

FISSIDENS HYALINUS (FISSIDENTACEAE, BRYOPHYTA),  
A NEW SPECIES FOR RUSSIA

FISSIDENS HYALINUS (FISSIDENTACEAE, BRYOPHYTA),  
НОВЫЙ ВИД ДЛЯ РОССИИ

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Abstract

*Fissidens hyalinus* has been found in Russian Far East, Primorsky Territory ('Vladivostok area'). This is the northernmost locality of the species which was known previously in Asia from China and Japan to Malesia (and penetrates also to Northern Australia) and disjunct in Eastern North America. As many other species of the genus, *F. hyalinus* grows on somewhat disturbed soil along roads in forest and meadows. Only sterile plants were found, that are very small, making the species inconspicuous and, likely, easily overlooked by collectors.

Резюме

*Fissidens hyalinus* найден на Дальнем Востоке России в Приморском крае, в окрестностях Владивостока и Находки. Это наиболее северное местонахождение вида, который был ранее известен в Азии от Японии и Китая до Малазии (заходя также на северный берег Австралии), с дизъюнкцией на востоке Северной Америки. Как и большинство видов рода, *F. hyalinus* растет на отчасти нарушенной почве по краям дорог в лесах и на лугах. Были найдены только стерильные растения, мелкий размер которых делает их весьма трудными для обнаружения, что обуславливает вероятные пропуски при сборах.

The Russian Far East is a phytogeographically quite peculiar region where a number of tropical and subtropical bryophytes penetrate to the north to the greater extend than in the other parts of the world. Some examples were discussed earlier by different authors, e. g. *Herpetineuron toccoeae*, *Brachymenium nepalense*, *Thuidium cymbifolium*, *Taxiphyllum taxirameum* (Bardunov & Cherdantseva, 1982), *Campylopus umbellatus* (Ignatova & Samkova, 2006), *Actinohydium hookeri* (Ignatov et al., 2000), etc.

During the field trip in this area in 2007, we found one more species beyond its earlier known southern range; at the same time, this species is also a new addition to the Russian moss flora.

***Fissidens hyalinus*** Wilson & Hooker f., J. Bot. (Hooker) 3: 89. 1841. Figs. 1-2.

Plants 1.5-3 mm, growing by solitary shoots or in small groups. Stem unbranched, loosely complanately foliate; central strand absent. Leaves in 4-5 pairs, broadly elongate, acute, to 0.5-1.6 x 0.2-0.3 mm; dorsal lamina narrowed proximally, ending at insertion, not decurrent; vaginant laminae about 1/3 of leaf length, equal; margins entire, bordered, border 1-3 cells wide, 1-2 cells thick, reaching apex or ending 1-3 cells below apex, indistinct or absent in vaginant laminae; costa absent; laminal cells unistratose, smooth, 20-50 x 15-35 µm, hexagonal, thin-walled. Only female plants with immature ga-

