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„TRIVALE FOREST” RESERVATION, PITEȘTI, ARGEȘ COUNTY

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Abstract: The analyzed forest ecosystem renders evident elements of flora and specific phytocenotic structures, that increase the scientific interest and claims for protection, because of its floristic richness and the rarity of many of the species identified among 1935 and 2004 by the botanists: I. Todor, Petruța Pestroiu, St. Săraru, A. Popescu, Bibica Drăghici, V. Alexiu. Many of these species are preserved in the herbaristic collections of the Argeș County Museum and those of the Pitești University.

Being placed at the border between Cotmeana Platform and the High Plain of Pitești, the Trivale Forest represents a strong interpenetration of the montane and plain flora. Besides the scientific interest, the Trivale Forest represents the green lung of Pitești, a strongly industrialized town. An important segment of this forest was transformed in a Park whose age is secular. Conformable to the Decision 18/1994 of The County Council Board, Trivale Forest was declared Forest Reservation of local interest.

Introduction

Trivale Forest which is found near the City of Pitești, represents a real green lung for this strongly industrialized town. It belongs to a great forest unit of the Middle Argeș, being placed in the Getic Piedmont (Cotmeana's Piedmont), in the North West of Pitești City. Because of its placement in the contact zone of Cotmeana Platform and Pitești's Plane, Trivale Forest has a rich flora which montane and plain elements are interpenetrated.

From a territorial administrative point of view, Trivale Forest has an area of 1981,2 ha. It is administrated by Forest Ward Pitești and by the Forest Inspectorate of the Argeș County, being situated on the territory of Pitești City and of the following parishes: Bascov, Băbana, Moșoaia. It stretches in the region of the low hillocks of the terraces situated on the right of Argeș River and Bascov River, from Valea Ursului, to the South of Pitești. The ground varies from plat to rough. Its altitude is comprised between 290 meter (Argeș' waterside) and 430 meter in Plaiul Foi.

Trivale Forest has been little studied until now from a botanic point of view. The Flora of Romania quotes 44 cormophytical systematic units. D. Grecescu herborized this zone, and P. Cretzoiu quotes, in Trivale, the hybrid species *Quercus x pseudodalechampii*, which is known in this region only. In 1966, Aurel Popescu effectuated a floristic research of the Trivale Forest and its environs. In the Herbarium of the Argeș County Museum (HCM) and of the Pitești University (HUP) exist 453 herbarium sheets of paper herborized in the area of this forest by such botanists as: Ioan Todor, Stelian Săraru, Bibica Drăghici, Petruța Pestroiu, Teodora Mavrodin, Aurel Popescu, D. Mitu, Gh. Ilie, Valeriu Alexiu.

Trivale Forest represents, for the inhabitants of Pitești, a place for rest, public walk, fun but also the most important source of air in front of the numerous industrial factors of pollution.

As far back as in 1902, there was a concern of the authorities of the Argeș County for the transforming of a part of the Trivale Forest in a Park. The architects Redont and Pinard projected a Park and ordered some ornamental trees. In 1913 were approved the work for the arrangement of the Trivale Park and the building of the small pond. The documents from the National Archives Argeș County branch, in the fund of Pitești Townhall, especially in the first half of the

20th century, helps us to have an idea about the efforts of the people from the Townhall for the transforming of a part of the Trivale Forest in a beautiful Park of entertainment and recreation.

From this period various exotic plants exist: *Juniperus horizontalis*, *Juniperus virginiana*, *Picea excelsa*, *Hybiscus syriacus*, *Picea pungens ssp. argentea*, *Chamaecyparis lawsoniana*, *Thuja orientalis*, *Thuja occidentalis*, *Acer negundo*, *Taxus baccata* etc. Then were built pergolas, kiosks, bridges, a wood summer house, an artificial cave, a lake with a dam etc.

In 1939, at the proposal of the Technical Service of the Townhall to declare Trivale Forest monument of nature, the Committee of the Monuments of Nature rejected the request, because the forest doesn't carry out the criteria requested by a monument of nature. The Committee recomands them to adress to the Forest Department from the Ministry of Agriculture and Domains, in order to be declared forest used for protection. As a result of this adress, the Townhall solicits to the Forest Department on the 20th of december 1939, to dispose "the effectuation of the necessary measures in order to declare Trivale Forest a forest used for protection, because this forest has an area of 800 ha, it is found near Pitești, a part of it being used now as an entertainment place under the name Trivale Park".

Only in 1994, the Decision no. 18 of the Argeș County Council Board declared Trivale Park a Forest Reservation of local interest. This happened because the forest is situated at the border of the beech and oak underzones, here also being characterised by a mixture of the flora of mountain and hill and plain.

Material and Methods

From the information gathered from the literature of speciality from the herbarious from the Argeș County Museum and the Pitești University, from our own herborization it is succeded in the carrying out of a floristic summary which comprised 764 taxa, belonging to 95 families (Fig. 1).

The gathered information have been introduced in a database in a PC, being analysed using a programme Acces 2002. The functions of the programme are: loading database and consulting (species and infrataxa, bioforms, floristic elements, herborization). The paper presents only the cormoflora. The synopsis is presented by families. The genus and species are enumerated in alphabetical order. The systematic arrangement was done after the system proposed by A. Cronquist, A. Takhtadjean and W. Zimmerman (1966), adopted by W. Adler, K. Oswald, R. Fischer (1994). Although in numerous floristical paper the nomenclatural options are still instable, on adopted, possible, the namins wich are considered correct according to International Code of Botanical Nomenclature (Tokyo, 1993; Saint Louis, 1999).

In the paper the following abbreviations have been used: MPh–megafanerophytes, mPh–mezofanerophytes, nPh–nanofanerophytes, Ch–chamaephytes, E–epiphytes, H–hemicriptophytes, G–geofphytes, Th–annual terophytes, TH–biannual terophytes, HH–helohydathophytes, Circ–circumpolar, Bor–boreal, Arct-Alp–arctic-alpin, Eua– eurasian, Cont–continental, Med–mediterranean, Mont–mountain, Alp–alpine, Eur–european, Atl–atlantic, Euc–Central European, Pont–pontic, Pan–panonic, Carp–carpathic, Balc–balcanic, Dac–dacic, Anat–anatolian, Cauc–caucasian, Cosm–cosmopolitical, Adv–adventitious, End–endemic. The herbolization have been made by: I. Todor (a) (HUP), St. Săraru (b) (HUP), Bibica Drăghici (c) (HUP), P. Pestroiu (d) (HCM), V. Alexiu (e) (HCM). Other taxons have been quoted from Aurel Popescu (f).

List of species: Equisetaceae: *Equisetum. arvense* L. G, Cosm, (b,d,f), *E. palustre* L. G, Circ., (d,f), *E. ramosissimum* Desf., G, Cosm., (f). *E. telmateia* Ehrh. G, Circ, (f) . **Dennstaedtiaceae:** *Pteridium aquilinum* (L.) Kuhn, G, Cosm, (d,f). **Aspleniaceae:** *Asplenium trichomanes* L. ssp. *trichomanes*, H, Cosm, (f). **Dryopteridaceae:** *Dryopteris filix-mas* (L.) Schott, H, Cosm, (f). **Athyriaceae:** *Athyrium filix-femina* (L.) Roth, H, Cosm, (f), *Cystopteris fragilis* (L.) Bernh., H, Cosm, (f). **Polypodiaceae:** *Polypodium vulgare* L., G, Circ, (f). **Pinaceae:** *Pinus sylvestris* L., MPh, Eua, (cult.)(f). **Cupressaceae:** *Juniperus communis* L. var. *communis*, mPh, Circ, (f). **Aristolochiaceae:**

