Acetabularia J.V. Lamouroux, 1812

DASYCLADALES, POLYPHYSACEAE

Thallus unbranched unicell 1-6 cm long, composed of a compact rhizoid, a tubular stalk ca. 1 mm diam., whorls of thrice-branched sterile laterals and a more or less flattened apical cap 0.5-1.5 cm dia. Whorls periodical from the apex of the stalk and deciduous leaving scars. The mature cap composed of 30-75 free or joined, terminally tapered, or rounded elongate rays, which are associated basally with whorls of enlargements, the basipetal inferior corona and the apical superior corona from which project sterile laterals. Thallus lightly to heavily calcified. Thallus size, cap diameter and cap morphology are important species characteristics.

Common in brackish to hypersaline shallow waters. Thalli firmly attached to solid substrates such as stones, coral rubble, shells as well as to wood and industrial detritus such as rubber.

The taxonomy remains uncertain.

- Guiry, *AlgaeBase*, 2021

Two species in the genus *Acetabularia* have been reported from Sri Lanka by Silva et al, 1996. Mallikarachchi has reported one species of *Parvocaulis* originally placed in the genus *Acetabularia*.

A. acetabulum (Linnaeus) P. Silva, 1952 [S. Dixit, 1970: 111]
A. crenulata Lamouroux [Durairatnam, 1961: 31, pl v, figs. 6, 7; Mahendran et al, 1980; Mageswaran & Sivasubramaniam, 1984, a & b].

- Silva et al, 1996.

Parvocaulis parvula (Sols-Laubach) S. Berger [Mallikarachchi, 2013]

Description of species

Acetabularia crenulata J.V. Lamouroux, 1816

Morphology Thalli calcified consisting of a tall (55 mm) terete basal portion surmounted by a whorl of laterals forming an umbrella-like structure (13 mm diameter).

Anatomy Durairatnam, 1961 describes the stipe up to 10 cm with terminal basin-shaped discs 6 - 15 mm diameter, strongly calcified. The shape of the apices of the laterals are said to vary, rounded and emarginate being common shapes. Durairatnam adds that “the Ceylon species are emarginate”, but the drawing in figure 6 shows narrowly rounded apices.

Ecology Shallow waters off the Jaffna peninsula - Senthamkulam, Jaffna lagoon and Kankesanthurai (Durairatnam, 1961:61). Cast ashore on Casuarina beach, Jaffna.

Discussion Live plants not seen, collected as bleached, dried, beached specimens.

Material examined No records.

References Durairatnam, 1961: 31, Plate V, figs, 6, 7.

Acetabularia crenulata J. V. Lamouroux, 1816

Dried and bleached fronds collected from Casuarina beach, Jaffna.

Parvocaulis

S. Berger, U. Fettweiss, S. Gleisberg, L.B. Liddle, U. Richter, H. Sawizky & G.C. Zuccarello, 2003

DASYCLADALES, POLYPHYSACEAE

Stalk corrugated during cap development, developing cap surrounded by a velum, corona inferior absent, cap rays free or united by calcification.

- Guiry, *AlgaeBase*, 2021

A new species for Sri Lanka

Parvocaulis parvulus (Sols-Laubach) S. Berger [Mallikarachchi, 2013: 18 (as 'parvula')]

Description of species

Parvocaulis parvulus

(Solms-Laubach) S. Berger, Fettweiss, Gleissberg, Liddle, U. Richter, Sawitzky & Zucarello, 2003

Synonyms - *Acetabularia parvula* Solms-Laubach 1895
Polyphysa parvula (Solms-Laubach) Schnetter & Bula Meyer 1982

Morphology Small thalli consisting of a white stalk ca. 2 cm high surmounted by a disc of green laterals, clustered on a dead bivalve shell. Developing thalli with whorls of hair-like branching structures below an incomplete disc.

