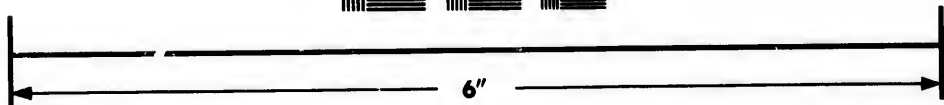
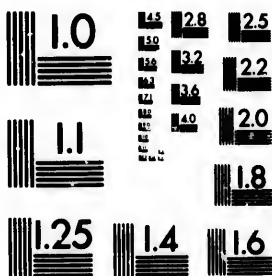


**IMAGE EVALUATION
TEST TARGET (MT-3)**



**Photographic
Sciences
Corporation**

23 WEST MAIN STREET
WEBSTER, N.Y. 14580
(716) 872-4503

1.5 1.8 2.0 2.2 2.5 2.8 3.2 3.6 4.0

**CIHM/ICMH
Microfiche
Series.**

**CIHM/ICMH
Collection de
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

1.0 1.5 1.8 2.0 2.2 2.5 2.8 3.2 3.6 4.0

© 1982

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distortion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Includes supplementary material/
Comprend du matériel supplémentaire
- Only edition available/
Seule édition disponible
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image/
Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
					✓						

The copy filmed here has been reproduced thanks to the generosity of:

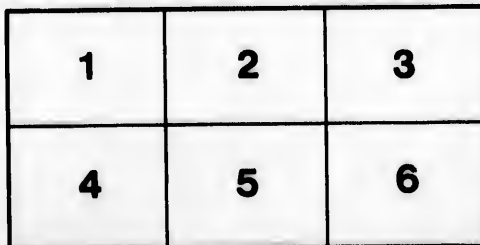
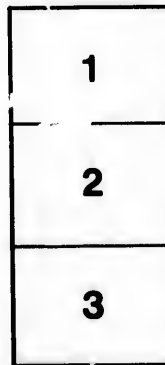
Plant Research Library
Agriculture Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol \rightarrow (meaning "CONTINUED"), or the symbol ∇ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque de recherches sur les végétaux
Agriculture Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole \rightarrow signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

ails
du
diffier
une
page

rrata
o

pelure,
n à

32X

586 P
K574n

[REPRINTED FROM OTTAWA NATURALIST.]
NEW CANADIAN MOSSES.

Described by Dr. Nils C. Kindberg, Linköping, Sweden, 1889.

(Communicated by Prof. John Macoun, M.A., F.L.S., F.R.S.C.)

Dicranum rugosum, Kindb. N. sp.

Leaves very undulate, acute, from the middle dentate at the papillose borders; cells not rarely porose, the upper short, the others long and narrow, except the hyaline alar and the pale-yellow basal ones; costa narrow, subpercurrent, dentate at the back from the middle. Barren. Allied to *D. Schraderi*.—In damp woods near Halifax, Nova Scotia (June 21st, 1883). J. Macoun, Coll.

—Var. *rugulosum*, Kindb. N. v.

Differs in the leaves, being slightly undulate, subobtuse, canaliculate; the alar cells pale brown, the costa less dentate. Capsule oblique, evidently furrowed in a dry state.—In the Big Swamp, Murray, Northumberland Co., Ont. (October 10th, 1878.) J. Macoun, Coll.

Dicranum Drummondii, Bland, v. *trachyneuron*, Kindb. N. v.

Stems shorter than type. Leaves smaller, narrower and looser, more densely and evidently serrate on the borders, subuliform-cuspidate; alar cells yellow; costa not excurrent, rough also below the middle and upwards.—Cedar swamps at the base of the Oak Hills, Hastings Co., Ont. (August, 24th, 1876.) J. Macoun, Coll.

Desmatodon cernuus, Bruch & Schimp. var. *xanthopus*, Kindb. N. var.

Leaves less chlorophyllous than the type, costa virescent. Capsule larger; teeth more united; pedicel yellow.—On the banks of Boggy Creek, Manitoba, where the "Carleton trail" crossed it (August 10th, 1872.) John Macoun, Coll.

