

## STUDIES ON INDIAN CORALS—1.

REPORT ON A NEW SPECIES OF *MONTIPORA* (SCLERACTINIA, ACROPORIDAE)\*+

By C. S. GOPINADHA PILLAI

*Central Marine Fisheries Research Institute, Mandapam Camp*

THE coral fauna of Gulf of Mannar and Palk Bay around Mandapam in South India, is one which has received very little attention of the biologists. The author made an intensive collection of shallow-water Scleractinians from this area during 1964-1966, comprising about 100 species. One may naturally expect several new species in a large biological collection from an area which is little investigated. But curiously enough, the coral fauna of this area yielded only a few new species, one of which is described in the present paper. The rest of the new species in the collection will be reported on subsequent occasions.

Family ACROPORIDAE Verrill

Genus *Montipora* Quoy and Gaimard, 1830

Type species : *Montipora verrucosa* Quoy and Gaimard.

*Generic characters* : Corallum variously shaped, encrusting, massive, foliaceous or ramose. Axial corallite absent. Corallites small, generally level with the surface coenenchyme ; septa in two cycles. Coenosteum porous. Columella absent or poorly developed.

***Montipora manauliensis* sp. nov.**

(Pl. I, figs. 1, 2)

*Description of the holotype* : Corallum massive, heavy, 35 cm. in greater diameter and 25 cm. in total height (measured in the field). Not realising the importance of the specimen in the field at the time of collection, it was broken up and only a piece 17 cm. in diameter and 19 cm. in height was brought to the laboratory. The upper surface of the coral rises into irregular hillocks of different size and shape, resembling some species of massive *Porites*. These gibbositities are 3 to 5 cm. in width and height.

Calices very small, inconspicuous, shallow, like mere pin points, irregular in outline, rounded or elongated, not well bounded by a solid thecal wall, sometimes, arranged in irregular longitudinal rows. Calices at the upper part of the corallum

\*Published with the kind permission of the Director, C.M.F.R.I.

+ Extracted from the Ph.D. Thesis approved by the University of Kerala.

close together, 0.35 to 0.6 mm. in diameter; still smaller at the basal part where majority are slit-like and are 0.25 to 0.35 mm. in greater diameter. They are flush with the surface at the basal part of the corallum, and are 1 to 2 mm. apart. The calices on the top of the corallum are comparatively deep and are close together. Septa in two cycles. Primaries large, either the directives alone or all the six primaries meet at the centre of the calyx, sometimes over a rudimentary columella. Secondary septa 4 to 6 in numbers. Septa much thickened and crowded within the calyx almost filling the fossa.

The coenenchymal surface swells up around the calyx. The foveolation is more marked on the gibbositities than at the lower portions of the colony. An examination of the surface coenenchyme under the lens reveals a fine reticulum with crowded, vertical plates the edges of which bear 2 to 3 sharp spinules; between which the pores of the reticulum are seen.

Section of the coral appears dense and massive to the naked eye but under magnification it shows a compact reticulum of horizontal and vertical elements.

*Colour* : The living corallum exhibited a lilac colour.

*Type locality* : Manauli Island (Long. 79° 7' 30" E., Lat. 9° 12' 30" N.) in Gulf of Mannar near Mandapam. Depth about 50 cm. during low tide.

The present species is named after the name of the place from where the holotype is collected. The specimen will be deposited in the reference collection museum of the Central Marine Fisheries Research Institute, Mandapam Camp.

