

ANACAMPTODON KAMCHATICUS (AMBLYSTEGIACEAE, MUSCI),
A NEW SPECIES FROM THE RUSSIAN FAR EAST

ANACAMPTODON KAMCHATICUS (AMBLYSTEGIACEAE, MUSCI),
НОВЫЙ ВИД С РОССИЙСКОГО ДАЛЬНЕГО ВОСТОКА

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Abstract

Anacamptodon kamchaticus sp. nov. is described from two localities in the Far East: the Kamchatka Peninsula and Sakhalin Island. A description, illustrations, and diagnostic characters are provided and the differentiation from the other species of *Anacamptodon* is discussed.

Резюме

Новый вид *Anacamptodon kamchaticus* sp. nov. описан из двух местонаждений с Дальнего Востока: Камчатки и Сахалина. Приводятся описание, иллюстрации и диагностические признаки вида и дается его сравнение с другими видами рода.

The *Anacamptodon* is a small genus of epiphytic mosses that includes about only ten species (Corsby & al., 1999). Until recently, this genus was considered to be a member of the Fabroniaceae, but on the basis of recent molecular studies, it has been transferred it to the Amblystegiaceae (cf. Goffinet & Buck, 2004).

In 2003, while identifying moss collections from the Kamchatka Peninsula, I found a specimen of *Anacamptodon*, which was easy to recognize as to genus because of its peculiar cap-shaped capsules. However, attempts to identify the species using Asian, European and American treatments (Grout, 1931; Lazarenko, 1955; Bardunov, 1969; Melnichuk, 1970; Buck & Crum, 1978; Taoda, 1980; Buck, 1980; Crum & Anderson, 1981; Noguchi, 1991; Wu, 2002) were unsuccessful. This moss did not match any previously described species. Subsequently, while looking through additional collections of the *Anacamptodon* from the Russian Far East, one more specimen of the same species was found among collections from the Sakhalin Island made by Ardeeva in 1966. These two specimens are described herein as a species new to science.

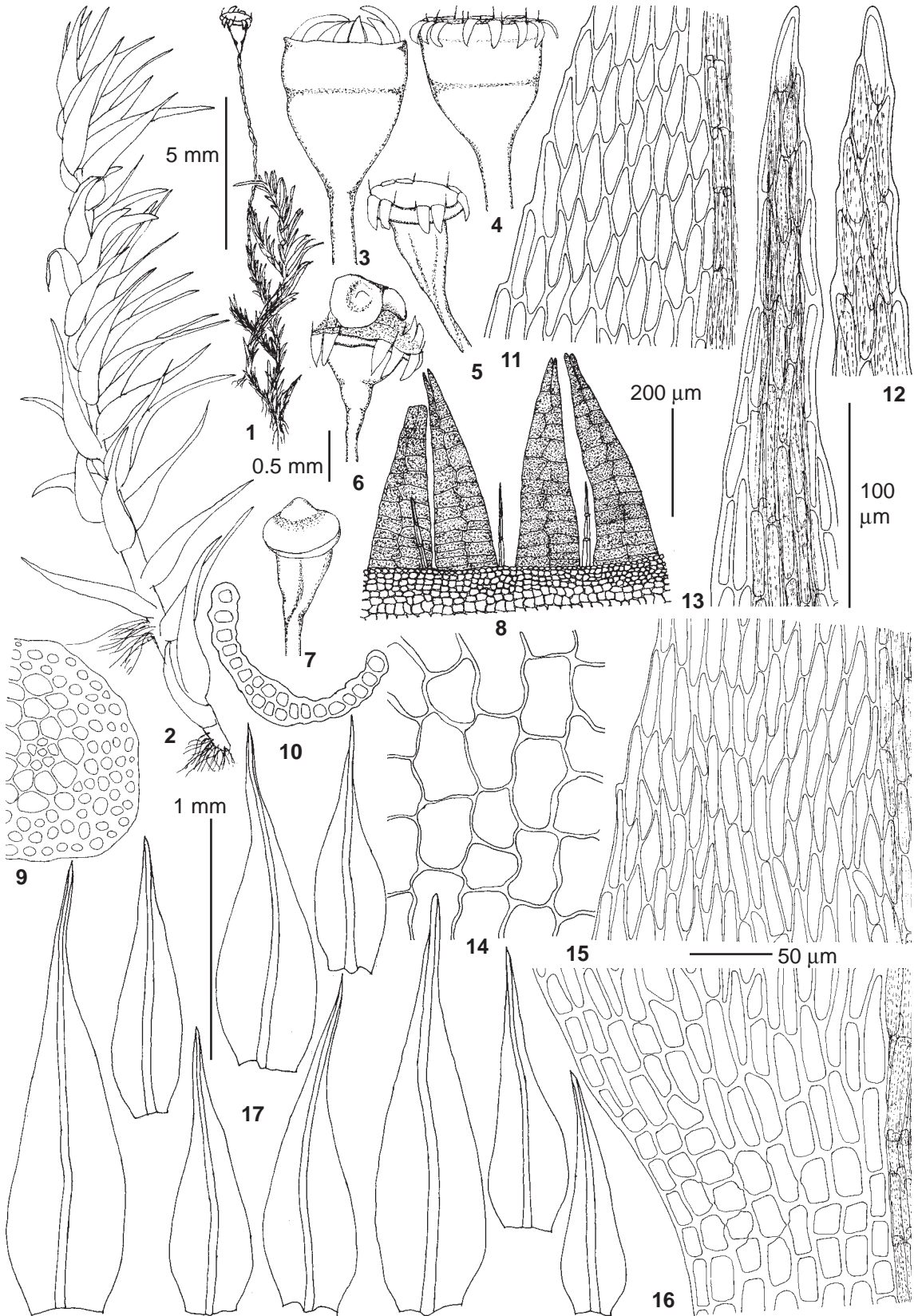
Anacamptodon kamchaticus, species nova.
Fig. 1.

