

FAM. SCROPHULARIACEAE FROM THE CERNA OF OLTET BASIN (ROMANIA)

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Abstract. In this paper we present all the species from Scrophulariaceae, identified in the Basin of Cerna of Oltet in the region of Oltenia – Romania. The representatives of this family had been found in all the types of vegetation: forest- *Digitalis ferruginea*, *D. grandiflora*, *Verbascum nigrum*, *Veronica officinalis* etc., meadows: *Euphrasia* spp., *Rhinanthus rumelicus*, *Veronica acinifolia*; places with elevated humidity - *Gratiola officinalis*, *Scrophularia umbrosa*, *Veronica anagallis-aquatica*, *V. catenata*, *V. beccabunga* or in cultivated places or ruderalized: *Veronica persica*, *V. polita*, *V. hederifolia* etc.

Key words: The Basin Cerna of Oltet, Romania, Scrophulariaceae.

Rezumat. Familia Scrophulariaceae din Bazinul Cernei de Oltet. În lucrare se prezintă speciile din familia Scrophulariaceae, identificate în Bazinul Cerna de Oltet, regiunea Oltenia – România. Reprezentanții acestei familii au fost identificați în toate tipurile de vegetație: pădure: *Digitalis ferruginea*, *D. grandiflora*, *Verbascum nigrum*, *Veronica officinalis* etc.; pajiști: *Euphrasia* spp., *Rhinanthus rumelicus*, *Veronica acinifolia*; locuri cu umiditate ridicată: *Gratiola officinalis*, *Scrophularia umbrosa*, *Veronica anagallis-aquatica*, *V. catenata*, *V. beccabunga*, precum și în locuri cultivate și ruderales: *Veronica persica*, *V. polita*, *V. hederifolia* etc.

Cuvinte cheie: Bazinul Cernei de Oltet, Romania, Scrophulariaceae

INTRODUCTION

The Cerna of Oltet Basin is situated in the south-eastern part of Romania on a surface of approximately 750 km². It runs towards the NE and has a length of 99 km on the axis of the main valley (UJVÁRI I., 1972).

If we refer to the historic-floristic region of Oltenia the territory studied here lies on the north-eastern part of it.

From the physical-geographical point of view it lies in the superior part of the Gaetic Plateau, the Sub-Carpathian Depression of Oltenia and the mountainous region (inferior, middle and superior) (IELENICZ M. 1999, POSEA G., 2002).

The alterations of the environmental components and of the structure utilization on the NS direction, from the tall Carpathians peaks till the hills, lead to certain changings within the actual relief.

At the latitudine of the Cerna and Cernisoara river mouths we notice an EW inclination, generated by positive movements from the anticline Măgura Slătioarei. The higher plateau in the western half is given by the intense moving of the quaternary deposits in this part (POPESCU N., 1977).

MATERIAL AND METHOD

The first stage while studying the Cerna of Oltet Basin was the reading of the bibliographical material.

That is why many publications mentioned in the bibliography represented a reference material through the similarity of the geographical zone and the studied one.

Starting from this information we repeatedly studied the area conform to the method of itinerary as the surface was very large, but when necessary we used the method of stationary and detailed our analyses collecting and preserving the floristic material.

We collected the material monthly, in numerous samples in different vegetation stages.

After the collecting, the material was dried in blotting paper and then stuck on A₃ sheets of paper, each of them having a label on the right low corner mentioning: the scientific name, the locality from which it was collected, the date the persons who collected it and its identification.

The identification of the taxons was performed on preserved dry material or on live material, using the latest taxonomic informative sources (BELDIE AL., 1977, 1979, SĂVULESCU T., 1952-1976, TUTIN T.G., et al. 1964-1980, BRUMMITT R.K. & POWELL C.E. 1992, CIOCÂRLAN V., 2000). For the localities we use the cartographic index UTM (LEHRER A. & LEHRER ALEXANDRINA 1990).

