

**A New Genus and Species of Soft Coral
(Octocorallia: Alcyoniidae) from South Africa**

by

Gary C. Williams

*Department of Invertebrate Zoology and Geology, California Academy of Sciences
Golden Gate Park, San Francisco, California 94118*

and

John Starmer

*Coral Reef Research Foundation,
P.O. Box 1765, Koror, Palau 96940*

A new genus and species of recently discovered soft coral is described from the shallow-water temperate reefs of the eastern Cape Province of South Africa. The new taxon is somewhat similar to the southern African endemic soft coral *Malacacanthus capensis* (Hickson, 1900). However, the new species has sclerites and appears to be monomorphic, while *Malacacanthus capensis* does not have sclerites and has dimorphic polyps.

In the past twelve years, several new endemic genera of southern African octocorals have been described. Included here are the soft coral genera *Pieterfaurea* Verseveldt and Bayer (1988), *Verseveldtia* Williams (1990), *Leptophyton* Ofwegen and Schleyer (1997), *Lampophyton* Williams (2000), and *Dimorphophyton* Williams (2000); and the pennatulacean genus *Amphibelemonn* López-González, Gili, and Williams (2000).

This paper reports the discovery and description of an additional new genus and species of soft coral from the South Coast of South Africa.

METHODS

An examination of recently collected material was made for this study. The material was collected by SCUBA and preserved in 70% ethanol. Sclerites were isolated using sodium hypochlorite. Micrographs were made using a Kodak MDS100 digital video camera and a Wild M400 photomicroscope. Scanning electron micrographs were made on a Hitachi S-510 scanning electron microscope. Abbreviations used in the text are as follows: CAS (California Academy of Sciences, San Francisco), CRRF (Coral Reef Research Foundation, Palau).

A small specimen of *Malacacanthus capensis* (Hickson, 1900), collected from the same locality as the new taxon, was examined for comparative purposes. Collection data for this specimen is as follows: CAS 118498, (Sta. No. SAFR 365), Republic of South Africa, Cape Province, off Port Elizabeth, Algoa Bay, White Sands 6, 20 m depth, 26 February 1999, collected by John Starmer with aid of SCUBA, one whole specimen 15 mm in length.

SYSTEMATIC ACCOUNT

Family Alcyoniidae Lamouroux, 1812

Lanthanocephalus gen. nov.

TYPE SPECIES. — *Lanthanocephalus clandestinus* sp. nov. by original designation and monotypy.

DIAGNOSIS. — Growth form upright, unbranched, cylindrical to clavate. Polypary retractile into distal region of stalk. Polyps monomorphic and retractile, without calyces. Surface coenenchymal sclerites: small spindles and radiates.

ETYMOLOGY. — The new generic name is derived from the Greek, *lanthano* (to escape notice; unknown or unseen) and *kephale* (a head); in reference to the ability of the polypary to retract into the distal portion of the stalk.

Lanthanocephalus clandestinus sp. nov.

Figs. 1–6

TYPE MATERIAL. — Holotype: CAS 118500 (Sta. No. SAFR 365), Republic of South Africa, Cape Province, off Port Elizabeth, Algoa Bay, White Sands 6, on exposed rock, 20 m depth, 26 February 1999, collected by John Starmer with aid of SCUBA, one whole specimen 16 mm in length. Paratype: CAS 118499, same data as holotype, one 22 mm long specimen cut longitudinally into two halves.

DIAGNOSIS. — Alcyoniid soft corals with upright, unbranched, cylindrical to clavate growth form. Stalk rigid with rough surface texture. Polyps retractile, without calyces, presumably monomorphic, restricted to distal portion of the soft coral. Polypary retractile into distal portion of stalk. Retracted polypary conical to mammiform. Polypary sclerites: small spindles with pronounced conical tubercles 0.11–0.18 mm long. Stalk sclerites: radiates 0.04–0.09 mm in length. All sclerites colorless. Wet-preserved color dark brown.

DESCRIPTION OF THE HOLOTYPE. — **Growth form and size.** The holotype is 16 mm in length and 6 mm in width at its widest portion. The growth form is unbranched and cylindrical to clavate (Figs. 1B; 2C).