Anatomy Mallikarachchi, 2013 describes much smaller thalli 0.2 to 0.5 cm high, solitary, calcified, bearing caps with 14-17 laterals.

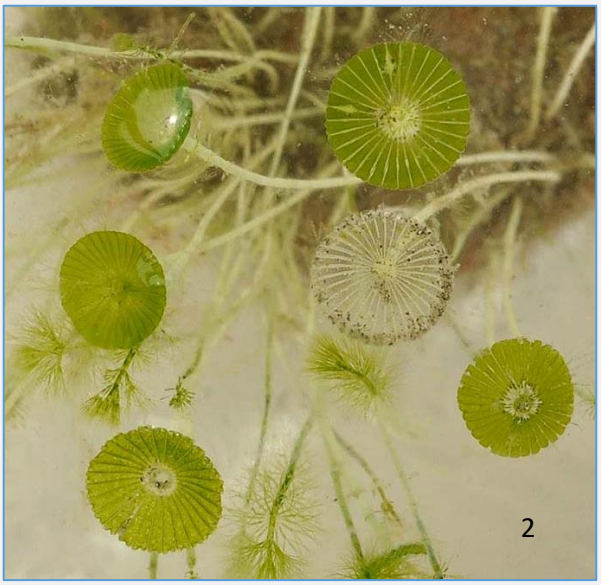
Ecology Growing attached to empty bivalve shells lying on the sand bottom at a depth of 2 – 3 m, in Thennadi Bay, Kayankerni.

Discussion Live plants collected and photographed ex situ but not examined in detail. Not preserved.

Material examined No records.

References Mallikarachchi, 2013: 18, first record in Sri Lanka.

Parvocaulis parvulus (Solms-Laubach) S. Berger, Fettweiss, Gleissberg, Liddle, U. Richter, Sawitzky & Zuccarello, 2003



Ex-situ images of a freshly collected colony collected from the sea, Thennadi Bay, Kayankerni, east coast Sri Lanka.

1. The colony arising from a bivalve shell lying on the sand at a depth of 2 metres.

2. Enlarged view of the whorls.

3. Views of growing fronds.

BIBLIOGRAPHY

Dixit, S.C., 1970. Species list of Indian marine algae III. *Journal of the University of Bombay* **39**(Sc.): 99-130.

Durairatnam, M., 1961. Contribution to the Study of the Marine Algae of Ceylon. *Bulletin No. 10, Fisheries Research Station*, Ceylon.

Guiry in Guiry, M.D. & Guiry, G.M. 2021. *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. http://www.algaebase.org; searched on 16 & 18 February 2021.
- page link - http://www.algaebase.org/search/species/detail/?species_id=61830

Mageswaran, R. & Sivasubramaniam, S., 1984a.Preliminary studies on the iodine content of some marine algae from coastal areas of Jaffna Peninsula. *Journal of the National Science Council of Sri Lanka* **12**: 173-178, 4 tables.

_____ 1984b. Mineral and protein contents of some marine algae from coastal areas of northern Sri Lanka. *Journal of the National Science Council of Sri Lanka* **12**: 179- 189, 6 tables.

Mahendran, M., Sirisena, D.M., Morisaki, M., Sano, F., Ikekawa, N. & Sivapalan, A., 1980. Sterols of some Sri Lankan marine algae. *Journal of the National Science Council of Sri Lanka* **8**: 69-74, 11 tables.

Mallikarachchi, U., 2013. *Taxonomic survey of seaweeds along the coastal belt of Sri Lanka* (*Part I - Eastern Coastal Segment*). Report to Biodiversity Secretariat, Ministry of Environment, Sri Lanka. Marine & Coastal Resources Conservation Foundation.

Silva, P.C., Basson, P.W. and Moe, R.L., 1996. *Catalogue of the Benthic Marine Algae of the Indian Ocean*. University of California Publications in Botany, Vol. 79. University of California Press.

MF 17.3.2021