RESULTS AND DISCUSSIONS

The floristic list is presented in alphabetical order:

Digitalis ferruginea L. – HT.-H., 2n = 56, 70. Giulești - GQ35. Balc. *Quercion frainetto*.

D. grandiflora MILL. (*D. ambigua* Murray) - H., 2n = 56. Cerna - "Plaiul Cernei" Hill - GR20, Cerna Dl. "Roșcăi" - GR20, Buciumu Peak- GR22, Zăvidanu Peak- GR22, Corșoru Peak - GR22. Centr. Eur. *Symphyto-Fagion*.

Euphrasia rostkoviana HAYNE (*E. officinalis* L. subsp. *pratensis* SCHÜBL. & MARTENS) - T., 2n = 22. Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20, Cerna "Roșcăi Hill" - GR20, Stânișoara Peak - GR22. Eur. Car. *Molinio-Arrhenatheretea*.

- E. salisburgensis* FUNCK - T., 2n = 44. Buciumu Peak - GR22, Zăvidanu Peak - GR22, Corșoru Peak - GR22, La Nedei Peak - GR22.. Alp. Eur. *Seslerietalia*.
- E. stricta* D. WOLFF EX J. F. LEHM. (incl. subsp. *pectinata* (TEN.) P. FOURN., *E. tatarica* auct. p.p.) - T., Frecv. in basin. Eur. *Arrhenatheretalia*, *Festuco-Brometea*.
- Gratiola officinalis* L. - H., 2n = 32. Oteteliș - GQ34, Rugetu - GR20, Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20, Cerna - "Plaiul Cernei Hill" - GR20. Circ. *Phragmitetea australis*, car. *Molinietalia caeruleae*.
- Kickxia elatine* (L.) DUMORT. (*Linaria elatine* (L.) MILL.) subsp. *sieberi* (Arcang.) Hayek (subsp. *crinita* (Mabille) Greuter) - T., 2n = 18, 36. Oteteliș - GQ34, Fârtățești - GQ36, Lădești -. Eur. de S. *Stellarietea mediae*, car. *Caucalidion*.
- Lathraea squamaria* L. - G., 2n = 36, 42. Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39, Rugetu - GR20. Euras. *Quercu-Fagetea*, *Fagetalia sylvaticae*, *Alno-Ulmion*.
- Linaria angustissima* (LOISEL.) BORBÁS subsp. *bessarabica* (KOTOV) CIOCĂRLAN & NEGREAN - H., Buciumu Peak - GR22, Zăvidanu Peak - GR22. Pont. *Festucetalia valesiaca*.
- L. genistifolia* (L.) MILL. (incl. var. *procera* SIMS.) - H., 2n = 12. Pietroasa - GQ34, Fârtățești - GQ36, Ciumagi - KK67, Berești - GQ37, Hotărâsa - KK68, Copăceni - GQ38. Cont. Euras. *Festuco-Brometea*, *Festucetalia valesiaca*.
- L. vulgaris* MILL. - H., 2n = 12. Frecv. in basin. Euras. *Chenopodietalia*, *Epilobietea angustifolii*, *Onopordion acanthii*.
- Melampyrum arvense* L. - T., 2n = 18. Fârtățești - GQ36, Ciocănari - KK65, Bocșa - KK65, Măciuca - KK65/66, Gârniciet - KK66, Obrocești - GQ39, Slătioara - "Gurgui Hill" - GR20/30, Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20. Eur. *Festucetalia valesiaca*.
- M. barbatum* WALDST. & KIT. - T., Ciocănari - KK65, Bocșa - KK65, Măciuca - KK65/66. Pan. Car. *Festuco-Brometea*.
- M. bihariense* A. KERN. - T., Bocșa - KK65, Lădești - KK67, , Stroești - GQ29/39, Slătioara - "Gurgui Hill" - GR20/30, Miloștea - GR20. Dacic. *Carpinion betuli*.
- M. cristatum* L. - T., 2n = 18. Popești - KK65, Ciocănari - KK65, Oveselu - KK65/66, Bocșa - KK65, Lădești - KK67, Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20, Cerna - "Roșcăi Hill" - GR20. Euras. Cont. *Quercetea pubescenti-petraeae*, *Festucetalia valesiaca*.