Stalk and Polypary. The stalk is relatively rigid and exhibits a tough, somewhat crenulated surface texture. The polypary is retractile into the distal region of the stalk, forming a conical or mammiform distal terminus (Figs. 1A, B; 2A–C). The retracted polypary comprises 5–12% of the total body length of the paratype and holotype (Fig. 1A, B).

Polyps. A detailed study of the polyps is not possible since the polypary is almost completely retracted into the distal region of the stalk. However, examination of the tip of the polypary of the holotype, as well as the interior of the longitudinally sectioned paratype, shows that the polyps are fully retractile (without calyces) and presumably monomorphic, since no siphonozooids are visible. Microscopic examination of the longitudinally sectioned paratype as well as a transverse section through the retracted polypary did not reveal any evidence for the presence of siphonozooids.

Sclerites. The surface coenenchyme of the distal tip of the polypary contains short robust spindles with pronounced, mostly conical tubercles (Fig. 3B). They vary in length from 0.11–0.18 mm. Also present are some radiates. The sclerites of the surface coenenchyme of the stalk are radiates: mostly eight-radiates, and irregularly-shaped forms that are presumably derived from radiates (Fig. 3A, 4, 5). They vary in length from 0.04–0.09 mm. The interior of the polypary and stalk appears not to contain sclerites or at most they are very sparse. All sclerites are colorless.

Color of wet-preserved material. Exterior dark chocolate brown throughout; interior uniform reddish brown.

