

NEW RECORDS OF RARE MOSSES IN RYAZAN PROVINCE (EUROPEAN RUSSIA)

НОВЫЕ НАХОДКИ РЕДКИХ ВИДОВ МХОВ В РЯЗАНСКОЙ ОБЛАСТИ

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Abstract

This paper provides the data on 17 new and 52 rare species in the Ryazan Province. Among them there are *Dichelyma capillaceum*, a new addition to the Middle European Russia, and a number of species previously known in the region only from more southern provinces: *Syntrichia caninervis* var. *astrakhanica*, *Schistidium crassipilum*, *Didymodon icmadophilus*, *Tortula hoppeana*. After this addition, the moss flora of the Ryazan Province includes 220 species.

Резюме

В статье приводятся данные о 17 новых и 52 редких для области видах мхов. Среди них *Dichelyma capillaceum* – новый вид для Средней полосы Европейской части России. Среди прочих показательны находки в целом более южных видов: *Syntrichia caninervis* var. *astrakhanica*, *Schistidium crassipilum*, *Didymodon icmadophilus*, *Tortula hoppeana*. С этими дополнениями флора мхов Рязанской области насчитывает 220 видов.

KEYWORDS: European Russia; flora, mosses, new records, Ryazan Province

INTRODUCTION

Ryazan Province is situated in the central part of European Russia, within 53°19'–55°22' N and 38°38'–42°31' E, at 100–236 m elevation, covering an area of 39605 sq. km. The mean annual temperature ranges between +3.9–4.6°C. The frostless period is 134–143 days. Forest covers 28.4% of the province territory. Coniferous forests with bogs dominate in its northern part, in Meshchera Lowland, while the broad-leaved forests alternate with steppe in the south.

The bryophyte exploration of the province started since 1930s, with the particular focus on the flora of the Oksky Nature Reserve. Later its moss flora was summarized by Volosnova *et al.* (2000), who listed 153 moss species. Mosses were collected also by Samsel in the course of geobotanic exploration in Klepikovskiy District: 27 species were recorded (Samsel, 1961).

Ignatov & Ignatova (2003–2004) reported 189 species for the province based on published data.

In 2000–2010 additional collections of mosses were accumulated during numerous expeditions in the province. Interesting findings were done by Volosnova, Kazakova and Sheloumov in the southern part of the province, south from Oka River. Only few of them have been published by Volosnova (2000, 2003, 2008).

In this paper we summarize data on more rare species found in 15 districts, 42 localities, among the 550 collected specimens. Most of them are kept in the Herbarium of Oksky Nature Biosphere Reserve, duplicates are in MW.

LIST OF MOSSES

Numerals indicate localities according to Fig.1 and Table 1. Species new for Ryazan Province are marked by asterisk. Habitats are briefly described.

Aloina rigida (Hedw.) Limpr. – **20**: slopes to river valleys, on limestone outcrops.

Anomodon attenuatus (Hedw.) Huebener – **35**: broad-leaved forests, on trunks of *Quercus* and *Populus*.

A. longifolius (Brid.) Hartm. – **2, 21, 30, 35**: broad-leaved forests; on tree trunks and soil-covered rock.

Barbula convoluta Hedw. – **21, 32, 40**: slopes to river valleys, on calcareous bare soil in meadows.

Brachythecium campestre (Müll. Hal.) Bruch *et al.* – **35, 41**: mixed and broad-leaved forests, on trunk bases of aspen.

B. rotaeanum* De Not. – **19: broad-leaved forests, on soil-covered rock outcrops.

Bryum weigelii Spreng. – **10**: in wet meadow among pine forest.

