IJCNP, Volume 1, Issue 2, 2023 ISSN: XXXX-XXXX
https://medicaljournals.eu/index.php/IJCNP

INTERNATIONAL JOURNAL OF COGNITIVE NEUROSCIENCE AND PSYCHOLOGY

STRUCTURE, ORIGIN AND CLASSIFICATION OF MULTICELLULAR ORGANISMS

Sattarova Sarvinoz Abdurashid qizi, Tojidinova Maftuna Abdunabi qizi
Andijan State Pedagogical Institute 2nd level students

Abstract: This article covers the structure of multicellular organisms, the characteristics of life, the origin and theories of the origin of multicellular organisms.

Key words: metazoa, parazoa, eumetazoa, radiata, bilateria, Gastrei and Phagocytella theory.

The body of multicellular organisms consists of cells with different structures and adapted to perform different tasks. These cells do not have independent existence, but are part of a whole organism. Cells are specialized to various degrees, adapted to perform a certain task. For example: muscle cells only contract, and nerve cells only sense. A complex individual development cycle is characteristic of all multicellular organisms. The individual development (ontogenesis) of multicellular organisms consists of the division of a fertilized egg cell into many small cells and the gradual formation of embryonic sheets and organs from them. Multicellular organisms reproduce asexually and sexually. Asexual reproduction is typical for multicellular organisms with a simple structure, and occurs by division, budding, or multiple divisions. Sexual reproduction can be observed in all types of multicellular organisms.

It has been proven that multicellular organisms originated from unicellular organisms. Colony-living animals play an important role in solving the problem of the origin of multicellular organisms. Many scientists now recognize that multicellular organisms originated from volvox-like colonies. There are several theories about the emergence of multicellular organisms from colonial unicellular organisms. 1. Phagocytella theory. This theory was founded in 1886 by I.I. Mechnikov. The gastrula stage of multicellular organisms with a base is not by invagination, but the blastula of some cells formed as a result of immigration. Later, the primary intestinal cavity gastrocoel and later the primary oral blastopore were formed with dense arrangement of internal cells. Mechnikov, like Haeckel, recognizes that multicellular animals are descended from single-celled colonies. 2. According to Gastrey's theory, the ancient ancestors of multicellular animals were animals with spherical colonies. The founder of this theory is E. Haeckel (1874). This idea is confirmed by the fact that the inner second embryonic sheet sinks into the blastula cavity in the gastrula stage of the embryonic development of multicellular organisms - it is formed as a result of invagination. According to Haeckel, the first progenitor of multicellular organisms was formed by the penetration of one part of a spherical colony into another part; the gastrula cavity has become the primary intestinal cavity, which is opened to the outside with a mouth opening. This hypothetical organism, which Haeckel called "gastrei", floated in water with the help of cilia. The transfer of cells to the internal cavity is related to their specialization in digesting food. That is why I.I. Mechnikov calls such cells phagocytoblasts, and his theory "phagocytella". According to most zoologists, multicellular organisms directly originated from unicellular organisms living in spherical colonies. But according to A.A. Zakhvatkin, the theories of E. Haeckel's "Gastrea" and I.I. Mechnikov's "Fagocitella" do not clearly reflect the origin of multicellularity. The ancient ancestors of multicellularity have moved from living in colonies to a more sedentary life, such as sporozoans and hydroid polyps. there were animals that were converted to forgiveness. But this idea can be said to be far from the truth. All the above-mentioned theories do not deny that multicellular organisms originated from colonial unicellular organisms. But according to some zoologists, multicellular organisms directly originated from single-celled organisms. Yugoslavian scientist Iovan Haji expressed the opinion that multicellular organisms directly originated from multinucleated infusoria. I. Haji puts forward the opinion that some parts of the body of infusoria adapted to perform

certain tasks, that is, their organoids, have become organs that perform the same tasks of multicellular animals. Even the scientist believes that the sexual reproduction of multicellular organisms corresponds to the conjugation of infusoria, and the fertilization of egg cells corresponds to the fusion of the migrating and stationary nuclei of the micronucleus. Thus, according to the theory of cellurization of I. Haji, the body of the infusoria became a whole multicellular organism. Despite the fact that this theory is far from the truth, there are those who support it among zoologists. divided into three sections. The real multicellular (eumetazoa) department unites representatives of many types. Their body cells are specialized to perform a certain task, and a real nervous system has been developed. This section is divided into radially symmetrical or double-layered (Radiata) and bilaterally symmetrical (Bilateria) sub-sections. Radially symmetric ones include the gap type and the ninateril type. Bilaterally symmetrical animals, in turn, can be divided into parenchymatous animals without a body cavity, primary body cavity animals, secondary body cavity animals, i.e. coelomic animals, and mixed body cavity animals.

Conclusion: According to the majority of zoologists, multicellular organisms directly originated from unicellular organisms living in spherical colonies. But according to A.A. Zakhvatkin, E. Haeckel's "Gastreya" and I. I. Mechnikov's "Fagocitella" theories do not clearly reflect the origin of multicellular organisms. Because blastula and gastrula do not represent the structure of the ancestors of adult organisms, but are free-living larvae that allow species to spread in nature.

References:

1. O.Mavlonov, Sh Xurramov, X. Eshonova “Umurtqasizlar zoologiyasi”. Toshkent 2006.
2. S. Dadayev, Q. Saparov. “Umurtqasizlar zoologiyasidan labaratoriya mashg’ulotlari” Toshkent 2018.
3. www.ziyouz.com
4. www.ziyonet.uz