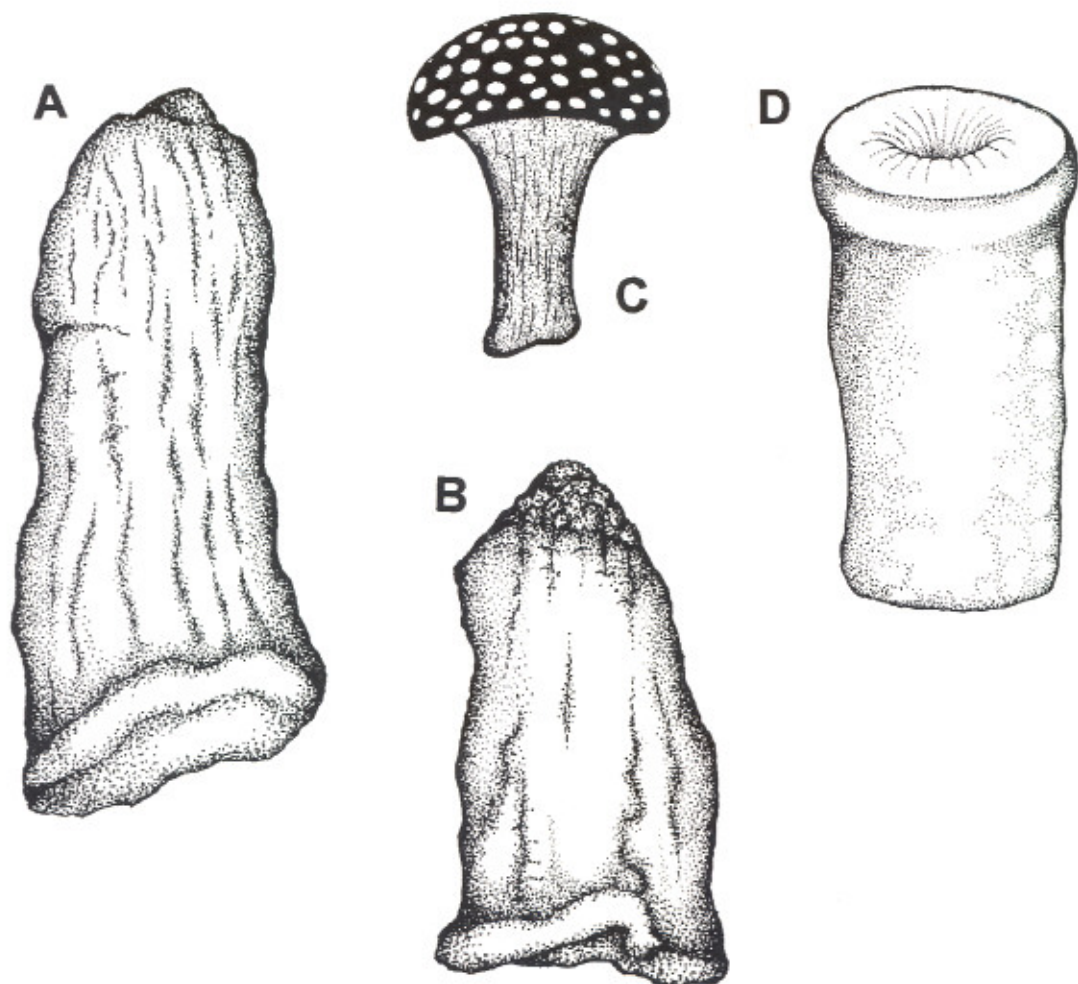


FIGURE 1. A-B. *Lanthanocephalus clandestinus* gen. and sp. nov. A. Paratype (CAS 118499); 22 mm in length. B. Holotype (CAS 118500); 16 mm in length. C-D. *Malacacanthus capensis* (Hickson, 1900). C. Specimen 80 mm long with retracted polyps, showing capitulate growth form. D. Specimen 75 mm long with retracted polypary. C and D after Williams (1987:1339, fig. 2).

DISTRIBUTION. — Algoa Bay, eastern Cape Province, South Africa (Fig. 6): 20 m in depth.

ETYMOLOGY. — The specific epithet of the new species is derived from the Latin, *clandestinus* (hidden or secret); in reference to the retractile polyps, and the ability of the polypary to withdraw into the distal portion of the stalk.

REMARKS. — The new taxon is at present known only from the holotype and paratype. Both of these specimens have the polypary tightly retracted into the distal region of the stalk. It is therefore not possible to provide detailed descriptions of the polypary or polyps.

DISCUSSION

Lanthanocephalus clandestinus gen. and sp. nov. is sympatric with, and most closely resembles, the southern African endemic soft coral *Malacacanthus capensis* (Hickson, 1900). The latter species has been illustrated or described, or at least mentioned, in several publications under various

