

# ***Sinularia mauritiana*, a new species of soft coral (Coelenterata: Octocorallia) from Mauritius, Indian Ocean**

J. Vennam & A.H. Parulekar

Vennam, J. & A.H. Parulekar. *Sinularia mauritiana*, a new species of soft coral (Coelenterata: Octocorallia) from Mauritius, Indian Ocean.

Zool. Med. Leiden 68 (13), 15.vii.1994:127-133, figs. 1-4.— ISSN 0024-0672.

J. Vennam & A.H. Parulekar, National Institute of Oceanography, Dona Paula, Goa, 403004, India.

**Key words:** Octocorallia; Alcyoniidae; *Sinularia mauritiana* spec. nov.; Indian Ocean; Mauritius.

*Sinularia mauritiana*, a new soft coral (family Alcyoniidae) from shallow subtidal waters off Mauritius (Western Indian ocean) is described. Extremely long clubs in the surface layer of the lobes, the presence of eight-radiates in the surface layer of the base, and the many spindles with simple tubercles in the interior of the lobes, separate it from previously described species.

## **Introduction**

The octocoral fauna of the Indian Ocean is known from stray reports: Maldives (Pratt, 1903; Hickson, 1903, 1905); Seychelles (Verseveldt, 1976); Madagascar (Verseveldt, 1968, 1970, 1971; Tixier-Durivault, 1966); Tanzania (Van Ofwegen & Benayahu, 1992) and from the material collected by the "Investigator" (Thomson & Henderson, 1906; Thomson & Simpson, 1909), mostly from Andamans, Ceylon, Ganjam Coast, Arakan Coast, Coromandel Coast and Persian Gulf. Recently, two papers were published on the octocorals of the Laccadive Archipelago (Van Ofwegen & Vennam, 1991; Alderslade & Shirwaiker, 1991). So far, however, there were no reports on soft corals from Mauritius.

The present study is based on the octocoral material made available by our colleague Dr T.G. Jagtap, who collected it by SCUBA diving at depths of 10-20 m, around Mauritius (fig. 1). All specimens are preserved in alcohol 70%.

Abbreviations of depositories: NIO/DOD/DIO = National Institute of Oceanography/Department of Ocean Development/Drugs from the Indian Ocean, Goa, India; RMNH = Nationaal Natuurhistorisch Museum, formerly Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands.

## **List of the species**

Genus *Sinularia* May, 1898

1. *Sinularia abrupta* Tixier-Durivault, 1970 (NIO/DOD/DIO/208)
2. *Sinularia dissecta* Tixier-Durivault, 1945 (NIO/DOD/DIO/206)
3. *Sinularia exilis* Tixier-Durivault, 1970 (NIO/DOD/DIO/200)
4. *Sinularia gyrosa* (Klunzinger, 1877) (NIO/DOD/DIO/199)
5. *Sinularia hirta* (Pratt, 1903) (NIO/DOD/DIO/207)
6. *Sinularia leptocladus* (Ehrenberg, 1834) (NIO/DOD/DIO/201)
7. *Sinularia mauritiana* spec. nov. (NIO/DOD/DIO/210, holotype; RMNH Coel. 18562, paratype)
8. *Sinularia muralis* May, 1899 (NIO/DOD/DIO/204)
9. *Sinularia ovispiculata* Tixier-Durivault, 1970 (NIO/DOD/DIO/202)

Genus *Cladiella* Gray, 1869.

10. *Cladiella krempfi* (Hickson, 1919) (NIO/DOD/DIO/203)

Genus *Sarcophyton* Lesson, 1834.

11. *Sarcophyton serenei* Tixier-Durivault, 1958 (NIO/DOD/DIO/195)

12. *Sarcophyton stellatum* Kükenthal, 1910 (NIO/DOD/DIO/196)

13. *Sarcophyton glaucum* (Quoy & Gaimard, 1833) (NIO/DOD/DIO/198)

14. *Sarcophyton crassum* Tixier-Durivault, 1946 (NIO/DOD/DIO/197)

Genus *Lobophytum* Von Marenzeller, 1886.

