

Topic: Taxus ; Reproduction  
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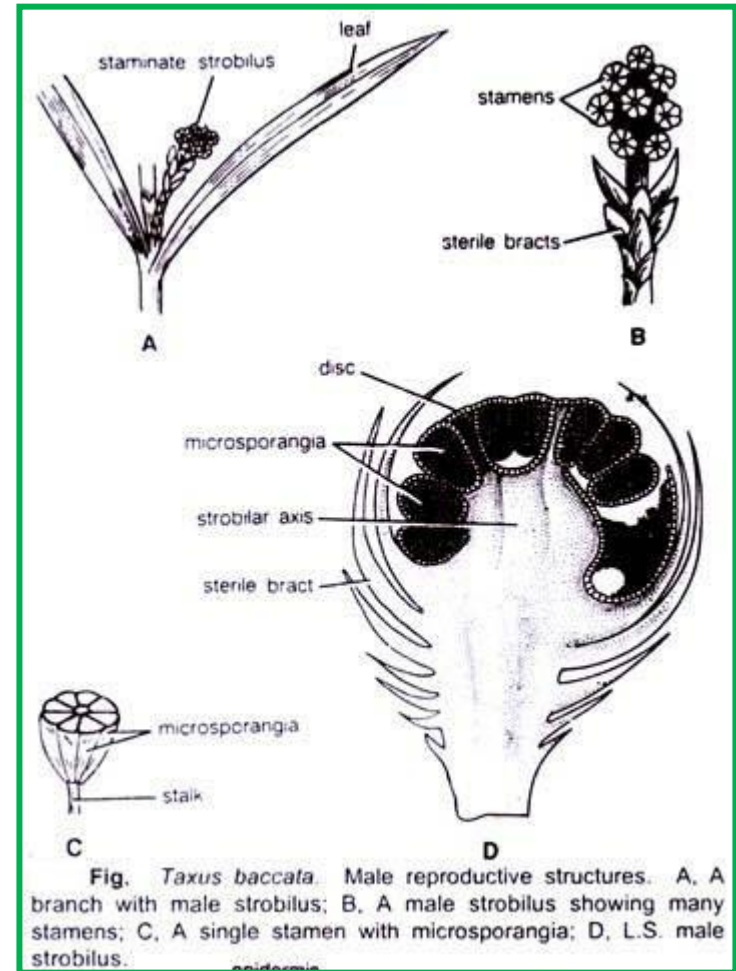
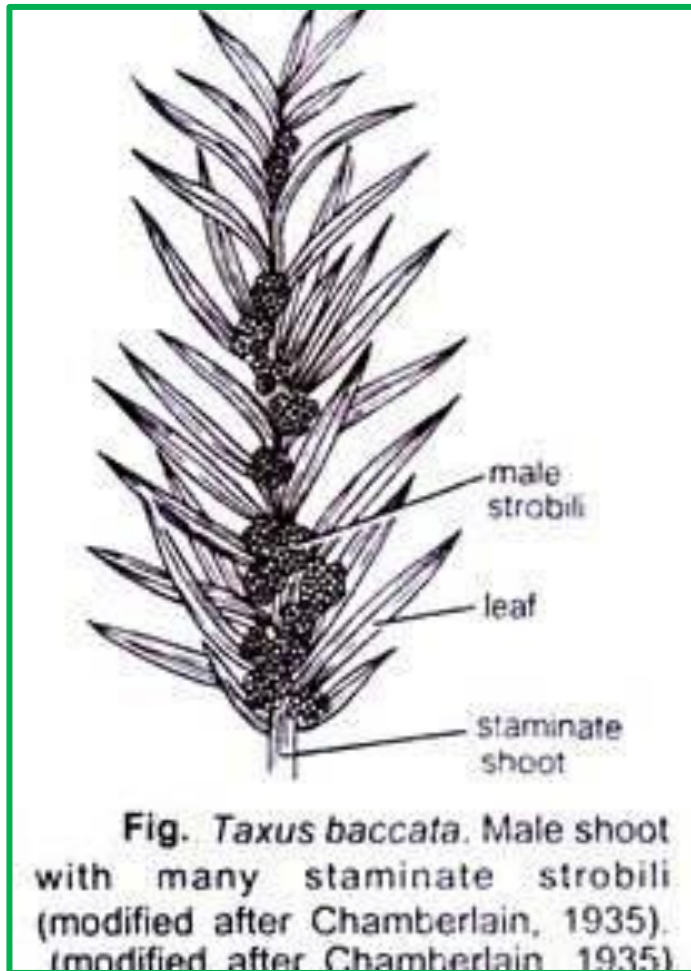
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## **Reproduction of Taxus**

