

New mosses of North America. IV.

F. RENAULD AND J. CARDOT.

(WITH PLATES VIII AND IX.)

Bryum extenuatum.—In loose, yellowish tufts. Stems depressed, radiculose, branching below the perichætium by elongated innovations (15–30 mm. long), erect, slender, flexuous, generally attenuate and flagelliform. Stem-leaves distant, equal, erecto-patulous when moist, imbricate when dry, concave, from a long decurrent base ovate-lanceolate, shortly acuminate-cuspidate, entire or subsinuate toward the point, 1.50–2 mm. long, .50–.75 mm. broad; innovation-leaves much smaller and narrower; margins revolute from the base to above the middle; costa excurrent into a very short point, or vanishing just below the apex; cells of the areolation rhomboidal or hexagonal, 3–4 times longer than broad, rectangular at base, longer and narrower on the margins, but not forming a distinct border. Pedicel flexuous, 25–35 mm. long, reddish below, yellowish above. Capsule pendulous, narrowly cylindrical, constricted below the mouth when dry, and tapering to a long attenuate neck; lid convex, acutely apiculate. Teeth pale yellow; internal membrane very broad; segments split, cilia 2–3, long appendiculate. Annulus of 2–3 rows of cells. Dioicous. Male plant unknown.

Oregon: Portland, wet, sunny bluffs (*L. F. Henderson*).

This plant has the facies of some *Cladodium* (as *Bryum* (*Cladod.*) *purpurascens* R. Br.), but the perfect structure of its peristome compels us to place it in the sect. *Eubryum*. By the form of the capsule it is related to *B. capillare* and other allied species, but is at first sight distinguished by its elongated, slender innovations, and its ovate-lanceolate and long decurrent leaves.

Bryum crassirameum. (*B. crassum* Ren. and Card. MSS., non H. et W.).—In robust, wide, compact, yellowish-green tufts. Stems robust, stout, branched, 3–5 cm. long. Leaves erect-patulous when moist, imbricate when dry, ovate-lanceolate, shortly acuminate, not decurrent, very entire or subsinuate at apex, 2–3 mm. long, 1–1.50 mm. broad; margins revolute from the base to near the apex; costa percurrent or vanishing just below the point; cells of the areolation rec-

tangular at base, hexagonal, 2-5 times longer than broad in the upper part, longer and narrower on the margins, but not forming a distinct border. Perichæatial leaves more long acuminate. Pedicel reddish, flexuous, 3-5 cm. long. Capsule pendulous, badious or ferruginous, cylindrical, constricted below the mouth when dry, tapering to an attenuate neck; lid conic or subconvex, apiculate. Teeth yellow, densely trabeculate; segments split; cilia 2-3, appendiculate. Annulus of 3 rows of cells. Dioicous. Male plant growing with the female; flowers terminal, capituliform; antheridia large, with equal paraphyses.

Oregon: Oregon city, wet sunny bluffs (*L. F. Henderson*)

A fine species, allied to *B. pseudotriquetrum*, but quite distinct by the entire leaves, imbricate and not twisted when dry and without distinct border, the looser areolation and the narrower capsule.

Atrichum undulatum Beauv. var. *altecristatum*.—Lamellæ of the leaves much higher than in the typical form; capsule narrower and erect.

Kansas: Saline county (*Joseph Henry*). Pennsylvania: Reading (*Bischoff*). No. 314 of our set of *Musci Bor.-Amer. exsic.*, issued as *A. angustatum* BS., also belongs to this variety.

Closely resembling the *A. angustatum*, but distinct from it in the inflorescence and chiefly in the looser areolation of larger cells.

Fontinalis Kindbergii.—(*Macoun, Canadian Musci.*, no. 233).—Robust, a foot or more long, ferruginous, golden yellow and shining above. Stems naked below, subpinnate; branches plumose, subflexuous. Stem-leaves erect-patulous, concave, more or less distinctly carinate, ovate-lanceolate, acuminate, very entire, the upper large, 5-7 mm. long, 2.50-3 mm. broad, the lower much smaller and more shortly acuminate. Branch-leaves tristichous, divaricate, narrowly lanceolate, long acuminate, concave, inflexed on the margins, canaliculate above, rounded or subcarinate at back, 4-5 mm. long, 1-1.50 mm. broad. Cells of the areolation long linear, those of the angles enlarged, subquadrate, yellowish or ferruginous. Perichæatial bracts convolute, suborbicular, entire at the truncate-rounded apex. Capsule immersed, oblong, 2 mm. long, .50-.75 mm. broad; lid conic. Teeth narrowly linear, slightly papillose, often connected in pairs at the

apex, with 25–35 lamellæ, not perforated on the dorsal line; lattice-cone of the inner peristome perfect, papillose, the transverse bars appendiculate. Dioicous. Male flowers numerous, sessile or pedunculate.