- M. sylvaticum* L. - T., 2n = 18. Cerna - "Plaiul Cernei Hill" - GR20, Cerna "Roșcăi Hill" - GR20. Euras. Car. *Piceetalia excelsae*.
- Odontites vernus* (BELLARDI) DUMORT. (*O. rubra* (BAUMG.) PERS.) subsp. *serotinus* (Dumort.) Corb. - T., 2n = 20. Oteteliș - GQ34, Valea Mare - GQ35, Fârtățești - GQ36, Dejoi - KK66, Copăceni - GQ38. Euras. *Cynosurion cristati*, *Agropyro-Rumicion*.
- Pedicularis verticillata* L. - H., 2n = ?. Buciumu Peak - GR22, Zăvidanu Peak - GR22, Corșoru Peak - GR22. Circ.-Arct.-Alp.-Euram. *Nardetalia strictae*, *Seslerietalia*.
- Rhinanthus angustifolius* C.C. GMEL. (*R. serotinus* (SCHÖNH.) OBORNÝ; *R. glaber* LAM. p.p.; *R. major* EHRH. non L.) - T., Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20. Euras. *Molinio-Arrhenatheretea*.
- R. minor* L. - T., 2n = 22. Frecv. in basin. Euras. Car. *Molinio-Arrhenatheretea*.
- R. rumelicus* VELEN. - T., Frecv. in basin. Pont.-Pan.-Balc. *Arrhenatheretalia*.
- R. wagneri* DEGEN (*R. r.* var. *wagneri* (DEGEN) NYÁR.) - T., 2n = ?. Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39. Balc.-Pan. *Cynosurion cristati*, *Arrhenatheretalia*.
- Scrophularia nodosa* L. - H., 2n = 36. Valea Mare - GQ35, Afânata - GQ35, Fârtățești - GQ36, Cernișoara - KK68, Zăvidanu Peak - GR22. Euras. *Quercu-Fagetea*, car. *Fagetalia sylvaticae*, *Epilobietea angustifolii*.
- S. scopolii* HOPPE (*S. glandulosa* WALDST. & KIT.) - H., 2n = ?. Buciumu Peak - GR22, Zăvidanu Peak - GR22, (Răduțoiu D. 2004). Pont.-Pan.-Balc. *Fagetalia sylvaticae*, *Galio-Alliarion*.
- S. umbrosa* DUMORT. (*S. alata* GILIB., *S. ehrhartii* STEVEN) subsp. *neesii* (WIRTG.) E. MAYER - H., 2n = 26, 52. Pojogi - Cerna - GQ29/39, Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39. Eur. Centr. Car. *Phragmitetea australis*, *Glycerio-Sparganion*.
- Verbascum blattaria* L. - HT., 2n = 30. Dejoi - KK66, Găgeni - KK66, Păsculești - KK67, Ciumagi - KK67, Zăvoiieni - KK66. Euras. (Submedit.). Car. *Onopordion acanthii*.
- fo. *blattariforme* (GRIS.) HAL. (*V. blattariforme* Gris.) - Măldărești - KK66, Ștefănești - KK66, Șotani - KK66, Gârniciet - KK66, Dejoi - KK66.
- V. chaixii* VILL. subsp. *austriacum* (SCHOTT) HAYEK - H., 2n = 26-36. Oveselu - KK65/66, Buciumu Peak - GR22, Zăvidanu Peak - GR22. Eur. Centr. și E. *Festucetalia valesiaca*;
- subsp. *orientale* (M. BIEB.) HAYEK - Ciocănari - KK65, Bocșa - KK65, Măciuca - KK65/66.. Pont. *Festucetalia valesiaca*, *Quercetea pubescenti-petraeae*.
- V. densiflorum* BERTOL. (*V. thapsiforme* SCHRAD.) - HT., 2n = 32, 36. Gorunești - GR29, Rugetu - GR20, Marița - GR20, Recea - GR20. Eur. *Onopordetalia acanthii*.
- V. lychnitis* L. - HT., 2n = 26, 32, 34. Cerna - "Plaiul Cernei Hill" - GR20, Buciumu Peak - GR22, Zăvidanu Peak - GR22, Corșoru Peak - GR22, Izvoru Rece - GR20. Eur. *Geranion sanguinei*.

