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Instruments for studying ocean pollution

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ABSTRACT

This paper describes some newly developed instruments, and some new varieties of old instruments, that can be used to obtain information about environmental conditions in open coastal waters to depths of about 650 ft (200 m).

In order to understand this undersea environment, a scientist must begin by taking inventory of the physical conditions, the chemicals present, and the plants and animals that live in a region. Some of these data are best obtained by in-situ measurements; others derive from sampling at sea followed by precise laboratory measurements ashore. Often the objective of the measurements is to answer questions relating to possible man-made pollution, such as: (1) What is the level of trace elements in the water, the bottom, and the sea animals? (2) how do man's wastes reach the sea and how are they distributed by currents after reaching the sea? (3) what animals live in the area that might be affected? And (4) how do they change with time?

A number of ways of sampling and measuring will help answer those questions. Table 1 is a summary of the information usually needed and the type of instrument required to obtain it most efficiently. The numbered items have been selected for description herein because they are not well known to many investigators. Information on the equipment, included in Table 1 for the sake of completeness is easily found in the literature or in instrument catalogs.

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