Pentoxylales

Stem –*Pentoxylon sahnii*

Leaf-*Nipaniophyllum sahnii*

Male fructification-*Sahnia nipaniensis*

Female-Carnoconites compactus

Pentoxyleae

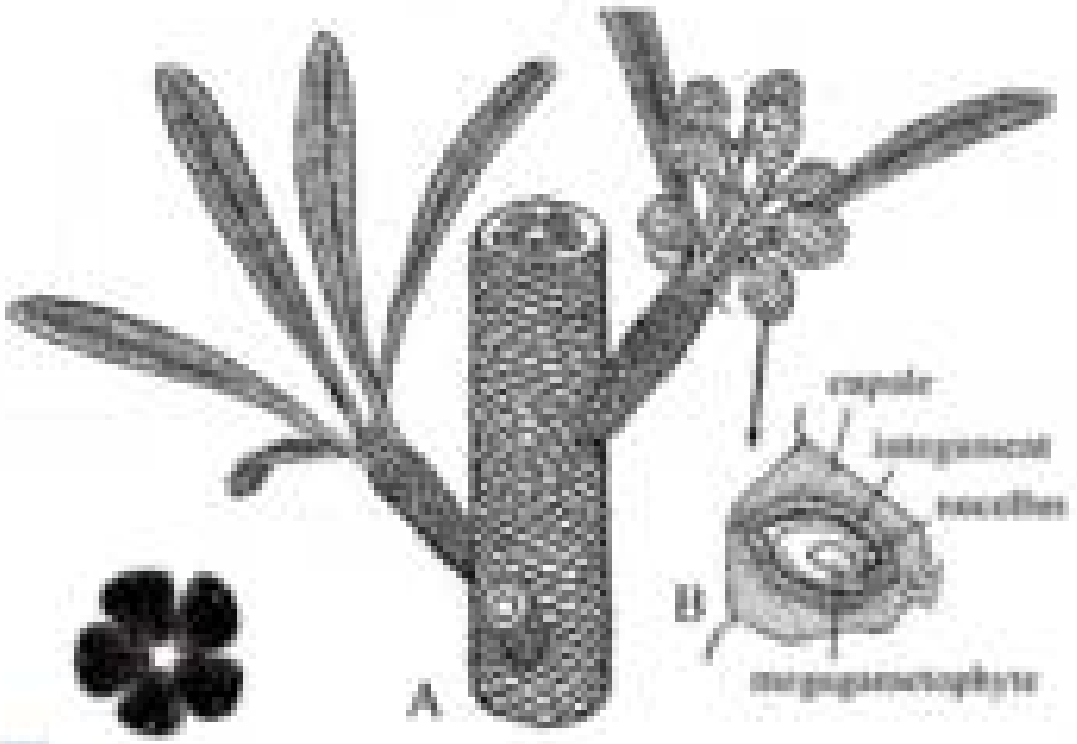
- This unique group of Gymnosperms appeared in the Rajmahal flora was erected by Prof Birbal sahni in 1948
- Sir B.P. Srivastav in 1946 reported a petrified stem which he named as *Pentoxylon sahnii.*
- Much of the information of this ***unique group*** was made available *by* Birbal sahni, B.P. Srivastav, Vishnu mittre, A.R.Rao,M.N.Bose,and B.D.Sharma

