lupulina** L. - T scap, Eurasian, pu. La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Pratovecchio (11/2002, Herb. Padula), San Benedetto in Alpe, Passo del Muraglione (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Prato Bertone (Zangheri, 1966a, 1966b sub *Medicago lupulina* subsp. *cupaniana*), La Lama (Zangheri, 1966b), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Medicago minima** (L.) Bartal. - T scap, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), La Verna (Giacinti Baschetti, 1998; Siemoni et al., 1989-1998), road to San Paolo, Ronco del Cianco, Ridracoli (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Medicago orbicularis** (L.) Bartal. - T scap, South European-Mediterranean, ru. Camaldoli (Marcucci, 1889; Baroni, 1897-1908 sub *Medicago orbicularis* var. *marginata*), Bibbiena (Marcucci, 1889 sub *M. marginata*; Baroni, 1897-1908 sub *M. orbicularis* var. *marginata*), La Verna (Siemoni et al., 1989-1998), Chiusi della Verna (06/2004, Herb. Padula).
- Medicago rigidula** (L.) All. - T scap, South European-Mediterranean, ru, r. Casentino (Marcucci, 1889 sub *Medicago gerardi*), La Verna (Siemoni et al., 1989-1998).
- Medicago sativa** L. - H scap, Eurasian (and cultivated), px. Chiusi della Verna e Poggio dello Spicchio, Corezzo (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002).

- bellini, 2002), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). Widely cultivated but also a component of the spontaneous flora.
- Melilotus albus** Medik. - T scap, Cosmopol/wide distrib., ru. Camaldoli (Marcucci, 1889 sub *Melilotus macrorhiza*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Melilotus alba*), La Verna (Siemoni et al., 1989-1998 sub *M. alba*), Chiusi della Verna (08/2002, Herb. Padula), Pratovecchio (10/2002, Herb. Padula), Passo del Muraglione (Zangheri, 1966a, 1966b sub *M. alba*), strada di Pian di Rocchi-M. Merli (Giacinti Baschetti, 1998 sub *M. alba*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *M. alba*).
- Melilotus altissimus** Thuill. - G rhiz, Boreal, pu. Casentino (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998 sub *Melilotus altissima*), Bibbiena (09/2003, Herb. Padula), PNFC wetlands (Mazza, 2006 sub *M. altissima*).
- Melilotus officinalis** (L.) Pallas - H bienn, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), fra Camaldoli e Moggiona (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Giacinti Baschetti, 1998; Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998), La Lama (Zangheri, 1966a), Ronco del Cianco, Nocicchio (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Onobrychis viciifolia** Scop. - H scap, Mediterranean Orophile (and cultivated), px. Casentino (Marcucci, 1889 sub *Onobrychis sativa*; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna (Ferrari et al., 1982), La Verna (Giacinti Baschetti, 1998; Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). Widely cultivated but also spontaneous in grasslands and pastures.
- Ononis natrix** L. - H caesp, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Giacinti Baschetti, 1998; Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2000-2002, Herb. Padula), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Ononis pusilla** L. - H scap, South European-Mediterranean, px. La Verna (Baroni, 1897-1908 sub *Ononis columnnae*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Valdonasso, Mandrioli, bivio Premilcuore-Fiumicello, Moggiona (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Ononis spinosa** L. - Ch suff, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), La Verna (Giacinti Baschetti, 1998; Siemoni et al., 1989-1998; Ferrarini, 1998; 07/2002, 04/2004, Herb. Padula), tra Chiusi della Verna e La Beccia, tra Moggiona e Ca' Sparena, Frassineta (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2001, Herb. Padula), Bibbiena (07/2002, Herb. Padula), Poggio Citerna, fra Passo del Muraglione e Monte Falco (Zangheri, 1966a sub *Ononis spinosa* subsp. *antiquorum*), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). The records are intended "sensu lato", as they probably include the typical subspecies and the subsp. *antiquorum* (L.) Arcang.
- Robinia pseudo-acacia** L. - P caesp, Naturalized, A. Foreste Casentinesi (Anonimo 1878), Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (06/1978, Herb. Padula), Poppi (08/2001, Herb. Padula), PNFC wetlands (Mazza, 2006), Lama Forest (Padula, 1988), Monte Moriccione (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *R. pseudo-acacia*), Poggio Cornacchia (Gonnelli, 2006 *in verbis*), Pegaiola (Oia Valley), along the road to La Calla and to Camaldoli (DREAM 2006), PNFC wetlands (Mazza, 2006). It tends to be invasive especially at low altitudes in disturbed sites.
- Securigera varia** (L.) Lassen - H scap, Boreal, pu. La Verna (Caruel, 1860-64 sub *Coronilla varia*; Marcucci, 1889 sub *C. varia*; Siemoni et al., 1989-1998 sub *C. varia*; 08/2002, Herb. Padula sub *C. varia*), Moggiona (Baroni, 1897 sub *C. varia*; Giacinti Baschetti, 1998 sub *C. varia*), Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *C. varia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Corezzo (Giacinti Baschetti, 1998 sub *C. varia*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *C. varia*).
- Spartium junceum** L., P caesp, South European-Mediterranean, arb. Casentino (Marcucci, 1889; Baroni, 1897-1908), Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Bibbiena (05-09/1982, Herb. Padula; Camangi et al., 2003), Pratovecchio (08-12/2002, Herb. Padula), Poppi (Camangi et al., 2003), Sasso Fratino (Gonnelli et al., 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Trifolium angustifolium** L. - T scap, South European-Mediterranean, px. Prataglia (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna (Ferrari et al., 1982), presso Corezzo (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe (Zangheri, 1966a, 1966b), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).

- Trifolium arvense** L. - T scap, Eurasian, px. At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).
- Trifolium aureum** Pollich. - T scap, European, pu, r. La Verna (Parlatore, 1849, FI; Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Camaldoli (Parlatore, 1/8/1867, FI; Arcangeli, 8/1875, FI; Baroni, 1897-1908; Baccarini, 8-13/8/1910, FI), Prataglia (Parlatore, 23/7/1867, FI), Appennino del Casentino (Siemoni, 13/6/1868, FI), Passo della Calla, Campigna (Savelli, 7/1912, FI; Zangheri, 1966a, 1966b).
- Trifolium campestre** Schreb. - T scap, Cosmopol/wide distrib., px. Bibbiena, Camaldoli (Marcucci, 1889 sub *Trifolium procumbens*), Casentino (Baroni, 1897-1908 sub *T. procumbens*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Pratovecchio (06/2001, Herb. Padula), presso Corezzo (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (06/2004, Herb. Padula sub *T. procumbens*), San Benedetto in Alpe (Zangheri, 1966a), Passo del Muraglione (Zangheri, 1966a incl. *T. campestre* var. *nanum*; Zangheri, 1966b sub *T. campestre* var. *nanum*), Campigna (Zangheri, 1966a, 1966b sub *T. campestre* var. *pseudoprocumbens*; Ferrari et al., 1982), road to San Paolo in Alpe, Ronco del Cianco (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium dubium** Sibth. - T scap, European, pu, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Zangheri, 1966a, 1966b sub *Trifolium filiforme*, incl. var. *micranthum* and var. *dubium*).
- Trifolium fragiferum** L. - H rept, Eurasian, ru. La Verna (Siemoni et al., 1989-1998), Passo del Muraglione (Zangheri, 1966a, 1966b).
- Trifolium glomeratum** L. - T scap, South European-Mediterranean, px, r. La Verna (Siemoni et al., 1989-1998).
- Trifolium hybridum** L. subsp. *elegans* (Savi) Asch. & Graebn. - H caesp, South-European, pu. Pratovecchio (Caruel, 1860 sub *Trifolium elegans*), Camaldoli, Bibbiena, La Verna (Marcucci, 1889 sub *T. elegans*; Baroni, 1897-1908 sub *T. elegans*; Siemoni et al., 1989-1998), Passo del Muraglione, Burraia, Passo della Calla (Zangheri, 1966, 1966b sub *T. elegans*), Campigna (Zangheri, 1966, 1966b sub *T. elegans*; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *T. hybridum*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *T. hybridum*).
- Trifolium hybridum** L. subsp. *hybridum* - H caesp, South European-Mediterranean, pu. La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Passo del Muraglione, San Benedetto in Alpe, Campigna (Zangheri, 1966a sub *Trifolium hybridum* = *T. hybridum* L. var. *fistulosum*; Zangheri, 1966b).
- Trifolium incarnatum** L. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Trifolium incarnatum* subsp. *molinerii*), La Verna (Siemoni et al., 1989-1998 sub *T. incarnatum* subsp. *molinerii*), Chiusi della Verna (05/2003, Herb. Padula), San Benedetto in Alpe, Campigna (Zangheri, 1966a sub *T. incarnatum* fo. *incarnatum*; Zangheri, 1966b sub *T. incarnatum* var. *elatius*). In this area both the subsp. *typica* and the subsp. *molinerii* (Hornem.) Ces. are present.
- Trifolium medium** L. - G rhiz, Eurasian, pu. Pratovecchio (Caruel, 1860-64), Camaldoli (Marcucci, 1889; Baroni, 1897-1908 sub *Trifolium flexuosum*), M. del Faggione (Marcucci, 1889), Falterona (Zangheri, 1966b sub *T. medium* var. *flexuosum*), La Verna (Matteini, 1968; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Poggio Sodo de' Conti (07/1980, Herb. Padula), Campigna Forest (Zangheri, 1966a, 1966b sub *T. medium* var. *flexuosum*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium nigrescens** Viv. - T scap, South European-Mediterranean, px. At low altitudes in the area, Fangacci-Campigna (Zangheri, 1966b), La Verna (Fiori, 1925; Siemoni et al., 1989-1998), Metaletto, Pozza del Cervo (Falzea, 2006).
- Trifolium ochroleucum** Huds. - H caesp. South European-Mediterranean, arb. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Prataglia (Baroni, 1897-1908), M. Falco a Sodo de' Conti (Zangheri, 1966a), M. Falco (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe, Poggio de' Ronchi-Campigna (Zangheri, 1966a), Campigna (Ferrari et al., 1982), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium pratense** L. - H scap, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falco (Zangheri, 1966a sub *Trifolium pratense* subsp. *pratense*; 06/2000, Herb. Padula), Passo del Muraglione, Passo della Calla (Zangheri, 1966a sub *T. pratense* subsp. *pratense*), Campigna (Zangheri, 1966a, 1966b incl. *T. pratense* var. *pratense* and *T. pratense* var. *sativum*; Ferrari et al., 1982), Passo de' Mandrioli (Zangheri, 1966a, 1966b sub *T. pratense* var. *sativum*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Ar-

- chiano (Tassini, 1976), Fiume d'Isola-Badia Prataglia, Poggio dello Spicchio, tra Val della Meta e torrente Archiano (Giacinti Baschetti, 1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Poggio Sodo de' Conti (07/1980, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Trifolium repens** L. - H rept, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Fonte de' Conti, Passo della Calla, Campigna (Zangheri, 1966a, 1966b), Passo del Muraglione (Zangheri, 1966a, 1966b sub *Trifolium repens* var. *biasoletti*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Metaletto, Pozza del Cervo (Falzea, 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium strictum** L. - T scap, South European-Mediterranean, NR. Mandrioli (Sommier, 1/7/1889, FI; Baroni, 1897-1908 sub *Trifolium laevigatum*). The report by Baroni (1897-1908) is based on Sommier (1890).
- Trifolium scabrum** L. - T rept, South European-Mediterranean, px. Prataglia (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), sopra Moggiona (Giacinti Baschetti, 1998), Passo del Muraglione (Zangheri, 1966a, 1966b), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium stellatum** L. - T scap, South European-Mediterranean, px. Casentino (Baroni, 1897-1908), La Verna (Fiori, 1925), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Trifolium striatum** L. - T scap, Eurasian, ru. Casentino (Caruel, 1860-64; Marcucci, 1889), Moggiona, Prataglia (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe (Zangheri, 1966a, 1966b).
- Trifolium subterraneum** L. - T rept, South European-Mediterranean, px, r. S. Piero in Bagno, Campigna (Zangheri, 1966a, 1966b).
- Ulex europaens** L. - P caesp, European, bru. Casentino (Marcucci, 1889), Bibbiena (Baroni, 1897-1908), Poggio Usciaioli (Zangheri, 1966a, 1966b), Poppi (02-03-05/203, Herb. Padula), Badia Prataglia (12/2004, Herb. Padula).
- Vicia bithynica** L. - T scap, South European-Mediterranean, px. Moggiona (Baroni, 1897-1908; Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Cancellino-Villaggio San Francesco, tra Chiusi della Verna e La Beggia, Poggio dello Spicchio, Val della Meta, Podere Sala Nuova, Frassineta (Giacinti Baschetti, 1998), Pratovecchio (05/2002, Herb. Padula), Bibbiena (05/2005, Herb. Padula), Campigna (Zangheri, 1966a, 1966b sub *Vicia bithynica* var. *major*; Ferrari et al., 1982), la Lama (Zangheri, 1966b sub *V. bithynica* var. *major*), road to San Paolo in Alpe, Ronco del Cianco, Ridracoli, Casanova dell'Alpe (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Vicia cassubica** L. - H scap, European, br. Prataglia (Caruel, 1860-64 sub *Vicia gerardi*; Marcucci, 1889 sub *V. gerardi*), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Vicia cracca** L. - H scap, Eurasian, ru. La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Poggio dello Spicchio, between Passo Mandrioli and Cancellino, Corezzo (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Tramitì, road to San Paolo in Alpe, road to Sasso and Mandrioli, Felcitino (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).
- Vicia disperma** DC. - T scap, Mediterranean, ru. La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Vicia dumetorum** L. - H scap, Boreal, br, RNT. La Verna (Marcucci, 1889; Matteini, 1968), Camaldoli (Baroni, 1897-1908), Campigna Forest (Zangheri, 1966a), Campigna (Zangheri, 1966b), Passo della Calla (Zangheri, 1966a, 1966b), Poggio Scali-Calla (Zangheri, 1966b). Matteini's report (1968) is based on Marcucci (1889).
- Vicia ervilia** (L.) Willd. - T scap, Naturalized, NR. La Verna (Marcucci, 1889 sub *Ervum ervilia*; Baroni, 1897-1908 sub *E. ervilia*; Matteini, 1968), between Mandrioli and Pratovecchio (Baroni, 1897-1908 sub *E. ervilia*).
- Vicia hirsuta** (L.) S.F. Gray - T scap, Eurasian, arb. Campigna a Poggio Palaio (Zangheri, 1966a sub *Vicia hirsuta* var. *leiocarpa* = *V. hirsuta* var. *terronii*; Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).
- Vicia incana** Gouan - H scap, South European-Mediterranean, bx. Passo del Muraglione, Campigna Forest (Zangheri, 1966a, 1966b sub *Vicia galloprovincialis*), Campigna (Zangheri, 1966b sub *V. galloprovincialis*), La Verna (Matteini, 1968 sub *V. cracca* subsp. *incana*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Vicia lathyroides** L. - T scap, South European-Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

- Vicia lutea* L. - T scap, South European-Mediterranean, D. Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). The report comes from vegetation relevés and could be reliable, but as we could not check any exsiccatum it must be confirmed.
- Vicia parviflora* Cav. - T scap, South European-Mediterranean, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Vicia sativa* L. (s.l.) - T scap, Cosmopol/wide distrib., ru. Falterona (Marcucci, 1889; Zangheri, 1966b), La Verna (Matteini, 1968 sub *Vicia sativa* var. *nemoralis*; Siemoni et al., 1989-1998; Giacinti Baschetti, 1998 sub *V. sativa* s.l.), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002 sub *V. sativa* s.l.), presso Ponte Cesare, road to san Paolo in Alpe, Tramiti (Giacinti Baschetti, 1998 sub *V. sativa* s.l.), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002 sub *V. sativa* s.l.).
- Vicia sativa* L. subsp. *nigra* (L.) Ehrh. - T scap, Cosmopol/wide distrib., px. Falterona (Baroni, 1897-1908 sub *Vicia sativa* subsp. *angustifolia*; Zangheri, 1966b sub *V. sativa* subsp. *angustifolia*), Campigna (Zangheri, 1966a sub *V. angustifolia* subsp. *angustifolia*), Pratovecchio (06/2002, Herb. Padula sub *V. sativa* subsp. *angustifolia*), Bibbiena (05/2005, Herb. Padula sub *V. sativa* subsp. *segetalis*).
- Vicia sepium* L. - H scap, Boreal, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Piancancelli-M. Falco (Zangheri, 1966a, 1966b sub *Vicia sepium* fo. *montana*), Poggio Martino, Poggio Palaio, Pian del Pero (Zangheri, 1966a incl. *V. sepium* fo. *montana*), Campigna (Zangheri, 1966b incl. *V. sepium* fo. *montana*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Vicia sylvatica* L. - H scap, Boreal, D. Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). The report comes from vegetation relevés and could be reliable, but as we could not check any exsiccatum it must be confirmed.
- Vicia tetrasperma* (L.) Schreb. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889 sub *E. tetrasperma*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Campigna at Poggio Palaio (Zangheri, 1966a), Campigna, Corniolo (Zangheri, 1966b).
- Vicia villosa* Roth - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889), La Verna (Marcucci, 1889 sub *Vicia pseudocracca* var. *glabrescens*; Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna Forest (Zangheri, 1966a, 1966b sub *Vicia dasycarpa* = *V. villosa* var. *dasycarpa*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002). Even if not all the authors specify the subspecies, probably in the area the most widespread taxon is *V. villosa* subsp. *varia* (Host) Corb. Also the report of *V. pseudocracca* var. *glabrescens* by Marcucci (1889) at La Verna is very likely referable to this entity.

## FAGACEAE

*Castanea sativa* Mill. - P scap, South-European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino (Marcucci, 1889), Alto Archiano (Tassini, 1976), Stia (10/1977 Herb. Padula), Camaldoli (07/1978 Herb. Padula), La Verna (Siemoni et al., 1989-1998), Metaletto (Sirotti 1998), Pratovecchio (07/2001 Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (7/1978 leg. Padula Herbario Museo Siemoni) *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Lama Forest, Campigna e Camaldoli (Padula, 1988), Campigna-Lama (Ferrari et al., 1979; 1982), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). Anonimo (1878) reported many varieties (in the sense of cultivars) as cultivated in the area: var. *pistolese*, *raggiolano*, *tigolese*, *marrone*, *fragonessa*.

*Fagus sylvatica* L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino (Marcucci, 1889; Baroni, 1897-1908), Burraia, Poggio Scali (Zangheri, 1966a), S. Benedetto in Alpe (Zangheri, 1966a), Poggio Giogo (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; 10/2004, Herb. Padula; 07/2005, Herb. Padula sub *Fagus sylvatica* var. *purpurea*), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Stia (09/1978, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982; Padula, 1988; Padula et al., 1988), Camaldoli, Campigna (Padula et al., 1988), Metaletto (Sirotti 1998; 09/1982, Herb. Padula sub *F. sylvatica* var. *purpurea*), Pratovecchio (05/2001, Herb. Padula), Prato alla Penna (09/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Lama Forest at Fornino (Checcacci et al., 2001), La Lama (4/1978 leg. Padula Herbario Museo Siemoni) Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006; Mazza, 2006), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002) Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). In the *Arboretum Siemoni* at Badia Prataglia cv. *pendula* and cv. *purpurea* are also present (Crudele et al., 2002).

- Quercus cerris** L. - P scap, South European-Mediterranean, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Pian del Pero (Zangheri, 1966a), La Lama (Zangheri, 1966a), S. Benedetto in Alpe (Zangheri, 1966a), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), S. Benedetto in Alpe, S. Paolo in Alpe, Passo della Calla (Zangheri, 1966a), Passo dei Mandrioli, Campigna (Zangheri, 1966a, 1966b), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (12/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Chiusi della Verna (07/2004, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), La Seghettina (10/1978 leg. Padula Herbario Museo Siemoni), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002) Sasso Fratino, (Tiglié, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Gonnelli et al., 2006).
- Quercus crenata** Lam. - P scap, Mediterranean, bx, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: LR. Frassineta, Bibbiena (Marcucci, 1889 sub *Quercus pseudo-suber*), Capria Valley (Padula, 1974), Il Capanno (Sirotti, 1998), Stia (09/2001, Herb. Padula), Marena (10/1994, 03/2004, Herb. Padula), Pratovecchio (10/1980, 05/1983, 02-12/2002, 12/2001-2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Val di Covile, Capria, Valcitura, Camporomagnolo, Castellana, Fonte Solforosa (Padula, 1988), Foreste Casentinesi (Padula, 1995), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).
- Quercus ilex** Lam. - P scap, Mediterranean, bx, r. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Subbiano, Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Pratovecchio (01/2002), Moggiona (01/2005, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Lama Forest (Padula, 1988), Par. Naz., vers. romagn. (Agostini, 1992).
- Quercus petraea** (Mattuschka) Liebl. - P scap, European, br, r, if. Foreste Casentinesi (Anonimo, 1878 sub *Q. sessiliflora*; Padula, 1995), Casentino (Marcucci, 1889 sub *Quercus sessiliflora*), Poggio Scali (Zangheri, 1966b), Pratovecchio (11/1999, Herb. Padula), Poppi (08/2001, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), La Seghettina (9/1978 leg. Padula Herbario Museo Siemoni), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006) Sasso Fratino, (Tiglié, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Gonnelli et al., 2006).
- Quercus pubescens** Willd. - P scap, South-European, bx. La Verna (Matteini, 1968 sub *Quercus robur* var. *lanuginosa*), Passo del Muraglione (Zangheri, 1966a, 1966b), S. Benedetto in Alpe (Zangheri, 1966a), Capria Valley (Padula, 1974), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (11/1984, Herb. Padula sub *Q. dalechampii*; 11/2000, Herb. Padula sub *Q. virgiliana*; 09/2002, 10/2004, Herb. Padula), Stia (11/1984, Herb. Padula sub *Q. dalechampii*; 08/2003, Herb. Padula sub *Q. virgiliana*; 11/1984, 08/1999, Herb. Padula), stazione Pratovecchio-Stia (06/2003, Herb. Padula), Bibbiena (05/2005, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002) Sasso Fratino (Tiglié, 1974; Massei, 1981; Padula, 1982; Gonnelli et al., 2006). All the systematically critical entities of *Q. pubescens* group are included here.
- Quercus robur** L. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878 sub *Q. pedunculata*), Bibbiena (Marcucci, 1889 sub *Quercus pedunculata*; Baroni, 1897-1908; 06/2000, 08/2002, Herb. Padula, culta.), Poppi (07/1999, Herb. Padula), Marena (12/2001, Herb. Padula), stazione Pratovecchio-Stia (06-08/2003, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Lama (Zoccola, 2006 *in verbis*). According to Padula (1988) this species is not spontaneously present in the Foreste Casentinesi; recently it was planted at Lama (Zoccola, *in verbis*).
- Quercus rubra** L. - P caesp, Cultivated, A. along Oia road (DREAM, 2006), some isolated plants in the Lama Forest (Zoccola, 2006 *in verbis*).

## GENTIANACEAE

- Blackstonia perfoliata** (L.) Huds. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *Chlora perfoliata*), Pratovecchio, Prataglia (Baroni, 1897-1908 sub *C. perfoliata*), San Benedetto in Alpe (Zangheri, 1966a), Poggio Scali (Zangheri, 1966b sub *C. perfoliata*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998; 08/2002, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Centaureum erythraea** Rafn - H bienn/T scap, Eurasian, px. Casentino (Marcucci, 1889 sub *Erythraea centaurium*; Baroni, 1897-1908 sub *E. centaurium*), Rincine-M. Massicaia (Sabato & Valenziano, 1975, Alto Archiano (Tassini, 1976 sub *E. centaurium*), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino (Gonnelli,

- et al., 2006), San Benedetto in Alpe, Premilcuore (Zangheri, 1966a sub *Centaureium minus*), Campigna (Zangheri, 1966a sub *C. minus*; Zangheri, 1966b sub *C. umbellatum*; Ferrari et al., 1982), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Centaureium pulchellum** (Swartz) Druce - T scap, Eurasian, pu. Bibbiena (Marcucci, 1889 sub *Erythraea ramosissima*; Baroni, 1897-1908 sub *E. ramosissima*), La Verna (Siemoni et al., 1989-1998).
- Gentiana asclepiadea** L. - H scap, European Orophile, br, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: LR. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Par. Naz., vers. romagn. (Agostini, 1992; Alessandrini & Bonafede, 1996). According to Sirotti (1998) this species has not been recorded again since the report by Alessandrini & Bonafede (1996). Matteini's citation (1968) at La Verna is based on Marcucci (1889).
- Gentiana cruciata** L. - H scap, Eurasian, px, r, if, l.r.2/1977, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni & Ricceri, 1989-1998; Ferrarini, 1998), Chiusi della Verna (08/2002, 09/2002, Herb. Padula), Foreste Casentinesi (Padula, 1995), Close to the Fonte della Cavalla, along the road Cancellino-Lama (Menegol, 1995 *in verbis*), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996), Bertesca (Sirotti, 1998).
- Gentiana verna** L. - H ros, European Orophile, pd, r, if, l.r.2/1977, l.r.56/2000 All.A. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b; Sirotti, 1998), Campigna da Sodo de' Conti a Burraia (Zangheri, 1966a, 1966b), M. Falco, Piancancelli (Zangheri, 1966a, 1966b incl. *Gentiana verna* fo. *elongata*; Padula, 1988; Contarini, 1996; Sirotti, 1998), La Verna (Matteini, 1968), Poggio Scali (Padula, 1988), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Recent surveys (Sirotti, 1998) pointed out that in the past this species was more widespread.
- Gentianella campestris** (L.) Corner - T scap/H bienn, European, pd, r, if, l.r.2/1977. Falterona (Marcucci, 1889 sub *G. campestris* and sub *G. germanica*; Baroni, 1897-1908; Zangheri, 1966b sub *G. campestris* var. *suecica*), Burraia (Zangheri, 1966a, 1966b sub *G. campestris* var. *suecica*), Campigna, da Burraia a Falterona e Poggio Scali (Zangheri, 1966b sub *G. campestris* var. *suecica*), M. Falco (Zangheri, 1966a, 1966b sub *G. campestris* var. *suecica*; Contarini, 1996; Sirotti 1998; 06/2000, Herb. Padula), Poggio Scali (Zangheri, 1966b sub *G. campestris* var. *suecica*; Padula, 1988), Par. Naz., vers. romagn. (Sempriani & Milandri, 2001). Probably the report of *G. germanica* by Marcucci (1889) did not refer to the alpine entity (*Gentianella germanica* (Willd.) E.F. Warb.) but to a variety of *G. campestris* quoted in Fiori (1923-29), var. *germanica* Froel., to be included in *G. campestris*.
- Gentianopsis ciliata** (L.) Ma subsp. *ciliata* - T scap/H bienn, South European Orophile, px, r, if, l.r.2/1977. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b sub *Gentiana ciliata*), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998 sub *Gentianella ciliata*), Pian del Pero e Poggio di Ricopri (Padula, 1988 sub *Gentianella ciliata*), Foreste Casentinesi (Padula, 1995 sub *Gentianella ciliata*), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996 sub *Gentiana ciliata*; Sirotti, 2002 *in verbis*).

## GERANIACEAE

- Erodium cicutarium** (L.) L'Her. - T caesp/H ros, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Grogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Poppi (04/2004, Herb. Padula), Passo del Muraglione (Zangheri, 1966a).
- Geranium columbinum** L. - T scap, Eurasian, ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe, Passo del Muraglione (Zangheri, 1966a), La Lama (Zangheri, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Geranium dissectum** L. - T scap, Cosmopol/wide distrib., ru. Fra Mandrioli e Pratovecchio (Baroni, 1897-1908), Grogana (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2002, Herb. Padula), Chiusi della Verna (04/2004), Bibbiena (05/2005, Herb. Padula), PNFC wetlands (Mazza, 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Geranium lucidum** L. - T scap, South European-Mediterranean, ro. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Praovecchio (05/2002, Herb. Padula), San Benedetto in Alpe (Zangheri, 1966a, 1966b), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).
- Geranium molle** L. - T scap (H bienn/H scap), Cosmopol/wide distrib., ru. Poggio Scali (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Pratovecchio (05/2002, Herb. Padula).
- Geranium nodosum** L. - G rhiz, Mediterranean Orophile, br. Passo del Muraglione, Campigna Forest, Passo dei

Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Camaldoli, Campigna (Padula et al., 1988), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Giogana, Il Poggione (06/2002, Herb. Padula), Sasso Fratino (Hofmann, 1965; Massei, 1981; Padula, 1982; Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2006).

**Geranium purpureum** Vill. - T scap, South European-Mediterranean, ro. La Verna (Matteini, 1968 sub *Geranium robertianum* var. *purpureum*), Alto Archiano (Tassini, 1976).

**Geranium pusillum** L. - T scap, Eurasian, ru. Falterona, Passo della Calla, Poggio Scali, Prato Bertone (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998).

**Geranium pyrenaicum** Burm. f. - H scap, South European-Mediterranean, arb. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Prataglia, Poggio Penna (Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b), Campigna, fra Passo della Calla e Poggio Scali, Passo Porcareccio (Zangheri, 1966a), Campigna, Poggio Scali, Poggio Penna (Zangheri, 1966b), Prato alla Penna (06/2000, Herb. Padula).

**Geranium robertianum** L. - H bienn/T scap, Cosmopol/wide distrib., br. La Verna (Caruel, 1860-64; Marcucci, 1889; Siemoni et al., 1989-1998), Camaldoli (Caruel, 1860-64; Marcucci, 1889; Padula et al., 1988), Passo del Muraglione, Premilcuore, Burraia, Fontefredda, Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Pratovecchio (04/2002, Herb. Padula), Bibbiena (05/2005, Herb. Padula), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Massei, 1981; Norcini & Zoccola, 1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006; Falzea, 2006).

**Geranium rotundifolium** L. - T scap, Eurasian, ru. La Verna (Siemoni et al., 1989-1998), Pratovecchio (07/2000, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (05/2005, Herb. Padula).

**Geranium sanguineum** L. - H scap, European, arb. At low altitudes in the area (Zangheri, 1966b), La Verna (Matteini, 1968).

**Geranium sylvaticum** L. - H scap, Eurasian, pd, r. M. Falco (Zangheri, 1966a, 1966b; Contarini, 1996; Sirotti, 1998), M. Penna di Camaldoli (Sirotti, 1998 *in verbis*).

#### GLOBULARIACEAE

**Globularia bisnagarica** L. - H scap, South European Orophile, px, l.r.56/2000 All.A. Bibbiena (Caruel, 1860-64 sub *Globularia vulgaris*), Campigna (Ferrari et al., 1982 sub *G. punctata*), La Verna (Siemoni et al., 1989-1998 sub *G. punctata*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *G. punctata*), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002 sub *G. punctata*).

#### HIPPOCASTANACEAE

**Aesculus hippocastanum** L. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2001), Bibbiena culta. (01/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna - Lama (Padula, 1988), along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*). According to Anonimo (1878) this species was introduced in 1840.

**Aesculus x carnea** Hayne - P scap, Cultivated, A. *Arboretum Siemoni* at Badia Prataglia (Crudele et al., 2002).

#### HYPERICACEAE

**Hypericum androsaemum** L. - NP, South European-Mediterranean, bu, if. San Benedetto in Alpe loc. Trafossi, Campigna Forest, La Lama (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Poggio Scali, Passo dei Mandrioli (Zangheri, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2006).

**Hypericum hirsutum** L. - H scap, Eurasian, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), PNFC eroded slopes (Giacinti Baschetti, 1998), M. Penna (Gonnelli et al., 2003), Sasso Fratino (Gonnelli et al., 2003b; Gonnelli et al., 2005; Gonnelli et al., 2006), Campigna Forest (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Hypericum humifusum** L. - H scap (H bienn), Cosmopol/wide distrib., pu, r. Passo del Muraglione (Zangheri, 1966a, 1966b), Camaldoli (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Hypericum montanum** L. - H caesp, European, br. La Verna (Caruel, 1860-64; Marcucci, 1889-1908; Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), San Benedetto in Alpe, Passo del Muraglione, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Par. Naz., vers. Tos. (Viciani & Ga-



bellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Hypericum perforatum** L. - H scap, Cosmopol/wide distrib., arb. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino (Bottacci et al. 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), San Benedetto in Alpe (Zangheri, 1966a sub *H. perforatum* subsp. *perforatum* and sub *H. perforatum* subsp. *angustifolium*; Zangheri, 1966b sub *H. perforatum* subsp. *angustifolium*), Poggio Palaio (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982; Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002). Generally the authors do not specify the subspecies, but according to a recent revision (Ciccarelli & Garbari, 2005) all the records from Emilia-Romagna and Tuscany must be referred to *H. perforatum* subsp. *veronense* (Schrank) Cesati.

**Hypericum richeri** Vill. - H scap, South European Orophile, bru, r, if. M. Falco (Zangheri, 1966a, 1966b; Padula, 1988; 08/1985, 06/2000, Herb. Padula; Contarini, 1996; Sirotti, 1998), Sodo dei Conti (Zangheri, 1966a, 1966b), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Hypericum tetrapterum** Fries - H scap, Eurasian, pu. La Verna (Baroni, 1897-1908 sub *Hypericum quadrangulum*; Siemoni et al., 1989-1998 sub *H. quadrangulum*), M. Falterona, S. Godenzo Valley (Forasassi, FI, 12/8/1953 sub *H. quadrangulum*; Ciccarelli & Garbari, 2005), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (08/2000, Herb. Padula), Bibbiena (07/2002, Herb. Padula), Passo del Muraglione, La Lama (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006).

#### JUGLANDACEAE

**Juglans nigra** L. - P scap, Cultivated, A. Badia Prataglia (09/1983, Herb. Padula), Pratovecchio (10/2004, Herb. Padula).

**Juglans regia** L. - P scap, Cultivated and Naturalized, A. Foreste Casentinesi (Anonimo, 1878), Casentino culta. (Marcucci, 1889), Pratovecchio culta. (10/1977, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC wetlands (Falzea, 2006), la Lama e Campigna

(Padula 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). Cultivated but also spontaneous along water courses at low altitudes.

#### LAMIACEAE

**Acinos alpinus** (L.) Moench - Ch suff, South European Orophile, px. Falterona (Marcucci, 1889 sub *Calamintha alpina*; Zangheri, 1966b sub *C. alpina*), La Verna (Marcucci, 1889 sub *C. alpina*; Matteini, 1968 sub *Satureja alpina*; Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna, Poggio Scali, Fangacci, M. Falco (Zangheri, 1966a, 1966b sub *C. alpina*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *S. alpina*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Chiusi della Verna (05/2003, Herb. Padula), M. Calvano (06/2004, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).

**Acinos arvensis** (Lam.) Dandy - Ch suff, South European-Mediterranean, px. Fangacci (Zangheri, 1966b sub *Calamintha acinos*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *Satureja acinos*), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (05/2004, Herb. Padula).

**Ajuga chamaepitys** (L.) Schreb. - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), Giogana (Zangheri, 1966b), La Verna (Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998).

**Ajuga reptans** L. - H rept, European, arb. Pratovecchio (Caruel, 1860-64; 04/2001, Herb. Padula), Stradella (Caruel, 1860-64), Falterona (Marcucci, 1889), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979; 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).

**Ballota nigra** L. - H scap, South European-Mediterranean, ru. Casentino (Baroni, 1897-1908), Everywhere in the area at low altitudes (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).

**Calamintha grandiflora** (L.) Moench - H scap, Mediterranean Orophile, D. Par. Naz., vers. tos. (Viciani & Gabellini, 2002). We could not check any exsiccatum of this plant reported in vegetation relevés, so the record must be confirmed.

