

Lyginopteris

Systematic Position of Lyginopteris:

Gymnosperms

Class. Cycadopsida

Order. Pteridospermales

Family. Lyginopteridaceae

Genus. Lyginopteris

(Calymatotheca)

The genus Lyginopteris also known as Lyginodendron.

Features of Lyginopteris:

1. Morphological Features:

The stem Lyginopteris was slender and covered with large scaly leaves. Near the base of the plant adventitious roots developed. The plant seems to have been a climber.

Lyginopteris oldhamia also known as Calymatotheca hoeninghausi was described in detail by Williamson, Scott, Brongniart, Binney, Potonie, and Oliver and Scott. It was found abundantly in the coal ball horizon of Lancashire and Yorkshire.

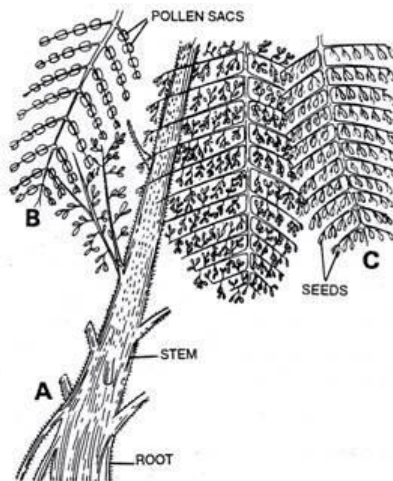


Fig. 2.2. *Lyginopteris oldhamia*. Restoration showing external characters. The frond on the left bears the pollen sacs on peltate leaflets (*Crossotheca*); that on the right bears seeds. Stem and roots also present.

2. Anatomical Features:

The Primary structure was an ectophloic siphonostele with large pith round a number of primary mesarch bundles. Older plants showed normal secondary growth. In some specimens, however, the xylem portion of primary vascular bundles was in a continuous ring. In some there was an abnormal type of secondary growth.

This abnormality was of two forms, either there was an inner ring of secondary phloem developed or it was that the cambium appeared in strips found separately in vascular bundles giving rise to a polystelic appearance.

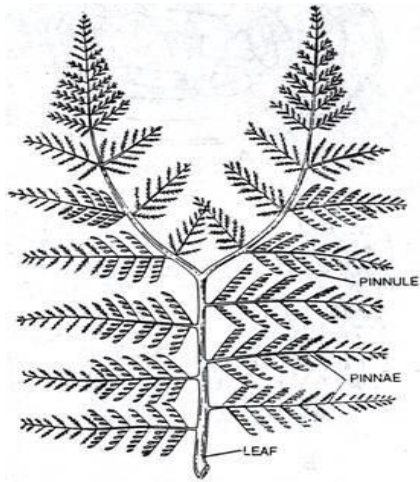


Fig. 2.3. *Lyginopteris oldhamia*. A frond.

Reproductive Structure of Lyginopteris:

Some of these Palaeozoic leaves bore microsporangia on them. The fertile pinnules were more or less peltate in form and on their underside they bore usually six sporangia. These sporangia are usually bilocular. Such a type has been described as *Crossotheca* type.

The microspores seem to have formed a male prothallus. The sperms seem to have been of like those of present-day cycads.

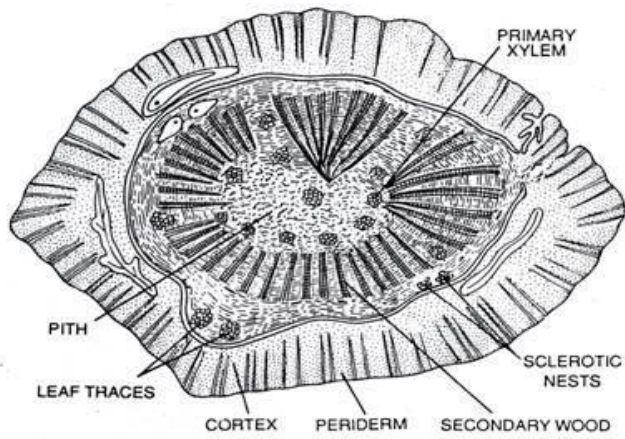


Fig. 2.4. *Lyginopteris oldhamia*. T.S. of the stem showing well-developed secondary wood and leaf traces.

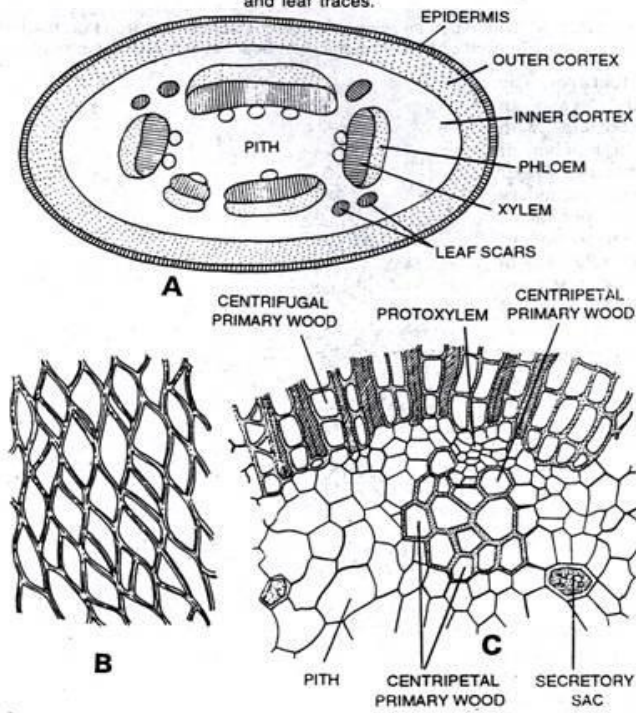


Fig. 2.5. *Lyginopteris oldhamia*. A. T.S. primary stem; B, outer cortex showing fibrous strands as they appear in L.S.; C, primary vascular bundle showing details.