

# Proceedings of the Iowa Academy of Science

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Volume 1 | Part 1, 1887-1889; (1887) -

Article 44

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1889

## The Ferns of Muscatine County, Iowa

F. M. Witter

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### Recommended Citation

Witter, F. M. (1889) "The Ferns of Muscatine County, Iowa," *Proceedings of the Iowa Academy of Science*, 1(Pt. 1), 96-97.

Available at: <https://scholarworks.uni.edu/pias/vol1/iss1/44>

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The author held that "water fleas" when coming in contact with the tentacles of *Hydræ* were seldom killed or even paralyzed for any length of time and that they often acted in the same way when touched by any unfamiliar object. The difficulty of provoking a discharge of nematocysts by mechanical stimulus was mentioned and experiments and observations on living corals related.

The author denied that the threads were projected with lightning-like rapidity, as stated by Agassiz and others.

The manner of projection was discussed at some length, and it was considered probable that it was by partial eversion.

The mechanism of these cells was touched upon as offering interesting mechanical problems not yet solved.

The nematocysts are thought to originate in the nucleus of ectodermal cells, and the author thought that several sometimes originated in one cell.

The apparent absence of nematocysts in *Gorgonilla* was announced and the systematic importance of this fact insisted upon.

(The paper was illustrated by sketches by the author.)

## THE FERNS OF MUSCATINE COUNTY, IOWA.

BY PROF. F. M. WITTER.

(Abstract.)

The following ferns have been noted or collected by me in Muscatine County. They are included in thirteen genera and twenty species:

*Adiantum pedatum*, *Aspidium achrosticoides*, *Aspidium goldianum*,\* *Aspidium thelypteris*, *Aspidium spinulosum*, *Asplenium felix-fœmina*, *Asplenium angustifolium*, *Asplenium the-*

\* The correctness of this determination is somewhat questionable.—EDITOR.

*lypteroïdes*, *Botrychium virginicum*, *Camptosorus rhizophyllus*,  
*Cystopteris bulbifera*, *Cystopteris fragilis*, *Onoclea sensibilis*,  
*Osmunda claytoniana*, *Osmunda cinnamomea*, *Phegopteris*  
*hexagonoptera*, *Polypodium vulgare*, *Pteris aquilina*, *Pellaea*  
*atropurpurea*, *Woodsia obtusa*.

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## PEARL BEARING UNIOS.

BY PROF. F. M. WITTER.

(No Abstract.)

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## NOTES ON A FOSSIL WOOD FROM THE KEOKUK LIMESTONE, KEOKUK, IOWA.

BY PROF. C. H. GORDON.

(Abstract.)

Some years since a portion of supposed fossil wood was obtained from an eighteen inch limestone layer about six or eight feet below the Geode bed. It was secured by Mr. S. J. Wallace and placed in the rooms of the Keokuk Library Association. A brief mention was made of it in a letter to the editors of the *American Journal of Science and Arts*, as noted in the May issue of 1878.

It consists of a "section about three feet long, one end of which disappears in the bank and the other apparently taken off in quarrying years before. It is flattened into a thin coaly layer one-sixteenth to one-sixth of an inch thick and twelve inches across, and seems to be separated by pressure into two parts apparently not quite on the same plane." The flattened layer of carbonaceous matter has largely disappeared though enough remains to show its nature, and the cast of the woody fiber in the limestone is well marked.

At one place a leaf scar is quite clearly defined and at others small transverse ridges probably due to pressure. It