

A NEW VARIETY OF SYNTRICHIA CANINERVIS (POTTIACEAE, MUSCI)
НОВАЯ РАЗНОВИДНОСТЬ SYNTRICHIA CANINERVIS
(POTTIACEAE, MUSCI)

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Abstract

Syntrichia caninervis var. *astrakhanica* var. nov. is described from Astrakhan Province, where it was found in a number of localities, and also it is known from one place in Volgograd Province. The variety is peculiar in producing gemmae on long branched filaments, and they are typically clustered in great abundance at shoot tips. The more abundant are gemmae, the smaller are plants, and also leaves around gemmae have no hyaline hair-point and cells are weakly papillose to smooth and lamina is unistratose throughout. Variation in leaf shape is similar to that known in *S. abrachesii* (Luis.) Ochyra (*Tortula caninervis* var. *abrachesii* (Luis.) Kramer), which is known only from Spain.

Резюме

По сборам из Астраханской области описана новая разновидность, *Syntrichia caninervis* var. *astrakhanica* var. nov., которая, помимо ряда мест в этой области, известна и с юга Волгоградской обл. Данная разновидность отличается наличием выводковых круглых 2-4-клеточных тел на длинных разветвленных нитях; их собрания часто сгущены на верхушках побегов. Чем обильнее выводковые тела, тем меньше размер растений, листья вокруг собраний выводковых тел не имеют гиалинового волоска, пластинка однослойная, и клетки листовой пластинки слабо папиллозные до практически гладких. Изменчивость в форме листа несколько напоминает таковую, отмеченную для *S. abrachesii* (Luis.) Ochyra (*Tortula caninervis* var. *abrachesii* (Luis.) Kramer), известной только из Испании.

Studying bryophytes of the Lower Volga River, in Astrakhan Province (for climate and overall moss flora see Suragina & al., 2002), we found a strange Pottiaceous moss, with short stems, terminated with the mass of 2-4-celled dark red-brown gemmae. Gemmae are sitting on rhizoid-like colorless branched filaments, resembling those well known in *Didymodon rigidulus* Hedw. and *D. cordatus* Jur. However the plant has broad leaves, very different from those of *Didymodon*. Laminal cells were found variable from totally smooth to papillose.

Plants with abundant gemmae have mostly leaves with costa percurrent to very shortly excurrent. However the fact that these curious plants were found several times side by side

