

PRELIMINARY NOTES ON CORMOPHYTE FLORA NEAR VILLAGE CĂLACEA (TIMIȘ COUNTY)

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Abstract: The paper contains the results of the researches made during 2011 – 2014, in a remarkable sit from a floristic point of view, in a plain-landscape with a net agricultural dominance (arable fields). The studied area is constituted from the northern slope of a valley and its lower portion, occupied by a mosaic of halophilous and swampy vegetation. A lane of about 50 meters between the slope and the lower areas of the valley is cultivated every year, with corn or grain. Thus, we have identified 144 species of cormophytes, out of which we consider as remarkable *Adonis vernalis* and *Pulsatilla montana*, whose presence at Călăcea may only be explained by the relict, natural character of the meadow and *Cirsium brachycephalum* and *Echium russicum*, species from Appendix II and of the Habitat Directive (92/43/CEE). The areas with halophilous patches are framed in the type of priority habitat 1530* - Pannonic salt steppes and salt marshes. The other species of the meadows from the slope are particular to the type of habitats 6210 – Semi-natural dry grasslands and scrubland facies on calcareous substrates (e.g. *Brachypodium pinnatum*, *Danthonia carthusianorum*, *Medicago sativa* ssp. *falcata*, *Adonis vernalis*), 6250 – Pannonic loess steppic grassland (e.g. *Nonea pulla*, *Salvia nemorosa*, *Festuca rupicola*, *Falcaria vulgaris*) and 40A0 - * Subcontinental peri-Pannonic scrubs (e.g. *Rosa gallica*, *Crataegus monogyna*, *Teucrium chamaedrys*, *Chrysanthemum corymbosum*). Although the area is included in the community importance sit ROSCI 0115 The Satchinez swamp, standard data form does not contain any species of plants. Plant species we found are enhancing the value of the sit and require specific conservation measures. Any anthropic intervention, except the extensive use as pasture (halophilous patches) or 1-cut/year mown meadow (grassland xeric patches on slopes) should be accepted only after a thoughtfully analysis.

Key words: flora, cormophytes, Călăcea, Habitat Directive

INTRODUCTION

Located in the Banat Plains, 25 km from Timișoara City, the village of Călăcea has belonged to Orțișoara commune since 1968 (when the first administrative and territorial division of Romania took place). It is located more precisely at coordinates 45°57'20"N 21°8'45"E. First written testimony comes from 1311, under the name of Kalanda, in a property handover document (TRAIĂ & DONGEA, 2006). Călăcea is also the site of the oldest thermal waters resorts in the West of the country, Călăcea Baths. Călăcea is a piedmont plain, 130 meters at its tallest, is situated in the North-West of Vinga Plain. It shows wide valleys and smooth slopes. In the West, towards Torontalului Plain, there used to be numerous marshlands. Many of these were drained to make way for cultivation. The temperate-continental climate of the region shows obvious signs of subMediterranean influences. The hydrographic network is formed of a few streams whose water is collected by Bega Veche. Today's local vegetation in the region is mostly cultivated fields and alluvial plains. In the past, forests of oaks, could be found. These were cleared en masse for economic reasons and to extend cultivated fields.

MATERIALS AND METHODS

Our research aims towards a floristic review as complete as possible, and noting all particular aspects of the regional flora. To this end, we have done field work between 2011 and 2014 within our site. This field work was done to note upon all plant species encountered in the

field and to collect specimens for further determination of those species not identified on site. The work done encompasses aspects of vernal, aestival and autumnal flora. In the laboratory, plant determination was done using *Flora R.S.R. I-XIII* (SĂVULESCU, 1952-1976) and “*Flora ilustrată a României. Pteridophyta et Spermatophyta*” (CIOCĂRLAN, 2000). All scientific plant denominations are according to Flora Europaea, electronic edition (<http://www.rbge.org.uk> Flora Europaea Database). Notation for the biological form, the floristic element and the autecological indices values was done using SÂRBU *et al.*, 2013.

