

Chara Kieneri, a new species from Nebraska

Fay Kenoyer Daily

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Edited by

Ray C. Friesner

The *Butler University Botanical Studies* journal was published by the Botany Department of Butler University, Indianapolis, Indiana, from 1929 to 1964. The scientific journal featured original papers primarily on plant ecology, taxonomy, and microbiology. The papers contain valuable historical studies, especially floristic surveys that document Indiana's vegetation in past decades. Authors were Butler faculty, current and former master's degree students and undergraduates, and other Indiana botanists. The journal was started by Stanley Cain, noted conservation biologist, and edited through most of its years of production by Ray C. Friesner, Butler's first botanist and founder of the department in 1919. The journal was distributed to learned societies and libraries through exchange.

During the years of the journal's publication, the Butler University Botany Department had an active program of research and student training. 201 bachelor's degrees and 75 master's degrees in Botany were conferred during this period. Thirty-five of these graduates went on to earn doctorates at other institutions.

The Botany Department attracted many notable faculty members and students. Distinguished faculty, in addition to Cain and Friesner, included John E. Potzger, a forest ecologist and palynologist, Willard Nelson Clute, co-founder of the American Fern Society, Marion T. Hall, former director of the Morton Arboretum, C. Mervin Palmer, Rex Webster, and John Pelton. Some of the former undergraduate and master's students who made active contributions to the fields of botany and ecology include Dwight W. Billings, Fay Kenoyer Daily, William A. Daily, Rexford Daudenmire, Francis Hueber, Frank McCormick, Scott McCoy, Robert Petty, Potzger, Helene Starcs, and Theodore Sperry. Cain, Daudenmire, Potzger, and Billings served as Presidents of the Ecological Society of America.

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CHARA KIENERI, A NEW SPECIES FROM NEBRASKA

By FAY KENOYER DAILY

This species was named in honor of Dr. Walter Kiener of the Nebraska Game, Forestation, and Parks Commission who collected it and who has collected much other fine material from Nebraska.

Although the affinity of *Chara Kieneri* is most nearly with *C. excelsa* Allen emend. Robinson, it differs in several ways and is unlike any other *Chara* known to the author in that the anterior bracts and bracteoles range from the usual unforked condition, through a series showing some forms with a wide base suddenly narrowing, some with a slight projection, some forked with one short arm and one long arm, and finally some forked with almost equal arms.

Two other cases of forked cells in the Charophytes are known to the author. *Nitella partita* Nordst. (3) has been named from Australia. The tips of the ultimate rays were made up of bi- and tri-partite cells with cuspidate diverging points. Since the species was named from only one unripe specimen, Groves and Allen state, "It is most desirable that further specimens should if possible be collected to see whether the extraordinary lobed ultimate cells are normal." Another case of forked cells was described by Migula (2) in a specimen of *Lychnothamnus barbatus* (Meyen) Leonh. One bract was seen to be forked. Other unusual conditions were seen in this specimen and all were treated as abnormalities.

CHARA KIENERI SP. NOV.

Plate I

Habito ca. 30 cm. alto, laxo, elongato, gracili; caule ca. 0.75 mm. in diametro, irreguliter haplostiche- diplostiche- triplostiche- corticato, usualiter diplostiche- corticato; primariis cellulis prominentibus; spinulis variabilissimis, solitariis vel geminatis, brevissimis vel longissimis; corona stipulari variabilissima, serie supera ca. 0.225 mm., serie infera ca. 0.12 mm.; ramulis verticilli 7-8, infimis internodiis diplostiche-corticatis 2-6, brevibus ecorticatis apicatis cellulis 1 vel 2; bracteolis et anterioribus bracteis longis, gracilibus, acutis,