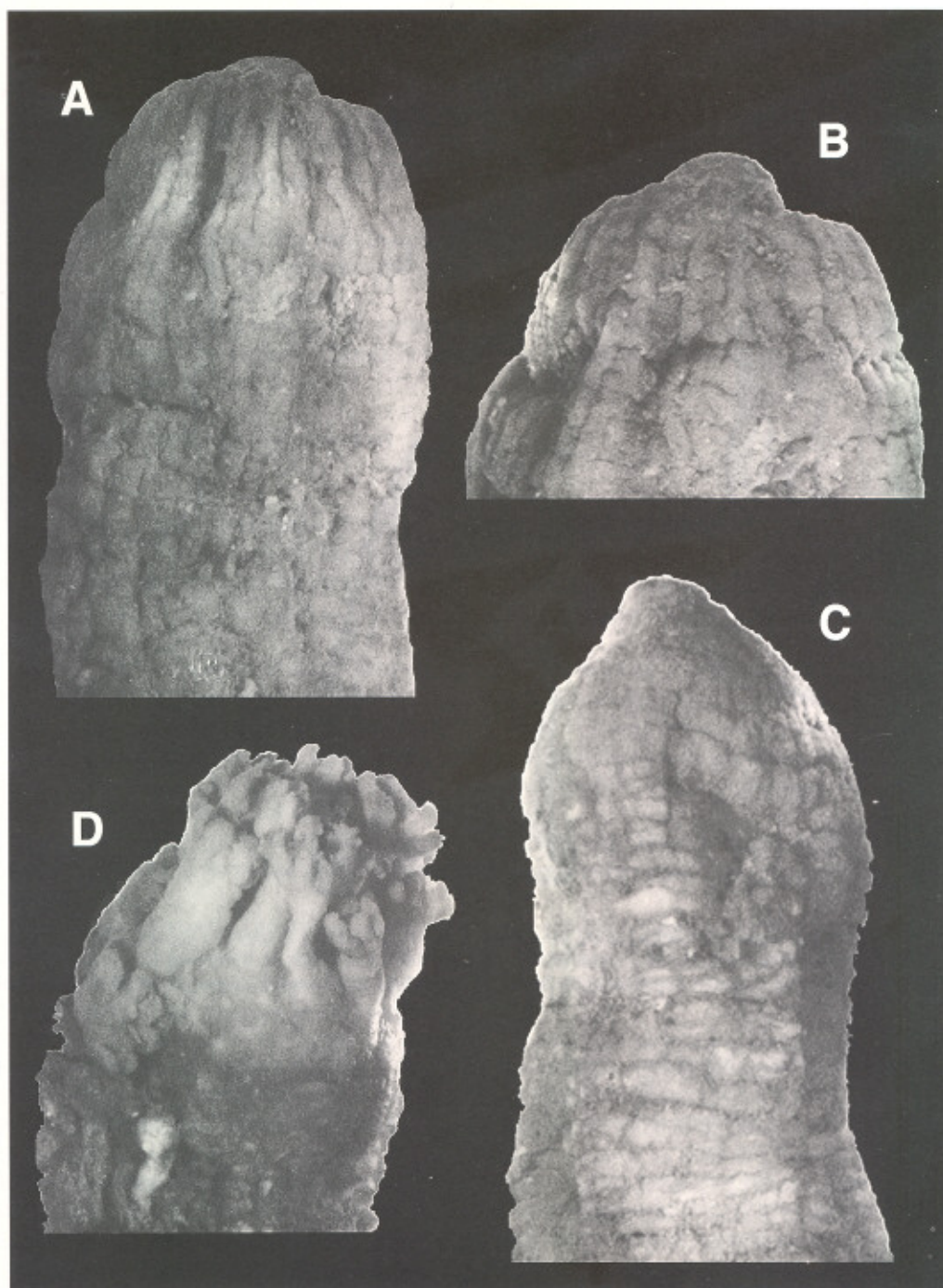


FIGURE 2. *Lanthanocephalus clandestinus* gen. and sp. nov. A. Micrograph of distal portion of wet-preserved paratype with retracted polypary; length of portion shown = 14 mm. B. Micrograph of distal tip of wet-preserved paratype; length of portion shown = 5 mm. C. Micrograph of distal portion of wet-preserved holotype with retracted polypary; length of portion shown = 14 mm. D. *Malacacanthus capensis* (Hickson, 1900). Micrograph of distal portion of wet-preserved specimen showing partly expanded polyps; length of portion shown = 10 mm.

