

## (1) Ecological Succession (Xerosere)

Successive colonization of the same area by different plant communities. Succession means an orderly sequence of communities over a period of time at the same place.

### Types of Succession

- (a) Primary succession - Which starts from a primitive substratum without any previous living matter, is known as the pri. succession.
- (b) Secondary succession - that starting from previously built up substratum where living matter already exists, is known as the sec. succession.
- (c) Autogenic succession - If the existing community, as a result of its reaction with the env<sup>nt</sup>, causes its own replacement, called autogenic succession.
- (d) Allogenic succession - If the replacement of the existing community takes place due to the influence of any external force, condition etc. known as allogenic succession.

### Xerosere on Rock

This is a type of xerosere originating on bare rock surfaces. The original substratum is deficient in water & lacks any organic matter, having only minerals in disintegrated unweathered state.

(2) The various stages are as follows: -

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Pioneer Community	Seral Communities					Climax Community
1	2	3	4	5	6	
Crustose Lichens stage	Foliose lichen stage	Moss stage	Herbs stage	Shrub stage	Forest stage	
<u>Rhizocarpon</u> <u>Rinodina</u>	<u>Parmaelia</u> <u>Dermatocarpon</u>	<u>Polypodium</u>	<u>Grasses</u> <u>Aristida</u>	<u>Rhus-phyto-</u> <u>Carpus</u>	Mesophytic trees	

- ① Crustose lichen - They produce some acids which bring about weathering of rocks. The dead organic matter of lichens becomes mixed with the small particles of rocks. This process is very slow. These lichens are then replaced by foliose lichens.
- ② Foliose lichens - They appear on the substratum partially built up by the crustose lichens. This lichen having leaf-like thalli. They can absorb & retain more water & are able to accumulate dust particles which help in the further build up of the substratum. Thus some humus becomes accumulated & thus there is a change in the habitat.
- ③ Moss stage - The dev<sup>nt</sup> of thin soil layer on rock surface favourable for the growth of some such xerophytic mosses like polytrichum, Grimmia etc. After their death & decay, the thickness of the soil layer now increases.
- ④ Herb stage - Due to more extensive growth of mosses there accumulation more soil & there are added more minerals. This changed habitat favours the growth of some herbaceous weeds which are annuals, & also biennials & perennials. After that this is replaced by shrubs stage.

⑤ Shrub stage - Due to much accumulation of soil, the habitat becomes suitable for shrubs. They overshadow the herbaceous vegetation eg - RhusphytoCarpus. The soil is enriched by this dense shrubby growth. These are finally replaced by trees which make up the climax community.

⑥ Forest stage - Some xerophytic tree sps invade the area. Further weathering of rocks & increasing humus content of soil favourable for more trees & vegetation finally becomes mesophytic. Thus, there develops finally a forest community.