Short Communication:

Occurrence of sponges *Callyspongia fibrosa* (Ridleyand Dendy, 1886) (Haplosclerida: Callyspongiidae) Off Thoothukudi coast of Gulf of Mannar, India (08° 27.963'N 78° 23.450'E) (185 M)

Thiruvengadam V.[1*]; De los Ríos-Escalante P.[2] ; Nazim K.[3]

Received: May 2023 Accepted: July 2023

Abstract

The routine observation of by-catch specimen of sponges *Callyspongia fibrosa* (Ridely and Dendy, 1886) this species occurrence was recorded off Thoothukudi coast of Gulf of Mannar, Thoothukudi landing centre, Tamil Nadu, India, specimenwas caught together in trawls at (08° 27.963'N 78° 23.450'E), Kuzhyll Kuli at a depth of 185 M. The above said species that an indication of very rich in biodiversity off Thoothukudi coast, India. Unknown specimens of fauna and flora should be conserved by assessing the fisheries resources, stock assessment of by-catch specimens and population dynamics is significant in this coast.

Keywords: Sponges *Callyspongia fibrosa*, Thoothukudi Coast, Tamil Nadu, India

1-Marinescape India Pvt Ltd,Aquatic Gallery, Ahmedabad, Gujarat, India
2-Departamento de Ciencias Biológicas y Químicas, Facultad de Recursos Naturales, Universidad Católica de Temuco, Casilla (PO-Box): 15-D, Temuco, CHILE
3-Services for Environment and Mangrove Protection, Pakistan
*Corresponding author's E.mail: vaitheeswaranthiruvengadam69@gmail.com

[Downloaded from injbir.com on 2026-11-19]

[DOI: 10.22034/INJBIR.2.2.6]

Introduction

According to Singgih Afifa Putra *etal.* 2023; Borchiellini *etal.* (2021) have reviewed that the phylum Porifera or sponges are currently classified into four classes viz., Calcarea, Demospongiae, Hexactinellida and Homoscleromorpha except for Demospongiae other three classes are exclusively marine species by (Manuel *et.al*., 2002; Dohrmann *et.al.*, 2008; Gazave *et.al*., 2012; van Soest *et.al*., 2012a). de Laubenfels (1936) was coined the family Callyspongiidae has described by haplosclerid sponges which have a two-dimensional ectosomal skeleton of primary, secondary and tertiary fibres (Desqueyroux-Faundeze and Valentine, 2002). The above said family currently contains four valid genera and four subgenera within the genus *Callyspongia*. Species of the genus *Callyspongia* are conspicuous and beautifully coloured sponges on Thoothukudi coast of Gulf of Mannar, Indian shallow-water by-catch specimen. Sections was taken parallel and vertical to the surface in thickness not exceeding 0.5 mm by an ordinary blade. According to Arndt (1935), Burton (1937), and de Laubenfels (1953) had reviewed that the spicule preparations were done. Sections and spicule was examined under water. Measurements were taken by calibrated ocular micrometer. Dimensions are expressed in millimeter following a pattern of lower and upper limit.

Systematics

Phylum: Porifera
Class: Demospongiae
Order: Haplosclerida Topsent, 1928
Family: Callyspongiidae de Laubenfels, 1936
Genus:*Callyspongia* Duchassaning and Michelotti, 1864
Species:*fibrosa*
Dasychallna fibrosa Ridley and Dendy, 1887, p.21
*Callyspongia fibrosa*Burton, 1934, p. 540 (Synonymy), Thomas, 1968 (Synonymy)

Morphological description

The description given by Ridley and Dendy (1887) and Thomas (1976) agrees with present sponges specimen. Sponges are irregularly cylindrical. Dermal skeleton composed of well developed reticulation of fibres. Main skeleton consists of primaries and connectives. The spicules are oxeas (Figs. 1 and 2). Height of specimen 90 mm and diameter 19 mm. Clue shaped with hollow interior, opening to the outside by an aperture of 13 mm diameter situated at the central part. Dermal reticulation consists of triangular meshes; fibres uni or multispicular. Main skeleton composed of stout primaries and connectives, which are multiserially cored.
Spicules: Oxea straight or slightly curved.
Habitat: Shallow reef areas.

