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Calliergon macounii sp. nova — A New Species of the Genus
Calliergon (Sull.) Kindb. from Arctic Region of Canada

Calliergon macounii sp. nova — nowy gatunek rodzaju
Calliergon (Sull.) Kindb. z obszarów arktycznych Kanady

Calliergon macounii sp. nova — новый вид рода *Calliergon* (Sull.)
Kindb. из арктических районов Канады

INTRODUCTION

In arctic regions many species of the genus *Calliergon* (Sull.) Kindb. are found to live which are one of the main components of the moss vegetation of arctic tundra. A survey of rich materials describing *Calliergon*, shows that *Calliergon megalophyllum* Mikut. is seldom found in the arctic part of the Soviet Union, Canada or Greenland, as well as in many northern islands. However, in those regions, with exception of the arctic part of the Soviet Union, *Calliergon obtusifolium* Kar. is often found and may be regarded as a vicarious species of *C. richardsonii* (Mitt.) Kindb. (Karczmarz 1965).

H. Persson's paper (1942) describing the occurrence of *Calliergon megalophyllum* in Yukon District in Arctic Canada is interesting because this species was not known to occur in the northern regions of North America. A detailed examination of the specimens known to H. Persson from the Herbarium of National Museum of Canada (Ottawa) and similar alogates and dublets from the New York Herbarium proved that the species identified by the author as *Calliergon megalophyllum* is a new species for bryology. Anatomical and morphological features of this species point out to its phylogenetic relationship to *C. megalophyllum* with which

it may be mistaken. However, differences between them are very pronounced and the taxonomic description confirms them. The samples of the new species were collected in 1902 in Bonanza Creek in Yukon District (North Canada) by John Macoun, a Canadian bryologist, and the new species was called after his name by me. The specimens of this species coming from Hunker Creek, published in the exsiccati of J. Macoun, Canadian Mosses, No. 405, according to N. C. Kindberg are determined as *Hypnum giganteum fluitans*.

At present the new species is known from two localities situated not very far from each other.

I wish to express my gratitude and thanks to Dr. Howard A. Crum from the National Museum of Canada, and to Professor William C. Steere, from the New York Botanical Garden, for the loan of the *Calliergon* genus coming from the collection of J. Macoun from North Arctic Regions of Canada. It has enabled me to describe the above mentioned species.

DESCRIPTION

Calliergon macounii Kar., sp. nova

(Exs. Canadian Mosses, No. 405 (OT sub *Hypnum giganteum fluitans*))

Plantae tenues vel robustae, \pm basi adiacentes vel erectae, ca. 10—15 cm. longae, pallide-luteo-virides, paulum nitentes, in parte superiore distincte ramificantes, foliis regularibus vel ramuli laterales rudimentarii ex aliquot foliis angustissimis compositi; caules tenues 0.8—0.9 mm. in diametro, multipliciter et alternatim reflexi, \pm teretes, lutei; medulla centralis non evoluta; folia caulina 5—6 mm. longa, 2.5 mm lata, distanter in cauli sita, cordatoovata, in apice obtusa et cucullata, distincte longitudinalim plicata, per caulem decurrentes, in aqua cauli non adiacentia; cellulae in parte mediali foliorum caulinarum prosenchymaticae, parietibus tenuibus, 8 (10) — 45×8 —90 μ , ad basin similes sed minores, 6—25 \times 5—35 μ , in parte apicali breves et latae, cellulae auriculares magnae, multae, non distincte a cellulis inferioribus separatae, partim hyalinae, ovatae, 5—6 parietibus, \pm tenuiparietales; cellulae initiales rhizoidorum in parte apicali foliorum parum distinctae vel deficientes; rhizoida ignota; nervus semper solitarius, luteus, folii parte superiore $\frac{3}{4}$ deficiens, vel in 2—6 cellula ante apicem finitus; antheridia, archegonia et folia perigonia et perichaetalia ignota; sporophytum ignotum.

Nomen in honorem bryologi canadensi John Macoun dedicatum.

Plants slender to robust, \pm creeping or erect, about 10—15 cm. long, clear yellow-green, dull-glimmering, almost not branched or lateral branches rudimentary, with some very narrow leaves; stem thin, 0.8—0.9 mm. in diameter, manifold and alternately flexuous, \pm taper,