- Calamintha nepeta** (L.) Savi subsp. **nepeta** - H scap, Mediterranean Orophile, px. Lungo il Capraia (Baroni, 1897-1908 sub *C. parviflora*), Everywhere in the area (Zangheri, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (07-10/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Poppi (Camangi et al., 2003; 09/2005, Herb. Padula), Bibbiena (Camangi et al., 2003), Badia Prataglia (09/2005, Herb. Padula).
- Calamintha nepeta** (L.) Savi subsp. **sylvatica** (Bromf.) R. Morales - H scap, European, br. Lungo l'Archiano (Baroni, 1897-1908 sub *Calamintha officinalis*), Everywhere in the area (Zangheri, 1966b sub *C. officinalis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *C. sylvatica*).
- Clinopodium vulgare** L. - H scap, Boreal, bx. Passo della Calla (Zangheri, 1966a sub *Calamintha clinopodium*), Everywhere in the area (Zangheri, 1966b sub *C. clinopodium*), La Verna (Matteini, 1968 sub *Satureja vulgaris*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *S. vulgaris*), Campigna-Lama (Ferrari et al., 1979; 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).
- Galeopsis angustifolia** Ehrh. - T scap, Mediterranean, ru. La Verna (Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Galeopsis ladanum** L. - T scap, Eurasian, ru. Chitignano, Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Passo della Calla, Sodo de' Conti (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Galeopsis pubescens** Bess. - T scap, European, ru. Poggio Scali and Passo dei Mandrioli (Zangheri, 1966b sub *G. tetrahit* var. *pubescens*).
- Galeopsis speciosa** Mill. - T scap, Eurasian, arb. La Verna (Matteini, 1968 sub *Galeopsis tetrahit* var. *speciosa*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).
- Galeopsis tetrahit** L. - T scap, Eurasian, br. Camaldoli (Caruel, 1860-64; Marcucci, 1889; 07/1984, 08/2000, Herb. Padula; Padula et al., 1988), La Verna (Caruel, 1860-64; Marcucci, 1889; Siemoni et al., 1989-1998; 08/2004, Herb. Padula), Badia Prataglia (Baroni, 1897-1908; 09/2005, Herb. Padula), M. Falco, Campigna (Zangheri, 1966a, 1966b; 07/2001, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poggio Scali (08/1968, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Glechoma hederacea** L. - H rept, Boreal, arb. Casentino (Marcucci, 1889 sub *Nepeta glechoma*; Baroni, 1897-1908 sub *N. glechoma*), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Bibbiena (04/2004, Herb. Padula).
- Glechoma hirsuta** Waldst. & Kit. - H rept, South-European, arb. Campigna (Zangheri, 1966b sub *Glechoma hederacea* var. *hirsuta*), La Verna (Matteini, 1968 sub *G. hederacea* var. *hirsuta*).
- Lamium album** L. - H scap, Eurasian, D. La Verna (Cortini, 26/5/1962, FI, det. Matteini, 1968). This exsiccatum was found in FI and controlled, but the identification is doubtful.
- Lamium amplexicaule** L. - T scap, Eurasian, ru. At low altitudes in the area (Zangheri, 1966b), Burraia di Campigna (Zangheri, 1966b).
- Lamium galeobdolon** L. - H scap, European, br. IrNaz: EN. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998 sub *Lamiastrum galeobdolon*; Herb. Padula sub *L. galeobdolon*), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b), Giogana, (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *L. galeobdolon*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino, (Hofmann, 1965; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). Probably many of the past records must be attributed to the subsp. *flavidum* (F. Herm.) A. Love & D. Love and to the subsp. *montanum* (Pers.) Hayek.
- Lamium maculatum** L. - H scap, Eurasian, ru. Capo d'Arno (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 04/2003, Herb. Padula), Falterona (Baroni, 1897-1908; Zangheri, 1966b), Everywhere in the area (Zangheri, 1966b), Camaldoli (Baroni, 1897-1908), M. Falco, Campigna, Poggio Scali (Zangheri, 1966a), Sodo de' Conti (05/1988, Herb. Padula), Pratovecchio (04/2001, Herb. Padula), Bibbiena (04/2002, Herb. Padula), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).
- Lamium purpureum** L. - T scap, Eurasian, ru. Falterona (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), Between Passo del Muraglione

- and M. Falco (Zangheri, 1966b), M. Falco (06/1989, Herb. Padula), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Pratovecchio (03/1998, 04/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Lavandula angustifolia** Mill. - NP, Mediterranean, px, r, l.r.56/2000 All.A. Casentino culta (Marcucci, 1889 sub *Lavandula officinalis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Bibbiena (Camangi et al., 2003). Reported by Sabato & Valenziano (1975) at Poggio Mandri (780 m), close to the Park boundaries in the florentine area, supposedly spontaneous.
- Lycopus europeus** L. - H scap, Boreal, pu. Bibbiena (Marcucci, 1889), Casentino (Baroni, 1897-1908), Campigna, La Lama (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (10/1999, 08/2000-2004, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Marrubium vulgare** L. - H scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Melissa officinalis** L. - H scap, South European-Mediterranean, pu, r. Casentino (Baroni, 1897-1908), Falterona (09/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), PNFC wetlands (Falzea, 2006), Sasso Fratino (Norcini & Zoccola, 1995; Gonnelli et al., 2006).
- Melittis melissophyllum** L. - H scap, European, br. Casentino (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), Campigna (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Mentha aquatica** L. - H scap, Cosmopol/wide distrib., pu. Camaldoli (Caruel, 1860-64; Marcucci, 1889; 08/2000-2004, Herb. Padula), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Badia Prataglia (08/2003, Herb. Padula), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Mentha arvensis** L. - H scap, Boreal, D. Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). The report comes from vegetation relevés and can be reliable, but as we could not check any exsiccatum it must be confirmed.
- Mentha longifolia** (L.) Huds. - H scap, Eurasian, pu. Everywhere in the area (Zangheri, 1966b), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (09/1997, 09/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Chiusi della Verna (07/2004, Herb. Padula), Badia Prataglia (09/2005, Herb. Padula).
- Mentha pulegium** L. - H scap, South European-Mediterranean, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area at low altitudes (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Mentha suaveolens** Ehrh. - H scap, South European-Mediterranean, pu. Casentino (Marcucci, 1889 sub *Mentha rotundifolia*; Baroni, 1897-1908 sub *M. rotundifolia*), La Verna (Matteini, 1968 sub *M. rotundifolia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *M. microphylla*), Pratovecchio (10/2002, Herb. Padula), Bibbiena (Camangi et al., 2003). We include in this taxon also a report of *M. rotundifolia* var. *microphylla* by Sabato & Valenziano (1975), as this entity is not recorded north of Abruzzo (Pignatti, 1982; Conti et al., 2005).
- Origanum vulgare** L. - H scap, Eurasian, arb. Casentino (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli, Fra Passo Muraglione e M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Passo della Calla (06/2002, Herb. Padula), Pratovecchio (07/2002, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).
- Prunella laciniata** (L.) L. - H scap, South European-Mediterranean, px. M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Chiusi della Verna (08/2002, Herb. Padula).
- Prunella vulgaris** L. - H scap, Boreal, pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Camaldoli, Campigna (Padula et al., 1988), PNFC eroded slopes (Giacinti Baschetti, 1998), Camaldoli (07/1984, Herb. Padula), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (10/2002, Herb. Padula), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2006).
- Salvia glutinosa** L. - H scap, European Orophile, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968;

- Siemoni et al., 1989-1998; Ferrarini, 1998), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Falterona, (08/2002, Herb. Padula), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino, (Hofmann, 1965; Massei, 1981, Bottacci et al., 2003; Gonnelli et al., 2006).
- Salvia pratensis** L. - H scap, South European-Mediterranean, px, l.r.56/2000 All.A. Sodo de' Conti, Burraia (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Bibbiena (Camangi et al., 2003), PNFC wetlands (Mazza, 2006).
- Salvia verbenaca** L. - H scap, South European-Mediterranean, px. Casentino (Marcucci, 1889), Campigna (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Pratovecchio (10/2002, Herb. Padula), Bibbiena (07/2004, 05/2005, Herb. Padula).
- Scutellaria columnae** All. - H scap, Mediterranean Orophile, bx. Camaldoli (Caruel, 1860-64; Marcucci, 1889), Campigna (Zangheri, 1966a), Poggio Scali, Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sideritis romana** L. - T scap, Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), PNFC eroded slopes (Giacinti Baschetti, 1998)
- Stachys alpina** L. - H scap, South European Orophile, br. Falterona (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Camaldoli (Baroni, 1897-1908), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna, Burraia, Poggio allo Spillo (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Stachys annua** (L.) L. - T scap, South European-Mediterranean, ru. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Pratovecchio (Baroni, 1897-1908), Everywhere in the area at low and medium altitudes (Zangheri, 1966b).
- Stachys germanica** L. - H scap, South European-Mediterranean, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Mandrioli (Baroni, 1897-1908), Campigna (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). Past records are intended *sensu lato*.
- Stachys germanica** L. subsp. *salviifolia* (Ten.) Gams - H scap, Mediterranean, px. Camaldoli (Caruel, 1860-64 sub *Stachys italica*; Marcucci, 1889 sub *S. italica*), Bibbiena (Marcucci, 1889 sub *S. italica*; Baroni, 1897-1908; 07/2002, Herb. Padula sub *S. italica*). All the records must be probably referred (Pignatti, 1982) to *S. germanica* subsp. *salviifolia*, considered a synonym of *S. italica* Auct. (Fiori, 1923-29) and not to *S. italica* Mill. (currently *Sideritis italica* (Mill.) Greuter & Burdet), which is excluded from the study area (Conti et al., 2005).
- Stachys heraclea** All. - Ch frut, Mediterranean Orophile, px. Poggio Scali (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Stachys officinalis** (L.) Trevisan - H scap, European, px. Casentino (Marcucci, 1889 sub *Betonica officinalis*; Baroni, 1897-1908 sub *B. officinalis*), Everywhere in the area at low altitudes (Zangheri, 1966b sub *B. officinalis*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Stachys recta** L. - H scap, Mediterranean Orophile, px. Burraia di Campigna (Zangheri, 1966a), Campigna, Calla (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Stachys sylvatica** L. - H scap, Boreal, br. Pratovecchio (Caruel, 1860-64), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poggio Scali (08/1985, Herb. Padula), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).
- Teucrium botrys** L. - T scap, South European-Mediterranean, px. Pratovecchio (Caruel, 1860-64; Marcucci, 1889), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Teucrium capitatum** L. - Ch suff, Mediterranean, px, r. Casentino (Caruel, 1860-64; Marcucci, 1889 sub *Teucrium polium*), Foresta Lorenese (Zangheri, 1966b sub *T. polium*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *T. polium* subsp. *capitatum*). Probably past records of *T. polium* must be referred to *T. capitatum* (Conti et al., 2005). Zangheri's report (1966b) at the Foresta Lorenese is based on ancient citations by Baccarini and Siemoni.
- Teucrium chamaedrys** L. - Ch suff, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Everywhere in the area (Zangheri, 1966b),

Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Bibbiena (Camangi et al., 2003), Chiusi della Verna (07/2004, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).

***Teucrium montanum*** L. - Ch suff, European Orophile, NR. From Pratovecchio to Lama through Giogana (Siemoni, 1880, FI; Zangheri, 1966b), Falterona, S. Godenzo Valley (Forasassi, 30/8/1953, FI). Zangheri's report (1966b) is based on an exsiccatum by Siemoni dated 1880.

***Teucrium scorodonia*** L. - H scap, European, bru. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

***Thymus glabrescens*** Willd. subsp. ***decipiens*** (Heinr. Braun) Domin - Ch rept, Eurasian, px. S. Benedetto in Alpe, Passo del Muraglione, Corniolo, Bagno di Romagna (Zangheri, 1966b sub *Thymus oenipontanus* and *T. glabrescens*), La Verna (Siemoni et al., 1989-1998 sub *T. oenipontanus*).

***Thymus longicaulis*** Presl - Ch rept, South European-Mediterranean, px. Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006). Ancient reports of *T. serpyllum* in Casentino and La Verna (Marcucci, 1889; Baroni, 1897-1908) must be attributed not to *T. serpyllum* s.s. but to some other entities of this group, of which the most common are *T. longicaulis* and *T. pulegioides*.

***Thymus praecox*** Opiz subsp. ***polytrichus*** (Borbàs) J alas - Ch rept, South European Orophile, pa, r. Campigna (Zangheri, 1966a, 1966b sub *Thymus alpigenus*; Ferrari et al., 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

***Thymus pulegioides*** L. - Ch rept, Eurasian, px. M. Falco, (Zangheri, 1966a; 07/1980, Herb. Padula sub *Thymus pulegioides* subsp. *chamaedrys*), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Poggio Sodo dei Conti (07/1980, Herb. Padula sub *T. pulegioides* subsp. *chamaedrys*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

***Thymus striatus*** Vahl - Ch rept, South-European, E. La Verna (Siemoni et al., 1989-1998). Reported only at La Verna on the basis of an exsiccatum of the *Herbarium Alvernae* (N. Siemoni, s.d.), which, in our opinion, does not correspond to *T. striatus* and is probably referable to *T. glabrescens* subsp. *decipiens*.

***Ziziphora capitata*** L. - T scap, Naturalized, A, NR. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Galeata (Zangheri, 1966b). This species was reported close to the Park boundaries both in Tuscany and in Romagna.

#### LAURACEAE

***Laurus nobilis*** L. - P caesp, Cultivated, A. Foreste Casentinesi (Anonimo 1878), Casentino culta. (Marcucci, 1889), Poppi, Bibbiena (Camangi et al., 2003), Pratovecchio culta. (04/2001, 03/2002, 11/2004, Herb. Padula).

#### LINACEAE

***Linum alpinum*** Jacq. - H scap, South European Orophile, pd, r, if, l.r.56/2000 All.A. M. Falco (Zangheri, 1966a, 1966b; 07/1980, Herb. Padula sub *Linum perenne* subsp. *alpinum*; Padula, 1988 sub *L. perenne* subsp. *alpinum*; Contarini, 1996; Sirotti, 1998), M. Falterona (Sirotti, 1998; Semprini & Milandri, 2001), Par. Naz., vers. Romagn. (Agostini, 1992; Sirotti & Fariselli, 2002). According to Pignatti (1982) the plants of this area could correspond to the subsp. *gracilius* (Bertol.) Pignatti; according to Conti et al. (2005) *L. alpinum* subsp. *gracilius* is a synonym of *L. austriacum* L. subsp. *tommasinii* (Rchb.) Greuter & Burdet. We could not check any exsiccatum of the Park, so we are not able to verify if the Park plants are referable to *L. alpinum* s.s. or to *L. austriacum* subsp. *tommasinii*.

***Linum bienne*** Mill. - H bienn/H scap, South European-Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), M. Falco (Zangheri, 1966a sub *Linum angustifolium*), Campigna (Zangheri, 1966a, 1966b sub *Linum angustifolium*; Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

***Linum catharticum*** L. - H scap/T scap, South European-Mediterranean, pa, RNT, l.r.56/2000 All.A. Casentino (Marcucci, 1889), PNFC eroded slopes (Giacinti Baschetti, 1998), Passo del Muraglione, Poggio Corsoio (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco (Contarini, 1996), Sasso Fratino (Gonnelli et al., 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). The reports could be referable either to the typical subspecies or to the subsp. *suecicum* (Murb. ex Hayek) Hayek.

***Linum strictum*** L. - T scap, Mediterranean, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Linum tenuifolium** L. - Ch suffr, South European-Mediterranean, px. Casentino (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Linum trigynum** L. - T scap, South European-Mediterranean, px. San Benedetto in Alpe, Passo del Muraglione (Zangheri, 1966a, 1966b sub *Linum gallicum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998).

**Linum viscosum** L. - H scap, South European Orophile, px. Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Corniolo (Zangheri, 1966a, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Radiola linoides** Roth - T scap, Eurasian, pu,r, l.r.56/2000 All.A. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Calla (Zangheri, 1966b).

#### LORANTHACEAE

**Loranthus europaeus** Jacq. - P epif, European, bx, r, l.r.56/2000 All.A,C. Foreste Casentinesi (Anonimo 1878), Casentino (Caruel, 1860-64; Marcucci, 1889), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (03/2001, Herb. Padula), Pratovecchio (12/2001, 01-12/2002, Herb. Padula), Bibbiena (01/2002, Herb. Padula), Subbiano (12/2002, Herb. Padula), Chiusi della Verna (09/2003, Herb. Padula), Poppi (02/2004, Herb. Padula).

**Viscum album** L. subsp. **abietis** (Wiesb.) Abromeit - P epif, Eurasian, br, l.r.56/2000 All.A,C. Lama Forest (Zangheri, 1966a, 1966b; Padula, 1988; Gonnelli, 2006 *in verbis*), Sasso Fratino (Gonnelli et al., 2006).

**Viscum album** L. subsp. **album** - P epif, Eurasian, br, l.r.56/2000 All.A,C, lrEM: EN. Foreste Casentinesi (Anonimo 1878), Casentino (Marcucci, 1889 sub *Viscum laxum*), Camaldoli (Baroni, 1897-1908), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Pratovecchio (10/2002, 01/2003, Herb. Padula), P. della Seghettina (Sirotti, 2006 *in verbis*). Marcucci (1889) reported also *V. laxum* Boiss & Reut., a synonym sensu stricto of *V. album* L. subsp. *austriacum* (Wiesb.) Vollm, which is currently considered present only on the Alps (Pignatti, 1982; Conti et al., 2005).

#### LYTHRACEAE

**Peplis portula** L. - T rept, Eurasian, pu, r. PNFC wetlands (Falzea, 2006). Recently reported only by Lastrucci in Falzea (2006), with exsiccata conserved in HCI (FI).

#### MALVACEAE

**Althaea hirsuta** L. - T scap, South European-Mediterranean, px. Fra Poppi e Camaldoli (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Hibiscus syriacus** L. - P caesp, Cultivated, A, D. Foreste Casentinesi (Anonimo, 1878). According to Anonimo (1878) it was introduced in 1840, but today its presence is doubtful.

**Malva moschata** L. - H scap, South European-Mediterranean, pa. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Caruel, 1860-64; Marcucci, 1889), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), San Benedetto in Alpe, Passo del Muraglione, Campigna Forest (Zangheri, 1966a, 1966b), M. Falco (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Passo della Calla (07/1999, Herb. Padula), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Pratovecchio (08/2003, Herb. Padula), Stia (07/2005, Herb. Padula), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Malva sylvestris** L. - H scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), La Verna (Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poppi, Bibbiena (Camangi et al., 2003), Pratovecchio (10/1998, 07/2005, Herb. Padula), Sasso Fratino (Tigliè, 1974; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

#### MORACEAE

**Ficus carica** L. - P scap, Cultivated, A. Casentino culta. (Marcucci, 1889), Poppi, Bibbiena (Camangi et al., 2003), loc. Giumella and along the road Campigna - Corniolo close to the Park boundaries (Zoccola & Simoncini, 2007 *in verbis*).

#### OLEACEAE

**Forsythia viridissima** Lindl. - P caesp, Cultivated, A. *Arboretum* Siemoni Badia Prataglia (Crudele et al., 2002).

**Fraxinus excelsior** L. subsp. **excelsior** - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Marena (05-07/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna, Pian Tombesi (Zangheri, 1966a, 1966b), *Arboretum Siemoni* Badia Prataglia (Crudele et al.,

2002), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (PFerrari et al., 1979; 1982; adula & Crudele 1988), Lama Forest (Vazzano, 2006), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Montanari, 2005; Gonnelli et al., 2006). In the *Arboretum Siemoni* at Badia Prataglia also the cv. *densiflora* is present (Crudele et al., 2002).

**Fraxinus ornus** L. - P scap, South European-Mediterranean, bx. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino (Baroni, 1897-1908), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Pratovecchio (05-07/2001, Herb. Padula), Badia Prataglia (08/2001, Herb. Padula), Par. Naz. vers. romagn. (Agostini, 1992), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (Camangi et al., 2003), Bibbiena (Camangi et al., 2003; 09/2003, Herb. Padula), Lama Forest at Fornino (Checcacci et al. 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), S. Benedetto in Alpe (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Vittrignesi (5/1978 leg. Acciai Herbario Museo Siemoni), PNFC eroded slopes (Giacinti Baschetti 1998), PNFC wetlands (Falzea, 2006, Mazza, 2006), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula 1988), Lama Forest (Vazzano, 2006), Sasso Fratino (Tigliè, 1974; Padula, 1978; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Jasminum nudiflorum** Lindl. - P caesp, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Ligustrum vulgare** L. - NP, Eurasian, bx. Foreste Casentinesi (Anonimo, 1878), Casentino (Marcucci, 1889), Pratovecchio (09/1997, Herb. Padula), Poppi (08/2001, 05/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Syringa vulgaris** L. - P caesp, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

#### ONAGRACEAE

**Circaea lutetiana** L. - H scap, Boreal, bu. Camaldoli (Carruel, 1860-64; 05/1976, Herb. Padula), Falterona (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Passo del Muraglione, Passo della Calla, Campigna Forest, Passo dei Mandrioli (Zangheri, 1966a), Campigna, Giogo Secchieta, Poggio Bertesca (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Padula, 1982; Norcini & Zoccola,

1995; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Epilobium angustifolium** L. - H scap, Boreal, arb. Falterona (Marcucci, 1889 sub *Epilobium spicatum*; Baroni, 1897-1908; Zangheri, 1966b), La Verna (Marcucci, 1889 sub *E. spicatum*; Baroni, 1897-1908; Matteini, 1968), Passo della Calla, Passo dei Mandrioli (Zangheri, 1966a sub *Chamaenerion angustifolium*; Zangheri, 1966b), Prato Bertone (Zangheri, 1966b), Campigna (Zangheri, 1966a sub *C. angustifolium*; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Epilobium dodonei** Vill. - H scap (Ch frut), European Orophile, px. La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), La Lama (Zangheri, 1966b), Chiusi della Verna (08/2002, Herb. Padula).

**Epilobium hirsutum** L. - H scap, Cosmopol/wide distrib., pu. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Campigna Forest local. Cullacce e La Lama, Bagno di Romagna (Zangheri, 1966a, 1966b), Corniolo, Passo della Calla (Zangheri, 1966a, 1966b sub *Epilobium hirsutum* var. *villosum*), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (07/2000, Herb. Padula), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).

**Epilobium lanceolatum** Sebast. et Mauri - H scap, European, br. Passo del Muraglione, San Benedetto in Alpe, M. Falco (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (08/2000, Herb. Padula).

**Epilobium montanum** L. - H scap, Eurasian, br. Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b), Campigna Forest, Passo della Calla (Zangheri, 1966a), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; 09/2004, Herb. Padula), Giogana di Poggio Scali (07/1969, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006), Par. Naz. Vers. Romagn. (Sirotti & Fariselli, 2002).

**Epilobium palustre** L. - H scap, Boreal, D. Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002). The report comes from vegetation relevés and could be reliable, but as we could not check any exsiccatum it must be confirmed.

**Epilobium parviflorum** Schreb. - H scap, Eurasian, pu. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), San Benedetto in Alpe (Zangheri, 1966a), Passo del Muraglione (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006).

#### OROBANCHACEAE

**Orobanche alba** Stephan ex Willd. - T par, Eurasian, px, r. La Verna (Siemoni et al., 1989-1998).

**Orobanche crenata** Forsk. - T par, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Orobanche pruinosa*; Baroni, 1897-1908 sub *O. speciosa*), Campigna (Zangheri, 1966a, 1966b), Giogana (Zangheri, 1966b), La Verna (Matteini, 1968).

**Orobanche gracilis** Sm. - T par, European, bx, r. Bibbiena, La Verna (Baroni, 1897-1908), Giogana (Zangheri, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998).

**Orobanche minor** Sm. - T par, Cosmopol/wide distrib., ru, r. Casentino (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).

**Orobanche ramosa** L. s.l. - T par, Eurasian, px. Casentino (Marcucci, 1889 sub *Phelypaea ramosa*; Baroni, 1897-1908 sub *Kopsia ramosa*), Bagno di Romagna, Giogana (Zangheri, 1966a). Probably all the records must be attributed to the subsp. *nana* (Reut.) Cout. or to the subsp. *mutelii* (F.W. Schultz) Cout., as the typical subspecies is not present here (Conti et al., 2005).

**Orobanche rapum-genistae** Thuill. - T par, European, arb. Casentino (Marcucci, 1889), Prataglia, Camaldoli (Baroni, 1897-1908), Campigna in vari luoghi (Zangheri, 1966a), Campigna, Giogana (Zangheri, 1966b), La Verna (Matteini, 1968; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

#### OXALIDACEAE

**Oxalis acetosella** L. - G rhiz, Boreal, br. Falterona (Marcucci, 1889; Zangheri, 1966b), Camaldoli (Marcucci, 1889), La Verna (Marcucci, 1889; Matteini, 1968; Ferrarini, 1998; 08/2004, Herb. Padula), fra Falterona e Camaldoli (Baroni, 1897-1908), Muraglione (Zangheri, 1966b), M. Falco, Pian delle Fontanelle, Fangacci, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965, 1991; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Oxalis corniculata** L. - H rept, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Badia Prataglia (Viciani, 2008 *in verbis*).

#### PAPAVERACEAE

**Chelidonium majus** L. - H scap, Boreal, ru. Casentino (Marcucci, 1889), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966b), Pratovecchio (04/2000, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino (Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006), La Verna (Viciani, 2008 *in verbis*).

**Corydalis cava** (L.) Schweigg. et Koerte - G bulb, European, br. Falterona (Caruel, 1860-64 sub *Corydalis tuberosa*; Marcucci, 1889 sub *C. tuberosa*; Zangheri, 1966b), La Verna (Caruel, 1860-64 sub *C. tuberosa*; Marcucci, 1889 sub *C. tuberosa*; Matteini, 1968; Ferrarini, 1998; 04/2001-2003, Herb. Padula), fra Camaldoli e Falterona (Baroni, 1897-1908 sub *C. tuberosa*), Campigna a Poggio Martino e in local. Pentolino (Zangheri, 1966a), Campigna (Zangheri, 1966b), M. Gemelli, Pian delle Fontanelle (M. Falco), Passo della Calla, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. bulbosa*), Campigna-Lama (Ferrari et al., 1979; 1982 sub *C. bulbosa*; Padula et al., 1988 sub *C. bulbosa*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia (04/2003, Herb. Padula), Prato alla Penna (05/2003-2004, Herb. Padula), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1982 sub *C. bulbosa*; Hofmann, 1991; Gonnelli et al., 2006).

**Corydalis intermedia** (L.) Mžrat - G bulb, European, NR. Stradella (Caruel, 1860 sub *Corydalis fabacea*), Falterona (Marcucci, 1889 sub *C. fabacea*; Baroni, 1897-1908 sub *C. fabacea*).

**Corydalis pumila** (Host) Rchb. - G bulb, European, br. l.r.56/2000 All.A, l.r.T: LR. Passo della Calla, Prato alla Penna, Passo Lupatti, La Verna, M. Penna (Gonnelli, 2001), Sasso Fratino (Gonnelli et al., 2006). According to Gonnelli (2001) in the Park many past records of *C. solida* must be attributed to *C. pumila*.

**Corydalis solida** (L.) Sw. - G bulb, European, br, RNT. Falterona, Fonte de' Conti, Fangacci (Zangheri, 1966b), Campigna al fosso Abetio, Passo della Calla (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Prato alla Penna (05/2003-2004, Herb. Padula). See previous note.

**Fumaria officinalis** L. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889), La Verna (Siemoni et al., 1989-1998), Pratovecchio (03/1998, Herb. Padula), Poppi (05/2002, Herb. Padula), Bibbiena (05/2005, Herb. Padula).



**Papaver argemone** L. - T scap, Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Papaver dubium** L. - T scap, Mediterranean, E. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* (Leg. Siemoni et Ricceri, sine data, sine loc.) is in our opinion referable to *P. rhoeas*.

**Papaver rhoeas** L. - T scap, Mediterranean, ru. Casentino (Marcucci, 1889), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975, Pratovecchio (07/2001), Campigna (Zangheri, 1966b), Poppi (05/2001-2002, Herb. Padula; Camangi et al., 2003), Bibbiena (Camangi et al., 2003).

#### PLANTAGINACEAE

**Plantago atrata** Hoppe - H ros, South European Orophile, pa, r, if. Poggio Giogo between Passo del Muraglione and Monte Falco (Zangheri, 1966a, 1966b sub *Plantago montana*).

**Plantago lanceolata** L. - H ros, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Lama (Zangheri, 1966a), Bagno di Romagna (Zangheri, 1966b sub *P. lanceolata* var. *dubia*), Passo del Muraglione, Campigna, Passo de' Mandrioli (Zangheri, 1966a, 1966b incl. *Plantago lanceolata* var. *sphaerostachya* and *P. lanceolata* var. *dubia*), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (10/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Plantago major** L. - H ros, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Pratovecchio (10/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Passo del Muraglione (Zangheri, 1966a sub *Plantago major* subsp. *intermedia*; Zangheri, 1966b sub *P. major* subsp. *minor*), Campigna (Zangheri, 1966b sub *P. major* subsp. *vulgaris*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Mazza, 2006; Falzea, 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Plantago maritima** L. subsp. *serpentina* (All.) Arcangeli - H ros, South European Orophile, px, r. La Verna (Siemoni et al., 1989-1998 sub *Plantago serpentina*; Ferrarini, 1998; 08/2002, Herb. Padula sub *P. serpentina*), Chiusi della Verna (07/2004, Herb. Padula sub *P. serpentina*), Bagno di Romagna (Zangheri, 1966a, 1966b sub *P. serpentina*).

**Plantago media** L. - H ros, Eurasian, pu. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti,

1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (10/2002, Herb. Padula), Bagno di Romagna (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Plantago sempervirens** Crantz - Ch suff, Mediterranean, px. Pratovecchio (Caruel, 1860-64 sub *Plantago cynops*), Casentino (Marcucci, 1889 sub *P. cynops*), fra Moggiona e Camaldoli (Baroni, 1897-1908 sub *P. cynops*), San Benedetto in Alpe (Zangheri, 1966a, 1966b sub *P. cynops*), Poggio Scali (Zangheri, 1966b sub *P. cynops*), Campigna (Ferrari et al., 1982 sub *P. cynops*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *P. cynops*), La Verna (Matteini, 1968 sub *P. cynops*; Siemoni et al., 1989-1998 sub *P. cynops*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. cynops*), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002 sub *P. cynops*).

#### PLATANACEAE

**Platanus hispanica** Mill. - P scap, Cultivated, A. Metaletto culta. (07/1982, Herb. Padula sub *Platanus hybrida*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002 sub *Platanus x acerifolia*). Cultivated ad sometimes spontaneous along rivers at low altitudes.

**Platanus orientalis** L. - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Along the road S. Benedetto-Tredozio (Simoncini & Zoccola, 2007 *in verbis*).

#### POLYGALACEAE

**Polygala alpestris** Rchb. - H scap, South European Orophile, pa. Pian delle Fontanelle (M. Falco), (Zangheri, 1966a), Passo del Muraglione, M. Falco, Burraia, Campigna Forest (Zangheri, 1966a, 1966b), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Agostini, 1992; Sirotti & Fariselli, 2002).

**Polygala chamaebuxus** L. - Ch suff/NP, South European Orophile, px, r, if, l.r.56/2000 All.A, lrEM: VU. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Montone, Rabbi and Bidente Valleys (Semprini & Milantri, 2001), Il Poggiaccio (Gonnelli et al., 2007a). All the reports at Mt. Falterona are ancient and based on Caruel (1860-64).

**Polygala flavescens** DC. - H scap, Endemic Apennines, px, if, l.r.56/2000 All.A. Casentino (Marcucci, 1889), Pratovecchio, Prataglia (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Chiusi della Verna (05/2003, 05/2004, Herb. Padula).

**Polygala nicaeensis** W. D. J. Koch subsp. *mediterranea* Chodat - H scap, South European-Mediterranean, px, RNT, l.r.56/2000 All.A. Casentino (Baroni, 1897-1908 sub *Polygala nicaeensis*), La Verna (Siemoni et al., 1989-

1998 sub *P. nicaeensis*), Premilcuore (Zangheri, 1966, 1966b), Campigna (Ferrari et al., 1982 sub *P. nicaeensis*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002). All the records of *P. nicaeensis* are attributed to the subsp. *mediterranea*, as it is the only present in this area (Pignatti, 1982; Conti et al., 2005).

**Polygala vulgaris** L. - H scap, Eurasian, pa. Prataglia (Caruel, 1860-64), Badia Prataglia (Marcucci, 1889), Poggio Martino (Campigna) (Zangheri, 1966a sub *Poygala vulgaris* subsp. *vulgaris*), Falterona, Campigna, La Lama (Zangheri, 1966b), Passo dei Mandrioli (Zangheri, 1966a sub *P. vulgaris* subsp. *vulgaris*; Zangheri, 1966b), Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998). At high altitudes, probably some reports refer to *P. alpestris* Rchb., which in the past was only a subspecies of *P. vulgaris*.

#### POLYGONACEAE

**Aconogonon alpinum** (All.) Schur - G rhiz, Eurasian, pd, r, if, l.r.56/2000 All.A. M. Falco (Zangheri, 1966a, 1966b sub *Polygonum alpinum*).

**Bistorta officinalis** Delarbre - G rhiz, Boreal, NR. La Verna (Pichi Sermolli, 1998). This record was reported by Pichi Sermolli in Ferrarini (1998), and it is based on an exsiccatum by Micheli of 18<sup>th</sup> century, located in the *Florence Micheli Herbarium* (FI-M).

**Fagopyrum esculentum** Moench - T scap, Cultivated, A, NR. Campigna (Zangheri, 1966b). Zangheri (1966b) reported that according to A. Targioni this species was cultivated in Campigna in 1857.

**Fallopia convolvulus** (L.) Holub - T scap, Boreal, ru. Casentino (Marcucci, 1889 sub *Polygonum convolvulus*; Baroni, 1897-1908 sub *P. convolvulus*), Passo del Muraglione (Zangheri, 1966a sub *Bilderdykia convolvulus*; Zangheri, 1966b sub *Fagopyrum convolvulus*), Giongana (Zangheri, 1966b sub *F. convolvulus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *B. convolvulus*), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

**Persicaria hydropiper** (L.) Delarbre - T scap, Boreal, pu. Bibbiena (Baroni, 1897-1908 sub *Polygonum hydropiper*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. hydropiper*), Camaldoli (08-10/2000, 09/2005, Herb. Padula sub *P. hydropiper*), PNFC wetlands (Mazza, 2006 sub *P. hydro-piper*; Falzea, 2006 sub *P. hydropiper*).

**Persicaria lapathifolia** (L.) Delarbre - T scap, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889 sub *Polygonum lapathifolium*; Baroni, 1897-1908 sub *P. lapathifolium*), Burraia (Zangheri, 1966b sub *P. nodosum*),

Pratovecchio (09/1997, Herb. Padula sub *P. lapathifolium*), La Verna (Siemoni et al., 1989-1998 sub *P. lapathifolium*).

**Persicaria maculosa** (L.) Gray - T scap, Cosmopol/wide distrib., pu. Pratovecchio (08/1987, Herb. Padula sub *Polygonum persicaria*), Campigna (Zangheri, 1966a, 1966b sub *P. persicaria*), La Lama (Zangheri, 1966b sub *P. persicaria*), PNFC wetlands (Falzea, 2006 sub *P. persicaria*).

**Polygonum aviculare** L. - T rept, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Pratovecchio (09/1998, Herb. Padula), Passo del Muraglione (Zangheri, 1966a sub *Polygonum aviculare* subsp. *bellardi*), Campigna, La Lama (Zangheri, 1966b). All the records are intended sensu lato, as Zangheri (1966a, 1966b) reported the presence of several subspecies, some of which currently correspond to different species (*P. bellardi* All., *P. aviculare* subsp. *rurivagum* (Jord. ex Boreau) Bohrer).

**Rumex acetosa** L. - H scap, Boreal, pu. Prataglia (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna Forest (Zangheri, 1966a, 1966b sub *Rumex acetosa* subsp. *acetosa*), Passo del Muraglione (Zangheri, 1966b), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).

**Rumex acetosella** L. s.l. - H scap, Cosmopol/wide distrib., px. Falterona (Marcucci, 1889; Baroni, 1897; Zangheri, 1966b), La Verna (Matteini, 1968 sub *Rumex acetosella* var. *vulgaris*; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Passo del Muraglione, Poggio Corsoio (Zangheri, 1966a sub *R. angiocarpus*; Zangheri, 1966b sub *R. acetosella* var. *angiocarpus*), M. Falco, Burraia, Campigna a Poggio Martino e Sodo dei Conti, Passo della Calla (Zangheri, 1966a sub *R. angiocarpus*), Campigna in vari luoghi (Zangheri, 1966b sub *R. acetosella* var. *angiocarpus*), Falterona-Burraia, Parto Bertone (Zangheri, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002). We refer to the species sensu lato (Conti et al., 2005). Probably the most widespread entity in the area is *R. acetosella* subsp. *angiocarpus* (Murb.) Murb.

**Rumex alpestris** Jacq. - H scap, Eurasian, pa. Campigna a Poggio Palaio, Poggio Martino, Passo della Calla, Passo Porcareccio (Zangheri, 1966a sub *Rumex arifolius*), Burraia, Prato Bertone (Zangheri, 1966a, 1966b sub *R. arifolius*), Campigna, Giongana (Zangheri, 1966b sub *R. arifolius*), Campigna-Lama (Ferrari et al., 1979, 1982 sub *R.*

*arifolius*; Padula et al., 1988 sub *R. arifolius*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *R. arifolius*).

**Rumex conglomeratus** Murray - H scap, Eurasian, pu. San Benedetto in Alpe, Passo del Muraglione (Zangheri, 1966a, 1966b), Giogana di Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).

**Rumex crispus** L. - H scap, Cosmopol/wide distrib., ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).

**Rumex obtusifolius** L. - H scap, Cosmopol/wide distrib., ru. Camaldoli (Caruel, 1860-64; Marcucci, 1889; 08/2000, Herb. Padula), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a, 1966b sub *Rumex obtusifolius* subsp. *agrestis*), La Lama (Zangheri, 1966a sub *Rumex obtusifolius* subsp. *agrestis*), Giogana, Prato Bertone, Passo della Calla (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), PNFC wetlands (Falzea, 2006).

**Rumex pulcher** L. - H scap (T scap), South European-Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Rumex pulcher* L. subsp. *divaricatus* (L.) Murb.).

**Rumex sanguineus** L. - H scap, European, br. Passo del Muraglione, Passo dei Mandrioli (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).

#### PORTULACACEAE

**Montia fontana** L. subsp. **chondrosperma** (Fenzl) Walters - I rad/T scap, South European-Mediterranean, pu, r. Burraia, Celle (Zangheri, 1966b sub *Montia minor*). All the records by Zangheri (1966b) are referable to this subspecies as it is the only present in the Park area (Pignatti, 1982; Conti et al., 2005).

#### PRIMULACEAE

**Anagallis arvensis** L. - T rept, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889 sub *Anagallis arvensis* and *A. arvensis* subsp. *phoenicea*), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Pratovecchio (09/1997, 07/2001, Herb. Padula), Passo del Muraglione (Zangheri, 1966a, 1966b), Campigna (Zangheri 1966a, 1966b), Par. Naz., vers. romagn. (Sirotti &

Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti 1998).

**Anagallis foemina** Mill. - T rept, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889 sub *Anagallis arvensis* subsp. *coerulea*; Baroni, 1897-1908 sub *A. arvensis* subsp. *coerulea*), La Verna (Ferrarini, 1998).

**Cyclamen hederifolium** Aiton - G bulb, Mediterranean, br. Camaldoli (Marcucci, 1889 sub *Cyclamen neapolitanum*; Baroni, 1897-1908 sub *C. neapolitanum*), La Verna (Marcucci, 1889 sub *C. neapolitanum*; Baroni, 1897-1908 sub *C. neapolitanum*; Matteini, 1968 sub *C. neapolitanum*; 08/1997, Herb. Padula; Siemoni et al., 1989-1998; Ferrarini, 1998), Badia Prataglia (Baroni, 1897-1908 sub *C. neapolitanum*), Poppi (08/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (09/2003, Herb. Padula), Passo del Muraglione, Pian del Pero, La Lama, Passo Porcareccio (Zangheri, 1966a sub *C. neapolitanum*), Campigna (Zangheri, 1966b sub *C. neapolitanum*), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino, (Hofmann, 1965 sub *C. neapolitanum*, Gonnelli et al., 2006).

**Cyclamen repandum** Sm. - G bulb, Mediterranean, bx, r, if, lrEM: VU. Campigna (Zangheri 1966b, 1966a sub *C. vernale*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Lysimachia nummularia** L. - H scap, Boreal, pu, r. PNFC wetlands alla Pozza del Cervo (Lastrucci, 2006 *in verbis*; Falzea, 2006).

**Lysimachia punctata** L. - H scap, South-European, bu, l.r.56/2000 All.A. Prataglia (Caruel, 1860-64; Marcucci, 1889), verso Moggiona (Baroni, 1897-1908), Passo del Muraglione (Zangheri, 1966a, 1966b), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna Forest (Zangheri, 1966a, 1966b), La Verna (Matteini, 1968; Ferrarini, 1998), Camaldoli (08/2000, 07/2003, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2006).

**Primula veris** L. subsp. **columnae** (Ten.) Maire & Petitm. - H ros, Mediterranean Orophile, px. l.r.56/2000 All.A,C1. M. Penna di Camaldoli (Baroni, 1897-1908 sub *Primula suaveolens*; Zangheri, 1966b sub *P. columnae*; Sirotti, 1998; Gonnelli, 2005 *in verbis*), Pian delle Fontanelle (Zangheri, 1966a sub *P. columnae*), Foreste Casentinesi (Semprini & Milandri, 2001), Sasso Fratino (Gonnelli et al., 2006 sub *P. veris* subsp. *suaveolens*). Conti et al. (2005) do not report this entity (sub *P. veris* subsp. *suaveolens*) in Tuscany, but probably it was a mistake as there are several records (cf. ad es. Ferrarini et al., 1997; Viciani, 2001) in the region.

