

Inter-relationship or Affinity of Order- Pteridospermales with Cycadophytes

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The **order Pteridospermales** came into existence during the **Upper Devonian** and reached the climax in the **Mesozoic era**. It occupies an intermediate position between the **fern** and the **cycadophytes** because the plants of this group bore **fern-like foliage** but also bore seeds that were unprotected that is characteristic of **gymnosperm**.

The pteridospermales and Cycadales resemble each other in the following respects:-

1. The stems are aerial and bear pinnate compound leaves.
2. The leaf traces are mesarch and arise mostly by tangential division.
3. The leaf traces in Medullosaceae and Cycadales are multiple.
4. Both are heterosporous.
5. The gametophyte are endosporic and reduces
6. The male gametes are multiciliate.
7. The ovule has a single integument that is distinguished in three layers.
8. Presence of pollen chamber.
9. The female sex organs are archegonia.
10. The leaf vernation is circinate.
11. The sporangia lack annulus.
12. The xylem and phloem are similar.
13. The megaspore has a thick wall.

The Pteridisperms and the Cycadophytes have close affinities and it is believed that Cycadophytes of Mesozoic was probably derived from the Pteridosperm.