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Fossil Plants From Cave Deposits Near Pella, Marion County, Iowa¹

M. D. HUFFMAN AND CHARLES HENKEL²

Abstract. An abundance of plant fossils from the Pennsylvanian period was found in sandstone caves near the Des Moines River in Marion County, Iowa, south of Pella. Fourteen species are listed in this preliminary report.

Fossil flora in Iowa have been described to some extent in earlier publications (1,2), but in comparison with other states, this remains largely an unworked field. The rich variety and excellent condition of some of this material was evident in many of the first collections.

In October, 1960, several sandstone caves were located in a wooded area along the Des Moines River near Pella, Marion County, Iowa. These caves have been formed by the action of drainage water upon the soft coal and shale layers of the formation, and the size of the caves is quite variable. Those from which the first collections were made average about 2 feet from floor to ceiling, may range to 30 feet in width and extend for as much as 100 feet in length. Students investigating the caves discovered many impressions and mummifications of plants on the ceilings of the caves, and collections examined in the laboratory revealed a variety of forms, mostly in excellent condition for identification. Even though several collections have been made from other sites in the area, the forms reported here represent only specimens from the initial cave site. Fossils from four orders are represented, and only a few representative species are included in this report.

LYCOPODIALES

Lepidodendreae

- Lepidodendron loricatum* Aber
- Lepidodendron obovatum* Sternberg
- Lepidodendron rimosum* Sternberg, Figure 1, A
- Lepidophloios laricinus* Sternberg, Figure 1, C
- Sigillaria brari* Brongniart, Figure 1-E
- Sigillaria mammillaris* Brongniart, Figure 1-B
- Stigmara ficoides* Sternberg

EQUISETALES

Calamariaeae

- Annularia galioides* Lindley & Hutton, Figure 1-F
- Annularia radiata* Brongniart
- Calamites cisti* Brongniart
- Calamites ramosus* Artis

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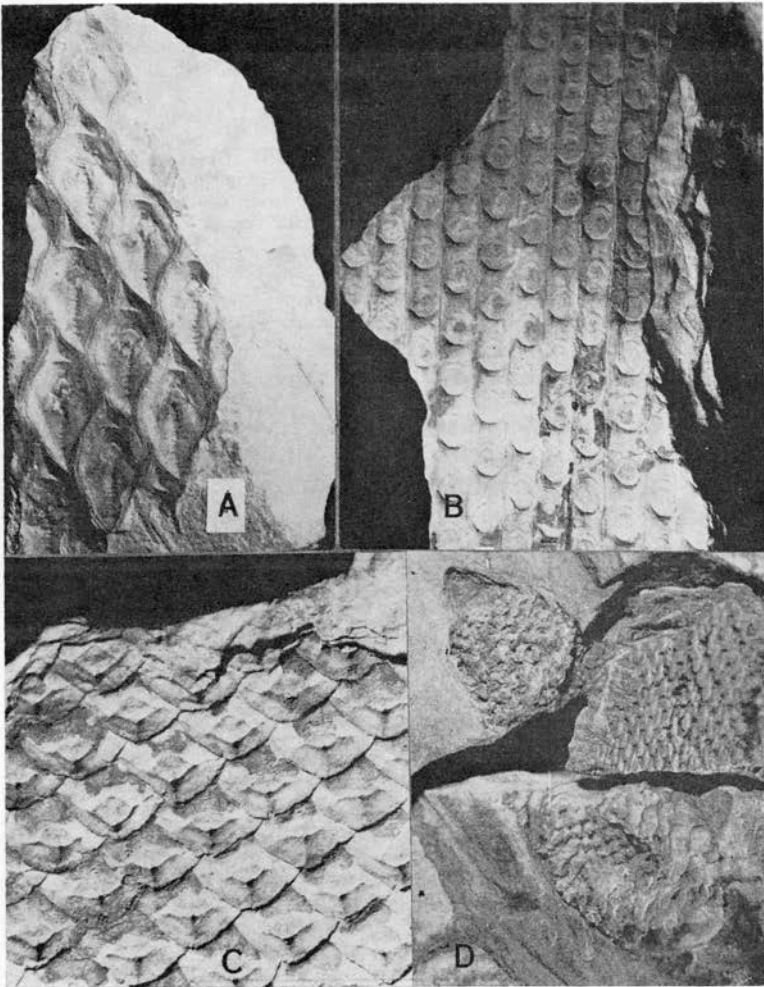