RESULTS AND DISCUSSIONS

Our first fieldwork took place in 2011. On entering Călăcea, on the right side, on a sunny exposed slope, we found the species *Adonis vernalis* and *Pulsatilla montana*, in bloom. We estimated the surface they occupied at around 400 meters long and 50 meters wide, at a 30° angle. At a glance there was a considerable number of bushes of *Pulsatilla montana* and *Adonis vernalis* (over 1000).

We found that most *Pulsatilla* groups had 8 to 10 flowering rods and that many young plants resulted from seeds. We have also found that in early spring (our field work was done at the beginning of April), the field was burned. At the base of the slope a ploughed strip of approximately 10 meters was still fallow ground. At the top of the slope *Prunus spinosa* settled well.

We followed up on our field work the next year in the same period. The field had been burned. With the exception of a few *Adonis vernalis* specimens, obviously affected by the fire, and a few bushes, nothing survived. At the base of the slope a portion had been ploughed, probably private property in use (the same from previous year). Many surrounding areas in the valley had been flooded.

Thus were found 144 cormophytes species. We consider remarkable species *Adonis vernalis* and *Pulsatilla montana*, *Cirsium brachycephalum* and *Echium russicum*. There are also found species particular to meadows from the habitats 6210 – *Semi-natural dry grasslands and scrubland facies on calcareous substrates* (e.g. *Brachypodium pinnatum*, *Dianthus carthusianorum*, *Medicago sativa* ssp. *falcata*), 6250 – *Pannonic loess steppic grassland* (e.g. *Nonea pulla*, *Salvia nemorosa*, *Festuca rupicola*, *Falcaria vulgaris*) and 40A0 - * *Subcontinental peri-Pannonic scrubs*.

The first *Adonis vernalis* species is part of the *Ranunculaceae* family, characteristic of the dry meadows and rarely met at low altitudes, in our case 130 m. Its popular name is Spring Adonis, due to the fact that it blooms in May and has a height of 30-40 cm. In 2014 1000 – 2000 bushes were identified.

The second species is *Pulsatilla montana*. It is still a *Ranunculaceae* characteristic to the mesophilic meadows, little affected by mowing and grazing. It presents a small height and its frequency in Romania is low, but can also be found in Italy, France or Switzerland. It is a species with spectacular flowers.

The presence of these two species in Călăcea is certainly explained through the natural and relict character of the slope meadows that couldn't be ploughed due to the relatively big slope.

Cirsium brachycephalum is a species from Appendix II of the **Habitat Directive**, is particular to the Pannonian bioregion, being found in Hungary, Slovakia, Serbia, Austria and Romania.

Echium russicum is also a species from the appendix 2 of the **habitat directive**. It is a perennial plant of the *Boraginaceae* family, its popular name being Snake's head, reaching up to 60 cm. it is found on salty soils.

The meadow is composed mainly by *Brachypodium pinnatum* and *Arrhenatherum elatius*. There are also other species, such as *Ornithogalum pyramidale*, which is found in highly natural meadows. The presence of the species *Jurinea mollis* subspecies *transilvanica* is exceptional, reported in Călacea by KARÁCSONYI & NEGREAN, 2012, being one of the few botanical researches in the area. Another species, *Medicago minima* has been reported here by ARVAT & POPESCU (1948, in ȘTEFĂNUT *et al.*, 2009).

In the summer of 2014 we returned for fieldwork at the same time of year, when we noted the species *Cirsium brachycephalum*, *Echium russicum*, *Iris spuria*, *Orchis elegans*, *Brachypodium pinnatum* and *Arrhenatherum elatius*. Now a part of the slope had been mowed. The neighboring field was cultivated with cereal grain (wheat).

