

# INVERTEBRATE TAXONOMY PROGRAM

The validity of an analysis of biological data is dependent upon accurate identification of the organisms in the sample. The large number of invertebrates in southern California coastal waters (more than 4,000 species are known) creates a special problem for local biologists attempting to understand the effects of wastewaters on the marine biota. The identification of the species is hampered by the lack of comprehensive, up-to-date literature sources. Even when sources are available, they can be interpreted differently by each biologist. This can result in the use of a large number of names for a single species. Thus comparisons of data compiled by different researchers may only show different taxonomic decisions.

The purpose of the invertebrate taxonomic program is to promote uniformity in the identification of the marine invertebrates by the various southern California monitoring groups. Our first step in the program was to compile a master species list of the coastal marine invertebrates. This list, which is computer-coded, contains the synonyms for each species that have been proposed in scientific literature by recognized experts. The list is the basis for recognizing the need for further work in a particular taxonomic group. Project biologists are studying groups of invertebrates that represent taxonomic problems to determine the specific characteristics that serve to distinguish one species from another. Illustrations of these characteristics are being incorporated into a series of keys entitled "Marine Invertebrates of Southern California Coastal Waters." The keys are then distributed to the various environmental monitoring groups participating in this program and other interested individuals.

The series of keys has been designed so that changes can easily be made: The one-species-per-page format (Figure 1) will allow us to add, delete, or modify information on a species without changing or reprinting pages on other species.

At the present time the first three volumes of keys are near completion. The first volume contains a miscellaneous group of papers, ranging from a commentary on Dr. Olga Hartman's Atlas of Polychaetes by Dr. Kristian Fauchald to keys on various groups of molluscs, echinoderms, and arthropods. The second and third volumes deal with the ophiuroids (brittle starfish) and the Natantia (shrimp) of Southern California coastal waters. These publications will contain specific information on the synonymies, distribution, and systematic characteristics of each species, as well as precise illustrations of the species.

The information contained in the keys will help standardize the systematic procedures and nomenclature of local invertebrates. Once these standardized procedures are in use, the results of surveys made by different monitoring groups can be compared, and similarities and differences can be attributed to factors other than inaccurate identifications.

