

ANTHOCEROS MACOUNII – A NEW HORNWORT FOR RUSSIAN FLORA

ANTHOCEROS MACOUNII – НОВЫЙ ВИД АНТОЦЕРОТОВЫХ ДЛЯ
ФЛОРЫ РОССИИ

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Abstract

Anthoceros macounii is found in Primorsky Territory, being the first record of this species in Russia. The species is characterized by a short capsule, 3-6 mm long, projecting from involucre 2/3–5/6 of its length. It is distributed in temperate and subtropical areas of the eastern U.S.A. and Japan.

Резюме

Anthoceros macounii найден в Приморском крае, и это первая российская находка вида, распространенного в умеренных и субтропических районах востока США и Японии. Вид характеризуется короткой коробочкой, 3-6 мм длиной, выступающий из обертки на 2/3–5/6 своей длины.

KEYWORDS: *Anthoceros macounii*, Anthocerotae, phytogeography, Russian Far East.

Hornworts is one of the smallest divisions of higher plants, including 200-250 species (Villarreal et al., 2010) in the world. Main diversity is in tropics and subtropics, while in the boreal zone the group is poorly represented. In Russia, hornwort flora includes 2 genera and 2(-4) species (Konstantinova et al. 1992; Potemkin & Sofronova, 2009), composed of widespread *Phaeoceros carolinianus* (Michx.) Prosk. and *Anthoceros agrestis* Paton, while two other species are little known and doubtful.

In the course of exploration of Far Eastern bryoflora in Primorsky Territory in October 2006 we found a peculiar hornwort superficially resembling *Notothylas* due to its small size and capsule shape. The population was revisited also in October, 2008.

The close up study revealed that the species belongs to *Anthoceros macounii*, the species with the distribution in temperate and subtropical areas of the eastern North America and Asia, and never reported from Russia before.

Anthoceros macounii Howe, Bull. Torrey Bot. Club 25: 19, pl. 326, figs. 1-9. 1898.

Thalli light green, forming compact rosettes 5-10 mm in diameter, rather strongly lobate, 6-8-stratose in central part and 2-4-stratose near margins, cavernose on upper surface. Cells polygonal, 30-35×35-75 μm, thin-walled. Monoicous. Antheridia by 3-4 per chamber. Involucres shortly cylindrical, to ca. 1 mm high, not plicate, mouth entire. Capsule cylindrical, rounded at the top, 3-6×ca. 0.5 mm, projecting from involucre to 2/3–5/6 of its length, bivalved, valves rigid at maturity and usually standing upright; valve wall 3-4-stratose. Epidermal cells narrowly rectangular to somewhat irregular in shape, 90-120×18-27 μm; stomata numerous; inner cells with helical bands. Columella 1/2–3/4 of capsule length. Pseudoelaters single, ca. 15-35 μm. Spores brown to blackish brown, 42-55 μm in diameter, more convex on distal face, quite flat on proximal face that is distinctly trilete, on both faces distinctly and sharply papillose.

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Fig. 1. *Anthoceros macounii* Howe, photos in nature.

Distribution: eastern North America and Japan (Schuster, 1992; Hasegawa 1984).

Anthoceros macounii was collected on wet clayish ground road in *Pinus koraiensis*+*Picea yezoensis*+broad-leaved forest, on October 5, 2006 (after a rather wet summer and early autumn) in several places along ca. 300 m of the forest ground road, obviously very little used at least that year. On flat places of the road and rut walls along the road a rare liverwort *Fossombronina alaskana* Steere & H. Inoue, and mosses: *Dicranella varia* and *D. schreberiana* were also found.

In 2008 this place was revisited on October 17, and the species was found only after long and extensive search. The year had less precipitation, road was quite dry, and intensively used for heavy log-

ging tracks. *Anthoceros* was found on the road itself, while ruts were mostly flattened by tracks. Only in one spur of road (occasionally used for turns) we found moist and recently disturbed soil banks with *Anthoceros*, as well as with *Fossombronina*.

Interestingly, the soil near *Anthoceros macounii* population had footprints of tiger (*Panthera tigris altaica*), a rare and vulnerable animal that is able to migrate each day for tens of kilometer.

