Bulgarian Journal of Agricultural Science, 21 (No 6) 2015, 1157-1161
Agricultural Academy

FLORA AND VEGETATION OF PROTECTED AREA ELESHNISHKI MONASTERY "USPENIE BOGORODICHNO"

V. VUTOV
National Museum of Natural History, Bulgarian Academy of Sciences, BG - 1000 Sofia, Bulgaria

Abstract

VUTOV, V., 2015. Flora and vegetation of protected area Eleshnishki Monastery "Uspenie Bogrodichno". *Bulg. J. Agric. Sci.,* 21: 1157–1161

The flora and vegetation in the protected area Eleshnishki monastery has been investigated for the first time. It is located in Central Stara Planina Mt. floristic region. Encompasses 125 vascular plants (mosses excluded), belonging to 41 genera and 91 families. There of two are Balkan endemics. With protected status are Balkan endemic species *Tragopogon balcanicum* Velen. and *Trifolium medium* L. subsp. *balcanicum* Velen. Taxus baccata L. The alien species is *Robinia pseudoacacia* L. *Lamium album* L. is a new species for the flora of Stara Planina.

The hemicryptophytes are the predominant life-form (81 species), followed by the phanerophytes (26 species), geophytes (3 species), therophytes (7 species), 2 chamaephyte; annual to biannual – 3, biannual – 3.

Key words: taxonomic composition, Balkan endemic, Stara Planina Mt., floristic region, plants community, protected area and species, flora and vegetation

Introduction

The monastery is located in the Murgash Mountain. It is situated within mixed deciduous forest above the left bench of Manastirska River. It is reachable through the left branch of the road from Eleshnica to Potop villages. After Eleshnica, to the left of the road, there is a monument of two perished soldiers of the Botev's band, and to the left – the monument of Iordanka Nikolova.

After 3 km along the asphalt road, we reached the monastery. Nearby its boundaries, to the right, a marked rout towards the Murgash peak (1687 m) is found. Since ancient times, the mountain has been a troubled cross-road for different tribes and peoples – Thracians, Romans, Bulgarians, Latin, Byzantines, Turkish, Russians, etc. To the West of the Monastery, at the Merkova meadow, the member of Botev's band, Angel Todorov (from the village of Kazyl Murad) was killed by the Turkish soldiers in July 1876. To the East of Monastery, at the Jerkovo dere, the band of Panaiot Hitov and Philip Totio went through on its way to Serbia. Its standard-bearer was Vassil Levski. The soldiers of general Gurko, who liberated Sofia on December 1877, passed through the Murgash peak on December 1877.

The Monastery was found in the XV century. It is a single-nave church entirely built of stone. The murals were created in the XVI century and have been restored with the financial aid of the Bulgarian Telecommunications Company. There are scenes from the Bible ("The Judgement Day", "Mother Mary's life" as well as other Saints' stories). The grave of Monk Ignatii is standing right at the entrance of the Monastery. Monk Ignatii was a Bulgarian of Macedonic origin, who arrived in Bulgaria after the Ilinden Uprising. He was born in 1873 and died on December 24th 1959.

Within the period of XV-XVI Century learning activities were developed in the Monastery. It was also the shelter of the Bulgarian revolutionary Vasil Levski during his traveling throughout the country. At the western and northern parts of the vestibule there are battle apertures in the wall in case of military attacks.

Materials and Methods

The routing and trans section methods were applied. The herbarium materials were determined according to Jordanov (1963-1982), Kozuharov and Kuzmanov (1995), Peev (2012). The vegetation has been investigated using the method of

E-mail: v_vutov@abv.bg

Braun-Blanquet (1964). Areals of a size of 300 m^2 have been investigated. For the grasses communities the areals are 10 m^2. The geo element composition has been defined by Asiov and Petrova (2012).

Results

The woody vegetation in the yard of the Monastery consists of 60-70 years old *Picea pungens* Engelm., *Pseudotsuga douglasii* Karr., *Picea abies* Karst., *Prunus cerasifera* Ehrh., *Sambucus nigra* L., *Robinia pseudoacacia* L., *Fraxinus excelsior* L. *Biota orientalis* Endl., *Tilia platyphyllos* Scop. and *Prunus avium* L..

Herbaceous vegetation is made of *Poa pratensis* L., *Arrhenatherum elatius* (L) Beauv. ex J. et C.Presl, *Hordeum murinum* L., *Cerastium fontanum* Baumg., *Cardaria draba (*L.) Desv., *Geum urbanum* L., *Ajuga genevensis* L., *Lamium album* L., *Potentilla reptans* L., *Potentilla neglecta* Baumg., *Cruciata laevipes* Opiz and *Alliaria petiolata* (Bieb.) Kavara et Grande.