We ventured on site for the last time at the beginning of November, this year. We found an abundance of *Cytisus austriacus*. We also found isolated specimens of *Centaurea pannonica*. Many weeds were present in the immediate vicinity: *Amaranthus sp.*, *Daucus carota*, *Euphorbia cyparissias* and *E. helioscopia*, *Lamium purpureum*, *Solanum nigrum*, *S. dulcamara*, *Artemisia vulgaris*, *Dipsacus laciniatus*, *Datura stamonium*, *Hibiscus trionum*, *Linaria vulgaris*, *Taraxacum officinale*, *Achillea millefolium*. We estimated a number of 100 specimens of *Verbascum nigrum*, with flowering rods or simply leaf rosettes, at the base of the slope. Many rosettes of *Tanacetum vulgare*, as well. A few isolated specimens of *Viola* and *Dianthus cartusianorum* were dispersed in the area. On the peak of the slope, *Prunus spinosa*, *Rosa canina*, *Rubus caesius*. Here we found many *Thalictrum flavum* and also a few specimens in the middle ribbon. *Melandrium album* specimens among brier and bramble. The field was dry with *Arrhenatherum elatius* as most likely cause.

The area studied herein presents a remarkable floristic diversity, with meadow species, as well as those that thrive in salty soil, wetlands and man-made environments. Species are mostly within the *Gramineae* and *Leguminosae* families: *Alopecurus pratensis*, *Poa pratensis*, *Festuca pratensis*, *F. valesiaca*, *F. rupicola*, *Agrostis stolonifera*, *Briza media*, *Bromus hordeaceum*, *Lotus corniculatus*, *Medicago falcata*, *Trifolium pannonicum*, *Ononis arvensis*. Meadow diversity is completed by other species, such as: *Linum sp.*, *Daucus carota*, *Euphorbia cyparissias*, *Tanacetum corymbosum*, *Centaurea pannonica*, *Tanacetum vulgare*, *Galium verum*, *Dianthus cartusianorum* etc.

Alongside the road, these species are frequent: *Calamagrostis epigeios*, *Dipsacus laciniatus*, *Poa annua*, *Ranunculus sardous*, *Carduus nutans*, *Plantago major*, *Lolium perenne*, *Taraxacum officinale*, *Polygonum aviculare*.

In wetlands, we found: *Butomus umbellatus*, *Lycopus europaeus*, *Glyceria fluitans*, *Oenanthe silaifolia*, *Juncus inflexus*, *Eleocharis palustris*, *Phragmites communis*, *Carex hirta*, *C. vulpina*, *Teucrium scordium*, *Lythrum salicaria*, *Althea rosea*.

Typical of salty fields, are: *Limonium gmelini*, *Camphorosma annua*, *Puccinellia distans*, *Festuca pseudovina*, *Pholiurus pannonicum*, *Artemisia santonica*, *Scorzonera canna*.

In the salty portions are found species particular to the priority habitat 1530*-*Pannonian steppe and salty meadows*, as *Camphorosma annua*, *Artemisia monogyna* and *Limonium gmelinii*.

The agricultural cultures shelter the herb species generally common, but also *Agrostemma githago*, a species that until a few decades ago was very rarely found, being sensitive to herbicide, it is also called cockle, it has 30-100 cm and is part of the *Caryophyllaceae* family.

This exceptional area, although is part of the community importance site Satchinez Meadows, is not the object of the preservation measures specific to flora.

The meadow is periodically put on fire, these fires, if they intervene in the early spring don't damage the flora significantly. The extensive mowing is made once a year, it is a measure that helps to maintain the meadow.

For now, the bushes invasion is not a particular problem. The extensive grazing affects especially the salty portions of the valley and generally the majority of the species, if made on humid soil.

Review of the flora, also specifying autecological indices of species – preliminary data.