Vancouver Island, in ponds (*Macoun*). Oregon: High Cascade Mts., Lost Lake (*L. F. Henderson*).

This fine moss differs from the robust forms of *F. antipyretica* in its stem-leaves less distinctly carinate, longer acuminate, and its branch-leaves longer and narrower, divaricate. The peristome is the same as in *F. antipyretica*.

Antitrichia Californica Sulliv. var. **ambigua**.—Distinct from the type by the branches not julaceous, the leaves not so closely imbricate, generally subsecund and narrower, the cells longer and the pedicel often flexuous. It resembles in habit *A. curtispindula*, but differs from it in the cylindrical, narrow capsule, the perichætil leaves longer acuminate and the shorter cells.

Oregon: Portland (*L. F. Henderson*).

Climacium dendroides W. M. var. **Oreganense**.—Differs from the type in the leaves narrower at base, less serrate at apex, sometimes subentire.

Oregon: Willamette River, on ground and old logs (*L. F. Henderson*).

Climacium Americanum Brid. var. **Kindbergii**.—A remarkable form, distinct from the type by the leaves shorter, more distant, loosely imbricate, and the cells of the areolation nearly equal, short, ovate, scarcely 1–2 times longer than broad.

Louisiana: Lafayette's woods (*A. B. Langlois*). Massachusetts: Wellesley, with transitions to the type (*Miss Clara E. Cummings*).

Heterocladium aberrans. (*Microthamnium aberrans* Ren. and Card. MSS.).—Intricate-cespitose, pale or yellowish green. Stems flexuous, creeping, radiculose, more or less regularly pinnate; branchlets ascending, flexuous. Stem-leaves squarrose, auriculate, from a cordate-ovate base long acuminate, generally subulate, 1.25–1.50 mm. long, .50–.75 mm. broad; borders plane, sinuate-crenulate all around, costa forked, with one of the divisions longer and vanishing about the middle; areolation loose, pellucid, of soft thick-

walled cells, elongated, linear, truncate or obtuse, 4-10 times longer than broad toward the costa, the others irregular, ovate, roundish or subhexagonal, sometimes slightly papillose. Branch-leaves shorter, acute or obtuse. Perichæatial leaves acuminate to a reflexed denticulate point, thin-nerved; paraphyses numerous, long. Pedicel purple, smooth, 15-17 mm. long. Capsule horizontal, ovate, curved, 1.50 mm. long, .50-.75 mm. broad; lid unknown. Teeth yellow, acuminate, densely trabeculate; segments narrowly split; cilia shorter, nodulose. Male flowers unknown.

Idaho: Kootenai county, on logs (*J. B. Leiberg*; kindly communicated by Mr. Ch. R. Barnes).

This moss, with the aspect of some tropical *Microthamnium*, is closely allied to *Pterogonium* (*Heterocladium*) *procurrens* Mitt., but according to the description and figures given by Mr. Mitten in Journ. Linn. Soc. viii, 37 and pl. 7, this last species is a more robust plant, with inequilateral branch-leaves, the perichæatial leaves only patent and not reflexed at their point, the pedicel longer and the capsule not curved. These two species constitute in the genus *Heterocladium* a section which we name *Eurybrochis*, characterized by the loose, pellucid, smooth or scarcely papillose areolation.

Brachythecium acuminatum (Beauv.) var. *subalbicans*.—Facies of the *B. albicans* (Neck.). More robust than the type, pale yellow; branches silky, julaceous; areolation denser, cells narrower.

Louisiana: Bayou des Cannes, foot of trees (*A. B. Langlois*). Florida: Enterprise (*Fitzgerald*).

Brachythecium Idahense.—Intricate-cespitose, bright green. Stems depressed, creeping, irregularly pinnate; branches ascending, subincurved. Leaves crowded, subsecund, from an ovate base lanceolate, long acuminate, plicate, costate to above the middle, 1 mm. long, .35-.50 mm. broad; borders denticulate all around or subentire, plane or more or less revolute; cells linear, attenuated, those of the angles subquadrate, numerous. Perichæatial leaves rather suddenly acuminate, obsoletely costate or subecostate. Pedicel purple, smooth, 10-17 mm. long. Capsule horizontal, ovate, gibbous, curved, 1.50-2 mm. long, 1 mm. broad, lid obtusely conic. Teeth lanceolate-acuminate, densely trabeculate; segments broadly split; cilia long, nodulose. Monoicous.

Idaho: Lake Pend d'Oreille, on logs (*Leiberg*; kindly communicated by Mr. Ch. R. Barnes).