**Primula vulgaris** Huds. - H ros, European, br, l.r.56/2000

All.C,C1. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Primula acaulis*; Siemoni et al., 1989-1998; Ferrarini, 1998 sub *P. acaulis*), Pratovecchio (Caruel, 1860-64; 01/2001, 03/2003, Herb. Padula), Bibbiena (Marcucci, 1889), Casentino (Baroni, 1897-1908 sub *P. acaulis*), Passo dei Mandrioli (Zangheri, 1966a), M. Penna (Zangheri, 1966b), Capria Valley (Padula, 1974 sub *P. acaulis*), Alto Archiano (Tassini, 1976 sub *P. acaulis*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2006), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006).

**Samolus valerandi** L. - H scap, Cosmopol/wide distrib., pu, r. Fonte dei Conti (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

#### PYROLACEAE

**Moneses uniflora** (L.) A. Gray - H scap, Boreal, br, r, if. La Verna (Ferrarini, 1998; Gonnelli, 2006a), Monte Gemelli (Milandri, 2002).

**Monotropa hypopitys** L. - G par, Boreal, br. Camaldoli (Marcucci, 1889 sub *Hypopitys multiflora*; Baroni, 1897-1908 sub *H. multiflora*), Poggio Penna (Baroni, 1897-1908), La Verna (Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Orthilia secunda** (L.) House - Ch rept, Boreal, D, NR. Falterona (Marcucci, 1889 sub *Pyrola secunda*; Baroni, 1897-1908 sub *P. secunda*; Zangheri, 1966b sub *P. secunda*), Campigna (Zangheri, 1966b; Padula, 1988). All the records, including the ones by Zangheri (1966b) and Padula (1988), are based on ancient reports by Parlato and Marcucci; in the *Herbarium Centrale Italicum* (FI) only an exsiccatum by Parlato is present (Poggio ...? nell'Appennino del Casentino, 11/9/1867), it has no flowers, and identification is not certain.

**Pyrola minor** L. - H ros, Boreal, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Marcucci, 1889), Poggio allo Spillo (Baroni, 1897-1908; Zangheri, 1966b), Burraia (Zangheri, 1966a, 1966b), M. Falco, Passo della Calla, Prato alla Penna (Zangheri, 1966a, 1966b), Poggio allo Spillo (Zangheri, 1966b), Giogana di Poggio Scali (07/1969, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965), Par. Naz., vers. romagn. (Semprini & Milandri, 2001).

#### RANUNCULACEAE

**Aconitum lycoctonum** L. emend. Koelle subsp. **neapolitanum** (Ten.) Nyman - H scap, European, br, RNT, l.r.56/2000 All.A, IrEM: DD. Falterona (Caruel, 1860-64; Marcucci, 1889; Sirotti, 1998 sub *A. lamarckii*), Camaldoli (Caruel, 1860-64; Marcucci, 1889), Burraia, Passo della Calla, Pian delle Fontanelle, Prato Bertone (Zangheri, 1966a, 1966b sub *A. vulparia* subsp. *theriophonum*; Sirotti, 1998 sub *A. lamarckii*), Giogana (07/1977, Herb. Padula sub *A. vulparia* subsp. *theriophonum*; Padula 2008), La Verna (Siemoni et al., 1989-1998 sub *A. napellus*), Prato alla Penna, Passo dei Mandrioli, Poggio Pian Tombesi, Poggio Scali, Prato al Soglio, Passo Porcareccio, M. Gabrendo, La Scodella, Il Poggione (Sirotti, 1998 sub *A. lamarckii*), Par. Naz. vers. romagn. (Semprini & Milandri, 2001 sub *A. lamarckii*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. lamarckii*), Camaldoli, Giogana (Gonnelli, 2005b), Sasso Fratino (Hofmann, 1965 sub *A. lycoctonum*; Bottacci, 2003 sub *A. vulparia*; Gonnelli et al., 2005 sub *A. lamarckii*; Gonnelli et al., 2006). The Park *Aconitum* plants were reported with different names, which according to Conti et al. (2005) are all to be included in *A. lycoctonum*. According to Gonnelli (2005b), we think that this species is present here only with the subsp. *neapolitanum* (Ten.) Nyman.

**Actaea spicata** L. - G rhiz, Eurasian, br. Falterona (Marcucci, 1889; Zangheri, 1966a), La Verna (Baroni, 1897-1908; 08/2004, Herb. Padula), fra Falterona e Camaldoli (Baroni, 1897-1908), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna, Burraia, Pian del Pero, Prato alla Penna (Zangheri, 1966a, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Massei, 1981; Hofmann, 1991; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Adonis annua** L. - T scap, South European-Mediterranean, ru, r. Casentino (Baroni, 1897-1908 sub *Adonis autumnalis*), La Lama (Zangheri, 1966b), Banzena near Bibbiena (05/2005, Herb. Padula sub *A. annua* subsp. *cupaniana*). Zangheri's report (1966b) is based on ancient citations by Baccarini.

**Anemone narcissiflora** L. subsp. **narcissiflora** - G rhiz, Boreal, pa, r, if, l.r.2/1977, l.r.56/2000 All.A, IrT: VU. M. Falco (Zangheri, 1966a, 1966b; Padula, 1988; Contarini, 1996; Sirotti, 1998), Fonte de' Conti (Zangheri, 1966a, 1966b), Poggio Scali, Prato al Soglio, M. Falterona (Sirotti, 1998), Campigna-Lama Forests (Padula, 1988), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Agostini, 1992; Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), From M. Falco to Poggio Scali (Padula, 1988).

- Anemone nemorosa** L. - G rhiz, Boreal, br. Pratovecchio, Stradella (Caruel, 1860-64), Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 04/2001, Herb. Padula), Camaldoli (Marcucci, 1889, Baroni, 1897-1908; Padula et al., 1988), Passo del Muraglione, Monte Gemelli, M. Falco, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Padula, 1982; Hofmann, 1991; Gonnelli et al., 2006).
- Anemone ranunculoides** L. - G rhiz, European, br. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; 04/2001, 04/2003, Herb. Padula), Camaldoli, Casentino (Baroni, 1897-1908), M. Falco, Poggio Scali, Passo Mandrioli (Zangheri, 1966a, 1966b), Badia Prataglia (04/2003, Herb. Padula), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Gonnelli et al., 2006), Par. Naz. vers. romagn. (Semprini & Milandri, 2001).
- Anemone trifolia** L. subsp. **trifolia** - G rhiz, South European Orophile, br, l.r.56/2000 All.A. Poggio Giogo, M. Falco (Zangheri, 1966a, 1966b), Val Savio-Val Bidente (Semprini & Milandri, 2001), La Verna (Gonnelli, 2006 *in verbis*). In this territory only the subsp. *trifolia* is present, as the subsp. *brevidentata* (Ubaldi & Puppi, 1989) is limited to Liguria and Emilia Apennines.
- Aquilegia vulgaris** L. - H scap, Eurasian, br, l.r.2/1977, l.r.56/2000 All.C. Falterona, Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Marcucci, 1889; Matteini, 1968), Bibbiena (Marcucci, 1889), M. Falco (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Gonnelli et al., 2006; Gonnelli et al., 2006).
- Caltha palustris** L. - H ros, Boreal, pu, r, if, l.r.56/2000 All.A. Stradella (Caruel, 1860-64), Falterona, Camaldoli, La Verna, M. Falco, Burraia (Zangheri, 1966a, 1966b; Sirotti, 1998), Poggio Giogo (Zangheri, 1966a, 1966b; Sirotti, 1998), Foreste Casentinesi (Padula, 1995 sub *C. palustris* subsp. *laeta*; Semprini & Milandri, 2001), Fangacci, M. Gabrendo, Poggio Lastraiolo (Sirotti, 1998), PNFC wetlands (Falzea, 2006), Campigna Forest (Padula, 1988).
- Clematis vitalba** L. - P lian, European, arb. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Alto Archiano (Tassinini, 1976), Campigna (Zangheri, 1966a, 1966b), Passo dei Mandrioli (Zangheri, 1966a), Calmaldoli (Marcucci, 1908), Poppi (Camangi et al., 2003), Bibbiena (Camangi et al., 2003; 09/2003, Herb. Padula), Pratovecchio (07/2001, Herb. Padula), PNFC wetlands (Mazza, 2006; Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Consolida regalis** S. F. Gray - T scap, South European-Mediterranean, ru, r, RNT, l.r.56/2000 All.A.C. Casentino (Marcucci, 1889 sub *Delphinium consolida*), between La Verna and Chiusi (Baroni, 1897-1908 sub *D. consolida*), La Verna (Siemoni et al., 1989-1998), S. Giacomo in Meleto (Zangheri, 1966a).
- Delphinium fissum** W. et K. - H scap, European Orophile, px, r, if, l.r.56/2000 All.C. La Verna (Caruel, 1860-64 sub *Delphinium velutinum*; Marcucci, 1889 sub *D. velutinum*; Matteini, 1968 sub *D. fissum* var. *velutinum*; Siemoni et al., 1989-1998; Sirotti, 1998; Gonnelli et al., 2003b), M. Penna (Sirotti, 1998; Gonnelli et al., 2003b), Fornino (Gonnelli et al., 2003b), Sasso Fratino (Gonnelli et al., 2006).
- Eranthis hyemalis** (L.) Salisb. - G rhiz, South-European, ru, r. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Chiusi della Verna (04/2004, Herb. Padula).
- Helleborus bocconei** Ten. subsp. **bocconei** - G rhiz, Endemic Apennines, br, l.r.56/2000 All.A. Poggio Scali (Zangheri, 1966a, 1966b), M. Falterona, Burraia (Zangheri, 1966b), Monte Gemelli (Zangheri, 1966a, 1966b), Campigna (Zangheri 1966a, 1966b), Par. Naz. vers. romagn. (Agostini, 1992), La Verna (Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (11/2002, Herb. Padula), M. Calvano (06/2004, Herb. Padula), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006). According to Zanotti & Cristofolini (1994) in this part of the Apennines *H. bocconei* is more widespread than *H. viridis*.
- Helleborus foetidus** L. - Ch suff, European, bx. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Ferrarini, 1998), Camaldoli (Padula et al., 1988), Alto Archiano (Tassinini, 1976), S. Benedetto in Alpe, Monte Gemelli, Passo del Muraglione, Pian del Grado (Zangheri, 1966a, 1966b), Bibbiena (03/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Moggiona (12/2002, Herb. Padula), Poppi (02/2004, Herb. Padula), PNFC wetlands (Mazza,

- 2006; Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).
- Helleborus viridis** L. - G rhiz, European, br. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998 sub *Helleborus odorus*), Passo della Calla, Campigna e Poggio Scali (Zangheri, 1966b sub *H. odorus*), Passo della Calla (Zangheri, 1966a), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Pratovecchio (01/2001, 02/2004, Herb. Padula sub *H. odorus*), Sasso Fratino (Hofmann, 1965; Padula, 1982). See note of *H. bocconei*.
- Hepatica nobilis** Mill. - G rhiz, Boreal, br. Pratovecchio (Caruel, 1860-64 sub *Anemone hepatica*), La Verna (Caruel, 1860-64 sub *A. hepatica*; Marcucci, 1889 sub *A. hepatica*; Matteini, 1968 sub *A. hepatica*; Siemoni et al., 1989-1998 sub *Hepatica trilobata*; Ferrarini, 1998; 04/2001, 08/2002, Herb. Padula), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976 sub *A. hepatica*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Mazza, 2006), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006).
- Isopyrum thalictroides** L. - G rhiz, Eurasian, br, r, RNT, l.r.56/2000 All.A. Falterona (Marcucci, 1889; Zangheri, 1966b), fra Falterona e Camaldoli (Baroni, 1897-1908), Poggio Scali (Zangheri, 1966a, 1966b), Burraia (Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Par. Naz., vers. romagn. (Semprini & Milandri, 2001; Sirotti & Fariselli, 2002).
- Nigella damascena** L. - T scap, South European-Mediterranean, ru. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Chiusi della Verna (05/2003, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Ranunculus acotinifolius** L. - H scap, European, pu, r. Stradella (Caruel, 1860-64), Camaldoli (Caruel, 1860-64; Marcucci, 1889), Falterona (Marcucci, 1889; Baroni, 1897-1908), Giogana di Poggio Scali (07/1969, Herb. Padula), M. Falco (06/1989, Herb. Padula), Campigna-Lama Forests (Padula, 1988), Prato alla Penna (06/1995, Herb. Padula), Sasso Fratino (Hofmann, 1965).
- Ranunculus acris** L. - H scap, Cosmopol/wide distrib., px, l.r.56/2000 All.A. Passo della Calla, Poggio Scali (Zangheri, 1966b sub *Ranunculus acer*), Poppi, Bibbiena (Camanigi et al., 2003), PNFC wetlands (Mazza, 2006).
- Ranunculus arvensis** L. - T scap, Eurasian, ru. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Marcucci, 1889 sub *R. arvensis* var. *inermis*; Baroni, 1897-1908 sub *R. arvensis* var. *inermis*; Matteini, 1968; Siemoni et al., 1989-1998), Isola di S. Sofia (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Ranunculus bulbosus** L. - H scap, Eurasian, pu. Everywhere in the area (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), La Verna (Matteini, 1968), PNFC wetlands (Mazza, 2006), PNFC eroded slopes (Giacinti Baschetti 1998), Campigna-Lama Forests (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975). According to Zangheri (1966b) in the medium and high Romagna Apennines *R. bulbosus* sensu stricto is widespread, while in Tuscany *R. neapolitanus* (= *R. bulbosus* subsp. *aleae*) seems to be the most common.
- Ranunculus ficaria** subsp. *ficaria* L. - G bulb, Eurasian, bu. Pratovecchio, Falterona (Caruel, 1860-64), Casentino (Marcucci, 1889), Burraia, Passo del Muraglione, Passo della Calla, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *Ficaria verna*), La Verna (Siemoni et al., 1989-1998; 04/2001, Herb. Padula), PNFC wetlands (Mazza, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *R. ficaria* subsp. *bulbifer*), Sasso Fratino (Gonnelli et al., 2006).
- Ranunculus lanuginosus** L. - H scap, European, br. La Verna (Caruel, 1860; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Capo d'Arno (Caruel, 1860; Marcucci, 1889), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Falterona (Baroni, 1897-1908; Zangheri, 1966b sub *Ranunculus lanuginosus* subsp. *umbrosus*), M. Falco (Zangheri, 1966a sub *R. lanuginosus* subsp. *umbrosus*), Poggio Scali (Zangheri, 1966a, 1966b sub *R. lanuginosus* subsp. *umbrosus*), Campigna-Lama (Ferrari et al., 1979; 1982), Stia (05/1999, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2005-2006), Campigna-Lama Forests (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006).
- Ranunculus montanus** Willd. s.l. - H scap, Endemic Apennines, pd, r. Falterona (Sommier, 1890; Baroni, 1897-1908 sub *Ranunculus villarsii*), M. Falco (Zangheri, 1966a, 1966b sub *R. montanus* subsp. *hornschuchii*). Past records must be referred to *R. montanus* sensu lato (Fiori, 1923-29; Pignatti, 1982), the most widespread entity of this group is probably *R. apenninus* Chiov., but in the *Herbarium Centrale Italicum* (FI) exsiccata of the study area are not present.
- Ranunculus neapolitanus** Ten. - H scap, Mediterranean, pu. La Verna (Siemoni et al., 1989-1998 sub *R. bulbosus* subsp. *aleae*), Pratovecchio (04/2001, Herb. Padula sub *R. bulbosus* subsp. *aleae*), Bibbiena (05/2005, Herb. Padula sub *R. bulbosus* subsp. *aleae*). Passo del Muraglione

- (Zangheri, 1966b sub *R. bulbosus* subsp. *aleae*), Campigna (Ferrari et al., 1982 sub *R. bulbosus* subsp. *aleae*). See note of *R. bulbosus*.
- Ranunculus platanifolius** L. - H scap, European, br, r, l.r.56/2000 All.A. Pian delle Fontanelle, Campigna a Poggio Martino e Burraia, Prato alla Penna, Pian Tombesi (Zangheri, 1966a, 1966b), Poggio Scali, Prato Bertone (Zangheri, 1966a, 1966b; Gonnelli et al., 2003b), Fangacci (Zangheri, 1966b), Poggio del Rovino (Gonnelli et al., 2003b), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Sasso Fratino (Gonnelli et al., 2006).
- Ranunculus polyanthemos** L. subsp. *polyanthemos* - H scap, Eurasian, D. Rincine-M. Massicaia (Sabato & Valenziano, 1975). According to Conti et al. (2005), this species is not present in Emilia-Romagna and Tuscany, and probably was erroneously reported by Sabato & Valenziano (1975).
- Ranunculus repens** L. - H rept, Cosmopol/wide distrib., pu. La Verna (Siemoni et al., 1989-1998), Metaletto (04/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna (Zangheri, 1966a, 1966b), S. Benedetto in Alpe (Zangheri, 1966a), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).
- Ranunculus serpens** Schrank subsp. *nemorosus* (DC.) G. López - H scap, South-European, br. Burraia (Zangheri, 1966a sub *Ranunculus nemorosus*), Campigna (Ferrari et al., 1982 sub *R. nemorosus*), La Verna (Siemoni et al., 1989-1998 sub *R. nemorosus*), PNFC wetlands (Mazza, 2006 sub *R. nemorosus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *R. nemorosus*).
- Ranunculus trichophyllus** Chaix - I rad, Cosmopol/wide distrib., st, r. Camaldoli (05/1975, 10/2000, 08/2004, Herb. Padula), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), PNFC wetlands (Mazza, 2006 sub *R. trichophyllus* subsp. *trichophyllus*; Falzea, 2006).
- Ranunculus velutinus** Ten. - H scap, Mediterranean, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Fangacci (Zangheri, 1966b), Pratovecchio (04/2001, Herb. Padula).
- Thalictrum aquilegifolium** L. - H scap, Boreal, br. Casentino (Caruel, 1860-64), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Prataglia (Baroni, 1897-1908), Campigna, M. Falco (Zangheri, 1966a, 1966b), Poggio Scali (Zangheri, 1966a, 1966b; 07/1969, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).
- Thalictrum flavum** L. - H scap, Eurasian, pu. Campigna (Zangheri, 1966b sub *T. angustifolium* subsp. *flavum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Thalictrum morisonii** C.C. Gmel. subsp. *mediterraneum* (Jordan) P.W. Ball - H scap, South-European, pu, l.r.56/2000 All.A. Campigna (Zangheri, 1966a, 1966b sub *T. exaltatum* subsp. *mediterraneum*), Sasseto, Pian delle Fontanelle, Pian Tombesi, Poggio Scali, Pian del Pero (Zangheri, 1966a).
- Trollius europaeus** L. - H scap, Boreal, pa, r, l.r.2/1977, l.r.56/2000 All.A,C, IrEM: VU, IrT: VU. Poggio Scali (Padula 1988; Padula, 1995; Sirotti, 1998; 07/1975, 06/2002, Herb. Padula), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996). In the Park, the only known population of this species is at Poggio Scali and it is in regression.
- RESEDACEAE
- Reseda luteola** L. - H scap, Boreal, ru. Pratovecchio (Caruel, 1860-64), Camaldoli (Caruel, 1860-64; Marcucci, 1889), Serravalle, Badia Prataglia (Marcucci, 1889), La Verna (Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- RHAMNACEAE
- Rhamnus alpina** L. - P caesp, Mediterranean Orophile, ro, r, if. La Verna (Fiori, 1925; Matteini, 1968; Siemoni et al., 1989-1998; Padula, 1995; Ferrarini, 1998; Sirotti, 1998), M. Penna, M. Calvano, La Beccia (Sirotti, 1998), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- ROSACEAE
- Agrimonia eupatoria** L. - H scap, Cosmopol/wide distrib., px. S. Benedetto in Alpe (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), S. Benedetto in Alpe (Zangheri, 1966a), Prato Bertone (Zangheri, 1966b), Poggio della Pieve (Baroni, 1897-1908), Pratovecchio (07/1997, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (07/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Alchemilla fallax** Buser - H ros, South European Orophile, pa, r, if, l.r.56/2000 All.A, IrT: LR. M. Falco (Festi, 2000). Reported for M. Falco only by Festi (2000), Festi does not specify if this record is based on ancient or recent data.
- Alchemilla flabellata** Buser - H ros, South European Orophile, pa, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Alchemilla glabra** Neygenf - H ros, Boreal, pu, r. M. Falco, Burraia, Passo della Calla (Zangheri 1966a, 1966b sub *Alchemilla vulgaris* subsp. *alpestris*).
- Alchemilla glaucescens** Wallr. - H ros, Eurasian, pa, r. Passo del Muraglione, M. Falco, Campigna (Zangheri, 1966b sub *Alchemilla hybrida*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).

- Alchemilla saxatilis** Buser - H ros, South European Orophile, pa, r, if, l.r.56/2000 All.A. Fra Falterona e Camaldoli (Baroni, 1897-1908 sub *Alchemilla alpina*), Fangacci, M. Falco (Zangheri, 1966a, 1966b sub *A. alpina*; 7/1980, Herb. Padula sub *A. alpina*; Padula, 1988 sub *A. alpina*; Contarini, 1996; Sirotti, 1998), M. Falterona (Sirotti, 1998; Gonnelli et al., 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna (Festi, 2000), Monte Falco (Padula, 1988 sub *A. alpina*; Festi, 2000), Sasso Fratino (Gonnelli et al., 2005, 2006). All the records of *A. alpina* s.l. have been referred to *A. saxatilis*, as it is the only species of this group recently reported in this area (Festi, 2000).
- Alchemilla vulgaris** L. s.l. - H ros, Eurasian, D. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Matteini, 1968). *A. vulgaris* sensu stricto is not present on Tuscan-Romagna Apennines (Festi, 2000; Conti et al., 2005), so all past records must be referred to other entities of this group (*A. glaucescens*, *A. glabra*, *A. xanthochlora*). Zangheri (1966b) reported also *A. subcrenata* Buser and *A. crinita* Buser.
- Alchemilla xanthochlora** Rothm. - H ros, European, pa. M. Falterona (Gonnelli et al., 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Zangheri, 1966b sub *A. vulgaris* subsp. *pratensis*), M. Falco e Campigna-Lama Forests (Padula 1988), Sasso Fratino (Gonnelli et al., 2005; Gonnelli et al., 2006).
- Amelanchier ovalis** Medik. - P caesp, Mediterranean Orophile, ro, r, if, l.r.56/2000 All.A. La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998; Sirotti, 1998), M. Penna (Sirotti, 1998).
- Aphanes arvensis** L. - T scap, Cosmopol/wide distrib., px. La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Aremonia agrimonioides** (L.) DC. - H ros, Mediterranean Orophile, br. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Camaldoli (Caruel, 1860-64; Marcucci, 1889; 05/1976, Herb. Padula), La Verna (Caruel, 1860-64; Matteini, 1968 sub *Agrimonia agrimonioides*; Siemoni et al., 1989-1998), S. Benedetto in Alpe, M. Falco, Poggio Scali, Pian del Pero, Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falza, 2006), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Chaenomeles japonica** (Thunb.) Lindl. - P caesp, Cultivated, A. Chiusi della Verna, naturalized (04/2004, Herb. Padula sub *C. japonica*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- Cotoneaster integerrimus** Medik. - NP, European Orophile, ro, r, if, La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Sirotti, 1998, Gonnelli, 2007 *in verbis*), M. Penna (Sirotti, 1998), Campigna (Sanesi in Zangheri, 1966b), Pian del Pero (Padula, 1988), Foreste Casentinesi (Padula, 1995).
- Cotoneaster tomentosus** (Aiton) Lindl. - NP, South-European, ro, r, if, l.r.56/2000 All.A. M. Falterona, M. Falco (Sirotti, 1998 sub *Cotoneaster nebrodensis*; Gonnelli et al., 2003b sub *C. nebrodensis*), M. Penna (Gonnelli et al., 2003b sub *C. nebrodensis*), Poggio del Rovino, (Gonnelli et al., 2003b sub *C. nebrodensis*), Sasso Fratino (Gonnelli et al., 2003b sub *C. nebrodensis*; Gonnelli et al., 2005 sub *C. nebrodensis*; Gonnelli et al., 2006). According to Conti et al. (2005) *C. nebrodensis* is endemic of Sicily and it was erroneously reported in the Italian Peninsula. Probably all past records of *C. nebrodensis* must be attributed to *C. tomentosus*.
- Crataegus laevigata** (Poir.) DC. - NP, European, br. Foreste Casentinesi (Anonimo, 1878 sub *C. oxyacantha*), Casentino (Marcucci, 1889 sub *Crataegus oxyacantha*), Alto Archiano (Tassini, 1976 sub *C. oxyacantha*), La Verna (Siemoni et al., 1989-1998 sub *C. oxyacantha*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *C. oxyacantha*), M. Calvano (06/2004, Herb. Padula sub *C. oxyacantha*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *C. oxyacantha*), Sasso Fratino (Tigliè, 1974 sub *C. oxyacantha*; Gonnelli et al., 2006).
- Crataegus monogyna** Jacq. - NP, Eurasian, arb. Faggione (Marcucci, 1889), Casentino (Baroni, 1897-1908 sub *Crataegus oxyacantha* subsp. *monogyna*), Campigna Poggio Palaio (Zangheri, 1966a), Burraia (Zangheri, 1966b), La Verna (Matteini, 1968 sub *C. oxyacantha* var. *monogyna*; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976 sub *C. oxyacantha* var. *monogyna*), Badia Prataglia (05/1998, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Ferrari et al., 1982; Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Crataegus rhpidophylla** Gand. - NP, Cultivated, A. Badia Prataglia (06/1996, 08-10/1997, 05-06-09/1998, 08/2000, 09/2005, Herb. Padula sub *Crataegus laciniata*; Padula, 2008 sub *C. laciniata*), Capanno di Badia Prataglia (Gonnelli, 2006 *in verbis*). Probably this species was introduced in the past and currently it is still present in Badia Prataglia area.
- Eriobotrya japonica** (Thunb.) Lindl. - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).



- Filipendula ulmaria** (L.) Maxim. ssp. **denudata** (Presl) Hayek - H scap, Boreal, pu, r, if. Pentolino (Sirotti, 1998), Sasso Fratino, (Gonnelli et al., 2003a; Gonnelli et al., 2003b, 2005, 2006).
- Fragaria vesca** L. - H rept, Cosmopol/wide distrib., br. Casentino (Caruel, 1860-64), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Mazza, 2006), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Geum urbanum** L. - H scap, Boreal, br. Casentino (Marcucci, 1889; Baroni, 1897-1908), Passo del Muraglione, M. Falco, Passo dei Mandrioli, Prato alla Penna (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Marena (05/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano 19875), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006), Sasso Fratino (Hofmann, 1965; Montanari, 2005; Gonnelli et al., 2006).
- Malus domestica** Borkh. - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Casentino culta. (Marcucci, 1889 sub *Pyrus malus*), La Verna (Siemoni et al., 1989-1998; 06-07/2004, Herb. Padula), Poppi (04/2001, Herb. Padula; Camangi et al., 2003), Bibbiena (04/2002, Herb. Padula; Camangi et al., 2003), Pratovecchio (05/1982, 04/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- Malus sylvestris** Mill. - P scap, European, br. Pian del Pero (Zangheri, 1966a), Campigna, La Lama (Zangheri, 1966b sub *Pyrus malus* subsp. *sylvestris*), Campigna-Lama Forests (Padula, 1988), La Verna (Siemoni & Ricceri, 1989-1998), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Lama Forest at Fornino (Checcacci et al., 2001), Sasso Fratino (Gonnelli, et al., 2006).
- Mespilus germanica** L. - P caesp, South-European, bru, l.r.56/2000 All.A. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Foreste Casentinesi (Anonimo, 1878), Bibbiena (Marcucci, 1889), Lonano, Pollino (Baroni, 1897-1908), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (04/2002, Herb. Padula), Pratovecchio (08/2001, 10/2004, Herb. Padula), La Lama (Zangheri, 1966b), S. Giacomo in Meleto (Zangheri, 1966a, 1966b), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna Forest (Padula, 1988).
- Potentilla erecta** (L.) Rauschel - H scap, Eurasian, pa. Casentino (Caruel, 1860-64 sub *Potentilla tormentilla*), Passo del Muraglione (Zangheri, 1966a), Camaldoli (Marcucci, 1889 sub *P. tormentilla*), M. Falco (Zangheri, 1966a, 1966b sub *P. tormentilla*; 06/2001, Herb. Padula), Burraia (Zangheri, 1966a, 1966b sub *P. tormentilla*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Potentilla hirta** L. - H scap, Mediterranean, px. Corniolo (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998).
- Potentilla micrantha** Ramond ex DC.- H ros, South European-Mediterranean, br. Casentino (Marcucci, 1889; Baroni, 1897-1908), Passo del Muraglione, Monte Gemelli, Poggio Giogo, Passo della Calla, Campigna, Poggio Scali (Zangheri, 1966a, 1966b), M. Falco (Zangheri, 1966b), La Verna (Matteini, 1968 sub *Potentilla sterilis* var. *micrantha*; Ferrarini, 1998; 03/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Badia Prataglia (04/2003, Herb. Padula), Bibbiena (04/2005, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Potentilla reptans** L. - H ros, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a; Ferrari et al., 1982), La Lama (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Pratovecchio (07/2000, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).
- Prunus avium** L. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878; Padula, 1995), Casentino (Marcucci, 1889), Chiusi della Verna (04/1974, Herb. Padula), Metaletto (06/1983, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (04/2005, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Passo del Muraglione, Campigna (Zangheri, 1966b; Ferrari et al., 1982), Passo del Muraglione, Campigna Pian del Pero (Zangheri, 1966a sub *Cerasus avium*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Tiglié, 1974; Massei, 1981; Padula, 1982; Gonnelli et al. 2006). Also cultivated.

- Prunus cerasifera* Ehrh. - P caesp, Cultivated, A. Pratovecchio (03-04-05/2001), Poppi, Bibbiena (05/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002). In the *Arboretum Siemoni* at Badia Prataglia also the var. *pissardi* is present (Crudele et al., 2002).
- Prunus domestica* L. - P scap, Cultivated e Naturalized, A. Casentino culta. (Marcucci, 1889), Poppi (04/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC wetlands (Mazza, 2006).
- Prunus dulcis* (Mill.) D. A. Webb - P scap, Cultivated, A. Casentino culta. (Marcucci, 1889 sub *Amygdalus communis*), Poppi (Larniano) culta. (04/2004, Herb. Padula).
- Prunus spinosa* L. - P caesp, European, arb. Foreste Casentinesi (Anonimo, 1878), Pratovecchio (Caruel, 1860-64; 07/2001, 04/2003, Herb. Padula), Pontenano (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (05/1982, Herb. Padula; Camangi et al., 2003), Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Pyracantha coccinea* M. J. Roemer - P caesp, Cultivated, A. Pratovecchio (10/1997, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002). In the Park area it is present only as introduced.
- Pyrus communis* L. - P scap, Eurasian (also cultivated), arb. Foreste Casentinesi (Anonimo, 1878 sub *P. communis* var. *sylvestris*; Padula, 1995 sub *P. pyraster*), Casentino (Caruel, 1860-64; Marcucci, 1889), Passo dei Mandrioli (Fl. Ital. Ex., fasc. XIV, 1921, n° 2459, Fiori sub *Pyrus communis* var. *pyraster*), Campigna Forest (Zangheri, 1966a, 1966b sub *P. pyraster*; Ferrari et al., 1982 sub *P. pyraster*), Alto Archiano (Tassini, 1976 sub *P. communis* var. *pyraster*), Pratovecchio (04/1981, Herb. Padula), La Verna (Siemoni et al., 1989-1998 sub *P. pyraster*, P. acras; 08/2002, Herb. Padula sub *P. pyraster*; 07/2004, Herb. Padula), Prato alla Penna (09/2001, Herb. Padula sub *P. pyraster*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *P. pyraster*), Stia (08/1980, 04/2002, Herb. Padula sub *P. pyraster*; 04/2002, Herb. Padula), Chiusi della Verna (08/2001, 09/2003, 04/2004, Herb. Padula sub *P. pyraster*), Lama Forest at Fornino (Checcacci et al. 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. pyraster* and *P. communis*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988 sub *P. pyraster*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *P. pyraster*), Sasso Fratino (Tiglié, 1974; Gonnelli et al., 2006). According to Padula (2008), in the *Herbarium Alvernae* some exsiccata referable to *P. magyarica* Terpò (= *P. cordata* Desv.) are present.
- Rosa agrestis* Savi - NP, South European-Mediterranean, br. Falterona presso il Castagno (U. Martelli, 5/6/1882, FI), Casentino (Baroni, 1897-1908), M. Penna (12/2004, 07/2005, Herb. Padula; Padula, 2008), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Rosa arvensis* Huds. - NP, South European-Mediterranean, br. Luoghi selvatici di Prataglia (Parlatore, 7/9/1862, FI), Casentino (Baroni, 1897-1908), S. Benedetto in Alpe, Campigna (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Rosa balsamica* Besser - NP, Eurasian, arb, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *R. obtusifolia*).
- Rosa canina* L. - NP, Eurasian, arb. Gogana in Casentino (Siemoni, 20/5/1871, FI), Foreste Casentinesi (Anonimo 1878), Badia Prataglia (Caruel, 1860-64; Marcucci, 1889), Camaldoli (Sommier, 17/10/1873, FI; Baroni, 1897-1908 sub *Rosa canina* var. *lutetiana*), La Verna (Sommier, 10/1873, FI; Baroni, 1897-1908 sub *R. canina* var. *lutetiana*; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Campigna Forest, Passo dei Mandrioli (Zangheri, 1966a sub *R. canina* var. *canina*; Zangheri, 1966b sub *R. canina* subsp. *lutetiana*), Alto Archiano (Tassini, 1976), Prato alla Penna (09/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Pratovecchio (10/2002-2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti 1998), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003 (sensu Bouleng), Montanari 2005; Gonnelli et al., 2006).
- Rosa corymbifera* Borckh. - NP, Eurasian, arb, r. Poppi (05/2001, Herb. Padula sub *Rosa canina* var. *corymbifera*), Rincine-M. Massicaia (Sabato & Valenziano, 1975). Nepi (1989) includes this species in *R. obtusifolia* (= *R. balsamica*) while Conti et al. (2005) keep it separate.
- Rosa dumalis* Bechstein - NP, European, arb, r. M. Penna della Verna (12/2004, 07/2005, Herb. Padula; Padula, 2008). Nepi (1989) includes this species in *R. glauca*.
- Rosa glauca* Pourr. - NP, South European Orophile, arb, r. La Verna (Marcucci, 1889 sub *Rosa rubrifolia*; Baroni, 1897-1908 sub *R. ferruginea*; sine coll., 14/6/1919, FI sub *R. rubrifolia*; Matteini, 1968 sub *R. rubrifolia*), Cotozzo (Baroni, 1897-1908), Chiusi della Verna (Urbani M., 27/6/1987 FIAF), M. Penna (12/2004, Herb. Padula sub *R. rubrifolia*; Padula, 2008 sub *R. rubrifolia*).
- Rosa gallica* L. - NP, European, NR. Fra Poppi e Camaldoli (Sommier, 24/6/1889, FI), Falterona, S. Godenzo Valley (Forasassi, 1/5/1953, FI).