15. *Lobophytum variatum* Tixier-Durivault, 1957 (NIO/DOD/DIO/205)

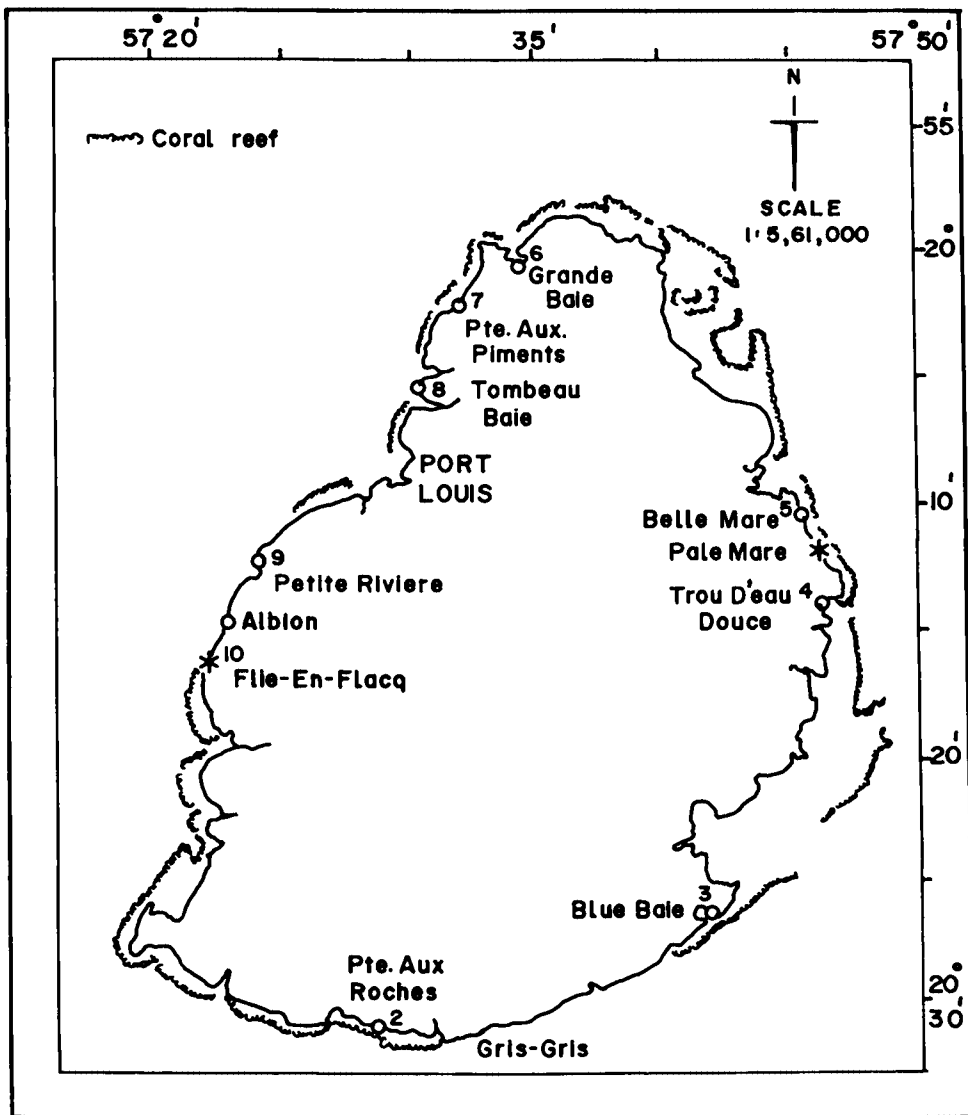


Fig. 1. \* Collection sites in Mauritius.

**Systematic part***Simularia mauritiana* spec. nov.  
(figs. 2-4)

**Material.**— Flie-En-Flacq, Mauritius, Western Indian Ocean, 10-20 m, 22.ix.1987, holotype (NIO/DOD/DIO/210), paratype (RMNH Coel. 18562).

The holotype (fig. 2a) is about 5.5 cm high and 5 cm wide. The colony is erect, tree like, with a sterile stalk measuring 2.5 cm in length. The polypary consists of densely placed lobes which are distinctly longer than wide. They are up to 3 cm long and 0.5 cm wide, finger-shaped, usually narrowing distally, and flattened laterally. Some of the lobes are curved at the tips, some are branched. The secondary lobes are finger-shaped or knob-like, up to 1 cm long. The polyps are not fully retracted, 0.06 mm (distally) to 0.09 mm (at the base) apart. The texture of the colony is soft and flexible. The stalk shows longitudinal ridges.