This species rather resembles *B. Bolanderi* Lesq., but it is distinct by the smooth pedicel, the monoicous inflorescence, the thicker capsule, the larger size and the bright green tint of the tufts. It is more closely allied to the European *B. olympicum* Jur. (*B. venustum* De Not.), from which it differs in the larger size, the larger, broader, plicate leaves, the basal areolation looser, with angular cells more numerous, quadrate, thin-walled, the costa narrower and shorter, and the lid obtuse, not apiculate.

Scleropodium caespitosum (Wils.) var. **sublæve**.—Pedicel nearly smooth, slightly rough only below the capsule.

Oregon: Sauvie's Island (*Th. Howell*).

Raphidostegium Regelianum (C. Müll.) var. **Floridanum**.—Scarcely distinct from the South American type by the shorter and broader capsule, rounded or less attenuate below.

Florida: Enterprise, trunks of palms (*Fitzgerald*).

Hylocomium triquetrum (L.) var. **Californicum**.—Very robust; leaves strongly rugose-undulate, strongly papillose above; capsule short.

California (*Mrs. Mary E. Pulsifer Ames*).

Remark on *Rhacomitrium Oreganum* Ren. and Card., Bot. GAZETTE, 1888, 98.—From the examination of an authentic specimen of *R. varium* Mitt., we recognize that our *R. Oreganum* must be identified with this species, but the description given in the *Manual*, 150, is not quite exact, the hair-point of the leaves being denticulate, not entire, and the upper cells elongated, not round-quadrate.

Monaco and Stenay, France.

EXPLANATION OF PLATES VIII AND IX.—Nearly all the figures are drawn by means of Nachet's camera lucida:

PLATE VIII.—A. *Bryum extenuatum* a, entire plant; b, b, stem-leaves; c, areolation in the middle; d, areolation of the apex; e, innovation-leaves; f, capsule; g, portion of the peristome.—B. *Bryum crassirameum*. a, entire female plant; b, male plant; c, c, leaves; d, basal areolation; e, areolation in the middle; f, areolation of the apex; g, capsule; h, portion of the peristome.

PLATE IX.—A. *Fontinalis Kindbergii*. a, part of stem; b, stem-leaf; c, branch leaf; d, perichætium and capsule; e, capsule.—B. *Heterocladium aberrans*. a, entire plant; b, b, stem-leaves; c, basal areolation toward the

costa; *d*, areolation in the middle, on the margin; *e*, areolation of an auricle; *f*, areolation of the point; *g, g*, branch-leaves; *h*, perichætical leaf; *i*, capsule; *j*, portion of the peristome.—*C. Brachythecium Idahense*. *a*, entire plant; *b, b*, leaves; *c*, basal areolation; *d*, areolation of the upper part; *e*, perichætical leaf; *f*, capsule.

An undescribed *Heuchera* from Montana.

DANIEL C. EATON.

Heuchera (§ *Holochloa*) *Williamsii*. Sesquipedalis ad bipedalis; foliis omnibus radicalibus orbiculari-reniformibus leviter crenatis ciliolatis ceterum fere lævibus (unciam ad sesquiunciam latis); scapis elatis gracilibus nudis puberulis; racemo gracili spiciformi 10–12-floro; floribus remotis subsessilibus, bracteis minutis squamiformibus; calycis tubo primum obconico serius subcylindraco, lobis brevibus albidis; petalis (3 lineas longis) albidis erectis spathulatis integris unguiculatis; stylibus staminibusque brevibus omnino inclusis.

Montana, collected by Mr. Robert S. Williams in the Belt Mts., in July, 1882, in the Highwood Mts. in 1888, and in Lower Belt Park in 1889.

This is a slenderer plant than *H. cylindrica*, and has more entire leaves and more distant flowers than either that species or *H. bracteata* or *H. Hallii*. It has somewhat the look of a *Tellima*, to which genus I at first referred it, but as the petals are entire and the stamens uniformly five, it comes fairly within the definition of *Heuchera*, even though the ripened capsule protrudes a little beyond the lobes of the calyx. Mr. Canby informs me that he has specimens collected by himself at Nevada creek in 1883, and others from Boseman collected by Prof. Scribner, and others again from Jefferson City, Yellowstone Park and Beaver Head Co. collected by Mr. Tweedy. Mr. Canby had sent specimens to the Gray Herbarium, with the MSS. name of *Tellima pentandra*; but as the whole genus *Heuchera* is normally pentandrous, and as Mr. Williams appears to have been the earliest collector of the plant, he kindly writes that he can see no possible objection to the name here proposed. Mr. Williams resides at Great Falls, Montana, and has devoted much time to the study of the flora of the neighboring region; and it is with great pleasure that I find an opportunity of naming a Montana plant in his honor.

New Haven, Conn.



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