- V. nigrum* L. subsp. *nigrum* - H., 2n = 30, 34. Slătioara - "Gurgui Hill" - GR20/30, Buciumu Peak - GR22, Zăvidanu Peak - GR22, Stânișoara Peak - GR22. Euras. Car. *Epilobietalia angustifolii*;
- subsp. *abietinum* (BORBÁS) I. K. FERGUSON (*V. abietinum* BORBÁS) - Cerna - "Plaiul Cernei Hill" - GR20, Cerna "Roșcăi Hill" - GR20, Zăvidanu Peak - GR22, Stânișoara Peak - GR22, Marița - GR20. Daco-Balc. *Arction lappae*.
V. phlomooides L. - HT., 2n = 32, 34. Frecv. in basin. Eur. Centr. și SE. Car. *Onopordion acanthii*.
V. phoeniceum L. - H., 2n = 32, 36. Hotărâsa - KK68, Vetelu - GQ38, Bâlteni - GQ38, Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Miloștea - GR20. Euras. Cont. *Festucetalia valesiaca*.
V. speciosum SCHRAD. (*V. longifolium* DC.) - HT., 2n = ?. Cerna - "Plaiul Cernei Hill" - GR20. Pont.-Pan.-Balc. *Festucetalia valesiaca*.
V. thapsus L. - HT., 2n = 32, 36. Cerna - "Plaiul Cernei Hill" - GR20. Euras. *Epilobietalia angustifolii*, *Onopordion acanthii*.
Veronica acinifolia L. - T., 2n = 14, 16. Giulești - GQ35. Atl.-Medit. *Nanocyperion*.
V. anagallis-aquatica L. (*V. anagallis* auct.) - H.(HH.), 2n = 18, 36. Oteteliș - GQ34, Valea Mare - GQ35, Afânata - GQ35, Giulești - GQ35, Dejoi - KK66. Circ. *Phragmitetea australis*, *Glycerio-Sparganion*.
V. arvensis L. (*V. micrantha* SCHUR) - T., 2n = 14, 16. Frecv. in basin. Euras. *Stellarietea mediae*, *Arrhenatheretalia*.
V. bachofenii HEUFF. (*V. media* BAUMG. non SCHRAD.) - H., 2n = ?. Cerna - "Plaiul Cernei Hill" - GR20, Cerna "Roșcăi Hill" - GR20, Zăvidanu Peak - GR22. Carp.-Balc.-Anat. *Asplenion septentrionalis*.
V. beccabunga L. - H.(HH.), 2n = 18, 36. Frecv. in basin. Euras. *Glycerio-Sparganion*.
V. catenata Pennell (*V. aquatica* Bernh. non Gray) - H.(HH.), 2n = 36. Giulești - GQ35, Pojogi - Cerna - GQ29/39, Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39. Circ. *Glycerio-Sparganion*.
V. chamaedrys L. subsp. *chamaedrys* - H.-Ch., 2n = 16. Frecv. in basin. Euras. *Quercu-Fagetea*, *Prunetalia spinosae*.
V. hederifolia L. - T., 2n = 54. Frecv. in basin. Euras. *Veronico-Euphorbion*, *Centauretalia cyani*, *Stellarietea mediae*, *Chenopodietalia*.
V. jacquinii BAUMG. (*V. austriaca* subsp. *jacquinii* (BAUMG.) EB. FISCH.) - H., 2n = 48. Pojogi - Cerna - GQ29/39, Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39, Slătioara - Dl. "Gurgui" - GR20/30. Pont.-Centr. Eur.-Medit. *Festucetalia valesiaca*, car. *Danthonio-Brachypodion*.
V. montana L. - Ch., 2n = 18. Marița - GR20, Izvoru Rece - GR20. Eur. *Alno-Ulmion*.
