

## HEPATICAЕ AND ANTHOCEROTAE OF THE VOLGOGRAD PROVINCE

### ПЕЧЕНОЧНИКИ И АНТОЦЕРОТОВЫЕ ВОЛГОГРАДСКОЙ ОБЛАСТИ

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Abstract

14 species of hepatics and 1 species of *Anthoceros* are revealed in herbarium collections for the Volgograd Province, one of the most xeric area in the European Russia. Their annotated list is given.

Резюме

14 видов печеночников и 1 вид *Anthoceros* представлены в изученных гербарных коллекциях из Волгоградской области, одной из наиболее засушливых областей России. Дан аннотированный список видов.

#### INTRODUCTION

Volgograd Province is one of the most xeric areas in European Russia. Its annual precipitation is ranging from 508 mm in the north-west to 292 mm in south-east, thus the ratio precipitation to evaporation ranging from 0.8 to 0.4. The more detail climate characteristics and the moss flora of the province were published by Suragina (2001). Here we publish the list of hepatics, which up to now are known from very few collections, despite of many-year search for them by the first author, and in 1999 by Suragina and Ignatov. Most of localities studied had no one hepatic species.

#### LIST OF SPECIES

The following list summarizes all data on the liverworts and hornworts of the Volgograd Province. Species known by herbarium specimens are numbered. In square brackets are numbers of localities as they are mapped and annotated by Suragina (2001), with coordinates; if the locality is absent in that list, coordinates are given in square brackets instead of the number. Specimens are in MHA and VOLG.

1. *Anthoceros* cf. *agrestis* Paton – [38]: Frolovo District, Archeda-Don sandy dune area, wet

depression with *Agrostis*, *Juncus* and *Centaurium*. With *Fossombronia foveolata*, 9.VIII.1999, coll. Ignatov & Suragina. Plants have no gametangia, nor sporophyte. The presence of mucilage cavities allows just to attribute this collection to the genus level, and the species is mentioned here because in the surrounding area this is the only *Anthoceros* species. However its identity with *A. punctatus* L. s. str. is also possible [this species is reported from Caucasus, but we have not seen any specimen from this area] .

2. *Fossombronia foveolata* Lindb. – [38]: the only collection in the same place with *Anthoceros*. Few plants have sporophytes with mature spores (34-37 µm in diameter).
3. *Chiloscyphus minor* (Nees) Engel et Schust. (*Lophocolea minor* Nees) – [21]: Kamyshinskij District, Shcherbakovka Ravine, on land-slide not far above the Scherbakovka creek; in several places. 19.VII.2000 and 9.V.2002, coll. Suragina.
4. *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dum. – [40]: Frolovo District, Archeda-Don sandy dune area, swampy *Alnus glutinosa* forest, on rotten log and peaty soil, 9.VIII.1999, coll. Ignatov & Suragina.
5. *Chiloscyphus polyanthos* (L.) Corda (incl. *C. rivularis* (Schrad.) Hazsl. – [40]: in the same locality as *C. pallescens*, but in different habitat: it grows partly submerged in the water of permanent pools