Around the Monastery woody vegetation is formed from a mixture of deciduous and coniferous species such as *Quercus cerris* L., *Quercus dalechampii* T.Ten., *Quercus frainetto* Ten., *Acer campestre* L., *Euonymus europaeus* L., *Carpinus betulus* L., *Cornus sanguinea* L., *Pinus sylvestris* L., *Prunus spinosa* L., *Rosa canina* L., *Pyrus pyraster* Burgsd., *Carpinus orientalis* Miller., *Tilia cordata* Miller, *Chamaecytisus hirsutus* (L.)Link, *Crataegus monogyna* Jacq., *Taxus baccata* L. and *Cornus mas* L. .

In the subforest the Poaceae family is represented by *Poa nemoralis* L., *Poa bulbosa* L., *Poa annua* L., *Festuca nigrescens* Lam., *Melica uniflora* Retz., *Bromus sterilis* L. and *Alopecurus pratensis* L..

The Fabaceae family is represented by *Genista ovata* Waldst. et Kit., *Vicia varia* Host., *Lathyrus pratensis* L., *Trifolium medium* L., *Trifolium campestre* Schreb., *Vicia sepium* L. and *Genista depressa* Bieb.

Other herbaceous species are *Pseudolysimachion orchideum* (Krantz) Wraber., *Geranium lucidum* L., *Lamium purpureum* L., *Stellaria holostea* L., *Helleborus odorus*, Waldst et Kit., *Fragaria vesca* L., *Chaerophyllum hirsutum* L., *Silene noctiflora* L., *Plantago major* L., *Clinopodium vulgare* L., *Dipsacus fulonum* L., *Berteroa incana* (L.) DC., *Achillea millefolium* L., *Salvia glutinosa* L., *Arctium lappa* L., *Silene vulgaris* (Moench.) Garcke, *Lychnis coronaria* (L)Desr., *Hypericum perforatum* L., *Hieracium murorum* L., *Teucrium chamaedrys* L., *Euphorbia cyparissias* L., *Sherardia arvensis* L., *Eryngium campestre* L., *Plantago lanceolata* L., *Carex caryophyllea* La Tour., *Veronica chamaedrys* L., *Rhodax canus* (L.) *Fuss*, *Silene italica* (L.)Pers., *Verbascum phoeniceum* L., *Cystopteris fragilis* (L.) Bernh., *Ranunculus ficaria* L., *Campanula persicifolia* L., *Asplenium trichomanes* L., *Asplenium adianthum-nigrum* L., *Polypodium vulgare* L., *Rorippa sylvestris* (L.) Besser, *Lapsana communis* L., *Arabis glabra* (L.)Bernh., *Lamistruum galeobdolon* (L.) Ehrnd. et Polaschek, *Primula veris* L., *Pastinaca sativa* L., *Mellitis melissophyllum* L., *Saxifraga rotundifolia* Velen., *Gentiana cruciata* L., *Ranunculus serbicus* Vis., *Aremonia agrimonoides* (L.) DC. *Polygonatum odoratum* (Miller) Druce, *Cerinthe minor* L., *Viola dacica* Borbas, *Cardamine hirsuta* L., *Aegopodium podagraria* L., *Pulmonaria officinalis* L., *Scrophularia nodosa* L., *Geranium robertianum* L., *Urtica dioica* L., *Potentilla reptans* L., *Sanguisorba minor* Scop., *Cardamine bulbifera* (L. Crantz.), *Mycelis muralis (*L.)Dumort., *Filipendula vulgaris* Moench, *Leucanthemum vulgare* Lam., *Draba muralis* L., *Geranium sanguineum* L., *Tragopogon balcanicum* Velen., *Potentilla micrantha* Ramond ex DC., *Asplenium septentrionale (*L.) Hoffm., *Linaria genistifolia* (L.)Miller, *Geranium pyrenaicum* Burn. Fil., *Erysimum diffusum* Ehrh., *Thymus pannonicus* All., *Campanula patula* L., *Cardamine impatiens* L., *Viola riviniana* Reichenb., *Arabidopsis thaliana* (L) Heynh., *Viola tricolor* L., *Polygala vulgaris* L., *Cruciata glabra* (L.)Ehrend., *Thlaspi alliaceum* L., *Carex divulsa* Hudson, *Hieracium caespitosum* Dumort. and *Myosotis ramosissima* Rochel – see Table 1.