V. officinalis L. - Ch., 2n = 18, 36. Frecv. in basin. Euras. *Potentillo-Nardion*, *Carpinion betuli*.
V. opaca FR. - T., 2n = 28. Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39. Eur. *Stellarietea mediae*.
V. orchidea CRANTZ (*V. spicata* L. subsp. *orchidea* (CRANTZ) ČELAK.) - H., 2n = 34. Oteteliș - GQ34, Ciumagi - KK67, Roești - KK67, Miloștea - GR20. Pont.-Pan.-Balc. *Festucetalia valesiaca*.
V. persica POIR. - T., 2n = 28. Frecv. in basin. Adv. (As. de SV.). Car. *Chenopodietalia*.
V. polita FR. (*V. didýma* auct.) - T., 2n = 14, 18. Frecv. in basin. Euras. *Stellarietea mediae*, *Veronico-Euphorbion*, *Centauretalia cyani*, *Chenopodietalia*.
V. scutellata L. - H.(HH.), 2n = ?. Pojogi - Cerna - GQ29/39, Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39, Cerna - "Plaiul Cernei Hill" - GR20. Circ. *Magnocaricion*.
V. serpyllifolia L. - H., 2n = 14. Cernișoara - KK68, Sărulești - KK67, Berești - GQ37, Hotărâsa - KK68, Vetelu - GQ38, Stroești - GQ29/39, Slătioara - "Gurgui Hill" - GR20/30, Buciumu Peak - GR22, Zăvidanu Peak - GR22. Cosm. *Agropyro-Rumicion*, *Agrostion stoloniferae*, *Cynosurion cristati*.
V. spicata L. - H., 2n = 34, 68. Oteteliș - GQ34, Stroești - GQ29/39, Cerna - "Dumbrăvița Hill", "La Rudarii de la Cerna Hill" - GR20, Cerna "Roșcăi Hill" - GR20. Cont. Euras. *Festuco-Brometea*, *Festucetalia valesiaca*.
V. teucrium L. - H., 2n = 64. Lădești - KK67, Cireșu - GQ29, Stroești - GQ29/39, Mogești - GQ29, Obrocești - GQ39. Cont. Euras. *Festucetalia valesiaca*.
V. triphyllos L. - T., 2n = 14. Oteteliș - GQ34. Eur. *Stellarietea mediae*.
V. urticifolia JACQ. - H., 2n = 18. Cerna - "Plaiul Cernei Hill" - GR20, Buciumu Peak - GR22, Zăvidanu Peak - GR22. Centr. Eur.-Submedit. (Mont.). *Symphyto-Fagion*, *Tilio-Acerion*.
V. verna L. - T., 2n = 16. Cerneghești - KK67, Chiricești - KK67, Lădești - KK67, Măldărești - KK67. Euras. *Festuco-Brometea*, *Sedo-Scleranthetea*.

CONCLUSIONS

In the Cerna of Olteț Basin the family *Scrophulariaceae* it is represented through 56 species. Among those there are rare taxons or with a limited habitat in the flora of our country (*Digitalis ferruginea*, *Veronica catenata*, *V. bachofenii*, *Melampyrum sylvaticum*, *Kickxia elatine* subsp. *sieberi*, etc.).

At each of the species, near the localities it is placed the cartographic index UTM too, in this way contributing at the chorology of the species with the precise localization of the points where they were identified.

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