

Figures 22, 23. Living animals of *Dendrofissurella* and *Amblychilepas*. 22. *Dendrofissurella scutum hiantula*, dorsal view of living animal, Tsitsikama Coastal National Park, Eastern Cape Province, South Africa; overall length about 80 mm; after Tietz and Robinson (1974). 23. *Amblychilepas nigrita* (Sowerby, 1835), dorsal view of living animal, New South Wales, Australia, overall length about 80 mm; photograph by John Fields, courtesy AMS.

Sophismalepis Iredale, 1924:219. Type species: *Fissurella nigrita* Sowerby, 1835. Recent, Australia.

DESCRIPTION. Shell oval, anterior end narrower than posterior, ends raised; sculpture of radial striae; foramen nearly central, elongate oval. Foot projecting posterior to shell for distance greater than length of shell; shell edge enveloped by upper fold of mantle, from which long papillae extend toward foramen; propodium unmodified. Massive outer tooth of radula quadricuspid.

REMARKS. Except for *A. platyactis* new species, species of *Amblychilepas* are restricted to Australia. Figured here for comparison (Fig. 23) is a living animal of the Australian *A. nigrita* (Sowerby, 1835). As in the new species here described, the papillae of the upper fold of the mantle of *A. nigrita* are well developed and project toward the foramen. The propodium of the Australian type species (*A. javanicensis*) is unmodified (based on AMS C.117375).

The following species has been confused with the common south African species here reassigned to *Dendrofissurella scutellum hiantula*.

Amblychilepas platyactis new species

Figures 3, 24, 25

Amblychilepas scutellum [non Gmelin, 1791]; Odhner, 1932: 298, fig. 31 [drawing of animal].

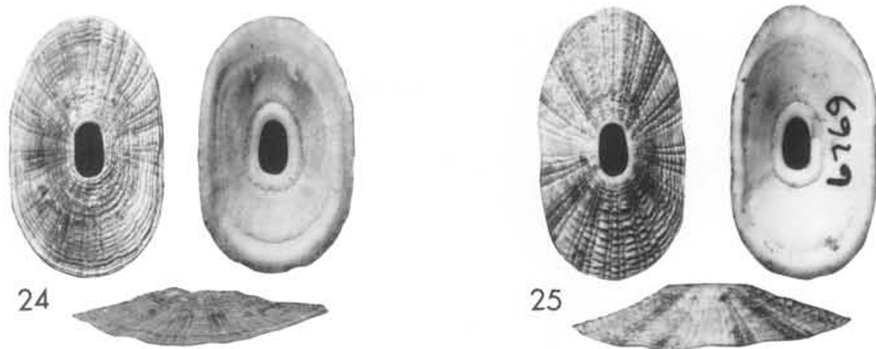
DIAGNOSIS. Shell to 30 mm in length, saddle-shaped, narrowed anteriorly; anterior markedly raised; posterior slightly raised; radial ribs alternating in strength, separated by deeply incised grooves. Primary ribs broad, low, and flat-

topped, up to twice as broad as secondary ribs and 3 times broader than tertiary ribs; primary ribs broader on sides of shell than on ends; concentric growth lamellae thin and raised, especially prominent on broad primary ribs. Color dark red with white rays.

Propodium unmodified; body extending posteriorly for one shell length; upper lobe of mantle enveloping edge of shell and having long, elaborate papillae corresponding to broad primary ribs.

DESCRIPTION. Shell outline elongate-oval in dorsal view, slightly narrowed anteriorly; anterior and posterior ends raised, lateral profile of base evenly curved. Radial sculpture of flat-topped ribs separated by narrow incised grooves rather than interspaces. Primary ribs 14, twice as broad as secondary ribs, which in turn are twice as broad as tertiary ribs. Primary ribs at anterior and posterior ends more elevated than those of sides, particularly in early growth stages. Concentric sculpture of thin, raised incremental growth lines, arched upon crossing primary ribs, to a lesser extent on crossing secondary and tertiary ribs. Foramen elongate-oval, slightly broader posteriorly, $\frac{1}{3}$ shell length. Color brick red, with white rays that tend to emerge at later growth stages and correspond to primary ribs. Margin faintly crenulate to correspond with exterior sculpture, shell edge angulate at sides, thinner anteriorly and posteriorly. Callus surrounding foramen faintly outlined in pink, more bluntly terminating posteriorly than anteriorly.

Propodium unmodified, outline of foot elongate-oval, body extending posteriorly for one shell length. Sides of foot with pustulose tubercles; epipodial tentacles of neck weakly developed; mantle lobe with tubercles like those on foot sides but smaller; lower edge of mantle lobe with projecting pa-



Figures 24, 25. *Amblychilepas platyactis*, new species, exterior and interior views with anterior at top; lateral views of left side. **24.** Holotype, Port Alfred, Eastern Cape Province, South Africa, NM B6397/T2744, 17.2 × 10.3 × 3.9 mm. **25.** Paratype, False Bay, Eastern Cape Province, South Africa, NM 6769/T3009, 20.5 × 11.0 × 4.5 mm.

pillae having numerous projecting points; upper edge of mantle with fewer papillae that are about three times the size of the lower edge papillae, about 14 major papillae altogether, corresponding to broad primary ribs. Major papillae separated by less prominent papillae. Tips of cephalic tentacles reddish in preservative.

