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DICRANELLA STAPHYLINA (DICRANACEAE, BRYOPHYTA) IN RUSSIA
DICRANELLA STAPHYLINA (DICRANACEAE, BRYOPHYTA) В РОССИИ

VIKTORIA I. ROZHINA[1], MICHAEL S. IGNATOV[1],
ELENA A. IGNATOVA[2] & MAXIM G. NAPREENKO[3]

ВИКТОРИЯ И. РОЖИНА[1], МИХАИЛ С. ИГНАТОВ[1],
ЕЛЕНА А. ИГНАТОВА[2], МАКСИМ Г. НАПРЕЕНКО[3]

Abstract

Dicranella staphylina is reported for Russia basing on recent collections from Kaliningrad and Moscow Provinces. The study of herbarium specimens of *Tortula truncata* and *T. acaulon* reveals however that *Dicranella staphylina* was collected in Moscow Province in 1985 and in Kursk Province in 1999, but remained an unrecognized admixture to collections of these species. Description and differentiation from related and superficially similar species, including *Leptobryum pyriforme*, are provided.

Резюме

Dicranella staphylina приводится для России по недавним сборам авторов из Калининградской и Московской областей. Изучение гербарных коллекций *Tortula truncata* и *T. acaulon* также выявило этот вид в качестве примеси в сборах из Московской (1985) и Курской (1999) областей. Дано описание и отличия вида от близких и внешне сходных видов, включая *Leptobryum pyriforme*.

KEYWORDS: *Dicranella*, mosses, new records, Russia

INTRODUCTION

Dicranella staphylina was described as a species rather recently from Great Britain (Whitehouse, 1969). Shortly afterward, it was found in Germany (Neu, 1970), Denmark, Belgium, the Netherlands and Luxemburg (Sipman, 1972), Finland (Karttunen, 1984), Hungary (Orban, 1976), Poland (Ochyra, 1988). In Russia the species was reported only in 2006 in Ignatov, Afonina, Ignatova et al. (2006), referring to unpublished herbarium data that later were proofed to be erroneous.

Subsequent observation in 2009-2010 in Kaliningrad Province found its additional localities at edges of arable fields, and the search in a similar environment resulted also in its discovery in Moscow Province. Obviously, the species was neglected due to its small size, lack of sporophytes and appearance of poorly developed plants of other *Dicranella* or *Leptobryum*.

In most places where we collected *D. staphylina*, it was associated with *Tortula acaulon, T. truncata,* and occasionally *Physcomitrium, Weissia, Pleuridium, Bryum klingraeffii*, etc. Considering this, we checked old collections of *Tortula truncata* and *T. acaulon* in MHA and succeeded to find two additional specimens, from Moscow Province of 1985, and Kursk Prov-

[1] – Main Botanical Garden of Russian Academy of Sciences, Botanicheskaya 4, Moscow 127276 Russia – Россия 127276 Москва, Ботаническая, 4, Главный ботанический сад РАН; e-mails: RozhinaV@yandex.ru & misha_ignatov@list.ru

[2] – Moscow State University, Biological Faculty, Geobotany Dept., Moscow 119991 Russia – Россия 119991 Москва, Московский государственный университет, Биологический факультет, каф. геоботаники; arctoa@list.ru

[3] – Department of Botany and Plant Physiology, Biological Faculty, Kaliningrad State University, Universitetskaya, 2, Kaliningrad 236040 Russia – Россия 236040 Калининград, Калининградский гос. университет, Биологический факультет, кафедра ботаники и физиологии растений, ул. Университетская, 2; e-mail: mg@poppendorf.ru