Polyps with poorly developed clubs, straight or curved, up to 0.25 mm long (fig. 3m). Furthermore, the tentacles contain flat rods, measuring 0.05-0.07 mm in length. The surface of the lobes and lobules contains two types of sclerites. Firstly, there are

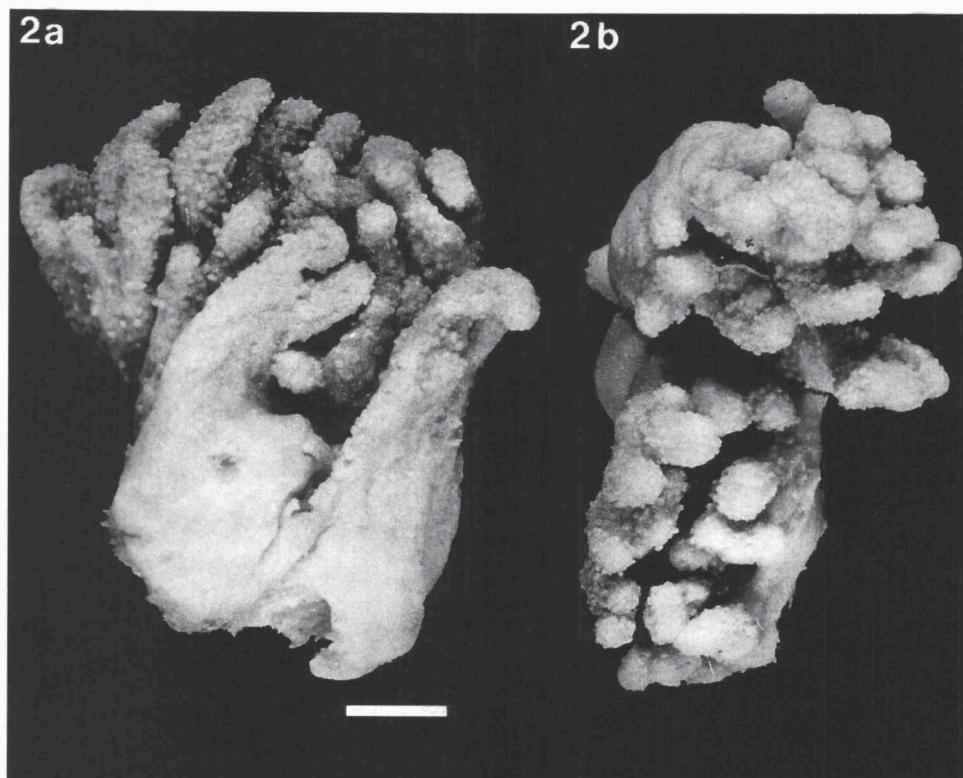


Fig. 2. *Simularia mauritiana* spec. nov.; a, holotype (NIO/DOD/DIO/210); b, paratype (RMNH Coel. 18562). Scale 1 cm.