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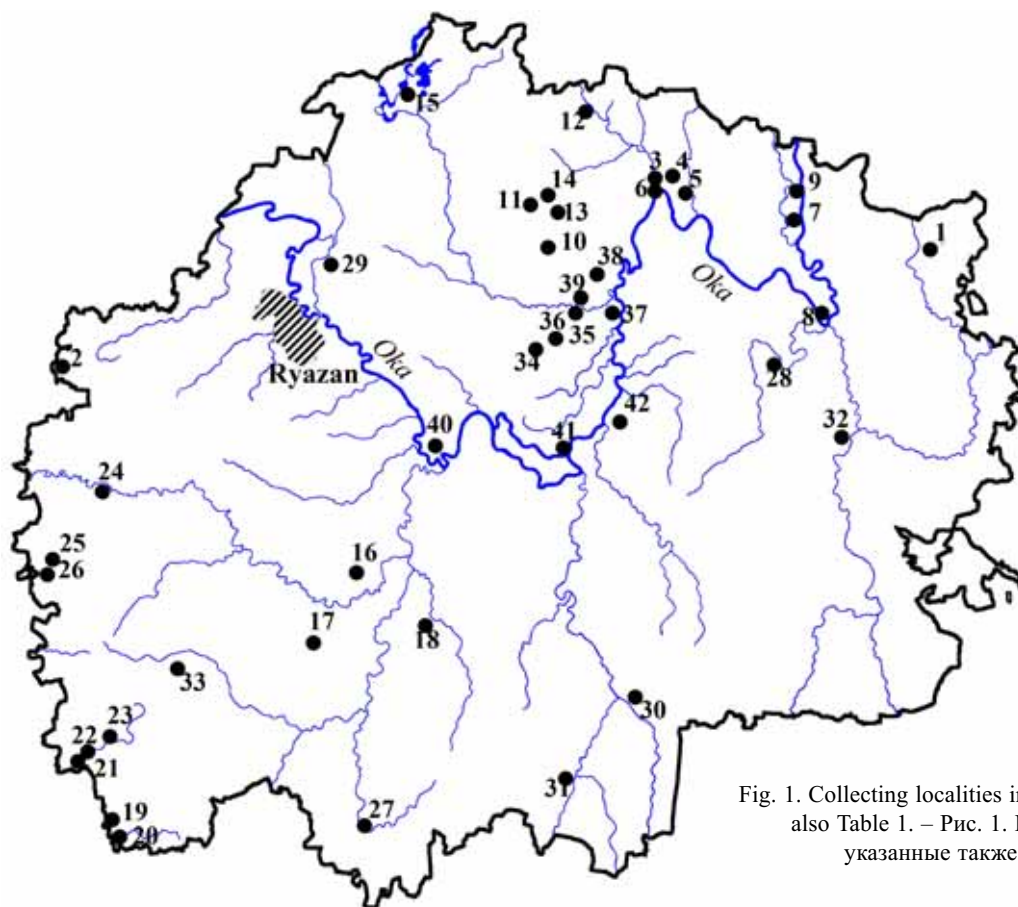


Fig. 1. Collecting localities in Ryazan Province, cf. also Table 1. – Рис. 1. Места сбора мхов, указанные также в Таблице 1.

Calliargonella cuspidata (Hedw.) Loeske – **3, 26, 30, 36**: on soil in springy mires, alder swamps, wet meadows.

Campyladelphus chrysophyllus (Brid.) R.S. Chopra – **21, 22, 24, 26**: in springy mires, wet meadows, slopes to river valleys, on calcareous soil.

Campylidium calcareum (Crundw. & Nyholm) Ochyra – **24**: slopes to river valleys, overgrowing limestone pit, on limestone.

Campylium stellatum (Hedw.) C.E.O. Jensen – **22**: in wet meadow near road, on calcareous soil.

Cirriphyllum piliferum (Hedw.) Grout – **21, 33**: mixed and broad-leaved forests, slopes to river valleys, on rotten wood and calcareous soil.

Cratoneuron filicinum (Hedw.) Spruce – **6, 21, 22, 25, 26, 28, 36**: on soil and calcareous rocks near springs.

Dichelyma capillaceum* (With.) Myrin – **39: on bank of old river bed, in temporarily flooded place, on *Betula pubescens* trunk base.

Dichodontium pellucidum* (Hedw.) Schimp. – **4: at bottom of ravines, banks of a small river, on damp and wet limestone.

Dicranum bonjeanii De Not. – **18, 22**: boggy pine forest, wet meadow near spring, on soil.

D. flagellare Hedw. – **10**: mixed coniferous and broad-leaved forests with *Picea abies*, on wet rotten wood.

D. viride (Sull. & Lesq.) Lindb. – **10**: old broad-leaved forest, on trunks of *Quercus robur*.

Didymodon icmadophilus* (Schimp. ex Müll.Hal.) K.Saito – **24: on limestone in old limestone pit.

D. rigidulus Hedw. – **1, 6, 19, 21, 24, 25**: slopes to river valleys, ravines, on soil-covered limestone outcrops.

Drepanocladus polygamus (Bruch et al.) Hedenäs – **10, 13, 21, 35**: wet meadows, wet banks of small rivers, on soil.

Encalypta trachymitria* Ripart – **21: slopes to river valleys, on dry exposed limestone.

E. vulgaris Hedw. – **21**: on soil-covered limestone outcrops, on calcareous soil in birch forest.

Fissidens exilis Hedw. – **9**: in broad-leaves forest on wet bare soil.

F. gracilifolius Brugg.-Nann. & Nyholm – **6**: on wet small limestone rocks in damp ravines, near springs.

F. taxifolius Hedw. – **5, 19, 26, 27, 28**: on wet bare soil in broad-leaved forest, in ravines.

Fontinalis antipyretica Hedw. – **36**: in water of lake in mixed forest.

Grimmia pulvinata (Hedw.) Sm. – **24, 26, 37**: on limestone in limestone pits and in some others man-made habitats.

