Pyramidellids are small, white, tall-spired gastropods, and are mostly ectoparasites. Each species feeds upon a particular host by means of mouth parts designed for piercing skin and sucking blood. There is no radula, so the true relationship to other molluscan groups has had to be determined on other evidence. For a long time the family was located in the Sub-Class Prosobranchia near the Heteropoda, but in recent years Fretter and Graham (1949), working on British forms, made the interesting discovery that these molluscs are apparently not Prosobranchs but belong to the Opisthobranchia near to the Acteonidae which they certainly some what resemble, especially in the presence of columellar plaits.

Fretter and Graham found evidence in their exhaustive anatomical studies, especially in the reproductive and alimentary systems, to suggest that the pyramidellids occupy a place between the Acteonidae and the Diaphanidae. These same authors had great difficulty in obtaining living material, even of species commonly cast ashore until they discovered the peculiar and specialised mode of life of each species. Examples of hosts for some common British pyramidellids are *Mytilus edulis*, *Pomatoceros triqueter*, *Pecten maximus*, and *Sabellaria spinulosa*.

The New Zealand faunal lists contain a bewildering array of species both Recent and Tertiary, grouped into some 23 genera; but so far next to nothing has been done on the animals thereof. Though empty shells are common enough, and have been copiously described, living examples have been neglected mostly through lack of knowledge of their hosts in New Zealand waters. Here a most rewarding field of study should be available.

It appears likely that most species prey on hosts located below low tide level — many are known only from dredgings, some from considerable depths. However, the possibility of intertidal species should not be overlooked, not only on host molluscs and tube worms, but also on echinoderms, etc.

The pyramidellids so far examined have elaborate mouth parts modified for piercing and sucking. The chitinous edges of the jaws are opposed to each other and prolonged into hollow stylets running along a tube formed from the buccal lips. The stylets are divided so as to form an upper suctorial and a lower salivary canal. The radula has aborted, all hard parts being formed from the jaws. The muscles of the pharynx form a sucking pump, and the ampullae of the salivary glands are muscular as well, providing a pump for the enzyme-carrying saliva. With a diet of fluid protein, the rest of the gut is exceedingly simple.

As in most shelled Opisthobranchs the larval shell is sinistrally coiled, later reversed to dextral. On mature shells the embryonic whorls appear to be twisted at almost right angles to the succeeding structure and partially immersed.

Some tropical species attain a height of an inch but New Zealand examples are always very small, seldom being more than 10 or 12 mm. in length. The shells are tall, many-whorled, and corkscrew-shaped, some
being quite smooth while others are axially sculptured. All have a simple, sub-circular aperture, usually with a distinctive toothed or plaited process on the columella. An operculum is present on the living forms so far examined.

The figures depict some typical forms of representative New Zealand genera.

REFERENCES

Fretter V. & Graham A.,


(1939) Ibid. No. 6, vol. 69, pp. 191-209.
(1941) Ibid. No. 8, vol. 71, pp. 6-22.


DESCRIPTIONS OF FIGURES

Fig. 1  Odostomia chordata Suter  2 x 4 mm.
Fig. 2  Linopyrga rugata (Hutton)  1.8 x 3.7 mm.
Fig. 3  Gumina dolichostoma (Suter)  2.1 x 4.2 mm.
Fig. 4  Chemnitzia zelandica (Hutton)  2 x 6 mm.
Fig. 5  Agatha georgiana (Hutton)  12 x 5 mm.