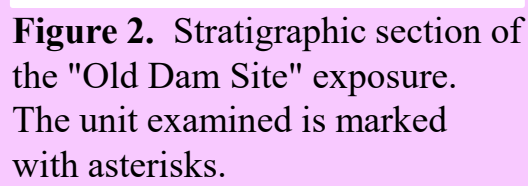
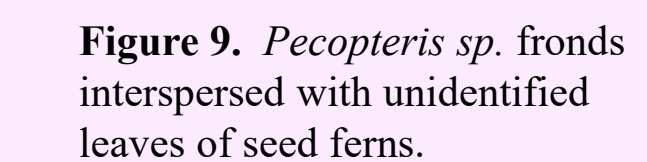


## Discussion

## Sample Comparison: Cut-off versus Rush Creek Localities

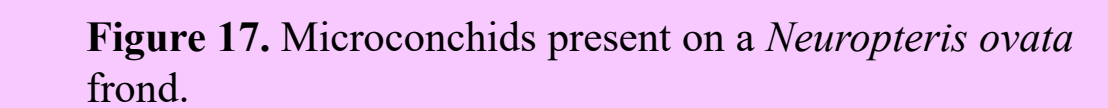


**Figure 4.** Diagram of an idealized cyclothem with typical stratigraphic units subdivided into three depositional phases: Marine, Transitional, and Terrestrial. These phases may be correlated to climatic trends, seasonal variations, and associated flora. Figure modified from DiMichele (2014).



**Figure 15.** *Pecopteris* sp. fronds on top of an unidentified medullosan.

<i>Calamites</i>	<i>Mariopteris</i>	<i>Laveinopteris</i>	<i>Eusphenopteris</i>	<i>Reticulopteris</i>	<i>Alethopteris</i>	<i>Odontopteris</i>	<i>Trigonocarpus</i>
<i>Calamites</i> sp.	<i>M. anthraxis</i>	<i>L. rarivensis</i>	<i>Eusphenopteris obtusiloba</i>	<i>Reticulopteris munsteri</i>	<i>Alethopteris lesquereuxi</i>	<i>Odontopteris aequalis</i>	<i>Trigonocarpus</i> sp.



Microconchida is an Order of small, spirally-coiled, encrusting fossil "worm" tubes classified into the Tentaculitida Class, spanning the Upper Ordovician to the Middle Jurassic. The characteristic tubes of microconchids are present on several *Neuropteris* specimens examined from the collections at the WMI but are absent on specimens collected from the Cut-off. The timing and association of the microconchids is difficult to discern, as they may have colonized on the plants following deposition, or may have been transported and deposited with the plant fossils. Seed ferns are dominant along channel margins, which may be due to high nutrient saturation or floating seed dispersal (Bashforth et al, 2014). This means the plants could have been growing in standing water,

- The dominant vegetation of the Pennsylvanian changed from wetland flora to dryland flora as the climate became more arid.
- Fossil plant remains show that wet-loving plants began to disappear as they were unable to adapt to the changing climate and landscape of the Late Pennsylvanian.
- Samples from the unnamed shale unit of the Bond Formation and from the Rush Creek locality in the collections at the Working Men's Institute in New Harmony indicate that these two sites both occur stratigraphically in the Bond Formation.
- Although the Rush Creek Site is now inaccessible, the nearby Cut-off (Old Dam Site), which contains the stratigraphically equivalent shale, provides access to an important Late Pennsylvanian fossil locality.
- Additional work is planned in the area near New Harmony, Indiana to examine the abundant plant fossils present in the area and the paleoclimatic implications of the Rush Creek/Cut-off assemblages.

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