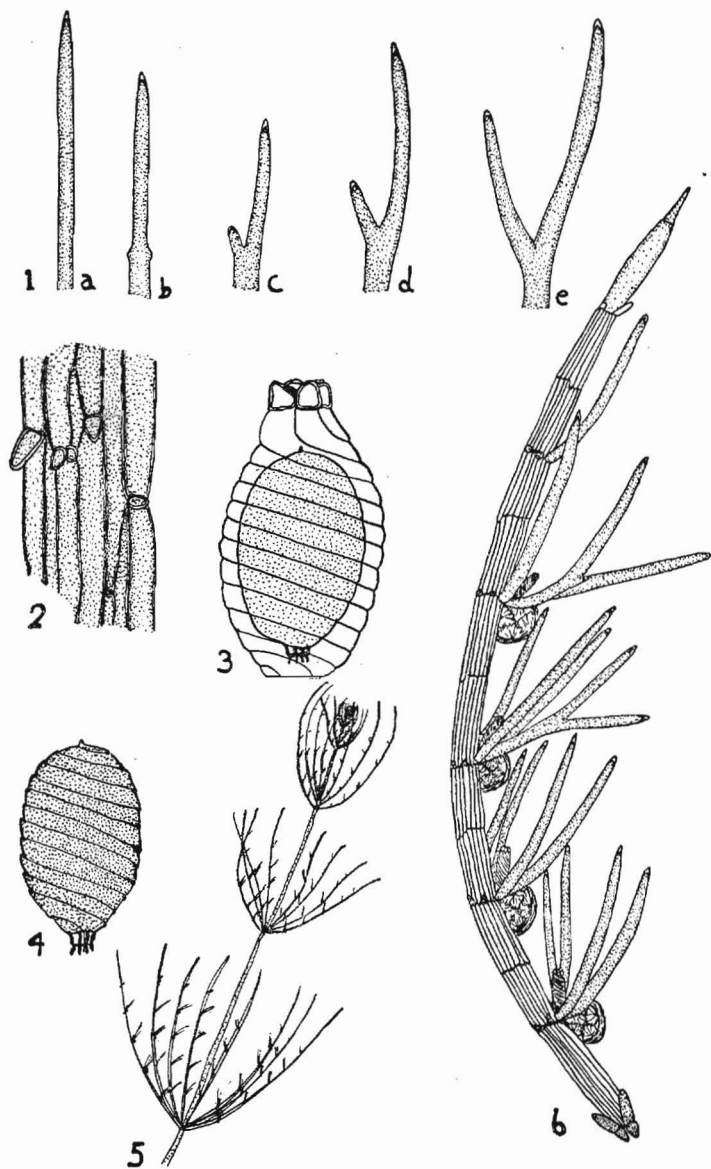


PLATE I. *Chara Kieneri* sp. nov. 1(a, b, c, d, and e). Showing different shapes of bracteoles and anterior bract cells. 2. Section of cortex. 3. Oogonium. 4. Oospore. 5. Portion of the plant. 6. Branchlet.

infurcatis vel furcatis; posterioribus bracteis brevissimis, infurcatis; coronula oogonii ca. 0.09 mm. alta; collo oogonii non elongato; nucleo oogonii brunneo, ca. 0.45-0.636 mm. longo, 0.375-0.525 mm. crasso, cum cavea, 10-14 gyrato non prominenter; exteriore colorata membrana nuclei brunnea, subtilissima granulato-punctata; antheridio 0.325-0.375 mm. in diametro.

HABIT: ca. 30 cm. high, lax, elongate, thin. MONOECIOUS. STEM: ca. 0.75 mm. in diameter; irregularly haplostichous, diplostichous, or triplostichous, usually diplostichous; primary cells prominent; no uncorticated internodes. SPINE CELLS: papillate to very long; usually single but sometimes geminate. STIPULODES: variable, usually 0.225 mm. long in upper series, 0.12 mm. long in lower series. BRANCHLETS: 7-8 at a node, 2-6 diplostichously corticated internodes, tipped by 2 short uncorticated cells. BRACTEOLAS AND ANTERIOR BRACT CELLS: long, narrow, acute, unforked or forked. POSTERIOR BRACT CELLS: short, not forked. OOGONIA: with neck not greatly elongate, crown cells ca. 0.09 mm. high. OOSPORES: brown, ca. 0.45-0.636 mm. long, 0.375-0.525 mm. wide, with cage, showing 10-14 ridges not very prominent. Outer colored membrane: brown, finely granulate. ANTHERIDIA: 0.325-0.375 mm. in diameter.

Chara Kieneri resembles *C. excelsa* Allen emend. Robinson but differs in the following characteristics: Although it has spine cells produced singly and is essentially diplostichous with occasional triplostichous cortication like *C. excelsa*, it is also at times haplostichous and has spine cells produced in pairs; it does not have elongated neck cells on the oogonia; anterior bract cells and bracteoles are acute rather than acuminate and show great variation ranging from unforked through various degrees of forking; none of the internodes on the stem or branchlets are uncorticated; the oospore has a cage.

Type specimen:—Nebraska: Sheridan county: several plants in a large collection containing also *C. contraria* A. Br., *C. fragilis* Desv., and *C. excelsa* Allen emend. Robinson; east of Bingham, marsh pond, lat. ca. 42° N., alt. 3910 ft., *Kiener 20625*, May 23, 1946. (Type deposited in Butler University Herbarium, co-type to be found in the Walter Kiener collection.)

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