Encalypta rhabdocarpa, Schwæger. var. *leiomitra*, Kindb. N. v.

Calyptra smooth; peristomial teeth blunt; spores larger, about 0.05 mm.; costa vanishing at the apex of the leaves.—On rocks along the Clearwater River, Athabasca, Lat. 57° (July 11th, 1888.) J. M. Macoun, Coll.

Physcomitrium strangulatum, Kindb. N. sp.

Differs from *P. pyriforme* in the leaves being shorter, obovate-lingulate, more or less acuminate, often serrate below the middle; costa longer, subpercurrent; capsule (unripe) larger, constricted under the orifice; calyptra longer; lid without a beak; pedicel flexuous or curved.—In a ditch, Port Dover, Ont. John Dearness, Coll.

Webera fontana, Kindb. N. sp.

Allied to *W. albicans*, but quite green, leaves not decurrent, more denticulate, at least to the middle. Barren.—In wet springy places at Canaan Forks, Queen's Co., New Brunswick (November, 1889). J. Moser, Coll.

Bryum pendulum, Schimp. × *cylindricum*, Kindb. N. Subsp.

Capsule narrow, cylindric-oblong; lid deplanate; spores small, scarcely 0.22 mm. long; flowers dioecious; stem-leaves ovate; costa red, short-excurrent.—On wet rocks, Kananaskis Falls, Rocky Mountains (June 23rd, 1885). J. Macoun, Coll.

Thelia compacta, Kindb. N. sp.

Stems closely creeping. Tufts green, very dense and thick. Branches erect, terete, obtuse and unilateral. Leaves cochleariform, rotundate-obtuse and short-apiculate, very scabrous at the back, with simple in-curved papilliferous ciliæ; borders spinulose-dentate or fimbriate-ciliate; ciliæ long, curved up and dentate; costa obsolete or very short. Perichetial leaves oblong-lanceolate, narrowly-acuminate, fimbriate. Capsule pale-brown, ovate-cylindrical; teeth subulate, short and broad, horizontally divaricate when moist, distantly articulate, dusky, the top article cleft; basilar membrane short, scarcely $\frac{1}{4}$ the length of the teeth, without segments; operculum conic obtuse, not curved, $\frac{1}{3}$ the length of the capsule; pedicel smooth scarcely 1 cm. long. Differs from *Thelia hirtella* in the longer branches, the larger and more pellucid leaves, the greater leaf-cells and the longer, thicker capsule, also in the peristome.—Abundant on the stems of young maples in the central counties of Ontario. Fruiting abundantly in Seymour, Northumberland Co., and forming thick girdles about four feet from the ground. John Macoun, Coll.

Leskea nervosa, Myrin, var *flagellifera*, Kindb. N. var.

Stem furnished with numerous flagelliform branchlets ; leaves small.—On trees in McKay's woods near Ottawa (Oct. 24th, 1885). J. Macoun, Coll.

Thuidium lignicola, Kindb. N. sp.

Monœcious. Tufts yellowish or bright green. Stems simply pinnate with few rhizoids and short, scarcely ramose, paraphyllia ; branches close, distichous, attenuate, flexuous or slightly recurved. Stem-leaves from the broad cordate base attenuate to a long, often curved, point, faintly striate, reflexed on the borders ; branch-leaves shorter, acuminate ; all denticulate from the middle upward and papillose at the back or on both sides ; cells obscure and rounded ; costa vanishing in or below the apex. Capsule cylindrical, arcuate and light brown ; teeth pale ; ciliæ long, perfect ; annulus double ; lid conical. Differs from *T. Blandovii* in the shorter areolations of the leaf-cells, the smaller capsule and the shorter paraphyllia.—On rotten logs along the base of the Porcupine Mountains, Manitoba (July 29th, 1881). John Macoun, Coll.

Cylindrothecium cladorrhizans (Hedw) Sulliv. Non Schimp.

This species differs from the European *Cylindrothecium Schleicheri* Bruch, & Schimp, principally in the easily detached annulus of the capsule (Demeter Revue Bryol, 1885, No. 6).—On rotten logs and on stones and roots of trees in woods ; Ontario. Common at Ottawa.