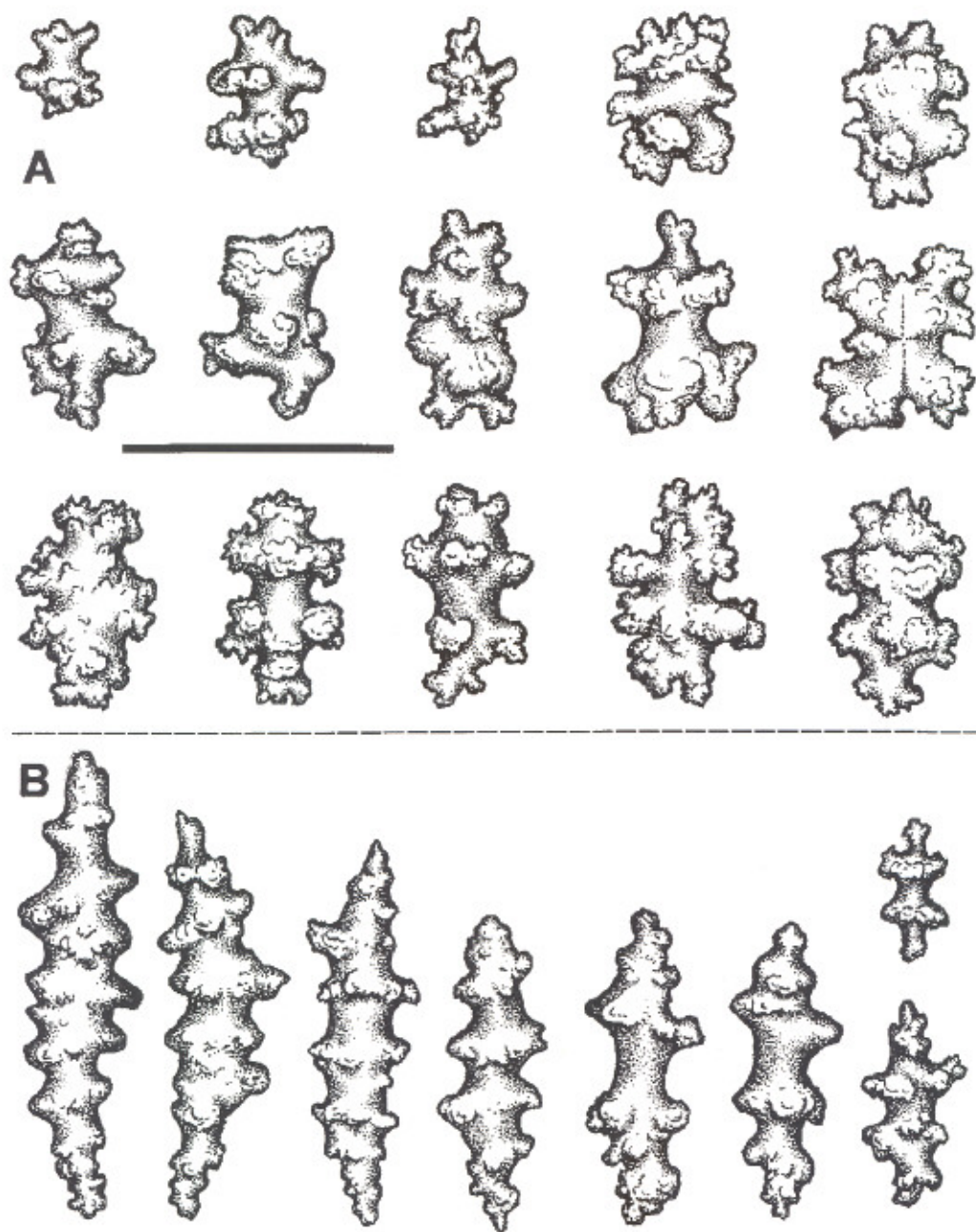


FIGURE 3. *Lanthanocephalus clandestinus* gen. and sp. nov. Variation in sclerites from the surface coenenchyme of the holotype. A. Sclerites from the stalk. B. Sclerites from the distal tip of the polypary. Scale bar for both A and B = 0.1 mm.

