

DIFICULTĂȚI ÎN DEFINIREA TERMENULUI DE SPECII ÎN BIOLOGIE

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ABSTRACT: In the long history of origin and evolution of life on Earth beings were deeply differentiated according to their behaviour and biology. In each biogeographically area there are some dominant species, with largest distribution, most frequently met. But inside the same species, usually there is an unexpectedly variability and these variation in time can lead to new and different species with divergent characters. This is why the topic of biological species still opens controversial debates. The aim of this article is to consider older references to the species term and to recall that biological species is fundamental concept in the natural history.

KEYWORDS: species definition, biological species, classification.

Since Antiquity, Aristotle asserted the species immutability but he classified beings in species and genera, the „id” (according to Plato – „eidos” = εἶδος being essential. In the Middle Age, the perpetuation and identity of species were explained by „God support and protection”, but in the same time it was recognised the intraspecific variation and the reproductive continuity.

Linné underlined the species’ constancy by an inherited identity or objective characters which are different from one species to another one. In 18th–19th centuries was accepted a new idea – of morphological typology of species, defining the morphological concept.

But the founder of the evolutionist theory wrote „*I was struck how entirely vague and arbitrary is the distinction between species and varieties*” (Darwin, 1859). At those times, because of lack of genetic knowledge, it was not considered intraspecific variability and therefore most scientist

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accepted typological concept of species – morphological criteria being most important to separate species between them. It is well known „the explosion” of species, subspecies and even forms or varieties.

After genetics appeared, it was a „reconciliation” with Darwin’s theory, especially by Dobzhansky (1937) and Mayr (1942), according to whom species is „*a complex of natural populations in which breeding takes place in a real or potential moment and which are reproductively isolated by other similar complexes of populations*”. This BSC – Biological Species Concept offered an objectivity consideration of species.

Referring to the reproductive isolation we have to understand: – the barriers or mechanisms which avoid zygote appearance. Adults always mate with conspecific individuals on morpho-physiological compatibility, ethologic and biochemical criteria; – some mechanisms are acting after the zygote has formed and its viability is reduced, having less resistance, competitiveness and vigour. Its sterility can be totally or partial – sterility appearing in next generations. The reproductive isolation is preserved by hybrids’ losing gradually its genetic material.

Other reproductive isolation type is hybridogenesis or producing into gametes the genetic material of only one ancestor species, missing the recombination phenomena. Thus the hybrids can reproduce but are not viable.

In case of apomictic and partenogenetic species they are reproductively isolated and not breed with individuals from other populations or species. In case of microorganisms there is an easier genetic transfer by „non-sexual forms”.

But what about fossil forms? Simpson (1951) defined the species: „*as a population unitary line linked by ancestor-descendent relationships, which keeps its identity in front of other such lines and has its own evolutionary history.*” This definition is tributary to the morphological or typological concept of species.

Crafft (1989) considered some definite characters and offered a phylogenetic conception on biological species: „*a phylogenetic species is an irreducible (basal) group of organisms, which can be diagnosed differently from other similar groups, inside of it appearing a parental succession of ancestor-descendent relationships*”.

Recently, some scientists (e.g., Mallet, 2001), are considering that not the species must be considered in classification of beings, but populations

and therefore the term of species should be abolished. This should suggest that biology is not a science.

A suitable method to define and identify the species is important both for taxonomists for classification and to support the natural sciences in evaluating the biodiversity, especially today with continuous anthropic pressure and risk of its spoliation.

Not least, we can observe that there are many critics to the definition of biological species, but they are only in the efforts to find a more satisfied concept and not to abandon it. Up to now, the biological concept of the species in biology is alone which promote objective criteria of any scientific contribution in the field.

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