Antediluvian Phytology

Illustrated by
A Collection of the
Fossil Remains of Plants,
Peculiar to the Coal Formation
of
Mazon Creek.

By JACK M. WITTRY
The Study of Plants from Before the Flood

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FOSSIL REMAINS OF PLANTS,

PECULIAR TO THE COAL FORMATIONS

OF

GREAT BRITAIN.

By EDMUND TYRELL ARTIS, F.S.A. F.G.S.

London:

PRINTED FOR THE AUTHOR;

AND PUBLISHED BY J. CUMBERLAND, 19, LUDGATE-HILL; BODWELL AND MARTIN, 40, NEW BOND STREET;

W. PHILLIPS, GEORGE YARD, LOMBARD STREET; TAYLOR, WATERLOO PLACE, PALL MALL;

NISSEY, FLEET STREET; AND NICHOLS AND SON, PARLIAMENT STREET.

1825.
WHAT CAN BE LEARNED FROM THE MAZON CREEK FLORA?

• CLIMATE CONDITIONS
• CLUES TO THE FOSSIL FORMING EVENT
• THE RELATIVE AGE OF THE EVENT
Mazon Creek Area
Mazon Creek Factoids

307 MYA
Days— 22 Hours Long
Year—398 Days Long
30% Oxygen vs 21% Today

Charcoal, Fusian or Fusinite
Algae and Progymnosperms

- Pteridosperms
- Lycopods*
- Tree ferns
- Cordaites**
- Sphenopsids
Non-Vascular Plants, Algae

*Taeniophyllum latifolium*

*Thallites dichopleurus*
Lycopsids
Arboreal Lycopsid Genera
Giant Club Mosses

- *Sigillaria*
- *Lepidodendron*
- *Asolanus*
- *Lepidophloios*
- *Omphalophloios*
Arboreal Lycopsid Genera

- Roots—*Stigmaria*
- Cones—*Lepidostrobus, Sigillariostrobus*
- Outer Bark—Same as for entire plant
- Inner Barks—*Knorria, Aspidiopsis*
- Leaves—*Cyperites*, (Previously called *Lepidophyllum*—a flowering plant—and *Lepidophylloides* which included fertile cone bracts)
Lepidophloios protherans  Asolanus camptotaenia
Lepidodendron

L. rimosum

L. aculeatum

L. worthenii
Lycopsid Diminutive and Herbaceous Forms

- Chaloneriaceae
- *Lycopodites*
Chaloneriaceae

Cormophyton mazonensis

Polysporia mirabilis  Lepidocystis sp.
Lycopodites

Lycopodites meeki

Lycopodites pendulus
After the Flood…

Lycopodium
Sphenopsids
Horsetails

(a) Tree diagram with labeled nodes
(b) Detailed view of horsetails
(c) Cross-section of horsetails
(d) Root system
(e) Homosporous cones
Sphenopsid Genera

- Roots—*Pinnularia, Myriophyllites*
- Cones—*Calamostachys, Palaeostachya, Bowmanites, Macrostachyia*
- Trunks—*Calamites*
- Foliage—*Annularia, Asterophyllites, Sphenophyllum and Equisetites*
Calamites

C. suckowi

C. cisti

C. goepperti
Asterophyllites

A. equisetiformis

A. longifolius

“dubium”
Annularia

A. sphenophylloides

A. stellata

A. radiata
Sphenophyllum and Equisetites

S. emarginatum

E. zeaeformis
After the Flood…

_Equisetum_
True Ferns
Marattialean Tree Fern Genera

- Foliage—*Lobatopteris, Acitheca and Pecopteris*
- Trunk—*Psaronius*
- Decorticated trunk—*Stigmariodes*
- Branch scars—*Caulopteris, Artisophyton, Megaphyton*
- Fertile structures—*Kankakeea*
- Roots—No name given
- Abortive pinnae—*Aphlebia*
- Immature pinnae—*Spiropteris*
Pecopteris subcrenulata

Lobatopteris sp.

Pecopteris unita

Acitheca polymorpha
Stigmariodes

Psaronius and Caulopteris
Shrub-like Fern Genera

- Foliage—*Alloiopteris, Nemejcopteris, Oligocarpia, Stellatheca* and *Myriotheca*
Alloiopteris winslovii  Nemejcopteris feminaeformis

Oligocarpia gutbieri
Myriotheca scaberrima

Stellathecata ornata
After the Flood…

Cyathea intermedia
Seed Ferns
Pteridosperms
Medullosan Seed Fern Genera

- Foliage—*Alethopteris*, *Callipteridium*, *Odontopteris*, *Neuropteris*, *Laveineopteris*, *Macroneuropteris*, *Cyclopteris*, *Linopteris* and *Reticulopteris*
- Pollen organs—*Dolerotheca*, *Schopfitheca* and *Codonotheca*
- Seeds—*Trigonocarpus*
Callipteridium neuropteroideis

Alethopteris serli

Odontopteris aequalis

Callipteridium neuropteroideis
Neuropteris ovata

Laveineopteris rarinervis
Linopteris neuropteroides

Macroneuropteris scheuchzeri

Cyclopteris Trichomanoides
Reticulopteris munsteri
Conodonotheca caduca

Dolerotheca sp.

Schopfitheca boulayoides

Trignocarpus

Condonotheca caduca
Shrub-like Seed Fern Genera

- Foliage—*Eremopteris, Eusphenopteris Mariopteris, Pseudomariopteris* and *? Pecopteris fontainei* - *Crossotheca sagittata*
Eremopteris missouriensis

Mariopteris nervosa

Eusphenopteris obtusiloba
Pecopteris fontainei

Crossotheca sagittata
Cordaites
Cordaites Genera

- Foliage—*Cordaites*
- Trunk pith casts—*Artisia*
- Pollen and seed cones—*Cordaianthus*
- Seed—*Samaropsis*
Cordaites

Artisia

Cordaianthus

Samaropsis
Progymnosperms
Progymnosperm Genera

- Cones—*Noeggerathia aestrobus*
Noeggerathia aestrobus sp.
Conclusion

- Confirmed plant species types; 2 Algae, ≥11 Lycopsids, ≥10 Sphenopsids, ≥25 True Ferns, ≥35 Seed Ferns, 1 Cordaite, 1 Progymnosperm, ≥ 5 incertae sedis foliage Grand Total = at least 90 plant species.

- Certain plant biases are evidence to a short, one time flooding event. Likely no more then several weeks. Making Mazon Creek a snapshot in time of mostly transported flora.