Pollution of the sea by organic chemicals was recognized 20-25 years ago when highly accumulating materials such as DDT were found in marine organisms, far away from locations of intended application. Man has now become aware of the fact that, organic chemicals can be transported over long distances by water movements, wind and precipitation, accumulating in oceans and coastal waters as the ultimate sink. It is now known that the discharged materials do not undergo degradation or even mineralization as rapidly as expected previously. Organic compounds are subjected to specific usage patterns resulting in their continuous or increased production or in their abolishment and replacement. Many of the 60,000 organic chemicals now used (Maugh, 1978) may finally reach estuaries and oceans. It is quite unlikely that a detailed critical assessment of the specific risk can ever be accomplished for such a large number of compounds.

Realising these, there is an intense search for viable alternatives, for example, Cycloprothrin is the latest find. It is said to act several times better than DDT, offering only less toxicity to mammals, fish and invertebrates. It does not chemically interfere with the body metabolism. Development of a range of new insecticides, fungicides and herbicides known as 'designer chemicals' because these are designed at the molecular level and not obtained by screening large number of chemical substances, is the latest trend in pesticide research.

Marine scientists continue to make extensive investigations on the effects of hazardous chemicals on estuarine and marine organisms. Usually the studies are confined to delineate the cause and effect of pollution due
to most common pesticides. It is understood that documentation of marine pollution in terms of concentration of the contaminant in water alone is no longer sufficient. The use of bioassays as part of a comprehensive approach to pollution assessment is widely accepted. Information so gathered can be of use in management of pollution for different purposes such as prediction of environmental damage of a waste, comparison of various toxicants, animals or test conditions, regulation of waste discharge.

Lethal and sublethal toxicity studies open up a very interesting vista of information on the probable consequences of presence of pollutants and its influence on the life and activity of marine animals. It has been recognized that, chemicals seldom occur alone, which opens up another important facet of pollution effects brought about by combined toxicity. Therefore it is essential that any study directed to analyse the effects of the common contaminants on aquatic organisms, should take into consideration the above aspects.

The material presented here explains the usefulness of such studies especially with reference to pesticides and oil. It is realised that any study of the above sort requires further continuation to explain scientific results in a more detailed manner. However, dearth of information on combined toxicity necessitates studies to understand the basics of these aspects. The lipophilic nature of the pesticides, associated with the possibility of pesticides and WAFs of oils occurring in concert in coastal and estuarine waters demand proper documentation of the combined effect of these components on the life and activity of marine and estuarine organisms. The present study is carried out considering these factors. It is earnestly hoped that the information provided here in offers an excellent background data to follow up the investigations to organic, cellular and sub-cellular levels.