Geographical distribution

Off Thoothukudi coast of Gulf of Mannar, Thoothukudi landing centre,

[Downloaded from injbir.com on 2026-11-19]
[DOI: 10.22034/INJBIR.2.2.6]

Tamil Nadu, India, (08° 27.963'N 78° 23.450'E), Kuzhyll Kuli at a depth of 185 M, Gulf of Mannar and Palkbay, Indian ocean and Australian region (Fig. 3).



Figure 1:*Callyspongia fibrosa* (Ridely & Dendy, 1886).

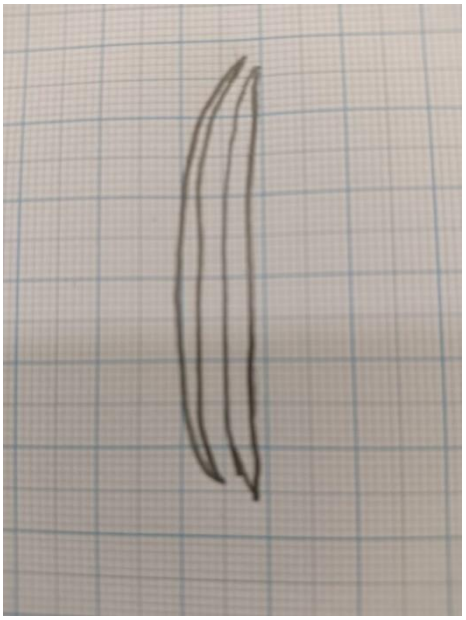


Figure 2:*Callyspongia fibrosa* (Ridely & Dendy, 1886) - Spicules: Oxea straight.

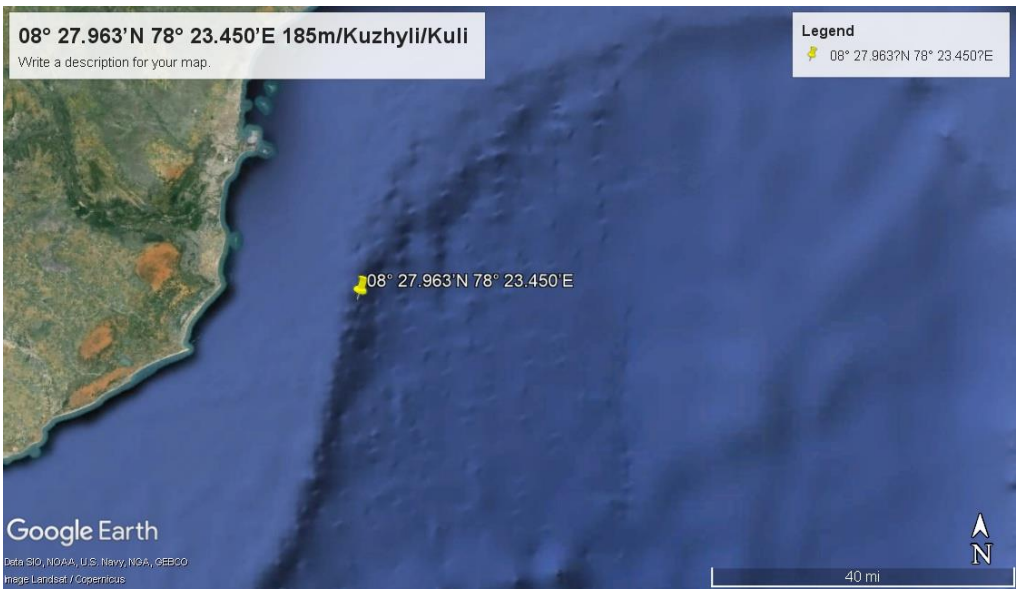


Figure 3: Overview map of the Gulf of Mannar coast, showing the samplingsite of Thoothukudi coast of Gulf of Mannar, India, (08° 27.963'N 78° 23.450'E)/Kuzhyll Kuli at a depth of 185 M.