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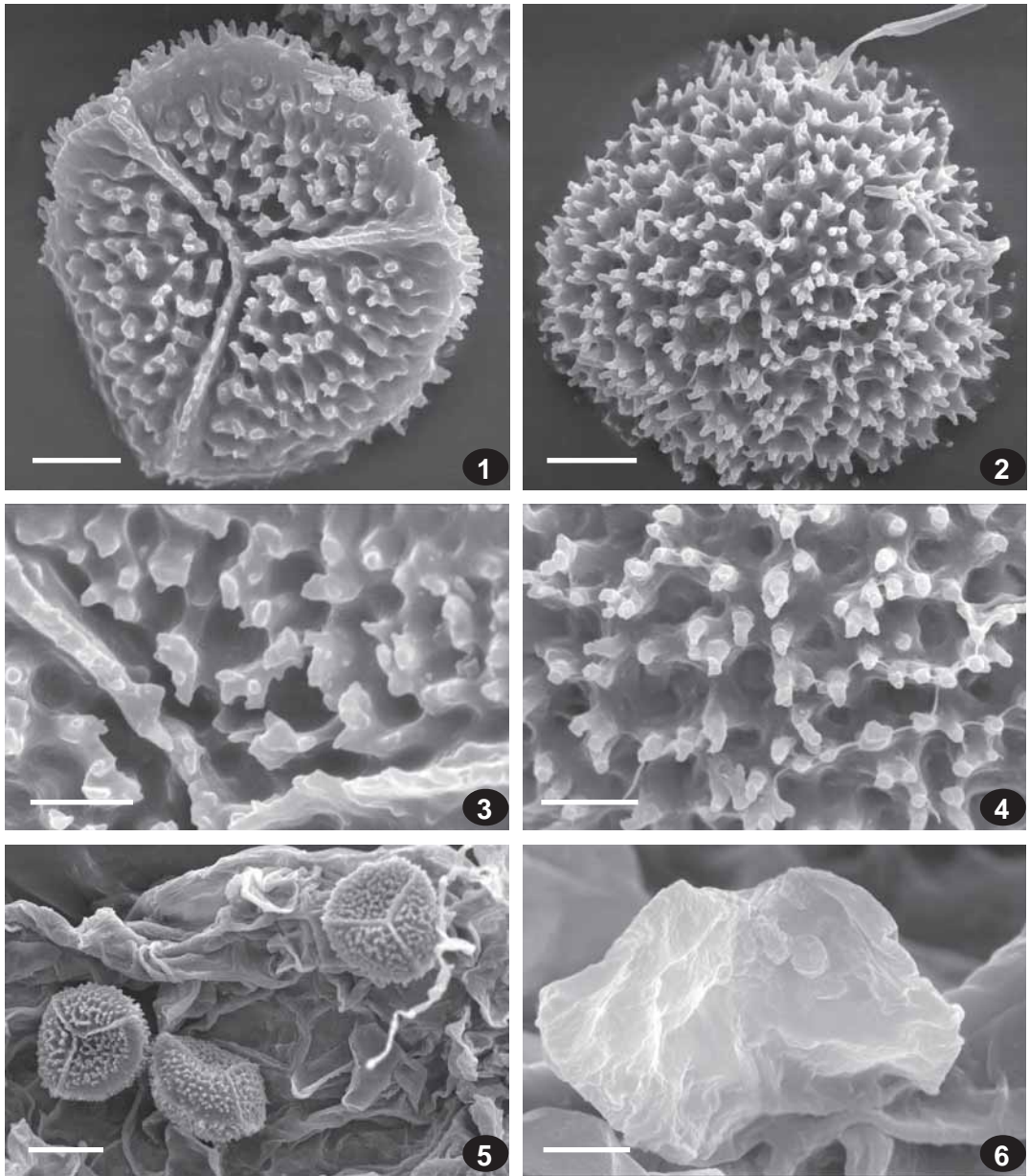


Fig. 2. *Anthoceros macounii* Howe (from Ignatov & Bakalin #08-999, MHA): 1, 3 – spores, proximal surface; 2, 4 – spores, distal surface; 5 – spores; 6 – pseudoelater. Scale bars: 30 μm for 5, 10 μm for 1-2, 5 μm for 3-4, 6.