*Taxus* is usually dioecious, but occasionally monoecious trees are also reported. The reproductive structures become prominent on the plant in February-March. The male and female plants do not show any distinction in their vegetative organisation, and the differentiation between them can be made only when the plants are in the flowering or fruiting stage. Vegetative reproduction in *Taxus* is not known.

### **Male Strobilus or Male Flower:**

The 'male flowers' or 'male strobili' are usually yellowish in colour and develop in the axil of foliage leaves. Each strobilus contains a number of overlapping sterile bracts. Some of the bracts towards the tip of the strobilus are replaced by stamens or micro-sporangiophores.

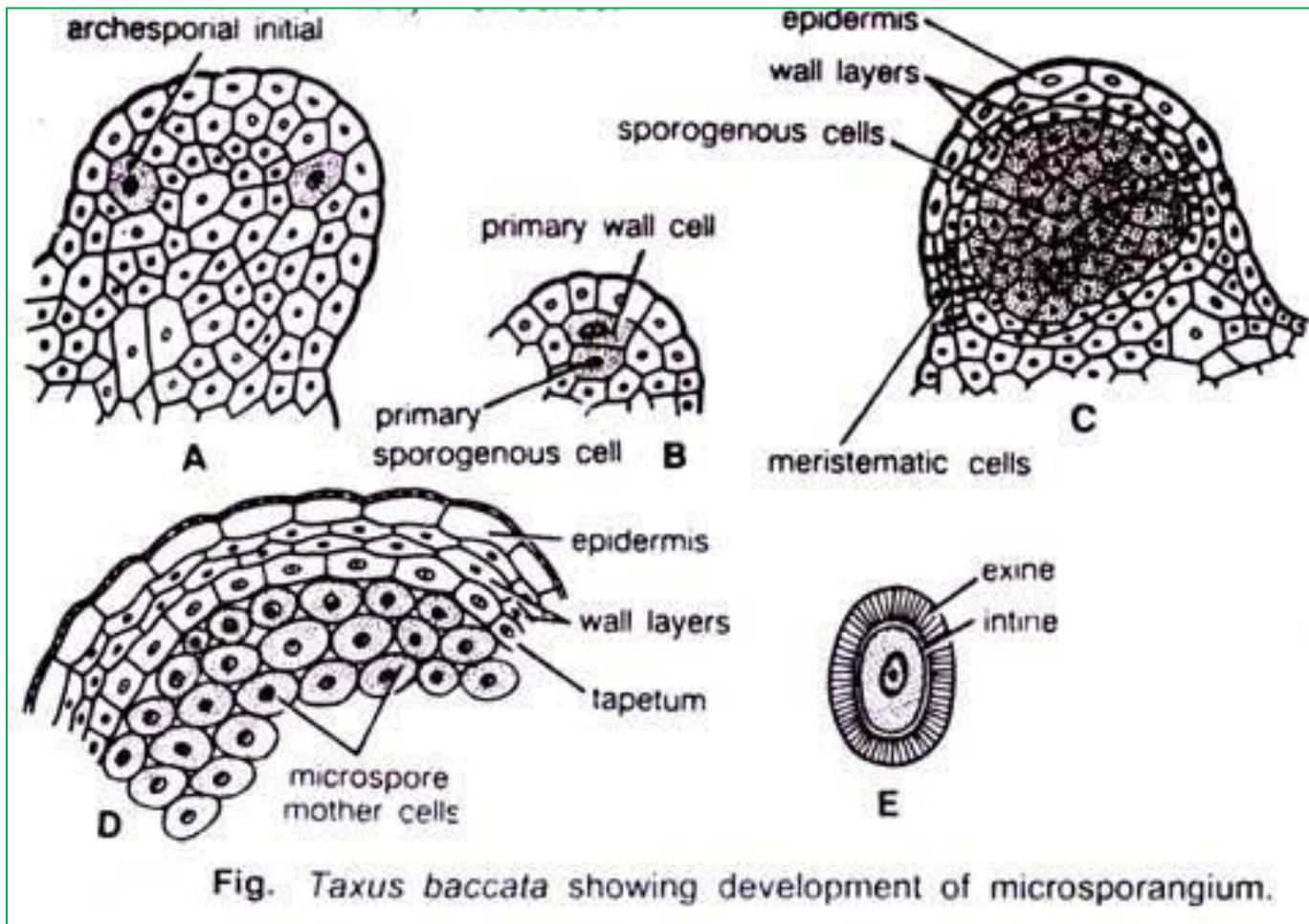





Each stamen is shortly-stalked and has a peltate disc bearing 4-8 pendant microsporangia. The microsporangia surround the stalk completely. The axis of the male strobilus contains a broad apex which is consumed in the formation of a stamen.

The microsporangia in the young male strobilus are compactly arranged but at maturity they get loosened and undergo dehiscence. The presence of peltate micro-sporangiophores is one of the most remarkable features of *Taxus*.

A mature microsporangium remains surrounded by an epidermal layer followed by two wall layers and sporogenous tissue. The outermost sporogenous cells differentiate into a tapetum. Pennell and Bell (1986) has also observed a peritapetal membrane with orbicules in *Taxus baccata*.





