Menefee Formation - Cretaceous conifer woods from the San Juan Basin in NW New Mexico
Introduction

• Collected
  – Specimen 0711 – May 3\textsuperscript{rd}, 2007
  – Specimen 0717 #2 – May 6\textsuperscript{th}, 2007

• Where?
  – NW New Mexico in the San Juan Basin
  – From the Menefee Formation
  – Early Campanian period of the Cretaceous age
Materials & Methods

• Wood was cut into three faces
  – Transverse, Radial, and Tangential
• Carborundum was used
• Peels were made
• Peels were mounted onto slides
  – Cut out
  – Rinsed in distilled water and xylene
  – Permount was used to mount them
  – Covered using more permount
Results – Specimen 0711

- Growth Rings – indistinguishable
  - Does however show some signs of growth interruptions
- Tracheids – RD: 37.5 | TD: 30.5
  - Uniseriate abietinean pitting
- Axial Parenchyma – pretty rare
  - Some with colored content
  - Resin ducts present (small in size)
Results – Specimen 0711

- Rays – Uniseriate to Multiseriate
  - Uniseriate for the majority of its length
  - Ray height – average of 6 to 8 cells
    - Some larger, in the 20’s
  - Terminal walls smooth and unpitted

- Simple cross-field pitting
  - Uniseriate
  - 1-2 pits per cross-field
Results – Specimen 0711

Tracheids - XS
100x plus zoom

Pitting - RLS
400x plus zoom
Results – Specimen 0711

Resin Duct - RLS
400x plus zoom

Ray Cell - TLS
100x plus zoom
Results – Specimen 0711

Cross-field Pitting - RLS 400x plus zoom

Cross-field Pitting - RLS 400x plus zoom
Results – Specimen 0717 #2

• **Growth Rings** – indistinguishable
  – Does however show some signs of growth interruptions

• **Tracheids** – RD: 33.5 | TD: 46.5
  – Uniseriate araucarian pitting

• **Axial Parenchyma** – highly abundant
  – No distinct orientation
  – Lacks resin ducts
Results – Specimen 0717 #2

• Rays – Uniseriate to Multiseriate
  – Uniseriate for the majority of its length
  – Ray height – average of 6 to 8 cells
    • Some larger, in the 20’s
  – Terminal walls smooth and unpitted

• Cross-field pitting not observed
  – SEM
Results – Specimen 0717 #2

- **Tracheids** - XS, 100x plus zoom
- **Ray Cell** - TLS, 400x plus zoom
Results – Specimen 0717 #2

Axial Parenchyma - RLS
100x plus zoom

Axial Parenchyma - RLS
400x plus zoom
Results – Specimen 0717 #2

Pitting – RLS
400x plus zoom
Discussion – Specimen 0711

- I have found characteristics of specimen 0711 to be very close in relation to those of Cupressinoxylon. However, there is suspicion as to the type of cross-field pitting present in the specimen, which leads me to question such identification of the species. A closer look at the cross-field pitting present in the specimen would require SEM images. Such images would be key in confirming identification as Cupressinoxylon, or any other type of wood.
Discussion – Specimen 0717 #2

• Using the key provided in the paper written by Philippe and Bamford, I was able to narrow this species down to a specific group containing araucarian pitting. However, further investigation will be necessary to identify the exact species. I was not able to observe any cross-field pitting in the lab, however this doesn’t mean that it isn’t there. SEM images will again be necessary in identifying cross-field pitting, which will aid in identifying the species.
References

• Phillipe, Marc, Bamford, Marion K., 2008. A key to morphogenera used for mesozoic confier-like woods. Review of Palaeobotany and Palynology 184-207
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