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Bo BIOLOGICAL CLASSIFICATION

1. Who is the father of botany?

Aristotle - Theophrastus.

2. Who is Aristotle? (Pioneer of in the field of biological classification

Aristotle is the father of biology as well as zoology.

3. Aristotle classified organisms into -

Plants → Herbs, shrubs, trees
Animals → Enaima, Anaima.

4. Red blooded animals are ~~et~~ called _____

Enaima.

5 Non red blooded animals are called _____

Anaima.

6. Why was Carl Linneaus's 2 Kingdom of Classification decided a failure?

in 1758

Carl Linneaus did not classify organisms into prokaryotes/eukaryotes and multicellular/unicellular

In his 2 Kingdom Classification, many organisms did not fall in either criteria.

This is the reason why Linneaus's 2 Kingdom of Classification was decided a failure.

7. Who proposed 5 Kingdom of Classification system?

R.H. Whittaker 1969.

8. Who coined the term 'biology' and in which year?

Lamarck & Treviranus in 1802.

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9. Who proposed the 5 Kingdom of Classification?

R.H. Whittaker (1969)

10. Which were the 5 kingdoms in the 5 kingdom of Classification system?

Monera Protista Fungi Plantae Animalia.

11. Write the major criterions used by R.H. Whittaker for the 5 kingdom Classification system?.

① Cell structure - ⓐ Cell type: Prokaryotic / Eukaryotic
ⓑ Cell wall - Present / Absent.
ⓒ Nuclear membrane: Present / Absent.

② Body Organisation / Thallus -
Cellular, Multicellular / Loose tissue, Tissue, Organ, Organ system

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③ Mode of Nutrition - ⓐ Autotrophism : Chemoautotrophism/ Photoautotrophism
ⓑ Heterotrophism : Holozoic / Saprophytic

④ Ecological Lifestyles - ⓐ Consumers
ⓑ Producers
ⓒ Decomposers.

⑤ Phylogenetic/Evolutionary Relationships
ⓐ Prokaryotic to eukaryotic
ⓑ Eukaryotic to fungi, plants & animals

12. R. H. Whittaker included 3 groups of unicellular and multicellular organisms in the kingdom Protista. Which are they?

Photosynthetic Protists - commonly called protistan algae
Consumer decomposer protists - called slime moulds
Protozoan Protists - ~~called~~

13. Photosynthetic protists led to the formation of kingdom ____

Plantae.

14. Mode of nutrition of consumer decomposer protists -

saprophytic.

15 Consumer decomposer protists led to the development of kingdom ____

Fungi.

16. Protozoan protists led to the development of kingdom ____

Animalia

17. Explain the advantages of 5 Kingdom Classification.

→ Brings out phylogeny in the living world.
→ Classification is based on levels of organisation and mode of nutrition.
→ Kingdom Animalia has become more homogeneous with exclu exclusion of protozoa.
→ Kingdom Plantae has become more coherent after exclusion of bacteria, fungi, some unicellular algal forms.
→ Separation of fungi from plants as well as slime moulds is a wise step.
→ Early eukaryotic forms which have flexible modes of nutrition and life styles have been separated and placed in Kingdom Protista.
→ Creation of Kingdom monera for prokaryotes is fully justified because they have their own level of structural and biochemical organisation.

18. Note down the disadvantages of 5 Kingdom of Classification system.

→ Kingdom Protista is highly heterogeneous with several lines of evolution.
→ Archaebacteria are quite different from other prokaryotes
→ Red and brown algae are not related to other membrane of kingdom plantae
→ Slime moulds do not fit into kingdom Protista.
→ Viruses, viroids and lichens do not find any place in five kingdom classification.

19. Who are the sole members of the Kingdom Monera?

Bacteria.

20. The most abundant ~~organisms~~ micro organisms are ____

Bacteria.

21. Give examples of bacteria which are of different shapes (by Cohn, 1872)

Cocci - spherical shaped (Coccus) Nitrococcus
Bacilli - rod shaped (Bacillus) Lactobacillus
Vibrio - comma shaped (Vibrium) ~~Rhodospirillum~~ Vibrio cholerae
Spirilla - spiral shaped (spirillium) Rhodospirillum

22. Who discovered bacteria?

Antoine Von Leeuwenhock

23. Explain the etymology of monera

Monos means single
They are the kingdom of prokaryotes.
They contain the simplest organisms with complex behaviour and metabolic diversity

24 The micro organism which can live on any climatic conditions -

Bacteria

25. Note down the characteristics of Kingdom Monera.

→ Genetic material is not organised into a nucleus. DNA is not associated with ~~his~~ histones. It lies coiled directly in the cytoplasm as nucleoid.
→ Cell wall is without cellulose. It contains peptidoglycans and non-cellulosic polysaccharides
→ Membrane covered cell organelles are absent. Their equivalents lie in the cytoplasm.
→ Ribosomes are 70S types
→ Sap vacuoles are absent
→ Flagella, if present, are unistranded and made of flagellin protein.
→ Sexual reproduction is absent.
→ Asexual reproduction occurs by binary fission and spore formation.

26 Kingdom Monera is also called _____

Kingdom Prokaryotes