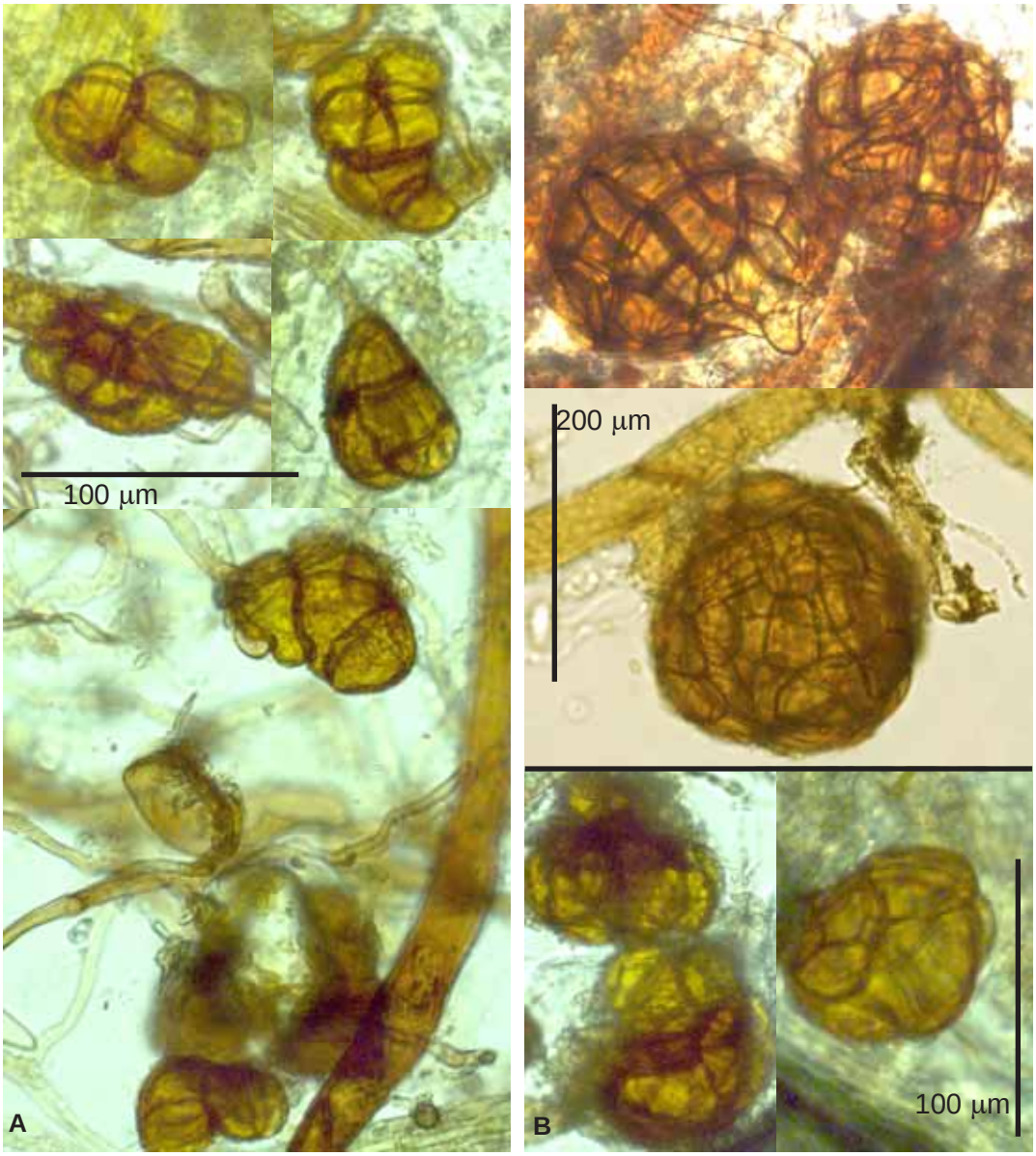

Fig. 1. Tubers of *Dicranella staphylina* (from Kaliningrad Prov., Kornevka, 2.V.2009 *Ignatov & Rozhina s.n.*, MHA), [left], and *Leptobryum pyriforme* (same locality) [right]. Two upper pictures of *Leptobryum* have magnification other than *Dicranella* and lower pictures of *Leptobryum*.

ince of 1999. Doubtless, the species has a much wider distribution in European Russia, but still remains neglected due to its inconspicuous appearance. In other countries, the first records of *D. staphylina* were published much later than their first collections had been done: for example, in Poland in 1958 (Ochyra, 1988) and in Germany in 1870 (Düll & Meinunger, 1989).

Dicranella staphylina H. Whiteh., Trans. British Bryol. Soc. 5: 759. 1969. Figs. 1-2.