- Rosa inodora* Fr. - NP, European, NR. Fra Bibbiena e Camaldoli (Baroni, 1897-1908 sub *Rosa graveolens*).
- Rosa micrantha* Barrer. - NP, South European-Mediterranean, br, r. M. del Faggione (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Rosa pendulina* L. - NP, South-European, D. Alto Archiano (Tassini, 1976). The only record is reported in a degree thesis, and it is doubtful; in the *Herbarium Centrale Italicum* (FI) we could not find any exsiccatum of this area.
- Rosa pouzinii* Tratt. - NP, Mediterranean Orophile, arb, r. Camaldoli (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Rosa rubiginosa* L. - NP, Eurasian, NR. Casentino (Marcucci, 1889), Badia Prataglia al M. Penna (Fiori A., 31/8/1917, FI), La Verna (Matteini, 1968). Matteini's report (1968) is based on Marcucci (1889).
- Rosa sempervirens* L. - NP, Mediterranean, bx. Camaldoli, Bibbiena (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968), PNFC wetlands (Falzea, 2006).
- Rosa tomentosa* Sm. - NP, European, arb. Campigna alle Cullacce (Zangheri, 1966a, 1966b), Passo dei Fangacci (10/2001, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Rosa villosa* L. - NP, European, arb, r. Campigna (Zangheri, 1966a, 1966b sub *R. villosa* var. *pomifera*), Sasso Fratino at Pian Tombesi (Gonnelli et al., 2006).
- Rubus caesius* L. - NP, Eurasian, bu. S. Benedetto in Alpe, Passo del Muraglione (Zangheri, 1966a), Campigna (Zangheri, 1966b), Badia Prataglia, Bibbiena (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), PNFC wetlands (Mazza, 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Padula, 1978; Tigliè, 1974; Gonnelli et al., 2006).
- Rubus canescens* DC. - NP, Mediterranean, arb. Passo dei Mandrioli (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *Rubus corylifolius*), Poppi (04/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *R. corylifolius*). Past records of *R. corylifolius* (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002) have been referred to *R. canescens* group as *R. corylifolius* is not present in Italy (Conti et al., 2005).
- Rubus hirtus* Waldst. et Kit. - NP, European, br. Foreste Casentinesi (Anonimo, 1878 sub *R. glandulosus*), La Verna (Caruel, 1860-64; Matteini, 1968 sub *Rubus fruticosus*), Passo del Muraglione, Campigna, Passo della Calla (Zangheri, 1966a), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Capria Valley (Padula, 1974 sub *R. glandulosus*), Camaldoli (07/1985, Herb. Padula; Padula et al., 1988 sub *R. glandulosus*), Marena (12/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (11/2004, 11/2005, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006; Mazza, 2006 sub gr. *hirtus*), Campigna-Lama Forests (Ferrari et al., 1979, 1982 sub *R. glandulosus*; Padula 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann sub *R. glandulosus*; Bottacci et al., 2003; Montanari 2005; Gonnelli et al., 2006).
- Rubus idaeus* L. - NP, Boreal, br, l.r.56/2000 All.A. Casentino (Caruel, 1860-64), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), M. Falco (Zangheri, 1966a, 1966b; Padula, 1988; 07/2001, Herb. Padula), Poggio Scali (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988; Padula et al., 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Massei, 1981; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Rubus incanescens* (DC.) Bertol. - NP, European, D. Rincine-M. Massicaia (Sabato & Valenziano, 1975). Doubtfully reported by Sabato & Valenziano (1975) in southern slopes of Mt. Massicaia.
- Rubus rivularis* Ph. J. Mull. & Lap. - NP, European, D. Passo del Muraglione a Poggio Puledro, (Zangheri, 1966a, 1966b). According to Pignatti (1982) and Conti et al. (2005) this species is not present in Italy.
- Rubus saxatilis* L. - H scap, Boreal, D. Alto Archiano (Tassini, 1976). This record comes from a degree thesis and is doubtful. In FI we could not find any exsiccatum.
- Rubus ulmifolius* Scott - NP, South European-Mediterranean, arb. Casentino (Marcucci, 1889 sub *Rubus discolor*; Baroni, 1897-1908 sub *R. discolor* and sub *R. fruticosus*), Alto Archiano (Tassini, 1976 sub *R. fruticosus*), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (02/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti 1998), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

- Sanguisorba minor** Scop. - H scap, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889 sub *Poterium sanguisorba*; Baroni, 1897-1908 sub *P. sanguisorba*), Passo del Muraglione (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), La Verna (Matteini, 1968 sub *P. sanguisorba*; Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998). Probably many reports must be referred to the subsp. *balearica* (Bourg.) Munoz Garm. & C. Navarro (=subsp. *muricata* (Gremli) Briq.).
- Sorbus aria** (L.) Crantz - P caesp, Eurasian, br. Foreste Casentinesi (Anonimo, 1878 sub *Pyrus aria*; Padula, 1995), Camaldoli (Caruel, 1860-64 sub *Pyrus aria*; Marcucci, 1889 sub *P. aria*), La Verna (Marcucci, 1889 sub *P. aria*; Baroni, 1897-1908 sub *P. aria*; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 06/2004, Herb. Padula), Calvano (Marcucci, 1889 sub *P. aria*; Baroni, 1897-1908 sub *P. aria*), Casentino (Fl. Ital. Ex., fasc. XIV, 1921, n° 2460, Fiori sub *P. aria*), M. Falco, Passo della Calla, (Zangheri, 1966a, 1966b), Passo dei Mandrioli (Zangheri, 1966a), Capria Valley (Padula, 1974), Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Lama Forest at Fornino (Checcacci et al., 2001), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna (10/1977 leg. Di Julio, 8/1973 leg. Conficoni Herbario Museo Siemoni), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Massei, 1981; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Sorbus aria** (L.) Crantz subsp. *cretica* (Lindl.) Holmboe - P scap, South-European, D. Rincine-M. Massicaia (Sabato & Valenziano, 1975). According to Conti et al. (2005) the presence of this subspecies is doubtful in Tuscany and Emilia-Romagna.
- Sorbus aucuparia** L. - P caesp, European, br. Foreste Casentinesi (Anonimo, 1878 sub *Pyrus aucuparia*; Padula, 1995), Stradella (Caruel, 1860-64 sub *Pyrus aucuparia*), Falterona (Marcucci, 1889 sub *P. aucuparia*; Baroni, 1897-1908 sub *P. aucuparia*; Zangheri, 1966b), La Verna (Marcucci, 1889 sub *P. aucuparia*; Baroni, 1897-1908 sub *P. aucuparia*; Matteini, 1968 sub *P. aucuparia*; Ferrarini, 1998), M. Falco, Burraia, Passo della Calla, Prato alla Penna (Zangheri, 1966a, 1966b), Camaldoli (Padula et al., 1988), Campigna (9/1978 leg. Padula Herbario Museo Siemoni), Stia (09/2001, Herb. Padula) Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Lama Forest at Fornino (Checcacci et al., 2001), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Massei, 1981; Gonnelli et al., 2006).
- Sorbus domestica** L. - P scap, South European-Mediterranean (also cultivated), bx. Foreste Casentinesi (Anonimo, 1878 sub *Pyrus sorbus*; Padula, 1995), Casentino (Marcucci, 1889 sub *Pyrus sorbus*), Pratovecchio culta. (08/1980-1998, 07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Marena (07/2002, Herb. Padula), Bibbiena (06/1978, 09/2003, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), S. Giacomo in Meleto (Zangheri 1966a, 1966b), Calanca Corniolo (8/1970 leg. Conficoni Herbario Museo Siemoni), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sorbus torminalis** (L.) Crantz - P caesp, Eurasian, br. Foreste Casentinesi (Anonimo, 1878 sub *Pyrus torminalis*; Padula, 1995), Lama Forest at Fornino (Checcacci et al., 2001), La Lama (9/1978 leg. Venturini Herbario Museo Siemoni), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), Lama Forest (Vazzano, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino, (Tigliè, 1974; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Gonnelli et al., 2006).
- Spiraea vanhouteri** (Briot.) Zab - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

## RUBIACEAE

- Asperula aristata** L. fil. subsp. *longiflora* (Waldst. & Kit.) Hayek - H scap, Mediterranean Orophile, pd, r, if, RNT. M. Falco (Zangheri, 1966a, 1966b sub *A. cynanchyca* subsp. *longiflora*; Padula, 1988 sub *A. cynanchica*; 07/2001, Herb. Padula; Contarini, 1996 sub *A. aristata*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Fosso del Barbaicaio (Gonnelli et al., 2003b sub *A. cynanchica*). All the reports have been referred to the subsp. *longiflora* as all the plants and the exsiccata we could check were referable to this subspecies, but we cannot exclude also the presence of the subsp. *oreophila* (Briq.) Hayek in the area.
- Asperula arvensis** L. - T scap, South European-Mediterranean, NR. Bibbiena (Marcucci, 1889), Giogana (Zangheri, 1966b). Zangheri's report (1966b) is based on ancient citations by Baccarini and on an exsiccatum by Siemoni dated 1871.
- Asperula laevigata** L. - H scap, Mediterranean, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Giogana (Zangheri, 1966b), Passo dei Mandrioli, Colle del Carnaio (Zangheri, 1966b, 1966a sub *Galium levigatum*).

- Past authors (before Pignatti, 1982) wrongly considered *Galium laevigatum* a synonym of *Asperula laevigata* and did not refer to entities of the group *G. aristatum/sylvaticum*.
- Asperula purpurea** (L.) Ehrend. - Ch suffr, South European Orophile, px. Pratovecchio (Caruel, 1860-64 sub *Galium purpureum*), La Verna (Caruel, 1860-64 sub *G. purpureum*; Marcucci, 1889 sub *G. purpureum*; Matteini, 1968 sub *G. purpureum*; Siemoni et al., 1989-1998 sub *G. purpureum*; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Asperula taurina** L. - G rhiz, South European Orophile, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Baroni, 1897-1908), Poggio Giogo, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna Forest (Zangheri, 1966a incl. *Asperula taurina* fo. *macrophylla*), fra Passo della Calla e Poggio Scali (Zangheri, 1966a sub *A. taurina* fo. *macrophylla*), Poggio Scali (Zangheri, 1966a, 1966b; 07/1969, Herb. Padula sub *A. taurina* var. *macrophylla*), Pian del Pero, Pentolino (Zangheri, 1966b sub *A. taurina* var. *macrophylla*), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003, Gonnelli et al., 2006), Fonte del Sodo dei Conti (Falzea, 2006).
- Cruciata glabra** (L.) Ehrend. - H scap, Eurasian, px. Capo d'Arno (Marcucci, 1889 sub *Galium vernum*), Falterona (Baroni, 1897-1908; Zangheri, 1966b), Prataglia (Baroni, 1897-1908), La Verna (Matteini, 1968 sub *G. vernum* var. *halleri*; Ferrarini, 1998 sub *G. vernum*; Giacinti, 1997-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *G. vernum*), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), San Benedetto in Alpe (Zangheri, 1966a sub *Cruciata glabra* var. *hirticaule*), M. Falco, Fonte de' Conti, Burraia (Zangheri, 1966a sub *C. glabra* var. *halleri*), Campigna (Zangheri, 1966b sub *G. vernum* var. *halleri* and sub *G. vernum* var. *hirticaule*), Valdonasso, Poggio Capannina, Ponte Cesare, Castel dell'Alpe, Poggio dello Spicchio, between Val della Meta and Fiume Archiano (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Cruciata laevipes** Opiz - H scap, Eurasian, pu. Casentino (Marcucci, 1889 sub *Galium cruciata*), La Verna (Matteini, 1968 sub *G. cruciata*; Siemoni et al., 1989-1998), Capria Valley (Padula, 1974 sub *G. cruciata*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), tra Badia Prataglia e l'Archiano (03/2001, Herb. Padula), Pratovecchio (04/2001, Herb. Padula), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (04/2004, Herb. Padula), Passo del Muraglione, Campigna Forest, Burraia, Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966b sub *G. cruciata*), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Galium anisophyllum** Vill. - H scap, European Orophile, pd, r, if. M. Falco (Zangheri, 1966a, 1966b sub *Galium austriacum*; 07/1980, 08/1985, Herb. Padula sub *G. cf. anisophyllum*; Padula, 1988 sub *G. cf. austriacum*). Past records of *G. austriacum* for the same sites must be referred to *G. anisophyllum*.
- Galium aparine** L. - T scap, Eurasian, ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Camaldoli, Poppi (08/2000, Herb. Padula), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Campigna (Zangheri, 1966a), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Galium aristatum** L. - H scap, South European Orophile, br. Camaldoli, La Verna (Baroni, 1897-1908 sub *G. sylvaticum*), Poggio Giogo, Campigna in vari luoghi (Zangheri, 1966a), Passo della Calla (Zangheri, 1966a, 1966b), Falterona (Marcucci, 1989 sub *G. sylvaticum*; Zangheri, 1966b), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003 sub *G. laevigatum*; Gonnelli et al., 2006), Capria Valley (Padula, 1974 sub *G. sylvaticum*), Alto Archiano (Tassini, 1976 sub *Galium sylvaticum* var. *aristatum*), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).
- Galium corrudifolium** Vill. - H scap, Mediterranean, px. Campigna (Zangheri, 1966a, 1966b sub *Galium lucidum* subsp. *corrudaefolium*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Galium debile** Desv. - H scap, South European-Mediterranean, pu, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Galium lucidum** All. - H scap, South European-Mediterranean, px. Casentino (Baroni, 1897-1908), Falterona, Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tos. (Giacinti Baschetti, 1998; Viciani & Gabellini, 2002), Par. Naz. vers. romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Galium mollugo** L. - H scap, South European-Mediterranean, ru. Prataglia (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), Par. Naz. Vers. Tos. (Giacinti Baschetti, 1998; Viciani & Gabellini,

2002), Sasso Fratino (Gonnelli et al., 2006 incl. *Galium mollugo* subsp. *erectum*), La Lama, Pozza del Cervo (Falzea, 2006), Passo del Muraglione, San Benedetto in Alpe (Zangheri, 1966a sub *Galium mollugo* subsp. *mollugo*), Passo dei Mandrioli (Zangheri, 1966a sub *Galium mollugo* subsp. *mollugo*; Zangheri, 1966b), Campigna (Zangheri, 1966b; Ferrari et al., 1982), Par. Naz. Vers. Romagn. (Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002). Even if many authors reported the presence of the typical subspecies, probably the most widespread entity in the Park is the subsp. *erectum* Syme (= *G. album* Mill.).

**Galium odoratum** (L.) Scop. - G rhiz, Eurasian, br. Camaldoli (Caruel, 1860-64 sub *Asperula odorata*; Marcucci, 1889 sub *A. odorata*; Padula et al., 1988), La Verna (Caruel, 1860-64 sub *A. odorata*; Marcucci, 1889 sub *A. odorata*; Matteini, 1968 sub *A. odorata*; Siemoni et al., 1989-1998; 09/2004, Herb. Padula sub *A. odorata*), Falterona (Marcucci, 1889 sub *A. odorata*; Baroni, 1897-1908 sub *A. odorata*; Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *A. odorata*), Poggio Gogo, Campigna in vari luoghi, Poggio Scali (Zangheri, 1966a), Passo dei Mandrioli, Burraia (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965 sub *Asperula odorata*; Tiglié, 1974 sub *A. odorata*; Padula, 1978 sub *A. odorata*; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Gonnelli et al., 2006), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).

**Galium palustre** L. - H scap, Eurasian, pu, r, l.r.56/2000 All.A. Bibbiena (Baroni, 1897-1908), Falterona (Zangheri, 1966b sub *Galium costrictum*), PNFC wetlands (Falzea, 2006; Mazza, 2006 sub *G. elongatum*). All the records are intended *sensu lato*, and could be referred either to the typical subspecies or to the subsp. *elongatum* (C. Presl) Lange, reported by Mazza (2006) at Traversari pond of Camaldoli.

**Galium parisiense** L. - T scap, South European-Mediterranean, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli, Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Passo del Muraglione (Zangheri, 1966a sub *Galium parisiense* subsp. *divaricatum*).

**Galium rotundifolium** L. - H scap, European Orophile, br. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Burraia (Zangheri, 1966a, 1966b), Prato Bertone (Zangheri, 1966a), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Galium tricornutum** Dandy - T scap, South European-Me-

diterranean, ru. Pratovecchio (Caruel, 1860-64 sub *Galium tricorne*), Casentino (Marcucci, 1889 sub *G. tricorne*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Galium uliginosum** L. - H scap, Eurasian, D. Rincine-M. Massicaia (Sabato & Valenziano, 1975). According to Conti et al. (2005) the presence of this species is doubtful in Tuscany and must be confirmed.

**Galium verum** L. - H scap, Eurasian, pu. Capo d'Arno (Caruel, 1860-64), Rimbocchi (Marcucci, 1889), Casentino (Baroni, 1897-1908), Falterona (Zangheri, 1966b; 07/2003, Herb. Padula), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), M. Falco (08/1985, Herb. Padula), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (07/2004, Herb. Padula), Poggio Scali (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Strada San Benedetto-Marradi, presso San Paolo in Alpe (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).

**Sherardia arvensis** L. - T scap, Cosmopol/wide distrib., px. Prataglia (Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982), Par. Naz. vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (05/2004, Herb. Padula), Passo del Muraglione, San Benedetto in Alpe (Zangheri, 1966a), Ridracoli (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Sirotti & Fariselli, 2002).

#### RUTACEAE

**Dictamnus albus** L. - Ch suff, Eurasian, D, NR. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968). All the records are based on Marcucci (1889).

#### SALICACEAE

**Populus alba** L. - P scap, Eurasian (also cultivated), bu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Foreste Casentinesi (Padula, 1995), Pratovecchio (08/1999, Herb. Padula), Stia culta. (05/1978, 10/1979, 08/1999, 04/2002, Herb. Padula), Poppi (04/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006). Cultivated and spontaneous along water courses at low altitudes.

**Populus canescens** (Aiton) Sm. - P scap, South-European, bu. Everywhere in the area (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Populus nigra** L. - P scap, Eurasian, bu. Casentino (Marcucci, 1889 sub *Populus pyramidalis*; Baroni, 1897-1908

- sub *P. pyramidalis*), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2001, 04/2002, Herb. Padula), Poppi (04/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama Forests (Padula, 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). In Mt. Massicaia also cultivated and naturalized *Populus x canadensis* Moench trees are present along water courses.
- Populus tremula** L. - P scap, Boreal, bu. Falterona (Marcucci, 1889; Baroni, 1897-1908; La Lama (Zangheri 1966a, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Foreste Casentinesi (Padula, 1995), Poppi (04/2002, 05/2004, Herb. Padula), Pratovecchio (08/2003, 11/2004, Herb. Padula), Poggio alla Lastra (7/1972 leg. Serra Herbario Museo Siemoni). Lama Forest (Padula, 1988), Sasso Fratino (Gonnelli et al., 2006).
- Salix alba** L. - P scap, Eurasian, bu. Passo del Muraglione, Campigna (Zangheri, 1966b), Poggio Palaio, Pian del Pero, S. Paolo in Alpe (Zangheri, 1966a), Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889 sub *Salix vitellina*), La Verna (Siemoni et al., 1989-1998), Stia (04-05/2000, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Foreste Casentinesi (Padula, 1995), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), M. Moriccione (Giacinti Baschetti, 1998), PNFC wetlands (Falzea, 2006; Mazza, 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). In the *Arboretum Siemoni* at Badia Prataglia also the subsp. *vitellina* (L.) Arcang. is present (Crudele et al., 2002).
- Salix apennina** Skvortsov - NP, Endemic Apennines, bu, l.r.56/2000 All.A. Campigna (Zangheri, 1966a sub *S. myrsinifolia*; Padula, 1988 sub *S. myrsinifolia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. myrsinifolia*), Foreste Casentinesi (Padula, 1995 sub *S. nigricans*), La Verna (Siemoni et al., 1989-1998), Chiusi della Verna (05/2003, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006). Past records of *S. myrsinifolia* Salisb. and *S. nigricans* Sm. have been referred to *S. apennina*, the only entity of this group certainly present in the study area (Pignatti, 1982; Conti et al., 2005).
- Salix appendiculata** Vill. - P caesp, European, D. Appennino del Casentino (Baroni, 1897-1908 sub *Salix grandifolia*), Rincine-M. Massicaia (Sabato & Valenziano, 1975). Its presence is doubtful in the area (Conti et al., 2005).
- Salix caprea** L. - P caesp, Eurasian, bu. Passo della Calla, M. Falco (Zangheri, 1966a), La Verna (Matteini, 1968 sub *Salix aurita* var. *caprea*; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi (02/2004, Herb. Padula), Capria Valley (Padula, 1974), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Loc Capanno (4/1979 leg. Padula Herbario Museo Siemoni), Campigna-Lama Forests (Padula, 1988), Camaldoli, Campigna (Padula et al., 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Massei, 1981; Padula, 1982; Bottacci et al., 2003; Montanari 2005; Gonnelli et al., 2006). Mazza (2006) reported "*Salix* gr. *aurita*" along T. Archiano near Badia Prataglia, but according to Martini & Paiero (1988) this species is not present in this part of the Apennines.
- Salix cinerea** L. - P caesp, Eurasian, bu, r. La Verna (Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Salix daphnoides** Vill - P caesp, Eurasian, D. Sasso Fratino alla frana nuova (Bottacci et al., 2003; Gonnelli et al., 2006). This species is dubious for Emilia-Romagna (Conti et al., 2005), According to Martini & Paiero (1998) this species is not present in the Tuscan-Romagna Apennines. Also Gonnelli et al. (2006) doubtfully reported it at Sasso Fratino.
- Salix eleagnos** Scop. - P caesp, South European Orophile, bu. Lungo la Vessa (Marcucci, 1889 sub *Salix incana*; Baroni, 1897-1908 sub *S. incana*), S. Benedetto in Alpe, Pian del Gradio (Zangheri, 1966a), Pian del Pero (Zangheri, 1966a, 1966b), Camaldoli (Baroni, 1897-1908 sub *S. incana*), Passo dei Mandrioli (Zangheri, 1966a), La Verna (Siemoni et al., 1989-1998), Pratovecchio (05/1979, 07/1980, 05/1994, 04/2001, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Foreste Casentinesi (Padula, 1995), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988 sub subsp. *elaegnus*), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).
- Salix fragilis** L. - P scap, Boreal, bu, r. S. Paolo in Alpe, Pian del Pero, Campigna Forest (Zangheri, 1996a, 1966b; Padula, 1988), Foreste Casentinesi (Padula, 1995).
- Salix matsudana** Koidz - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).
- Salix purpurea** L. - P scap, Eurasian, bu. Lungo la Vessa (Marcucci, 1889; Baroni, 1897-1908), Badia Prataglia, Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a),

Campigna (Zangheri, 1966b), S. Benedetto in Alpe, Poggio Martino, S. Paolo in Alpe (Zangheri, 1966a), Pratovecchio (03/1978, 04-07/1979, 05/1994, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula), Poppi (03/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Foreste Casentinesi (Padula, 1995), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Salix triandra** L. - P caesp, Boreal, bu. La Verna (Siemoni et al., 1989-1998), Campigna (Zangheri, 1966b; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Fiumicello (Giacinti Baschetti, 1998), Foreste Casentinesi (Padula, 1995).

**Salix viminalis** L. - P caesp, Boreal, D. Foreste Casentinesi (Padula, 1995). Padula (1995) reported this species in the whole area when he talks about Park willows. The presence of this taxon in the area is probable at low altitudes, but the record must be confirmed.

#### SANTALACEAE

**Thesium linophyllum** L. - G rad, South-European, NR. Burraia (Zangheri, 1966b sub *Thesium intermedium*). Zangheri (1966b) reported an ancient citation by Baccarini, but in the *Herbarium Centrale Italicum* (FI) exsiccata of the Park area are not present.

#### SAXIFRAGACEAE

**Chrysosplenium alternifolium** L. - H scap, Boreal, pu, r, if. Stradella, Capo d'Arno (Caruel, 1860-64), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), M. Falco, Burraia, Passo dei Mandrioli (Zangheri, 1966a), Stia (04/1976), Pratovecchio (05/1975, Herb. Padula), Sasso Fratino (Gonnelli et al., 2006).

**Parnassia palustris** L. - H scap, Boreal, pu, r, l.r.56/2000 All.A. M. Falco, Burraia, Passo della Calla (Zangheri, 1966a, 1966b; Sirotti, 1998), M. Falterona, M. Gabrendo, between Burraia and Sodo dei Conti (Sirotti, 1998), Bidente di Corniolo and Rabbi Valleys (Semprini & Milandri, 2001), M. Falterona (Gonnelli et al., 2002), Sasso Fratino (Gonnelli et al., 2005; Gonnelli et al., 2006).

**Philadelphus coronarius** L. - NP, Cultivated, A, NR. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Poppi (03/2004, Herb. Padula). Pignatti (1982) considered this generally cultivated plant spontaneous at La Verna, but the reports are based on Marcucci (1889) and must be confirmed.

**Ribes alpinum** L. - NP, Boreal, br, r, RNT. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Herb. Alvernae, N. Siemoni, 25/5/1995 sub *R. multiflorum*; Fer-

rari, 1998; Sirotti, 1998; 07-09-10/2004, Herb. Padula), M. Penna (Sirotti, 1998; 07/2005, Herb. Padula), M. Calvano (Sirotti, 1998). The exsiccatum of the *Herbarium Alvernae* identified as *R. multiflorum* (N. Siemoni, Crinale di fra' Lupo, 25/5/1995) is in our opinion referable to *R. alpinum*. On the contrary, another exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, sine loc., 19/6/1996) identified as *R. alpinum* is referable to *R. uva-crispa*.

**Ribes multiflorum** Kit. - NP, Mediterranean Orophile, br, r, RNT, l.r.56/2000 All.A. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Herb. Alvernae, N. Siemoni, 3/8/1995 sub *R. rubrum*; Ferrarini, 1998; Sirotti, 1998; 07/2004, Herb. Padula), Giogana (Zangheri, 1966b), M. Penna, M. Calvano (Sirotti, 1998), Campigna-Lama Forests (Padula, 1988), Foreste Casentinesi (Padula, 1995), La Lama (Gonnelli, 2007 *in verbis*, culta?). The Park sites of this species are at the northern limit of the Italian distribution. The exsiccatum of the *Herbarium Alvernae* identified as *R. rubrum* (N. Siemoni, Pianello dei Balli, 3/8/1995) is in our opinion referable to *R. multiflorum*.

**Ribes petraeum** Wulfen - NP, Boreal, br, r, RNT. La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Sirotti, 1998), Poggio Scali, La Beccia (Sirotti, 1998), La Lama (Zangheri, 1966a, 1966b), Pentolino (Zangheri, 1966b), Campigna-Lama Forests (Padula, 1988). The reports for La Verna and La Beccia, quoted by Matteini (1968) and Sirotti (1998), are at the southern Italian distribution limit of this species, but are based on Marcucci (1889) and must be confirmed. In the *Herbarium Centrale Italicum* (FI) two exsiccata collected at La Verna, previously identified as *R. petraeum* (Siemoni, 29/4/1868 and 5/1870) were attributed to *R. multiflorum*. Zangheri (1966b) and Padula (1988) reported the presence of this species in Poggio Scali and Pentolino, but this data are based on ancient citations by Baccarini, and exsiccata certainly referable to *R. petraeum* of this area are not present in the *Herbarium Centrale Italicum* (FI). The only acceptable record of *R. petraeum* is then that for La Lama, based on Zangheri (1966a, 1966b), but we could not check the Zangheri's exsiccata.

**Ribes rubrum** L. - NP, European (Naturalized?), A, D. La Verna (09/2004, Herb. Padula). As the *R. rubrum* exsiccatum of the *Herbarium Alvernae* (N. Siemoni, 3/8/1995, see note of *R. multiflorum*) was referable to *R. multiflorum*, it is not unlikely that also the exsiccatum of *Herbarium Padula* could be attributed to this similar species (but we could not check it). Moreover, according to Pignatti (1982) *R. rubrum*, even if collected in wild places, is present mostly because derived by cultivation.

**Ribes uva-crispa** L. - NP, Eurasian, pa. La Verna (Caruel, 1860-64 sub *Ribes grossularia*; Marcucci, 1889 sub *R.*



- grossularia*; Matteini, 1968 sub *R. grossularia*; Siemoni e Ricceri, 1989-1998; Herb. Alvernae, Siemoni et Ricceri, 19/6/1996 sub *R. alpinum*; Ferrarini, 1998; Sirotti, 1998 sub *R. grossularia*; 07-09/2004, Herb. Padula, Camaldoli (Baroni, 1897-1908 sub *R. grossularia*; 09/1983, 05/2004, Herb. Padula, Badia Prataglia (Baroni, 1897-1908 sub *R. grossularia*), Prato alla Penna (Zangheri, 1966a sub *R. grossularia*; Sirotti, 1998 sub *R. grossularia*), Burraia (Zangheri, 1966b sub *R. grossularia*), Foreste Casentinesi (Padula, 1995), M. Penna (Sirotti, 1998 sub *R. grossularia*; 07/2005, Herb. Padula), Passo della Calla, M. Calvano (Sirotti, 1998 sub *R. grossularia*), Poppi (06/2000, Herb. Padula), Stia (09/2001, Herb. Padula), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Gonnelli et al., 2006). The exsiccatum of the *Herbarium Alvernae* identified as *R. alpinum* (Siemoni et Ricceri, sine loc., 19/6/1996) in our opinion is referable to *R. uva-crispa*.
- Saxifraga aizoides** L. - H scap, Boreal, ro, r, l.r.2/1977, l.r.56/2000 All.C, lrEM: EN. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b; Sirotti, 1998; Gonnelli et al 2003b), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996), M. Falco, Poggio Aggio Grosso (Sirotti 1998; Gonnelli et al., 2003b), M. Penna (Gonnelli et al., 2003b). Poggio del Rovino (Gonnelli et al., 2003b), Fosso del Satanasso (Gonnelli et al., 2003b), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2003a, 2003b, 2005, 2006; Montanari, 2005).
- Saxifraga bulbifera** L. - H scap, Mediterranean, px, l.r.2/1977, l.r.56/2000 All.C. Prataglia, La Verna (Caruel, 1860-64; Marcucci, 1889), Falterona (Baroni, 1897-1908; Zangheri, 1966b), M. Falco (Zangheri, 1966a), S. Benedetto in Alpe, Poggio Giogo (Zangheri, 1966a), La Verna (Matteini, 1968), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Campigna-Lama Forests (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Saxifraga exarata** Vill. subsp. **moschata** (Wulfen) Cavill. - H scap, European Orophile, ro, r, l.r.2/1977, l.r.56/2000 All.C, lrEM: LR. M. Falco (Zangheri, 1966a sub *Saxifraga moschata*; Padula, 1988 sub *S. moschata*; 07/1980, Herb. Padula sub *S. moschata*; Padula, 1995 sub *S. moschata*; Sirotti, 1998 sub *S. moschata*), Falterona (Zangheri, 1966b sub *S. moschata* and sub *S. exarata*; Sirotti, 1998 sub *S. moschata*), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002 sub *S. moschata*), Campigna-Lama Forests (Padula, 1988 sub *S. moschata*). Zangheri (1966b) reported that *S. exarata* was collected at Falterona by Bubani, but in our opinion the citation must be intended sensu lato and must be referred to *S. exarata* subsp. *moschata*.
- Saxifraga granulata** L. - H scap, European, px, r, l.r.2/1977, l.r.56/2000 All.C, lrEM: VU. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), M. Penna, M. Falco (Sirotti, 1998; Gonnelli et al., 2003b), Camaldoli (Sirotti, 1998), at Fornino, Gonnelli et al. 2003b), Pratovecchio (04/2002, Herb. Padula), Campigna-Lama Forests (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996), Sasso Fratino (Gonnelli et al., 2006).
- Saxifraga oppositifolia** L. subsp. **oppositifolia** - Ch pulv, Boreal, ro, r, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: LR. M. Falco (Zangheri, 1966a sub *Saxifraga oppositifolia* var. *latina*; Padula, 1988 sub *S. latina*; 05/1978, 04/1981, Herb. Padula; Padula, 1995 sub *S. latina*; Contarini, 1996; Sirotti, 1998 sub *S. latina*), Falterona (Zangheri, 1966b sub *S. oppositifolia* var. *latina*; Sirotti, 1998 sub *S. latina*), Par. Naz., vers. tos. (Vicini & Gabellini, 2002 sub *S. latina*), Par. Naz., vers. romagn. (Agostini, 1992; Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Campigna-Lama Forests (Padula, 1988 sub *S. latina*). *S. latina* is included in *S. oppositifolia* subsp. *oppositifolia* (Conti et al., 2005).
- Saxifraga paniculata** Mill. - H ros, Boreal, ro, l.r.2/1977, l.r.56/2000 All.C, lrEM: LR. La Verna (Caruel, 1860-64; Marcucci, 1889 sub *Saxifraga aizoon*; Matteini, 1968 sub *S. aizoon*; Siemoni et al., 1989-1998; Ferrarini, 1998; Sirotti, 1998; 08-09/2004, Herb. Padula), Falterona (Baroni, 1897-1908; Zangheri, 1966b; Sirotti, 1998), Passo della Calla (Zangheri, 1966a sub *S. aizoon*; Sirotti 1998), M. Falco (Zangheri, 1966a sub *S. aizoon*; 08/1978; Padula, 1988, 07/1977-1980, Herb. Padula; Padula, 1995; Sirotti, 1998), Poggio Giogo (Zangheri, 1966a, 1966b sub *S. aizoon*), M. Penna, Camaldoli, Poggio Pian Tombesi, Poggio Scali, M. Calvano, Poggio Giogo, Le Crocicchie, La Scodella, Il Poggione (Sirotti, 1998), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Par. Naz., vers. romagn. (Agostini, 1992; Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Campigna-Lama Forests (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino, (Gonnelli et al., 2005; Gonnelli et al., 2006).
- Saxifraga rotundifolia** L. - H scap, South European Orophile, br, l.r.2/1977, l.r.56/2000 All.C. Capo d'Arno (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Falterona (Baroni, 1897-1908; Zangheri, 1966b), M. Falco, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a), Capria Valley (Padula, 1974), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), PNFC wetlands (Mazza, 2006; Falzea, 2006-2006), Sasso Fratino, Rincine-M.

Massicaia (Sabato & Valenziano, 1975), (Tigliè, 1974; Hofmann, 1965; Massei, 1981; Hofmann, 1991; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Saxifraga tridactylites** L. - T scap, South European-Mediterranean, ro, l.r.2/1977, l.r.56/2000 All.C. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968 sub *Saxifraga tridactylites* var. *parnassica*; Siemoni et al., 1989-1998), Chiusi della Verna (04/2004, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

#### SCOPHULARIACEAE

**Chaenorhinum minus** (L.) Lange - T scap, South European-Mediterranean, px. Camaldoli (Marcucci, 1889 sub *Linaria minor*; Baroni, 1897-1908 sub *L. minor*), Prataglia (Baroni, 1897-1908 sub *L. minor*), La Verna (Siemoni et al., 1989-1998 sub *L. minor*), Campigna (Zangheri, 1966b sub *Linaria minor*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Cymbalaria muralis** Gaerth., Mey. et Sch. - H scap, Cosmopol/wide distrib., ro. Poppi (Marcucci, 1889 sub *Linaria cymbalaria*; Baroni, 1897-1908 sub *L. cymbalaria*; 04/2000, Herb. Padula), La Verna (Siemoni et al., 1989-1998; 03/2001, Herb. Padula; Viciani, 2008 *in verbis*).

**Digitalis ferruginea** L. - H scap, Mediterranean Orophile, arb, r, if, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 07/2002, Herb. Padula, Padula, 2008), Bibbiena (Marcucci, 1889; Baroni, 1897-1908), La Lama (Zangheri, 1966a, 1966b), Vallesanta (Gonnelli, 2006 *in verbis*).

**Digitalis lutea** L. subsp. *lutea* - H scap, European, br, if. Casentino (Marcucci, 1889; Baroni, 1897-1908; Fiori, 1910 sub *Digitalis lutea x micrantha*), La Verna (Matteini, 1968; Ferrarini, 1998), Alto Archiano (Tassini, 1976), Campigna, La Lama, Passo dei Mandrioli (Zangheri, 1966a, 1966b), S. Benedetto in Alpe (Zangheri, 1966a), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *D. lutea* subsp. *lutea*), Sasso Fratino (Montanari, 2005). According to Fiori (1910), the nearby Pratomagno massif, and consequently also the study area, are the places where the northern *D. lutea* subsp. *lutea* and the southern *D. lutea* subsp. *australis* come in contact; they remain quite separate from an altitudinal point of view, as the subsp. *lutea* is generally present at higher elevations than the subsp. *australis*. Plants with intermediate characteristics are frequent and it is not always easy to refer a specimen to one or to another subspecies.

**Digitalis lutea** L. subsp. *australis* (Ten.) Arcangeli - H scap, Endemic Apennines, br, if, l.r.56/2000 All.A. Casentino (Fiori, 1910 sub *Digitalis micrantha x lutea*), Passo dei Mandrioli (Zangheri, 1966a, 1966b), Giogana (Zangheri, 1966b), Alto Archiano (Tassini, 1976 sub *D.*

*micrantha*), La Verna (Siemoni et al., 1989-1998 sub *D. micrantha*), S. Giacomo in Meleto (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *D. micrantha*), Bibbiena (07/2002, Herb. Padula), Stia (07/2005, Herb. Padula), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Hofmann, 1965 sub *D. micrantha*; Bottacci et al., 2003 sub *D. micrantha*; Montanari, 2005 sub *D. micrantha*; Gonnelli et al., 2006). This part of the Apennines is at the northern distribution limit of this taxon.

**Euphrasia liburnica** Wettst. - T scap, European, D. La Verna (Siemoni et al., 1989-1998). The esiccatum of the *Herbarium Alvernae* (Siemoni & Ricceri, Massi della Fossa, 10/9/1996) is not surely referable to this species, which is not reported in Tuscany by Conti et al. (2005).

**Euphrasia officinalis** subsp. *rostkoviana* (Hayne) Towns. - T scap, Boreal, pa. La Verna (Marcucci, 1889 sub *Euphrasia officinalis*; Baroni, 1897-1908 sub *E. officinalis*; Matteini, 1968 sub *E. officinalis*; Siemoni et al., 1989-1998 sub *E. rostkoviana*), Camaldoli (Marcucci, 1889 sub *E. officinalis*; Baroni, 1897-1908 sub *E. officinalis*), Pratovecchio (05/2004, Herb. Padula sub *E. officinalis*). All the reports of *E. officinalis* s.l. have been referred to the subsp. *rostkoviana* as it is the only surely recorded in this area, but the presence of other subspecies is not excluded.

**Euphrasia salisburgensis** Hoppe - T scap, South European Orophile, px, r. Campigna at Burraia (Zangheri, 1966a).

**Euphrasia stricta** D. Wollf. ex J. F. Lehm - T scap, European, px. Poggio Scali (Zangheri, 1966a sub *E. officinalis* subsp. *pectinata*), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Parc. Naz. vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Kicksia elatine** (L.) Dumort. - T scap, South European-Mediterranean, ru, r. Pratovecchio (Baroni, 1897-1908 sub *Linaria elatine*), S. Benedetto in Alpe (Zangheri, 1966a).

**Kicksia spuria** (L.) Dumort - T scap, Eurasian, ru, r. Isola di S.Sofia (Zangheri, 1966a).

**Kicksia commutata** (Bernh. ex Rchb.) Fritsch - H rept, Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Lathraea squamaria** L. - G rhiz, Eurasian, br, r, if, l.r.56/2000 All.A, lrEM: LR. Pratovecchio (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Ferrarini, 1998), Camaldoli (04/1976, Herb. Padula), PNFC wetlands (Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).