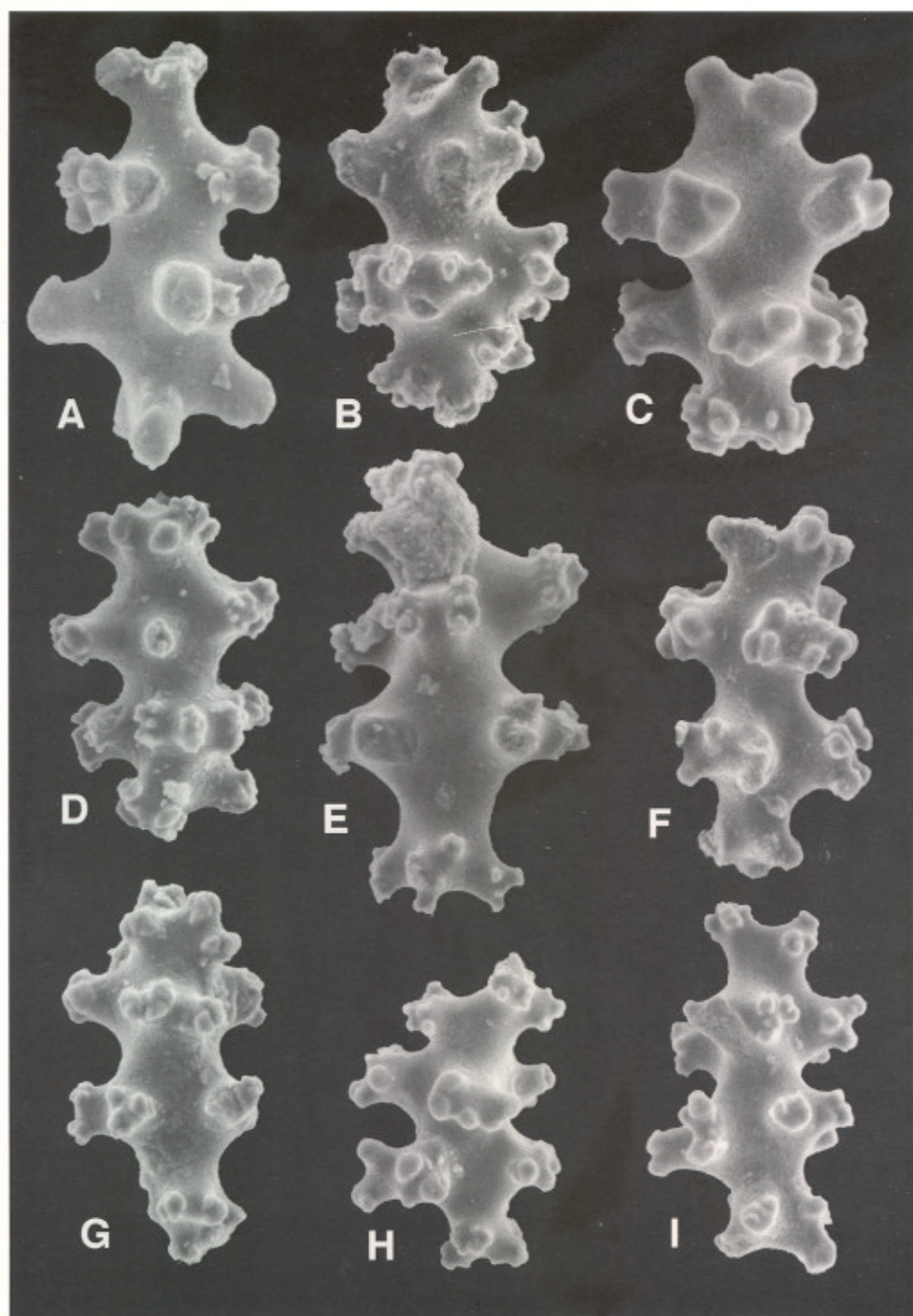


FIGURE 4. *Lanthanocephalus clandestinus* gen. and sp. nov. Scanning electron micrographs of sclerites from the surface coenenchyme of the holotype. Lengths: A. 0.07 mm. B. 0.09 mm. C. 0.07 mm. D. 0.08 mm. E. 0.09 mm. F. 0.08 mm. G. 0.08 mm. H. 0.07 mm. I. 0.09 mm.