Plants green, in sparse tufts. Stems to 5 mm, simple. Leaves erect to erect-spreading, occasionally homomallous, 0.5-1.0×0.2-0.3 mm, lanceolate, acuminate; costa narrow, 40 μm wide, broadened to base, reaching almost leaf apex; margin plane, entire or slightly serrulate near

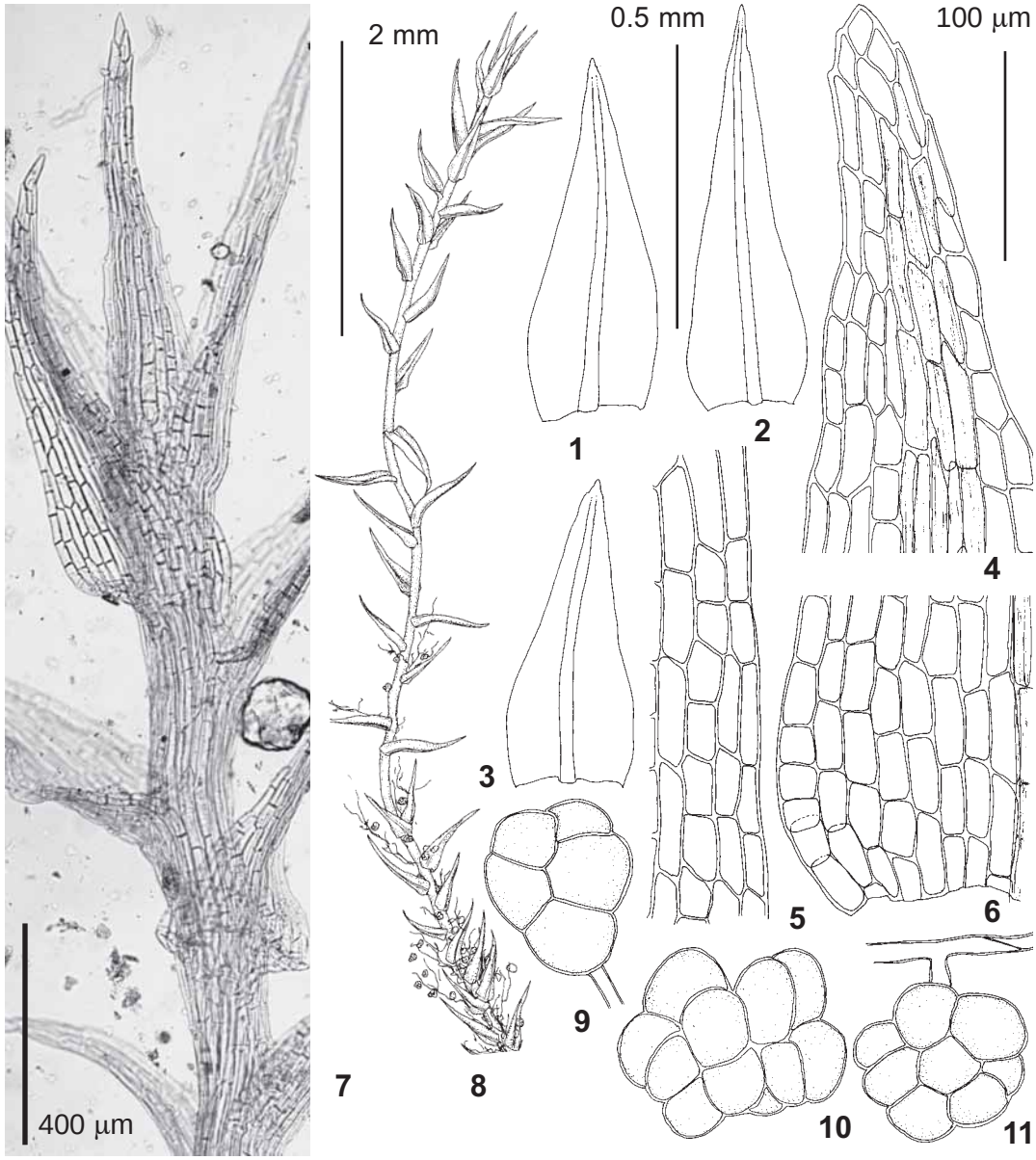

Fig. 2. *Dicranella staphylina* (1-6, 8-11 – from Moscow Prov., 15.VII.2010 *Ignatov & Ignatova s.n.*, MHA; 7 – from Kaliningrad Prov., 2.V.2009 *Ignatov & Rozhina s.n.*, MHA). 1-3 – leaves; 4 – upper leaf cells; 5 – median leaf cells; 6 – basal leaf cells; 7-8 – habit; 9-11 – tubers. Scale bars: 2 mm for 8; 0.5 mm for 1-3; 400 μm for 7; 100 μm for 4-6, 9-11.