The sporogenous cells start to behave as microspore mother cells which undergo meiosis and form microspores or pollen grains. The microspores remain arranged isobilaterally or tetrahedrally for quite sometime.

The development of microsporangium is of eusporangiate type and is identical with that of *Pinus*. Four to eight archesporial cells develop hypodermally. They divide and form wall layers and sporogenous tissue.

In *Taxus canadensis* the microsporangium develops from one or rarely two hypodermal archesporial cells. Each microspore remains surrounded by two layers, i.e. intine and exine. It is uniaperturate, spheroidal and contains a mass of cytoplasm and a centrally located nucleus

## **Female Strobilus or Female Flower:**

The female strobili in *Taxus* are so highly reduced that they hardly appear as cones or strobili. They arise in the axils of leaves early in the season and mature in the next season.

Each female reproductive organ consists of a short primary axis having scaly leaves or bracts arranged in opposite decussate manner. A short secondary axis develops from the axil of upper three scaly leaves.

This secondary axis bears a few pairs of scaly leaves and a terminal ovule. According to Dupler (1920) the primary axis functions only as a vegetative branch of limited growth bearing the reproductive secondary axis.

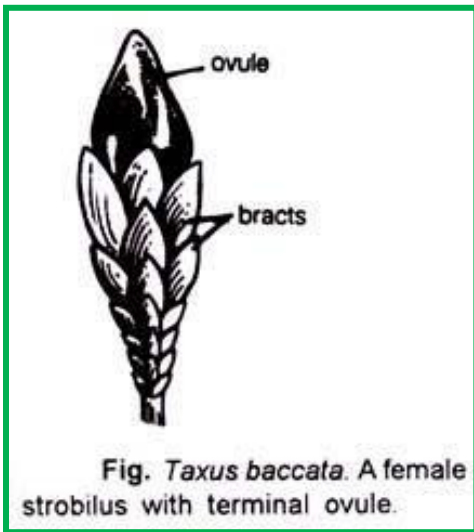


Fig. *Taxus baccata*. A female strobilus with terminal ovule.