**Linaria purpurea** (L.) Mill. - H scap, Endemic Apennines, ro, r, l.r.56/2000 All.A. Le Crocicchie, Stia (Sirotti, 1998; Togni et al., 2010). This endemic species is rare in the

- study area, which is close to the northern distribution limit in Italy.
- Linaria vulgaris** Mill. - H scap, Eurasian, ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Lama, Poggio allo Spillo (Zangheri, 1966b), Campigna (Zangheri, 1966a), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Falterona, (08/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Melampyrum arvense** L. - T scap, Eurasian, ru, r. Pratovecchio (Caruel, 1860-64), La Verna (Caruel, 1860-64; Parlato, 7/1869, FI; Marcucci, 1889; Savelli, 17/8/1909, FI; Matteini, 1968; Ferrarini, 1998), Grogana in Casentino (Siemoni, 10-20/5/1871, FI sub *M. cristatum*), Casentino (Siemoni, 8/6/1871, FI, det. Parlato), Moggiona (Marcucci, 1889; Baroni, 1897-1908). Recently collected only in La Verna area; we checked also some ancient exsiccata by Siemoni erroneously attributed to *M. cristatum* which actually must be referred to *M. arvense*.
- Melampyrum italicum** Soó - T scap, Endemic Apennines, br, r. From Pratovecchio to La Lama (Zangheri, 1966b sub *M. nemorosum*), Par. Naz., vers. romagn. (Agostini, 1992). Zangheri's report (1966b) is based on a citation by Baccharini concerning *M. nemorosum*. According to Pignatti (1982), in the Italian Peninsula all the data referred to *M. nemorosum* must be attributed to *M. italicum*. In the *Herbarium Centrale Italicum* (FI) exsiccata of *M. nemorosum* or *M. italicum* collected in this area are not present.
- Misopates orontium** (L.) Rafin. - T scap, South European-Mediterranean, ru, r. Casentino (Marcucci, 1889 sub *Antirrhinum orontium*), Prataglia (Baroni, 1897-1908 sub *A. orontium*), Pratovecchio (10/1988, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Odontites luteus** (L.) Clairv. - T scap, South European-Mediterranean, px. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Odontites vulgaris** Moench - T scap, Eurasian, px. Casentino (Marcucci, 1889), Prataglia (Baroni, 1897-1908 sub *Odontites serotinus*), Campigna (Ferrari et al., 1982 sub *O. rubra*), La Verna (Siemoni et al., 1989-1998 sub *O. serotinus*; Ferrarini, 1998 sub *O. vernus* subsp. *serotinus*; 08/2002, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *O. rubra*).
- Parentucellia latifolia** (L.) Caruel - T scap, South European-Mediterranean, px. Falterona (Marcucci, 1889 sub *Bartsia latifolia*; Baroni, 1897-1908 sub *B. latifolia*; Zangheri, 1966b sub *B. latifolia*), La Verna (Marcucci, 1889 sub *B. latifolia*; Baroni, 1897-1908 sub *B. latifolia*; Matteini, 1968 sub *B. latifolia*), Passo del Muraglione, S. Piero in Bagno (Zangheri, 1966a, 1966b sub *B. latifolia*).
- Rhinanthus alectorolophus** (Scop.) Pollich - T scap, European, px. M. Falco, Passo della Calla, Poggio Gogo, Campigna (Zangheri, 1966a), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Rhinanthus minor** L. - T scap, Endemic Apennines, px. Prataglia (Caruel, 1860-64 sub *Rhinanthus crista galli*; Marcucci, 1889 sub *R. crista galli*), La Verna (Caruel, 1860-64 sub *R. crista galli*; Marcucci, 1889 sub *R. crista galli*; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), M. Falco (Zangheri, 1966a, 1966b sub *R. serotinus*; Padula, 1988), San Benedetto in Alpe (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982 sub *R. personatus*), Passo della Calla (Zangheri, 1966b sub *R. serotinus*), Par. Naz. vers. romagn. (Agostini, 1992 sub *R. personatus*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Falterona (07/2003, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Scrophularia auriculata** Loeffl. - H scap, European, pu. Zone umide PNFC, Along Rabbi, Archiano and Gorgone water course at low altitudes (Mazza, 2006). This plant was reported only in a recent degree thesis, but some exsiccata were collected and checked by prof. M. Padula.
- Scrophularia canina** L. - H scap, South European-Mediterranean, px. Pratovecchio (Baroni, 1897-1908), Alto Archiano (Tassini, 1976), La Lama (Zangheri, 1966b), Campigna (Zangheri, 1966a), La Verna (Siemoni et al., 1989-1998; 07/2004, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Scrophularia nodosa** L. - H scap, Boreal, br. Camaldoli (07/1993, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Calvano (06/2004, Herb. Padula), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), La Lama (Zangheri, 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).
- Scrophularia scopolii** Hoppe - H scap, European Orophile, br. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Sodo de' Conti, Passo della Calla (Zangheri, 1966a, 1966b), Grogana di Poggio Scali (07/1969, Herb. Padula), Alto Archiano (Tassini, 1976), Camaldoli (08/2000, Herb. Padula), Pratovecchio (04/2001, Herb. Padula), Campigna-La-ma Forests (Ferrari et al., 1979; 1982; Padula, 1988; Padula et al., 1988), Poggio Sodo de' Conti (06/03, Herb. Padula), PNFC wetlands (Mazza, 2006), Sasso Fratino

- (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Scrophularia vernalis** L. - H scap, European, br, r, if, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998).
- Tozzia alpina** L. - H scap, European Orophile, pu, r, if, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: CR, lrT: VU. Falterona (Marcucci, 1889; Sirotti, 1998; Gonnelli et al., 2003), Casentino (Fiori, 1927, Fl. Ital. Ex., fasc. XVI, n. 2936), M. Falco (Zangheri, 1966a; Sirotti 1998), Passo dei Mandrioli (Zangheri, 1966a, 1966b; Gonnelli et al., 2003), Burraia, Poggio Scali (Zangheri, 1966b; Sirotti, 1998; Gonnelli et al., 2003b), Poggio allo Spillo, Cancellino, Fangacci, M. Gabrendo, tra Burraia e Sodo dei Conti (Sirotti, 1998), Par. Naz. vers. romagn. (Agostini, 1992; Padula, 1995; Alessandrini & Bonafede, 1996), Fosso Abetio, Fosso del Bicchiere, zona del Barbicaio (Padula, 1998, Gonnelli et al., 2003b), Fosso del Satanasso, (Gonnelli et al 2003b). According to Gonnelli et al. (2003b) all the recent reports of this rare species are located in the Romagna territory, as the citations concerning the Tuscan side are ancient and not confirmed. The Park sites are at the southern distribution limit of the species in Italy.
- Verbascum blattaria** L. - H bienn, Eurasian, ru. Casentino (Marcucci, 1889), Prataglia, Bibbiena (Baroni, 1897-1908), Pratovecchio (08/1997, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Verbascum lychnitis** L. - H bienn, European, ru. Passo dei Mandrioli (Zangheri, 1966a), S. Benedetto in Alpe, Campigna, Prato Bertone, Passo dei Mandrioli (Zangheri, 1966a, 1966b), La Verna (Siemoni et al., 1989-1998), Stia (07/1999, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Verbascum nigrum** L. - H scap, Eurasian, NR. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968). Also the report by Matteini (1968) is based on ancient citations.
- Verbascum pulverulentum** Vill. - H bienn, European, NR. Prataglia (Baroni, 1897-1908).
- Verbascum thapsus** L. - H bienn, European, arb. Casentino (Marcucci, 1889), Campigna, Passo del Muraglione, Bagno di Romagna (Zangheri, 1966b), Prataglia (Baroni, 1897-1908), La Verna (Matteini, 1968), Poppi, Bibbiena (Camangi et al., 2003), Stia (07/2005, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica acinifolia** L. - T scap, European, ru, r. From Pratovecchio to Giogana and LaLama (Siemoni, aprile-maggio 1871, FI), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica anagallis-aquatica** L. - H scap, Cosmopol/wide distrib., pu. Falterona (Marcucci, 1889), Casentino (Baroni, 1897-1908), Giogana (Zangheri, 1966b), Passo del Muraglione (Zangheri, 1966a, 1966b).
- Veronica arvensis** L. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Burraia (Zangheri, 1966a), La Verna (Siemoni et al., 1989-1998), Poggio Scali (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica beccabunga** L. - H rept, Eurasian, pu. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), M. Falco (Zangheri, 1966a), La Lama (Zangheri, 1966b), Metaletto (11/1999, Herb. Padula), Camaldoli (08-10/2000, Herb. Padula), Chiusi della Verna (04/2004, Herb. Padula), Bibbiena (05/2005, Herb. Padula), PNFC wetlands (Mazza, 2006; Falzea, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica chamaedrys** L. - H scap, Boreal, px. Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Burraia (Zangheri, 1966a, 1966b), M. Falco, Passo dei Mandrioli (Zangheri, 1966a), M. Falterona (Zangheri, 1966b), S. Benedetto in Alpe (Zangheri, 1966a), Giogana di Poggio Scali (07/1969, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Padula, 1988; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica cymbalaria** Bodard - T scap, South European-Mediterranean, ro, r. Campigna (Zangheri, 1966b), Close to Corniolo (A. Contardo, 10/5/1968, FI). The report by Zangheri (1966b) is based on ancient citations by Baccharini.
- Veronica hederifolia** L. - T scap, Eurasian, ru. At low altitudes in the area (Zangheri, 1966b), Selvapiana (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Veronica montana** L. - H rept, European, br. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Poggio Scali (Zangheri, 1966b), Campigna, Pian del Pero (Zangheri, 1966a, 1966b), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino, (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Veronica officinalis** L. - H rept, Eurasian, bru. Camaldoli (Baroni, 1897-1908), Prataglia (Baroni, 1897-1908 sub *Veronica tournefortii*), M. Falco (Zangheri, 1966a), Giogana (Zangheri, 1966b), Campigna (Zangheri, 1966a), S. Giacomo in Meleto (Zangheri, 1966a), La Verna (Mattei-

ni, 1968; Siemoni et al., 1989-1998), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Montanari 2005; Gonnelli et al., 2006).

**Veronica persica** Poir. - T scap, Cosmopol/wide distrib., ru. La Verna (Siemoni et al., 1989-1998), In tutta la fascia, Campigna (Zangheri, 1966b), Pratovecchio (03/1998-2001, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006).

**Veronica polita** Fries - T scap, Cosmopol/wide distrib., D. At low altitudes in the area (Zangheri, 1966b), La Verna (Herb. Alvernae, Siemoni et Ricceri, sine dat., sine loc.). The exsiccatum of the *Herbarium Alvernae* is doubtful and probably referable to *V. persica*.

**Veronica serpyllifolia** L. - H rept, Cosmopol/wide distrib., px. Casentino (Caruel, 1860-64; Marcucci, 1889), M. Falco (Zangheri, 1966a), Falterona (Zangheri, 1966b), La Verna (Matteini, 1968), Pratovecchio (04/2002, 04/2004, Herb. Padula), Bibbiena (05/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *V. serpyllifolia* subsp. *humifusa*).

**Veronica teucrium** L. - H scap, European, D. Close to Corniolo (A. Contardo, 10/5/1968, FI), Alto Archiano (Tassinini, 1976). Contardo's specimen is doubtful and probably must be referred to a species of *V. teucrium* group but not to *V. teucrium* s.s.; Tassinini's report comes from a degree thesis and must be confirmed.

**Veronica urticifolia** Jacq. - H scap, European, br. Casentino (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908 sub *Veronica latifolia*), Sodo de' Conti (Zangheri, 1966b), Sasso Fratino, (Hofmann, 1965 sub *V. latifolia*; Gonnelli et al., 2006).

## SIMAROUBACEAE

**Ailanthus altissima** (Mill.) Swing. - P scap, Naturalized, A. Moggiona (06/1982, Herb. Padula), Pratovecchio (07/1982, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975). Important alien species which tends to be invasive in disturbed areas at low altitudes.

## SOLANACEAE

**Atropa bella-donna** L. - H scap, Mediterranean Orophile, br, l.r.2/1977, l.r.56/2000 All.A. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; (Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Baroni, 1897-1908), M. Falco, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Poggio Scali (Zangheri, 1966b), Pian del Pero (Zangheri, 1966a), Chiusi della Verna (08/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Hofmann, 1965; Massei,

1981; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Datura stramonium** L. - T scap, Naturalized, A. Bibbiena (Marcucci, 1889; Baroni, 1897-1908; Bibbiena (07/1999, Herb. Padula), Camaldoli (10/2003, Herb. Padula).

**Hyoscyamus niger** L. - T scap, Eurasian, ru, r. Falterona (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966b), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Ferrarini, 1998).

**Physalis alkekengi** L. - H scap, Eurasian, bu, r. Pratovecchio (Baroni, 1897-1908), La Lama (Zangheri, 1966a, 1966b), Sasso Fratino (Gonnelli et al., 2006).

**Solanum dulcamara** L. - NP, Eurasian, bu. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968), Camaldoli (Baroni, 1897-1908; 10/2000, 08/2004, Herb. Padula), Prataglia (Baroni, 1897-1908), Passo della Calla, Falterona (Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006; Falzea, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

## STAPHYLEACEAE

**Staphylea pinnata** L. - P caesp, South-European, br, r, if, RNT, l.r.2/1977, l.r.56/2000 All.A, l.rEM: EN, l.rT: LR. Foreste Casentinesi (Anonimo 1878; Padula, 1995), Casentino (Baroni, 1897-1908), M. Penna, Camaldoli (Sirotti 1998), Campigna (Zangheri, 1966b; Ferrari et al., 1982), Pian del Pero (Zangheri, 1966b), Lama Forest (Zangheri, 1966a, 1966b; Padula, 1988), Sasso Fratino (Massei, 1981; Gonnelli et al., 2006), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).

## THYMELAEACEAE

**Daphne alpina** L. - Ch frut, European Orophile, ro, r, if, l.r.2/1977, l.r.56/2000 All.A, l.rEM: CR, l.rT: CR. La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; Sirotti, 1998; Pichi Sermolli, 10/06/1937 (FI) sub *D. oleoides* var. *glandulosa*; Tosi, 7/06/1960 (FI), Urbani et Luccioli, 27/06/1987 (FI), Gonnelli, 2007 *in verbis*), M. Penna (Sirotti, 1998).

**Daphne laureola** L. - P caesp, South European-Mediterranean, br, l.r.2/1977. Foreste Casentinesi (Anonimo, 1878), Camaldoli (Marcucci, 1889; Baroni, 1897-1908; 03/2001, Herb. Padula), Passo dei Mandrioli (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 08/2002, Herb. Padula), Alto Archiano (Tassinini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (01/2002, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano 1975), Passo dei Mandrioli, Monte Gemelli, S. Benedetto in Alpe, S. Giacomo in Meleto

(Zangheri, 1966a), Passo del Muraglione, Campigna, La Lama (Zangheri, 1966a, 1966b), Campigna-Lama Forests (Ferrari et al., 1979, 1982; Padula, 1988), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Padula, 1978; Massei 1981; Norcini & Zoccola, 2005; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Daphne mezereum** L. - NP, Boreal, br, l.r.2/1977, IrEM: VU. Foreste Casentinesi (Anonimo 1878; Padula, 1995), Stradella (Caruel, 1860-64), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), fra Falterona e Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966b; Padula, 1988; Sirotti 1998), Poggio Giogo, Pian delle Fontanelle, Passo della Calla, Poggio Scali (Zangheri, 1966a), Passo del Muraglione, Campigna, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Campigna-Lama (Ferrari et al., 1979, 1982; Padula, 1988; Padula et al., 1988), M. Falterona (Sirotti, 1998, Gonnelli et al., 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Stia (09/2001, 07/2005, Herb. Padula), Rincine-M. Massicaia, (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006), Par. Naz., vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tiglié, 1974; Bottacci et al., 2003; Gonnelli et al., 2005; Montanari, 2005; Gonnelli et al., 2006).

**Thymelaea passerina** (L.) Coss. & Germ. - T scap, South European-Mediterranean, ru, r. At low altitudes in the area (Zangheri, 1966b), Rincine-M. Massicaia, (Sabato & Valenziano, 1975).

#### TILIACEAE

**Tilia cordata** Mill. - P scap, European, br, l.r.56/2000 All.A. Foreste Casentinesi (Anonimo, 1878 sub *Tilia parvifolia*; Padula, 1995; Semprini & Milandri, 2001), Camaldoli (Marcucci, 1889 sub *T. microphylla*; Baroni, 1897-1908 sub *T. microphylla*; 09/1978, Herb. Padula), La Verna (Marcucci, 1889 sub *T. microphylla*; Baroni, 1897-1908 sub *T. microphylla*; Matteini, 1968 sub *T. europaea* var. *cordata*; Siemoni et al., 1989-1998; 07/2004, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Pratovecchio (06/2003, Herb. Padula), Badia Prataglia (08/2003, Herb. Padula), Metaletto (10/2003, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Lama Forest (Vazzano, 2006), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).

**Tilia platyphyllos** Scop. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878 sub *Tilia grandifolia*; Padula, 1995), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini,

1968 sub *T. europaea* var. *platyphylla*; Siemoni et al., 1989-1998), Alto Archiano (Tassini, 1976 sub *T. europaea*), Campigna Forest (Zangheri, 1966a, 1966b), La Lama (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (06/2003, Herb. Padula), Lama Forest at Fornino (Checcacci et al., 2001), La Lama (6/1978 leg. Milanese Herbario Museo Siemoni), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), PNFC wetlands (Falzea, 2006), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Lama Forest (Vazzano, 2006), Sasso Fratino (Hofmann, 1965; Tiglié, 1974; Massei, 1981; Padula, 1982; Gonnelli et al., 2006), Par. Naz., vers. romagn. (Semprini & Milandri, 2001).

**Tilia tomentosa** Moench - P scap, Cultivated, A. *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Tilia x vulgaris** Hayne - P scap, European, br, r. Foreste Casentinesi (Anonimo, 1878), Campigna Forest, La Lama, Passo della Calla, Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *Tilia vulgaris*), Badia Prataglia (08/1999 sub *T. vulgaris*), La Verna (07/2004 sub *T. vulgaris*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Sasso Fratino (Gonnelli et al., 2006).

#### ULMACEAE

**Celtis australis** L. subsp. *australis* - P scap, Cultivated, A. Foreste Casentinesi (Anonimo, 1878), Loc. Pezza Chiusi della Verna (Zoccola, 2006 *in verbis*), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Ridracoli (9/1972 Leg. Padula Herbario Museo Siemoni).

**Ulmus glabra** Huds. - P scap, European, br. Foreste Casentinesi (Anonimo, 1878 sub *Ulmus latifolia*; Padula, 1995), Campigna (Zangheri, 1966a sub *U. scabra*, Zangheri, 1966b sub *U. montana*), La Verna (Siemoni et al., 1989-1998), Chiusi della Verna, Camaldoli (04/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Fonte Solforosa (6/1979 leg. Sartini Herbario Museo Siemoni), Le Grigiole (6/1975 leg. Padula Herbario Museo Siemoni), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula 1988), Lama Forest (Vazzano, 2006), Sasso Fratino (Hofmann, 1965 sub *U. montana*; Tiglié, 1974; Padula, 1978; Massei, 1981; Norcini & Zoccola, 1995; Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Ulmus laevis** Pallas - P caesp, Cultivated, A. Bibbiena (04/2002, Herb. Padula), Pratovecchio (04/1994, 04/2001, 04-10/2002, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

**Ulmus minor** Mill. - P caesp, European, arb. Foreste Casentinesi (Anonimo, 1878 sub *Ulmus campestris*; Padula, 1995), Casentino (Marcucci, 1889 sub *U. campestris*; 10/2003, Herb. Padula), La Verna (Matteini, 1968 sub *U. campestris*; Siemoni et al., 1989-1998; 07/2004, Herb. Padula), Pratovecchio (04-07-12/2001, 04-10/2002, Herb.

Padula), Poppi (04/2000-2001, 02-04/2002, Herb. Padula; Camangi et al., 2003), Bibbiena (Camangi et al., 2003), Rincine-M. Massicaia (Sabato & Valenziano, 1975), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002), Campigna-Lama Forests (Padula, 1988), Sasso Fratino (Tiglié, 1974; Gonnelli et al., 2006).

*Ulmus pumila* L. - P scap, Cultivated, A. Pratovecchio (08/2003, Herb. Padula), *Arboretum Siemoni* Badia Prataglia (Crudele et al., 2002).

#### URTICACEAE

*Parietaria judaica* L. - H scap, Mediterranean, ro. Poggio Scali, frequent in the area (Zangheri, 1966b sub *Parietaria officinalis* subsp. *judaica*), Pratovecchio (09/1982, Herb. Padula sub *P. diffusa*).

*Parietaria officinalis* L. - H scap, European, ru. Casentino (Marcucci, 1889), La Verna (Matteini, 1968), Pratovecchio (09/1982, Herb. Padula), Everywhere in the area (Zangheri, 1966b), S. Benedetto in Alpe, Campigna, La Lama (Zangheri, 1966a sub *P. erecta*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Norcini & Zoccola, 1995; Gonnelli et al., 2006).

*Urtica dioica* L. - H scap, Cosmopol/wide distrib., ru. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), M. Falco, Burraia, Passo dei Mandrioli (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Giogana di Poggio Scali (07/1969, Herb. Padula), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (07/2001, 05/2002, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Campigna-Lama Forests (Padula, 1988), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino, (Hofmann, 1965; Massei, 1981; Norcini & Zoccola, 2005; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

*Urtica membranacea* Poir. - H scap, Mediterranean, NR. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968 sub *Urtica caudata*). All the data are ancient as also the report by Matteini (1968) is based on Marcucci. Probably more frequent at low altitudes than it results from literature.

*Urtica urens* L. - T scap, Cosmopol/wide distrib., NR. La Verna (Marcucci, 1889; Baroni, 1897-1908, Matteini, 1968). All the data are ancient as also the report by Matteini (1968) is based on Marcucci. Probably more frequent at low altitudes than it results from literature.

#### VALERIANACEAE

*Centranthus ruber* (L.) Dc. subsp. *ruber* - Ch suff, Mediterranean, ro, r. Bibbiena (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975). Sabato & Valenziano (1975) reported that this species was collected in ap-

parently wild rocky sites at 700 m a.s.l., but it is not improbable (Pignatti, 1982) that also these plants could derive from cultivated and naturalized ones.

*Valerianella coronata* (L.) DC. - T scap, South European-Mediterranean, NR. Casentino (Caruel, 1860-64; Marcucci, 1889), Mandrioli (Baroni, 1897-1908), La Verna (Fiori, 1925), Giogana (Zangheri, 1966b). All the data must be confirmed as also the report by Zangheri (1966b) is based on ancient citations by Siemoni.

*Valeriana officinalis* L. - H scap, European, pu, l.r.56/2000 All.A. La Verna (Siemoni et al., 1989-1998), S. Benedetto in Alpe, Campigna (Zangheri, 1966a, 1966b), M. Calvano (Viciani, 2008 *in verbis*).

*Valeriana tripteris* L. - H scap, South European Orophile, br. Poggio Scali (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966a), La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968 sub *Valeriana montana* var. *tripteris*; Siemoni et al., 1989-1998; Ferrarini, 1998), Passo della Calla, Passo dei Fangacci, Passo dei Mandrioli (Zangheri, 1966a), Falterona (Zangheri, 1966b), M. Falco (07/1980, Herb. Padula), Campigna-Lama Forests (Ferrari et al., 1979; 1982; Padula, 1988), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Tiglié, 1974; Massei, 1981; Bottacci et al., 2003; Gonnelli et al., 2005; Montanari, 2005; Gonnelli et al., 2006).

*Valerianella dentata* (L.) Pollich - T scap, South European-Mediterranean, ru. Casentino (Caruel, 1860-64), La Verna (Marcucci, 1889 sub *Valerianella morisoni*; Baroni, 1897-1908; Matteini, 1968), S. Benedetto in Alpe, Campigna (Zangheri, 1966a, 1966b) Isola di S. Sofia (Zangheri, 1966a).

*Valerianella eriocarpa* Desv. - T scap, Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

*Valerianella locusta* (L.) Laterrade - T scap, South European-Mediterranean, ru.. La Verna (Caruel, 1860-64; Marcucci, 1889 sub *Valerianella olitoria*; Matteini, 1968 sub *V. olitoria*; Siemoni et al., 1989-1998), Pratovecchio (04/1999, Herb. Padula), S. Benedetto in Alpe, Campigna (Zangheri, 1966a), Campigna (Zangheri, 1966b sub *V. olitoria*).

*Valerianella microcarpa* Loisel. - T scap, Mediterranean, ru, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

*Valerianella rimosa* Bast. - T scap, South European-Mediterranean, ru, r. Prataglia (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

#### VERBENACEAE

*Verbena officinalis* L. - H scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Ferrari et al., 1982), Pratovecchio (09/1997, Herb. Padula), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna

(08/202, Herb. Padula), Poppi, Bibbiena (Camangi et al., 2003), Campigna (Zangheri, 1966b), PNFC wetlands (Mazza, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sasso Fratino (Gonnelli et al., 2006).

#### VIOLACEAE

**Viola alba** Besser subsp. **dehnhardtii** (Ten.) Becker - H ros, South European-Mediterranean, bx. Campigna (Zangheri, 1966b sub *Viola hirta* L. var. *dehnhardtii*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *V. alba*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *V. alba*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2006). All the records of *V. alba* (Sabato & Valenziano, 1975; Sirotti & Fariselli, 2002; Falzea, 2006) have been referred to the subsp. *dehnhardtii* as it is the only surely present in this area (Conti et al., 2005).

**Viola arvensis** Murray - T scap, Eurasian, ru. Everywhere in the area (Zangheri, 1966b sub *Viola tricolor* var. *arvensis*), La Verna (Matteini, 1968 sub *Viola tricolor* var. *arvensis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Viola canina** L. - H scap, Eurasian, pa. Camaldoli (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Ferrarini, 1998), Falterona (Marcucci, 1889), Campigna (Zangheri, 1966b), M. Falco (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Mazza, 2006). All past records of *V. canina* must be considered sensu lato, as in the past floras (e.g. Fiori, 1923-29) many taxa currently considered good species (e.g., *V. reichenbachiana*, *V. riviniana*) were considered varieties of *V. canina*. Probably *V. canina* s.s. is rare in the study area.

**Viola eugeniae** Parl. subsp. **eugeniae** - H scap, Endemic Apennines, pa, l.r.56/2000 All.A, C. Falterona (Marcucci, 1889 sub *Viola calcarata*; Baroni, 1897-1908; Zangheri, 1966a, 1966b; Sirotti, 1998), Burraia (Zangheri, 1966a sub *V. calcarata* subsp. *eugeniae*; Zangheri, 1966b; Sirotti, 1998), M. Falco (Zangheri, 1966a sub *V. calcarata* subsp. *eugeniae*; Zangheri, 1966b; Padula, 1988; 07/1980, 05/1986, 06/1989, Herb. Padula; Contarini, 1996; Semprini & Milandri, 2001), M. Gabrendo, Poggio Sodo dei Conti (Sirotti, 1998), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002).

**Viola hirta** L. - H ros, European, D. Campigna (Zangheri, 1966b; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998). Zangheri's report (1966b) for Campigna is based on ancient citations by Baccarini. All the records must be verified as in the past some common entities (e.g.:

*V. dehnhardtii*, *V. odorata*) were considered varieties of *V. hirta*.

**Viola odorata** L. - H ros, South European-Mediterranean, br. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966b sub *Viola hirta* var. *odorata*), La Verna (Matteini, 1968 sub *Viola hirta* var. *odorata*; Siemoni et al., 1989-1998; Ferrarini, 1998; 03/2001, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (04/2000, Herb. Padula), Bibbiena (03/2001, Herb. Padula), Stia (03/2003, Herb. Padula).

**Viola reichenbachiana** Jord. ex Boreau - H scap, Boreal, br. M. Falco, Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a sub *Viola silvestris*), Campigna (Zangheri, 1966a, 1966b sub *Viola silvestris*) La Verna (Matteini, 1968 sub *V. canina* var. *silvestris*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *V. canina* var. *silvestris*), Campigna-Lama (Ferrari et al., 1979; 1982), Camaldoli, Campigna (Padula et al., 1988), PNFC eroded slopes (Giacinti Baschetti, 1998), Camaldoli (05/1976, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Stia (04/2002, Herb. Padula), Bibbiena (04/2005, Herb. Padula), PNFC wetlands (Mazza, 2006), Sasso Fratino, (Hofmann, 1965 sub *V. silvestris*; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).

**Viola riviniana** Rchb. - H scap, European, br. Fra Falterona e Camaldoli (Baroni, 1897-1908 sub *Viola silvestris* var. *riviniana*), Falterona (Zangheri, 1966b sub *V. hirta* var. *riviniana*), Alto Archiano (Tassini, 1976 sub *V. silvestris* var. *riviniana*), La Verna (Siemoni et al., 1989-1998), Sasso Fratino (Gonnelli et al., 2006).

**Viola tricolor** L. subsp. **saxatilis** (A. F. W. Schmidt) Jan - H bienn, Eurasian, pu. Campigna (Zangheri, 1966a sub *Viola tricolor* subsp. *subalpina*; 1966b), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Pratovecchio (11/2002, Herb. Padula sub *Viola tricolor* subsp. *subalpina*).

**Viola tricolor** L. subsp. **tricolor** - T scap, Eurasian, pu. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Caruel, 1860-64; Marcucci, 1889; Siemoni et al., 1989-1998; Ferrarini, 1998), Camaldoli (Marcucci, 1889), Burraia (Zangheri, 1966a), Pratovecchio (06/2002, Herb. Padula).

#### VITACEAE

**Vitis vinifera** L. - P lian, Cultivated, A. Casentino culta. (Marcucci, 1889), Poppi (Camangi et al., 2003; 05/2004, Herb. Padula), Bibbiena (Camangi et al., 2003), Pratovecchio-Stia culta. (06/2003, Herb. Padula).

#### MAGNOLIOPHYTA MONOCOTYLEDONES

##### ALISMATACEAE

**Alisma plantago-aquatica** L. - I rad, Cosmopol/wide di-



strib., st, r. Casentino (Marcucci, 1889; Baroni, 1897-1908 sub *Alisma plantago*), La Verna (Siemoni et al., 1989-1998), Camaldoli (08/2000-2004, Herb. Padula), PNFC wetlands (Falzea, 2006; Mazza, 2006).

## AMARYLLIDACEAE

**Galanthus nivalis** L. - G bulb, European, br, l.r.2/1977, l.r.56/2000 All.A,C1, lrEM: VU. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Passo della Calla, Poggio Scali, Campigna (Zangheri, 1966a, 1966b), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Padula, 1988; Padula et al., 1988), Humid woodlands close to the crests (Alessandrini & Bonafede, 1996), Pratovecchio (02/2002, Herb. Padula), Badia Prataglia (04/2003, Herb. Padula), Sasso Fratino (Hofmann 1965; Gonnelli et al., 2006).

**Leucojum vernum** L. - G bulb, South-European, br, r, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: VU. Par. Naz. vers. romagn. (Agostini, 1992), Presso La Calla (Alessandrini & Bonafede, 1996), Closio to San Benedetto in Alpe (Alessandrini & Bonafede, 1996; Sirotti, 1998), Tre Faggi Pass, M. Mazzucca, M. Rozzo, Renuzzoli, Colle di Tramazzo (Sirotti, 1998).

## ARACEAE

**Arisarum proboscideum** (L.) Savi - G rhiz, Endemic Apennines, br, if, l.r.56/2000 All.A. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), fra Bibbiena e La Verna (Baroni, 1897-1908), Campigna Forest (Zangheri, 1966b; Ferrarini et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Lama (Padula, 1988; Padula, 1995), Par. Naz., vers. romagn. (Agostini, 1992; Semprini & Milandri, 2001; Sirotti & Fariselli, 2002).), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Gonnelli et al., 2006).

**Arum italicum** Mill. - G rhiz, Mediterranean, ru. Casentino (Marcucci, 1889 sub *Arisarum italicum*; Baroni, 1897-1908), Camaldoli (Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Poppi, Bibbiena (Camangi et al., 2003).

**Arum maculatum** L. - G rhiz, European, br. La Verna (Caruel, 1860-64 sub *Arisarum maculatum*; Marcucci, 1889 sub *A. maculatum*; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889 sub *A. maculatum*; Baroni, 1897 sub *A. aculatum*), M. Falco (Zangheri, 1966a), Poggio Giogo, Campigna, Prato Bertone, Pian delle Fontanelle (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrarini et al., 1979, 1982; Par. Naz., vers. romagn. (Sirotti & Fariselli,

2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006; Falzea, 2006).

## ARECACEAE

**Trachycarpus fortunei** (Hook.) H. Wendl. - P scap, Cultivated, A, Arboretum Siemoni Badia Prataglia (Crudele et al., 2002).

## CYPERACEAE

**Carex brizoides** L. - G rhiz, European, D. Passo Porcareccio (Paoli & Ciuffi Cellai, 1973). Very rare species in Tuscany, anciently reported in Siena Province, in the sixties of last century in the Alpe di Catenia (exsiccatum in H.C.I., leg. et det. M. Raffaelli, 1967, FI) and in the Park area near Passo Porcareccio, in small marshes, by Paoli & Ciuffi Cellai (1973), this environment was in the past modified, and so far the species has not been recorded. We checked all Tuscan herbarium exsiccata, and we noted that some important identification characteristics (like the presence of the rhizome) were lacking in all specimens, so in our opinion all Tuscan data must be confirmed.

**Carex caryophyllea** La Tourr. - H scap, Eurasian, px. Falterona, Prataglia (Caruel, 1860-64 sub *Carex praecox*; Marcucci, 1889 sub *C. praecox*), La Verna (Marcucci, 1889 sub *C. praecox*; Baroni, 1897-1908 sub *C. verna*; Matteini, 1968 sub *C. brizoides* var. *praecox*), M. Falco (Corradi et Bavazzano, 23/5/1952, FI; Zangheri, 1966a, 1966b sub *C. verna*), Burraia (Zangheri, 1966a), Falterona (Forasassi, 30/4/1953, FI; Zangheri, 1966b sub *C. verna*), Campigna (Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). At La Verna Matteini (1968) reported *C. brizoides* var. *praecox* (Schreb.)=*C. praecox* Schreb., but this datum is based on Marcucci (1889), who conversely reported *C. praecox* Jacq.=*C. caryophyllea*.

**Carex digitata** L. - H caesp, Eurasian, br. Sasso Fratino (Hofmann 1965), Campigna-La Lama (Ferrarini et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Carex distachya** Desf. - H caesp, Mediterranean, pd, r. Sasso Fratino (Gonnelli et al., 2006).

**Carex distans** L. - H caesp, South European-Mediterranean, pu. Camaldoli, Giampereta (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998).

**Carex divulsa** Stokes - H caesp, South European-Mediterranean, br. Camaldoli (Marcucci, 1889; Baroni, 1897-1908 sub *Carex muricata* subsp. *divulsa*), M. Falco (Zangheri, 1966a, 1966b), Poggio Scali (Zangheri, 1966a),

- Falterona, Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Carex echinata** Murray - H caesp, Boreal, pu, r, l.r.56/2000 All.A, lrT: LR. Capo d' Arno (Caruel, 1860-64 sub *Carex stellulata*; Marcucci, 1889; Zangheri, 1966b sub *C. stellulata*), Campigna (Zangheri, 1966b sub *C. stellulata*), Par. Naz., vers. tos. (Viciani & Gabellini sub *C. stellulata*).
- Carex flacca** Schreb. - G rhiz, European, px. Falterona (Marcucci, 1889 sub *Carex glauca*), M. Faggione (Marcucci, 1889 sub *C. glauca*; Baroni, 1897-1908), Burraia (Zangheri, 1966a), Campigna (Zangheri, 1966b sub *C. diversicolor*; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998 sub *C. glauca*; 08/2004, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Carex frigida** All. - G rhiz, South European Orophile, pu, r. Poggio Giogo between Passo del Muraglione and M. Falco, Campigna (Zangheri, 1966a, 1966b).
- Carex halleriana** Asso - H caesp, South European-Mediterranean, bx. La Verna (Marcucci, 1889; Baroni, 1897-1908, Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Carex hirta** L. - G rhiz, European, pu. M. del Faggione (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).
- Carex hostiana** DC. - H caesp, European, D. La Verna (Siemoni e Ricceri, 1989-1998). The exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, loc. Pozza Marcia, 10/9/1996) is lacking of clear identification characters and must be confirmed.
- Carex macrolepis** DC. - H caesp, Mediterranean Orophile, pd, r, if. Par. Naz., vers. romagn. (Agostini, 1992), Canale di Pentolino e dirupi di Pian Tombesi (Gonnelli et al. 2007a). Recently reported in the Park territory (Gonnelli et al. 2007a) and new for Emilia-Romagna (even if it was also quoted without references and particular relevance in Agostini, 1992), the Park sites are at the north-western distribution limits of this species in Italy.
- Carex michelii** Host - H caesp, South-European, NR. Camaldoli-Eremo (Zangheri, 1966b). The report by Zangheri (1966b) is based on ancient citations by Baccharini.
- Carex otrubae** Podp. - H caesp, South European-Mediterranean, pu. La Verna (Siemoni et al., 1989-1998), PNFC wetlands (Mazza, 2006).
- Carex ovalis** Good. - H caesp, Boreal, pu. Falterona (Caruel, 1860-64 sub *Carex leporina*; Marcucci, 1889 sub *C. leporina*; Baroni, 1897-1908 sub *C. leporina*), Poggio allo Spillo (Marcucci, 1889 sub *C. leporina*; Baroni, 1897-1908 sub *C. leporina*), M. Falco, Campigna, Sodo dei Conti, Piancancelli (Zangheri, 1966a; 07/2001, Herb. Padula sub *C. leporina*), Burraia (Zangheri, 1966a), La Verna (Matteini, 1968 sub *C. leporina*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *C. leporina*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Carex pallescens** L. - H caesp, Boreal, pu, l.r.56/2000 All.A. Falterona, Capo d'Arno (Caruel, 1860-64), Falterona (Marcucci, 1889), M. Falco (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC wetlands (Falzea, 2006).
- Carex pendula** Huds. - H caesp, Eurasian, bu. Bibbiena (Marcucci, 1889; Baroni, 1897), Poggio Scali, Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (08/2000, Herb. Padula), Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Carex punctata** Gaud. - H caesp, South European-Mediterranean, pu, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Carex remota** L. - H caesp, European, bu. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Passo Porcareccio (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Gonnelli et al., 2006).
- Carex riparia** Curt. - E, Eurasian, NR. Fangacci (Zangheri, 1966b). The report by Zangheri (1966b) is based on ancient citations by Baccharini.
- Carex spicata** Huds. - H caesp, Eurasian, br. Falterona, Camaldoli (Marcucci, 1889 sub *Carex muricata*; Baroni, 1897-1908 sub *C. muricata*), Burraia, Campigna (Zangheri, 1966a, 1966b sub *C. vulpina* and *C. contigua*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. vulpina*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). Zangheri (1966b) and Sabato & Valenziano (1975) reported the presence of *C. vulpina*, which according to Fiori (1923-29), whose flora they used for identification, must be intended sensu lato; so probably the reports must be referred to *C. spicata*.
- Carex strigosa** Huds. - H caesp, Eurasian, bu, r, RNT. Ca-

maldoli-Eremo (Zangheri, 1966b), Piano della Lama (F. Selvi, 13/06/2009 *in verbis*, with exsiccatum). Rare species reported by Zangheri (1966b) on the basis of ancient citations by Baccarini (whose exsiccata are not present in FI), in 2009 it was collected by F. Selvi in the Lama plain.

**Carex sylvatica** Huds. - H caesp, Eurasian, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), M. Falco, Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino (Hofmann, 1965; Montanari, 2005; Gonnelli et al., 2006).

**Carex vesicaria** L. - E, Boreal, pu, r, l.r.56/2000 All.A, lrT: VU. PNFC wetlands (Lastrucci, 2006 *in verbis*; Falzea, 2006; Mazza, 2006). In the study area this species was recently collected for the first time by Lastrucci at Traversari pond of Camaldoli; this report was quoted in Falzea (2006) and Mazza (2006).

**Carex viridula** Michx. - H caesp, Eurasian, pu, r, RNT. Campigna (Zangheri, 1966a sub *Carex serotina*), Fangacci (Zangheri, 1966b sub *Carex oederi*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *C. oederi*).

**Cyperus fuscus** L. - T caesp, Eurasian, pu, r, Bibbiena, Prataglia (Baroni, 1897-1908), PNFC wetlands, Metaletto pond (Falzea, 2006). Recently collected by Lastrucci at Metaletto pond; this report was quoted in Falzea (2006).

**Eriophorum latifolium** Hoppe - H caesp, Eurasian, pu, r, if, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: EN, lrT: VU. Campigna (Siemoni 07/1882, FI), Giampereta (Marcucci, 1889; Baroni, 1897-1908), La Verna (Siemoni et al., 1989-1998), Corniolo (Padula, 1988; Padula, 1995), La Lama-Corniolo (Alessandrini & Bonafede, 1996). Species of conservation interest at regional scale, few recent sites are reported for La Verna and Corniolo; we checked and confirmed the exsiccatum of La Verna (*Herb. Alvernae*, sine loc., Siemoni et Ricceri, 19/6/1996; N. Siemoni told us that the collection locality was Fosso della Melosa) but we could not find the species again. According to Sirotti (1998) in the site of Corniolo the plant must be considered extinct. Sirotti (1998) also reported a datum concerning *Eriophorum angustifolium* L. at Mt. Penna, on the basis of a herbarium specimen (R. Cucini, 28/7/1938, Monte Penna lungo il sentiero per venire all'Aiona, *Herbarium Senaensis*, SI). This report does not refer to Mt. Penna of La Verna or Badia Prataglia, but most probably to the area of Mt. Penna - Mt. Aiona in the Aveto Valley (Liguria-Emilia Apennines).