Pentoxylalis

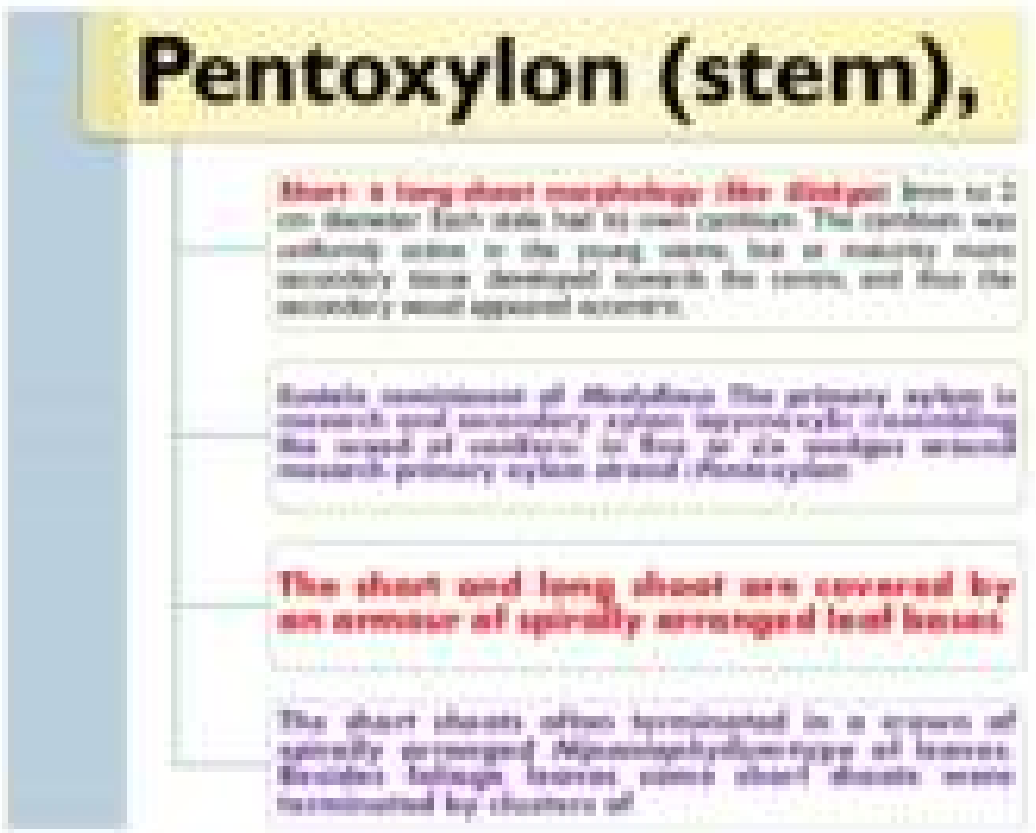
- Habit : small trees or shrubs that possessed long and short shoots.
- Stem : called Pentoxylon because it frequently showed five segments of triangular vascular tissue arranged in a ring around a central ground tissue. The primary xylem is mesarch and secondary xylem is pycnoxylic (resembling the wood of conifers). The short and long shoot are covered by an armour of spirally arranged leaf bases. The short shoots often terminated in a crown of spirally arranged Nipaniophyllum-type of leaves. Besides foliage leaves some short shoots were terminated by clusters of ovulate cones or pollen organs.

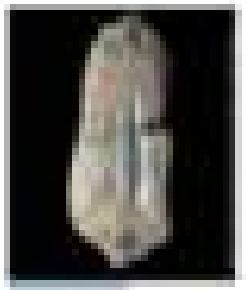
Discovery of Pentoxylales:

This group has been discovered and named as **"Pentoxyleae"** by well-known Indian Palaeobotanist Professor Birbal Sahni (1948). This is a group of some fossil plants described from Rajmahal Hills in Amrapara District (Santhal Parganas) of Eastern Bihar (India) revealing their existence in Jurassic Period.

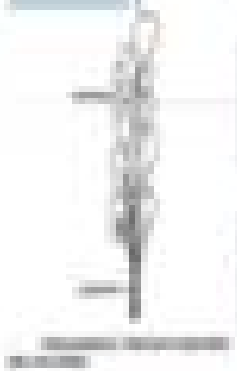

A
B
nucelles

Pentoxylon (stem).





Sahnia (male flower Sahnia nipaniensis)

