Lab 6
Brachiopods and trilobites

Brachiopoda

Classification

Phylum Brachiopoda (Cambrian to recent)

Class Inarticulata (Cambrian to recent)
- Shell articulation usually absent
- Shells of apatite, calcite or aragonite

Order Lingulida (Cambrian to recent)
- Valves binconvex and circular, triangular, or elongate
- Beaks marginal
- Pedicle groove
- Shell of calcium phosphate and chitin

Class Articulata (Cambrian to recent)
- Articulated shell with ventral teeth and dorsal sockets
- Muscle scars near midline of valve
- Shells of calcite

Order Orthida (Cambrian to Permian)
- Simple shells
- Strong hinge-line
- Mildly convex valves
- Pedicle foramen
- Often with fine radial ridges

Order Strophomenida (Ordovician to Triassic)
- Distinctive appearance
- Usually have concave dorsal valve which creates saucer-like or cup-like appearance

Order Pentamerida (Cambrian to Devonian)
- Usually with strongly convex shells
- Often smooth externally
- Conspicuous internal platforms for muscle scars

Order Rhynchonellida (Ordovician to recent)
Strongly convex shells
No apparent hinge-line on posterior margin
Usually lack internal platforms for muscle scars
Usually have strong radial ridges

Order **Atrypida** (Ordovician to Devonian)
Similar to rhychonellides but with a complex, spirally coiled brachidium

Order **Spiriferida** (Ordovician to Jurassic)
Broad hinge-line
Spiraled brachidium

Order **Terebratulida** (Carboniferous to recent)
Similar externally to atrypides
Brachidium less complex than atrypides

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**Trilobita**

Phylum **Arthropoda** (Cambrian to recent)

Class **Trilobita** (Cambrian to Permian)
Arthropods with cephalon, thorax, and pygidium
Prominent elevation lengthwise along middle of back that produces three-lobed appearance

Order **Polymerida**
Small to large size
Variable sized pygidium
Five or more thoracic segments
Pygidium often segmented

Order **Agnostida**
Small
Eyeless
Two thoracic segments
**Assignment**

1. **Brachiopoda.**

<table>
<thead>
<tr>
<th>Genus</th>
<th>Hinge-line widest point of shell?</th>
<th>Fold and sulcus well developed?</th>
<th>Pedicle opening present?</th>
<th>Order</th>
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2. **Trilobita.**

<table>
<thead>
<tr>
<th>Specimen</th>
<th>Number of segments</th>
<th>Pre-glabellar field?</th>
<th>Pygidium small, medium, or large?</th>
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