1. *Achillea millefolium* L. - Asteraceae; H, Eua, U3 T0 R0
2. *Adonis vernalis* L. - Ranunculaceae; H, Eua, U2 T3,5 R4
3. *Agrimonia eupatoria* L. - Rosaceae; H, Eua, U2,5 T3 R4
4. *Agrostemma githago* L. - Caryophyllaceae; Th, Cosm, U3 T4 R0
5. *Agrostis stolonifera* L. - Poaceae; H, Circ, U4 T0 R0
6. *Allium schorodoprasum* L. - Alliaceae; G, Eur, U2 T3 R4
7. *Alopecurus pratensis* L. - Poaceae; H, Eua, U4 T3 R0
8. *Anthemis arvensis* L. - Asteraceae; Th, Eur (Med), U3 T3 R0
9. *Arrhenatherum elatius* L. - Poaceae; H, Eua, U3 T3 R4
10. *Artemisia santonica* L. - Asteraceae; Ch-H, Eua (Cont), U2,5 T4 R0
11. *Artemisia vulgaris* L. - Asteraceae; H, Circ, U2,5 T3 R4
12. *Asperula cynanchica* L. - Rubiaceae; H, Euc-Med, U2 T3 R5
13. *Berteroa incana* L. - Brassicaceae; Th, Eua, U2 T3 R4
14. *Bolboschoenus maritimus* L. - Cyperaceae; G, Cosm, U4,5 T3 R5
15. *Brachypodium pinnatum* L. - Poaceae; H, Eua, U2,5 T4 R4
16. *Briza media* L. - Poaceae; H, Eua, U0 T3 R0
17. *Bromus inermis* Leysser - Poaceae; H, Eua, U2,5 T4 R4
18. *Bromus hordeaceum* L. - Poaceae; Th, Eua, U0 T3 R0
19. *Bupleurum tenuissimum* L. - Apiaceae; Th, Eur, U0 T3,5 R 4,5
20. *Butomus umbellatus* L. - Hydrocharitaceae; HH, Eua, U6 T3 R0
21. *Calamagrostis epigeios* (L.) Roth. - Poaceae; G, Eua, U2 T3 R0
22. *Camphorosma annua* Pallas. - Chonopodiaceae; Th, Pont., U2 T4 R5
23. *Capsella bursa-pastoris* (L) Medik - Brassicaceae; Th-TH, Cosm, U3 T0 R0
24. *Carduus nutans* L. - Asteraceae; Th, Eua, U1,5 T3 R3
25. *Carex hirta* L. - Cyperaceae; G, Circ, U0 T3 R0
26. *Carex vulpina* L. - Cyperaceae; HH, Eua (Med), U4 T3 R4
27. *Centaurea cyanos* L. - Asteraceae; Th, Med, U3 T4 R0
28. *Centaurea pannonica* (Heuffel) Simonkai - Asteraceae; H, Eua, U2 T3 R4
29. *Centaurea spinulosa* (Rochel) Dostal. - Asteraceae; H, Eur, U2 T3,5 R4,5
30. *Tanacetum vulgare* L. - Asteraceae; H, Eua, U3 T0 R0
31. *Cirsium arvense* (L.) Scop - Asteraceae; G, Eua, U2,5 T3 R0
32. *Cirsium brachycephalum* Juratzka - Asteraceae; TH, Pan, U4 T3 R0
33. *Convolvulus arvensis* L. - Convolvulaceae, H-G, Cosm, U0 T0 R0
34. *Crataegus monogyna* Jack - Rosaceae; G, Cosm, U2,5 T3,5 R3,5
35. *Cynodon dactylon* (L.) Pers. - Poaceae; G, Cosm, U2 T3,5 R0
36. *Chamaecytisus austriacus* (L.) Link - Fabaceae; Ch-N, Pont-Pan-Balc, U2 T3,5 R4
37. *Datura stramonium* L. - Solanaceae; Th, Cosm, U3,5 T4 R4
38. *Daucus carota* L. - Apiaceae; Th-H, Eua (Med), U2,5 T3 R0
39. *Dianthus armeria* L. - Caryophyllaceae; Th, Eur, U2 T3 R3
40. *Dianthus cartusianorum* L. - Caryophyllaceae; H, Eua, U5 T5 R5
41. *Dipsacus laciniatus* L. - Dipsacaceae; Th, Eua, U4 T3,5 R4