apex; laminal cells 30-70×10-14 μm, smooth; alar cells poorly differentiated, quadrate to short rectangular, few. Rhizoid tubers yellow-brown, darker with age, 80-100×50-80 μm, irregular in shape, composed of 10-15 round cells, the cells being 20-50 μm in diameter. Apparently dioicous. Perichaetial leaves more abruptly contracted. Male plants and sporophytes unknown.

Differentiation. *Dicranella staphylina* is somewhat similar to *D. varia*, but the latter species in Russia rarely grows in arable fields, usually has sporophytes and in sterile state can be differentiated by distinctly reflexed leaf margins (plane or only indistinctly so in *D. staphylina*). In unclear cases the leaf cell width is also suggestive, being 10-14 μm in *D. staphylina* versus 5-9

in *D. varia*. Plane leaf margin is characteristic of two other *Dicranella, D. humilis* and *D. rufescens*, both rare in Russia, also usually occurring with sporophytes, and differing from *D. staphylina* in tubers composed of 2-3 cells only.

At the same time we faced a problem in differentiating *D. staphylina* from *Leptobryum pyriforme*. Being optimally developed, the latter species is distinct in so many characters that their differences may even look strange to discuss. However, being very common in Russia as a whole, *Leptobryum* often grows on disturbed soil, including arable fields, where it forms sometimes a long slender shoots with even foliage by small and remotely arranged leaves. In this state, *Leptobryum* has sometimes all laminal cells less than 50 μm long and costa as narrow as in *D. staphylina.* Tubers are often numerous in such a phenotypes of *Leptobryum*. Their shape is very regularly ovate when they are sitting in leaf axils or are terminal on thick rhizoids bringing them not far from leaf axils. Such typical tubers are nicely illustrated by H. Kanda (http://antmoss.nipr.ac.jp/ham/en/cont/nashi/kisai.html). Sometimes they may change shape to almost round (Fig. 1B). However, when developing buried in soil, they are not that regular and often curved, providing aspect that is very similar to *D. staphylina* (Fig. 1B below). Moreover, being reddish to purplish above ground, they do not develop this pigmentation inside the soil, and may be yellowish, as commonly observed in *D. staphylina* as well. In this case we found the most reliable character to be the cell size of tubers: cells of tubers in *D. staphylina* rarely exceed 30-40 μm, whereas in a smaller tuber of *Leptobryum* some larger cells are usually still larger than 50-60 μm, covering a considerable part of surface. Cells of tubers of *D. staphylina* are more or less distinctly protuberant, while more or less developed tubers of *Leptobryum* are usually perfectly smooth in outline. However, at a very early stage of development, tuber cells of *Leptobryum* may be very uneven, and some young small cells on the body of large old cells may have a protuberant aspect, as illustrated by e.g. Hallingbäck et al. (2008). In any case, this pattern is distinct from *D staphylina* where cells are protuberant in tubers formed by cells of an about equal size.

Specimens examined: KALININGRAD PROVINCE: Bagrationovsk Distr., Kornevka River Valley, arable field, 2.V.2009 Ignatov & Rozhina (MHA); Zelenogradsk Distr., Primorie, arable field, 1.V.2009 Ignatov & Rozhina (MHA). MOSCOW PROVINCE: Odinzovo Distr., Karinskoe, 15.VII.2010 Ignatov & Ignatova (MHA); Zaraisk Distr., Radushna, 15.VII.1985 Ignatov (MHA, specimen of *Tortula truncata*); KURSK PROVINCE: Oboyan Distr., "Zorinskie Bolota" (branch of Centralno-Czernozemny Reresve), 20.V.1999 Ignatov (MHA, specimen of *Tortula acaulon*).

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