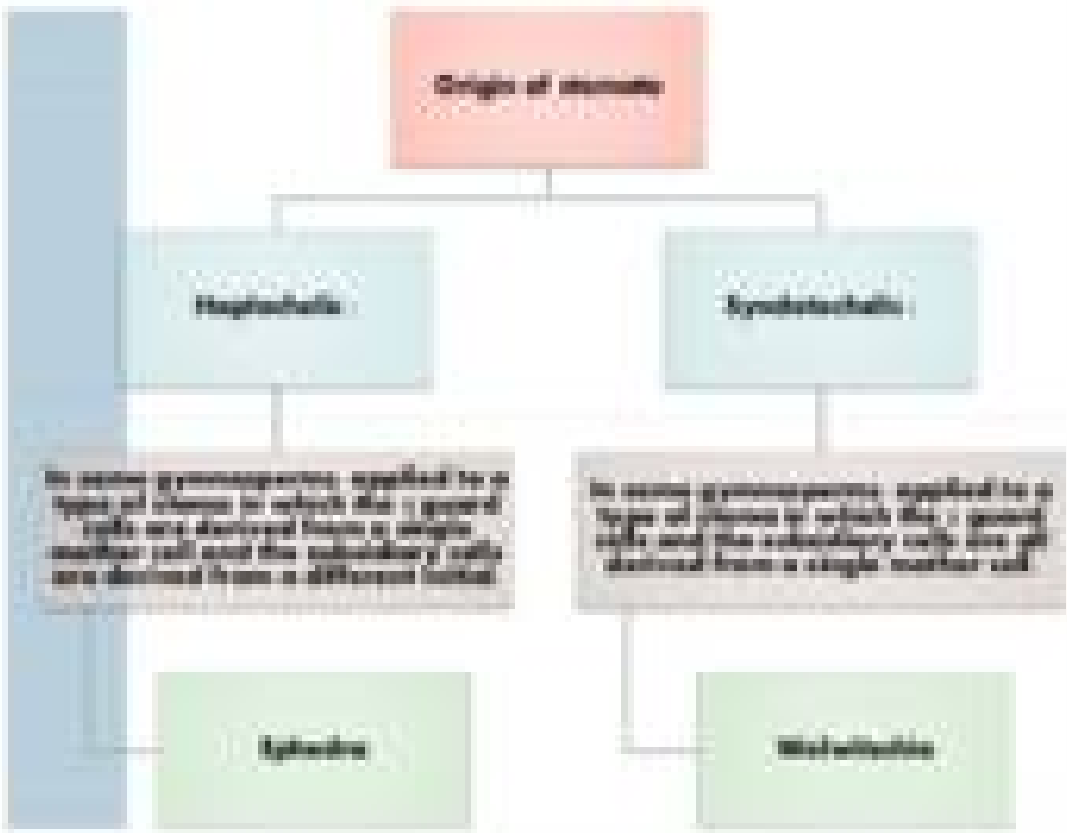


Carnoconites (female cone)
C. compactum and C. laxum

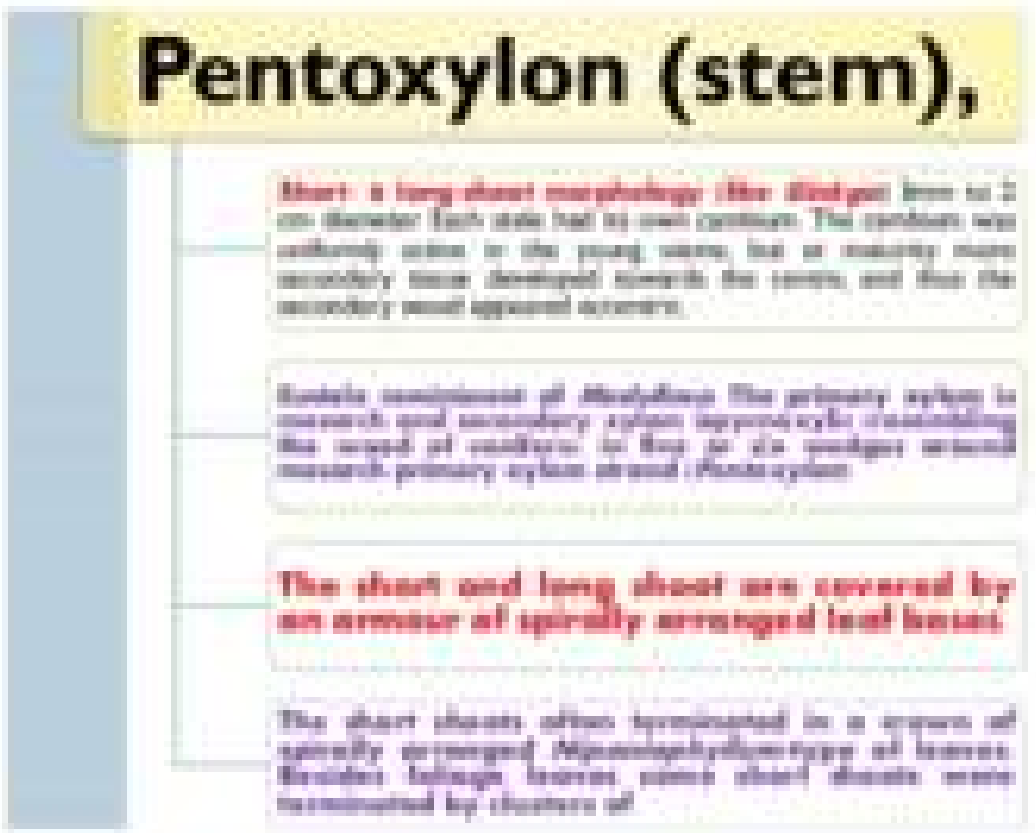
Ovules aggregated into strobili They were mostly ovoid and attained a length of about 1.8 cm in *Carnoconites compactum* and 1 cm in *C. laxum*. They were, however, narrower in *C. laxum*. Attached to short stouts (dimension) (maybe less specialised to be connected to angiosperms)