Aristolochia clematidis L., G, Med, (d,f), *Asarum europaeum* L., H, Eua, (d,e,f). **Ranunculaceae:** *Aconitum variegatum* L. ssp. *gracile* (Reichb.) Gáy, H, Alp-Carp, (f), *Anemone nemorosa* L. ssp. *nemorosa*, G, Circ, (c,d,f), *A. ranunculoides* L., G, Eur-Cauc, (f), *Caltha palustris* L., H, Circ, (b,f), *Clematis vitalba* L., nPh, Eur-Cauc, (d,f), *Consolida regalis* S.F. Gray ssp. *regalis*, Th, Eur-Med, (f), *Hepatica nobilis* Miller, G, Circ, (e,f), *Isopyrum thalictroides* L., G, Eua-Temp, (f), *Myosurus minimus* L., Th, Circ, (f), *Ranunculus acris* L. ssp. *acris*, Eua, (d,f), *R. aquatilis* L. ssp. *aquatilis*, HH, Cosm, (f), *R. arvensis* L., Th, Eua (Med), (f), *R. auricomus* L., H, Eua, (a,c,f), *R. bulbosus* L. ssp. *bulbosus*, H(G), Eur, (d,f), *R. ficaria* L., H-G, Eua, (d,e,f), *R. flammula* L., H, Eua, (f), *R. polyanthemus* L. ssp. *polyanthemos*, H, Eua (Cont), (f), *R. repens* L., H, Eua (Med), (d,f), *R. sardous* Crantz, Th (TH, H), Eur-Med, (f), *R. sceleratus* L., Th, Circ, (f), *R. x silvicolus* (Wimmer et Grab.) A. Nyár., (a,c), *R. x variifolius* (Schur) A. Nyár., (a,f), *Thalictrum lucidum* L., H, Eur (Cont), (f), *Th. simplex* L. ssp. *galioides* (Nestler) Korsh., (f), H, Euc. **Papaveraceae:** *Chelidonium majus* L., H, Eua, (a,e,f), **Fumariaceae:** *Corydalis solida* (L.) Sw., G, Eur, (f), *Fumaria schleicheri* Soy.-Willem., Th, Eua (Med), (f), **Ulmaceae:** *Ulmus glabra* Hudson, mPh (MPh), Eua, (f), *Ulmus minor* Miller, MPh, Eur, (f), **Cannabaceae:** *Cannabis sativa* L. ssp. *spontanea* Serebr., (f), Th, Eua (Cont), *Humulus lupulus* L., H, Eua, (f). **Urticaceae:** *Urtica urens* L., Th, Cosm, (b,f), *Urtica dioica* L. ssp. *dioica*, H, Cosm, (b,f), *Parietaria officinalis* L., H, Med, (d,f). **Fagaceae:** *Fagus sylvatica* L. ssp. *sylvatica*, MPh (mPh), Eur, (d,f), *Fagus orientalis* Lipsky, MPh, Balc-Anat-Cauc, (f), *Quercus cerris* L., MPh (mPh), Med, (f), *Q. dalechampii* Ten., MPh, Med-Carp-Balc, (f), *Q. frainetto* Ten., MPh, Balc, (b,f), *Q. pedunculiflora* C. Koch., MPh, Pont-Anat, (d), *Q. petraea* (Mattuschka) Liebl., MPh (mPh), Eur, (a,f). **Betulaceae:** *Alnus incana* (L.) Moench, MPh (mPh), Eur, (f), *Alnus glutinosa* (L.) Gaertner, MPh (mPh), Eua, (b,f), *Betula pendula* Roth, MPh (mPh), Eua, (f). **Corylaceae:** *Carpinus betulus* L., MPh-mPh, Eur, (d,e,f), *Corylus avellana* L., mPh, Balc, (d,e,f). **Portulacaceae:** *Montia minor* C.C. Gmelin, Th, Circ, (f), *Portulaca oleracea* L., Th, Cosm, (f). **Caryophyllaceae:** *Arenaria serpyllifolia* L. Th, Circ, (f), *Cerastium semidecandrum* L., Th, Eur, (f), *C. pumilum* Curtis ssp. *pumilum*, Th, Eur, (f), *C. brachypetalum* Desportes ex Pers. ssp. *brachypetalum*, Th, Med, (f), *C. glomeratum* Thuill., Th, Cosm, (f), *C. fontanum* Baumg. ssp. *fontanum*, Ch (H), Cosm, (f), *Dianthus armeria* L. ssp. *armeria*, Th, Eur, (f), *D. carthusianorum* L. ssp. *carthusianorum*, H, Eur, (d,f), *Gypsophila muralis* L., Th, Eua (Cont), (f), *Herniaria glabra* L., Th (TH)-H, Eua (Med), (f), *Holosteum umbellatum* L. ssp. *umbellatum*, Th, Eua (Med), (d,f), *Kohlruschia prolifera* (L.) Kunth, Th, Atl-Med, (f), *Lychnis coronaria* (L.) Desr., H, Med, (d,f), *L. viscaria* L. ssp. *viscaria*, Ch (H), Eua (a,d,f), *L. flos-cuculi* L., H, Eua, (a,d,f), *Moehringia trinervia* (L.) Clairv., Th (TH), Eua (Med), (d,f), *Moenchia mantica* (L.) Bartl., Th, Med, (f), *Myosoton aquaticum* (L.) Moench, H, Eua (Med), (f), *Sagina procumbens* L., H (Ch), Circ, (f), *Saponaria officinalis* L., H, Eua (Med), (e,f), *Scleranthus annuus* L. ssp. *annuus*, Th (TH), Eua (Med), (f), *S. perennis* L. ssp. *perennis*, H (Ch), Eur, (f), *Silene alba* (Miller) E.H.L. Krause, Th (TH), Eua, (d,f), *S. armeria* L., Th, Euc, (f), *S. italica* (L.) Pers. ssp. *italica*, TH-H, Med, (f), *S. nutans* L. ssp. *nutans*, H, Eua, (f), *S. viridiflora* L., H, Euc, (f), *S. vulgaris* (Moench) Garcke ssp. *vulgaris*, H (Ch), Eua, (a,f), *Spergularia rubra* (L.) J. et C. Presl, Th-H, Circ, (f), *Stellaria graminea* L., H, Eua, (d,f), *S. holostea*, H, Eur, (a,d,f), *S. media* (L.) Vill., Th (TH), Cosm, (f), *S. nemorum* L., H, Eur, (f). **Amaranthaceae:** *Amaranthus albus* L., Th, Adv, (f), *A. crispus* (Lesp. et Thev.) N. Terracc., (f), Th, Adv, *A. retroflexus* L., Th, Adv, (f). **Chenopodiaceae:** *Chenopodium album* L., Th, Cosm, (d,f), *C. botrys* L., Th, Cosm, (f), *C. polyspermum* L., Th, Eua (f), *C. urbicum* L., Th, Eua (Med), (f), *Polycnemum arvense* L. ssp. *arvense*, Th, Eua (Med), (f). **Polygonaceae:** *Polygonum dumetorum* L., Th, Circ, (f), *P. convolvulus* L., Th, Circ, (f), *P. bistorta* L., G, Eua, (d,f), *P. mite* Schrank, Th, Eur (Med), (f), *P. persicaria* L., Th, Cosm, (f), *P. hydropiper* L., Th, Circ, (d,f), *P. aviculare* L., Th, Cosm, (d,f), *Rumex acetosa* L., H, Cosm, (f), *R. acetosella* L. ssp. *acetosella*, H (G), Cosm, (d,f), *R. longifolius* DC. in Lam. et DC., H, Circ, (f), *R. sanguineus* L., H, Eur, (f), *R. pulcher* L. ssp. *pulcher*, Th (TH), (f), Atl-Med, *R. conglomeratus* Murray, H, Circ, (f), *R. crispus* L., H, Eua, (f). **Crassulaceae:** *Sedum acre* L., Ch, Eua, (f), *Sedum maximum* (L.) Hoffm., H, Eur, (f). **Saxifragaceae:** *Saxifraga tridactylites* L., Th, Eua, (f). **Rosaceae:** *Agrimonia eupatoria* L. ssp. *eupatoria*, H, Eua, (f), *Aphanes arvensis* L., Th, Eur, (d,f), *Aremonia agrimonioides* (L.) DC., H, Euc (Med), (a,d,f) *Crataegus monogyna* Jacq. ssp. *monogyna*, mPh, Eua, (d,e,f) *Filipendula vulgaris* Moench, H, Eua, (d, f), *F. ulmaria* (L.) Maxim ssp. *ulmaria*, H, Eua, (e), *Fragaria vesca* L., H, Eua, (d,e,f), *F. moschata* Weston, H, Euc, (f), *F. viridis* Weston ssp. *viridis*, H, Eur (Cont), Eua, (f), *Geum urbanum* L., H, Med (Circ), (d,e,f), *Malus sylvestris* (L.) Miller, mPh, Eur, (d,f) *Potentilla alba* L., H, Euc (Cont), (f), *P. micrantha* Ramond ex DC., H, Med-Euc, (a,f) *P. argentea* L. ssp. *argentea*, H, Eua, (f), *P. recta* L. ssp. *laciniosa* (Kit. et Nestl.) Soó, H, Eur, (f), *P.*