Herzogiella seligeri (Brid.) Z. Iwats. – **4**: on rotten wood in coniferous and mixed forests with *Picea abies*.

Homomallium incurvatum* (Schrad. ex Brid.) Loeske – **21: on soil-covered limestone outcrops.

Table 1. List of collecting localities shown in Fig.1. – Табл. 1. Места сбора мхов, показанные на Рис. 1.

№	Местонахождение	Locality	Latitude – Longitude
1	Мердушь	Merdush'	54°52' N – 42°17' E
2	Перекаль, берег р. Осетр	Perekal', bank of Osetr River	54°30' N – 38°49' E
3	Гусь-Железный	Gus-Zheleznyj	55°02' N – 41°08' E
4	дер. Даньково, «Страшный Овраг»	Dan'kovo, «Strashnyi ovrag»	55°01' N – 41°16' E
5	Сынтул, берег пруда	Syntul, pond bank	55°00' N – 41°17' E
6	Погост, берег р. Гусь	Pogost, slopes to Gus River	55°00' N – 41°08' E
7	Елазьма, берег Оки	Elat'ma, bank of Oka River	54°57' N – 41°46' E
8	Щербатовка, известняки	Scherbatovka, limestone outcrops	54°49' N – 41°45' E
9	Ласино, берег Оки	Lasino, bank of Oka River	55°01' N – 41°43' E
10	Окский заповедник, кордон «Чарус»	Oksky Reserve, "Charus"	54°49' N – 40°37' E
11	Окский заповедник, Комсомольское лесничество	Oksky Reserve, Komsomolskoe Forestry	54°59' N – 40°35' E
12	Лихунино, берег р.Гусь	Likhunino, slopes to Gus River	55°10' N – 40°49' E
13	Малахово, берег р.Курша	Malakhovo, slopes to Kursha River	54°58' N – 40°46' E
14	Иванково, берег р. Курша	Ivankovo, slopes to Kursha River	54°57' N – 40°37' E
15	Ушмор, оз. Ивановское	Ushmor, Ivanovskoe Lake	55°10' N – 40°06' E
16	Асники, берег р. Лоша	Asniki, bank of Losha River	54°04' N – 40°04' E
17	Аманово	Amanovo	53°55' N – 39°52' E
18	между Петрово и Пахомовка	between Petrovo and Pachomovka	53°57' N – 40°18' E
19	Воейково, остепненные склоны	Voeikovo, steppe slopes	53°26' N – 39°10' E
20	Воейково, известняки по р. Кочуровка	Voeikovo, limestone along Kochurovka River	53°26' N – 39°12' E
21	Прямоглядово, остепненные склоны по р.Паника	Pryamoglyadovo, steppe slopes to Panika River	53°35' N – 39°00' E
22	Дивилки	Divilki	53°36' N – 39°01' E
23	Чернавские Выселки	Chernavskye Vyselki	53°37' N – 39°03' E
24	Михайлов, известняки по р. Проня	Mikhailov, Pronya River, limestone	54°13' N – 39°01' E
25	Иваньково, р. Проня	Ivan'kovo, Pronya River	54°02' N – 38°52' E
26	Толмачевка	Tolmachevka	54°12' N – 38°43' E
27	Калинино	Kalinino	53°32' N – 40°69' E
28	Пет	Pet	54°37' N – 41°40' E
29	Солотча	Solotcha	54°47' N – 39°49' E
30	Борец, берег р. Пара	Borets, slopes to Para River	53°47' N – 41°07' E
31	Телятники, берег р. Верда	Telyatniki, slopes to Verda River	53°37' N – 40°58' E
32	Темгенево, выходы известняка	Temgenevo, limestone outcrops	54°22' N – 41°55' E
33	Князево	Knyazevo	53°43' N – 39°22' E
34	Лесхоз «Тонино»	«Tonino» Forestry	54°33' N – 40°31' E
35	Брыкин Бор, берег р. Пра	Brykin Bor, banks of Pra River	54°42' N – 40°52' E
36	Аграфеновка, оз. Ковежное	Agrafenovka, Kovezhnoe Lake	54°37' N – 40°42' E
37	Лакаш, берег р. Ока	Lakash, bank of Oka River	54°42' N – 41°00' E
38	Окский заповедник, Центральное лесничество	Oksky Reserve, Tzentralnoe Forestry	54°45' N – 40°53' E
39	Окский заповедник, кордон «Бедная Гора»	Oksky Reserve, "Bednaya Gora"	54°43' N – 40°52' E
40	Спасск-Рязанский, берег р. Ока	Spassk-Ryazansky, left bank of Oka River	54°23' N – 40°20' E
41	Санское, берег р. Ока	Sanskoe, bank of Oka River	54°22' N – 40°46' E
42	Инякино, склон к ручью	Inyakino, slope to stream	54°25' N – 41°07' E

Hygroamblystegium varium* (Hedw.) Mönk. – **20, 21, 27, 31: on soil and wet small limestone rocks, wet meadow, near springs.