42. *Erophila verna* (L.) Chevall. - *Brassicaceae*; Th, Eur, U2,5 T3,5 R0
43. *Echium maculatum* L.J.F. Gmelin - *Boraginaceae*; Th, Pont-Pan, U2 T4 R4
44. *Eleocharis palustris*(L.) Roemer et Schultes - *Cyperaceae*; G, Cosm, U5 T0 R4
45. *Elymus repens* (L.) Gould. - *Poaceae*; G, Circ, U0 T0 R0
46. *Erigeron annuus* (L.) Pers. - *Asteraceae*; Th, TH-H, U4 T0 R4
47. *Eryngium campestre* L. - *Apiaceae*; H, Pont-Med, U1 T5 R4
48. *Euphorbia cyparissias* L. - *Euphorbiaceae*; H-G, Eua, U2 T3 R4
49. *Euphorbia helioscopia* L. - *Euphorbiaceae*; Th, Eua, U3 T3 R
50. *Euphorbia seguieriana* Necker - *Euphorbiaceae*; H, Eua, U1 T3,5 R4
51. *Festuca pratensis* Hudson. - *Poaceae*; H, Eua, U3,5 T2 R0
52. *Festuca pseudovina* Hackel. - *Poaceae*; H, Eua, U2 T4 R4
53. *Festuca rupicola* Heuffel. - *Poaceae*; H, Eua, U1,5 T4 R4
54. *Festuca valesiaca* Schleicher ex Gaudin. - *Poaceae*; H, Eua, U1 T5 R4
55. *Filipendula vulgaris* Moench. - *Rosaceae*; H, Eua, U2,5 T3 R4,5
56. *Gagea lutea* (L.) Ker-Gawl. - *Liliaceae*; G, Eua, U3 T3 R3
57. *Galium verum* L. - *Rubiaceae*; H, Eua, U2,5 T2,5 R0
58. *Glyceria fluitans* (L.) R.Br. - *Poaceae*; H, Eua, U5 T3 R0
59. *Gypsophilla muralis* L. - *Caryophyllaceae*; Ch, Alp-Carp, U2 T3 R4,5
60. *Hibiscus trionum* L. - *Tiliaceae*; Th, Eua, U2,5 T4 R 4
61. *Hordeum geniculatum* All. - *Poaceae*; Th, Eua, U2 T4 R4,5
62. *Iris spuria* L. - *Iridaceae*; G, Eua, U4,5 T3,5 R4,5
63. *Juncus inflexus* L. - *Juncaceae*; H, Eua, U4 T4 R4
64. *Jurinea mollis* ssp. *transilvanica* (Spreng.) Hayek - *Asteraceae*; H, End, U2 T3,5 R4
65. *Knautia arvensis* (L.) J.M. Coult. - *Dipsacaceae*; H, Eur, U2,5 T3 R0
66. *Lamium purpureum* L. - *Lamiaceae*; Th, Eua,,U3 T0 R0
67. *Lathyrus pratensis* L. - *Fabaceae*; H, Eua, U3 T0 R4
68. *Limonium gmelini* (Willd) O. Kuntze. - *Plumbaginaceae*; H, Eua, U3,5 T4 R4
69. *Linaria vulgaris* Miller. - *Scrophulariaceae*; H, Eua, U2 T3 R3
70. *Lolium perenne* L. - *Poaceae*; H, Cosm, U3 T3 R0
71. *Lotus corniculatus* L. - *Fabaceae*; H, Eua, U2,5 T0 R0
72. *Lotus glaber* Miller. - *Fabaceae*; H, Eua, U3,5 T3 R4
73. *Luzula campestris* L. (D.C.) - *Cyperaceae*; H, Cosm, U3 T0 R3
74. *Lycopus europaeus* L. - *Lamiaceae*; H (HH), Eua, U5 T3 R0
75. *Lythrum salicaria* L. - *Lythraceae*; H (HH), Circ, U4 T2, 5 R0
76. *Matricharia recutita* L. - *Asteraceae*; Th, Eua,U2,5 T3,5 R5
77. *Medicago falcata* L. - *Fabaceae*; H, Eua, U2 T3 R5
78. *Medicago minima* L. - *Fabaceae*; Th, Med, U1,5 T4 R4
79. *Melandrium album* (Mill.) Garcke - *Caryophyllaceae*; Th (TH), Eua, U3,5 T2 R3
80. *Melilotus officinalis* Lam. - *Fabaceae*; TH, Eua, U2,5 T3,5 R0
81. *Mentha pulegium* L.- *Lamiaceae*; H, Eua, U4,5 T R5
82. *Muscari comosum* (L.) Miller - *Liliaceae*; G, Eur, U1,5 T3,5 R0
83. *Myosotis arvensis* Hill. - *Boraginaceae*; TH, Eua, U3 T3 R0
84. *Myosurus minimus* L. - *Ranunculaceae*; Th, Circ, U4 T4 R3
85. *Nonea pulla* D.C. - *Boraginaceae*; TH, Eua, U2 T4 R3
86. *Oenanthe silaifolia* Bieb. - *Apiaceae*; E, Med, U5 T3,5 R0
87. *Ononis arvensis* L. - *Fabaceae*; CH-H, Eua, U3 T4 R0
88. *Orchis elegans* Heuff. - *Orchidaceae*; G, Pont.-Pan., U2 T4 R4,5
89. *Ornithogallum pyramidale* L. - *Liliaceae*; G, Eua, U2,5 T4 R4