heptaphylla L., H, Eur (Cont), (f), *P. erecta* (L.) Räusch., H, Eua, (d,f), *P. reptans* L., H, Eua, (d,f), *P. supina* L., Th-H, Eua (Med), (f), *Pyrus pyrastrer* (L.) Burgsd., mPh-MPh, Eur, (d,e,f), *Rosa canina* L., nPh, Eur, (d,e,f), *R. gallica* L., nPh, Pont-Med, (f), *Rubus caesius* L., H-nPh, Eur, (d,e,f), *R. canescens* DC., H-nPh, Euc (Med), (f), *R. discolor* Weihe et Nees, nPh, Eua (Med), (f), *Sorbus torminalis* (L.) Crantz MPh, Eur (Med), (f), *Cerasus avium* (L.) Moench, mPh-MPh, Euc (Med), (e,f) *Prunus cerasifera* Ehrh. var. *cerasifera*, mPh, Pont-Balc, (cult.)(f), *P. spinosa* L. ssp. *spinosa*, mPh, Eua (Med), (d,e,f), *Sanguisorba officinalis* L., H, Eua (Bor), (e,f), *S. minor* Scop. ssp. *minor*, H, Eua, (f). **Fabaceae:** *Amorpha fruticosa* L., mPh, Adv, (cult.)(f), *Astragalus cicer* L., H, Eua (Cont), (d), *A. glycyphyllos* L., H, Eua (Med), (e), *Chamaecytisus austriacus* (L.) Link, Ch-nPh, Pont-Pan-Balc, (a,f), *Ch. hirsutus* (L.) Link ssp. *hirsutus*, N, Euc, (c,d,f), *Ch. hirsutus* (L.) Link ssp. *leucotrichus* (Schur) A. et D. Löwe, (f), nPh, Pan-Balc, *Coronilla varia* L., H, Euc (Med), (b,c,e,f), *Cytisus nigricans* L., nPh, Euc (d), *Dorycnium pentaphyllum* Scop. ssp. *herbaceum* (Vill.) Bonnier et Layens, Ch-H, Euc (Med), (f), *Galega officinalis* L., H, Pont-Med, (f), *Genista tinctoria* L. ssp. *tinctoria*, Ch, Eur, (e,f), *Genistella sagittalis* (L.) Gams, H, Atl-Med-Euc, (b,d,e,f), *Laburnum anagyroides* Medik., mPh, Eur-Med (Mont) (cult.)(f), *Lathyrus aphaca* L., Th, Med, (d,f), *L. hallersteinii* Baumg., H, Carp-Balc, (f), *L. hirsutus* L., Th, Eua, (f), *L. niger* (L.) Bernh., H, Euc, (a,d,f), *L. nissolia* L. ssp. *nissolia*, Th, Atl-Med, (f), *L. pratensis* L., H, Eua, (f), *L. tuberosus* L., H (G), Eua (Med), (e,f), *L. venetus* (Miller) Wohlf., H, Pont-Med, (d,f), *L. vernus* (L.) Bernh., H, Eua, (d,e,f), *Lotus corniculatus* L., H, Eua, (b,d,f), *Medicago falcata* L., H, Eua, (d,f), *M. lupulina* L., Th-H, Eua, (d,e,f), *M. minima* (L.) L., Th, Med, (d,f), *Melilotus albus* Medik., Th (TH), Eua, (d,e,f), *M. officinalis* Lam., Th (TH), Eua, (d,e,f), *Ononis arvensis* L. ssp. *spiniformis* (Simonkai) Ciocârlan, Ch-H, Euc, (e,f), *Robinia pseudacacia* L., MPh, Adv, (cult.)(d,e,f), *Sarothamnus scoparius* (L.) Wimmer, nPh, Atl-Med-Euc, (f), *Trifolium alpestre* L., H, Eur, (f), *T. arvense* L. ssp. *arvense*, Th, Eua, (d,f), *T. aureum* Pollich, Th (TH), Eur, (f), *T. campestre* Schreber, Th (TH), Eur, (b,d,e,f), *T. fragiferum* L. ssp. *fragiferum*, H, Eua, (e), *T. hybridum* L. ssp. *hybridum*, H, Atl-Eur(d,f), *T. incarnatum* L. ssp. *molinerii* (Balbis ex Hornem.) Cesati, H, Atl-Med, (f), *T. medium* L. ssp. *medium*, H, Eua, (e,f), *T. montanum* L., H, Eua (Cont), (f), *T. ochroleucon* Hudson, H, Euc, (f), *T. pallidum* Waldst. et Kit., Th (TH), Med, (f), *T. patens* Schreber, Th (TH), Med, (f), *T. pratense* L. ssp. *pratense*, H-TH, Eua, (d,f), *T. repens* L. ssp. *repens*, H, Eua, (a,b,d,f), *T. resupinatum* L. ssp. *resupinatum*, Th-TH, Med, (f), *T. striatum* L. ssp. *striatum*, Th, Atl-Med-Euc, (f), *Vicia angustifolia* L. ssp. *angustifolia*, Th, Eua, (d,f), *V. cracca* L., H, Eua, (d,f), *V. dasycarpa* Ten., Th, Med, (f), *V. dumetorum* L., H, Euc, (f), *V. grandiflora* Scop. ssp. *grandiflora*, Th, Pont-Cauc-Balc, (f), *V. hirsuta* (L.) S.F.Gray, Th, Eua, (d,f), *V. pannonica* Crantz, Th, Med, (d,f), *V. peregrina* L., Th, Med, (b,f), *V. sepium* L., H, Eua, (d,f), *V. striata* Bieb., Th, Med, (c,f), *V. sylvatica* L., H, Eua, (f), *V. tetrasperma* (L.) Schreber, Th, Eua, (f), *V. villosa* Roth, Th (TH), Eur, (f). **Lythraceae:** *Lythrum hyssopifolia* L., Th, Cosm, (f), *L. salicaria* L., H-HH, Circ, (e,f), *L. virgatum* L., H-HH, Eua (Cont), (f), *Peplis portula* L., Th, Eur (Med), (f). **Onagraceae:** *Chamerion angustifolium* (L.) Holub, H, Circ, (f), *Circaea lutetiana* L., G, Eua (Med), (e,f), *Epilobium montanum* L., H, Eua, (d,e,f), *E. tetragonum* L., H, Eua (Med), (f), *E. roseum* Schreber, H, Eua, (f), *Oenothera biennis* L., TH, Adv, (d,e,f). **Elaeagnaceae:** *Hyppophae rhamnoides* L. ssp. *rhamnoides*, mPh, Eua (Cont), (d,f). **Thymelaeaceae:** *Thymelaea passerina* (L.) Coss. et Germ., Th, Eua, (f). **Cornaceae:** *Cornus mas* L., mPh, Pont-Med, (b,c,d,e), *C. sanguinea* L., mPh, Euc, (c,d,f). **Loranthaceae:** *Loranthus europaeus* Jacq., Ch-nPh, Eur, (d,e,f). **Celastraceae:** *Evonymus europaeus* L., mPh, Eur, (d,e,f). **Euphorbiaceae:** *Euphorbia carniolica* Jacq., H, Alp-Carp-Balc, (d,e,f), *E. cyparissias* L., H-G, Eua, (d,e,f), *E. epithymoides* L., H, Pan-Balc, (f), *E. platyphyllos* L., Th, Med-Euc, (f), *E. stricta* L., Th, Eur (Cont), (f), *E. virgata* Waldst. et Kit. ssp. *virgata*, H, Eua (Cont), (f), *Mercurialis perennis* L., G (H), Eur, (d,e,f). **Rhamnaceae:** *Frangula alnus* Miller, mPh, Eua, (d,e,f). **Vitaceae:** *Vitis sylvestris* C.C.Gmelin, mPh-E, Pont-Med, (f). **Aceraceae:** *Acer campestre* L. ssp. *campestre*, MPh-mPh, Eur, (d,f), *A. platanoides* L., MPh, Eur, (d,f), *A. pseudoplatanus* L., MPh, Euc, (f), *A. tataricum* L., mPh-MPh, Eur (Cont), (f). **Simaroubaceae:** *Ailanthus altissima* (Miller) Swingle, MPh, Adv, d,e,f). **Zygophyllaceae:** *Tribulus terrestris* L., Th, Med, (f). **Oxalidaceae:** *Oxalis corniculata* L., Th, Med, (e,f), *O. stricta* L., H, Adv, (f). **Geraniaceae:** *Erodium cicutarium* (L.) L'Hérit., Th, Cosm, (d,f), *Geranium collinum* Stephan, H, Pont, (f), *G. columbinum* L., Th, Eua, (f), *G. dissectum* L., Th, Eua, (f), *G. phaeum* L., H, Euc, (d,f), *G. pratense* L., H, Eua (Cont), (f), *G. pusillum* L., Th, Eur (Med), (f), *G. robertianum* L., Th-TH, Cosm, (e,f), *G. sanguineum* L., H, Eur, (f). **Balsaminaceae:** *Impatiens noli-tangere* L., Th, Eua, (e). **Linaceae:** *Linum austriacum* L., H, Eua (Cont), (f), *L. catharticum* L. ssp. *catharticum*, Th-H, Eur (Med), (f). **Polygalaceae:** *Polygala amara* L. ssp. *amara*, H (Ch), Euc (Mont), (d,f), *P. comosa* Schkuhr, H-Ch, Eur,