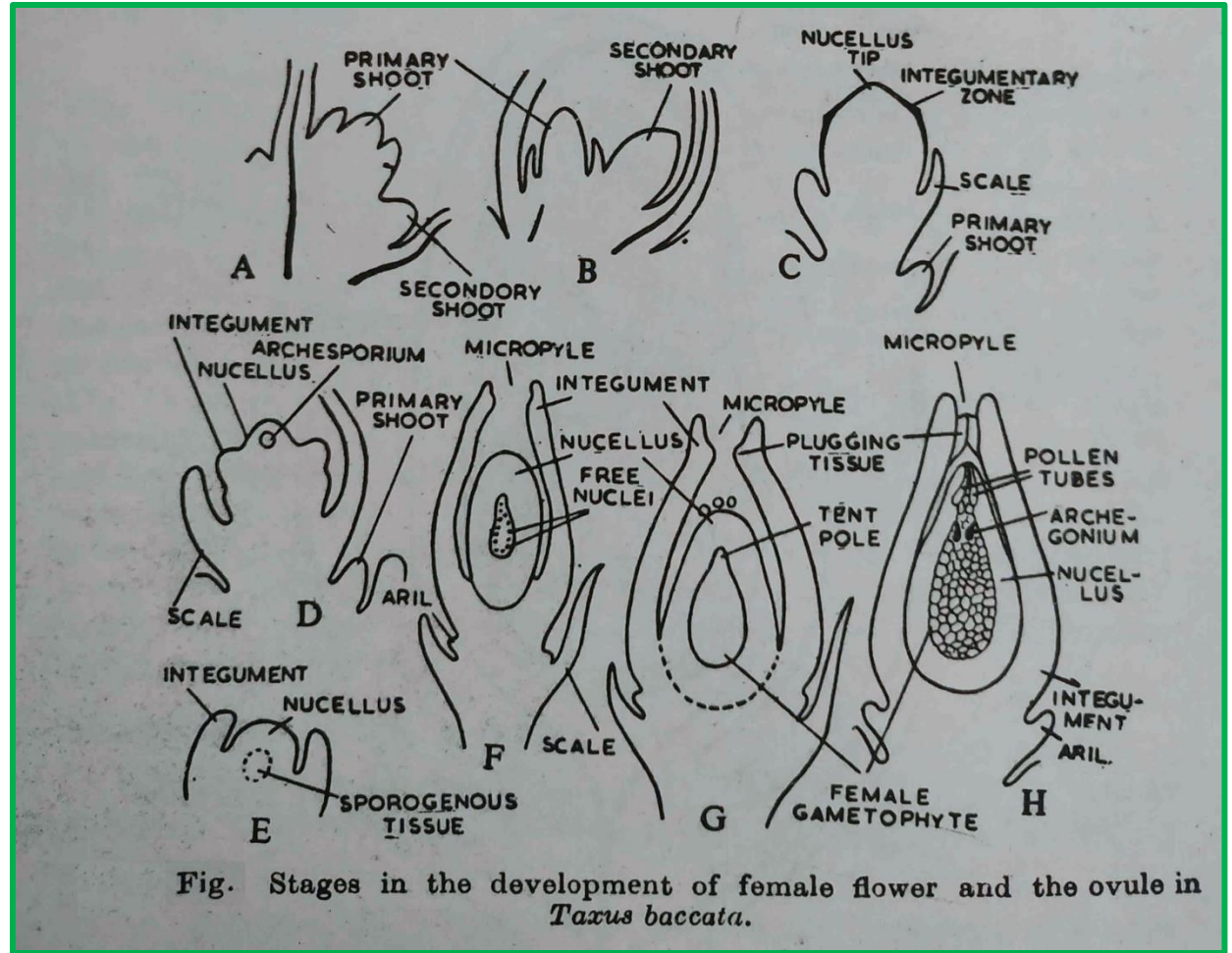


Fig. Stages in the development of female flower and the ovule in *Taxus baccata*.