

Biological classification



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Classification :- Grouping of organisms into different categories on the basis of similarities of characters.

Types of classification

(i) Artificial system of classification :-

(a) This was the earliest system of classification based on one nearly one or two characters which is also not permanent, mostly habitat. They are mainly based on vegetative characters or on the androecium structure. (system given by Linnaeus).

(b) They are unscientific and unsystematic.

(c) Theophrastus, Pliny the elder, the main exponent of this system of classification.

(ii) Natural system of classification :-

(a) This system of classification is more scientific and more systematic. It is based on the comparison of large no. of characters e.g. morphological, anatomical, embryological, cytological, genetical, i.e. Such system of classification considers all those aspects possible for classification except evolution.

(b) First natural system of classification of animals was given by Linnaeus.

(c) The first natural system of classification of plants was given by Schimper modified by Eichler.

(d) A very big name associated with natural system of classification was Bentham and Hooker. He classified a vast no. of plants and their families in the

book "Genera Plantarum".

The only demerits of Bealtem and Hookers system of classification was not consideration of evolution and putting of Gymnosperm between Dicot and Monocot.

i.e. Monocot \rightarrow Gymnosperm - Dicot
While the actual sequence is -

Gymnosperm - Dicot - Monocot.

(20) Phylogenetic system of classification.

(a) This system of classification is entirely based on evolutionary history of organisms. In addition to - comparative study of morphology, anatomy - embryology, cytology, genetics etc.

(b) For getting evolutionary relationship it takes the help of fossils.

(c) The main exponent or supporter of this system of classification was Hutchinson, John Ray, Engler and Prantle (Balt started the phylogenetic system of classification), Takhtajan etc.

(d) The famous line in supported by of Phylogenetic system of classification by Takhtajan was -

"Taxonomy without phylogeny is like bone without flesh!"

The only demerit of this system of classification was if any fossil missing, classification does not move forward and stopped.

Ⓐ Phenetic system of classification:

This system of classification focused on comparison of characters of past organisms to its present counterparts, not wasting the time in search of fossils, if there was any missing link. For this it may take support of -

Numerical taxonomy, cytological taxonomy and biochemical taxonomy etc.

Classification of Plants by Schimper and Eichler.