DIMENSIONS. Holotype, shell length 17.2, width 10.3, height 3.9 mm. Maximum length 30.8 mm (NM 6769/T3009).

TYPE MATERIAL. Holotype, NM B6397/T2744, Port Alfred, Eastern Cape Province, South Africa, collected by R. Kilburn, 1966 (Fig. 24). Paratype 1, LACM 2108, Port Alfred, collected by E. Warren, July 1912. Paratype 2, NM B9916/T3008, Kommetjie, collected by C.M. Connolly. Paratypes 3–5, NM B9929/T3055, Kwelera, E of East London, collected by C.M. Connolly. Paratypes 6–11, NM 6769/T3009 (Fig. 25) Simonstown, False Bay, collected by C.M. Connolly. Holotype and paratypes wet-preserved, except for paratypes 6–11, shells only.

DISTRIBUTION. South Africa: East London to Kommetjie, Atlantic coast of Cape Peninsula.

COMPARISONS. On anatomical characters, there is no difficulty in distinguishing intact specimens of *A. platyactis* from both subspecies of *Dendrofissurella scutellum*, the former having elaborate papillae on the upper lobe of the mantle and lacking the propodial elaboration; the latter having small, simple papillae on the upper lobe and having the trunklike propodium. Shells, however, closely approach those of *D. scutellum hiantula*, of which there are specimens with broad primary ribs (Figs. 20, 21) up to twice the breadth of the lesser ribs. However, no specimens of *D. scutellum hiantula* are known with the extremely broad ribs of *A. platyactis*, which may be three times the breadth of the lesser ribs. The development of the scaly sculpture on the primary ribs is much more extreme in the young stages of *A. platyactis*. Shells of all specimens are red and white rayed, which indicates that the range of color variation is minimal in *A. platyactis*. The posterior end of the shell of *A. platyactis* is less raised than that of *D. scutellum*.

REMARKS. We name this species with reluctance, considering the large number of synonyms pertaining to *D. scu-*

tellum hiantula. However, original descriptions of all these taxa make no reference to broad ribbing and it is clear that none of them has sculpture to match the type specimens of *A. platyactis*. The specimen figured by Odhner (1932) is presumed to be this species on the basis of lack of propodial development and the papillae of the upper lobe of the mantle.

ETYMOLOGY. The name is Greek, meaning with wide or flat spokes or rays, suggested by the extremely broad ribs of this species.

DISCUSSION. *Dendrofissurella scutellum* (both subspecies) and the three species of *Medusafissurella* have very different expressions of the propodium, here considered diagnostic at the generic level. However, the vexing question of *function* remains. One might speculate that the propodial tentacles serve to trap or hold food, such as drifting algae. Yet, in these species the snout, which is no larger than in other fissurellid genera, is *dorsal* to the proportionally longer propodium (Fig. 26). A role in feeding would be more readily understood if these tentacles were attached to the snout instead of the propodium, access to the mouth thereby being closer. In the fissurellids described here, the snout would presumably have to be extended through the tentacles to reach the food, but the propodium is not bifid, as would be expected if this were the case. Yet, the mouth and the snout are more laterally compressed than in fissurellid genera lacking the propodium.

Stomach contents of a preserved specimen of *Medusafissurella dubia* included branched coralline algae, suggesting that the diet of this species is comprised of encrusting algae, not unlike the diet of *Fissurella barbadensis* Gmelin, examined by Ward (1966). Thus, there is no indication that propodial development corresponds to an unusual diet in these species.

The two fissurelline genera having these propodial modifications occur in southern Africa and the western Indian Ocean, a region central to the distribution of genera in the subfamily. All five of the genera keyed above are known from South Africa. *Fissurella*, with its unmodified propodium, has more numerous species in the western hemisphere, on both sides of the Atlantic and in the eastern Pacific. *Amblychilepas*

and *Macrochisma* are better represented to the east, *Amblychilepas* in Australia and *Macrochisma* in Japan and Australia.

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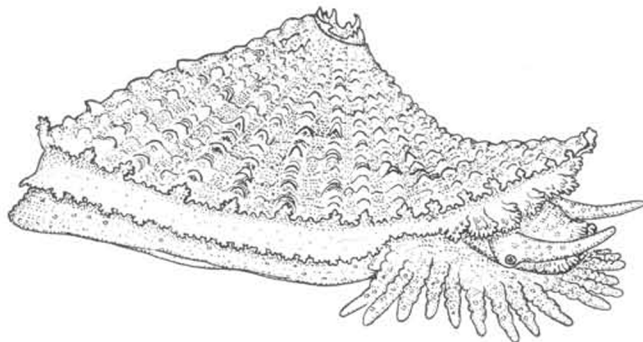


Figure 26. Right lateral view of *Medusafissurella salebrosa*, based on specimen in Fig. 14, reconstructed to show the mantle folds in contact with shell, tentacular propodium, snout, and cephalic tentacles with eyes at base, drawn by Yvonne Albi.

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