Hygrohypnum luridum* (Hedw.) Jenn. – **3: on wet small limestone rocks in temporarily flooded places on river banks.

Hypnum cupressiforme Hedw. – **30**: in mixed forests, on tree trunk bases, more rarely on soil and soil-covered outcrops.

Mnium stellare Hedw. – **8, 30, 35, 42**: on bare soil in broad-leaved forests, soil-covered shady outcrops.

Neckera pennata Hedw. – **35**: in old broad-leaved and coniferous–broad-leaved forests, on trunks of *Quercus robur* and *Populus tremula*.

Orthotrichum anomalum* Hedw. – **21, 24, 26: slopes to river valleys, on dry exposed limestones.

O. pumilum Sw. ex anon. – **19**: on trunks of broad-leaved trees.

Plagiomnium affine (Blandow ex Funck) T.J. Kop. – **13**: mesic spruce forest.

P. elatum (Bruch et al.) T.J. Kop. – **22**: bushy wet meadows near springs, on calcareous soil.

P. rostratum (Schrud.) T.J. Kop. – **4, 14, 21**: broad-leaved and black-alder forests, often in deep ravines, on soil and wet rotten wood.

Plagiothecium nemorale (Mitt.) A. Jaeger – **7**: shady broad-leaved forest in deep ravine, on soil.

Pogonatum dentatum (Brid.) Brid. – **15**: mixed forests, wet cuvettes of roads, on bare soil.

Pohlia andalusica (Höhn.) Broth. – **12**: near spring, on wet bare soil.

P. proligera (Kindb.) Lindb. ex Broth. – **11**: on bare

soil in spruce forest.

Pseudoleskeella catenulata* (Brid.ex Schrad.) Kindb. – **21: slopes to river valleys, on dry exposed limestone.

Pterygoneurum ovatum (Hedw.) Dixon – **2, 20**: slopes to river valleys, on dry exposed limestone.

P. subsessile (Brid.) Jur. – **20**: on limestone outcrops.

Rhizomnium magnifolium* (Horik.) T.J. Kop. – **35: in wet mixed forest with *Alnus glutinosa*, on rotten wood.

Rhynchostegium arcticum* (I. Hagen) Ignatov & Huttunen – **6, 21: banks of rivers, on shady limestone outcrops.

Rhytidadelphus squarrosus (Hedw.) Warnst. – **10, 42**: in mesic spruce forest, in forest edges, on soil.

R. subpinnatus* (Lindb.) T.J. Kop. – **5: in wet meadows, in spruce forest edges, on soil.

Schistidium crassipilum* H.H. Blom – **24: open and dry habitats, on limestone outcrops.

S. dupretii (Thér.) W.A. Weber – **16, 21, 35**: in open places, on concrete blocks and limestone outcrops.

Sciuro-hypnum starkei (Brid.) Ignatov & Huttunen – **27**: broad-leaved forest, on trunk of *Quercus robur*.

Seligeria campylopoda* Kindb. – **3: mixed forest, wet places in ravine, on small limestone rocks.

S. galinae Mogensen & I. Goldberg – **6**: banks of rivers, on shady limestone outcrops.

Sphagnum compactum Lam. & DC. – **10, 34**: mesotrophic pine forests, on bare peat in peat bog.

S. cuspidatum Ehrh. ex Hoffm. – **35**: open eutrophic-mesotrophic mire.

S. subsecundum Nees – **35, 38**: open oligotrophic hollow in a bog with *Oxycoccus palustris*.

S. wulfianum Girg. – **18**: mesotrophic swamp with *Pinus sylvestris* and *Betula pubescens*.

Syntrichia caninervis var. *astrakhanica* Ignatov, Ignatova & Suragina – **24**: slopes to river valleys, on limestone outcrops.

S. montana* Nees – **20: slopes to river valleys, on limestone outcrops.

Tortula acaulon (With.) R.H. Zander – **2, 17, 19, 21, 23, 29**: meadows, open dry slopes, bare loamy soil.

T. hoppeana* (Schultz) Ochyra – **41: near bank of road, on calcareous soil.

T. modica R.H. Zander – **21, 40**: dry steppe slopes, on bare soil.

T. protobryoides R.H. Zander – **21**: dry steppe slopes, on soil.

Ulota crispa (Hedw.) Brid. – **10**: coniferous-broad-leaved forest, on trunk of old *Populus tremula*.

Weissia levieri (Limpr.) Kindb. – **20**: dry steppe slopes, on calcareous soil.

W. longifolia Mitt. – **20, 21**: dry steppe slopes, on calcareous soil.

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