Economic importance

The profuse growth of sponges such as *Callyspongia fibrosa* and *Haliclona exigua* may result in the complete covering of an individual oyster or a cluster of oysters. The occurrence frequency of these sponges is usually low at the present Indian farm site and

[Downloaded from injbir.com on 2026-11-19]

[DOI: 10.22034/INJBIR.2.2.6]

the damage caused to the oysters is negligible. The sponges *Callyspongia fibrosa, Ircinia* species and the seaweed *Stoecheospermum margilatum* are totally inactive against fungi. The extracts showing good antimicrobial activity are undergoing further analysis to identify the active constituents of east coast of India (Fig. 3).

References

Arndt, 1935. W. Porifera. Die Tierwelt der Nord- und Ostsee, Grimpie & Wagler, Berlin (1935), 14P.

Borchiellini, C., Degnan, S.M., Le off, E., Rocher C., Vernale A., Baghdiguian S., Séjourné, N., Marschal F., André Le Bivic A., Godefroy N., Degnan B.M., Emmanuelle Renardd E., 2021. Staining and tracking methods for studying sponge cell dynamics. *Methods in Molecular Biology*, 219, 81–97.

Burton, M., 1937. Supplement to The Littoral Fauna of Krusadai Island in the Gulf of Manaar. Porifera. *Bulletin of the Madras Government Museum (New Series, Natural History Section)*. 1 (**2, Part 4**). 1-58 pls I-IX.

Desqueyroux-Faúndez, R. and Valentine, C., 2002. Family Callyspongiidae: 835-851. In: Hooper J.N.A & R.W.M. van Soest (eds.). Systema Porifera: A guide to the classification of sponges.

Dohrmann, M., Janussen, D., Reitner, J., Collins, A.G. and Wörheide, G., 2008. Phylogeny and evolution of glass sponges (Porifera, Hexactinellida). *Systematic Biology*, 57, 388–405.

Gazave, E., Lapébie, P., Ereskovsky, A. V., Vacelet, J., Renard, E., Cárdenas, P. and Borchiellini, C., 2012. No longer Demospongiae: Homoscleromorpha formal nomination as a fourth class of Porifera. *Hydrobiologia*, 687, 3–10. https://doi.org/10.1007/s10750-011-0842-x

Laubenfels, M.W. de., 1953. Sponges from the Gulf of Mexico. *Bulletin of Marine Science of the Gulf and Caribbean*. 2(**3**), 511-557

Manuel, M., Borojevic, R., Boury-Esnault, N. and Vacelet, J., 2002. Class Calcarea Bowerbank, 1864. *In*: Hooper, J.N.A. and vanSoest, R.W.M. (Eds.), *Systema Porifera: A Guide to the Classification of Sponges*. Kluwer Academic/Plenum Publisher, New York. pp. 1103–1110.

Putra S.A., Ambo-Rappe R., Jompa J. and De Voogd N.J., 2023. Two centuries of sponges (phylum Porifera) taxonomic studies in Indonesia (1820-2021): checklist and bibliography. *Zootaxa*, 5298(**1**), 001-074

Renard, E., 2021. Porifera(Sponges): Recent Knowledge and New Perspectives. *Encyclopedia of Life Sciences*, 2021, 110.https://doi.org/10.1002/9780470015902.a0029283

Ridley, S.O. and Dendy, A., 1887. Preliminary report on the Monaxonida collected by H.M.S. Challenger. Part I. *Annals and Magazine of Natural History*, 18, 325-351, 470-493.

Thomas, P.A., 1976. Marine demospongiae of Zanzibar Island. *Journal of Marine Biological Association of India*., 18(**3**), 448-460

van Soest, R.W.M., Boury-Esnault, N., Vacelet, J., Dohrmann, M., Erpenbeck, D., de Voogd, N.J., Santodomingo, N., Vanhoorne, B., Kelly, M. and Hooper, J.N.A., 2012a. Global Diversity of Sponges (Porifera). *PLOS ONE* 7, e35105. https://doi.org/10/1371/journal.https://doi.org/10.1371/journpone.0035105

[Downloaded from injbir.com on 2026-11-19]

[DOI: 10.22034/INJBIR.2.2.6]