**Isolepis cernua** (Vahl) Roem. & Schult. - T scap, Cosmopol/wide distrib., NR. Badia Prataglia (Baroni, 1897-1908 sub *Scirpus savii*; Fiori exs. 31/08/1917 in FI).

**Scirpoides holoschoenus** (L.) Sojak - G rhiz, South European-Mediterranean, pu. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Castagno (M. Falterona, S. Godenzo Valley, Forasassi 28/07/1953, FI).

#### DIOSCOREACEAE

**Tamus communis** L. - G rad, South European-Mediterranean, bx. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Bascetti, 1998), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003), Sasso Fratino (Hofmann, 1965), La Lama (Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), (PNFC wetlands (Mazza, 2006).

#### HALORAGACEAE

**Myriophyllum spicatum** L. - I rad, Cosmopol/wide distrib., st, r, l.r.56/2000 All.A, lrEM: VU. Metaletto pond (08/1980, 11/1999, 10/2000, Herb. Padula; Mazza, 2006; Falzea, 2006).

#### IRIDACEAE

**Crocus biflorus** Mill. - G bulb, Mediterranean, px, r, l.r.2/1977, lrEM: DD. La Verna (Ferrarini, 1998). This species was photographed by Fra' Ginepro (Ferrarini, 1998) only at La Verna. The plant of the photo seems to be wild, but as it is also a cultivated ornamental flower, it could be derived also by anthropic introduction.

**Crocus vernus** (L.) Hill subsp. **vernus** - G bulb, South European-Mediterranean, pa, l.r.2/1977, lrEM: DD. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Passo del Muraglione, M. Gemelli, M. Falco, Poggio Scali, Passo della Calla (Zangheri, 1966a, 1966b), Pian delle Fontanelle (M. Falco), Campigna al Poggione e a Poggio Martino (Zangheri, 1966a), Campigna in vari luoghi (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Prato alla Penna (04/2005, Herb. Padula sub *C. neapolitanus*), Sasso Fratino (Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002). Generally the subspecies is not reported in literature, and all the records have been referred to the subsp. *vernus*, surely the most widespread in the area; at higher altitudes also the subsp. *albiflorus* (Kit.) Ces. could be present.

**Gladiolus italicus** Mill. - G bulb, South European-Mediterranean, ru. Casentino (Marcucci, 1889 sub *Gladiolus sege-*

*tum*; Baroni, 1897-1908 sub *G. segetum*), Campigna, La Lama (Zangheri, 1966b sub *G. segetum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Chiusi della Verna (05/2003, 06/2004, Herb. Padula).

***Iris foetidissima*** L. - G rhiz, South European-Mediterranean, D. Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002). This plant was doubtfully reported at low altitudes by Sirotti & Fariselli (2002), and near but outside the Park boundaries at Poppi and Pratovecchio in the *Herbarium Padula*.

***Iris graminea*** L. - G rhiz, South-European, arb, r, RNT. Pian del Pero (Zangheri, 1966b), Upper Montone and Rabbi Valleys (Semprini & Milandri, 2001).

#### JUNCACEAE

***Juncus acutiflorus*** Ehrh. ex Hoffm. - G rhiz, European, pu, r. Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

***Juncus articulatus*** L. - G rhiz, Boreal, pu. Falterona, Camaldoli (Marcucci, 1889 sub *Juncus lamprocarpus*; Baroni, 1897-1908 sub *J. lamprocarpus*), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).

***Juncus bufonius*** L. - T caesp, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC wetlands (Falzea, 2006).

***Juncus conglomeratus*** L. - H caesp, Boreal, pu. Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco (07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).

***Juncus effusus*** L. - H caesp, Cosmopol/wide distrib., pu. Campigna, Prato Bertone (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Camaldoli (10/1999, 08/2000, Herb. Padula), Metaletto (10/2003, Herb. Padula), Stia (07/2005, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006).

***Juncus inflexus*** L. - H caesp, Eurasian, pu. Campigna, Poggio Scali (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).

***Luzula campestris*** (L.) DC. - H caesp, European, px. Falterona, Camaldoli (Baroni, 1897-1908), Campigna (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano,

1975), M. Falco (05/1983, Herb. Padula). Zangheri (1966b) reported also the presence of *L. campestris* var. *congesta* (Lej.), which probably is to be referred to *L. multiflora* subsp. *congesta* (Thuill.) Arcang.

***Luzula forsteri*** (Sm.) DC. - H caesp, South European-Mediterranean, bx. Pratovecchio (Caruel, 1860-64; 04/2002, Herb. Padula), Prataglia (Caruel, 1860-64; Marcucci, 1889; 04/2003, Herb. Padula), Frequent in woods (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (04/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

***Luzula multiflora*** (Ehrh.) Lej. - H caesp, Boreal, pa. M. Falco, Burraia (Zangheri, 1966a), Frequent at every altitudes (Zangheri, 1966b), Campigna (Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

***Luzula nivea*** (L.) Lam. et DC - H caesp, South European Orophile, br. Prataglia (Caruel, 1860-64; Marcucci, 1889), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b; Gonnelli et al., 2002), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Campigna, Passo dei Mandrioli (Zangheri, 1966a), Campigna-Lama (Ferrari et al., 1979; 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), Sasso Fratino, (Hofmann, 1965; 1991; Padula, 1978; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).

***Luzula pedemontana*** Boiss. et Reut. - H caesp, Boreal, D. Camaldoli (Baroni, 1897-1908). Probably erroneously reported by Baroni (1897-1908). This Author quoted the *Herbarium Sommer*, but in the *Herbarium Centrale Italicum* (FI), which contains the exsiccata of the *Herbarium Sommer*, this specimen is not present. The known distribution of *L. pedemontana* is limited to the Apennines of Pistoia and Mugello, and does not reach East Tuscany and Romagna.

***Luzula pilosa*** (L.) Willd. - H caesp, Boreal, br, r. Falterona (Caruel, 1860-64 sub *Luzula vernalis*; Marcucci, 1889 sub *L. vernalis*; Zangheri, 1966b), Camaldoli (Marcucci, 4/1864, FI sub *L. vernalis*; Baroni, 1897-1908 sub *L. vernalis*), From Lama to Camaldoli (Zangheri, 1966b), La Verna (Matteini, 1968), Lama Forest near Badia Prataglia (Moggi, Nardi et Bavazzano, 24/5/1969, FI), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976). Many reports are ancient (also the one by Zangheri, 1966b, based on Baccarini), then, in the past

the name *L. vernalis* could refer also to *L. forsteri*, considered only one of the varieties. By checking the exsiccata present in the *Herbarium Centrale Italicum* (FI) we found that at least the Marcucci's specimen for Camaldoli and the one by Moggi et al. for La Lama correspond to *L. pilosa* s.s.

**Luzula sylvatica** (Huds.) Gaudin - H caesp, South European Orophile, br. Falterona (Caruel, 1860-64 sub *Luzula maxima*; Marcucci, 1889 sub *L. maxima*; Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).

#### LEMNACEAE

**Lemna minor** L. - I nat, Cosmopol/wide distrib., st, r. PN-FC wetlands, at Gorganera pond (Falzea, 2006).

#### LILIACEAE

**Allium oleraceum** L. - G bulb, Eurasian, D. La Verna (Matteini, 1968). The report by Matteini (1968) at La Verna is based on a citation by Marcucci (1881), but the same Marcucci (1889) in his second edition referred this datum to M. Calvi near Bibbiena and not to La Verna.

**Allium pendulinum** Ten. - G bulb, Mediterranean, br, r, l.r.56/2000 All.A. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Campigna in Giogana (Zangheri, 1966b), Fornino (Gonnelli, 2003b), Sasso Fratino (Gonnelli et al., 2006).

**Allium sativum** L. - G bulb, Cultivated, A. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poppi, Bibbiena (Cammangi et al., 2003).

**Allium sphaerocephalon** L. - G bulb, Eurasian, px. La Verna (Baroni, 1897-1908; Siemoni et al., 1989-1998; Ferrarini, 1998), PNFC eroded slopes (Giacinti Baschetti, 1998), M. Penna (07/2005, Herb. Padula).

**Allium ursinum** L. - G bulb, Eurasian, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pian Tombesi (06/2002, Herb. Padula), Prato alla Penna (05/2003, Herb. Padula), Sasso Fratino (Hofmann, 1965; Padula, 1978; Massei, 1981; Padula, 1982; Hofmann, 1991; Bottacci et al., 2003, Gonnelli et al., 2006), Campigna Forest, Prato Bertone (Zangheri, 1966a), Campigna (Zangheri, 1966b).

**Allium victorialis** L. - G bulb, Boreal, pd, r, if. M. Falterona and M. Falco, northern rocky steep slopes (Togni, 2008 *in verbis*; Togni et al., 2010). These recently reported sites are the only ones known in the Peninsula; they are quite disjunct from the alpine ones and at the southern distribution limit of the species in Italy.

**Allium vineale** L. - G bulb, South European-Mediterranean, ru. Pratovecchio (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a).

**Asparagus tenuifolius** Lam. - G rhiz, Eurasian, br, l.r.56/2000 All.A,C1. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998; Gonnelli et al., 2003), Campigna, La Lama (Zangheri, 1966b), Giogana, M. Penna (Gonnelli et al., 2003b), Fornino (Gonnelli et al., 2003b), Sasso Fratino (Gonnelli et al., 2006).

**Asphodelus macrocarpus** Parl. subsp. **macrocarpus** - G rhiz, Mediterranean Orophile, pa. Camaldoli (Marcucci, 1889 sub *Asphodelus albus*; Baroni, 1897-1908 sub *A. albus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Ferrarini, 1998 sub *A. albus*), Prato alla Penna (05/2003, Herb. Padula sub *A. albus*), Campigna (Zangheri, 1966a, 1966b sub *A. albus*), Par. Naz., vers. romagn. (Semprini & Milandri, 2001).

**Colchicum alpinum** Lam. & DC. - G bulb, Mediterranean Orophile, px, r, if, l.r.56/2000 All.A, lrT: LR. Falterona, Burraia, Poggio Scali, Prato Bertone (Zangheri, 1966b), M. Gabrendo, Poggione (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Falco (Sirotti, 1998), Prato al Soglio (Milandri 2007 com.pers.). The sites quoted in Zangheri (1966b) were searched for and not confirmed by Sirotti (1998), this species seems to have become very rare in the Romagna side of the Park.

**Colchicum lusitanum** Brot. - G bulb, Mediterranean Orophile, px. Passo della Calla (Zangheri, 1966a), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Marcucci, 1889 sub *C. autumnale*; Baroni, 1897-1908 sub *C. autumnale*; Matteini, 1968 sub *C. autumnale*; Siemoni et al., 1989-1998), Par. Naz., vers. romagn. (Semprini & Milandri, 2001), Badia Prataglia (09/2001, Herb. Padula), Chiusi della Verna (09/2003-2004, Herb. Padula), Bibbiena (05/2005, Herb. Padula). In the area, all past records of *C. autumnale* must be referred to *C. lusitanum* (Pignatti, 1982; Zangheri, 1966b).

**Convallaria majalis** L. - G rhiz, Boreal, pd, if, RNT, l.r.2/1977, l.r.56/2000 All.A, lrEM: VU, lrT: LR. La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Ferrarini, 1998; Sirotti 1998; Gonnelli et al., 2003; Viciani, 2008 *in verbis*), Pian delle Fontanelle (Zangheri, 1966b), Giogana (Zangheri, 1966b; Gonnelli et al., 2003), Poggio Aggio Grosso (Sirotti, 1998), M. Penna (Gonnelli et al., 2003), Passo dei Mandrioli (Gonnelli et al., 2003), Sasso Fratino (Gonnelli et al., 2003b, 2005, 2006), Par. Naz., vers. romagn. (Padula, 1995; Alessandrini & Bonafede, 1996).

- Gagea lutea** (L.) Ker-Gawl. - G bulb, Boreal, pa, l.r.56/2000 All.A. M. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Ferrarini, 1998), Pian delle Fontanelle (Zangheri, 1966a), Passo della Calla, Campigna (Zangheri, 1966a, 1966b), Burraia (Zangheri, 1966b; Sirotti, 1996 *in verbis*), Giogana, Poggio Scali, Pian del Pero (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Semprini & Milandri, 2001; Sirotti & Fariselli, 2002), Pratovecchio (04/1981, Herb. Padula).
- Gagea villosa** (M. Bieb) Sweet - G bulb, Eurasian, px, r, if. La Verna (Ferrarini, 1998 sub *Gagea arvensis*).
- Hyacinthoides non-scripta** (L.) Chouard ex Rothm. - G bulb, Cultivated, A. La Verna (Cortini, 26/5/1962, FI, det. Matteini, 1968 sub *Scilla non-scripta*). Matteini (1968) reported "maybe cultivated".
- Lilium bulbiferum** L. subsp. **croceum** (Chaix) Jan - G bulb, European Orophile, br, l.r.2/1977, l.r.56/2000 All.C, lrEM: LR. Camaldoli (Caruel, 1860-64; Marcucci, 1889 sub *Lilium bulbiferum*), La Verna (Marcucci, 1889 sub *L. bulbiferum*; Baroni, 1897-1908 sub *L. bulbiferum*; Matteini, 1968 sub *L. bulbiferum*; Simoni et al., 1989-1998; Ferrarini, 1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *L. bulbiferum* var. *croceum*), Alto Archiano (Tassini, 1976 sub *L. bulbiferum*), Foreste Casentinesi (Padula, 1995), Pratovecchio (07/1999, Herb. Padula), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Poppi, Bibbiena (Camangi et al., 2003 sub *L. bulbiferum*), Sasso Fratino (Gonnelli et al., 2006), Poggio Giogo, Campigna (Zangheri, 1966a, 1966b sub *L. bulbiferum*), Par. Naz., vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002). All the records must be referred to the subsp. *croceum*, as it is the only present in this area (Pignatti, 1982; Conti et al., 2005).
- Lilium chalcedonicum** L. - G bulb, Cultivated, A, NR. Camaldoli (Marcucci, 1889).
- Lilium martagon** L. - G bulb, Eurasian, br, l.r.2/1977, l.r.56/2000 All.A,C, lrEM: LR, lrT: LR. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Simoni et al., 1989-1998; Ferrarini, 1998), Falterona (Baroni, 1897-1908; Zangheri, 1966b sub *Lilium martagon* subsp. *eu-martagon*), Campigna Forest, Passo della Calla, La Lama, Passo dei Mandrioli (Zangheri, 1966a), Campigna (Zangheri, 1966b sub *L. martagon* subsp. *eu-martagon*), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Il Poggione (07/1968, Herb. Padula), Pian Tombesi (07/1969, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), M. Penna (07/2005, Herb. Padula), Par. Naz., vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Padula, 1978; Bottacci et al., 2003; Gonnelli et al., 2006).
- Loncomelos brevistylus** (Wolfn.) Dostàl - G bulb, Eurasian, ru, r. La Verna (Ferrarini, 1998 sub *Ornithogalum pyramidale*).
- Loncomelos narbonensis** (Torn. in L.) Raf. - G bulb, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *Ornithogalum narbonense*), Campigna (Burraia-Calla) (Zangheri, 1966b), Chiusi della Verna (05/2003, Herb. Padula sub *O. narbonense*).
- Loncomelos pyrenaicus** (L.) Hrouda ex J. Holub - G bulb, South European-Mediterranean, br. La Verna (Marcucci, 1889 sub *Ornithogalum pyrenaicum*; Baroni, 1897-1908 sub *O. pyrenaicum*; Matteini, 1968 sub *O. pyrenaicum*; Simoni et al., 1989-1998 sub *O. pyrenaicum*; Ferrarini, 1998 sub *O. pyrenaicum*), Passo dei Mandrioli (Zangheri, 1966a, 1966b sub *O. pyrenaicum*), Campigna a Poggio de' Ronchi (Zangheri, 1966a sub *O. pyrenaicum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *O. pyrenaicum*), Par. Naz., vers. romagn. (Semprini & Milandri, 2001 sub *O. pyrenaicum*), Sasso Fratino (Gonnelli et al., 2006).
- Muscari botryoides** (L.) Mill. - G bulb, South European-Mediterranean, px, r. Casentino (Marcucci, 1889 sub *Botryanthus vulgaris*; Baroni, 1897-1908 sub *B. vulgaris*), Poppi (04/2004, Herb. Padula).
- Muscari comosum** (L.) Mill. - G bulb, South European-Mediterranean, px. Casentino (Marcucci, 1889; Baroni, 1897-1908 sub *Bellevalia comosa*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna (Ferrari et al., 1982 sub *Leopoldia comosa*), La Verna (Simoni et al., 1989-1998 sub *L. comosa*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *L. comosa*), Poppi (05/2002, Herb. Padula sub *L. comosa*), Pratovecchio (05/2004, Herb. Padula sub *L. comosa*), Campigna (Zangheri, 1966a, 1966b), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002 sub *L. comosa*).
- Muscari neglectum** Guss. ex Ten. - G bulb, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *Botryanthus odoratus*; Baroni, 1897-1908 sub *B. odoratus*), Bibbiena (04/2005, Herb. Padula sub *Muscari atlanticum*), Poggio Giogo (Zangheri, 1966a sub *M. racemosum* subsp. *racemosum*).
- Ornithogalum umbellatum** L. - G bulb, South European-Mediterranean, px. Pratovecchio (Caruel, 1860-64; 05/1999, 04/2001, Herb. Padula), Casentino (Marcucci, 1889), Giogana (Zangheri, 1966b sub *Ornithogalum umbellatum* subsp. *eu-umbellatum*), La Verna (Simoni et al., 1989-1998), Chiusi della Verna (04/2004, Herb. Padula).
- Paris quadrifolia** L. - G rhiz, Eurasian, br, l.r.56/2000 All.A. La Verna (Caruel, 1860-64; Matteini, 1968; Simoni et al., 1989-1998; Ferrarini, 1998), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908), Piancancelli

- (M. Falco), Campigna, Prato Bertone, Passo dei Mandrioli (Zangheri, 1966a, 1966b), in tutta l'alta Giogana (Zangheri, 1966b), Campigna-Lama (Ferrari et al., 1979; 1982), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Fangacci (08/1982, Herb. Padula), Prato alla Penna (05/2003, Herb. Padula), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Polygonatum multiflorum** (L.) All. - G rhiz, Eurasian, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998), Prataglia (Caruel, 1860-64; Marcucci, 1889; Baroni, 1897-1908), Pian delle Fontanelle (M. Falco), Burraia (Zangheri, 1966a, 1966b sub *Polygonatum multiflorum* subsp. *eu-multiflorum*), Campigna-Lama (Ferrari et al., 1979; 1982), Prato alla Penna (06/1995, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), M. Calvano (06/2004, Herb. Padula), Par. Naz., vers. Romagn. (Semprini & Milandri, 2001; Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), PNFC wetlands (Falzea, 2006).
- Polygonatum odoratum** (Mill.) Druce - G rhiz, Boreal, br, l.r.56/2000 All.A. La Verna (Marcucci, 1889 sub *Polygonatum officinale*; Baroni, 1897-1908 sub *P. officinale*; Matteini, 1968 sub *P. officinale*; Siemoni et al., 1989-1998), Poggio Scali, Passo dei Mandrioli (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *P. officinale*), Prato alla Penna (05/2003, Herb. Padula), Camaldoli (05/1976, 08/2004, Herb. Padula), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006).
- Polygonatum verticillatum** (L.) All. - G rhiz, Eurasian, br. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Camaldoli (Baroni, 1897-1908; 05/1976, Herb. Padula), Pian delle Fontanelle (M. Falco), Poggio Martino, Burraia, Passo della Calla Prato Bertone (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966b), Campigna-La Lama (Ferrari et al., 1979; 1982; Padula et al., 1988), M. Falco (07/1980, Herb. Padula; Padula, 1988), Pian Tombesi (07/1969, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Foreste Casentinesi (Padula, 1995), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002).
- Ruscus aculeatus** L. - G rhiz/Ch frut, South European-Mediterranean, bx. Casentino (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Bibbiena (03/2001, Herb. Padula), Poppi (08/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Tigliè, 1974; Gonnelli et al., 2006).
- Ruscus hypoglossum** L. - G rhiz/Ch frut, South European-Mediterranean, br, r, if, l.r.56/2000 All.A,C1, IrT: LR. Camaldoli (Baroni, 1897-1908; 05/1976, Herb. Padula; Padula, 1995), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna (Zangheri, 1966b sub *Ruscus hypoglossum* var. *angustifolium*), Sasso Fratino (Hofmann, 1965 sub *R. hypophyllum*; Hofmann, 1991; Bottacci et al., 2003; Gonnelli et al., 2006), Campigna-Lama (Ferrari et al., 1979; 1982; Padula, 1995), Par. Naz., vers. romagn. (Semprini & Milandri, 2001).
- Scilla bifolia** L. - G bulb, European, pa, l.r.2/1977, l.r.56/2000 All.A. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Ferrarini, 1998), Passo del Muraglione, M. Gemelli, Poggio Giogo, Pian delle Fontanelle, Burraia, Passo della Calla (Zangheri, 1966a), Campigna (Zangheri, 1966b; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Badia Prataglia (04/2003, Herb. Padula), Sasso Fratino (Hofmann, 1965; Tigliè, 1974; Gonnelli et al., 2006).
- Streptopus amplexifolius** (L.) DC. - G rhiz, Boreal, br, r, if, RNT. Stradella (Caruel, 1860-64 sub *Streptopus distortus*), Falterona (Marcucci, 1889 sub *S. distortus*; Baroni, 1897-1908 sub *S. distortus*; Zangheri, 1966b), Fangacci di Campigna (Zangheri, 1966a, 1966b), Campigna (Ferrari et al., 1982; Barasi, 1998), Passo della Calla-Cullacce (Ubaldi, *in verbis*).
- Veratrum lobelianum** Bernh. - G rhiz, Eurasian, pu. La Verna (Marcucci, 1889 sub *Veratrum album*; Matteini, 1968 sub *V. album*), Burraia (Zangheri, 1966a, 1966b sub *V. album* subsp. *lobelianum*; Sirotti, 1998 sub *V. album*), Fonte de' Conti, Fangacci (Zangheri, 1966b sub *V. album* subsp. *lobelianum*), M. Falco (07/1977, 08/1978, Herb. Padula sub *V. album* subsp. *lobelianum*; Padula, 1988 sub *V. album*; Sirotti, 1998 sub *V. album*), Poggio Scali, M. Falterona, M. Gabrendo (Sirotti, 1998 sub *V. album*), Par. Naz., vers. Tos. (Viciani & Gabellini, 2002), Par. Naz., vers. Romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006). All the records of *V. album* must be referred to *V. lobelianum*, which in the past was considered a variety or a subspecies of *V. album* (Fiori, 1923-29; Pignatti, 1982) and it is the only taxon of this group present in the area (Conti et al., 2005).
- Veratrum nigrum** L. - G rhiz, Eurasian, br, r. M. Luceto (Milandri, 1986 *in verbis*; Sirotti, 1998; Semprini & Milandri, 2001). The species was observed only by Mi-

landri in 1986; the datum was considered reliable and reported by Sirotti (1998), and then published by Semprini & Milandri (2001).

#### ORCHIDACEAE

**Anacamptis pyramidalis** (L.) L. C. Rich. - G bulb, South European-Mediterranean, px, l.r.2/1977, l.r.56/2000 All.A. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968 sub *Orchis pyramidalis*; Gualazzi e Piaggi, 1989-1998; Ferrarini, 1998; Siemoni et al., 1989-1998), Campigna (Ferrari et al., 1982), Par. Naz. vers. tos. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).

**Cephalanthera damasonium** (Mill.) Druce - G rhiz, South European-Mediterranean, br, l.r.2/1977. Campigna verso Poggio Scali (Zangheri, 1966a), abetine di Campigna, Poggio Scali, Pian del Pero, Falterona (Zangheri, 1966b sub *Cephalanthera pallens*), Campigna-Lama Forests (Padula, 1988), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002; Sirotti et al., 2005). The photograph taken by Fra' Ginipro (Ferrarini, 1998) attributed to *C. damasonium* must be probably referred to *C. longifolia*.

**Cephalanthera longifolia** (L.) Fritsch - G rhiz, Eurasian, br, l.r.2/1977. Falterona (Marcucci, 1889 sub *Cephalanthera ensifolia*; Baroni, 1897-1908 sub *C. ensifolia*), La Verna (Marcucci, 1889 sub *C. ensifolia*; Baroni, 1897-1908 sub *C. ensifolia*; Matteini, 1968 sub *C. ensifolia*; 05/2003, 06/2004, Herb. Padula), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), Campigna, La Lama (Zangheri, 1966a, 1966b; Ferrari et al., 1979; 1982), Camaldoli (05/1983, Herb. Padula), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), M. Calvano (06/2004, Herb. Padula), Moggioina (05/2005, Herb. Padula), Bidente Valley (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002; Sirotti et al., 2005).

**Cephalanthera rubra** (L.) L. C. Rich. - G rhiz, Eurasian, br, l.r.2/1977. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Sasso Fratino (Hofmann, 1965; Gonnelli et al., 2006), Campigna (Zangheri, 1966a, 1966b), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Bidente Valley (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002; Sirotti et al., 2005).

**Coeloglossum viride** (L.) Hartman - G bulb, Boreal, pa,

if, l.r.2/1977, l.r.56/2000 All.A, lrT: LR. Falterona (Caruel, 1860-64; Marcucci, 1889; Sirotti 1998; Sirotti et al., 2005), Poggio Giogo fra Passo del Muraglione e M. Falco (Zangheri, 1966a, 1966b), M. Falco (07/1980, Herb. Padula; Padula, 1988; Sirotti 1998; Sirotti et al., 2005), fra Campigna e Poggio Scali (Zangheri, 1966a, 1966b), fra Pian del Pero e Poggio Scali (Zangheri, 1966b), Passo della Calla (Sirotti, 1998; Sirotti et al., 2005), La Verna (Ferrarini, 1998), Passo della Braccina (Milandri, 2007 *in verbis*).

**Corallorhiza trifida** Chatelain - G rhiz, Boreal, br, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: LR. La Lama (Zangheri, 1966b), Campigna (Ferrari et al., 1982; Alessandrini & Bonafede, 1996), M. Falco, Pian delle Fontanelle (Alessandrini & Bonafede, 1996), Fangacci di Campigna, Poggio Martino (Sirotti, 1998; Sirotti et al., 2005).

**Dactylorhiza maculata** (L.) Soò s.l.- G bulb, Eurasian, br, l.r.2/1977. La Verna (Caruel, 1860-64 sub *Orchis maculata*; Marcucci, 1889 sub *O. maculata*; Matteini, 1968 sub *O. maculata*; Ferrarini, 1998; Siemoni et al., 1989-1998 sub *O. maculata*; Giacinti Baschetti, 1998 sub *O. maculata*), tra Chiusi della Verna e Poggio dello Spicchio (Giacinti Baschetti, 1998 sub *O. maculata*), Camaldoli (Baroni, 1897-1908 sub *O. maculata*), Sasso Fratino (Hofmann, 1965 sub *O. maculata*; Gonnelli et al., 2006), Falterona (Zangheri, 1966b sub *O. maculata*), Campigna Forest-Campigna (Zangheri, 1966a sub *O. maculata*; Zangheri, 1966b sub *O. maculata*), Burraia (Zangheri, 1966a, 1966b sub *O. maculata*; Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassinari, 1976 sub *O. maculata*), Campigna-Lama (Ferrari et al., 1979; 1982 sub *O. maculata*; Padula et al., 1988), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002 sub *O. maculata*; Sirotti et al., 2005 sub *D. fuchsii* subsp. *fuchsii*), Chiusi della Verna (05/2003, Herb. Padula sub *Dactylorhiza maculata* subsp. *fuchsii*), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002). This group is critical from a systematic point of view (cf. Rossi, 2002), so we refer to this species s.l.. Probably all the reports concerning the Tuscan part of the Park must be referred to the subsp. *fuchsii* (Druce) Hyl., which is the only present here according to Conti et al. (2005). In the Romagna side also the subsp. *saccifera* (Brongn.) Diklic could occur. For a more detailed information, see Sirotti et al. (2005).

**Dactylorhiza majalis** (Rchb.) P. F. Hunt & Summerh. - G bulb, European, D. Poggio Giogo, M. Falco, Passo della Calla, Campigna (Zangheri, 1966a sub *Orchis latifolia* subsp. *latifolia*; Zangheri, 1966b sub *O. latifolia* subsp. *majalis*). The reports by Zangheri must be confirmed, as this species can be easily confused with plants of *D. maculata* group. In effect, recent studies (Hedren, 1996; Bullini et al., 2002) affirm that *D. majalis* is a polyploid taxon



originated by hybridization between *D. maculata* and *D. incarnata*.

**Dactylorhiza sambucina** (L.) Soò - G bulb, European, pa, l.r.2/1977. Camaldoli (Caruel, 1860-64 sub *Orchis sambucina*; Marcucci, 1889 sub *O. sambucina*), La Verna (Caruel, 1860-64 sub *O. sambucina*; Marcucci, 1889 sub *O. sambucina*; Matteini, 1968 sub *O. sambucina*; Ferrarini, 1998), Falterona (Baroni, 1897-1908 sub *O. sambucina*), Poggio Uscialoi (Zangheri, 1966a sub *O. sambucina*; Zangheri, 1966b sub *O. sambucina*, incl. subsp. *eu-sambucina* and var. *purpurea*), Burraia (Zangheri, 1966a sub *O. sambucina*; Zangheri, 1966b sub *O. sambucina*, incl. subsp. *eu-sambucina* and var. *purpurea*; Padula, 1988), Poggio Giogo, Pian delle Fontanelle (Zangheri, 1966a sub *O. sambucina* var. *rubra*), Campigna (Zangheri, 1966b), From Poggio Sodo de' Conti to Prato alla Penna (Padula, 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Calvano (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti et al., 2005).

**Epipactis atrorubens** (Hoffm. ex Bernh.) Besser - G rhiz - European, D. Campigna Forest (Zangheri, 1966a, 1966b sub *Epipactis atropurpurea* subsp. *rubiginosa*; Fiori, 1969-70). Zangheri (1966a, 1966b) reported the presence of the species but he himself was doubtful about the correct identification of his specimens.

**Epipactis baumanniorum** Ströhle - G rhiz, European, br, r, if, RNT, l.r.2/1977, lrEM: DD. Pendici M. Falco verso S. Sofia, Upper Montone Valley, San Benedetto, S. Piero in Bagno (Savelli et al., 1988 sub *E. persica*; Alessandrini & Bonafede, 1996 sub *E. gracilis*), Par. Naz. vers. fior. (Biagioli, 1996; Sirotti 1998 sub *Epipactis gracilis*; Sirotti et al., 2005 sub *E. gracilis*), Par. Naz. vers. fior. (Romolini & Sodi, in litt.), Campigna (Togni et al., 2010).

**Epipactis flaminia** Savelli et Alessandrini - G rhiz, Endemic Apennines, br, r, if, l.r.2/1977, lrNaz: VU. Tra Campigna e Poggio Palaio, tra Campigna e le Cullacce (Savelli et al., 1988 sub *Epipactis greuteri*; Savelli e Alessandrini, 1994), Campigna e dintorni Casentino toscano (Alessandrini & Bonafede, 1996), Passo della Calla (Sirotti 1998), Par. Naz. vers. romagn. (Agostini, 1992 sub *E. greuteri*; Sirotti & Fariselli, 2002), Camaldoli (08/2004, 09/2005, Herb. Padula; Padula, 2008), Par. Naz. vers. tosc. (Sirotti et al., 2005), Sasso Fratino (Sirotti & Fariselli, 2002; Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006). This is the only strictly endemic plant of the Park, reported exclusively for this area of Tuscany and Romagna. It is similar to *E. greuteri* Baumann et Kunkele, so some authors do not treat it as a distinct species, while in the interpretation of Savelli & Alessandrini (1994), Rossi (2002) and Conti et al. (2005) it is considered separated.

**Epipactis helleborine** (L.) Crantz - G rhiz, Eurasian, br, RNT, l.r.2/1977. La Verna (Marcucci, 1889 sub *Epipactis*

*latifolia*; Baroni, 1897-1908 sub *E. latifolia*; Matteini, 1968 sub *E. latifolia*; Ferrarini, 1998), Camaldoli (Baroni, 1897-1908 sub *E. latifolia*; Padula et al., 1988), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *E. latifolia*), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Sasso Fratino, (Hofmann, 1965 sub *E. latifolia*; Bottacci et al., 2003; Gonnelli et al., 2006), Passo del Muraglione (Zangheri, 1966a, 1966b sub *E. latifolia*), Campigna Forest (Zangheri, 1966a, 1966b sub *E. latifolia*; Padula, 1988), Poggio Martino-M. Falco, Pian del Pero (Zangheri, 1966a sub *E. helleborine* subsp. *helleborine*), Campigna-Lama (Ferrari et al., 1979, 1982), Lama Forest (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).

**Epipactis microphylla** (Ehrh.) Swartz - G rhiz, European, br, l.r.2/1977. La Verna (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Campigna at Pentolino (Zangheri, 1966b), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).

**Epipactis muelleri** Godfery - G rhiz, Eurasian, br, RNT, l.r.2/1977, l.r.56/2000 All.A. Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002; Sirotti et al., 2005). The general (and so the Park) distribution area is not well known as it is often confused with the similar *E. helleborine* (Sirotti et al., 2005).

**Epipactis palustris** (Mill.) Crantz - G rhiz, Boreal, pu, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: EN, lrT: VU. La Verna (09/2004, Herb. Padula), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996), Valbonella (Alessandrini & Bonafede, 1996; Sirotti, 1998), Upper Rabbi and Bidente Valleys (Sirotti, 2004-2006 *in verbis*).

**Epipactis viridiflora** (Hoffm.) Krock. - G rhiz, European, br, r, l.r.2/1977, lrNaz: DD, lrEM: EN. Monte Bucine (Savelli et al., 1988 sub *Epipactis purpurata*), Campigna (Savelli et al., 1988 sub *E. purpurata*; Alessandrini & Bonafede, 1996 sub *E. purpurata*; Sirotti, 1998 sub *E. purpurata*; Sirotti, 2006 *in verbis*).

**Epipogium aphyllum** Sw. - G rhiz, Boreal, br, r, if, RNT, l.r.2/1977, l.r.56/2000 All.A, lrEM: VU, lrT: VU. Campigna (Agostini, 1996 *in verbis*; Alessandrini & Bonafede, 1996; Sirotti 1998; Sirotti et al., 2005), Sasso Fratino alla Fonte del Maresciallo (Bottacci A., 2009 *in verbis*; Gonnelli et al., 2010).

**Goodyera repens** (L.) R.Br. - G rhiz, Boreal, br, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: DD, lrT: CR. La Verna (Matteini, 1968 sub *Peramium repens*, leg. Tosi 12/8/1960, FI), M. Falterona (Romolini, 2001), Valbonella (Alessandrini & Bonafede, 1996; Sirotti, 1998; Sirotti & Fariselli, 2002; Sirotti et al., 2005), M. Gemelli (Sirotti & Milandri, 2002).