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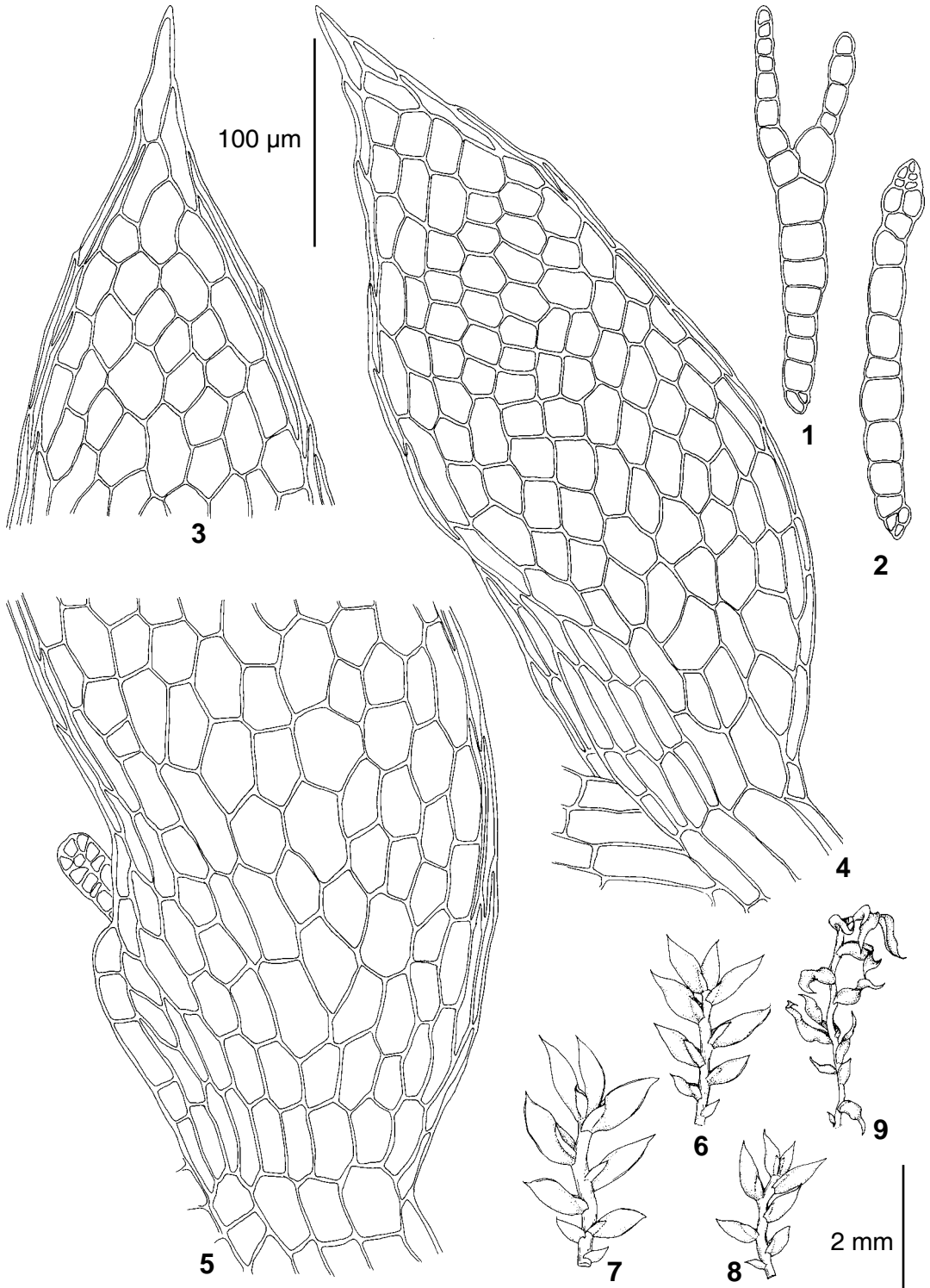


Fig. 1. *Fissidens hyalinus* Wilson & Hooker (from Primorsky Territory, Chandolaz, Ignatov #07-8, MHA): 1-2 – leaf transverse sections; 3-5 – leaves, showing areolation; in '5', left of leaf base the neck of immature archegonium is seen; 6-8 – habit, wet; 9 – habit, dry. Scale bars: 2 mm for 6-9, 100 μm for 1-5.