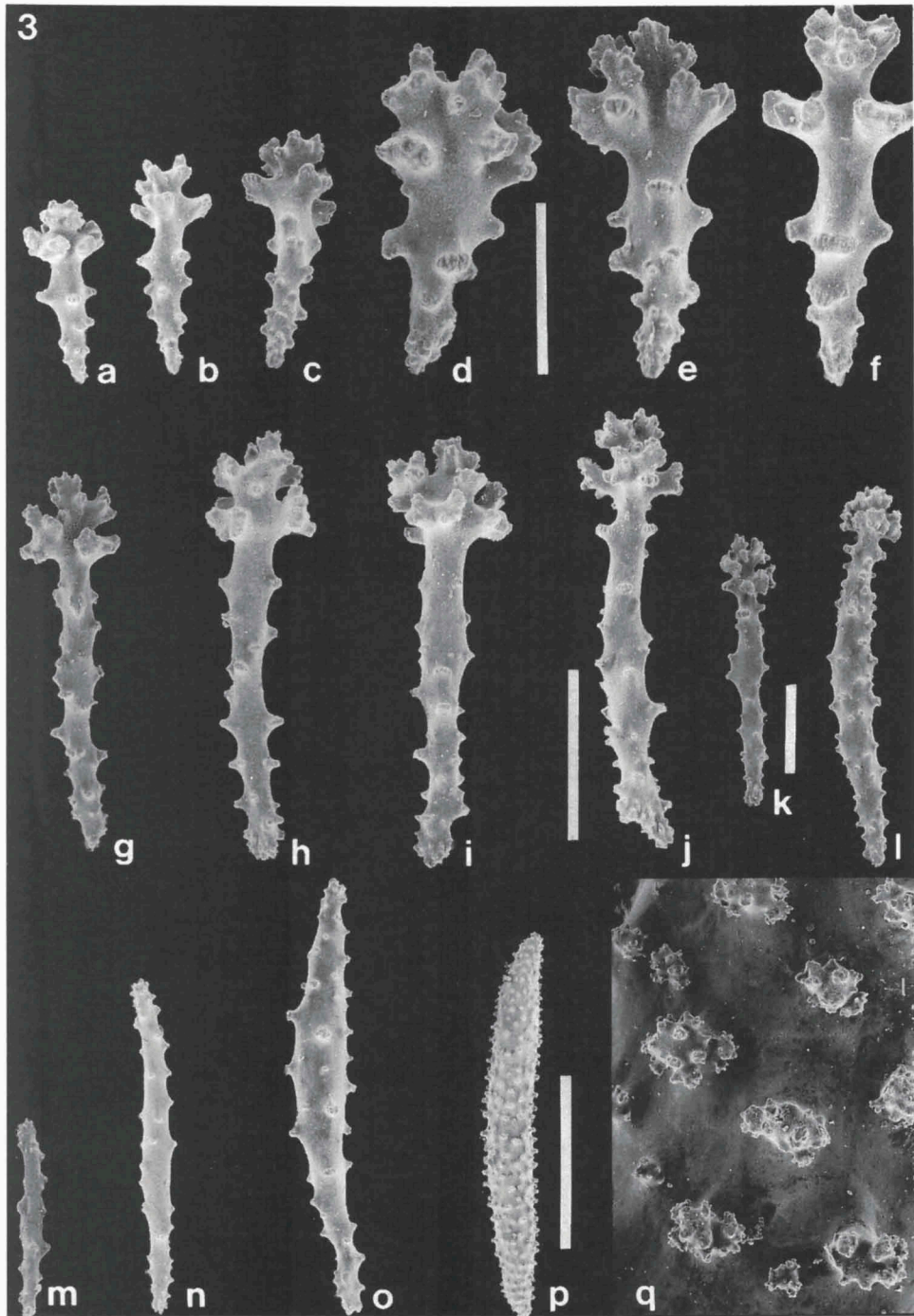


Fig. 3. *Sinularia mauritiana* spec. nov., holotype (NIO/DOD/DIO/210); a-l, clubs of surface layer of lobe; m, anthocodial club; n-o, spindles of surface layer of lobe; p, spindle of interior of lobe; q, tubercles on spindle of 3p; 0.05 mm scale at 3d applies to 3d-f; 0.10 mm scale at 3j applies to 3a-c, g-j, m, q; 0.10 mm scale at k applies to 3k-l, n-o; 1.00 mm scale at 3p applies to 3p.