(f), *P. major* Jacq. ssp. *major*, H, Pont-Med, (e), *P. vulgaris* L. ssp. *vulgaris*, H (Ch), Eur (Med), (f). **Araliaceae:** *Hedera helix* L., nPh-E, Atl-Med, (d,e,f). **Apiaceae:** *Aegopodium podagraria* L., H(G), Eua, (f), *Aethusa cynapium* L. ssp. *cynapium*, Th-TH, Eur, (f), *Anthriscus sylvestris* (L.) Hoffm., H, Eua (Med), (a,f), *Anthriscus cerefolium* (L.) Hoffm. ssp. *trichosperma* Nyman, Th, Med (est), (f), *Bupleurum affine* Sadler, Th, Pont-Pan-Balc, (f), *Carum carvi* L., TH, Eua, (b,f), *Chaerophyllum temulum* L., Th-TH, Eur, (f), *Conium maculatum* L., TH, Eua, (d,f), *Daucus carota* L. ssp. *carota*, TH-H, Eua (Med), (d,e,f), *Eryngium campestre* L., H, Pont-Med, (d,e,f), *E. planum* L., H, Eua, (f), *Ferulago sylvatica* (Besser) Reichenb., H, Pont-Med, (f), *Heracleum sphondylium* L., H, Eua, (f), *Laserpitium prutenicum* L., TH, Euc-Med, (f), *Oenanthe aquatica* (L.) Poiret, HH, Eua, (f), *O. banatica* Heuffel, H, Dac-Balc, (b,f), *O. peucedanifolia* Pollich, H, Dac-Balc, (f), *Peucedanum officinale* L., H, Euc-Med, (f), *Peucedanum rochelium* Heuffel, H, Dac-Balc, (f), *P. oreoselinum* (L.) Moench, H, Eur (Cont), (f), *P. cervaria* (L.) Lapeyr., H, Eur (Cont), (f), *P. carvifolium* Vill., H, Euc, (f), *Pimpinella saxifraga* L. ssp. *saxifraga*, H, Eua (Med), (f), *Sanicula europaea* L., H, Eua, (a,d,e,f), *Selinum carvifolium* (L.) L., H, Eua (Cont), (f), *Seseli libanotis* (L.) Koch ssp. *libanotis*, TH-H, Eua (Cont), (d,f), *S. annuum* L., TH-H, Eur (Cont), (f), *Tordylium maximum* L., Th-TH, Euc-Med, (f), *Torilis arvensis* (Hudson) Link ssp. *arvensis*, Th, Euc-Med, (d,f), *T. japonica* (Houtt.) DC., Th, Eua, (f), *Trinia ramosissima* (Fischer ex Trev.) Koch, TH-H, Pont-Balc, (f). **Hypericaceae:** *Hypericum montanum* L., H, Eur, (f), *H. hirsutum* L., H, Eua, (f), *H. perforatum* L., H, Eua, (d,f). **Tiliaceae:** *Tilia cordata* Miller, MPh, Eur, (d,f), *T. platyphyllos* Scop. ssp. *platyphyllos*, MPh, Euc, (d,f), *T. tomentosa* Moench, MPh, Balc-Pan, (d,f). **Malvaceae:** *Abutilon theophrasti* Medik., Th, Eua, (f), *Hibiscus trionum* L., (d,f), *Malva neglecta* Wallr., Th, Eua, (d,f), *M. sylvestris* L. ssp. *sylvestris*, TH-H, Eua-Cosm, (e,f). **Violaceae:** *Viola alba* Besser ssp. *alba*, H, Med-Euc, (f), *V. ambigua* Walldst. et Kit., H, Pont-Pan, (f), *V. arvensis* Murray, Th, Cosm, (d,f), *V. canina* L. ssp. *canina*, H, Eua, (f), *V. canina* L. ssp. *ruppii* (All.) Schübler et Martens, H, Eua, (f), *V. hirta* L., H, Eua, (c,f), *V. mirabilis* L., H, Eua, (f), *V. odorata* L., H, Atl-Med, (b,f), *V. reichenbachiana* Jordan ex Boreau, H, Eua, (f), *V. tricolor* L. ssp. *tricolor*, TH-Th-H, Eua, (d,f). **Cistaceae:** *Helianthemum nummularium* (L.) Miller ssp. *nummularium*, Ch-H, Euc-Med, (d,f). **Brassicaceae:** *Alliaria petiolata* (Bieb.) Cavara et Grande, TH-H, Eua, (a,d), *Alyssum alyssoides* (L.) L., Th-TH, Eua (Cont), (f), *Arabidopsis thaliana* (L.) Heynh., Th (TH), Cosm, (f), *Barbarea vulgaris* R. Br. ssp. *vulgaris*, TH-H, Eua (Med), (f), *Capsella bursa-pastoris* (L.) Medik., Th-TH, Cosm (Med), (d,f), *Cardamine hirsuta* L., Th-TH, Eua, (f), *C. pratensis* L. ssp. *pratensis*, H, Circ (Bor), (a,f), *C. amara* L. ssp. *amara*, H, Eua (Med), (f), *Cardaria draba* (L.) Desv., H, Eua (Med), (d,f), *Dentaria bulbifera* L., G, Euc, (d,e), *D. glandulosa* Waldst. et Kit., G, Carp (end), (f), *Descurainia sophia* (L.) Webb ex Prantl, Th-TH, Eua, (a), *Diplotaxis muralis* (L.) DC., Th-TH, Euc-Med, (f), *Erophila verna* (L.) Chevall. ssp. *verna*, Th, Eur, (f), *Lepidium perfoliatum* L., Th (TH), Eua (Cont), (d,f), *L. campestre* (L.) R. Br., Th, Eur (Med), (d,f), *L. ruderalis* L., Th, Eua, (c,d,f), *Raphanus raphanistrum* L. ssp. *raphanistrum*, Th, Med-Cosm, (c,f), *Rorippa austriaca* (Crantz) Besser, H (G), Pont, (f), *R. pyrenaica* (L.) Reichenb., H, Eur, (d), *R. prolifera* (Heuffel) Neilr., Th (TH), Balc, (f), *R. sylvestris* (L.) Besser ssp. *sylvestris*, H, Eua, (f), *Sinapis arvensis* L., Th, Eua, (d,f), *Sisymbrium orientale* L., Th (TH), Pont-Med, (f), *S. officinale* (L.) Scop., Th, Eua, (f), *Thlaspi perfoliatum* L., Th, Eua, (e), *Turritis glabra* L., TH, Circ, (f). **Resedaceae:** *Reseda lutea* L., TH-H, Eua, (f). **Salicaceae:** *S. alba* L. ssp. *alba*, MPh-mPh, Eua, (d,f), *S. caprea* L., mPh, Eua, (f), *S. cinerea* L., M, Eua, (f), *S. fragilis* L., mPh-MPh, Eua, (f), *S. triandra* L. emend. Ser. ssp. *triandra*, mPh, Eua, (f), *S. pentandra* L., mPh-MPh, Eua, (f), *S. purpurea* L. ssp. *purpurea*, mPh, Eua, (f), *Salix viminalis* L., mPh, Eua, (f), *Populus alba* L., MPh-mPh, Eua, (d), *P. nigra* L., MPh, Eua, (d,f), *P. tremula* L., MPh-mPh, Eua, (d,f). **Cucurbitaceae:** *Bryonia alba* L., H, Eua, (e,f). **Primulaceae:** *Anagallis arvensis* L., Th, Circ, (d,f), *Centunculus minimus* L., Th, Eua, (f), *Lysimachia punctata* L., H, Eur, (a,d,e,f), *L. vulgaris* L., H-HH, Eua, (e,f), *L. nummularia* L., Ch, Eur, (e,f), *Primula acaulis* (L.) L. ssp. *acaulis*, H, Atl-Med, (f), *P. veris* L. ssp. *veris*, Eua, (d,f). **Gentianaceae:** *Centaurium erythraea* Rafin. ssp. *erythraea*, Th, Euc, (f), *C. pulchellum* (Swartz) Druce, Th, Eua (Med), (f), *Gentiana pneumonanthe* L., H, Eua (Med), (f). **Apocynaceae:** *Vinca minor* L., Ch, Euc-Med, (e,f). **Asclepiadaceae:** *Vincetoxicum hirundinaria* Medikus ssp. *hirundinaria*, H, Eur (Med), (e,f). **Oleaceae:** *Fraxinus excelsior* L., MPh, Eur, (e,f), *F. ornus* L., MPh, Med, (f), *Ligustrum vulgare* L., mPh, Eua (Med), (d,e,f), *Syringa vulgaris* L., mPh, Carp-Balc-Anat, (f). **Solanaceae:** *Datura stramonium* L., Th, Cosm, (d,f), *Hyoscyamus niger* L., TH, Eua (Med), (f), *Lycium barbarum* L., mPh, Adv, (d,f), *Solanum nigrum* L. ssp. *nigrum*, Th, Cosm, (e,f), *S. dulcamara* L., Ch-nPh, Eua (Med), (e,f). **Convolvulaceae:** *Calystegia sepium* (L.) R. Br., G (H), Eua, (f), *Convolvulus arvensis* L., G (H), Cosm, (d,f). **Cuscutaceae:** *Cuscuta campestris* Yuncker ssp. *campestris*, Th, Adv, (f), *C. epilinum* Weihe, Th,