Figure 1. A, *Lepidodendron rimosum* Sternberg; B, *Sigillaria mammillaris* Brongniart; C, *Lepidophloios laricinus* Sternberg; D, Lepidodendroid cones; E, *Sigillaria brardi* Brongniart; F, *Annularia galioides* Lindley & Hutton; G, *Sphenophyllum majus* Bronn; H, *Mariopteris decipiens* Lesquereux.

SPHENOPHYLLALES

Sphenophylleae

Sphenophyllum majus Bronn, Figure 1-G

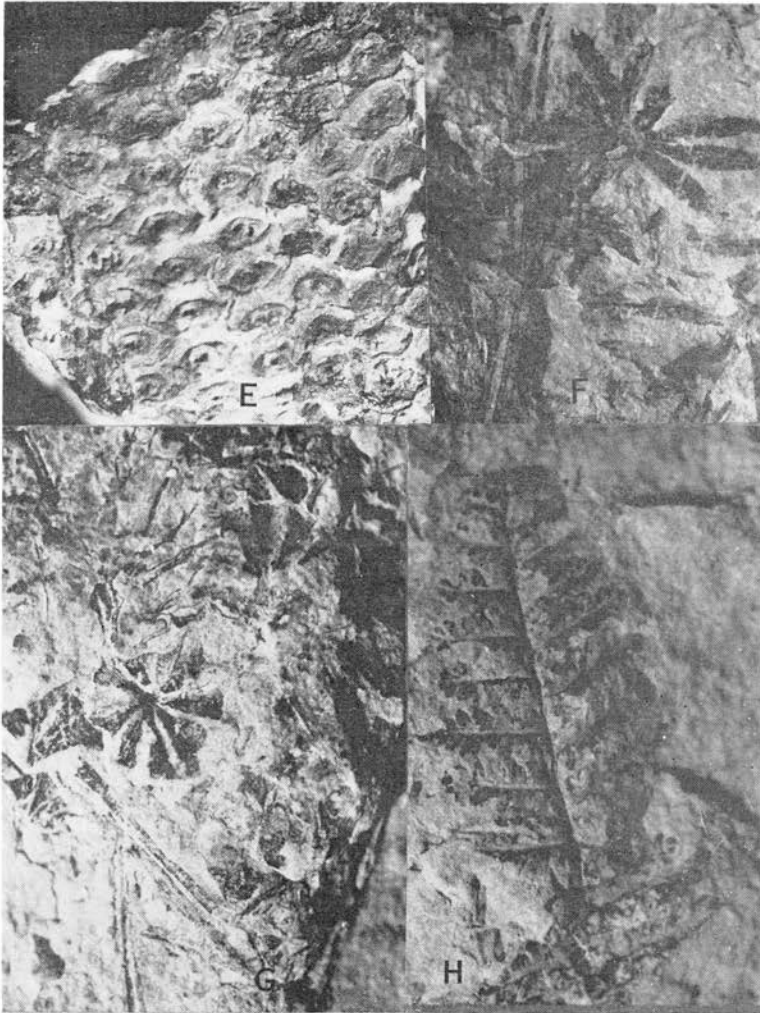
FILICALES

Mariopterideae

Mariopteris decipiens Lesquereux, Figure 1-H

Neuropterideae

Neuropteris flexuosa Sternberg



ADDENDUM

It has been learned subsequent to the writing of this article that the "caves" referred to actually represent former hand-operated coal mines with some additional erosion by water.

Literature Cited

1. Wilson, L. R., and A. T. Cross. 1939. Fossil plants of a Des Moines sandstone cave deposit near Robins, Linn County, Iowa. *Proc. Iowa Acad. Sci.* 46: 225-226.
2. Wilson, L. R., and Iola Tillapaugh. 1941. Observations on the leaves of arborescent lycopods from the Pennsylvanian rocks of Iowa. (Abstr.) *Proc. Iowa Acad.* 48: 148, 149.