

In his study of certain rissoid genera, Powell (1927) has used the spirally lirated protoconch as an indication of relationship, but this type seems to have been evolved in several different groups of rissoids and thus cannot always be relied upon. I have included species with spirally sculptured and smooth protoconchs within a single genus (*Merelina*, *Alvinia*) and, in the case of *Haurakia* (as now recognised) and *Powellisetia* (Ponder, 1965c) all variations between smooth and distinctly spirally sculptured protoconchs occur. The protoconch in the *Estea-Scrobs* group is sculptured with pits or granules in spiral series, or with spiral lines crossed by axial threads. In this group the protoconch can, fairly reliably, be used as an indicator of relationship. The value of the protoconch, therefore, varies with the group in question. Varying types of life history may effect the size and structure of the protoconch (Thorson, 1950). Species that emerge from a capsule at the crawling stage generally have a larger protoconch than those that spend their early life in the plankton. This fact probably explains the difference in size of the protoconchs of some otherwise very similar groups. Thus genera and subgenera based on protoconch dimensions should also be distinctive in other ways, as abbreviation of the life history is a common occurrence.

Certain taxa have a uniform and distinctive type of sculpture (e.g. *Merelina* and *Subonoba*), but others, as recognised at present, show great variation—*Estea*, *Haurakia* and *Rissoina* being examples. As with the protoconch, sculpture alone cannot be an indicator of relationship, but must be used in conjunction with other features if it is to be a useful guide.

The structure of the adult aperture, particularly the nature of the outer lip has been used rather haphazardly by some authors and relatively little emphasis has been placed on it, compared with the protoconch. I have found the aperture to be one of the most useful shell characters for determining genera. Species appearing to be similar in nearly every way, but separable on minor details of the aperture, often prove, on examination of the animal, to belong to very different genera or even families (e.g. some eatoniellids can easily be confused with some rissoids).

The solidity, texture, general appearance, colour, size and outline are important shell features on which the investigator often has to rely when other structures are of little assistance. Though solidity, texture and general appearance are hard to define and describe, these usually play a large part in the determination of a species or even in generic classification. Colour is frequently variable, but is sometimes a very useful guide, though it should always be used with caution. Size, though variable within rather narrow limits, is usually a good guide to specific and generic determination. The shell outline is useful at all levels of classification though it can be variable within one genus (e.g. *Scrobs*) or, to a lesser extent, within a species.

THE ANIMAL USED AS AN INDICATOR OF RELATIONSHIP

There are many cases of diverse anatomy being disguised by simple shell features—the Skeneopsidae, the Rissoellidae and the Omalogyridae (Fretter, 1948), the Eatoniellidae (Ponder, 1965a) and the Cingulopsidae (Fretter and Patil, 1958), being a few such examples. In most species the extraction and the examination of the radula and operculum is relatively simple and these characters can be used as a fairly reliable guide to relationship. Few workers, however, have examined these structures. Similarly the parts of the animal that are exposed when it is alive and moving about, the head-foot region, are also a valuable additional taxonomic tool and relatively easily examined if the material in question can be collected locally. However, the number of descriptions of the exposed animal of small gastropods available in the literature is infinitesimal.