Eua, (f), *C. epithymum* (L.) L. ssp. *epithymum*, Th (H), Eua (Med), (f), *C. europaea* L. ssp. *europaea*, Th, Eua, (d,f). **Boraginaceae:** *Anchusa officinalis* L. ssp. *officinalis*, TH-H, Eur (Med), (e,f), *Asperugo procumbens* L., Th, Eua (Cont), (f), *Cerinthe minor* L. ssp. *minor*, Th-TH, Euc-Med, (f), *Cynoglossum officinale* L., TH, Eua (Cont), (d,f), *Echium vulgare* L., TH, Eua, (d,e,f), *Lithospermum arvense* L., Th-TH, Eua, (f), *L. officinale* L., H, Eua, (f), *L. purpureocaeruleum* L., H-G, Euc-Med, (f), *Myosotis arvensis* Hill ssp. *arvensis*, TH, Eua, (e,f), *M. ramosissima* Roedel, Th, Eur, (f), *M. scorpioides* L., H, Eua, (d,e), *M. sparsiflora* Mikan ex Pohl, Th, Eua (Cont), (f), *M. stricta* Link ex Roemer et Schultes, Th, Eua (Med), (f), *M. sylvatica* Ehrh. ex Hoffm., H, Eur, (d,f), *Pulmonaria mollis* Wulfen ex Hornem. ssp. *mollis*, H, Euc, (e,f), *P. officinalis* L., H, Eur, (d,f), *Symphytum officinale* L. ssp. *officinale*, H, Eua, (d,f), *S. tuberosum* L. ssp. *tuberosum*, G, Euc, (d,f). **Verbenaceae:** *Verbena officinalis* L., H, Cosm, (e,f). **Lamiaceae:** *Acinos arvensis* (Lam.) Dandy ssp. *arvensis*, Th-TH, Euc (Med), (f), *Ajuga genevensis* L., H, Eua (Cont), (d,f), *A. reptans* L., H, Eur, (b,d,f), *Ballota nigra* L. ssp. *nigra*, H, Med-Euc, (d,f), *Clinopodium vulgare* L., H, Circ, (f), *Galeopsis ladanum* L., Th, Eua, (f), *G. speciosa* Miller, Th, Eua, (d,f), *G. tetrahit* L., Th, Eur, (d,f), *Glechoma hederacea* L., H-Ch, Eua, (a,b), *G. hirsuta* Waldst. et Kit., H-Ch, Pont-Med, (f), *Lamium galeobdolon* (L.) L. ssp. *galeobdolon*, H-Ch, Euc, (a,c,d,f), Th, Eua, (f), *L. maculatum* L. ssp. *maculatum*, H (Ch), Eua, (d,f), *L. purpureum* L., Th, Eua, (d,f), *Leonurus cardiaca* L. ssp. *cardiaca*, H, Eua, (e,f), *Lycopus europaeus* L., H-HH, Eua, (d,e), *Marrubium vulgare* L., H, Eua, (f), *Melittis melissophyllum* L. ssp. *melissophyllum*, H, Eur, (f), *Mentha aquatica* L., H-HH, Eur, (b,f), *M. arvensis* L. ssp. *arvensis*, H-G, Circ, (d,f), *M. longifolia* (L.) Hudson, H, Eua, (e,f), *M. pulegium* L., H, Eua (Med), (f), *Mentha x verticillata* L., H, Eur, (f), *Nepeta cataria* L., H, Eua (Med), (f), *Origanum vulgare* L., H, Eua, (d,f), *Prunella laciniata* (L.) L., H, Euc-Med, (d,f), *P. vulgaris* L., H, Cosm, (e), *Salvia glutinosa* L., H, Eua (Mont), (e,f), *S. nemorosa* L. ssp. *nemorosa*, H, Euc, (f), *S. pratensis* L. ssp. *pratensis*, H, Eur (Med), (f), *S. verticillata* L., H, Euc (Med), (e,f), *Scutellaria galericulata* L., H, Circ, (f), *S. hastifolia* L., H, Eur, (f), *Stachys annua* (L.) L., Th, Eur (Med), (f), *S. germanica* L., H-TH, Pont-Med, (d,f), *S. officinalis* (L.) Trev., H, Eua, (f), *S. palustris* L., H, Circ, (f), *S. recta* L. ssp. *recta*, H, Pont-Med, (f), *S. sylvatica* L., H, Eua, (d,f), *Teucrium chamaedrys* L., Ch, Med-Euc, (d), *Thymus pulegioides* L. ssp. *pulegioides*, Ch, Eur (Mont), (d). **Callitricheaceae:** *Callitriche cophocarpa* Sendtner, HH, Eua, (f). **Plantaginaceae:** *Plantago altissima* L., H, Balc-Pan, (f), *P. lanceolata* L., H, Eua, (d), *P. major* L. ssp. *major*, H, Eua, (d,f), *P. media* L., H, Eua, (d,f), *P. scabra* Moench ssp. *scabra*, Th, Eua (Cont), (f). **Scrophulariaceae:** *Digitalis grandiflora* Miller, H, Euc, (d,e,f), *D. lanata* Ehrh., TH-H, Balc-Pan, (f), *Euphrasia stricta* D. Wolff ex J.F. Lehm. ssp. *stricta*, Th, Eur, (f), *Gratiola officinalis* L., H, Circ, (f), *Kickxia elatine* (L.) Dumort., Th, Euc-Med, (f), *Lathraea squamaria* L., G, Eua, (d,f), *Linaria vulgaris* Miller, H, Eua, (f), *Melampyrum bihariense* A. Kerner, Th, Dac, (f), *Melampyrum cristatum* L., Th, Eua (Cont), (f), *Odontites vernus* (Bellardi) Dumort. ssp. *serotinus* (Dumort.) Corb., Th, Eua, (f), *Rhinanthus minor* L., Th, Eur, (f), *R. rumelicus* Velen., Th, Pont-Pan-Balc, (d,f), *Scrophularia nodosa* L., H, Eua, (e,f), *Verbascum blattaria* L., H, Eua (Med), (f), *V. chaixii* Vill. ssp. *austriacum* (Schott) Hay., TH-H, Eua, (f), *V. densiflorum* Bertol., TH, Eur (Med), (f), *V. nigrum* L. ssp. *nigrum*, H, Eua, (f), *V. phoeniceum* L., H, Eua (Cont), (f), *V. speciosum* Schrader, TH, Pont-Pan-Balc, (f), *Veronica anagallis-aquatica* L., H (HH), Circ, (f), *V. arvensis* L., Th, Eua, (f), *V. austriaca* L. ssp. *austriaca*, H, Pont-Med-Euc, (d,f), *V. beccabunga* L., H (HH), Eua, (f), *V. chamaedrys* L. ssp. *chamaedrys*, H (Ch), Eua, (d,f), *V. hederifolia* L. ssp. *hederifolia*, Th, Eua (Med), (f), *V. officinalis* L., Ch, Eua (d,f), *V. opaca* Fries, Th, Eur, (f), *V. orchidea* Crantz, H, Pont-Pan-Balc, (f), *V. persica* Poiret, Th, Adv, (f), *V. polita* Fries, Th, Eua, (f), *V. serpyllifolia* L. ssp. *serpyllifolia*, H, Cosm, (f), *V. spicata* L. ssp. *spicata*, H, Eua, (f), *V. teucrium* L. ssp. *teucrium*, H, Eua (Cont), (f), *V. triphyllos* L., Th, Eur, (f), *V. verna* L., Th, Eua, (f). **Campanulaceae:** *Campanula abietina* Griseb., TH, Carp-Balc (f), *C. bononiensis* L., H, Eua (Med), (f), *C. cervicaria* L., H, Eua, (f), *C. glomerata* L. ssp. *glomerata*, H, Eua, (d,f), *C. patula* L., TH, Eur, (f), *C. persicifolia* L., H, Eua, (d,f), *C. rapunculoides* L., H, Eua, (d,f), *C. rapunculus* L., TH, Eur (Med), (f), *C. serrata* (Kit.) Hendrych, H, End (Carp), (f), *C. trachelium* L., H, Eua (Med), (f). **Rubiaceae:** *Asperula cynanchica* L., H, Euc-Med, (f), *Cruciata glabra* (L.) Ehrend., H, Eua, (d,f), *C. laevipes* Opiz, H, Eua, (f), *C. pedemontana* (Bellardi) Ehrend., Th, Med, (f), *Galium aparine* L., Th, Circ, (d,f), *G. divaricatum* Pourret ex Lam., Th, Med, (f), *G. humifusum* Bieb., H, Pont-Balc, (f), *G. mollugo* L., H, Eua, (e,f), *G. octonarium* (Klokov) Pobed., H, Pont, (f), *G. odoratum* (L.) Scop., G, Eua, (f), *G. palustre* L. ssp. *palustre*, H, Circ, (f), *G. rivale* (Sibth. et Sm.) Griseb., H, Eua (Cont), (b), *G. rubioides* L. ssp. *rubioides*, H, Euc, (f), *G. schultesii* Vest., G, Euc, (f), *G. verum* L., H, Eua, (f), *Sherardia arvensis* L. ssp. *arvensis*, Th, Eua, (f). **Caprifoliaceae:** *Sambucus ebulus* L., H, Eua (Med), (e,f), *S. nigra* L., Mph-mPh, Eur (Med), (d,f),