Monoica. Caulis repentis, vage ramoso intertexto, folia \pm secunda, patentibus, lanceolatis, sensim acutis, (0.7-)1.0-1.6(-1.9) mm longa, nervo crassiusculo excurrente vel percurrente, cellulis unistratosa oblongus, oblongo-rhombicus, (17-)30-55(-83) μ m longa. Capsula in pedicello e basi geniculato flexuoso tortili turbinata, brevis, atro-sanguinea, sub ore coarctata, orificio ampliore. Operculum breviter conicum. Peristomii duplex, dentes externi 16 lati, lanceolati, fusciduli, articulationibus latis granulosis apice hyalinis secedentibus.

Typus: Russia, peninsula Kamchatka, 52°54' lat. bor., 157° 30' long. orient., in cursu medio fluminis Bannaya. Leg. 8.VIII.2002, I.V. Czernyadjeva (holotypus LE, isotypus MHA).

Plants small, forming dense light-green mats. Stem prostrate, irregularly branched, with numerous reddish-brown smooth rhizoids, with central strand, cortical cells thick-walled; branches \pm ascending, 1-3 mm long, densely foliated. Stem leaves lanceolate to oblong-lanceolate, gradually acuminate, spreading to \pm second; (0.7-)1.0-1.6(-1.9) mm long, (0.2-)0.3-0.4(-0.5) mm wide, 3-4:1, slightly concave;

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margins entire to minutely serrulate, plane, rarely partly incurved, unistratose, very rarely partly bistratose; nerve single, strong, 25-42 μm wide at leaf base, shortly excurrent to percurrent; laminal cells smooth, median laminal cells elongate to elongate-rhomboidal, (17-)30-55(-83) μm long, (5-)6.7-8.3(-10) μm wide, (3-)6-8(-10):1 (cell length correlating with leaf length), cell walls 2-3 μm thick, uniform, practically without pores, base laminal cells lax, homogeneous, numerous, never colored, not much differentiated at the basal margins, rectangular to quadrate, (11-)17-25(-35) μm long, (11-)15-18(-20) μm wide, 0.7-2:1, thick-walled, rarely with pores; branch leaves similar to stem leaves, smaller, \pm secund.

Autoicous. Inner perichaetial leaves smaller than stem leaves, acuminate, slightly serrulate above; nerve weak, ending somewhat above midleaf. Setae straight, smooth, red or red-brown, 7-14 mm long; capsules erect and symmetric, cup-shaped to short-obovate, wide-mouthed, strongly contracted below mouth and at a neck when dry, 0.9-1.4 mm long, 0.7-1.3 mm wide; exothecial cells quadrate to rectangular, with \pm wavy cell walls; peristome double, inserted somewhat below the mouth; exostome teeth light-brown to yellowish, broadly lanceolate, gradually tapering, often fused in pairs at their bases, densely papillose throughout, strongly reflexed when dry, ca. 400 μm long, ca. 130 μm wide in base; basal membrane absent, endostome segments thin, smooth, linear, golden, ca. 200 μm long, spreading when dry; annulus consisting of 1-2 rows of thin-walled cells, persistent; operculum convex-conic, short-pointed; calyptra cucullate. Spores smooth to finely papillose, 10-14 μm in diameter.

Type: Russia, Far East, Kamchatka Peninsula, 52°54' N 157°30' E, middle course of Bannaya River. Leg. 8.VIII.2002, I. V. Czernyadjeva (holotype LE, isotype MHA). Paratype (LE, VLA): Russia, Far East, Sakhalin Island, Ulegorsk District, Lamononskij Mountains, watershed of Ichora and Stariza Rivers. Leg. 13.VIII.1966, V.Ya. Ardeeva.

Anacamptodon kamchaticus is known presently from just two localities in the Russian Far East, the Kamchatka Peninsula and Sakhalin Island (Fig. 2). Its habitat is the bark of *Betula ermanii* Cham., on lower and middle parts of the tree trunks in the grassy birch forests.

