



"Psilotales is regarded as early land plant"  
Justify.

Before land habit all plants lived in aquatic condition and they take water and minerals from surrounding water. As a result they had no vascular system. But as the world became terrestrial and plants started to live on terrestrial condition so that they have to develop ~~conducting tissues~~ vascular bundle to conduct water and minerals from soil.

The division Psilophyta is of great evolutionary significance as it includes two closely related classes of extinct and living plants (Psilophytosida and Psilopsida). They are the oldest known and simplest vascular plants that possess no roots and are either leafless or possess rudimentary leaves. They have been regarded as connecting links between the aquatic algae and the terrestrial and more complex vascular plants like dicots, ferns etc. Some Psilophytales resemble some algae in -

Wednesday



- (a) their dichotomously branched axes.
- (b) Absence of leaves
- (c) Absence of roots

They differ from algae in possessing -

- (a) Definite cuticle
- (b) stomata

Thursday

- ③ Cutinised spores
- ④ A vascular system with well defined xylem and phloem.

Psilophytales offers a number of evidences that have a great evolutionary importance as follows —

① They throw light on the origin of root as suggested by Dignier from that portion of the axis which became negatively geotropic and entered the soil where it became adapted to perform the function of anchorage and absorption. Rootless rhizomes of Psilophytales and psilotales offer a great support to his view.

Friday

(2) They also suggest the origin of microphyllous and megaphyllous leaves of lycopsids and fern.

(3) The anatomy of the shoot in the Psilophytales suggest that protostele is the primitive type of vasculature and that siphonostele has originated from it by the appearance of pith. Again the annular scalariform tracheids are simple and spiral and advanced.

④ A comparative study shows that the other advanced divisions viz - lycopsids, sphenopsids and pteropsids has evolved from Psilophytales through different lines.

A few Psilophytales eg. Psilotopteridium exhibit a tendency towards the formation of leaves by flattening and webbing of branches leading to the development of large leaved vascular plants.

The above evidences lead us to conclude that the Psilophytales have originated from the green algae and have in turn give rise to vascular plants. ~~It is also believed that the Bryophytes were which colonised on the land exhibiting land habit and colonises the planet.~~

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