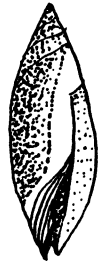


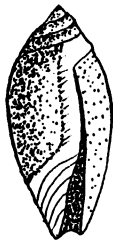
a



b



c



d

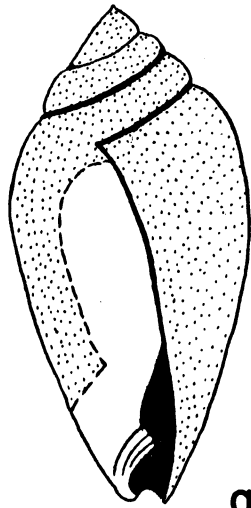


e



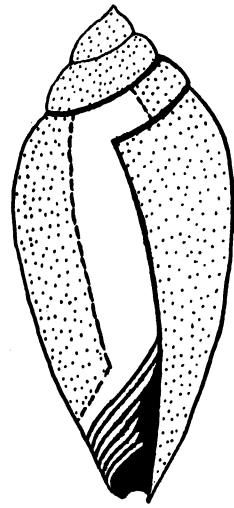
f

(Coast)



g

(Gulf)



h

Fig. 1

The first method is not only more objective than the second, but holds well for hundreds of specimens examined from four large collections containing shells from many localities, both fossil and modern. In decorative beads or Kol-kol* strings from any one site, it is probable that most of the shells will be readily identifiable as to the general area of origin, while a few may be on the borderline as to the "ridge" characteristics. It is always possible that a few fossil shells which could have been made into beads had been found, or that trade routes were such that a few shells came in from a distant area, or even that occasional mutations occurred in the molluscs (although there is no evidence at present of variability approximating the shell characteristics of either opposite type).

As one typical kind of shell is found between Canada and Baja California and another type is found from the northernmost part of the Gulf of California to La Paz on the western side of the Gulf and to Acapulco on the east coast of Mexico (*O. anazora* has even been reported from Western Colombia, and *O. undatella* from Panama), it would be interesting to know if the two types intergrade somewhere northwest of La Paz where the ocean temperature changes. If genetic drift or selective forces have acted upon what had been one continuous population before the formation of the land mass of Baja California and the isolation of the Gulf during the Miocene Epoch, a less evolved type might be found. It seems more likely from fossil evidence that a tropical type has spread into the new habitat of the Gulf, while the less tropical type has remained on the coast. The few *Olivella* species from the West Indies examined appear to be similar in the two respects discussed here to the Gulf of California form, while the Coast species are similar to a few from the Orient. Not many specimens of fossil or modern *Olivella* from the Western Atlantic and Eastern Pacific areas are available at present.

* This term was used in historic times by several different groups of California Indians, even non-coastal groups such as the Nisenan. See Powers' Tribes of California, p. 337, in U. S. Geographical and Geological Survey of the Rocky Mountain Region. Contributions to North American Ethnology, Vol. III, Washington, 1877. Powers elaborates on the wide use of shell money among the Nisenan, and lists values attached to certain shells by the Indians, e.g., 14 yards of Kol-kol, or *O. biplicata* was reportedly worth 14 dollars.