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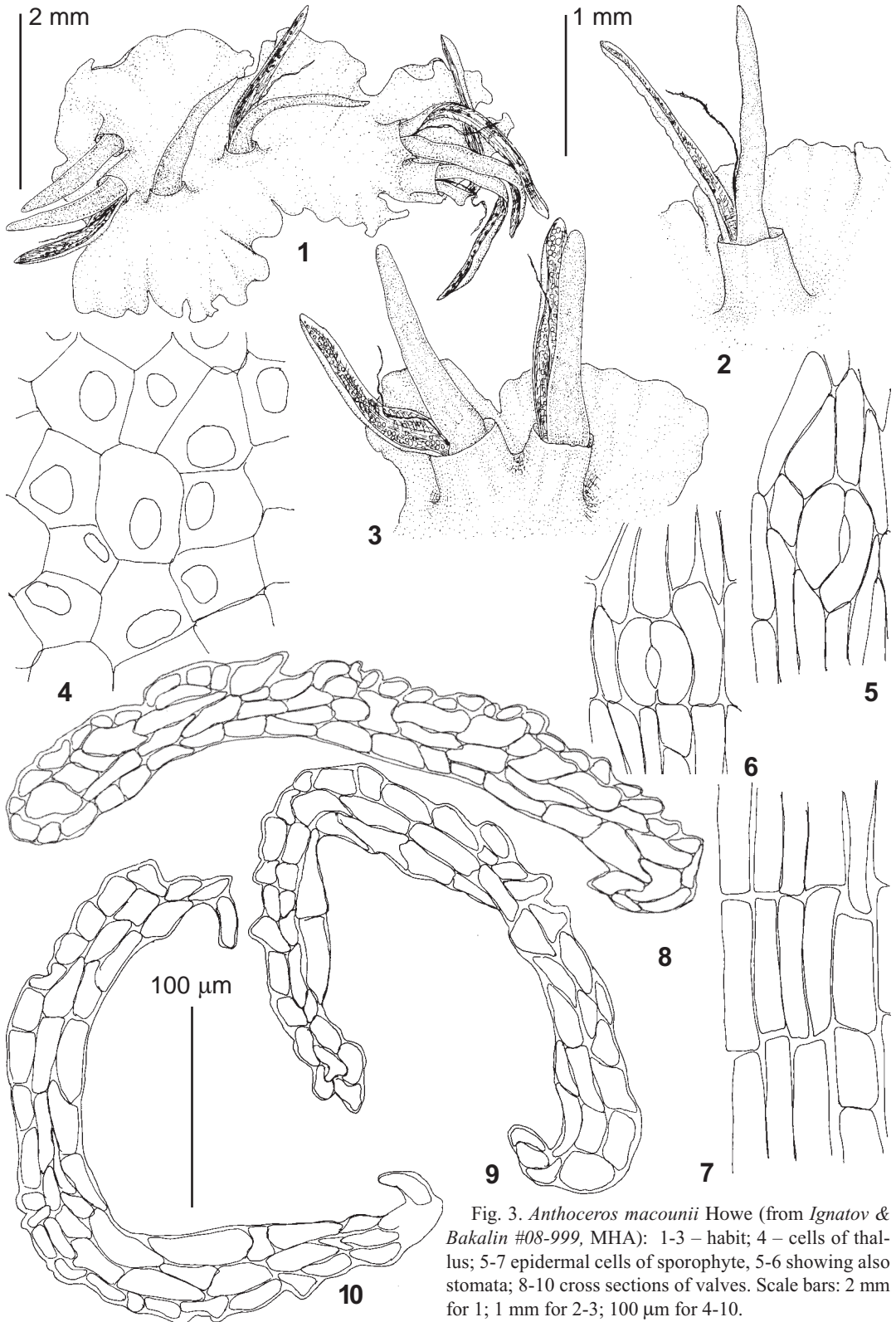


Fig. 3. *Anthoceros macounii* Howe (from Ignatov & Bakalin #08-999, MHA): 1-3 – habit; 4 – cells of thallic; 5-7 epidermal cells of sporophyte, 5-6 showing also stomata; 8-10 cross sections of valves. Scale bars: 2 mm for 1; 1 mm for 2-3; 100 µm for 4-10.