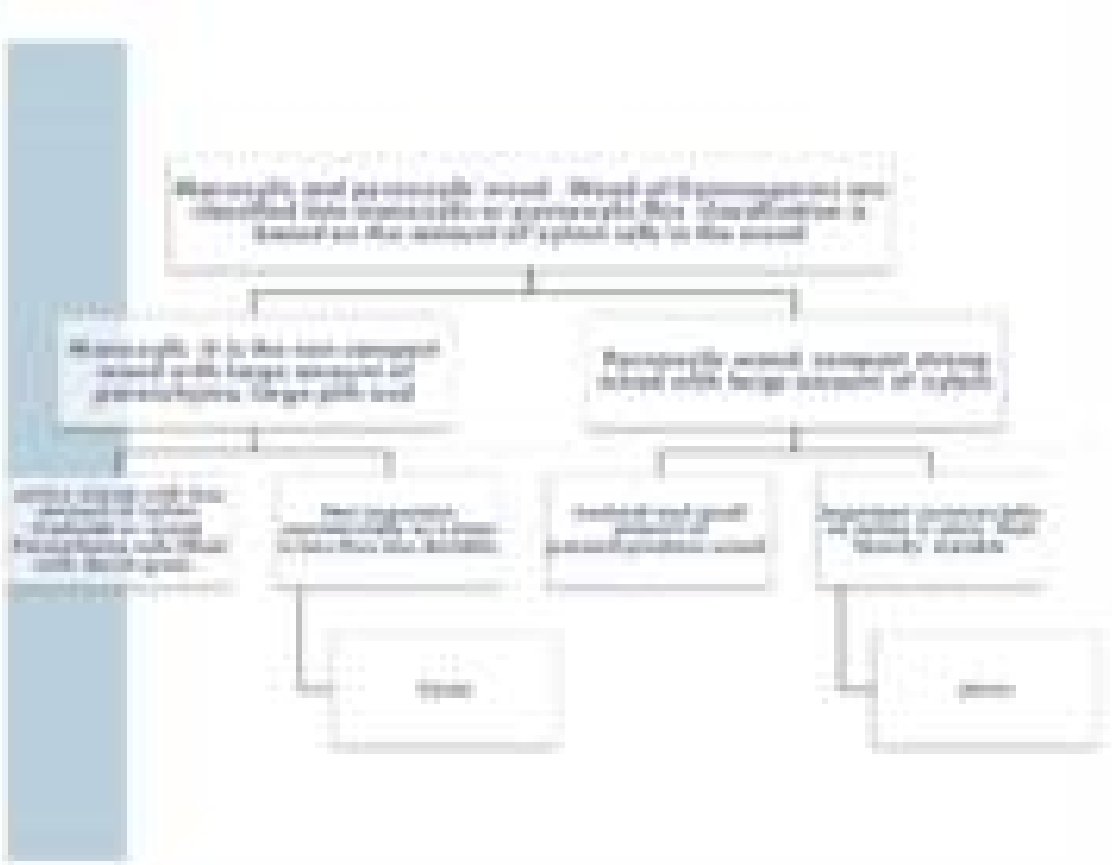
Many (50 ovoids ovules were attached on the megastrobili and these were on short vertical scales. Any sporophyll-like structure was also not reported in some of these fossils. Sahni (1948) used the word cone for these structures. The ovules were covered by a single integument. The nucellus was free from the integument/ovules almost completely surrounded by cupule

Integument has inner sclerenchymatised layer and fleshy outer layer



Pentoxylon (stem).





Affinities of Pentoxylon