PRELIMINARY NOTE ON THE SPERMATOGENESIS OF MNIUM HORNUM.—In a recent paper Arens¹ has investigated the spermatogenesis of *Polytrichum juniperinum* and *Mnium hornum* and finds that in both cases the nuclear divisions are of the normal type. In the latter plant eight (later corrected to six²) chromosomes of equal size appear at each mitosis. Drs. van Leeuwen-Reijnvaan^{3 4} have also described the spermatogenesis in several Mosses, and in all the plants examined they state that a reduction in the number of chromosomes takes place at the final division of the spermatogenetic cells. In *Mnium* sp.⁴ eight chromosomes are present, four being long and four short, and, at the last division, two long and two short chromosomes pass to each daughter-cell.

In the present investigation no such reduction has been discovered. The early divisions in the antheridium resemble the premeiotic mitoses already described in the developing archesporium,⁵ with the difference that here six chromosomes are present. During the early stages of the penultimate and of the final division a body is cut off by constriction from the nucleolus, similar to that described in the first meiotic division;⁵ this body has not been observed to pass outside the nuclear membrane as long as the latter is present. No centrosomes are found during the later stages in these or in the earlier division figures. The resting nucleus, before the final division, is of large size in relation to the cell, but possesses a small nucleolus. A continuous spireme is not present, the chromatic material first appearing in a number of small masses, and from these the chromosomes are gradually formed. Stages showing the six free chromosomes are frequently found; the latter are usually curved and intertwined, but are of approximately equal size. The metaphase is normal and is quickly passed over, the axis of the spindle usually coinciding with the long axis of the cell; there is no diagonal division. In polar views of the anaphase six chromosomes can be distinguished, and it is quite clear that no reduction has taken place. The telophase is normal, and is characterized by the presence of large vacuoles in the cytoplasm. The spermatocytes each possess a distinct wall, but the protoplasm soon contracts away from this, forming a rounded mass; a large vacuole is usually present. The nucleus is large and contains a small deeply staining nucleolus.

The development of the spermatozoid from the spermatocyte is a very complex process, and full details of this and of the preceding divisions will be given in a further communication.

M. WILSON.

ROYAL COLLEGE OF SCIENCE,
S. KENSINGTON.
Dec. 1909.

¹ Zur Spermatogenese der Laubmoose. Inaugural-Dissertation, Bonn, 1907.

² Zur Spermatogenese der Laubmoose. Ref. Bot. Centralblatt, Bd. cvii, 1908, p. 611.

³ Über eine zweifache Reduktion . . . bei einigen *Polytrichum*-Arten. Recueil des Travaux botaniques Néerlandais, iv, 1907.

⁴ Über die Spermatogenese der Moose. Ber. d. deutsch. Bot. Gesell., Bd. xxvi a, 1908, p. 301.

⁵ Wilson, M.: Spore Formation and Nuclear Division in *Mnium hornum*. Annals of Botany, xxiii, 1909, p. 141.

Wilson, Malcolm. 1910. "Preliminary note on the spermatogenesis of *Mnium hornum*." *Annals of botany* 24, 235–235.

<https://doi.org/10.1093/oxfordjournals.aob.a089260>.

View This Item Online: <https://www.biodiversitylibrary.org/item/262605>

DOI: <https://doi.org/10.1093/oxfordjournals.aob.a089260>

Permalink: <https://www.biodiversitylibrary.org/partpdf/319771>

Holding Institution

New York Botanical Garden, LuEsther T. Mertz Library

Sponsored by

BHL-SIL-FEDLINK

Copyright & Reuse

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.