90. *Phalaris arundinacea* L. - *Poaceae*; HH, Circ, U5 T3 R0
91. *Pholiurus pannonicus* Trin. - *Poaceae*; Th, Pont.-pan.-balc., U0 T4 R4,5
92. *Phragmites australis* (Cav.) Steud. - *Poaceae*; G (HH), Cosm, U5 T0 R4
93. *Picris hieracioides* L. - *Asteraceae*; TH, Euras, U1,5 T3 R4
94. *Pimpinella saxifraga* L. - *Apiacea*; H, Eua, U2,5 T0 R3
95. *Plantago lanceolata* L. - *Plantaginaceae*; H, Eua, U3 T0 R0
96. *Plantago major* L. - *Plantaginaceae*; H, Eua, U3 T0 R0
97. *Plantago media* L. - *Plantaginaceae*; H, Eua, U2,5 T4 R4,5
98. *Plantago schwarzenbergiana* Schur. - *Plantaginaceae*; H, Pan.-Dac., U3,5 T4 R5
99. *Poa annua* L. - *Poaceae*; Th-TH, Cosm, U3,5 T0 R0
100. *Poa pratensis* L. - *Poaceae*; H, Cosm, U3 T0 R0
101. *Polygonum aviculare* L. - *Polygonaceae*; Th, Cosm, U2,5 T0 R3
102. *Potentilla anserina* L. - *Rosaceae*; H, Cosm, U4 T3 R4
103. *Prunus spinosa* L. - *Rosaceae*; M, Eua, U2 T3 R3
104. *Puccinellia distans* (L.) Parl. - *Poaceae*; H, Pont-Pan, U3,5 T0 R5
105. *Pulsatilla montana* (Hoppe) Reichenb. - *Ranunculaceae*; H, Pan-Balc, U1 T4 R4
106. *Ranunculus sardous* Grantz. - *Ranunculaceae*; Th, Eur, U3 T3 R4
107. *Ranunculus stevenii* auct. - *Ranunculaceae*; H, Eur, U3,5 T0 R0
108. *Rorippa kernerii* (Menih) Soó - *Brassicaceae*; H, Pan., U3,5 T4 R4,5
109. *Rosa canina* L. - *Rosaceae*; N, Eur, U2 T3 R3
110. *Rosa gallica* L. - *Rosaceae*; N, Pont-Med, U2 T4 R4
111. *Rubus caesius* L. - *Rosaceae*; H-N, Eur, U4,5 T3 R4
112. *Rumex crispus* L. - *Polygonaceae*; H, Eua, U4 T3 R0
113. *Salvia pratensis* L. - *Lamiaceae*; H, Eur, U2,5 T3 R5
114. *Sambucus ebulus* L. - *Caprifoliaceae*; H, Eua, U3 T3 R3
115. *Scabiosa ochroleuca* L. - *Dipsacaceae*; H, Eua, U2 T4 R4
116. *Schoenoplectus lacustris* (L.) Palla - *Cyperaceae*; G, Cosm, U6 T3 R4
117. *Scorzonera canna* Griseb. - *Asteraceae*; G, Pont-Med, U2 T4 R4,5
118. *Scutellaria hastifolia* L. - *Lamiaceae*; H, Eur, U5 T3 R3
119. *Senecio vernalis* Waldst et Kit. - *Asteraceae*; TH, Eua, U2,5 T4 R0
120. *Serratula tinctoria* L. - *Asteraceae*; H, Eua, U3,5 T3 R0
121. *Setaria viridis* (L.) Beauv. - *Poaceae*; Th, Cosm, U2 T3,5 R0
122. *Silene alba* E.H.L. Krause (Miller) - *Caryophyllaceae*; Th, Eua, U3,5 T2 R0
123. *Solanum dulcamara* L. - *Solanaceae*; Ch-N, Eua, U4,5 T3 R4
124. *Solanum nigrum* L. - *Solanaceae*; Th, Cosm, U3 T4 R0
125. *Sorghum halepense* L. - *Poaceae*; H, Med, U3 T4 R0
126. *Stachys officinalis* (L.) Trev. - *Lamiaceae*; H, Eua, U3 T3 R0
127. *Stachys recta* L. - *Lamiaceae*; H, Pont-Med, U2 T5 R5
128. *Stellaria graminea* L. - *Caryophyllaceae*; H, Eua, U2,5 T2 R3
129. *Stellaria media* L. (Vill.) - *Caryophyllaceae*; Th (TH), Cosm, U3 T0 R0
130. *Tanacetum corymbosum* (L.) Schultz. - *Asteraceae*; Th, Eua, U2,5 T2,5 R3
131. *Tanacetum vulgare* L. - *Asteraceae*; H, Eua, U3 T3 R4
132. *Taraxacum officinale* Weber ex Wiggers. - *Asteraceae*; H, Eua, U3 T0 R0
133. *Teucrium scordium* L. - *Lamiaceae*; H, Eua, U4 T4,5 R4
134. *Thalictrum flavum* L. - *Ranunculaceae*; H, Eua, U4,5 T0 R4,5
135. *Thesium arvense* Horvatowszky - *Santalaceae*; Th (H), Eua, U1,5 T3,5 R4,5
136. *Thlaspi perfoliatum* L. - *Brassicaceae*; Th, Eua, U2,5 T3,5 R4,5
137. *Trifolium arvense* L. - *Fabaceae*; Th, Eua, U1,5 T3 R4