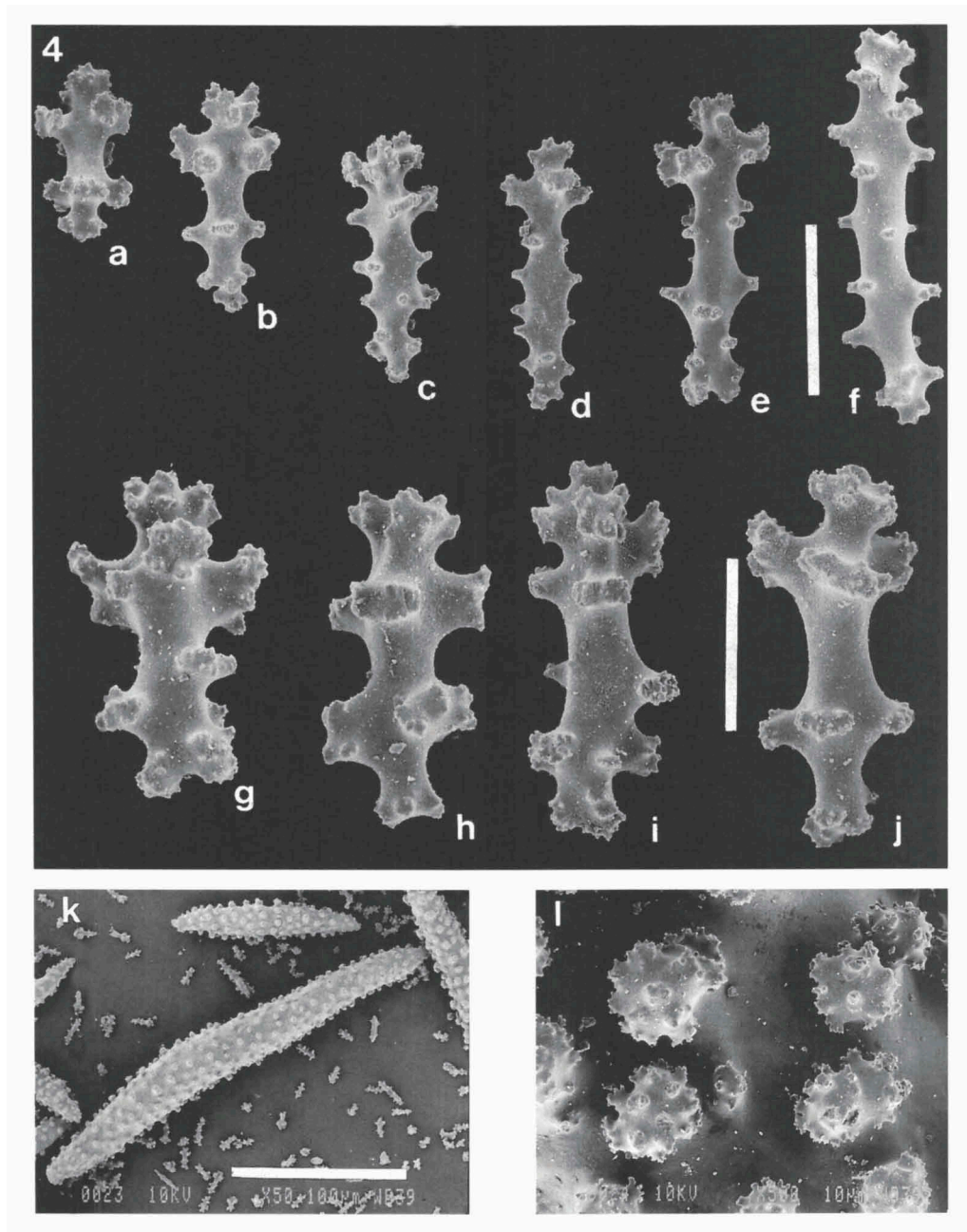


Fig. 4. *Sinularia mauritiana* spec. nov., holotype (NIO/DOD/DIO/210); a-j, sclerites of the surface layer of the stalk; k, spindles of the stalk interior; l, tubercles on spindle; 0.10 mm scale at 4f applies to 4a-f; l; 0.05 mm scale at 4j applies to 4g-j; 1.00 mm scale at 4k applies to 4k.

clubs measuring 0.08–0.45 mm in length, mostly with a central wart (figs. 3a–l), and with handles bearing low prominences. Secondly, there appear to be many spindles up to about 0.50 mm long, straight or curved, with low prominences (figs. 3n–o).

The interior of the lobes contains pointed spindles, up to about 3.5 mm long (fig. 3p). Few are bifurcated at one end. Most of the spindles have simple tubercles, some have small complex tubercles. These tubercles have a diameter of 0.01–0.05 mm (fig. 3q).

The sclerites of the surface layer of the base are wider and much coarser. Most of the clubs are 0.10–0.30 mm long (figs. 4a–e, g, i–j). Some larger club-like sclerites also occur, transitional forms to the spindles of the interior. Apart from these, there are eight-radiates, up to about 0.10 mm long (fig. 4h).

The large spindles of the stalk interior are larger than those in the lobes, some are up to about 4 mm long. The tubercles on the spindles are irregularly arranged and 0.03–0.06 mm in diameter (fig. 4l).

Colour.— The colour of the preserved colony is creamish.

Variation.— In the paratype most primary lobes are ramified to knob-like secondary lobes. Only a few finger-shaped, unbranched primary lobes are present. The distances between the polyps are much wider than in the holotype, at the base up to 0.1 mm. The colony is also creamish in colour. There are no significant differences between the sclerites of the paratype and those of the holotype.

### Discussion

Because the clubs of the surface layer have a central wart, *Simularia mauritiana* spec. nov. can be included in Verseveldt's Group II (see Verseveldt, 1980: 7). In this group only *Simularia parva* Tixier-Durivault, 1970, has clubs up to 0.40 mm long, but that species has an encrusting colony form.

The new species has a colony form similar to that of *S. conferta* (Dana, 1846) but the shape and dimensions of the sclerites of that species are not known (see Verseveldt, 1980: 31, pl. 6).

There is a similarity of the colony form, and the shape and size of the few long clubs of *S. manaarensis* Verseveldt, 1980, and the present species. However, in *S. manaarensis* the longer clubs are only up to 0.29 mm long, whereas in the present species the longer clubs are up to at least 0.45 mm long.