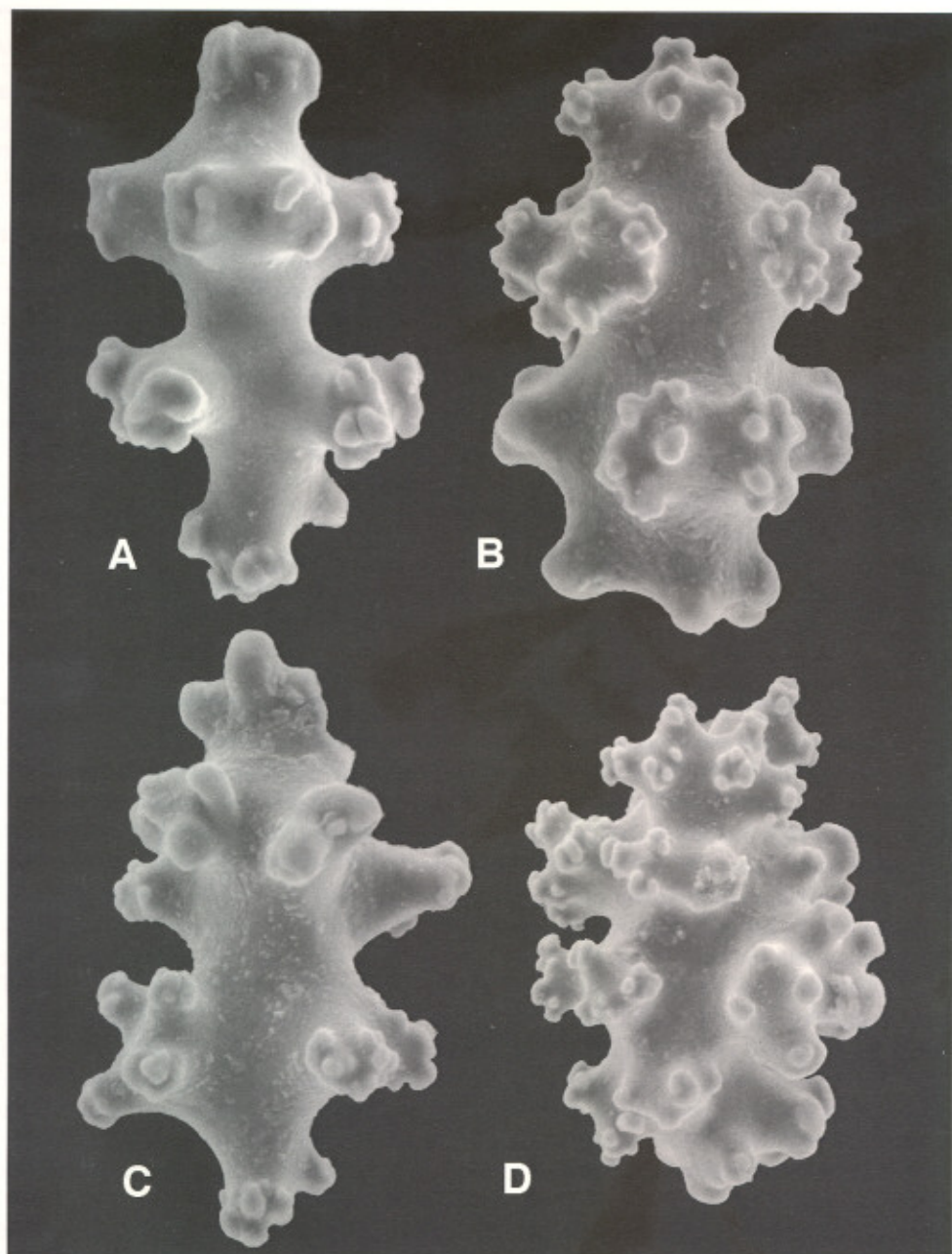


FIGURE 5. *Lanthanocephalus clandestinus* gen. and sp. nov. Scanning electron micrographs of sclerites from the surface coenenchyme of the holotype. Lengths: A. 0.06 mm. B. 0.08 mm. C. 0.08 mm. D. 0.09 mm.

binomens. These names include *Heteroxenia capensis*, *Xenia uniserta*, *Malacacanthus rufus*, *Heteroxenia uniserta*, and *Malacacanthus capensis*, as well as *Malacacanthus*, and the vernacular "sunburst soft coral." The relevant publications include Bayer (1981), Branch and Branch (1981), Branch et al. (1994), Broch (1939), Day et al. (1970), Hickson (1900, 1931), Kükenthal (1906), J. S.