Balkan endemic species are *Tragopogon balcanicum* Velen. and *Trifolium medium* subsp. *balcanicum* Velen..

Lamium album L. Is a new species for the flora of Stara Planina.

The hemicryptophytes are the predominant life-form (81 species), followed by the phanerophytes (26 species), geo-

Table 1
Taxonomic composition and flora of the protected area

Division / Subdivision	Families	Genera	Species
Pteridophyta	3	3	4
Gymnospermae Magnoliophyta	3	5	6
Monocotyledonae	3	9	12
Dicotyledonae	32	74	103
Total	41	91	125

phytes (3 species), therophytes (7 species), 2 chamaephyte; annual to biannual – 3, biannual – 3.

From the analysis of the phytogeographical elements (Asiov et al., 2012) are: European-Asian (15 species), followed by European-Mediterranean species - 9, Submediterranean - 14, Boreal - 10, European-Siberian - 13, Cosmopolitan - 7, European-Submediterranean - 4, Subboreal - 13, Pont Mediterranean - 3, Mediterranean and European Oriental Tyranean - all of them 2 species, European - 14, Southern Pontic - 4, 1 species for: Mediterranean Oriental Tyranean, Submediterranean Central Asian, Pontic, Pontic Siberian, Apenino Balcan, European Northern American, Balcan Karpatian, Central European and Balkan. There are 4 species Adventiv.

Appendix 1.

List of the plant species found in the protected area:

Pteridophyta
Aspleniaceae
1. *Asplenium adianthum-nigrum* L.
2. *Asplenium septentrionale* (L) Hoffm.
3. *Asplenium trichomanes* L.

Athyriaceae
4. *Cystopteris fragilis* (L) Bernh.

Polypodiaceae
5. *Polypodium vulgare* L.

Gymnospermae
Taxaceae
6. *Taxus baccata* L.

Pinaceae
7. *Picea abies* Karst.
8. *Picea pungens* Engelm.
9. *Pinus sylvestris* L.
10. *Pseudotsuga douglasii* Karr.

Cupressaceae
11. *Biota orientalis* Endl.

Magnoliophyfita Dicotyledonae
Aceraceae
12. *Acer campestre* L.

Apiaceae
13. *Aegopodium podagraria* L.
14. *Chaeropfyllum-hirsutum* L.
15. *Eryngium campestre* L.
16. *Pastinaca sativa* L.

Asteraceae
17. *Achillea millefolium* L.
18. *Arctium lappa* L.
19. *Hieracium caespitosum* Dumort.
20. *Hieracium murorum* L.
21. *Lapsana communis* L.
22. *Tragopogon balcanicum* Velen.

Betulaceae
23. *Carpinus betulus* L.
24. *Carpinus orientalis* Miller

Boraginaceae
25. *Cerinthe minor* L.
26. *Pulmonaria officinalis* L.

Brassicaceae
27. *Alliaria petiolata* (Biieb) Kavara et Grande
28. *Arabidopsis thaliana* (L.) Heynh.
29. *Arabis glabra* (L.) Bernh.
30. *Berteroa incana* (L.) DC.
31. *Cardamine bulbifera* (L.) Crantz.
32. *Cardamine hirsuta* L.
33. *Cardamine impatiens* L.
34. *Cardaria draba* (L.) Desv.
35. *Draba muralis* L.
36. *Erysimum difussum* Ehrh.
37. *Thlaspi alliaceum* L.
38. *Rorippa sylvestris* (L.) Besser.

Campanulaceae
39. *Campanula patula* L.
40. *Campanula persicifolia* L.

Caryophyllaceae
42. *Cerastium fontanum* Baumg.
43. *Lychnis coronaria* (L.) Desv.
44. *Silene italica* (L.) Pers.
45. *Silene noctiflora* L.
46. *Silene vulgaris* (Moench.) Garcke
47. *Stellaria holostea* L.

Caprifoliaceae
48. *Sambucus nigra* L.

Celastraceae
49. *Evonymus europaeus* L.

Cistaceae
50. *Rhodax canus* (L.) Fuss

Cornaceae
51. *Cornus mas* L.
52. *Cornus sanguinea* L.

Dipsacaceae
53. *Dipsacus fulonum* L.

Euphorbiaceae
54. *Euphorbia cyparissias* L.