138. *Trifolium pannonicum* Jacq. - *Fabaceae*; H, Pont-Med, U2 T3,5 R0
139. *Verbascum nigrum* L. - *Scrophulariaceae*; H, Eua, U2 T3 R4
140. *Vincetoxicum hirundinaria* Medikus. - *Asclepiadaceae*; H, Eur, U2 T4 R4
141. *Viola reichenbachiana* Jordan ex Boreau. - *Violaceae*; H, Eua, U3 T2,5 R3
142. *Viola tricolor* L. - *Violaceae*; TH-Th-H, Eua, U3 T2 R0
143. *Xanthium strumarium* L. - *Asteraceae*; Th, Eua, U3,5 T3,5 R4
144. *Xeranthemum annuum* L. - *Asteraceae*; Th, Pont-Med, U2 T4 R3

CONCLUSIONS

1. We identified so far 144 cormophyte species (in meadows, salty pans, swamp area weeds).
2. Of a particular beauty, in bloom, we mention the species *Adonis vernalis*, *Pulsatilla montana*, *Orchis elegans*, *Iris spuria*, *Echium russicum*.
3. *Cirsium brachycephalum* and *Echium russicum* are species from Appendix II and of the Habitat Directive (92/43/CEE).
4. Considering all of the above, we believe methods of preservation of vegetal resources in this remarkable site are required, due to the biodiversity, rarity and unique esthetic of the landscape.
5. We recommend the extensive use of meadows.

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