

NEW OEDOGONIACEÆ.

E. N. TRANSEAU and HANFORD TIFFANY.

The following forms of *Oedogonium* and *Bulbochæte* have been found in collections from Illinois and Massachusetts and are apparently undescribed.

Oedogonium hystricinum nov. sp.

Oedogonium dioicum, nannandrium, idioandrosporum; oogoniis singulis, globosis vel suboboviformibus, poro mediano apertis; oosporis globosis vel subglobosis, oogonia fere complentibus; episporio brunneo, echinis subuliformibus instructo; cellulis suffultoriis tumidis; plantis masculis paullo gracilioribus quam femineis; androsporangiiis 3-6-cellularibus; cellula fili terminali obtusa; cellula fili basali elongata; nannandribus subrectis in cellulis suffultoriis sedentibus, antheridio exteriore, unicellulari;

Crassit. cell. plant fem.	8-15, altit.	42-100
“ cell. plant masc.	6-9, “	50-67
“ cell. suffult.	16-19, “	42-70
“ oogon.	30-40, “	36-53
“ oospor. (c. echin.)	23-38, “	28-43
“ cell. androsp.	6-8, “	8-15
“ stip. nannandr.	6-10, “	20-32
“ cell. antherid.	5-6, “	6-10

Diocious, nannandrous, idioandrosporous, oogonia single, globose or somewhat obovoid, pore median; oospores globose or subglobose, nearly filling the oogonia, outer spore wall, brown, densely covered with spines; suffultory cells swollen; male filaments smaller than the female; androsporangia 3-6-celled; terminal cells obtuse; basal cells elongated; dwarf males nearly straight resting on the suffultory cell, antheridium exterior, one-celled;

Diam. veg. cell. female plant	8-15, length	42-100
“ “ “ male plant	6-9, “	50-67
“ “ suffult.	16-19, “	42-70
“ “ oogonia	30-40, “	36-53
“ oospore (includ. spines)	23-38, “	28-43
“ androsporangia	6-8, “	8-15
“ stipe, dwarf males	6-10, “	20-32
“ antheridia	5-6, “	6-10

This species is near *Oe. Hystrix* Wittr. but differs in the small diameter of the filaments in proportion to their length and the size of the oogonia. The suffultory cells are swollen and the androsporangia are much smaller.

Collected from a temporary pond at the West end of Polk St., Charleston, Illinois, May, 1914. Type in herbarium. E. N. T. Collections. No. 2310, 2364. (Plate XIV, Figs. f-i.)

Oedogonium Pisanum gracilis nov. var.

Var. omnibus partibus gracilior; ceterum ut in typo.

Crassit. cell. veget. fem.	6-9, altit.	18-48
“ cell. veget. masc.	5-8, “	16-45
“ oogon.	16-20, “	20-30
“ oospor.	15-18, “	18-28
“ cell. antherid.	5-7, “	5-10

Diœcious, macrandrous; oogonia single, rarely 2, elliptical to elliptical-ovate, operculate, division superior; oospore elliptical nearly filling the oogonium, outer wall smooth; male filaments somewhat smaller than the female; antheridia 1-4 celled; sperms two, division horizontal; basal cell elongated; terminal cell hairlike;

Diam. cells of female plant	6-9, length	18-48
“ cells of male plant	5-8, “	16-45
“ oogonia	16-20, “	20-30
“ oospores	15-18, “	18-28
“ antheridia	5-7, “	5-10

Somewhat smaller than the species in all dimensions, otherwise similar to the type.

Collected at Gates' pond, Coffeen, Illinois, May, 1914. Type in herbarium. E. N. T. Coll. No. 2420.

Bulbochæte Bullardi nov. sp.

B. dioica, nannandria, idioandrospora; cellulis vegetativis, diametro 2-8 longioribus; oogoniis ellipsoideis vel ovoideo-ellipsoideis, erectis, sub setis longis terminalibus, poro supramediano apertis, evidenter; oosporis ellipsoideis, oogonia complementibus vel non complementibus; costis episporii dentatis, dentibus inter se costis transversalibus, evidentibus conjunctis; costis longitudinalibus irregulariter inter se anastomosantibus; 1-6 cellularibus; nannandribus paullulum curvatis, in oogonis vel cellulis suffultoriis vel cellulis vegetativis sedentibus; antheridio exteriore, 1-3-cellulari;

Crassit. cell. veget.	20-32, altit.	60-165
“ oogon.	56-66, “	70-96
“ cell. androsp.	18-21, “	15-33
“ stip. nannandr.	18-21, “	30-33
“ cell. antherid.	9-14, “	6-10

Diœcious, nannandrous, idioandrosporous; vegetative cells 2-8 diameters long; oogonia ovoid-ellipsoid or ellipsoid, erect, terminated by a long seta, pore evident and suprmedian; oospore filling or nearly filling the oogonium and of the same form, ribs of outer wall dentate, the teeth connected by transverse lines, longitudinal ribs uniting irregularly, androsporangia 1-6-celled; dwarf males slightly curved resting on the oogonia, suffultory cells, or the vegetative cells; antheridium exterior, 1-3-celled;