Viburnum lantana L., mPh, Euc-Med, (d,f), *V. opulus* L., mPh, Circ, (c,f). **Adoxaceae:** *Adoxa moschatellina* L., G, Circ, (f). **Valerianaceae:** *Valeriana officinalis* L., H, Eua (Med), (d,f), *Valerianella costata* (Steven) Betcke, Th, Pont-Med, (f), *V. dentata* (L.) Pollich, Th, Eur (Med), (f), *V. locusta* (L.) Latterade, Th, Eur. **Dipsacaceae:** *Dipsacus fullonum* L., TH, Med-Euc, (f), *D. gmelinii* Bieb., TH, Eua (Cont), (f), *D. laciniatus* L., TH, Eua (Cont), (f), *Knautia arvensis* (L.) Coulter ssp. *arvensis*, H, Eur, (d,f), *K. dipsacifolia* Kreutzer ssp. *dipsacifolia*, H, Euc, (f), *Scabiosa ochroleuca* L., H, Eua (Cont), (d,f), *Succisa pratensis* Moench, H, Eua, (f). **Asteraceae:** *Achillea millefolium* L. ssp. *millefolium*, H, Eua, (e,f), *A. setacea* Waldst. et Kit., H, Eua (Cont), (f), *Anthemis arvensis* L., Th, Eur (Med), (f), *A. austriaca* Jacq., Th, Euc-Pont, (f), *A. cotula* L., Th, Cosm, (f), *A. ruthenica* Bieb., Th, Euc-Pont-Med (f), *A. tinctoria* L. ssp. *tinctoria*, H, Eua (Cont), (f), *Arctium lappa* L., TH, Eua, (f), *Artemisia absinthium* L., H (Ch), Eua (Med), (f), *A. vulgaris* L., H, Circ, (f), *Bellis perennis* L., H, Eur (Med), (d,f), *Bidens tripartita* L., Th, Eua, (b,f), *Carduus acanthoides* L., TH, Eur, (f), *C. nutans* L., TH, Eua, (f), *Carlina biebersteinii* Bernh. ex Hornem. ssp. *brevibracteata* (Andrae) Werner, TH, Euc (Mont), (f), *C. vulgaris* L., TH, Eua, (f), *Centaurea biebersteinii* DC. TH-H, Pont-Pan-Balc, (f), *C. cyanus* L., Th-TH, Cosm, (f), *C. iberica* Trev., TH, Pont-Balc, (f), *C. indurata* Janka, H, Dac, (f), *C. jacea* L., H, Eur, (f), *C. nigrescens* Willd., H, Euc, (f), *C. pseudophrygia* C.A. Meyer ssp. *pseudophrygia*, H, Euc, (f), *C. scabiosa* L., H, Eur, (f), *C. stenolepis* A. Kerner ssp. *stenolepis*, H, Eur, (f), *Chondrilla juncea* L., TH-H, Eua (Cont), (f), *Cichorium intybus* L. ssp. *intybus*, H, Eua, (f), *Cirsium arvense* (L.) Scop., G, Eua, (f), *C. canum* (L.) All., G, Eua (Cont), (f), *C. vulgare* (Savi) Ten., TH, Eua, (f), *Conyza canadensis* (L.) Cronq., Th, Adv, (f), *Crepis biennis* L., TH, Eur, (f), *C. foetida* L. ssp. *rhoeadifolia* (Bieb.) Čelak., Th, Pont-Med, (f), *C. praemorsa* (L.) F.W. Walther, H, Eua (Cont), (f), *C. setosa* Haller fil., Th, Euc, (f), *C. tectorum* L., Th, Eua, (f), *Doronicum hungaricum* (Sadl.) Reichenb. Fil., G, Pont-Pan-Balc, (f), *Erigeron acris* L. ssp. *acris*, Th, Circ, (f), *E. annuus* (L.) Pers. ssp. *annuus*, Th-TH-H, Adv, (f), *Filago arvensis* L., Th, Eua (Med), (f), *F. minima* (Sm.) Pers., Th, Eua, (f), *F. vulgaris* Lam., Th, Eua (Med), (f), *Galinsoga ciliata* (Rafin.) Blake, Th, Adv, (f), *Gnaphalium sylvaticum* L., H, Circ, (f), *G. uliginosum* L., Th, Eua, (d,f), *Hieracium bauhinii* Besser ssp. *bauhinii*, H, Eur, (f), *H. hoppeanum* Schultes, H, Euc (Mont), (f), *H. lactucella* Wallr., H, Eur, (d,f), *H. murorum* L., H, Eur, (f), *H. pilosella* L., H, Eua, (f), *H. piloselloides* Vill. ssp. *piloselloides*, H, Eur (Med), (f), *H. racemosum* Waldst. et Kit. ex Willd. H, Euc, (f), *H. schmidtii* Tausch, H, Eur (Mont), (f), *H. transsylvanicum* Heuffel, H, Carp-Balc, (f), *H. umbellatum* L., H, Euc, (f), *Hypochaeris maculata* L., H, Eua, (f), *H. radicata* L., H, Eur, (f), *Inula britannica* L., TH, Eua (Med), (f), *I. conyza* DC., H, Euc, (f), *I. germanica* L., H, Eur, (f), *I. hirta* L., H, Eua (Cont), (f), *I. salicina* L. ssp. *salicina*, H, Eua, (f), *Lactuca saligna* L., Th-TH, Euc, (f), *L. serriola* L., TH, Eua, (f), *Lapsana communis* L. ssp. *communis*, Th-TH-H, Eua, (f), *Leontodon autumnalis* L. ssp. *autumnalis*, H, Eua, (f), *L. crispus* Vill. ssp. *crispus*, H, Euras (Cont), (d), *L. hispidus* L. ssp. *hispidus*, H, Eua, (f), *Leucanthemum vulgare* Lam. ssp. *vulgare*, H, Eua, (d,f), *Matricaria perforata* Merat, Th-TH, Eua, (f), *M. recutita* L., Th, Eua, (f), *Mycelis muralis* (L.) Dumort., H, Eur, *Onopordum acanthium* L., TH, Eua, (f), *Pulicaria vulgaris* Gaertner, Th, Eua, (d,f), *Senecio jacobaea* L. ssp. *jacobaea*, H, Eua, (f), *S. vulgaris* L., Th, Eua, (f), *Serratula tinctoria* L., H, Eua, (f), *Solidago virgaurea* L. ssp. *virgaurea*, H, Circ, (d,f), *Sonchus arvensis* L. ssp. *arvensis*, G, Eua, (d,f), *S. asper* (L.) Hill ssp. *asper*, Th-TH, Cosm, (f), *S. oleraceus* L., Th, Cosm, (f), *Tanacetum corymbosum* (L.) Schultz Bip. ssp. *corymbosum*, Th, Eua, (d,f), *T. vulgare* L., H, Eua, (d,f), *Taraxacum officinale* Weber ex Wiggers, H, Eua, (d,f), *Tragopogon dubius* Scop., Th-TH, Eur, (d,f), *T. pratensis* L. ssp. *pratensis*, TH-H, Eua, (f), *Tussilago farfara* L., G, Eua, (d,f), *Xanthium italicum* Moretti, Th, Eur, (b,f), *X. spinosum* L., Th, Cosm, (b,d,f), *X. strumarium* L., Th, Cosm, (d,f), *Xeranthemum annuum* L., Th, Pont-Med, (f), *X. cylindraceum* Sibth. et Sm., Th, Pont-Med, (f). **Alismataceae:** *Alisma plantago-aquatica* L., HH, Circ, (e,f). **Potamogetonaceae:** *Potamogeton natans* L., HH, Circ, (e,f). **Dioscoreaceae:** *Tamus communis* L., G, Med, (e,f). **Trilliaceae:** *Paris quadrifolia* L., G, Eua, (d,e,f). **Liliaceae:** *Anthericum ramosum* L., H, Euc (Med), (f), *Erythronium dens-canis* L. ssp. *dens-canis*, G, Euc-Med, (e,f), *Gagea lutea* (L.) Ker-Gawl., G, Eua, (e,f), *Lilium martagon* L., G, Eua, (f), *Muscari comosum* (L.) Miller, G, Eur, (f). **Hyacinthaceae:** *Ornithogalum pyrenaicum* L., G, Atl-Med-Euc, (f), *O. umbellatum* L., G, Med-Euc, (d), *Scilla bifolia* L. ssp. *bifolia*, G, Eur, (e,f). **Alliaceae:** *Allium rotundum* L. ssp. *rotundum*, G, Euc-Med, (f), *A. scorodoprasum* L., G, Euc, (f). **Melanthiaceae:** *Veratrum album* L. ssp. *album*, H, Eua, (f). **Colchicaceae:** *Colchicum autumnale* L., G, Euc, (f). **Asparagaceae:** *Asparagus tenuifolius* Lam., G, Pont-Med., (f), *Convallaria majalis* L., G, Eur, (d,e,f), *Maianthemum bifolium* (L.) F.W.Schmidt, G, Eua (Cont), (f), *Polygonatum latifolium* (Jacq.) Desf., G, Pont-Pan-Balc, (e,f), *P. odoratum* (Miller) Druce ssp. *odoratum*, G, Eua (Med), (f). **Iridaceae:** *Crocus*