- Gymnadenia conopsea** (L.) R. Br. - G bulb, Eurasian, pu, l.r.2/1977. Fra Moggiona e Camaldoli (Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Gualazzi e Piaggi, 1989-1998; Siemoni et al., 1989-1998; Ferrarini, 1998), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005 sub *Gymnadenia conopsea* subsp. *densiflora*), Campigna Forest, La Lama (Zangheri, 1966a; Padula, 1988), Campigna (Zangheri, 1966b), Lama Forest (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002). According to Rossi (2002) and Conti et al. (2005) the several infraspecific entities described for this plant are of doubtful taxonomic relevance.
- Himantoglossum adriaticum** H. Baumann - G bulb, South European-Mediterranean, px, if, l.r.2/1977, l.r.56/2000 All.A. La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998 sub *Himantoglossum hircinum*; Sirotti, 1998), Bibbiena (Marcucci, 1889 sub *H. hircinum*; Baroni, 1897-1908 sub *H. hircinum*), Pratovecchio (Sirotti et al., 2005), Upper Montone and Tramazzo Valley (Alessandrini & Bonafede, 1996; Sirotti et al., 2005), Upper Rabbi Valley of (Sirotti, 1998). All past records of *H. hircinum* (L.) Sprengel (= *Loroglossum hircinum* (L.) L. C. Rich.) must be referred to *H. adriaticum* (Rossi, 2002; Conti et al., 2005).
- Limodorum abortivum** (L.) Swartz - G rhiz, South European-Mediterranean, arb, l.r.2/1977. Bibbiena (Marcucci, 1889; Baroni, 1897-1908), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).
- Listera cordata** (L.) R.Br. - G rhiz, Boreal, br, r, if, RNT, l.r.2/1977, l.r.56/2000 All.A, lrEM: EN, lrT: LR. M. Gemelli (Sirotti & Milandri, 2003), Camaldoli (Sirotti et al., 2000-2001; Sirotti et al., 2005). On Monte Gemelli, the only known site in Romagna (Sirotti & Milandri, 2003), the species has not been recorded again in the 5 years following the first report.
- Listera ovata** (L.) R.Br. - G rhiz, Eurasian, br, l.r.2/1977, l.r.56/2000 All.A. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), M. Calvano (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Sasso Fratino (Gonnelli et al., 2006), PNFC wetlands (Mazza, 2006), Campigna Forest (Zangheri, 1966a; Padula, 1988), Pian del Pero-Poggio Scali (Zangheri, 1966b), Lama Forest (Padula, 1988), Pietrapazza, Poggio Capannina (Giacinti Baschetti, 1998), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).
- Neottia nidus-avis** (L.) L. C. Rich. - G rhiz, Eurasian, br, l.r.2/1977. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; 04/2001, Herb. Padula), Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Poggio Scali (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Badia Prataglia (05/1998, Herb. Padula), Par. Naz. vers. tosc. (Viciani & Gabellini, 2002; Sirotti et al., 2005), Sasso Fratino, (Hofmann, 1965; Massei 1981; Bottacci et al., 2003; Gonnelli et al., 2006), Campigna (Zangheri, 1966b), Poggio Scali (Zangheri, 1966a, 1966b), Campigna Forest (Zangheri, 1966a; Padula, 1988), Bidente Valley (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002).
- Ophrys apifera** Huds. - G bulb, South European-Mediterranean, px, l.r.2/1977. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Pratovecchio (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996). Matteini's record (1968) at La Verna is based on Marcucci (1881, 1889).
- Ophrys bertolonii** Moretti - G bulb, Mediterranean, px, l.r.2/1977, lrEM: LR. Bibbiena (Marcucci, 1889; 04/2003, Herb. Padula), La Verna (Ferrarini, 1998; Siemoni et al., 1989-1998), Chiusi della Verna (05/2003, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996). We do not separate *O. bertolonii* from *O. benacensis*, so all the records are intended s.l.
- Ophrys fuciflora** (F. W. Schmidt) Moench - G bulb, South European-Mediterranean, px, l.r.2/1977, l.r.56/2000 All.A. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Ophrys holosericea*), La Verna (Siemoni et al., 1989-1998; Ferrarini, 1998), close to Rimocchi (Giacinti Baschetti, 1998), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Giacinti Baschetti, 1998; Sirotti & Fariselli, 2002).
- Ophrys fusca** Link - G bulb, Mediterranean, px, r, RNT, l.r.2/1977. Passo della Braccina (Alessandrini & Bonafede, 1996), Par. Naz. vers. tosc. (Sirotti et al., 2005).
- Ophrys insectifera** L. - G bulb, European, px, l.r.2/1977, l.r.56/2000 All.A. Casentino (Marcucci, 1889 sub *Ophrys muscifera*; Baroni, 1897-1908 sub *Orchis muscifera*), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Giacinti Baschetti, 1998).
- Ophrys sphegodes** Mill. - G bulb, South European-Mediterranean, px, l.r.2/1977. La Verna (Siemoni et al., 1989-1998), Chiusi della Verna (04/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Campigna (Zangheri, 1966b sub *Ophrys aranifera*), Bidente Valley-Poggio di Spescia (Padula, 1988), Par. Naz. vers. romagn. (Ales-

- sandrini & Bonafede, 1996), near Ponte Cesare (Giacinti Baschetti, 1998).
- Orchis anthropophora** (L.) All. - G bulb, South European-Mediterranean, px, r, l.r.2/1977. Upper Bidente di Pietrapazza Valley (Alessandrini & Bonafede, 1996 sub *Aceras antropophorum*; Sirotti, 1998 sub *A. antropophorum*; Sirotti et al., 2005).
- Orchis laxiflora** Lam. - G bulb, South European-Mediterranean, pu, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: EN, lrT: VU. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Orchis mascula** (L.) L. - G bulb, European, px, l.r.2/1977. Camaldoli (Marcucci, 1889), Poggio Giogo, Poggio Scali (Zangheri, 1966a, 1966b), Pian delle Fontanelle, (Zangheri, 1966a), Muraglione, Falterona (Zangheri, 1966b), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), La Verna (Gualazzi e Piaggi, 1989-1998; Ferrarini, 1998; Siemoni et al., 1989-1998), Pratovecchio (05/2002-2003, Herb. Padula), Chiusi della Verna (05/2003, 06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).
- Orchis militaris** L. - G bulb, Eurasian, px, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: VU, lrT: LR. Upper Rabbi and Acquacheta Valleys (Alessandrini & Bonafede, 1996; Sirotti, 1998), Upper Bidente di Pietrapazza Valley (Alessandrini & Bonafede, 1996).
- Orchis morio** L. - G bulb, European, px, l.r.2/1977. Casentino (Marcucci, 1889; Baroni, 1897-1908), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Pratovecchio (05/2002, Herb. Padula), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Bibbiena (04/2003, Herb. Padula), Chiusi della Verna (04/2001, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006), Pian delle Fontanelle-M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Bidente Valley (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Giacinti Baschetti, 1998). Sirotti et al. (2005) reported the presence of some plants referable to the subsp. *picta* (Loisel.) K. Richt., an entity which several authors do not consider separated from type (Rossi, 2002; Conti et al., 2005).
- Orchis pallens** L. - G bulb, European, pa, r, if, l.r.2/1977, l.r.56/2000 All.A. Falterona, Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Burraia, Poggio Scali (Zangheri, 1966a, 1966b), Sodo de' Conti, Pian del Pero, Fontefreda, Poggiaccio (Zangheri, 1966b), Campigna, tra la Calla e Piancancelli, Pian delle Fontanelle (Sirotti, 1998), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).
- Orchis provincialis** L. - G bulb, Mediterranean, arb, l.r.2/1977. Casentino (Marcucci, 1889; Baroni, 1897-1908), Poggio Giogo (Zangheri, 1966a), Bibbiena (04/2003, Herb. Padula), M. Falco (Zangheri, 1966b), Par. Naz. Vers. Tosc. (Sirotti et al., 2005), Sasso Fratino (Gonnelli et al., 2006), Par. Naz. Vers. Romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002; Sirotti et al., 2005).
- Orchis purpurea** Huds. - G bulb, Eurasian, px, l.r.2/1977. Montecchio (Marcucci, 1889; Baroni, 1897-1908), Campigna, Burraia, Poggio Scali (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Gualazzi e Piaggi, 1989-1998; Ferrarini, 1998; Siemoni et al., 1989-1998), Bibbiena (04/2003, Herb. Padula), Pratovecchio (05/2002-2003, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Sasso Fratino (Gonnelli et al., 2006), Campigna-Lama Forests (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Giacinti Baschetti, 1998).
- Orchis simia** Lam. - G bulb, South European-Mediterranean, px, if, l.r.2/1977. La Verna (Ferrarini, 1998), Par. Naz. vers. tosc. (Sirotti et al., 2005), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Giacinti Baschetti, 1998).
- Orchis tridentata** Scop. - G bulb, South European-Mediterranean, px, l.r.2/1977. La Verna (Ferrarini, 1998; Siemoni et al., 1989-1998), M. Calvano (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Campigna (Zangheri, 1966b), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996).
- Orchis ustulata** L. - G bulb, European, px, l.r.2/1977. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998; Ferrarini, 1998; Sirotti 1998), Pian delle Fontanelle-M. Falco (Zangheri, 1966a), M. Falco (Zangheri, 1966b), Passo della Calla (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), M. Calvano (Sirotti 1998; 06/2004, Herb. Padula), Chiusi della Verna (06/2004, Herb. Padula), Par. Naz. vers. tosc. (Sirotti et al., 2005), Bidente Valley (Padula, 1988), Upper Montone, Rabbi and Bidente di Pietrapazza Valleys (Alessandrini & Bonafede, 1996).
- Platanthera bifolia** (L.) Rchb. - G bulb, Eurasian, bru, l.r.2/1977. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), La Verna (Marcucci, 1889; Siemoni et al., 1989-1998), Burraia (Zangheri, 1966a, 1966b), Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz. vers. tosc. (Sirotti et al., 2005), Campigna-Lama Forests (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996). It is possible that some past records could refer to *P. chlorantha*, once considered only a variety of *P. bifolia*.
- Platanthera chlorantha** (Custer) Rchb. - G bulb, Boreal, br, l.r.2/1977, l.r.56/2000 All.A. Falterona (Caruel, 1860-64; Marcucci, 1889), La Verna (Baroni, 1897-1908; Matteini, 1968 sub *Platanthera bifolia* var. *chlorantha*; Ferrarini,

1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Badia Prataglia (05/1998, Herb. Padula), La Lama (Zangheri, 1966b), Bidente Valley (Padula, 1988), Par. Naz. vers. romagn. (Alessandrini & Bonafede, 1996; Sirotti & Fariselli, 2002), Par. Naz. vers. tosc. (Sirotti et al., 2005).

**Serapias vomeracea** (Burm. f.) Briq. - G bulb, South European-Mediterranean, px, r, if, l.r.2/1977, l.r.56/2000 All.A, lrEM: LR, lrT: LR, Upper Bidente Valley (Alessandrini & Bonafede, 1996), Rabbi Valley (Sirotti et al., 2005).

**Spiranthes spiralis** (L.) Chevallier - G rhiz, European, px, r, if, l.r.2/1977, lrEM: LR. At Fornino (Gonnelli et al., 2003b), Par. Naz. vers. tosc. (Sirotti et al., 2005), M. Guffone, Upper Rabbi Valley (Alessandrini & Bonafede, 1996), Rabbi Valley, Upper Bidente di Ridracoli and Bidente di Pietrapazza Valleys (Sirotti, 2006 *in verbis*).

#### POACEAE

**Achnatherum bromoides** (L.) P. Beauv. - H caesp, Mediterranean, NR. La Verna (Caruel, 1860-64 sub *Stipa aristellata*; Matteini, 1968 sub *S. bromoides*). Anciently reported at La Verna by Caruel, (1860-64), the same datum is erroneously attributed by Matteini (1968) to Marcucci (1881).

**Achnatherum calamagrostis** (L.) P. Beauv. - H caesp, South European Orophile, px, r. Par. Naz., vers. romagn., Rabbi Valley (Sirotti in Sirotti & Fariselli, 2002). This species was reported only for the Romagna side of the Park and it is not known in the Tuscan side; the specimen was checked and the identification confirmed.

**Agrostis canina** L. - H caesp, Boreal, D, NR. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968). Matteini's report (1968) is based on Marcucci (1889), and could be referred also to other entities, today separated in distinct species but once considered only varieties of *A. canina*.

**Agrostis capillaris** L. - H caesp, Boreal, pa. Burraia, Fonte dei Conti, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Camaldoli (07/1984, Herb. Padula sub *A. tenuis*), Camaldoli (Padula et al., 1988), M. Falco (06/2000, Herb. Padula sub *A. tenuis*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. tenuis*), La Verna (08/2004, Herb. Padula sub *A. tenuis*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).

**Agrostis castellana** Boiss. & Reut. - H caesp, South European-Mediterranean, px. Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Agrostis stolonifera** L. - H rept, Boreal, pu. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889 sub *Agro-*

*stis alba*; Baroni, 1897-1908 sub *A. alba*), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *A. alba*), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).

**Aira caryophyllea** L. subsp. *caryophyllea* - T scap, Cosmopol/wide distrib., px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Mandrioli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a), Poggio Scali (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).

**Aira elegantissima** Schur - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *A. capillaris*), Mandrioli (Baroni, 1897-1908 sub *A. capillaris*), Burraia, Campigna (Zangheri, 1966a sub *A. elegans*), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *A. elegans*).

**Alopecurus myosuroides** Huds. - T scap, Cosmopol/wide distrib., ru. Casentino (Baroni, 1897-1908 sub *Alopecurus agrestis*), Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Pratovecchio (04/2003, Herb. Padula).

**Alopecurus pratensis** L. - H caesp, Boreal, pu, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).

**Alopecurus rendlei** Eig. - T scap, South European-Mediterranean, pu, r. Campigna (Zangheri, 1966a, 1966b sub *A. utriculatus*). Zangheri (1966a, 1966b) reported the presence of *A. utriculatus* (L.) Soland., a name which is currently referable to an alien species, but probably it was a mistake and he intended *A. utriculatus* (L.) Pers., today a synonym of *A. rendlei*.

**Anthoxanthum odoratum** L. - H caesp, Eurasian, pa. Casentino (Marcucci, 1889), Giogana di Campigna, P. Giogo fra Passo Muraglione e M. Falco (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968 sub *Anthoxanthum odoratum* var. *glabrescens*; Siemoni et al., 1989-1998), M. Falco (06/1998, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. odoratum* and *A. alpinum*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Stia (04/2002, Herb. Padula), Pratovecchio (06/2002, Herb. Padula). Probably some of the past records at higher altitudes must be referred to *A. alpinum* (according to Conti et al., 2005 = *A. odoratum* subsp. *nipponicum* (Honda) Tzvelev).

**Arrhenatherum elatius** (L.) J. & C. Presl. - H caesp, Eurasian, pu. Poggio Scali, Fra Campigna e Passo della Calla (Zangheri, 1966a, 1966b), Campigna, Passo della Calla

- (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), M. Calvano (Viciani, 2008 *in verbis*).
- Arundo collina** Ten. - G rhiz, Mediterranean, arb, r. La Verna (Siemoni et al., 1989-1998 sub *Arundo pliniana*). According to Danin et al. (2005) in the Italian Peninsula all the records of *A. plinii* Turra s.l. must be referred to *A. collina*.
- Arundo donax** L. - G rhiz, Cosmopol/wide distrib., A, NR. Casentino culta (Marcucci, 1889), Campigna Lama (Zangheri, 1966b). Widely cultivated and naturalized at low altitudes, the report by Zangheri (1966b) is based on ancient citations by Baccharini and must be confirmed.
- Avena barbata** Pott. - T scap, South European-Mediterranean, px. Giogana di Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Avena fatua** L. - T scap, Eurasian, ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Avena sativa** L. - T scap, Cultivated, A. Casentino culta (Marcucci, 1889), Everywhere in the area (Zangheri, 1966b).
- Avena sterilis** L. - T scap, South European-Mediterranean, ru. Casentino (Marcucci, 1889), Frequent in the area (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Avenula praetutiana** (Parl.) Pign. - H caesp, Endemic Apennines, E. La Verna (Siemoni et al., 1989-1998). The exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, sine loc., 19/6/1996), previously identified as *A. praetutiana*, is in our opinion referable to *Homalotrichon pubescens*.
- Bellardiachloa variegata** (Lam.) Kerguelen - H caesp, South European Orophile, E. La Lama (Zangheri, 1966b sub *Poa violacea*), La Verna (Siemoni et al., 1989-1998 sub *P. violacea*). The exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, sine dat., sine loc.), is, in our opinion, referable to the common *Poa trivialis*. *P. violacea* was doubtfully reported also by Zangheri (1966b), on the basis of ancient citations by Baccharini; we also checked Baccharini's exsiccata in the *Herbarium Centrale Italicum* (Baccharini, 20/6/1912; 17/6/1912; 18/6/1912) which must be referred to *Poa sp.* and not to *B. variegata*.
- Bothriochloa ischaemum** (L.) Keng - H caesp, Cosmopol/wide distrib., px. Casentino (Marcucci, 1889 sub *Andropogon ischaemum*; Baroni, 1897-1908 sub *A. ischaemum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Brachypodium genuense** (DC.) Roem. et Schult. - H caesp, Endemic Apennines, pd, if. M. Falco (Zangheri, 1966a sub *B. pinnatum*), Sasso Fratino (Bottacci et al. sub *B. pinnatum*; Montanari, 2005 sub *B. pinnatum*; Gonnelli et al., 2006). According to Lucchese (1987) and Conti et al. (2005), all past records of *B. pinnatum* in the Italian Peninsula are erroneous. The data concerning plants living at high altitudes must be referred to *B. genuense* (in the Park area rare and localized), and the ones concerning plants living at low and medium altitudes to *B. rupestre* (very common).
- Brachypodium rupestre** (Host) Roem. & Schult. - H caesp, Eurasian, px. La Verna (Marcucci, 1889 sub *Brachypodium pinnatum*; Baroni, 1897-1908 sub *B. pinnatum*; Matteini, 1968 sub *B. pinnatum*; Siemoni e Ricceri, 1989-1998), Everywhere in the area (Zangheri, 1966b sub *B. pinnatum* and *B. rupestre*), Capria Valley (Padula, 1974 sub *B. pinnatum*), Alto Archiano (Tassini, 1976 sub *B. pinnatum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *B. pinnatum* and *B. rupestre*), Campigna (Ferrari et al., 1982 sub *B. pinnatum*), M. Falterona (Gonnelli et al., 2002), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *B. pinnatum*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2005, 2006), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). See note of *B. genuense*.
- Brachypodium sylvaticum** (Huds.) Beauv. - H caesp, Eurasian, br. Camaldoli (Marcucci, 1889; Marcucci, 1889 sub *Festuca sylvatica*; Baroni, 1897-1908 sub *F. sylvatica*), La Verna (Marcucci, 1889 sub *Festuca sylvatica*; Matteini, 1968 sub *F. sylvatica*; 08/2004, Herb. Padula), da Falterona alla Burraia, Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Campigna-Lama (Ferrari et al., 1979, 1982), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), M. Penna (07/2005, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Briza maxima** L. - T scap, Cosmopol/wide distrib., px, r. Casentino (Marcucci, 1889), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Briza media** L. - H caesp, Boreal, px. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (08/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006).

- Bromus arvensis** L. - T scap, Boreal, ru. M. del Faggione (Marcucci, 1889; Baroni, 1897-1908 sub *Serrafalcus arvensis*), Moggiona (Baroni, 1897-1908 sub *S. arvensis*), Giogana, Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Bromus benekenii** (Lange) Trimen - H caesp, Eurasian, br. Pian delle Fontanelle, Campigna (Zangheri, 1966a sub *Bromus ramosus* subsp. *benekenii*), Passo dei Mandrioli (Zangheri, 1966b sub *B. ramosus* subsp. *benekenii*), Campigna-Lama (Ferrari et al., 1979, 1982).
- Bromus commutatus** Schrad. - T scap, European, ru, r. La Verna (Marcucci, 1889 sub *Serrafalcus commutatus*; Baroni, 1897-1908 sub *S. commutatus*; Matteini, 1968 sub *Bromus hordeaceus* var. *pratensis*), Moggiona (Baroni, 1897-1908 sub *S. commutatus*), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Bromus erectus** Huds. - H caesp, Eurasian, px. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), M. del Faggione (Marcucci, 1889; Baroni, 1897-1908), M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Bromus hordeaceus** L. - T scap, Cosmopol/wide distrib., pu. M. Faggione (Marcucci, 1889 sub *Serrafalcus mollis*), M. Falco, Campigna (Zangheri, 1966a sub *Bromus mollis*; 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Matteini, 1968; Siemoni et al., 1989-1998 sub *B. scoparius*), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Chiusi della Verna (05/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006). The exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, Fondo della Melosa, 19/6/1996) previously identified as *B. scoparius* L. is in our opinion referable to *B. hordeaceus*.
- Bromus inermis** Leyss. - H caesp, Eurasian, D. Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). The presence of this species in the study area is possible, but as the only record comes from vegetation relevés and a specimen was not collected, the report must be confirmed.
- Bromus intermedius** Guss. - T scap, South European-Mediterranean, px, r. Between Pratovecchio and La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Bromus japonicus** Thunb. - T scap, Eurasian, NR. Between Moggiona and Mandrioli (Baroni, 1897-1908 sub *Serrafalcus patulus*). Anciently reported between Moggiona and Mandrioli by Baroni (1897-1908) because collected by Sommier (1890).
- Bromus madritensis** L. - T scap, South European-Mediterranean, ru. La Verna (Marcucci, 1889; Matteini, 1968 sub *Bromus sterilis* var. *madritensis*), Giogana (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Bromus racemosus** L. - T scap, European, pu, r. Campigna (Zangheri, 1966a, 1966b), Giogana (Zangheri, 1966b).
- Bromus ramosus** Huds. - H caesp, Eurasian, br. Passo della Calla, Campigna (Zangheri, 1966a, 1966b), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).
- Bromus scoparius** L. - T scap, Mediterranean, E. La Verna (Siemoni et al., 1989-1998). The only report is based on an exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, Fondo della Melosa, 19/6/1996), which we checked and is referable to *B. hordeaceus*.
- Bromus squarrosus** L. - T scap, Eurasian, NR. Between Moggiona and Mandrioli (Baroni, 1897-1908 sub *Serrafalcus squarrosus*), From Passo della Calla to La Lama (Zangheri, 1966b). Also the report by Zangheri (1966b) is based on ancient citations by Baccarini.
- Bromus sterilis** L. - T scap, South European-Mediterranean, ru. Campigna (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Poppi (04/2001, Herb. Padula), Pratovecchio (05/2003, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Calamagrostis arundinacea** (L.) Roth - H caesp, Eurasian, D. PNFC eroded slopes (Giacinti Baschetti, 1998). The report could be plausible, but it comes from a degree thesis and we could not check the specimen. Moreover, it could be also referable to *C. corsica*, common in the area but not reported by the degree thesis author.
- Calamagrostis corsica** (Hack.) D. Prain - H caesp, Corse-Appennines, ro, if, RNT. M. Falco, Passo della Calla, Campigna (Zangheri, 1966a, 1966b sub *C. varia*), Campigna (Zangheri, 1966b sub *C. varia*), Campigna-Lama (Ferrari et al., 1979, 1982 sub *C. varia*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Bottacci et al., 2003; Gonnelli et al., 2006). We refer to this species all past records of *C. varia* s.l. as, probably (Pignatti, 1982; Conti et al., 2005; Alessandrini et al., 2003), *C. corsica* is the only taxon of this group present in the Northern Apennines.
- Calamagrostis epigejos** (L.) Roth - H caesp, Boreal, NR. Campigna (Zangheri, 1966b). Zangheri's report (1966b) is based on ancient citations by Baccarini.

- Catapodium rigidum** (L.) C. E. Hubbard - T scap, South European-Mediterranean, px. Casentino (Marcucci, 1889 sub *Scleropoa rigida*), Corniolo e Campigna (Zangheri, 1966a, 1966b sub *S. rigida*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *S. rigida*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Cynodon dactylon** (L.) Pers. - G rhiz, Cosmopol/wide distrib., pu. Casentino (Marcucci, 1889; Baroni, 1897-1908), Campigna (Zangheri, 1966b; Ferrari et al., 1982), La Lama and Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Poppi, Bibbiena (Camangi et al., 2003), Pratovecchio (08/2000, 09/2005, Herb. Padula).
- Cynosurus cristatus** L. - H caesp, European, pu. Falterona (Marcucci, 1889), Passo della Calla, Passo dei Mandrioli, Prato alla Penna, Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (06/2002, Herb. Padula).
- Cynosurus echinatus** L. - T scap, South European-Mediterranean, px. M. Falco, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), La Verna (Siemoni et al., 1989-1998; 07/2004, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Pratovecchio (06/2002, Herb. Padula).
- Dactylis glomerata** L. s.l. - H caesp, Eurasian, pu. Casentino (Marcucci, 1889), Burraia, Passo della Calla (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-Lama (Ferrari et al., 1979, 1982), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (07/2001, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino (Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006). All the data are intended s.l. and include the infraspecific taxa; *D. glomerata* subsp. *lobata* (Drejer) Lindb. F. was reported by Montanari (2005) at Sasso Fratino, but not found again by Gonnelli et al. (2006), in the Campigna grasslands Ferrari et al. (1982) reported the subsp. *hispanica* (Roth) Nyman.
- Danthonia alpina** Vest. - H caesp, South-European, px. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Danthonia provincialis*), La Verna (Siemoni et al., 1989-1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Danthonia decumbens** (L.) DC. - H caesp, European, pa. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Sieglingia decumbens*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Dasypyrum villosum** (L.) P. Candargy, non Borbàs - T scap, South European-Mediterranean, D, NR. Lama-Camaldoli (Zangheri, 1966b). Thermophilous species reported by Zangheri (1966b) on the basis of ancient citations by Baccharini.
- Deschampsia caespitosa** (L.) P. Beauv. - H caesp, Cosmopol/wide distrib., pu, if. Giogana, Passo della Calla (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998; 08/2004, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Sasso Fratino (Montanari, 2005).
- Deschampsia flexuosa** (L.) Trin. - H caesp, Cosmopol/wide distrib., pa. Falterona (Caruel, 1860-64; Marcucci, 1889; Zangheri, 1966b), Burraia, Passo della Calla, M. Falco (Zangheri, 1966a), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982 sub *A. flexuosa*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Stia (07/1994, Herb. Padula sub *A. flexuosa*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. flexuosa*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Hofmann, 1965; Padula, 1978; Gonnelli et al., 2006).
- Digitaria sanguinalis** (L.) Scop. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), Pratovecchio (09/1998, 08-10/2003, Herb. Padula).
- Echinochloa crus-galli** (L.) P. Beauv. - T scap, Cosmopol/wide distrib., ru. From Pratovecchio to La Lama (Zangheri, 1966b), Pratovecchio (08/1987, 07/2002, Herb. Padula), PNFC wetlands (Mazza, 2006).
- Elymus caninus** (L.) L. - H caesp, Boreal, br. La Verna (Caruel, 1860-64 sub *Triticum caninum*; Marcucci, 1889 sub *T. caninum*; Baroni, 1897-1908 sub *T. caninum*; Matteini, 1968 sub *Agropyron caninum*), Campigna (Zangheri, 1966a, 1966b sub *A. caninum*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. caninum*).
- Elymus repens** (L.) Gould. subsp. *repens* - G rhiz, Boreal, ru. La Verna (Caruel, 1860-64 sub *Triticum repens*; Marcucci, 1889 sub *T. repens*), Campigna (Zangheri, 1966a sub *A. repens*; Ferrari et al., 1982 sub *A. repens*), Everywhere in the area (Zangheri, 1966b sub *A. repens*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. repens*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006).
- Eragrostis cilianensis** (All.) Vignolo Lutati - T scap, Cosmopol/wide distrib., NR. Casentino (Marcucci, 1889 sub *Eragrostis magastachya*; Baroni, 1897-1908 sub *E. magastachya*), From Pratovecchio to La Lama (Zangheri, 1966b). All the records are ancient as also the report by Zangheri (1966b) is based on Baccharini.
- Festuca altissima** All. - H caesp, European, br. Campigna, Lama (Zangheri, 1966a, 1966b sub *F. sylvatica*; Ferrari et al., 1979, 1982; Padula et al., 1988), Par. Naz., vers. tos.

- (Viciani & Gabellini, 2002), La Verna (10/2002, Herb. Padula), M. Penna (07/2005, Herb. Padula), Sasso Fratino (Hofmann, 1965; Montanari, 2005; Gonnelli et al., 2006). In one of his notes, Zangheri (1966b) reported that Baccharini considered *F. spadicea* L. (= *F. paniculata* (L.) Schinz. et Thell.) common in this area, but nobody else has ever reported the presence of this striking plant, so probably Baccharini was referring to *F. altissima* and not to the true *F. paniculata*.
- Festuca arundinacea** Schreb. subsp. **fenas** (Lag.) Arcang. - H caesp, South European-Mediterranean, px. Campigna, La Lama (Zangheri, 1966a, 1966b)
- Festuca arundinacea** Schreb. s.l. - H caesp, Eurasian, pu. Pratovecchio (Caruel, 1860-64), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), Passo della Calla (Zangheri, 1966a, 1966b), Campigna (Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002). Past data could refer either to the typical subspecies or to others, in particular to the subsp. *fenas*.
- Festuca circummediterranea** Patzke - H caesp, South European-Mediterranean, px. M. Falco, Prato alla Penna, Sodo dei Conti, Campigna (Zangheri, 1966a, 1966b sub *F. laevis*).
- Festuca dimorpha** Guss. - H caesp, South European Orophile, pd, r, if, RNT. Canale di Pentolino, Pian Tombesi cliffs (Gonnelli et al., 2007b sub *Leucopoa dimorpha*). Recently reported in the Park area and new for Emilia-Romagna (Gonnelli et al., 2007b).
- Festuca filiformis** Pourr. - H caesp, European, pa, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Festuca gigantea** (L.) Vill. - H caesp, Eurasian, bu. Passo della Calla, Campigna (Zangheri, 1966a, 1966b), Poggio Scali, Passo dei Mandrioli (Zangheri, 1966b), Alto Archiano (Tassini, 1976), Camaldoli (08-10/2000, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Festuca heterophylla** Lam. - H caesp, European, br. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968), Campigna (Zangheri, 1966a), M. Falterona, (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976 sub *Festuca rubra* var. *heterophylla*), Campigna-La Lama (Ferrari et al., 1979, 1982), Sodo dei Conti (08/1978, 07/1980, Herb. Padula), Camaldoli (07/1984, Herb. Padula; Padula et al., 1988), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Festuca inops** De Not. - H caesp, Endemic Apennines, px. Campigna (Zangheri, 1966b sub *F. glauca*; Ferrari et al., 1982 sub *F. cinerea* and *F. ovina*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *F. glauca*), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006). We refer to this species the report of *F. cinerea* by Ferrari et al. (1982), as the true *F. cinerea*, a plant not very common in the Peninsula area, is probably not present here (B. Foggi, *in verbis*; see note of *F. ovina* s.l.).
- Festuca ovina** L. s.l. - H caesp, European, D. Consuma (Caruel, 1860-64 sub *Festuca duriuscula*; Marcucci, 1889 sub *F. duriuscula*), La Verna (Caruel, 1860-64 sub *Festuca duriuscula*; Marcucci, 1889 sub *F. duriuscula*; Matteini, 1968 sub *F. ovina* var. *duriuscula*), Falterona (Marcucci, 1889 sub *F. duriuscula*; Baroni, 1897-1908 sub *F. duriuscula*; Zangheri, 1966b sub *F. duriuscula*), Capria Valley (Padula, 1974), Campigna (Ferrari et al., 1982). All past records are referred to taxa of *F. ovina* group or to other similar species (e.g. *F. pumila* Chaix *sensu* Baccharini in Zangheri, 1966b), but not to *F. ovina* s.s. (Conti et al., 2005). In the area, one of the most widespread species of this group is *F. inops*, but also others are present (*F. stricta* subsp. *trachyphylla* = *F. duriuscula* Auct. p.p., *F. filiformis* and *F. circummediterranea*).
- Festuca pratensis** Huds. - H caesp, Eurasian, pu. Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Passo dei Mandrioli (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). Probably in the area also the subsp. *apennina* (De Not.) Hegi is present.
- Festuca robustifolia** Mgf.-Dbg. - H caesp, Endemic Apennines, D. PNFC eroded slopes (Giacinti Baschetti, 1998). Reported for the eroded slopes of the Park by Giacinti Baschetti (1998), but almost certainly by mistake as it is a species strictly endemic of ultramafic rocks (Foggi & Signorini, 2001), which are not present in the Park. Probably many records refer to *F. stricta* subsp. *trachyphylla*.
- Festuca rubra** L. s.l. - H caesp, Boreal, D. La Lama, Passo della Calla, Sodo de' Conti (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), M. Falco (06/2000, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). All past records of *F. rubra*, which *sensu stricto* is a nordic species, in Italy only cultivated, probably must be referred *p.max.parte* to other taxa of the group (*F. rubra* subsp. *commutata*, *F. rubra* subsp. *juncea*, *F. trichophylla*).
- Festuca rubra** L. subsp. **commutata** (Gaudin) Markgr.-Dann. - H caesp, Boreal, pa. M. Falco, Burraia, Passo della Calla, Campigna, Prato Bertone, Poggio Giogo (Zangheri, 1966a, 1966b sub *F. rubra* subsp. *fallax*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *F. nigrescens*), Stia



- (07/1994, Herb. Padula), Sasso Fratino (Bottacci et al., 2003). See note of *F. rubra* s.l.
- Festuca rubra** L. subsp. **junceae** (Hack.) K. Richt. - H caesp, South-European, pa. La Lama, Passo della Calla, Sodo de' Conti (Zangheri, 1966b).
- Festuca stricta** Host subsp. **trachyphylla** (Hack.) Patzke ex Pils - H caesp, European, px. M. Calvano (Vicini, Lastrucci et Foggi, 2008 *in verbis*). This species was recently reported at Mt. Calvano, but probably several citations of "*F. ovina* var. *duriuscula*" for dry grasslands refer to this taxon (see note of *F. ovina* s.l.).
- Festuca trichophylla** (Ducros ex Gaudin) K. Richt. - H caesp, South-European, pu. M. Falco, Campigna Forest (Zangheri, 1966a, 1966b sub *F. rubra* subsp. *trichophylla*).
- Festuca violacea** Schleich. subsp. **puccinellii** (Parl.) Foggi, Graz., Rossi & Signorini - H caesp, Endemic Apennines, pd, r, RNT, l.r.56/2000 All.A. M. Falco (Sirotti 1998; Rossi, 2001), Par. Naz., vers. tos. (Vicini & Gabellini, 2002 sub *Festuca puccinellii*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). In the study area it is present only on the northern rocky slopes of Mt. Falco, a site representing the southern limit of the distribution area of this species in Italy.
- Gastridium ventricosum** (Gouan) Schinz. & Thell. - T scap, South European-Mediterranean, ru. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Gaudinia fragilis** (L.) P. Beauv. - T scap, South European-Mediterranean, px. Between Pratovecchio and La Lama (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Glyceria fluitans** (L.) R. Br. - G rhiz/I rad, Cosmopol/wide distrib., pu, r, l.r.56/2000 All.A. PNFC wetlands at Passo Porcareccio (Lastrucci in Falzea, 2006).
- Glyceria notata** Chevall. - G rhiz/I rad, Cosmopol/wide distrib., pu. Camaldoli (Caruel, 1860-64 sub *Glyceria plicata*; Marcucci, 1889 sub *G. plicata*), Passo della Calla, Campigna (Zangheri, 1966a sub *G. plicata*), PNFC wetlands (Falzea, 2006).
- Holcus lanatus** L. - H caesp, Boreal, pu. Lungo il Capraia (Baroni, 1897-1908), Campigna (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna (Ferrari et al., 1982), La Verna (Siemoni et al., 1989-1998), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Pratovecchio (06/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006).
- Holcus mollis** L. - H caesp, Boreal, br. Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), San Paolo in Alpe (Sirotti, 2006 *in verbis*).
- Homalotricon pubescens** (Huds.) Banfi, Galasso & Bracchi subsp. **pubescens** - H caesp, Boreal, px, r. La Verna (Siemoni et al., 1989-1998 sub *Avenula praetutiana*), PNFC eroded slopes alla Verna (Giacinti Baschetti, 1998 sub *Avenula pubescens*), M. Calvano (D. Vicini, 2008 *in verbis*). The exsiccatum of the *Herbarium Alvernae* (Siemoni et Ricceri, sine loc., 19/6/1996), previously identified as *Avenula praetutiana*, is in our opinion referable to *H. pubescens*.
- Hordeylum europaeus** (L.) Harz - H caesp, European, E. La Verna (Siemoni et al., 1989-1998). The only record is an exsiccatum of the *Herbarium Alvernae* (Leg. Siemoni et Ricceri, sine dat., sine loc.), which is in bad conditions and in our opinion referable to *Hordeum* sp. and not to *Hordeylum*.
- Hordeum murinum** L. - T scap, Boreal, ru. Everywhere in the area (Zangheri, 1966b), La Verna (Siemoni et al., 1989-1998). Zangheri (1966b) reports that *H. murinum* s.l. is common everywhere in the area, but affirms that the most widespread subspecies is subsp. *leporinum* (Link) Arcang.
- Hordeum murinum** L. subsp. **leporinum** (Link) Arcang. - T scap, South European-Mediterranean, ru. Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975).
- Hordeum secalinum** Schreb. - H caesp, South European-Mediterranean, D, NR. From Pratovecchio to Grogana (Zangheri, 1966b sub *Hordeum nodosum*). Zangheri's report (1966b) is based on ancient citations by Baccarini and Siemoni.
- Lolium multiflorum** Lam. - T scap, South European-Mediterranean, ru. Campigna (Zangheri, 1966a), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Lolium perenne** L. - H caesp, Boreal, ru. La Verna (Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Lolium rigidum** Gaudin - T scap, Cosmopol/wide distrib., NR. Campigna (Zangheri, 1966b). Zangheri's report (1966b) is based on ancient citations by Baccarini.
- Lolium temulentum** L. - T scap, Cosmopol/wide distrib., ru. La Verna (Marcucci, 1889; Baroni, 1897; Matteini, 1968), Par. Naz., vers. tos. (Vicini & Gabellini, 2002).
- Melica ciliata** L. - H caesp, South European-Mediterranean, px. La Verna (Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Everywhere in the area (Zangheri, 1966b), Par. Naz., vers. tos. (Vicini & Gabellini, 2002), Chiusi della Verna (09/2003, Herb. Padula).
- Melica transsylvanica** Schur. - H caesp, Eurasian, px, r. Rin-

- cine-M. Massicaia (Sabato & Valenziano, 1975).
- Melica uniflora** Retz. - H caesp, Eurasian, br. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Passo dei Mandrioli, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Alto Archiano (Tassini, 1976), Campigna-La Lama (Ferrari et al., 1979; 1982), Camaldoli (Padula et al., 1988), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Badia Prataglia (08/2003, Herb. Padula), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino, (Hofmann, 1965, Padula, 1982; Bottacci et al., 2003; Montanari, 2005; Gonnelli et al., 2006).
- Milium effusum** L. - G rhiz, Boreal, br. La Verna (Marcucci, 1889; Baroni, 1897-1908; Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a, 1966b), Alto Archiano (Tassini, 1976), Campigna-La Lama (Ferrari et al., 1979; 1982), Camaldoli (07/1993, Herb. Padula), Sodo de' Conti (06/2000, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006; Mazza, 2006), Sasso Fratino, (Hofmann, 1965; Padula, 1978; Padula, 1982; Montanari, 2005; Gonnelli et al., 2006).
- Molinieriella minuta** (L.) Rouy - T scap, Mediterranean, NR. Mandrioli (Baroni, 1897-1908 sub *Molinieria minuta*). Anciently reported at Mandrioli by Baroni (1897-1908) on the basis of some specimens collected by Sommier (1890), and never found again.
- Molinia caerulea** (L.) Moench - H caesp, Boreal, D, NR. Prato Bertone, Passo della Calla (Zangheri, 1966b). Zangheri's report (1966b), based on ancient citations by Baccarini, could refer either to the rare typical subspecies or, more probably, to the relatively more common subspecies *arundinacea* (Schrank) K. Richt.
- Nardus stricta** L. - H caesp, Boreal, pa. Falterona (Marcucci, 1889; Baroni, 1897-1908; Zangheri, 1966b), fra Falterona e Camaldoli (Baroni, 1897-1908), M. Falco (Zangheri, 1966a, 1966b; 06/2000, Herb. Padula), Passo della Calla, Campigna (Zangheri, 1966a), Burraia, Prato Bertone (Zangheri, 1966a, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Sodo de' Conti (08/1978, Herb. Padula), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Paspalum distichum** L. - G rhiz, Naturalized, A. Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002). The record comes from phytosociological relevés, but some specimens were collected and verified.
- Phleum alpinum** L. - H caesp, South European Orophile, pa, r. Par. Naz., vers. tos. (Viciani & Gabellini, 2002). New species for this area, recently collected in Mt. Falco grasslands (Viciani & Gabellini, 2002), some exsiccata have been deposited in the *Tuscan Herbarium* of the Botanical Garden "Giardino dei Semplici" (University of Florence).
- Phleum bertolonii** DC. - H caesp, South European-Mediterranean, pu. Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Everywhere in the area (Zangheri, 1966b sub *Phleum pratense* subsp. *nodosum*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *P. pratense* subsp. *nodosum*), Campigna (Ferrari et al., 1982).
- Phleum hirsutum** Honck. subsp. **ambiguum** (Ten.) Tzvelev - G rhiz, Endemic Apennines, px, r, if. La Verna (Siemoni et al., 1989-1998 sub *Phleum ambiguum*), M. Calvano (Viciani & Gabellini, 2002). The study area is important as this is the site where the northern populations of the species (subsp. *hirsutum*) get in touch with the southern ones (subsp. *ambiguum*).
- Phleum hirsutum** Honck. subsp. **hirsutum** - G rhiz, South European Orophile, px, r, if. La Verna (Marcucci, 1889 sub *Phleum michelii*; Baroni, 1897-1908 sub *P. michelii*), La Verna (Siemoni et al., 1989-1998). See previous note.
- Phleum paniculatum** Huds. - T scap, South European-Mediterranean, NR. Between Pratovecchio and La Lama (Zangheri, 1966b). Zangheri's report (1966b) is based on ancient citations by Baccarini.
- Phleum pratense** L. - H caesp, European, pu. Pratovecchio (Caruel, 1860-64), Casentino (Marcucci, 1889), Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Badia Prataglia (07/1978, Herb. Padula), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Bibbiena (07/2002, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Phragmites australis** (Cav.) Trin. - E, Cosmopol/wide distrib., pu. Campigna, Lama (Zangheri, 1966b sub *P. communis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Metaletto (10/2003, Herb. Padula), PNFC wetlands (Falzea, 2006; Mazza, 2006).
- Phyllostachys aurea** (Carr.) A. & C. Riv. - P scap, Cultivated, A. Metaletto culta (11/1999, Herb. Padula), PNFC wetlands at Metaletto pond (Mazza, 2006).
- Piptatherum miliaceum** (L.) Coss. - H caesp, Mediterranean, D. La Verna (Matteini, 1968 sub *Milium multiflorum*). Matteini (1968) quoted an exsiccatum collected by Tosi (dated 12/8/1960), but in the *Herbarium Centrale Italicum* (FI) this specimen is not present. The record is not probable also for the ecological and climatic conditions of the site (at an altitudes of more than 1000 a.s.l.) and must be confirmed.
- Poa alpina** L. - H caesp, Boreal, pa, r. La Verna (Caruel, 1860-64; Marcucci, 1889; Fiori, 1925; Matteini, 1968;