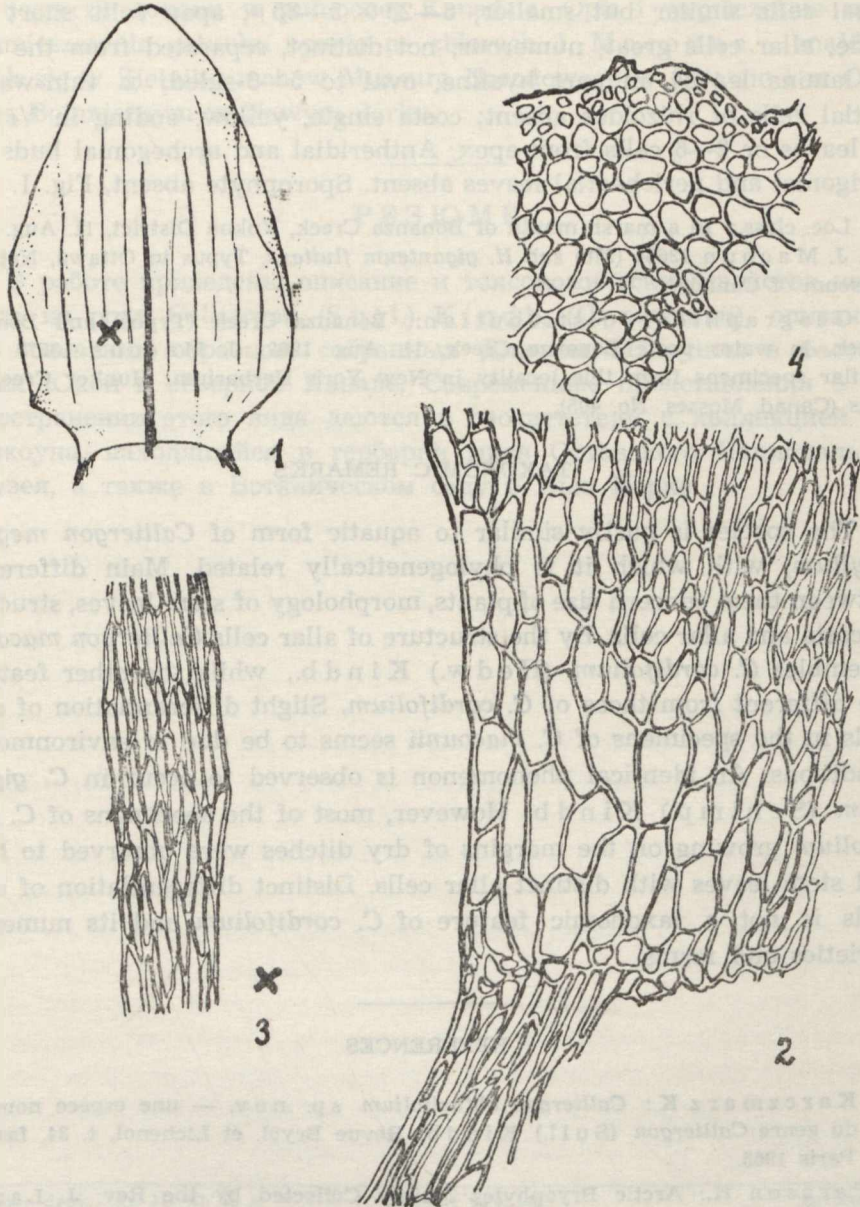


Fig. 1. 1 — leaf, 2 allar cells (auricle), 3 — cells of a leaf, 4 — part of a cross section of a stem

green, central strand not developed; stem leaves 5—6 mm. long, 2.5 mm. wide, standing distant on the stem, concave, orbiculato-cordate, obtuse and cucullate at apex, very distinct striate, extending down the stem below place of its attachment, loosely imbricated in water; median cells of stem leaves prosenchymaticous, \pm thin-walled, $8(10)–45 \times 8–90 \mu$, basal cells similar but smaller, $6–25 \times 5–35 \mu$, apex cells short and wide, allar cells great, numerous, not distinct, separated from the cells of lamina leaves, in part hyaline, oval to 5—6-sided; \pm thin-walled, initial cells of rhizoides absent; costa single, yellow, ending in $3/4$ part of leaves or 2—6 cells from apex. Antheridial and archegonial buds and perigonial and perichaetial leaves absent. Sporophyte absent, Fig. 1.

Loc. class.: In a marsh mouth of Bonanza Creek, Yukon District, 11. Aug. 1902, leg. J. Macoun 13654 (370) sub *H. giganteum fluitans*. Typus in Ottawa, National Museum of Canada.

Geographical distribution: Bonanza Creek (Typus) and Bonanza Creek, in water pools Bonanza Creek, 11. Aug. 1902, J. Macoun 13577 (OT), similar specimens from this locality in New York Herbarium; Hunker Creek, in bogs (Canad. Mosses, No. 405).

TAXONOMIC REMARKS

The species is partly similar to aquatic form of *Calliergon megalophyllum*, with which it is phylogenetically related. Main differences between them concern size of plants, morphology of stem leaves, structure of costa and allar cells. By the structure of allar cells *Calliergon macounii* resembles *C. cordifolium* (Hedw.) Kindb., while the other features are different from those of *C. cordifolium*. Slight differentiation of allar cells in the specimens of *C. macounii* seems to be due to environmental conditions. An identical phenomenon is observed to occur in *C. giganteum* (Schimp.) Kindb. However, most of the specimens of *C. cordifolium* growing on the margins of dry ditches were observed to have had stem leaves with distinct allar cells. Distinct differentiation of allar cells is not a taxonomic feature of *C. cordifolium* and its numerous varieties and forms.

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1. Karczmarz K.: *Calliergon obtusifolium* sp. nov. — une espèce nouvelle du genre *Calliergon* (Sull.) Kindb. Revue Bryol. et Lichenol, t. 34, fasc. 1. Paris 1965.
 2. Persson H.: Arctic Bryophytes Mainly Collected by the Rev. J. Lagerkranz. Svensk Bot. Tidskrift, Bd. 36, H. 4, Stockholm 1942.
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STRESZCZENIE

W pracy podano opis i cechy taksonomiczne nowego gatunku z rodzaju *Calliergon* (Sull.) Kindb. (*C. macounii*), opisanego na podstawie okazów zebranych przez kanadyjskiego bryologa Johna Macouna w dorzeczu Jukonu w północnej Kanadzie. Opis i współcześnie znane rozmieszczenie gatunku oparto na zbiorach J. Macouna, znajdujących się w Zielniku mchów Muzeum Narodowego w Ottawie i w Ogrodzie Botanicznym w Nowym Jorku.

РЕЗЮМЕ

В работе приведены описание и таксономические свойства нового вида из рода *Calliergon* (Sull.) Kindb. (*C. macounii*), описанного на основании образцов, собранных Джоном Мэкауном в бассейне реки Юкон в северной Канаде. Современные представления о распространении этого вида даются в соответствии с коллекцией Дж. Мэкауна, находящейся в гербарии мхов Оттавского Национального Музея, а также в Ботаническом саду в Нью Йорке.