vernus (L.) Hill, G, Carp-Balc, (f), *Gladiolus imbricatus* L., G, Eua (Cont), (f), *Iris sibirica* L., G, Eua, (f), *I. variegata* L., G, Eua (Cont), (f). **Orchidaceae:** *Cephalanthera longifolia* (L.) Fritsch, G, Eur, (f), *Epipactis helleborine* (L.) Crantz, G, Eua, (f), *Gymnadenia conopsea* (L.) R. Br. ssp. *conopsea*, G, Eur, (f), *Listera ovata* (L.) R. Br., G, Eua (Med), (f), *Neottia nidus-avis* (L.) L.C.M. Richard, G, Eua, (f), *Orchis coriophora* L. ssp. *coriophora*, G, Euc (Med), (f), *O. morio* L. ssp. *morio*, G, Eur, (d,f), *Platanthera bifolia* (L.) L.C.M. Richard, G, Eua (Med), (f), *P. chlorantha* (Cust.) Reichenb., G, Eua (Med), (d). **Juncaceae:** *Juncus articulatus* L., H, Circ, (f), *J. atratus* Krocke, H, Eua (Cont), (f), *J. bufonius* L., Th, Cosm, (d,f), *J. compressus* Jacq., G, Eua, (f), *J. conglomeratus* L., H, Cosm, (f), *J. effusus* L., H, Cosm, (d,f), *J. gerardi* Loisel., G, Circ, (f), *J. tenuis* Willd., G, Adv, (d,f), *Luzula campestris* (L.) DC., H, Cosm, (f), *L. luzuloides* (Lam.) Dandy et Willmott ssp. *luzuloides*, H, Euc (Mont), (f), *L. multiflora* (Ehrh.) Lej. ssp. *multiflora*, H, Circ, (f). **Cyperaceae:** *Bolboschoenus maritimus* (L.) Palla ssp. *maritimus*, G (HH), Cosm, (f), *Carex brizoides* L., G, Euc, (f), *C. caryophylla* Latourr., G, Eua (Med), (f), *C. distans* L., H, Eua (Med), (f), *C. divulsa* Stokes, H, Circ, (f), *C. hirta* L., G, Circ, (f), *C. ovalis* Good., H, Circ, (f), *C. pallescens* L., H, Circ, (d), *C. praecox* Schreber, G, Eua (Cont), (f), *C. remota* L., H, Circ, (f), *C. spicata* Hudson, H, Circ, (f), *C. sylvatica* Hudson, H (HH), Circ, (f), *C. tomentosa* L., G, Eua, (f), *C. vesicaria* L., H (HH), Circ, (f), *C. vulpina* L., H, Eua, (d,f), *Cyperus flavescens* Jacq., Th, Cosm, (f), *C. fuscus* L., Th, Eua (Med), (f), *E. palustris* (L.) Roemer et Schultes, G (HH), Cosm, (f), *Scirpus sylvaticus* L., HH-G, Circ, (f). **Poaceae:** *Aegilops cylindrica* Host, Th, Eua (Med), (f), *Agrostis canina* L. ssp. *canina*, H, Eua, (e,f), *A. capillaris* L. ssp. *capillaris*, H (G), Circ, (f), *A. stolonifera* L. ssp. *stolonifera*, H, Circ, (e,f), *Aira elegantissima*, Schur, Th, Euc-Med, (f), *Alopecurus aequalis*, Sobol., H, Circ, (f), *A. pratensis* L. ssp. *pratensis*, H, Eua, (f), *Anthoxanthum odoratum* L., H, Eua, (f), *Apera spica-venti* (L.) Beauv. ssp. *spica-venti*, Th, Eua, (f), *Arrhenatherum elatius* (L.) Beauv. ex J. et C. Prestl, ssp. *elatius*, H, Eua, (f), *Avenula compressa* (Heuffel) W. Sauer et Chmelitschek, H, Pont-Pan-Balc, (f), *Brachypodium pinnatum* (L.) Beauv. ssp. *pinnatum*, H, Eua (Med), (f), *B. sylvaticum* (Hudson) Beauv., H, Eua (Med), (f), *Briza media* L., H, Eua, (d,e,f), *Bromus arvensis* L. ssp. *arvensis*, Th-TH, Eua (Med), (e,f), *B. benekenii* (Lange) Trimen, H, Eua, (f), *B. commutatus* Schrader, Th-TH, Eua (Med), (f), *B. erectus* Hudson ssp. *erectus*, H, Euc-Med (f), *B. hordeaceus* L., Th-TH, Eua (Med), (f), *B. secalinus* L., Th-TH, Eua (Med), (f), *B. sterilis* L., Th, Eua (Med), (e,f), *B. tectorum* L., Th, Eua (Cont) (f), *Calamagrostis epigeios* (L.) Roth, G, Eua, (d,f), *C. pseudophragmites* (Haller fil.) Koeler, H, Eua (Cont), (f), *Chrysopogon gryllus* (L.) Trin., H, Med, (f), *Crypsis alopecuroides* (Piller et Mitterp.) Schrader, Th, Eua, (f), *Cynodon dactylon* (L.) Pers., G, Cosm, (d,f), *Cynosurus cristatus* L., H, Eur, (d,f), *Dactylis glomerata* L. ssp. *glomerata*, H, Eua, (e,f), *Dichanthium ischaemum* (L.) Roberty, H, Eua (Med), (f), *Digitaria sanguinalis* (L.) Scop. ssp. *sanguinalis*, Th, Cosm, (f), *Echinochloa crus-galli* (L.) Beauv., Th, Cosm, (f), *Elymus elongatus* (Host) Runemark ssp. *elongatus*, H, Pont, (f), *E. hispidus* (Opiz) Melderis ssp. *hispidus*, G, Eua (Cont), (f), *E. repens* (L.) Gould, G, Circ, (f), *Eragrostis minor* Host, Th, Euc (Med), (f), *E. pilosa* (L.) Beauv., Th, Euc (Med), (f), *Festuca heterophylla* Lam., H, Euc (Med), (f), *F. pratensis* Hudson ssp. *pratensis*, H, Eua, (e,f), *F. pseudovina* Hackel, H, Eua (Cont), (f), *F. rubra* L. ssp. *rubra*, H, Circ, (f), *F. valesiaca* Schleicher ex Gaudin, H, Eua (Cont), (d,f), *Glyceria notata* Chevall., H (HH), Circ, (f), *Holcus lanatus* L., H, Cosm, (f), *Hordeum murinum* L. ssp. *murinum*, Th, Eua, (d,e,f), *Koeleria macrantha* (Ledeb.) Schultes ssp. *macrantha*, H, Circ, (f), *Lolium perenne* L., H, Cosm, (d,e), *Melica nutans* L., H (G), Eua, (d), *M. picta* C. Koch, H (G), Pont-Euc, (f), *M. uniflora* Retz., H (G), Euc-Med, (f), *Milium effusum* L., H, Circ, (d,f), *Panicum capillare* L., Th, Adv, (f), (sälb.), *Phleum phleoides* (L.) Karsten, H, Eua (Cont-Med), (f), *Ph. pratense* L., H, Eua, (f), *Phragmites australis* (Cav.) Steudel ssp. *australis*, HH, Cosm, (e,f), *Poa annua* L., Th-TH, Cosm, (f), *P. bulbosa* L. ssp. *bulbosa*, H, Eua, (f), *P. compressa* L. ssp. *compressa*, H, Eua (Cont), (f), *P. nemoralis* L., H, Circ, (e,f), *P. pratensis* L., H, Cosm, (f), *P. sylvicola* Guss., H, Med, (f), *P. trivialis* L., H, Eua, (e,f), *Setaria pumila* (Poiret) Schultes, Th, Cosm, (f), *Setaria viridis* (L.) Beauv. ssp. *viridis*, Th, Cosm, (e,f), *Ventenata dubia* (Leers) Cosson et Durieu, Th, Euc-Med, (f), *Vulpia myuros* (L.) C.C. Gmelin, Th, Eua (Cosm), (f). **Sparganiaceae:** *Sparganium emersum* Rehm., G (HH), Eua, (d,f). **Typhaceae:** *Typha angustifolia* L., G (HH), Circ, (d,f), *T. latifolia* L., G (HH), Cosm, (e,f), *T. minima* Funk in Hoppe, G (HH), Eua, (f). **Araceae:** *Arum maculatum* L., G, Euc-Med, (e,f). **Lemnaceae:** *Lemna minor* L., HH, Cosm, (e,f).

Results and Discussion

The 764 taxa are grouped in 95 families, the best represented are: *Asteraceae* (92), *Poaceae* (67), *Fabaceae* (61), *Lamiaceae* (42) etc. (Fig. 1).

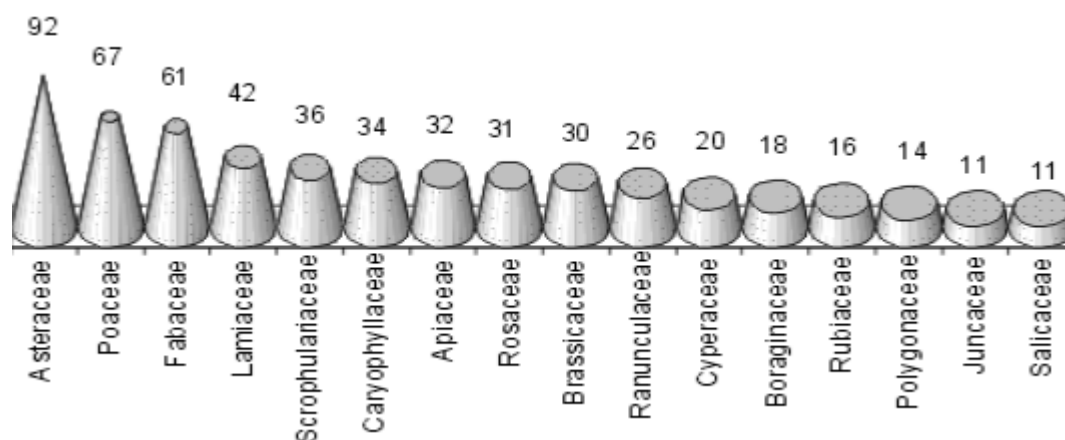


Fig. 1: The families and the number of the identified species

The elements of the montaine flora are particularly meet in the moist and shady valleys: *Athyrium filix-femina*, *Crocus vernus*, *Dryopteris filix-mas*, *Hepatica nobilis*, *Libanotis montana* etc. In the southern exposed glades and especially on the lands without forests we meet species which belong to plain region: *Moenchia mantica*, *Trifolium incarnatum*, *Lathyrus nissolia* etc.