- Siemoni et al., 1989-1998), M. Falco (Zangheri, 1966a, 1966b), M. Falterona (Zangheri, 1966b), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Poa annua** L. - T caesp, Cosmopol/wide distrib., ru. Badia Prataglia (Marcucci, 1889), M. Falco, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b).
- Poa bulbosa** L. - H caesp, Eurasian, px. P. Giogo fra Passo Muraglione e M. Falco, Campigna (Zangheri, 1966a), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Pratovecchio (04/2002, Herb. Padula), Chiusi della Verna (04/2004, Herb. Padula), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), Sasso Fratino (Gonnelli et al., 2006).
- Poa compressa** L. - H caesp, Boreal, ru. La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Campigna (Zangheri, 1966a, 1966b; Ferrari et al., 1982), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Poa nemoralis** L. - H caesp, Boreal, br. Falterona, Camaldoli (Caruel, 1860-64; Marcucci, 1889), M. Falterona (Gonnelli et al., 2002), La Verna (Caruel, 1860-64; Marcucci, 1889; Matteini, 1968; Siemoni et al., 1989-1998), Badia Prataglia (Marcucci, 1889; Baroni, 1897-1908), Burraia, Passo dei Mandrioli, M. Falco, (Zangheri, 1966a), Campigna (Zangheri, 1966a; Ferrari et al., 1982), Everywhere in the area (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006), Sasso Fratino, (Hofmann 1965, Bottacci et al., 2003; Gonnelli et al., 2006).
- Poa pratensis** L. - H caesp, Boreal, pu. M. Falco, Prato alla Penna, Campigna (Zangheri, 1966a), Everywhere in the area (Zangheri, 1966b), La Verna (Matteini, 1968), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Poa sylvicola** Guss. - H caesp, South European-Mediterranean, br. Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Campigna Forest, Prato Bertone (Zangheri, 1966a, 1966b), Sasso Fratino (Montanari, 2005; Gonnelli et al., 2006).
- Poa trivialis** L. - H caesp, Eurasian, pu. Campigna (Ferrari et al., 1982), La Verna (Matteini, 1968; Siemoni et al., 1989-1998), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002), PNFC wetlands (Falzea, 2006). Some records could refer to *P. sylvicola* Guss., which in the past was considered a subspecies or a variety of *P. trivialis*, but is in our opinion the most widespread taxon of this group in the area.
- Polypogon viridis** (Gouan) Breistr. - H caesp, Cosmopol/wide distrib., pu,r. La Verna (Siemoni et al., 1989-1998). We can confirm only the record of the *Herbarium Alvernae* (Siemoni et Ricceri, Fondo della Melosa, 19/6/1996), but probably this species is common at low altitudes and often confused with *Agrostis stolonifera* L.
- Rostraria cristata** (L.) Tzvelev - T caesp, Cosmopol/wide distrib., ru. Passo del Muraglione (Zangheri, 1966a sub *Koeleria gerardii*; 1966b sub *K. phleoides*).
- Secale cereale** L. - T scap, Cultivated, A. Casentino culta (Caruel, 1860-64-64-64), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Sesleria argentea** Savi - H caesp, Appennino-Balcanica, D. Casentino (Marcucci, 1889 sub *Sesleria elongata* and *S. caerulea*), fra Camaldoli e Moggiona (Baroni, 1897-1908 sub *S. caerulea*), La Verna (Caruel, 1860-64 sub *S. caerulea*; Marcucci, 1889 sub *S. cylindrica*; Baroni, 1897-1908; Matteini, 1968 sub *S. caerulea*; Siemoni et al., 1989-1998 sub *S. autumnalis*), Capria Valley (Padula, 1974 sub *S. caerulea*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002 sub *S. autumnalis*). All past records of *S. autumnalis*, *S. caerulea*, *S. cylindrica*, *S. elongata* must be considered erroneous (Conti et al., 2005) and must be referred to the other taxa of this genus present in Tuscany and Emilia-Romagna (*S. argentea*, *S. italica*, *S. pichiana*). Currently, *S. argentea* is not surely recorded in the Park area.
- Sesleria italica** (Pamp.) Ujhelyi - H caesp, Endemic Apennines, px, RNT, l.r.56/2000 All.A. Poggio Scali, Passo dei Mandrioli, Campigna, P. Giogo tra Passo Muraglione e M. Falco (Zangheri, 1966a,1966b), M. Falco, Campigna, Prato Bertone (Zangheri, 1966b), Rincine-M. Massicaia (Sabato & Valenziano, 1975), PNFC eroded slopes (Giacinti Baschetti, 1998), Par. Naz., vers. romagn. (Agostini, 1992; Sirotti & Fariselli, 2002), Par. Naz., vers. tos. (Viciani & Gabellini, 2002), Moggiona (05/2005, Herb. Padula), PNFC wetlands (Mazza, 2006), Sasso Fratino (Gonnelli et al., 2006). Some past records of this species could refer to *S. pichiana*, recently described.
- Sesleria pichiana** Foggi, Graz. Rossi & Pignotti - H caesp, Endemic Apennines, pd, r, if. La Verna (herbarium exsiccatum by Bubani, 1883, in BOLO, Herb. Bertoloni; Gonnelli, 2006 *in verbis*), M. Penna nearby Badia Prataglia (V. Gonnelli, 20/5/2005, FI), Canale di Pentolino, Pian Tombesi cliffs (Gonnelli et al., 2006). This endemic plant of the Northern Apennines was recently described by Foggi et al. (2007), the exsiccata here quoted are between the "*specimina visa*" reported by these authors. The sites of La Verna, together with the ones of Monterufoli (Pisa), are at the southern distribution limit of the species in Italy.

- Setaria viridis** (L.) P. Beauv. - T scap, Cosmopol/wide distrib., ru. Casentino (Marcucci, 1889; Baroni, 1897-1908), From Pratovecchio to La Lama (Zangheri, 1966b), Pratovecchio (09/1998, Herb. Padula).
- Sorghum bicolor** (L.) Moench - T scap, Cultivated, A. Casentino culta (Caruel, 1860-64 sub *Sorghum saccharatum*; Marcucci, 1889 sub *S. vulgare*, *S. saccharatum*; Baroni, 1897-1908 sub *S. saccharatum*), Premilcuore (Zangheri, 1966a), Bibbiena (08/1999, Herb. Padula sub *S. bicolor* subsp. *saccharatum*).
- Trachynia distachya** (L.) Link - T scap, Mediterranean, px. Casentino (Marcucci, 1889 sub *Brachypodium distachyon*; Baroni, 1897-1908 sub *B. distachyon*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *B. distachyon*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Trisetaria flavescens** (L.) Baumg. - H caesp, Eurasian, pu. La Verna (Marcucci, 1889 sub *Trisetum flavescens*; Baroni, 1897-1908 sub *T. flavescens*; Matteini, 1968 sub *T. flavescens*; Siemoni et al., 1989-1998 sub *T. flavescens*), Burraia (Zangheri, 1966a sub *T. flavescens*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *T. flavescens*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Triticum neglectum** (Req. ex Bertol.) Greuter - T scap, Mediterranean, px, r. Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Aegilops ovata* var. *triaristata*).
- Triticum ovatum** (L.) Raspail - T scap, Mediterranean, px. Casentino (Marcucci, 1889 sub *Aegilops ovata*; Baroni, 1897-1908 sub *A. ovata*), Campigna (Zangheri, 1966b sub *A. ovata*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *A. ovata* var. *typica*), PNFC eroded slopes (Giacinti Baschetti, 1998 sub *A. geniculata*), Par. Naz., vers. tos. (Viciani & Gabellini, 2002 sub *A. geniculata*), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Ventenata dubia** (Leers) Coss. - T scap, South European-Mediterranean, NR. Falterona (Marcucci, 1889 sub *Ventenata avenacea*; Sabato & Valenziano, 1975), Mandrioli (Sommier, 1890 sub *V. avenacea*; Baroni, 1897-1908). All the records are ancient as also the report by Sabato & Valenziano (1975) is based on Marcucci (1889).
- Vulpia bromoides** (L.) Gray - T caesp, Eurasian, px. La Verna (Baroni, 1897-1908 sub *Vulpia myuros* var. *bromoides*), From Pratovecchio to La Lama (Zangheri, 1966b sub *V. myuros* var. *dertonensis*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. tos. (Viciani & Gabellini, 2002).
- Vulpia ciliata** (Pers.) Lk. - T caesp, South European-Mediterranean, px. Mandrioli (Baroni, 1897-1908), P. Giogo fra Passo Muraglione e M. Falco (Zangheri, 1966a), M. Falco (Zangheri, 1966b sub *Vulpia danthonii*), Rincine-M. Massicaia (Sabato & Valenziano, 1975), Par. Naz., vers. romagn. (Sirotti & Fariselli, 2002).
- Vulpia geniculata** (L.) Link - T caesp, Mediterranean, D, NR. From Poggio Scali to Pian del Pero (Zangheri, 1966b). Zangheri (1966b) doubtfully reported an ancient citation by Baccarini, and there is no Baccarini's exsiccatum in the *Herbarium Centrale Italicum* (FI).
- Vulpia myuros** (L.) C. C. Gmel. - T caesp, Cosmopol/wide distrib., px. La Verna (Marcucci, 1889 sub *Festuca myuros*), Rincine-M. Massicaia (Sabato & Valenziano, 1975 sub *Vulpia myuros* var. *pseudo-myuros*).

## POTAMOGETONACEAE

- Potamogeton crispus** L. - I rad, Cosmopol/wide distrib., st. Metaletto (08/1980, 05/1996, 10/2000, Herb. Padula), PNFC wetlands at Traversari and Metaletto ponds (Mazza, 2006; Falzea, 2006).
- Potamogeton natans** L. - I rad, Cosmopol/wide distrib., st, r. Camaldoli (Marcucci, 1889; Baroni, 1897-1908), Metaletto (08/1980, 11/1999, 10/2000, Herb. Padula), Eremo-Poggio Scali (Zangheri, 1966b), PNFC wetlands at Traversari and Metaletto ponds (Mazza, 2006; Falzea, 2006).

## SPARGANIACEAE

- Sparganium erectum** L. - I rad, Eurasian, st, r. Camaldoli (Marcucci, 1889 sub *Sparganium ramosus*; Baroni, 1897-1908 sub *S. ramosus*), La Lama (Padula, 1995), Upper Savio Valley (Semprini & Milandri, 2001), PNFC wetlands at Traversari pond of Camaldoli (Falzea, 2006; Mazza, 2006).

## TYPHACEAE

- Typha angustifolia** L. - G rhiz, Cosmopol/wide distrib., pu, r. La Verna (Siemoni et al., 1989-1998). In mountain sites of the main river valleys (Montone, Rabbi, Bidente and Savio), Semprini & Milandri (2001) reported also the presence of *T. minima* Hoppe, but we could not understand whether these sites are within the Park boundaries or not.
- Typha latifolia** L. - G rhiz, Cosmopol/wide distrib., pu. La Verna (Siemoni et al., 1989-1998), Pratovecchio (07/2000, Herb. Padula), La Lama (Zangheri, 1966b), PNFC wetlands at Vignano pond (Mazza, 2006), Rincine-M. Massicaia (Sabato & Valenziano, 1975).

## Discussion

Even after excluding alien and doubtful species and those not found after 1960, the Park's phytodiversity is still very high, having a flora of 1125 entities. The taxa are divided into 97 families (according to Pignatti, 1982), the most numerous being *Asteraceae* (134 species), *Poaceae* (103) and *Fabaceae* (87). *Lamiaceae* (52 species), *Rosaceae* (48), *Caryophyllaceae* (46), *Brassicaceae* (45), *Orchidaceae* (44), *Apiaceae* (43), *Scrophulariaceae* (43) are also quite numerous. Although this check-list is primarily based on bibliography, there are several new data for the area (e.g. *Phleum alpinum*, *Cytisus nigricans*, *Festuca stricta* subsp. *trachyphylla*, *Euphorbia pepus*, etc.), resulting from unpublished observations and collections by the study group or from checks and confirmations of herbarium material specimens.

### The biological spectrum

As was expected, given the climatic-environmental collocation of the area, the analysis of the biological spectrum (Fig. 3) shows a clear predominance (46%) of hemicryptophytes (H); therophytes (T) are about 23% of the total, and most probably the majority are distributed in the lowland open areas; geophytes (G) and phanerophytes (P) are quite numerous (15% and 10% respectively), while chamaephytes (Ch) are below 5% and hydrophytes together with helophytes (I+E) do not even reach 1%, because water environments are not many in the study area. The comparison with the spectra of some other Apennine floras of nearby areas (Fig. 4) is not very significant because a lot depends more on the altitudinal gradient taken into consideration rather than real similar environmental conditions.

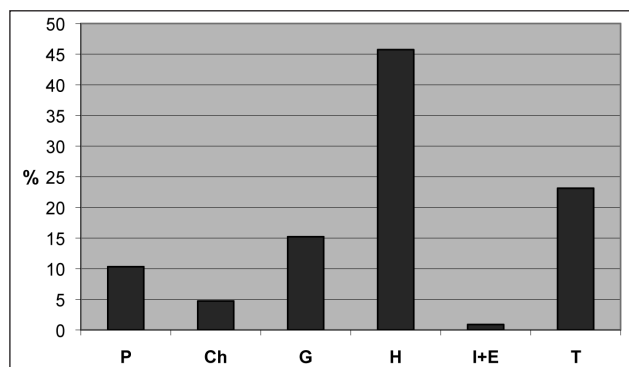


Fig. 3 – Biological spectrum of native vascular flora in the "Parco Nazionale delle Foreste Casentinesi".

All things considered, the most similar readings in Fig. 4 are those relating to Mt. Cetona (Mazzeschi & Selvi, 1999), which is certainly quite different as regards substratum and type of environment from the Park which, at least in theory, should be more similar to the Alpe della Luna (Raffaelli & Rizzotto, 1991). If we calculate the biological spectrum related only to the forest flora (species of the br, bu, bx environments, Fig. 5), apart from a considerable amount of phanerophytes (26%), we also notice a very high percentage of geophytes (28%). In northern deciduous broadleaved woods this is indicative of habitat maturity, because nemoral geophytes are adapted to live in fully-developed forest habitats (Ferrari et al., 1979; Walter, 1979). Hemicryptophytes are always dominant (41%), while therophytes are greatly decreasing (3%).

### Chorological categories

The general chorological spectrum is shown in Fig. 6. To better understand the chorological analysis and highlight the most typical components, the many categories taken from Pignatti (1982) have been put together in bigger groups, which have been specified in the flora list. As Fig. 6 shows, the European species in the broad sense are the most representative geographical

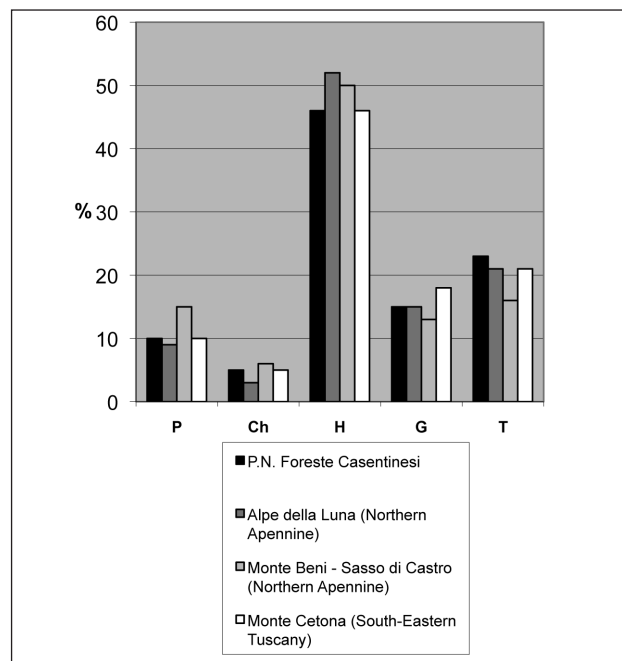


Fig. 4 – Comparison between biological spectra in "Parco Nazionale delle Foreste Casentinesi", "Alpe della Luna" (Raffaelli & Rizzotto, 1991), "Monte Beni and Sasso di Castro" (Viciani et al., 2008), "Monte Cetona" (Mazzeschi & Selvi, 1999).

component (>25%), among which the South European Orophile (5%) and the South European (4%) have significant percentages, followed by the Eurasian (19%) and the Boreal (13%). The linking elements between the Boreal and Tetric subkingdoms are also important among which the South-European Mediterranean (19%) stands out, while the Mediterranean species in the strict sense are present in a limited percentage (6%). The European Orophile, the South European and also the Oro-Mediterranean, though with not outstanding percentages (less than 10% in total), characterize the plant population of the area in the orophile sense. The Endemic entities form a small part compared to the rest (3%), but they represent a very important component from the phytogeographical point of view. Within this category there are plants with different distributions: punctiform endemisms limited to the territory under study (*Epipactis flaminia*, *Hieracium villosum* var. *zangherii*; there are ongoing studies on the latter which seem to reveal its autonomy from the type), entities

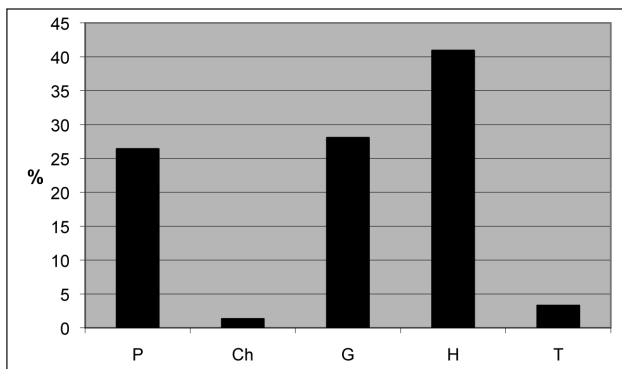


Fig. 5 – Biological spectrum of forest vascular flora in the “Parco Nazionale delle Foreste Casentinesi”.

common in the whole of Italy and Corsica (*Robertia taraxacoides*) or present between Northern Italy and the central Apennines (*Tephrosia longifolia* subsp. *brachychaeta*), species that are centrally distributed essentially on the northern Apennines which reach their southern or eastern limit here (*Festuca violacea* subsp. *puccinellii*, *Murbeckiella zanonii*, *Sesleria pichiana*, etc.), entities common between the northern and central Apennines (*Festuca inops*, *Centaurea nigrescens* subsp. *pinnatifida*, etc.), species distributed more or less over all the Peninsula (*Polygala flavescens*, *Arenaria bertolonii*, *Viola eugeniae*, *Arisarum proboscideum*, *Linaria purpurea*, *Digitalis lutea* subsp. *australis*, etc.). The endemism present here is therefore essentially of the northern Apennine and peninsular type.

A comparison between the chorological elements of the upper mountain flora of the Park (grasslands and upper mountain rocky areas, part of the heath and wood species, cfr. Alessandrini et al., 2003) and those related to the Tuscan-Emilia Apennines in the part that goes from Passo della Cisa to the Pistoia/Modena area (Alessandrini et al., 2003) can be attempted. In order to do this, reference has to be made to the same chorotypes used for the northern Apennines (Tomaselli & Agostini, 1994; Tomaselli & Gualmini, 2000; Alessandrini et al., 2003). Fig. 7 shows that the two floras are chorologically different because of several factors. One of the most significant factors is the different percentages of the Central European Orophiles, which are clearly predominant in the Tuscan-Emilia Apennines (35% as opposed to not even 3%). Another important difference regards the South European Orophiles which, on the contrary, are prevalent in the

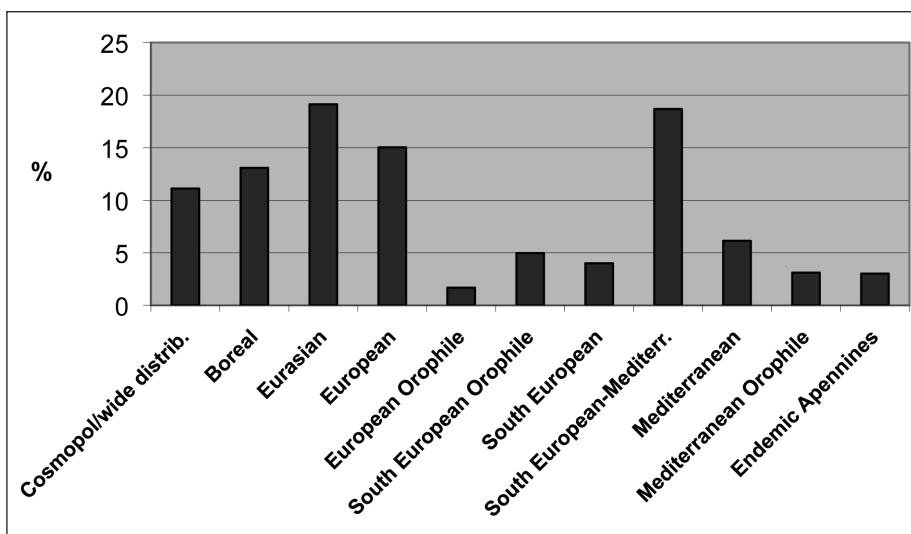


Fig. 6 – Chorological spectrum of the flora in the “Parco Nazionale delle Foreste Casentinesi”.

Park (21% as opposed to 8%). Therefore, although it still has several species from the Tuscan-Emilia Apennines and the Alps, the study area is closer to the peninsular-Apennines and the southern-European components than the more northern Apennines. The percentage variations of the Boreal and Eurasian elements follow the same trend and are higher in the Tuscan-Emilia Apennines and in the Park respectively. A further confirmation of this are the Endemic Apennine species readings of the study area which are higher than those of the Tuscan-Emilia Apennines (6% as opposed to 4%); moreover, if the actual taxa distributions are checked, it will be noted that several northern Apennine endemisms are missing in the study area (*Armeria marginata*, *Primula apennina*, *Festuca riccerii*, *Saxifraga etrusca*, *Taraxacum aemilianum*, etc.).

#### Rare species, phytogeographical and conservation interest species

As already pointed out in the paragraph about chorology, the geographical position of the Parco Nazionale delle Foreste Casentinesi turns these places into a “bridge” between two very different flora groups. In fact, several species of phytogeographical interest have their southern or northern distribution border here.

Among the species which have their southern border in the park's territory the following examples can be mentioned: *Alnus incana* (which reach La Verna and Sasso di Simone), *Cardamine trifolia* (which stops at Monte Zucca, slightly beyond the Park's territory), *Allium victorialis*, *Festuca violacea* subsp. *puccinellii*, *Murbeckiella zanonii*, *Sesleria pichiana*, *Tozzia alpina* and *Vaccinium vitis-idaea*. Among the ferns there are *Ly-*

*copodium clavatum*, *Lycopodium annotinum* (the sites on Monte dei Fiori near Ascoli Piceno have not recently been confirmed, cfr. Gonnelli et al. 2002), *Phegopteris connectilis*, *Dryopteris expansa* (which terminates its continuous distribution area in the national Park, but which also grows on Monte Amiata and in the Chianti) and *Matteuccia struthiopteris* which has its only locations on the whole Peninsula in the Park. On the contrary, several plants have their northern or north-eastern distributional limit here, as for example *Ribes multiflorum*, *Carex macrolepis*, *Leucopoa dimorpha*.

The species considered as rare (r) in the flora list are many. A good part are rare within the Park's territory but not overall. This is the case of several stenomediteranean species which, due to climate and altitude reasons, are very rare here, but not in other places where they might be common (e.g. *Acer monspessulanus*, *Viburnum tinus*, *Briza maxima*, etc.). Of a similar relative rarity are those plants that belong to environments that are scarce in the Park, like water habitats (e.g. *Potamogeton* sp.pl., *Myriophyllum spicatum*) or traditional farming systems which have now reduced considerably (e.g. *Agrostemma githago*, *Consolida regalis*, *Cyanus segetum*). The species that are rare both here and on the Apennines in general are more interesting. Most of these have already been mentioned because they are also of phytogeographic interest, like the endemic punctiform *Epipactis flaminia*, many ferns, *Tozzia alpina*, *Anemone narcissiflora*, *Trollius europaeus*, *Isopyrum thalictroides*, *Filipendula ulmaria*, *Berberis vulgaris*, *Physalis alkekengi*, etc. There are also a lot of entities that are considered rare, at least in the whole of Italy, both because they are naturally not widely spread (e.g. *Streptopus amplexifolius*, *Epipogium aphyllum*, *Listera cordata*,

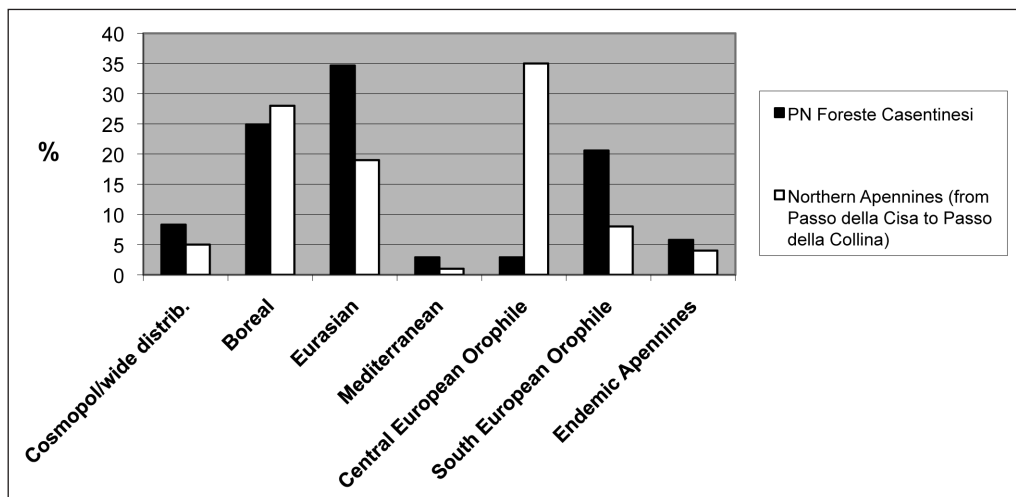


Fig. 7 – Comparison between chorological spectra of upper mountain floras in the “Parco Nazionale delle Foreste Casentinesi” and in the Northern Apennines (Alessandrini et al., 2003).

*Ruscus hypoglossum*) and because of reduction or changes in the preferred environments (e.g. *Carex strigosa*, typical of mature riparian woods which are always becoming more rare).

Most of the above-mentioned entities are also of conservation interest, inasmuch as they are included in various national and regional lists. Particularly there are 86 plants which are included in the Emilia Romagna regional law 2/1977, 166 in the annexes of the Tuscany regional law 56/2000, 39 in the Repertorio Naturalistico Toscano (<http://web.rete.toscana.it/sgr/webgis/consulta/viewer.jsp>) and 71 inserted in the red lists (Conti et al., 1997). Most of these categories overlap. The species in the red lists in particular can be considered the most important ones, at least for the time being, even though at the moment a serious revision of the criteria for assessing conservation status is underway (Rossi et al., 2008). Four of these species belong to the national list: the already mentioned *Epipactis flaminia*, *E. viridiflora*, *Carlina macrocephala* (however there are interpretative doubts regarding the last two, cfr. note in the list) and *Lamium galeobdolon* (which however is inserted only with the typical subspecies, whose presence in the area is not certain, see note in the list). Apart from these, 57 entities fall within the Emilia Romagna regional red list and 28 within the Tuscany list. Among the species that are part of the lists of both regions, apart from the already mentioned *Epipogium aphyllum*, *Listera cordata*, *Tozzia alpina*, *Anemone narcissiflora*, *Trollius europaeus*, the following can also be mentioned *Huperzia selago*, *Ophioglossum vulgatum*, *Daphne alpina*, *Staphylea pinnata*, *Campanula medium*, *Convallaria majalis*, *Serapias vomeracea*, *Epipactis palustris*, *Orchis laxiflora*, *O. militaris*, *Eriophorum latifolium*.

### Flora characteristics of the various environments

When the flora is divided into percentages according to preferred habitats (Fig. 8 see materials and methods for the meaning of the abbreviations) we notice that even in this forest context most of the taxa belong to herbaceous coenoses, primarily those of dry grasslands and sinanthropic-ruderal environments. Even when the typologies are grouped according to physiognomy, we can see that herbaceous species are 66% of the total, forest species are 27% and shrubby species are slightly over 6%.

If only the species of conservation importance are considered, that is, those included in regional laws (Emilia regional law 2/1977, Tuscany regional law 56/2000), red lists (Conti et al., 1997), international conventions and regulations (Comunità Economica Europea, 1982; 1992; CITES, 2007) which, in total, in the Park's flora are about 232 entities distributed among the environments (Fig. 9), it is interesting to note that herbaceous habitats, particularly dry grasslands, upper mountain and rocky environments, even though with a dynamically less developed vegetation, have the highest conservation value, containing about 57% of the important plants. The single environment containing the largest number of entities of conservation interest (30%), however, is the mesophilic wood environment (br) and this further confirms the importance of forest flora in this territory.

### Inquirendae and alien plants

In the flora list there are names in italics of *inquirendae* and alien entities followed by different abbreviations to distinguish between taxa considered doubtful (D), excluded (E) from the study area, or not recorded

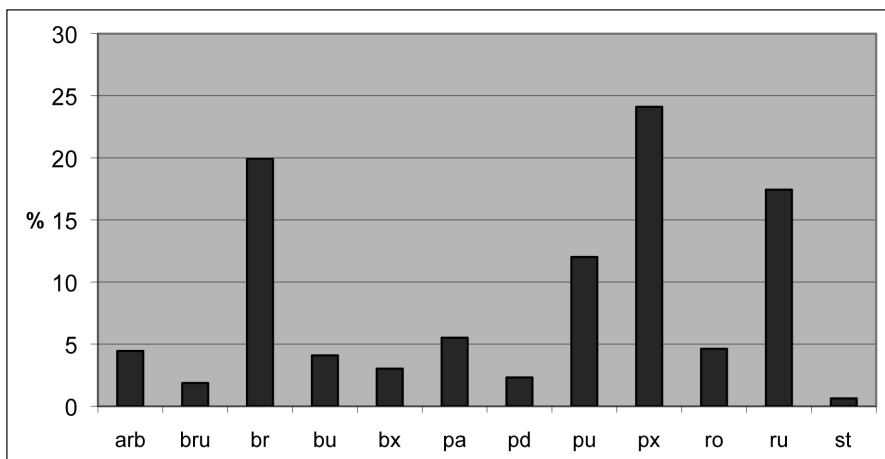


Fig. 8 – Flora of the “Parco Nazionale delle Foreste Casentinesi” divided according to preferred environments (for the meaning of the abbreviations see the text).



after 1960 (NR), or alien (A) to the Park’s territory.

### *Doubtful species, excluded species or not found after 1960*

Species that are doubtful, excluded or not found are 130 in total. The few species considered *excludendae* (e.g. *Avenula pratetutiana*, *Hordelymus europaeus*, *Cirsium palustre*, *Peucedanum oreoselinum*, *Trochiscanthes nodiflora*, etc.) are the result of the examination of recent specimens, particularly of the “Herbarium Alvernae” which, in our opinion, had been wrongly identified. As regards the doubtful species, a lot of information refers to problems related to nomenclature, because in the past, names like *Festuca ovina* or *Alchemilla vulgaris* were used to identify plants of the same group which were better defined and correctly named later. A small part has most probably been reported on the basis of identification errors, but their exsiccata was not found in the herbaria (e.g. *Luzula pedemontana*, *Piptatherum miliaceum*, *Cirsium bertolonii*, *Festuca robustifolia*), while some plants which are likely to be present in the study area (*Mentha arvensis*, *Erysimum pseudorheticum*, *Galatella linosyris*, *Carduus chrysacanthus*, etc.), have been considered doubtful because they have been reported in degree theses or in unpublished data, and specimens could not be verified. The species that have not been found are mostly the result of old reports, often already quoted by Zangheri (1966b), on the basis of specimens from the second half of the 19<sup>th</sup> century or early 20<sup>th</sup> century (collected by Siemoni, Sommier, Baccharini, etc.), or just quoted (e.g. by Bertoloni, Marcucci) and not found again recently, and therefore cannot be confirmed. A part consists of commensal plants which were once present on the upper

mountain, where various farming activities, which today have disappeared almost completely, took place. Some interesting points, however, also emerge from this list: for example, the only certain site in Tuscany, even though outdated, of *Arabis auriculata* reported by Fiori (1924; 1925) based on his own 1923 specimens which have been traced and checked at the *Herbarium Centrale Italicum* (FI).

### *Alien species*

The plants considered alien to the study area (A) amount to 120 entities, most of which are cultivated in reforestations, woods or farming and urbanized environments. Only a small part of alien plants is naturalized and reproduces naturally in the territory under study, and amongst these even a smaller number are invasive. In this respect, the herbaceous plants to be mentioned are *Erigeron canadensis*, *Paspalum distichum*, *Helianthus tuberosus* and *Brunnera macrophylla*, which have been reported recently (Frignani et al., 2006), while the trees to be mentioned are particularly *Ailanthus altissima* and *Robinia pseudacacia*, but also *Pinus nigra* (in the broad sense) which often tends to actively reproduce in pastures and open areas on calcareous substrata.

### Conclusions

Even though the flora importance of this area was well-known, compiling the check-list, apart from providing the Park with an essential database to administer the territory, has quite precisely quantified the entities of the plant diversity present here, which has

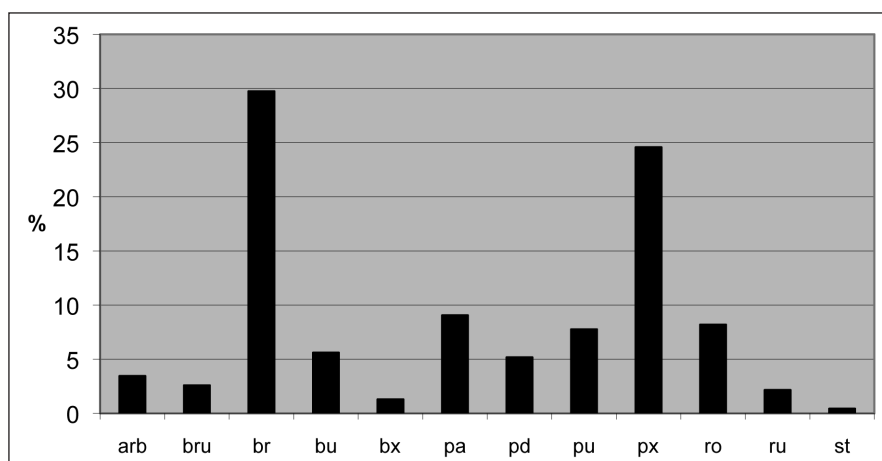


Fig. 9 – Flora of conservation importance in the “Parco Nazionale delle Foreste Casentinesi” divided according to preferred environments (for the meaning of the abbreviations see the text).

turned out to be remarkable, giving us the opportunity to analyse its essential characteristics. Moreover, it has highlighted the flora problems towards which future research should be directed, giving information about rare, not found species, which need to be studied systematically, etc.

The study of plant species in the Park certainly cannot be considered completed. Like any other data instrument, the check-list has to be considered as a useful starting point for the knowledge of the vascular flora of this marvellous territory, which can be implemented and improved, and certainly not as an end result.

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- European Plant Conservation Strategy: <http://www.plantaeuropa.org/pe-publications-EPCS.htm>
- Euro+Med PlantBase: <http://www.emplantbase.org/home.html>
- Global Strategy for Plant Conservation: <http://www.bgci.org/files/Worldwide/GSPC/globalstrategyeng.pdf>
- Guida interattiva alla flora del Parco Nazionale delle Foreste



Casentinesi, Monte Falterona e Campigna: [http://dbiodbs.units.it/carso/chiavi\\_pub21?sc=150](http://dbiodbs.units.it/carso/chiavi_pub21?sc=150)  
Parco delle Foreste Casentinesi, Monte Falterona e Campigna: <http://www.parcforestecasentinesi.it>  
Repertorio Naturalistico Toscano: <http://web.rete.toscana.it/sgr/webgis/consulta/viewer.jsp>

**Summary:** A catalogue of the vascular plants that make up the flora of the Parco Nazionale delle Foreste Casentinesi is presented. The catalogue was compiled after analyzing different types of sources (both published and unpublished works, herbarium specimens, vegetation data, etc.). Although the check-list is primarily based on bibliography, there is quite an amount of new data for the area resulting from unpublished observations and specimens collected by the study group or from checks and confirmation of herbarium specimens. The total number of species registered is 1357, of which 1125, subdivided in 97 families, are to be considered indigenous confirmed by data subsequent to 1960, while the rest can be distinguished in alien to the Park's territory (most of which cultivated), doubtful, or not found, or in some cases excluded. Through the study, the extent of the Park's phytodiversity has been quantified and confirmed as being very high due to the fact that the territory hosts valuable forest ecosystems among the best preserved in Europe, and its geographical position renders it a "trait d'union" between two very different floristic typologies, a northern one and a southern one. The data analysis carried out on the chorology of the species of phytogeographic interest show that, in Italy, several entities have their northern or southern distributional limit here. The endemism present in the territory is essentially northern-Apennine and peninsular, while the chorological category with the highest percentage is the European (*sensu lato*) one. The floristic characteristics of the different environments have been analyzed both in general as well as compared to the species of conservation interest. In this regard it has been noted that herbaceous habitats, particularly dry grasslands, those at high altitudes and rocky environments contain the highest conservation value as they contain more than half of the relevant plants. The single environment that contains the largest number of species of conservation interest (30%) is, however, the mesophilic wood environment and this further confirms the importance of the forest flora of the Park. Finally, it is pointed out that this check-list has to be considered a useful starting point, which can be implemented and improved, for the knowledge of the vascular flora of this marvellous territory and certainly not an end result.