In *S. gardineri* (Pratt, 1903) also very long clubs are present, but the colony form is cup-shaped with slender primary lobes and digitiform secondary lobes on all sides, and the clubs show no central wart at all.

### Acknowledgements

We wish to thank Dr B.N. Desai, Director, NIO, Goa, for the facilities provided. We thank Dr P. Alderslade (Northern Territory Museum, Darwin, Australia) for his valuable suggestions in preparing this manuscript. Our appreciation also goes to Mr Umesh Sirsat and Mr Sheikh, NIO, Goa, for development of the photoprints.

### References

- Alderslade, P., & P. Shirwaikar, 1991. New species of soft corals (Coelenterata: Octocorallia) from the Laccadive Archipelago.— *The Beagle* 8 (1): 189-233, figs. 1-48.
- Hickson, S. J., 1903. The Alcyonaria of the Maldives. Part I. The genera *Xenia*, *Telesto*, *Spongodes*, *Nephthya*, *Paraspongodes*, *Chironephthya*, *Siphonogorgia*, *Solenocaulon* and *Melitodes*. In: Gardiner, J.S. (ed.). *The Fauna and Geography of the Maldives and Laccadive Archipelagoes* 2 (1): 473-502, pls. 26-27.— Cambridge.
- Hickson, S. J., 1905. The Alcyonaria of the Maldives. Part III. The families Muriceidae, Gorgonellidae, Melitodidae and the genera *Pennatula*, *Eunephthya*. In: Gardiner, J.S. (ed.). *The Fauna and Geography of the Maldives and Laccadive Archipelagoes* 2 (4): 807-826, pl. 67.— Cambridge.
- Pratt, E.M., 1903. Alcyonaria of the Maldives. Part II. The genera *Sarcophytum*, *Lobophytum*, *Sclerophytum* and *Alcyonium*. In: Gardiner, J.S. (ed.). *The Fauna and Geography of the Maldives and Laccadive Archipelagoes* 2 (1): 503-539, pls. 28-31.— Cambridge.
- Thomson, J.A., & W.D. Henderson, 1906. The marine fauna of Zanzibar and British East Africa, from collections made by Cyril Crossland M.A., B.Sc., F.Z.S., in the years 1901 and 1902. Alcyonaria.— *Proc. zool. Soc. Lond.*, 1906: 393-443, fig. 85, pls. 26-31.
- Thomson, J.A., & J.J. Simpson, 1909. An account of the Alcyonarians collected by the Royal Indian Marine Survey Ship "Investigator" in the Indian Ocean. II. The Alcyonarians of the littoral area: i-xviii, 1-319, pls. 1-9.— Calcutta.
- Tixier Durivault, A., 1966. Octocoralliaires de Madagascar et des îles avoisinantes.— *Faune de Madagascar* 21: 1-456, figs. 1-399.
- Ofwegen, L.P. van, & J. Vennam, 1991. Notes on Octocorallia from the Laccadives (SW India).— *Zool. Med. Leiden* 65 (9): 143-154, figs. 1-7.
- Ofwegen L.P. van, & Y. Benayahu, 1992. Notes on Alcyonacea (Octocorallia) from Tanzania.— *Zool. Med. Leiden* 66: 139-154, figs. 1-15.
- Verseveldt, J., 1968. Preliminary note on some new Octocorallia from Madagascar.— *Proc. Kon. Nederl. Akad. Wetensch., (C)* 71 (1): 52-59.
- Verseveldt, J., 1970. A new species of *Sinularia* (Octocorallia: Alcyonacea) from Madagascar.— *Israel J. Zool.* 19 (3): 165-168, figs. 1-3.
- Verseveldt, J., 1971. Octocorallia from north-western Madagascar (Part II).— *Zool. Verh., Leiden* 117: 1-73, figs. 1-40, pls. 1-15.
- Verseveldt, J., 1976. Alcyonacea from the Seychelles (Coelenterata: Octocorallia).— *Rev. Zool. afr.*, 90 (3): 497-513, figs. 1-5, 1 pl.
- Verseveldt, J., 1980. A revision of the genus *Sinularia*. May (Octocorallia, Alcyonacea).— *Zool. Verh., Leiden* 179: 1-128, figs. 1-68, pls. 1-38.

Received: 18.i.1994

Accepted: 12.iv.1994

Edited: J.C. den Hartog & L.P. van Ofwegen