The floristic composition of the forest is not uniform on the entire surface. In the South-East it is a flat ground (The Proper Trivale Forest), the Shrub being formed by species of *Quercus polycarpa*, *Q. petraea*, *Q. dalechampii*, with few sample of *Q. frainetto* și *Q. x pseudodalechampii*.

In the highest part of the territory, the forest is formed by the following species: *Quercus petraea*, *Q. polycarpa*, while in the southerly side, beside the few samples of *Quercus frainetto* it can be found some samples of *Quercus cerris*. The undershrub is representing by the following samples: *Crataegus monogyna*, *Ligustrum vulgare*, *Rosa canina*. The species *Poa nemoralis* mixed with *Carex brizoides*, *Campanula abietina*, *Dactylis glomerata*, *Genista tinctoria*, *Veronica chamaedrys* etc. are very spread.

In the little valleys *Quercus robur* is mixed with *Carpinus betulus*, *Tilia cordata*, *Cerasus avium*, *Acer platanoides*, *Acer pseudoplatanus*. In the deeper and shady valleys appear features of *Fagus sylvatica*, and in the Aninoasa Valley pure beech forests are formed.

Regarding the spreading of the biological forms, the characteristic plants of these valleys are the Geophytes and the Hemycryptophytes, whose evolutive cycle ends when the trees come into leaf: *Erythronium dens-canis*, *Anemone nemorosa*, *Hepatica nobilis*, *Potentilla micrantha*, *Pulmonaria officinalis*, *Scilla bifolia* etc. (Fig. 2).

In the cormoflora of the Trivale Forest phytogeographical elements with a great scientific value can be found: **Pannonian:** *Rorippa sylvestris* (L.) Besser ssp. *kernerii* (Menyh.) Soó, *Chamaecytisus hirsutus* (L.) Link ssp. *leucotrichus* (Schur) A. et D. Löve, *Euphorbia epythimoides* L., **Atlantic and Atlantic-Mediterranean:** *Trifolium incarnatum* L., *Kohlruschia prolifera* Kunth, *Lathyrus nissolia* L., *Ornithogalum pyrenaicum* L., *Genistella sagittalis* (L.) Gams, **Pontic, Pontic-Anatolic, Pontic-Balkan, Pontic-Mediterranean:** *Geranium collinum* Stephan, *Quercus pedunculiflora* C. Koch, *Galium humifusum* Bieb., *Sisymbrium orientale* L., **Meediterranean:** *Lychnis coronaria* (L.) Desr., *Cruciata pedemontana* (Bellardi) Ehrend., *Moenchia mantica* (L.) Bartl., *Potentilla micrantha* Ramond ex DC, **Balkan:** *Rorippa prolifera* (Heuffel) Neilr., *Quercus frainetto* Ten., *Digitalis lanata* Ehrh. (Fig. 3).

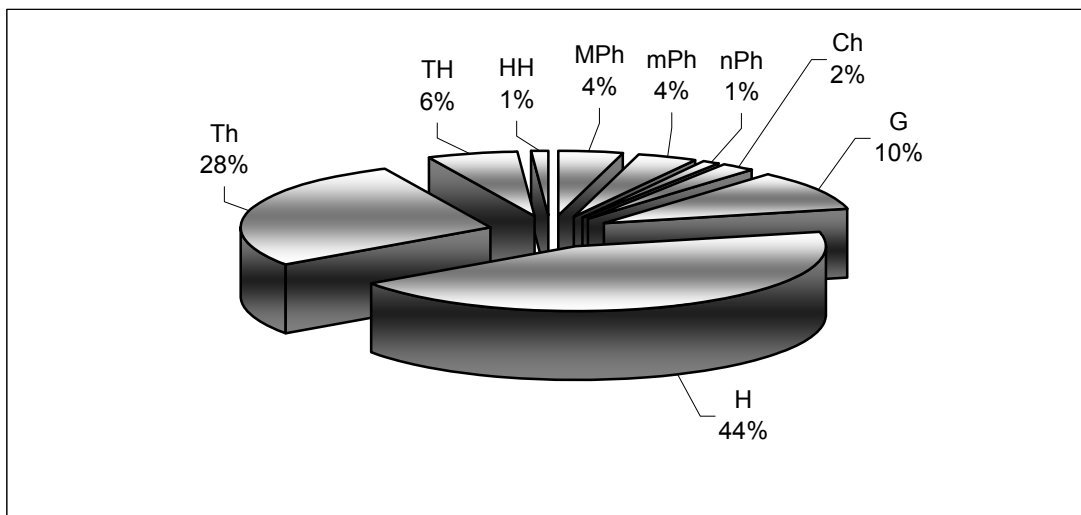


Fig. 2: The spectrum of the bioforms in Trivale Forest

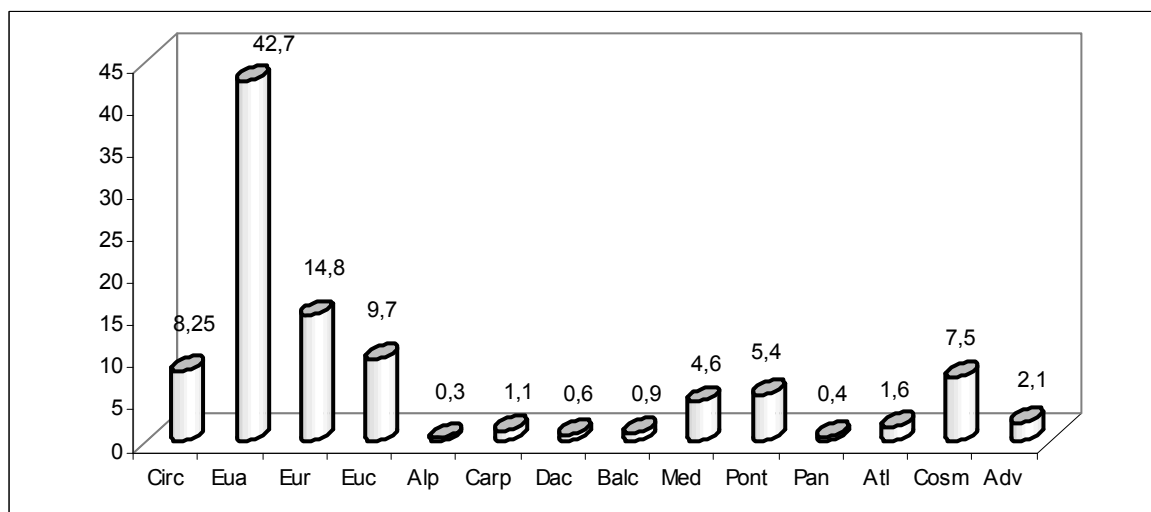


Fig. 3: The share of the phytogeographical in the cormoflora of Trivale Forest

Conclusions

The rarity of termophile oak forests, the rich informational content, the diversity of the vegetation, the excellent phytogeographical importance confer a big importance to the Trivale Forest, justifying any effort done for the preservation of this enclave.

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REZERVAȚIA „PĂDUREA TRIVALE”, PITEȘTI, JUD. ARGHEȘ

(Rezumat)

Prin bogăția floristică, prin raritatea multora dintre speciile identificate în perioada 1935-2004, de botaniști precum: Ioan Todor, Petruța Pestroiu, Stelian Săraru, Aurel Popescu, Bibica Drăghici, Anghel Richițeanu, Valeriu Alexiu, multe dintre ele păstrate în colecțiile herbaristice ale Muzeului Județean Argeș și ale Facultății de Biologie, Universitatea din Pitești, acest ecosistem forestier analizat evidențiază elemente de floră și structuri fitocenotice specifice, care măresc interesul științific și reclamă măsuri pentru protecția lui. Pe lângă interesul științific, Pădurea Trivale reprezintă „plămânul verde” al Piteștiului, oraș puternic industrializat. Un important segment al acestei păduri a fost transformat într-un renumit parc, de vârstă seculară. Prin Hotărârea 18/1994, Consiliul Județean Argeș a declarat Pădurea Trivale ca Rezervație forestieră de interes local.

Lucrarea de față prezintă lista celor 764 taxoni identificați în cormoflora pădurii, cu o analiză a bioformelor și geoelementelor și o foarte sumară prezentare a principalelor tipuri de pădure prezente pe cele 1981 ha.