Anacamptodon kamchaticus is characterized by a combination of characters that is unique among species of *Anacamptodon*: (1) a stout, shortly excurrent to percurrent nerve; (2) the leaf margin unistratose, only rarely bistratose in places; (3) elongate to elongate-rhomboidal median laminal cells; and (4) lanceolate leaves (0.7)1.0-1.6(-1.9) mm long. The length of the leaves of this species is noteworthy; they are larger than those of any other species in the genus.

The only species of *Anacamptodon* previously recorded in Siberia and the Russian Far East (Bardunov & Cherdantseva, 1982; Ignatov & Afonina, 1992) is *A. latidens* (Besch.) Broth., which is also the most common species of this genus in China and Japan (Wu, 2002; Noguchi, 1991). *Anacamptodon kamchaticus* differs from *A. latidens* in a stout and excurrent or percurrent costa (vs. a weak costa, reaching ca. mid-leaf), larger – 1.0-1.6 mm long – leaves (vs. leaves mostly 0.5-0.8 mm long), lanceolate (vs. ovate-triangular) leaf shape, and longer – mostly elongate – laminal cells (vs. mostly rhomboidal).

Anacamptodon kamchaticus is similar to *A. fortunei* Mitt., a species known from Japan and China, in having a strong, excurrent nerve. The main differences between these species are: (1) in *A. kamchaticus*, cells of the leaf margin are unistratose or only rarely bistratose for a short distance, whereas in *A. fortunei* they are bistratose almost throughout, so the leaf of the latter is clearly limbate; (2) laminal cells in *A. kamchaticus* are longer, 30-55 μm vs. 20-40 μm in *A. fortunei*; (3) the capsule in *A. kamchaticus* is cap-shaped to obovate (similar to that of *A. latidens*) vs. in *A. fortunei* the capsule is oblong, with a clear constriction below the mouth (so similar to that of *A. splachnoides* (Brid.) Brid.).

Fig. 1. *Anacamptodon kamchaticus* sp. nov. (from holotype): 1-2 – habit; 3 – wet capsule; 4 – capsule at the middle from wet to dry; 5-7 – dry capsules as various stages of deoperculation; 8 – part of peristome; 9 – transverse stem section; 10 – transverse leaf section; 11 – upper leaf cells; 12-13 – uppermost leaf cells; 14 – exothecial cells; 15 – midleaf cells; 16 – basal leaf cells; 17 – leaves. Scale bars: 5 mm for 1; 1 mm for 17; 0.5 mm for 2-7; 200 μm for 8; 100 μm for 9-14; 50 μm for 15-16.

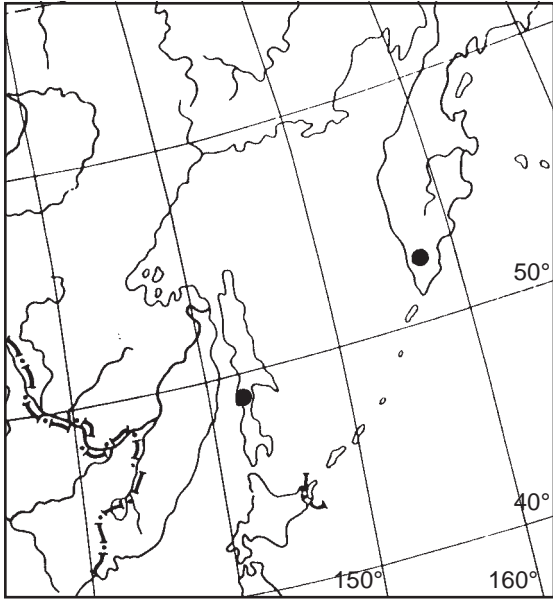


Fig. 2. Distribution of *Anacamptodon kamchaticus* sp. nov.

Another species of *Anacamptodon* with a long nerve is *A. cubensis* (Sull.) Mitt., which occurs in Central and South America. This species differs from *A. kamchaticus* in having (1) the operculum that is shortly and obliquely rostrate (vs. bluntly conic-convex in *A. kamchaticus*); (2) the capsule is oblong, constricted below the mouth (vs. cap-shaped);

(3) a rather slender and percurrent to subpercurrent costa (vs. stout and excurrent to percurrent); (4) shorter rhomboidal laminal cells (vs. mostly elongate ones); and (5) shorter leaves, usually ovate-lanceolate (vs. always lanceolate).

Grout (1906) described from the North America *A. splachnioides* var. *tayloriae*, a variety that differs from the type variety of this widespread species in having a long costa. This taxon differs from *A. kamchaticus* in: (1) the oblong capsule, constricted below mouth (vs. the cap-shaped capsule of *A. kamchaticus*); (2) the rather slender and excurrent to percurrent costa (vs. one that is stout and percurrent to excurrent); and (3) the acute conic operculum (vs. the blunt and low one in *A. kamchaticus*).

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