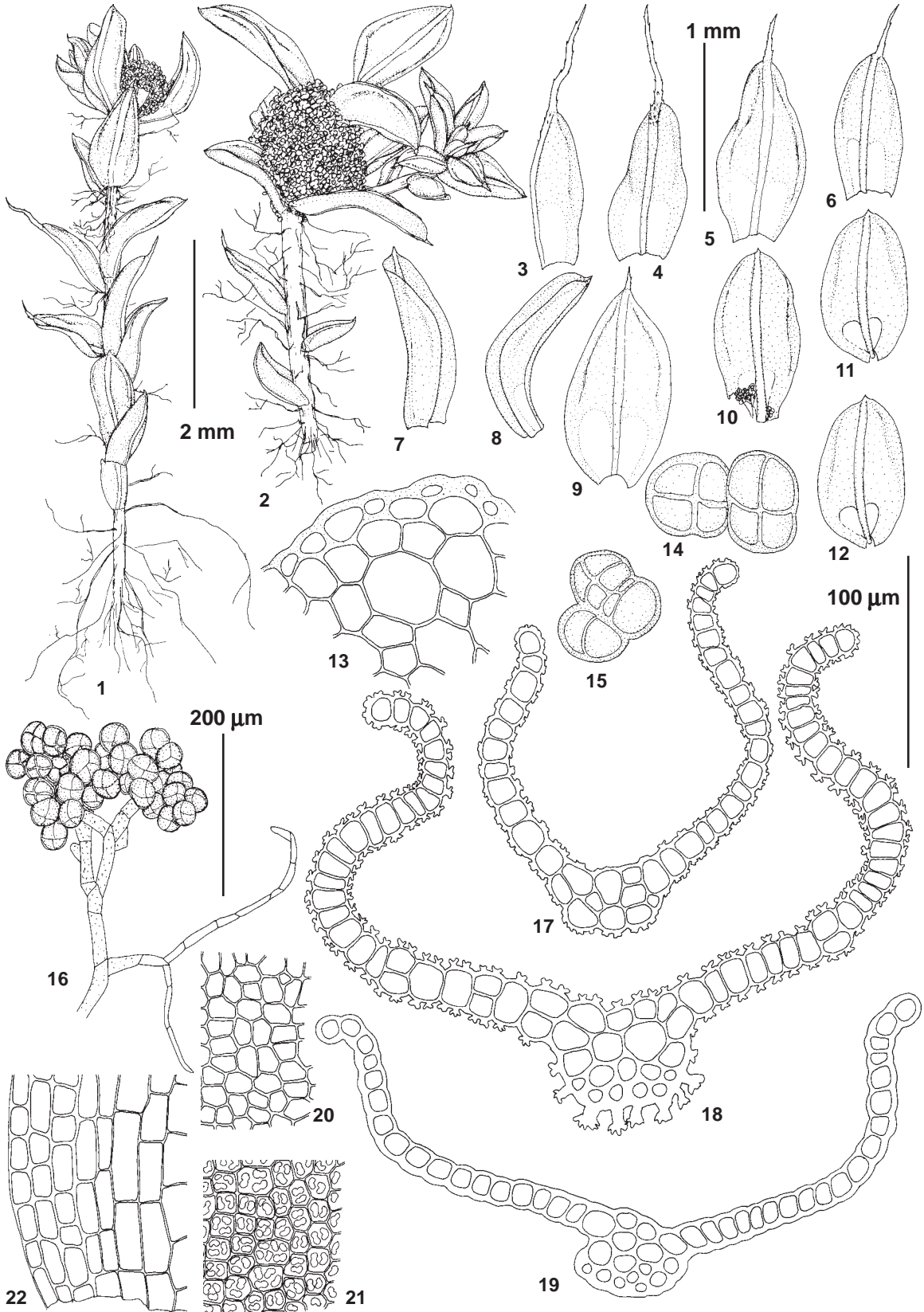
with *Syntrichia caninervis* Mitt., which is rather polymorphic in this area, turned us to their detailed comparison. Soon we were succeeded to find some plants with less abundant gemmae and some leaves with costa excurrent in a hyaline hair-point. In most of such leaves with excurrent costa, the back of the latter is smooth, but sometimes it has few rather tall papillae, especially at the transition from lamina to hair point.

Checking more collections of "normal" *S. caninervis* from Astrakhan Province and southern part of neighbouring Volgograd Province (for its climate and overall moss flora see Suragina, 2001), we found in some of them a somewhat smaller plants with a few gemmae on filaments in leaf axils. The leaves around

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gemmiferous parts of shoots have always shorter hair-point (to almost none), unistratose lamina (or almost so) and less papillose laminal cells (to almost none). Thus, we left all the doubts that gemmiferous plants are an ultimate expression (probably a response to the most xerix environment) of *S. caninervis*.

The additional evidence to the conclusion that this curious moss belongs to *S. caninervis* is the similar tendencies to the loss of the hyaline hair-point and to the low-papillose cells reported for *Tortula caninervis* ssp. *spuria* (Amman) Kramer var. *gypsophila* (Roth) Kramer [known from Central Europe and Middle East west to Afganistan] and especially var. *abrachesii* (Luis.) Kramer [known only from Spain] (see Kramer, 1980).

