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 ORIGINAL PAPERS

Ecology as a Systemic Science

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Abstract. *The work discusses the two revolutions which took place in the study of the living world, both caused by a change of vision concerning the way this world is organized. The first revolution started when scientists became aware of the fact that organisms were not isolated, but lived in communities occupying a nonliving environment. The second revolution came with the recognition of the organization of life in systems of different sizes, integrated one in another, into a hierarchy which comprises them all. The place and the role of ecology in this hierarchy are specified; a definition of ecology, consistent with the systemic approach, is proposed.*

Keywords: revolutions in the study of the living world, ecology as a science of the hierarchy of living systems.

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1. Introduction

According to Thomas Kuhn [62], scientific progress is achieved by: A – long periods of "normal science", characterized by an accumulation of data and by the establishment of paradigms (more or less accepted by the scientific community), and B – revolutionary periods, when, in a certain scientific field, new insights concerning phenomena occur; consequently, paradigms are reconsidered and are replaced by new ones.

This cyclicity is applicable to sciences concerning the living world, too. The fact is obvious when considering the development of one of these sciences – ecology.

Ecology has a long history. Observations regarding the non-living environment inhabited by plants and animals go back to the XVIIIth century (Linné 1739, Buffon 1767, E. Darwin, 1794 [in 69].

Since the beginning of the XIXth century, all sylviculture treatises and textbooks of silvical botanic contained descriptions concerning the non-living environments naturally inhabited by woody species [19], [48], [54]. Even in Romania, a work on silvical botanic describing the relations of 60 woody species