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Notes On Iowa Mosses II

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- Cephaloziella divaricata* (Sm.) Schiffn.
Sandstone ledge, Jasper co.; Apr. 5, 1929; fr.
- Jamesoniella autumnalis* (DC.) Steph.
Rocky hillside, Marion co.; Apr. 2, 1930; fr.
- Lepidozia reptans* (L.) Dum.
Cool, shaded, rocky bank, Hardin co. ster.
- Lophocolea minor* Nees.
Moist, shady bank, Hardin, Jasper, Marion; ster.
- Plagiochila asplenoides* (L.) Dum.
Shady banks, Hardin, Marion, Jasper; ster.
- Porella platyphylloides* (Schwein.) Lindb.
Delaware co. Sept. 11, 1929; ster.
- Scapania nemorosa* (L.) Dum.
Marion co. Apr. 2, 1930; ster.
Moist sandstone.

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NOTES ON IOWA MOSSES. — II

LUCY M. CAVANAGH

The object of this paper is to note, with comments and corrections, certain published lists of Iowa mosses.

A short paper by the late Dr. Charles E. Bessey¹ is, so far as the writer is able to find, the first published list of Iowa mosses.

In order to put this list into a more usable form it is here rearranged according to the classification and nomenclature of the Grout key.² Where the names used by Grout differ from those in the Bessey list, the latter appear in parenthesis.

DR. BESSEY'S LIST

- Catharinea angustata* Brid. (*Atrichum angustatum* B. & S.)
Polytrichum commune L.
Polytrichum juniperinum Willd.
Fissidens bryoides (L.) Hedw.
Ceratodon purpureus (L.) Brid.
Dicranella varia, (Hedw.) Schimp.
Leucobryum glaucum (L.) Schimp. (*L. vulgare* Hampe)
Astomum nitidulum Schimp.
Barbula sp.
Weisia viridula (L.) Hedw.
Orthotrichum strangulatum Sulliv.
Physcomitrium turbinatum (Mx.) Brid. (*P. pyriforme* Brid.)
Physcomitrium Hookeri Hampe.
Funaria hygrometrica var. *clavescens* B. & S.

¹ Bessey, Dr. C. E. *Preliminary List of Bryophytes of the Ames Flora*. Bull. Dept. of Bot., I. A. C. Nov., 1884.

² Grout, A. J. *Mosses with Hand-lens and Microscope*, 1903.

Timmia megapolitana Hedw.
Bartramia pomiformis (L.) Hedw.
Bryum intermedium Brid.
Bryum argenteum L.
Mnium cuspidatum (L.) Leys.
Thuidium delicatulum (L.) Mitt. (*Hypnum delicatulum* L.)
Anomodon minor (P. Beauv.) Fuern. (*A. obtusifolius* B. & S.)
Anomodon rostratus (Hedw.) Schimp.
Brachythecium oxycladon (Brid.) J. & S. (*Hypnum laetum* Brid.)
Brachythecium acuminatum var. *rupincolum* Sull. & Lesq. (*Hypnum acuminatum* var. *rupincolum*)
Climacium dendroides (L.) Web. & Mohr.
Amblystegium serpens (L.) B. & S. (*Hypnum serpens* L.)
Amblystegium serpens var. *radicalis* Aust. (*Hypnum radicale* Beauv.)
Hypnum imponens Hedw.
Entodon cladorrhizans (Hedw.) C. M. (*Cylindrothecium cladorrhizans* Sch.)
Platygyrium repens (Brid.) B. & S.
Pylaisia polyantha (Schreb.) B. & S.
Pylaisia Schimperii R. & C. (*P. intricata* B. & S.)
Pylaisia intricata (Hedw.) R. & C. (*P. velutina* B. & S.)

Climacium americanum Brid., a rather common species in Iowa, does not appear in this list. *C. dendroides*, however, is included, but it is an exceedingly rare species in Iowa, and Grout³ says of it that it is "not reported from the North Central States." It therefore seems probable that the specimen to which Dr. Bessey referred was *C. americanum*. An attempt was made to verify this, but so far Dr. Bessey's specimens have not been located.

In a more recent paper⁴ a rearrangement of Dr. Savage's list of Iowa mosses⁵ was presented. This paper, however, contains certain errors and omissions, in part probably typographical errors, which are here noted.

Barbula fallax Hedw., *Platygyrium repens* (Brid.) B. & S., *Brachythecium rivulare* B. & S. and a form of *Brachythecium oxycladon* (Brid.) J. & S., which are given in Savage's list, are omitted in the later paper.

Thuidium gracile B. & S. is given as *T. virginianum* (Brid.) Lindl., which is a synonym for *T. gracile* var. *lancastriensis* S. & L.; but Savage did not have the variety, and this form should appear under the name *T. microphyllum* (Sw.) Best

Pylaisia intricata B. & S. is given as *P. intricata* (Hedw.) R. & C., apparently simply by changing the author's name. *P. intri-*

³ Grout, A. J. *Moss Flora of N. Am.*, vol. III, part I, p. 5; 1928.

⁴ Blogg, Betty. *Preliminary List of Iowa Mosses*. Proc. Ia. Acad. Sci., vol. XXXIV, pp. 125-132; dated 1927, but published in 1929.

⁵ Savage, T. E. *A preliminary List of the Mosses of Iowa*. Proc. Ia. Acad. Sci., vol. VI, pp. 154-164; 1899.

cata B. & S., as reported by Savage, should appear as *P. Schimperii* R. & C.

In this and a subsequent paper ⁷ the same author reported these species, with the exception of *Pylaisia Schimperii*, as new to the state. In the former list Dr. Savage is also credited with *Rhodobryum roseum* (Weis.) Limpr., but this species, though rather common in Iowa, is found neither in his list, nor in his collection which is deposited in the Herbarium of the State University.

In a recent paper ⁶ the writer reported *Bryhnia novae-angliae* Sull. & Lesq. as new to the state. This species appears in a paper published by Miss Blagg,⁷ which was not available at the time the writer's list was sent in because of the unfortunate delay in the publication of the Proceedings of the Academy.

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POLYEMBRYONY IN ALFALFA AND SWEET CLOVER

JOHN R. WATT AND J. N. MARTIN

In the germination tests of alfalfa seed in the spring of 1930, one seed was discovered with two embryos. They were both normal in all structures, equal in size and behaved normally in germination. Multiple embryo sacs in the ovules of alfalfa are frequent, but it has been supposed that not more than one is able to mature and function. The presence of two embryos is evidence that two embryo sacs may mature and function.

In biennial white sweet clover, one ovule was found with a normal embryo and a second structure much smaller but resembling an embryo in early stage of development. The normal embryo was about two-thirds mature with cotyledons, hypocotyl, and radicle differentiated. The second embryo-like structure was borne on well defined suspensor but no parts were differentiated. It occupied a region enclosed by a membrane which was separate from but in contact on one side with the normal embryo sac. Here we have evidence of the occurrence and functioning of more than one embryo sac in sweet clover, which, like alfalfa, is also irregular in number of embryo sacs occurring in an ovule.

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⁶ Cavanagh, Lucy M. *The Bryologist*, vol. XXXII, pp. 112-113; Nov., 1929.

⁷ Blagg, Betty. *Proc. Ia. Acad. Sci.*, vol. XXXV, pp. 113-116; dated 1928, but published nearly two years later.