Diam. veg. cells	20-32, length	60-165
“ oogonia	56-66, “	70-96
“ androsporangia	18-21, “	15-33
“ stipe dwarf male	18-21, “	30-33
“ antheridia	9-14, “	6-10

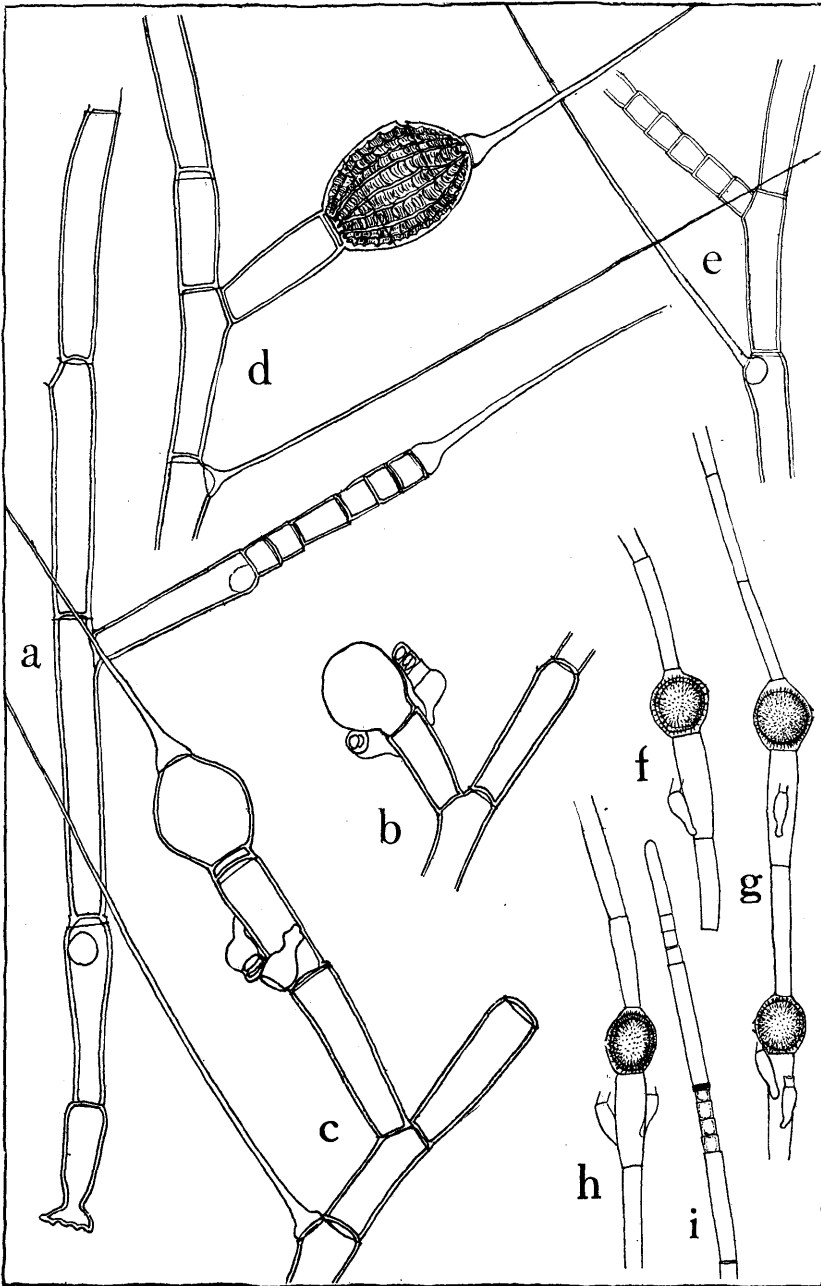
This species has larger vegetative cells than any of the described species. Its position in the genus is near *B. imperialis* Wittr., from which it differs in dimensions, in being idioandrosporous, and in the more highly ornamented spore wall. The spore most nearly resembles that of *B. insignis reticulata* (Nordst.) Hirn. Collected by Mr. Charles Bullard in a pond west of Winter Pond, Winchester, Mass., July 15, 1908. Type in Herbarium E. N. T. (Plate XIV, Figs. a-e.)

EXPLANATION OF PLATE XIV.

Figures a-e. *Bulbochæte Bullardi* nov. sp.

Figures f-i. *Oedogonium hystricinum* nov. sp.

a—Male filament showing strict habit, basal cell and five androsporangia. b—Imperfect oogonium with two dwarf males, antheridia and sperms. c—Immature oogonium. d—Mature oogonium and oospore. e—Five androsporangia. f. g. h—Female filaments showing mature oospores and dwarf males. i—Male filament with androspores. Camera lucida drawings.



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