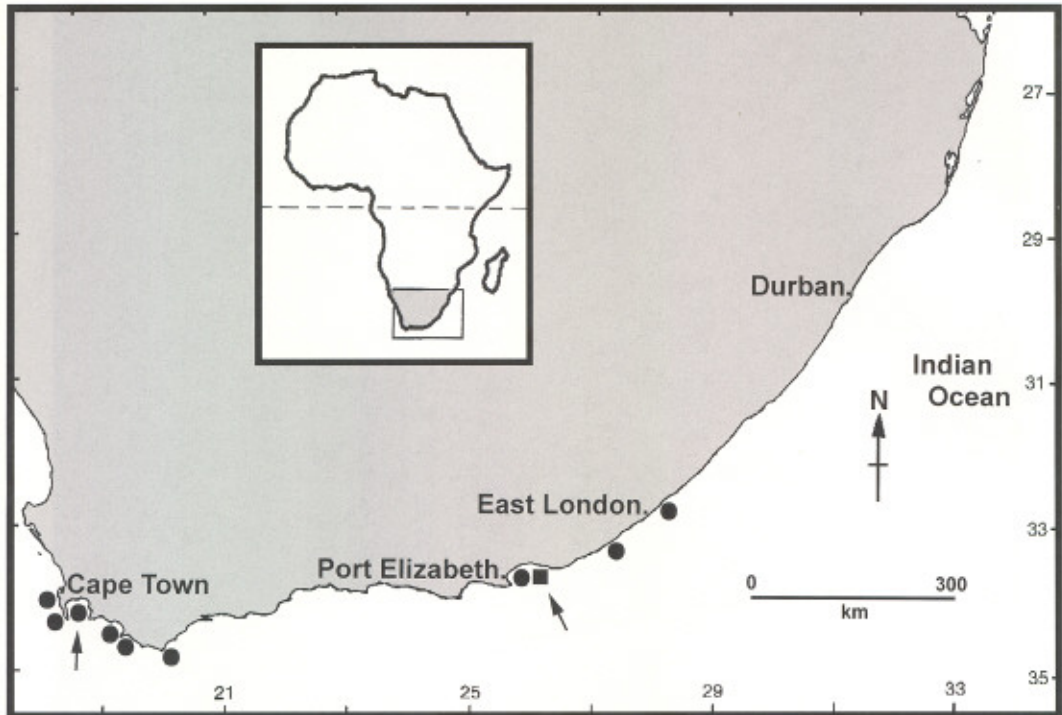


FIGURE 6. Map of southern Africa showing distributions of *Lanthanocephalus clandestinus* gen. and sp. nov. (■), and *Malacacanthus capensis* (Hickson, 1900) (●). Arrows represent type localities.

Thomson (1910, 1921, 1924), Tixier-Durivault (1954), Williams (1987, 1990, 1992a, 1992b), and Williams and Alderslade (1999).

Lanthanocephalus clandestinus and *Malacacanthus capensis* share one important morphological character besides having sympatric distributions (Fig. 6; Table 1). Both taxa have polyparies capable of retraction into the stalk (Figs. 1D, 2B). However, they differ in three significant characters. *Lanthanocephalus clandestinus* has sclerites, does not have a cuticle surrounding the stalk, and appears to be monomorphic since siphonozooids are not evident in the two retracted specimens. The capitate *Malacacanthus capensis* (Fig. 1C), on the other hand, does not have sclerites, a reddish orange cuticle covers the epidermis of the stalk, and it is conspicuously dimorphic. In light of these observations, it is therefore justified to differentiate the two taxa into separate genera. A 15-mm, wet-preserved specimen of *Malacacanthus capensis* (CAS 118498) was examined for comparison. The autozooids are partly expanded and measure 3–4 mm in length (Fig. 2D). Minute siphonozooids are apparent between the autozooids, each approximately 0.3 mm in diameter.

Ceratocaulon wandeli Jungersen, 1898, from subarctic waters, also has a distinct horny cuticle surrounding the stalk as in *Malacacanthus capensis*, but is monomorphic and cylindrical in shape as is *Lanthanocephalus clandestinus*. It differs from these two taxa however, in having sclerites that resemble minute ovals or rounded platelets.

Species of the paracyoniid genus *Studerites* Thomson and Simpson, 1909, can also withdraw the polyparium into the stalk and are also monomorphic, but they differ in having sclerites that are predominantly large robust spindles, numerous fingerlike branches that compose the polyparium, and polyps with conspicuous calyces comprised of abundant sclerites. Pertaining to *Studerites mirabilis* (J. A. Thomson, 1908) from the Andaman Islands, J. A. Thomson and Simpson (1909:8, figs. 3–4)

TABLE 1. Comparison of *Lanthanocephalus clandestinus* and *Malaccacanthus capensis*.

	<i>Lanthanocephalus clandestinus</i>	<i>Malaccacanthus capensis</i>
Maximum length	22 mm	80 mm
Growth form	cylindrical to clavate	cylindrical to capitate
Sclerites	radiates ≤ 0.09 mm, colorless; spindles ≤ 0.18 , colorless	absent
Distribution	Port Elizabeth	Cape Town to East London
Depth range	20 m	10–93 m
Polyps	presumably monomorphic	dimorphic
Stalk cuticle	absent	present
Polypary shape (wet preserved)	conical to mammiform	usually capitate
Polypary retraction into stalk	yes	yes
Wet-preserved color	dark brown	orange polyps, reddish brown stalk

clearly illustrate the fully retracted polyparium within the trunklike stalk, as well as the conspicuous calyces of the retracted polyps.

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