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PREFACE

RADIOACTIVITIES IN THE MEDITERRANEAN SEA

The disaster of the Chernobyl power station occurred 10 years ago – what is its significance? Although some “closed” seas such as the Mediterranean or the Baltic are receivers of runoff and deposition greater than elsewhere, will this increase greater protection or standards? More than 200 nuclear power plants were built in Europe and Russian countries during the past few years (about 20% of electrical energy comes from nuclear power stations) – any of these might influence the Mediterranean Sea, and other internal seas, as a result of accidents as seen at Chernobyl in 1986.

This topic was discussed at a meeting at Giglio Island (Mediterranean Sea) by a joint meeting of Italian scientists and other representatives from a few other countries in March 1994. The issue concerned marine radioecology and radiocontamination of this and other enclosed seas.

This meeting was a scientific collaboration with the Italian Ecology Society and the Italian Radioprotection Association (AIRP). The papers presented at the full meeting were selected further for later publication in *Chemistry and Ecology*. A wide range of arguments, mostly on anthropogenic activity, with specialist scientists – chemists, physicists, biologists, geologists, engineers – ensured discussion and debates. Interdisciplinary discussions developed on the environmental processes that influence the cycling of radioactive isotopes of caesium, strontium and plutonium in marine ecosystems. Special emphasis was given to the Chernobyl radiocontamination, particularly the reactions of the persistent nuclide ^{137}Cs , its distribution between water, biomass and sediment. Investigations of the concentration factors of radionuclides in different biotic sediments and benthic sea food represented a very important radioprotectionist approach. The radioactive contamination in benthic and pelagic populations of biota of both the open sea and the salt marsh environments becomes a significant issue. In many papers the high retention capacity of benthic organisms collected in the lagoon ecosystems is illustrated. In particular, the Po River Delta and the Grado and Marano Lagoons result in large radioactivity reservoirs containing high levels of persistent ^{137}Cs , even in spite of the long time elapsed since the Chernobyl contamination. These areas, where sea farming activities and commercial fishing have real economic strengths, controls on radioactive pollutants are still needed. Comprehension of environmental processes has emerged in work using cosmogenic and primordial radiotracers; new investigation techniques with radon and phosphorus isotopes has opened up different perspectives in the use of such radionuclides in oceanographic research.

These papers published in *Chemistry and Ecology Journal* represent much of the work reported to the meeting. If others find more aspects of interest after ten years of following the post-Chernobyl events, they may wish to follow up other contributions in

the Congress report “The radioactivita ambientale nell’area del Mar Mediterranea”, in the meeting by the Italian Society of Ecology and the Association di Protection contro le Radiazioni, or take up any discussions with Professor C. Triulzi at the University of Parma.

G. Howells
Editor