

Recent advances and perspectives in biospeleological research

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In recent times a great deal of interest has been oriented towards the problems related to the subterranean biome. Speleologists and biospeleologists are united by the concern of the delicate equilibrium of cave ecosystems menaced by several events such as phreatic layer lowering and pollution, the absurd use of caves as waste deposits or the vandalic acts of tourists and occasional visitors. The increasing impact of our species is devastating and alarming, especially in the subterranean ecosystems, where constructing equilibrium is a slow and difficult process. Induced changes are faster than the answers scientist can possibly give to administrators. Thus it is necessary an accurate and rapid contribution to the knowledge of ecosystems functioning and stability. Not an easy task for our scientific disciplines. This objective can only be obtained through a deep and true consciousness that interdisciplinary and co-operative studies are the only valid way to fulfil the task.

Our ancestors inhabited, explored and knew very well, even the biotic aspects of this environment, as demonstrated by a famous engraved bone of a French cave. All ancient myths refer to the subterranean world, suggesting a great curiosity and an intense exploratory activity.

The first printed notes on cavernicolous animals date back to the XVI century and do not belong to any European writer, but to a Chinese one describing a stygobitic fish.

Who was born first? Speleology codified at the end of '800 by E. A. Mantel, Biospeleology, codified by E. Racovitza in 1907, or voiceovers? I would like to underline the strict relationship, although a contrasted one, between Speleology and Biospeleology and the uselessness of asking for a primogeniture. Of course we owe much to Speleology especially on the improving of the progression techniques and on exploring and signalling new and interesting environments. Biospeleology has given its contribution through the study and description of troglobitic species and ecosystems thus increasing the consciousness of the necessity of their protection.

"Perspectives for the Third Millennium" is the main theme of the Congress. Perspectives go together with, follow in fact, advances and are strictly interconnected. The most recent advances in Biospeleology follow up the history of the discipline and the ever-growing necessity of scientific answers to the conservation problems. We do assist to an increasing interest to biodiversity of cave life, in its various components (individual, population, community, and landscape), and to the functioning and stability maintenance of ecosystems. The need of rapid answers and the protection necessities do become pushing forces for solutions, sometimes demanding an oversimplification of concepts such as stability and functioning of the environment. A lot of energies are devoted to the study of genetic bases of evolutionary and colonisation aspects of the subterranean biome and a lot is being done also in the field of microbial ecology, one of the most up to date topics in Biospeleological research. Many studies have been produced on the Physiology and Behaviour of trogllobionts.

To follow up and develop all what has been and is being done, we do need a lot of co-operation within research, to improve the presence of many young researchers with their innovative ideas and the possibility to guarantee them the necessary funding for their research.