Fabaceae
55. *Chamaecytisus* hirsutus (L.) Link
56. *Genista depressa* M.Bieb.
57. *Genista ovata* Walds.& Kit.
58. *Lathyrus pratensis* L.
59. *Trifolium medium* L.*subsp. balcanicum* Velen.
60 *Robinia pseudacacia* L.
61. *Vicia sepium* L.

Fagaceae
62. *Quercus cerris* L.
63. *Quercus dalechampii* T. Ten.
64. *Qercus* frainetto Ten.

Gentianaceae
65. *Gentiana cruciata* L.

Geraniaceae
66. *Geranium lucidum* L.
67. *Geranium pyrenaicum Burm*. f.
68. *Geranium robertianum* L.
69. *Geranium sanguineum* L.

Hypericaceae
70. *Hypericum perforatum* L.

Lamiaceae
71. *Ajuga genevensis* L.
72. *Clinopodium vulgare* L.
73. *Lamium album* L.
74. *Lamium galeobdolon* (L.) L.
75. *Lamium purpureum* L.
76. *Melittis melissophyllum* L.
77. *Salvia glutinosa* L.
78. *Teucrium chamaedrys* L.
79. *Thymus pannonicus* All.

Oleaceae
80. *Fraxinus excelsior* L.

Plantaginaceae
81. *Plantago lanceolata* L.
82. *Plantago major* L.

Primulaceae
83. *Primula veris* L.

Ranunculaceae
84. *Helleborus odorus* Waldst & Kit.
85. *Ranunculus ficaria* L.
86. *Ranunculus serbicus* Vis.

Rosaceae
87. *Aremonia agrimonoides* (L.) DC.
88. *Crataegus monogyna* Jacq.
89. *Filipendula vulgaris* Moench.
90. *Fragaria vesca* L.
91. *Geum urbanum* L.
92. *Potentilla micrantha* Ramond. ex DC.
93. *Potentilla neglecta* Baumg.
94. *Potentilla reptans* L.
95. *Prunus avium* L.
96. *Prunus cerasifera* Ehrh.
97. *Prunus spinosa* L.
98. *Pyrus pyraster* Burgsd.
99. *Sanguisorba minor* Scop.

Rubiaceae
100. *Cruciata glabra* (L.) Ehrend.
101. *Sherardia arvensis* L.

Saxifragaceae
102. *Saxifraga rotundifolia* L.

Scrophulariaceae
103. *Linaria genistifolia* (L.) Miller
104. *Pseudolysimachion orchideus* (Crantz.) Wraber
105. *Scrophularia nodosa* L.
106. *Verbascum phoeniceum* L.
107. *Veronica chamaedrys* L.

Tiliaceae
108. *Tilia cordata* Mill.
109. *Tilia platyphyllos* Scop.

Urticaceae
110. *Urtica dioica* L.

Violaceae
111. *Viola dacica* Borbas.
112. *Viola riviniana* Reichenb.
113. *Viola tricolor* L.

Monocotyledonae
Cyperaceae
114. *Carex cariophyllea* La Tour.
115. *Carex divulsa* Hudson

Liliaceae
116. *Polygonatum odoratum* (Miller) Druce

Poaceae
117. *Alopecurus pratensis* L.
118. *Arrhenatherum elatius* (L.) Beauv.
119. *Bromus sterilis* L.
120 .*Festuca nigrescens* Lam.
121. *Hordeum murinum* L.
122. *Melica uniflora* Retz.
123. *Poa annua* L.
124. *Poa nemoralis* L.
125. *Poa pratensis* L.

Acknowledgements
We acknowledge the partial support by the European Project EMAP (FP7-PEOPLE-2009-IRSES) № 247548.

References

Assyov, B., A. Petrova, D. Dimitrov and R. Vassilev, 2012. Conspectus of the Bulgarian vascular flora. Distriburion maps and floristic elements. *Bulgarian Biodiversity Foundation*, Sofia, 489 pp. (Bg).

Braun-Blanquet, J., 1964. Pflanzensoziologie. *Springer Verlag*, Vien, N. Y.

Jordanov, D. (ed.), 1963-1982. Flora of Bulgaria, v. 1-8. *BAS Publishing House*, Sofia. (Bg).

Kozuharov, S. and B. Kuzmanov, 1995. Flora of Bulgaria, v. 10, *BAS Publishing House*, Sofia.

Peev, D. (ed.), 2012. Flora of Bulgaria, v. 11, *BAS Publishing House* (Bg).

Received December, 11, 2014; accepted for printing October, 5, 2015