

Jack Q. Word

TAXONOMIC STANDARDIZATION DEVELOPMENTS

Studies of benthic invertebrates provide important information on the effect of man's activities on the marine environment. Standardized identification of the over 4,000 known coastal species of bottom-dwelling invertebrates among ecological laboratories is a crucial pre-requisite to determining their distributional patterns, comparing data on the abundance of each species present, and understanding the responses of various species to pollution.

The objectives of the Project's Taxonomic Standardization Program are (1) to improve the overall level of taxonomic expertise and (2) to standardize the names used for each species so that different monitoring agencies can compare the animals present at various times and locations. Since the initiation of this program in 1973, the number of animals on the species lists produced by continuous monitoring programs has increased more than 40 percent (increases per monitoring agency have ranged from 28 to 50 percent). In addition, there has been considerable success in the effort devoted to standardizing the names used for particular species. In reviewing taxonomic literature, it is not uncommon to find species known by ten different names—one animal, a species of gastropod (*Megasurcula carpenteriana*), has been referred to by nearly 30 different names. Such an abundance of synonyms can cause confusion in the interpretation of monitoring data. A case in point is the record on *Parvilucina tenuisculpta*, an abundant clam found around all Southern California discharge sites. The clam has been known by at least four other names in the past (*Parvilucina approximata*, *Lucina tenuisculpta*, *L. approximata*, and *Axinopsida serricata*). When data collected over the past 5 years at several outfall sites were reanalyzed, taking into account the synonyms for this species, the pattern of distribution and abundance of the animal appeared to be quite different from that indicated by the original analyses (the results of this reanalysis are discussed in more detail in the article on indicator animals).

The objectives of the taxonomy program are accomplished by producing two types of publications and conducting bi-monthly meetings or workshops on special taxonomic problems. During the past year, we have sponsored six meetings with local experts and two special meetings, one on amphipod systematics with Dr. J.L. Barnard of the Smithsonian Institution and one on the phylum Porifera. Nearly twenty different talks (see Appendix B) were presented at the work-shops; subjects varied from the differentiation of the species of a single genus of polychaete (marine worm) to the creation of diagnostic keys on a major taxonomic group of animals, the Class Ascidiacea.

The meetings provide for exchange of information—the speakers at each of these programs provided taxonomic keys, special diagnostic figures, notes, and bibliographies, discussed the content of these handouts, and gave related information on the natural history of their group of animals.

The Proceedings of the Taxonomic Standardization Program, published bimonthly, presents a short synopsis of the additional information contained in these talks and is distributed to over 200 individuals at 85 different organizations throughout California. We are also publishing a series entitled *The Invertebrates of Southern California Coastal Waters*. Two of these guides—covering problem animals and shrimp—have been published, and a third volume on Ophiuroidea (brittle stars) is in preparation.

The format of the guides was a topic of discussion at a conference of National taxonomic managers held at the Project in November and partially sponsored by the Sea Grant Program of the University of California, San Diego. This special workshop also considered the standardization of computer coding systems for indexing National species lists.

The key format agreed upon at the meeting is similar to the original format described in previous annual reports but includes additional descriptive information and a 2-page folio on any species for which additional information on larval forms and sexual dimorphism is necessary. The coastal chart of California was revised so that the darkened squares of occurrence now represent 1/2 degree of latitude and longitude.

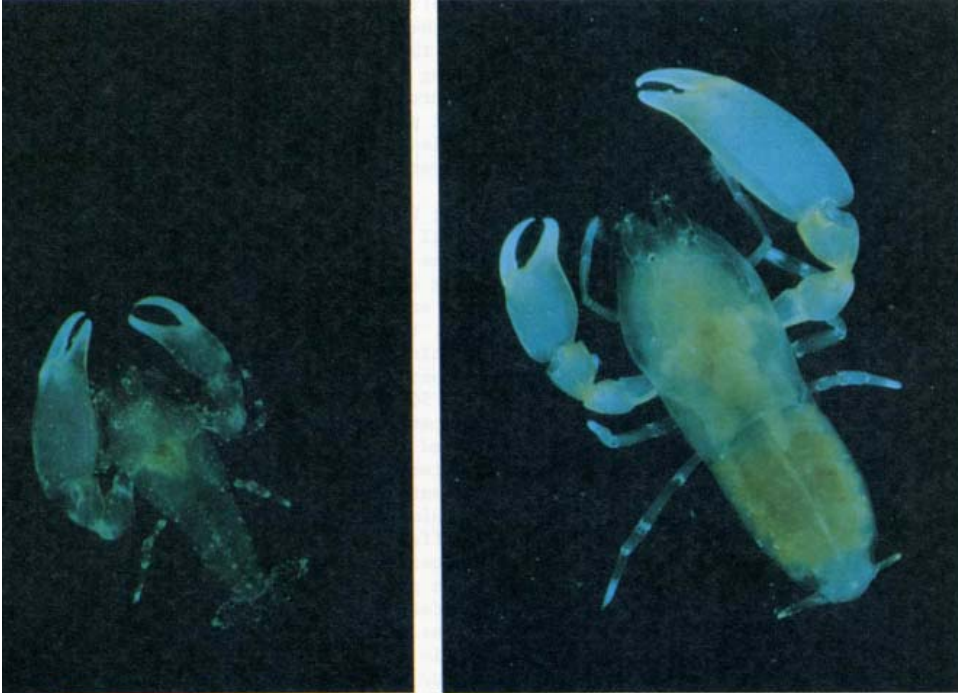
At the meeting, an "ideal" computer coding system for in-vertebrate data was designed, with recommendations for certain companion information. Three of the many existing computer coding systems were found to be sufficiently similar to this idealized version, and recommendations for their improvement and use were made. These systems are the EPA's Bio-Storet, the Hawaii Coastal Zone Data Bank, and the listing for the Bureau of Land Management prepared by the National Oceanographic Data Center in Washington, D.C.

More detailed information on the meeting can be found in the final report to Sea Grant (Word 1977).

In the coming year, the Taxonomic Standardization Program will continue making increased use of the standardized data being produced by the five sanitation districts. These data will be compared with those taken in the Project's 60-meter synoptic benthic survey.

REFERENCE

Word, J.Q. 1977. Conference on the standardization of taxonomic reporting of marine invertebrates. Final report to University of California, San Diego, Sea Grant Project R/NP-1K.



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The translucent shrimp *Pontonia californiensis* (2X) is commonly found inside of another animal, the tunicate *A. vermiformis*. Until our recent records, only three specimens were known. The species is now considered to be common and has been found in pairs in all of the *A. vermiformis* specimens that we have examined.