*Remarks* : *M. manauliensis* sp. nov. belongs to Bernard's (1897) group of foveolate *Montipora* in which the interstitial coenenchyme swells up around the calices forming ramparts. Bernard (*op. cit.*) in his catalogue has considered sixteen species and one variety under his foveolate group. Among the subsequent authors such as Studer (1901), Marenzeller (1906), Vaughan (1907, 1918), Gravier (1911), Hoffmeister (1925), Thiel (1932), Crossland (1948, 1952) and Wells, (1954), only Vaughan (1918) and Hoffmeister (*op. cit.*) have described single new species of foveolate *Montipora* each. Out of the described foveolate species, *M. gaimardi* Bernard, *M. palmata*, *M. rigida* Verrill, *M. limitata* (Ellis and Solander) and *M. cocosensis* Vaughan possess branching corallum. *M. indentata* Bernard also possesses a ramose corallum but is synonymous with *M. divaricata* Brüggemann (Crossland, 1952). *M. multiformis* Bernard and *M. pilosa* Bernard are encrusting in their growth form. *M. caliculata* Bernard and *M. calcarea* Bernard are thick and explanate with free edges. *M. irregularis* Quelch is having a corallum consisting of loosely branching mass with irregular encrusting base. The growth form of *M. angulata* (Lamarck) as far as known is in the form of flattened process with sharp angular edges. None of the above species approaches the present. *M. vauhani* Hoffmeister is synonymous with *M. socialis* Bernard (Wells, 1954). Both *M. socialis* and *M. foveolata* (Dana) are somewhat massive, and are closely related to each other. But they differ greatly from the present species in having large, deep and conspicuous calices (about 1 mm. diameter in *M. socialis* and 1.5 mm. or more in *M. foveolata*) arranged between the ridges formed by the continuous running of foveolation. *M. libera* Bernard and *M. profunda* Bernard group with *M. turgescens* Bernard (Wells, 1954) and may develop a somewhat massive corallum. But their calicular characters are very different from the present. The present species appears to be unique in its growth form among all the described species of foveolate *Montipora*.