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- near springs. In this locality *C. polyanthos* looks contrastingly different from *C. pallescens*: it has stems uprising to straight (vs. procumbent and appressed to substrate in *C. pallescens*) and very dark-green in color, getting nearly black after drying (pale-green to glaucous, not changing color after drying in *C. pallescens*).
6. *Chiloscyphus profundus* (Nees) Engel et Schust. (= *Lophocolea heterophylla* (Schrad.) Dum.) – [39, 40]: Frolovo District, Archeda-Don sandy dune area, in several depressions with *Betula alba* and *Alnus glutinosa* stands, on bark of stumps and strongly rotten logs, 9-10.VIII.1999, coll. Ignatov & Suragina.
  7. *Ptilidium pulcherrimum* (G. Web.) Vaino – [19]: Kamyshinskij District, Shcherbakovka Ravine, slope, on trunk of inclined *Betula*, 19.VII.2000 and 9.V.2002, coll. Suragina.
  8. *Radula complanata* (L.) Dum. – [41]: Frolovo District., Archeda Leskhoz, Archeda River valley near Archedinskij Colledge, base of *Populus* trunk, 20.X.1991, coll. E. Kudryashova; [40]: Frolovo District, NW of Vyezdinskij, wet to swampy *Alnus glutinosa* forest, on bark of *Alnus*, 9.VIII.1999, coll. Ignatov & Suragina; [1]: Uryupinsk Distr., Lukovskaya, “Roditelskaya Gora”, on bark at trunk bases, 21.VII.1995, coll. Suragina; [78]: Svetloyarskij Distr., Tinguta, Karatsaga Balka (Ravine), forest in flood valley of temporary Bolshaya Tinguta Creek, on bark, 20.VI.1996, coll. Matveeva; [91]: Volgograd, Grigorova Balka (Ravine), at base of *Alnus* trunk, 4.VIII.1999, coll. Ignatov & Suragina; [49°16'N – 43°03'E]: Kletsk Distr., 3 km S of Kletskaya, forest in the bottom part of ravine; on trunk 50 cm above ground, 10.VIII.2001, coll. Suragina.
  9. *Marchantia polymorpha* L. – at banks of Don River [between mouths of Medveditsa and Ilovlya Rivers], coll. Gueldensteadt, 10.X.1769 (Gueldensteadt, 1787); [26]: Alekseevskij Distr., Buzuluk River mouth, southern shore of Larinskoye Lake, wet depression among sandy dunes, 24.VIII.1986, coll. Sagalaev; [10]: Nekhaevskij Distr., Zakhoperskij, wet depression, on sand, 19.VIII.1994, coll. Kuvaldina; [40]: Frolovo Distr., Archeda-Don sandy dune area, 4 km upstream Don from Vyezdinskij, wet *Alnus glutinosa* forest, in and near water, 25.IX.1994, coll. Matveev; [48°48'N – 44°36'E]: Volgograd, Traktorozavodskij Distr., in between steps of the club of Volgograd Aluminium Plant, 18.XI.1995, coll. Suragina; [39]: Frolovo Distr., Archeda-Don sandy dune area, depression with *Betula* stand, on burned area 9.VIII.1999, coll. Ignatov & Suragina; [49°17'N – 43°04'E]: Kletskij Distr., 2 km SE of Kletskaya, springs at ravine bottom, in water, 11.VIII.2000, coll. Suragina.
  10. *Riccia cavernosa* Hoffm. – [58]: Kalach Distr., left bank of Don River, on wet soil on low bank near the bridge across Don, 19.VI.1995, coll. Suragina; [50]: Kletskij Distr., 2 km E of Melokletskaya, on the right bank of Don River, river bank, 30-50 cm above water level (place temporary flooded); [44]: Ilovinskij Distr., 4 km downstream Trekhrostrovskaya, bank of Don River and along wet road across meadow in flood-valley. 10.VI.2000; [48°43'N – 44°34'E]: Volgograd, island Krit of Volga River, wet sand along road at river bank 28.VI.1989, coll. Bochkin & Klinkova; [48°06'N – 42°50'E]: Chernyshkovskij Distr., Tsimlyanskije Peski, Tormosinsky Forest Area, kordon 2, shore of water-reservoir, IX.1995, coll. Kulakov; [48°31'N – 44°37'E]: Volgograd, bank of Sarepta River (tributary of Volga River), 7.IX.1883, coll. & det. Becker, ver. Ladyzhenskaya [LE: with *R. frostii*].
  11. *Riccia fluitans* L. – [49°00'N – 44°55'E]: Sredneakhtubinskij Distr., left bank of Volga River, Rakhinka, in the water in irrigation channel, 5.VI.1988, coll. Sagalaev; [49°13'N – 43°37'E]: Ilovlya Distr., 4 km SW of Sirotinskaya, shallow water of Telezhinka River, 23.VI.1989, coll. Sagalaev; [49°38'N – 42°46'E]: Serafimovich Distr., Malyj Orlovskij, shallow water and low bank of Don River, 29.VII.1993, coll. Klinkova; [54]: Serafimovich Distr., Krutovskoye, pond, 16.VI.1994, coll. Klinkova.
  12. *Riccia frostii* Aust. – [48°31'N – 44°37'E]: Volgograd, bank of Sarepta River (tributary of Volga River). 7.IX.1853, coll. & det. Becker; ver. Ladyzhenskaya [LE: with *R. cavernosa*]; see also Ladyzhenskaya (1952). This collection was cited earlier by Becker (1858), as *R. beckeriana* C. A. Meyer.
  13. *Riccia lamellosa* Raddi – [49°13'N – 46°39'E]: Pallasovka Distr., near Elton Lake, left bank of Khara Creek 3 km upstream from its mouth, 5.V.1995, coll. V. Kulakov #050595034, det. E. Andreeva, ver. Konstantinova; [49°33'N – 46°21'E]: Pallasovka Distr., 15 km S of Prudentov village, steppe and young *Alnus glutinosa* thicket, 28.VI.2000, coll. Kulakov, #280600-01B; [57]: Kalach Distr., right bank of Don River near Kalach-na-Donu, upper part of steppe slope of Krasnaya Ravine, 12.VI.2001, coll. Matveev.
  14. *Riccia trichocarpa* M. Howe (*R. ciliata* Hoffm. ssp. *trichocarpa* (M. Howe) Schust.) – [67]: Volgograd, Gumrak Ravine, springs on gentle slope of ravine, on loamy soil, 20.IV.1991, coll. Sagalaev. Plants have very long, partly flexuose ciliae (500-600 μm in average, many of 1000-1400(-1500) μm), densely covering tallus in dry state, so it is totally unseen from above. Judging from the brief descriptions, this species was also reported under the name *Riccia intumescens* from the following localities: 1) [48°30'N – 44°30'E]: Serepta, on solonetz soils with *Artemisia pauciflora* (Keller, 1926; 1928,