Very few species of *Syntrichia* were reported to produce gemmae. They occur regularly in *S. latifolia* (on upper lamina) and in *S. rigescens* and *S. papillosa* (on upper side of costa). In these 3 species however gemmae are always sessile (Kramer, 1980). An expanded search of any report of long-stalked gemmae in *Syntrichia* in literature (cf. Kramer, 1980; Mamatkulov, 1990; Zander, 1993; Crum & Anderson, 1981; Mishler, 1994; Li, X.-j & al., 2001; Smith, 1978; Savicz-Ljubitskaya & Smirnova, 1970) gave no results. So, the plants under question represent probably the unique case of stalked gemmae in the genus.

The latter fact seems sufficient enough to describe these plants as a separate variety:

***Syntrichia caninervis* var. *astrakhanica* var. nov.**

Holotype: Astrakhan Province, Bogdo Mountain, 48°09'N – 46°50'E, between Surikovskaya and Kordonnaya ravines, on sandy soil. Coll. Suragina, 2.V.2002 (MHA, isotype MW, VOLG, LE).

Plantae pro parte gemmiferae. Plantae non gemmiferae var. *caninervis* similes. Plantae cum gemmae valde minora, folia mutica, celluli epapilloosi.

Plants variable – partly gemmiferous, partly without gemmae. Latter approaching to *S. caninervis* var. *caninervis*, having stem 1-4 cm

tall, leaves with long hyaline hair-point, lamina partly bistratose, cells densely papillose. Among these tall plants spots with smaller plants situated (apparently in parts of tufts exposed to unfavorable environmental condition). Smaller plants in lax tufts or open groups, sometimes partly buried in sand, blackish-brown. Stem 2-10 mm long, lacking central strand and hyalodermis, loosely foliate, at base with long rhizoids, and in plants with many gemmae – with subapical shoots, otherwise almost unbranched. Leaves when dry spreading, when wet widely spreading, 0.5-0.9 mm long, 0.2-0.5 mm wide (gradually becoming larger upwards), ovate to broadly elliptic, broadly acute to rounded, concave; margin widely recurved almost to apex, costa 40-60 µm wide, usually of the same width in most of its length, in upper leaves percurrent to shortly excurrent and dorsally smooth, in lower leaves and leaves of subapical shoots – excurrent into hyaline hair-point and dorsally moderately to highly papillose; on transverse section costa composed of rather homogeneous guide cells in 1-2 rows and substereid cells, without dorsal epidermis. Upper laminal cells isodiametric to irregularly polygonal, (12)18-20 µm, in hair-pointed leaves papillose, in muticous leaves – lowly papillose to almost smooth; at base juxtacostal cells rectangular, 30-45 x 12-15 µm, thin-walled; in leaves around numerous gemmae – mostly decomposed; basal cells at leaf margin shortly rectangular. Gemmae 2-4-celled, red-brown, spheric, 20-40 µm, crowded distally on slightly to moderately branched filaments in leaf axils; abundant or a few (the more similar plant to var. *caninervis*, the fewer gemmae). Gametangia and sporophytes unknown.

Distribution and ecology: Besides the holotype this species has been found in several more places on Bogdo Hill and also in Astrakhan Province (1) near Kharabali town; (2) near Chapchachi railway station; and in Volgograd Province, near Tinguta. It is growing on soil, sand or gyps outcrops, sometimes in xeric, exposed habitats among steppe vegetation.

Fig. 1. *Syntrichia caninervis* var. *astrakhanica* Ignatov, Ignatova et Suragina, var. nov. (from Holotype: Bogdo, 2.V.2002 Suragina): 1-2 – habit; 3-12 – leaves; 13 – stem transverse section (from gemmiferous plant); 14-16 – gemmae; 17-19 – leaf transverse sections (at the same part of leaf, in its middle part), showing variation from papillose to non-papillose; 20-21 – cells of mid-leaf, showing variation from papillose to non-papillose; 22 – basal cells. Scale bars: 2 mm for 1-2; 1 mm – for 3-12; 200 µm – for 16; 100 µm – 13-15, 17-22

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