

SEARCH OF GROUP OF FISHES WHICH GAVE RISE TO AMPHIBIA: —

Fish-like ancestor of Amphibia, it should be kept in mind that modern Amphibia cannot be compared with modern fishes as modern forms have become highly specialized in response to the demands of modern environment. The result of this specialization is that almost all the phylogenetic relationships have been covered up. Hence it is reasonable to compare the earlier forms.

Amphibians were present as three distinct groups, namely, Labyrinthodontia, Phyllospondyli, and Lepospondyli during Carboniferous age. The first group was found in abundance and in variety of forms in Devonian period. Another notable fact revealed by fossil records is their presence in fresh water. Hence, they have originated from fresh water forms. At that time freshwater fishes were Actinopterygii, Aberrant sharks, Dipnoi and Crossopterygii.

- (1) ACTINOPTERYGIAN ORIGIN: — Due to lack of internal nares and fleshy lobed fins, Actinopterygians can not be considered to be the ancestors of amphibians.
- (2) SHARK ORIGIN: — Aberrant sharks constitute a specialized branch, hence, these can not be regarded as the ancestors of Amphibians.
- (3) DIPNOAN ORIGIN: — Dipnoan exhibit following structural and functional resemblances with the amphibians.

Deepti, all of 10 years old, was working as a full-time maid ...

- (i) Both respire to a large extent by lungs.
- (ii) Distribution of blood vessels to and from the organs have same pattern.
- (iii) Histology of cartilage and autostylic suspension^{mentum} resemble in both.
- (iv) cloaca is present in both.
- (v) pectoral and pelvic girdles of dipnoans fore-shadowed some amphibian features.

The above mentioned distinct similarities guided some old zoologists to think that dipnoans are the direct ancestors of Amphibians. But modern studies revealed that the striking similarities particularly in respiratory and circulatory systems are due to the physiological convergence for living in similar condition of life. Further, dipnoans possess several too specialized features. Hence, a specialized group can not be the possible ancestor of another group of animals.

(4) CROSSOPTERYGIAN ORIGIN:— The Crossopterygians like Osteolepis and Eusthenopteron possessed some features which are either amphibian or lead towards Amphibia. The resemblances between two groups can be summarized as follows:—

- (i) The plate of Amphibian resembles so that of Crossopterygian in its basic plan.
- (ii) The lower jaw of Labyrinthodontia resembles with that of Crossopterygian.

(6)