- 1951); 2) [99] Elton Lake, in *Festuca sulcata* + *Artemisia austriaca* semidesert, 12.V.1928; 3) [49°47'N – 46°40'E]. Pallasovka, khutor Tarakanovo, salty desert with *Artemisia pauciflora* and grassy-shrubby steppe, 20.VIII.1932 (Keller, 1936); 4) [49°16'N–46°52'E] liman Sunali (15 km N of Elton Lake), salty soils, 10.V.1932, 20.VIII.1932. and 10.V.1933 (Novikov, 1936); 5) limans Moguta and Prishibok (Keller, 1951). However *R. intumescens* Heeg. was considered as a synonym of *R. ciliata*, which is also possible in the area.
15. *Ricciolepis natans* (L.) Corda – [49°38'N – 42°46'E]: Serafimovich Distr., Malyy Orlovskiy, in shallow water and low bank of Don River, 29.VII.1993, coll. Klinkova.

## NON CONFIRMED LITERATURE RECORDS

*Riccia sorocarpa* Bisch. and *R. glauca* L. In the description of the steppe vegetation near Sarepta Keller (1926) mentioned two *Riccia* species – *R. intumescens* (discussed above under *R. trichocarpa*) and *R. sorocarpa*. The latter, as was explained by Keller, differs from the former species in non-ciliate thallus. Later Keller (1928) reported these two species for the same place. However in the subsequent publications about Elton Lake area (1936) and again about Sarepta Keller (1951) reported for the same kind of vegetation *R.*

*trichocarpa* and *R. glauca*; the material was identified by Savicz-Ljubitskaya. It looks like Keller just changed his mind on the identity of specimens without cilia. In our collections both species are absent, and the single xerophytic *Riccia* without cilia is *R. lamellosa*. Were Keller's records also belong to *R. lamellosa*, or his identifications were correct? This can be clarified only when specimens would be found. Keller (1926, 1928, 1936) and Novikov (1936) listed *Riccia* without cilia in localities [1-4] of *R. trichocarpa* (see above).

Thus, though the history of hepaticological exploration of the province is over 200 years, since Gueldensteadt (1787) collected *Marchantia polymorpha*, only 14 species were revealed in its territory.

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