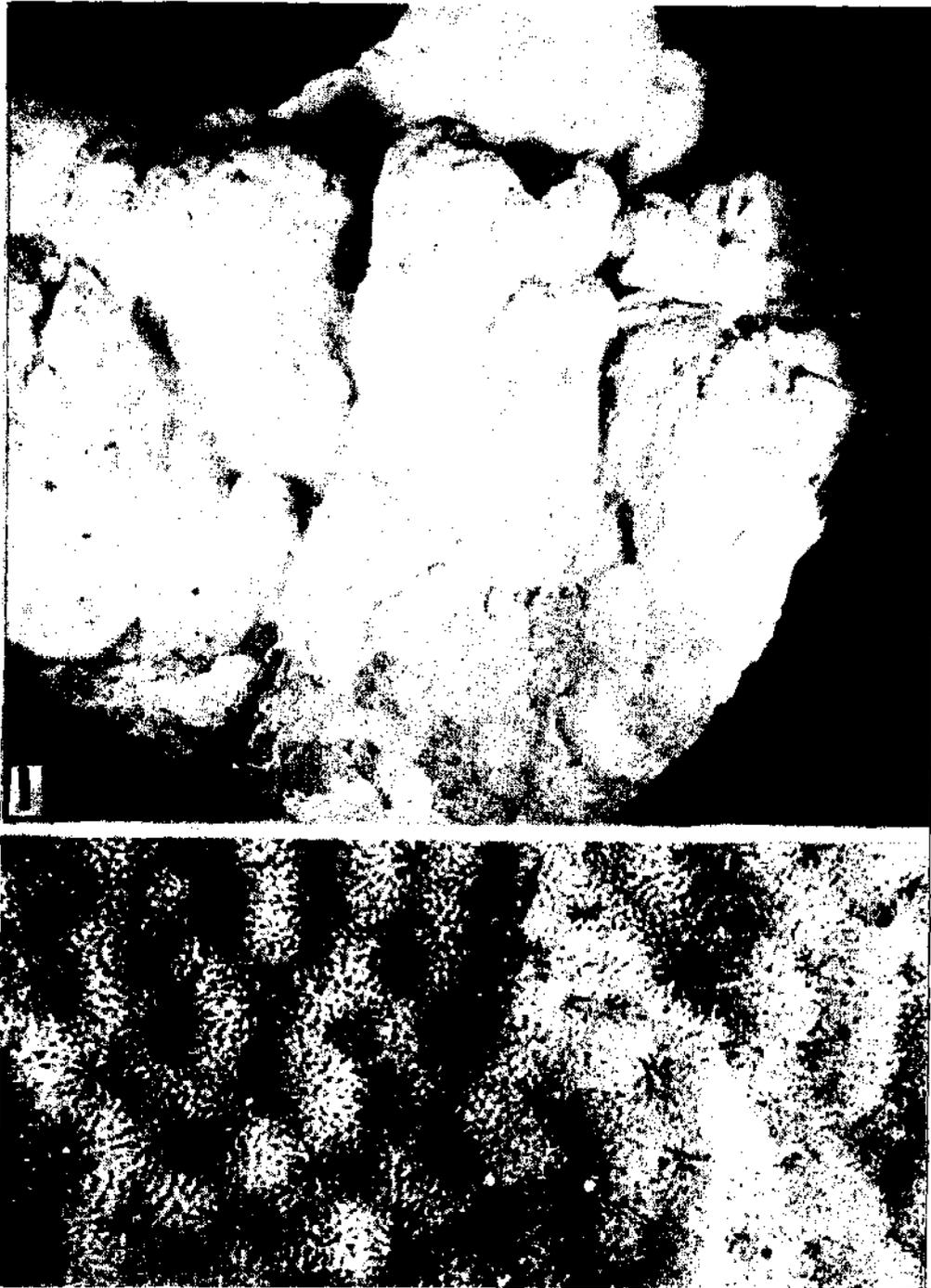


FIG. 1. *Montipora manauliensis* sp. nov., holotype, from Manauli Island  $\times 0.7$ .  
FIG. 2. Calices from the top of the same  $\times 12$

## SUMMARY

*Montipora manauliensis*, a new acroporid coral from Gulf of Mannar is described and its affinities are discussed. This foveolate species is characterised by a massive corallum with gibbosities, small calices and well developed septa.

## ACKNOWLEDGEMENTS

I am grateful to Dr. S. Jones, Director, Central Marine Fisheries Research Institute, Mandapam Camp, for guidance and encouragement. My thanks are due to the Ministry of Education, Government of India, for the award of a Senior Research Scholarship during the tenure of which the work is carried out. Sincere thanks are due to Dr. R. Velappan Nair for reading through the manuscript and to Shri Satya Prakash Ghanshani for the photographs published here.

## REFERENCES

- BERNARD, H. M. 1897. The genus *Montipora*. The genus *Anacropora*. *Catalogue of the Madreporarian corals in the British Museum (Nat. Hist.)*, 111 : 1-192.
- CROSSLAND, C. 1948. Reef corals of the South African coast. *Ann. Natal. Mus.*, 12 (2) : 169-205.
- . 1952. Madreporaria, Hydrocorallinae, Heliopora and Tubipora. *Scient. Rep. Gt. Barrier Reef Exped.*, 6 (3) : 85-257.
- GRAVIER, C. 1911. Les récifs de coraux et les Madreporaires de la baie de Tadjourah (Golfe d'Aden). *Annls. Inst. Oceanogr., Monaco, Paris*, 2 (2) : 1-96.
- HOFFMEISTER, J. E. 1925. Some corals from American Samoa and the Fiji Islands. *Pap. Dep. mar. Biol. Carnegie Instn. Wash.*, 343 : 1-89.
- MARENZELLER, E. VON. 1906. Riffkorallen. Expedition S.M. Schiff 'Pola' in das Rote Meer. *Denkschr. Akad. Wiss. Math.-nat., Kl.* 80 : 27-71.
- THIEL, M. E. 1932. Madreporaria. *Mem. Mus. r. Hist. nat. Belg.*, (Hors serie) 1 (2) : 1-177.
- VAUGHAN, T. W. 1907. Recent madreporaria of the Hawaiian Islands and Laysan. *Bull. U.S. natl. Mus.*, 59 : 1-427.
- . 1918. Some shallow-water corals from Murray Island (Australia), Cocos-Keeling Islands and Fanning Island. *Pap. Dep. mar. Biol. Carnegie Instn. Wash.*, 213 : 49-219.
- WELLS, J. W. 1954. Recent corals of the Marshall Islands. *Prof. Pap. U.S. geol. Surv.*, 260-1 : 385-479.