Brachythecium rivulare, Bruch Ms. × *Novæ-Brunsviciæ*, Kindb. N. Subsp.

Stem irregularly divided ; branches simple and elongate. Leaves glossy, ovate, blunt or short-acute, striate, decurrent, indistinctly denticulate above or from the middle ; cells dilatate, principally the lower and the uppermost, the alar and basilar finally orange-reddish, the alar rarely greater ; costa short and simple.—On a horse trough at Canaan Forks, Queen's Co., New Brunswick (October, 1889). J. Moser, Coll.

Brachythecium cyrtophyllum, Kindb. N. sp.

Habit of a small form of *B. albicans*. Plants caespitose, green and faintly glossy. Stems irregularly divided, not creeping ; branchlets

filiform sub-obtuse. Leaves small, close, loosely appressed when dry, open-erect when moistened, ovate-acute or short acuminate, not sulcate or decurrent, serrulate at least above the middle; borders recurved below the middle; areolation loose; upper cells narrowly rhomboidal, inner sublinear; alar quadrate somewhat numerous, chlorophyllose; costa stout reaching to $\frac{2}{3}$. Perigonal leaves ecostate. Dioecious.—On elm logs in thick woods, Brighton, Northumberland Co., Ontario (October 6th, 1888). J. Macoun, Coll.

Isothecium (?) *Dawsoni*, Kindb. N. sp.

Tufts soft, bright green, intricate. Stems slender, filiform, irregularly branching, sparingly radiculose; branchlets short, flexuous or incurved. Leaves small, spreading, loose or not crowded, ovate-oblong, cuspidate or filiform-acuminate, at the base slightly reflexed on the borders, denticulate above, pellucid but sometimes faintly papillose; most of the cells narrow-lanceolate, the basal and marginal quadrate-oblong; costa none or very short and simple. Capsule oblong, pale brown, not striate; lid obliquely short beaked; annulus large, pedicel smooth, bright red-yellow, $\frac{1}{5}$ cm. long. Dioecious. Habit of *Pylaisia velutina*.—On the base of trees in woods, Jupiter River, Anticosti (August 26th, 1883). J. Macoun, Coll.

Rhyncostegium (?) *aneuron*, Kindb. N. sp.

Tufts dense, green and glossy. Leaves distichous, crowded and patent, flat, ovate-oblong, acute or short-acuminate, striate, entire or denticulate above the middle, decurrent; cells very long and narrow, the alar large, hyaline and subquadrate; costa none or obsolete. Capsule cylindric-obovate, horizontally curved; teeth yellow; pedicel smooth, 2 cm. long; lid unknown. Probably dioecious.—This species could possibly be referred to *Plagiothecium*. On dead wood in Dow's Swamp, near Ottawa (October 17th, 1884). J. Macoun, Coll.

Amblystegium speciophyllum, Kindb. N. sp.

Plants loosely caespitose, dark green. Stems capillary, irregularly ramulose, not or sparingly radiculose. Leaves small, long-distant, spreading, subcordate or oval oblong, blunt or sub-acute, entire or denticulate; cells short; costa sub-percurrent, broad, sometimes very distinct.

Barren. Probably diœcious. Habit of *Amblystegium Sprucei*. On rocks at Canaan Forks, Queen's Co., New Brunswick (November, 1879). J. Moser, Coll.

Amblystegium tenuifolium, Kindb. N. sp.

Plants loosely coherent, green; stems capillary, irregularly ramulose. Leaves small, far apart, spreading, very narrow, ovate-lanceolate acute, often denticulate; cells dilated but elongate; costa more or less distinct. Barren. Habit of *Amblystegium Sprucei*.—On the borders of a pond near London, Ont. (June, 1889). John Dearness, Coll.

Hypnum (Harpidium) Moseri, Kindb. N. sp.

Differing from *H. uncinatum* in the leaves not being striate, but sometimes recurved at the base; costa faint, often failing; differing from all other *Harpidia* in the stem being densely radiculose.—On the base and trunks of poplar trees in woods at Canaan Forks, Queen's Co., New Brunswick (December 30th, 1889). J. Moser, Coll.

