

A TOXICOLOGICAL APPROACH TO ENVIRONMENTAL EDUCATION IN CHEMICAL SCIENCES: EXPLORING A NEW FIELD OF STUDY

TERESA HELLER^{1*}, CRISTINA ALVAREZ², NELLY MAÑAY²

¹*Toxicology Department, Faculty of Chemistry, University of the Republic, Montevideo, 11800, Uruguay*

²*Department of Toxicology, Faculty of Chemistry, University of the Republic, Montevideo, 11800, Uruguay*

theller@fq.edu.uy

Chemistry, with all its scientific and technological applications, is a protagonist of the various processes of contamination, as well as of its detection, prevention and control. Toxicology, which emerged historically as the “Science of Poisons”, has been widening its scope of study as a consequence of recognizing that “problems such as atmospheric pollution, the destruction of ecosystems or the disappearance of species have a serious impact on human beings...” (1). Nowadays it includes multiple areas, most of them directly or indirectly linked to the environmental problems: Environmental Toxicology, Ecotoxicology, Medical Geology are already common topics. Toxicology is essentially the interdisciplinary science that studies the adverse effects of chemical substances on living organisms. In Uruguay, the Faculty of Chemistry, together with areas of the Faculties of Science and Engineering, is the main university institution devoted to the formation of professionals and researchers in Chemical Sciences and their diverse applications. Due to the responsibility of chemical substances in the affectation of the environment, a solid environmental background is imperatively required for all students of these faculties in the present context.

Toxicology, Chemistry and Environment are nowadays thoroughly intertwined as regards, for example, the impact of chemicals on the health of all living organisms. In the Faculty of Chemistry of the University of the Republic in Uruguay, the former course of “Chemical Toxicology” has been substituted and widened by four new courses at present. Beyond the particular characteristics of each course and their relationships with the “environmental issue”, there is a need to explore and expand the environmental perspective to the same fundamentals of Toxicology.

In this study we want to present, through the example of our Toxicology courses and our research practice, the emerging need to make a deeper reflection about Environmental Education, in order to prevent the risk of just applying a stereotyped label of “environmental”. At the same time, we intend to show the particular ability of Chemical Toxicology to facilitate the integration of the environmental perspective to the curricular contents of our university teaching.

[1] Albert, L., *Introducción a la contaminación ambiental*, OPS, México, 1997.

Keywords: environmental education, chemistry, toxicology