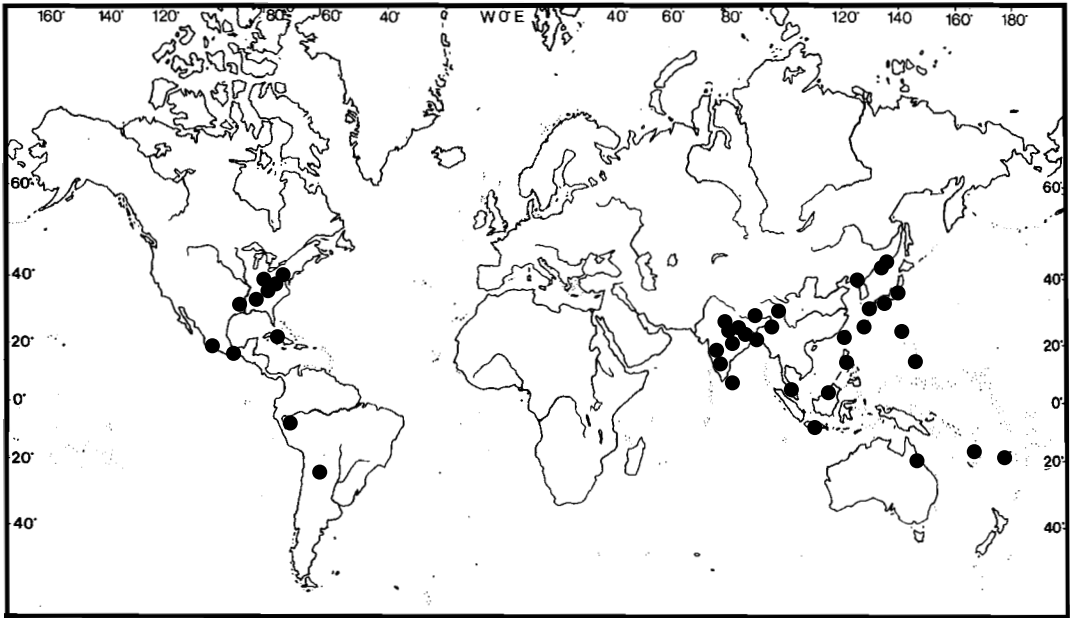


Fig. 2. Distribution of *Fissidens hyalinus* Wilson & Hooker. Data somewhat generalized, taken from Gangulee (1971), Iwatsuki (1969, 2004), Iwatsuki & Mohamed (1987), Iwatsuki & Suzuki, 1995, 1996), Li Zhi-hua & Iwatsuki (2001), Miller (1968), Pursell (1994), Risk (2002), Stone (1985), Tan & Iwatsuki (1991) and also specimens cited in <http://mobot.mobot.org/W3T/Search/mbib.html>. Dot in Peru is approximate.

metangia, and without sporophytes were found in Russia. [According to Pursell (2007): sexual condition rhizautoicous. Seta to 3 mm. Capsule erect, symmetric or sometimes slightly arcuate, to 0.4 mm; peristome well developed; operculum  $\pm$  as long as theca. Calyptra mitrate. Spores 9–13  $\mu$ m].

**SPECIMENS EXAMINED: Primorsky Territory.** (1) Partizansk Distr., foothill of Lozovyj Range, Chandolaz Mt., 43°00' N – 133°00' E, 200 m alt., 26.VIII.2007 *Ignatov & Suzuki* # 07-8; # 07-9; (2) Vladivostok, 0.5 km E of the Institute of Biology and Soil Science, 43°11' N – 131°56' E, 150 m alt., 30.VIII.2007 *Ignatov & Cherdantseva* # 07-10 (MHA).

In both places *F. hyalinus* was found in a relatively disturbed places, on bare soil rather rich in humus. In the first place it was found along small, rarely used ground roads across tall grass meadows dominated by *Miscanthus sinensis*, as well as across *Quercus mongolica* stands. The species was found in several places along ca. 2 km of roads near the foothill of Lozovyj Range (mountain Chandolaz), one of very a few calcareous areas in the south of the Russian Far East. However the second locality within Vladivostok is a quite average hill slope, without any rock outcrops or calcareous bedrocks. Associated species were: *Fossom-*

*bronia* sp., *Pleuridium subulatum*, *Fissidens bryoides*, *F. curvatulus*, *Dicranella heteromalla*, etc.

In first locality we found the species first in one place, ca. 2 km from our camp (better developed plants were found first), and then in many places along the road to our camp (although in many places just solitary shoots) and finally almost within the camp itself. After that, the intentional search in Vladivostok also revealed it. The parallel (and much more sound) situation was described in U.S.A. by Risk (2002): once found, the species can be revealed by “trained eye” in similar habitats in many more localities. Undoubtly it will be found in other places in the area.

It seems that the most probable reason that this species was not collected earlier is its small size and appearance similar to many just very young stages of other species of *Fissidens*. Another reason why *F. hyalinus* can look rare is its development in late August to autumn, when field work is usually already over. However, the recent introduction of *F. hyalinus* can not be excluded as well: contrary to North America, where the common habitats of *F. hyalinus* are soil banks to streams, all the findings in Russia were in man-made habitats, mainly along roads.

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