

Actinotrichia Decaisne, 1842

NEMALIALES, GALAXAURACEAE

Plants calcified, dichotomously branched, branches terete, weakly articulated, multiaxial, with apical depression. Gametophytes and tetrasporophytes isomorphic. Medulla filamentous; cortical cells closely packed and polygonal to circular in surface view, inner cortical cells large, progressively smaller toward surface, surface cortical cells bearing multicellular, photosynthetic filaments in whorls or distributed irregularly around the axes.

- M.D. 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 15 July 2021.

Species reported from Sri Lanka

Actinotrichia fragilis (Forsskål) Børgesen, 1932 [Dur, 1961: 49]

- Silva et al, 1996

[Coppejans et al, 2009: 158, Fig. 127]

Description of species

Actinotrichia fragilis (Forsskål) Børgesen, 1932

Synonym: *Actinotrichia rigida* (J. V. Lamouroux) Decaisne, 1842

Morphology Small tufts of terete, calcified, uncoloured branching axes with whorls of short, fine, pigmented and uncalcified photosynthetic filaments (hairs). The branches interlace, resulting in a characteristic appearance. The tufts somewhat globose, spreading at times, attached by a calcareous disc.

Anatomy Tuft diameter 6 cm, attached by a small disc. Segments heavily calcified, interlacing and forming a firm mass. Branches cylindrical with broadly rounded apices, more or less in one plane, but some rotated by a few to ninety degrees so that the branches interlace with large spaces in between. Branching dichotomous, at intervals of 2 - 3 mm below and 4 - 5 mm above. Basal branches 500 µm, apical branches 450 µm thick. Whorls of uncalcified hairs (photosynthetic filaments) arise at intervals of 175 - 325 µm, the hairs being 150 - 300 µm long.

Ecology Subtidal, epilithic, 4 to 24 m in clear water. Found on the distant Pitagala shoal off Colombo and in Batticaloa. Coppejans et al (2009) has collected this species in shallow, sheltered water "behind surf-exposed rock outcrops". Durairatnam's collection was from the Pearl Banks in the Gulf of Mannar.

Discussion A distinctive alga, first identified from the colour image in Lewmanomont & Ogawa, 1995. The collections agree with the descriptions in both Durairatnam, 1961 and Coppejans et al, 2009.

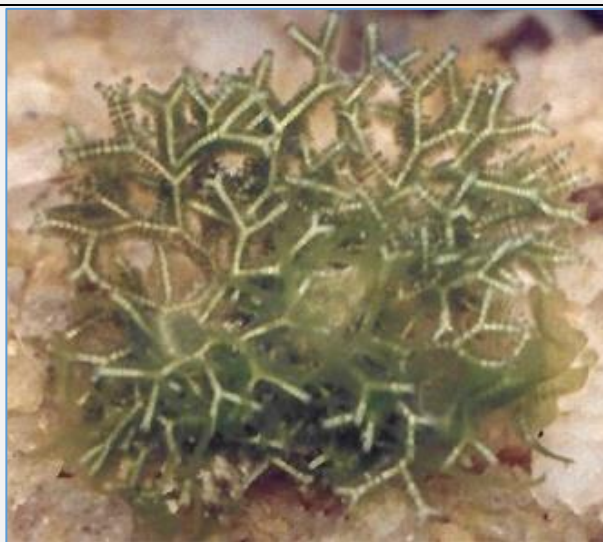
Material examined

HMF 143, 12.3.1999, and HMF 200, 24.2.2000, Colombo, Pitagala, 24 m, epilithic.
HMF 476, 23.6.2005, Batticaloa, Kattankudy ($7^{\circ} 41.423' \text{ N } 81^{\circ} 44.409' \text{ E}$), 4 m, epilithic.

References

Durairatnam, 1961: 49
Lewmanomont and Ogawa, 1995: 91.
Silva et al, 1996: 454.

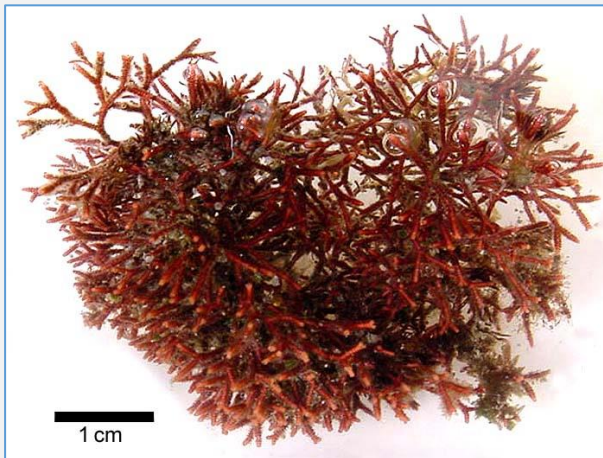
Actinotrichia fragilis (Forsskål) Børgesen, 1932



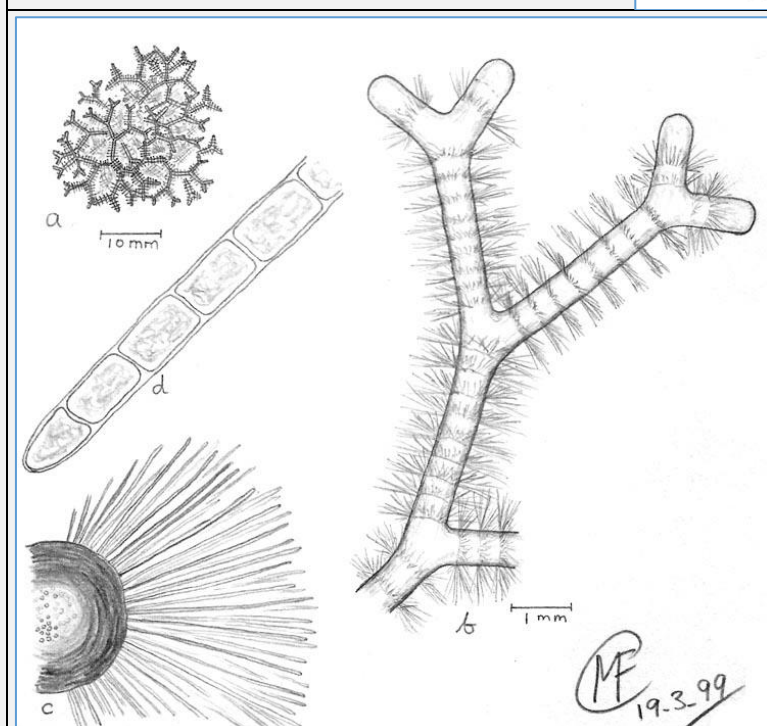
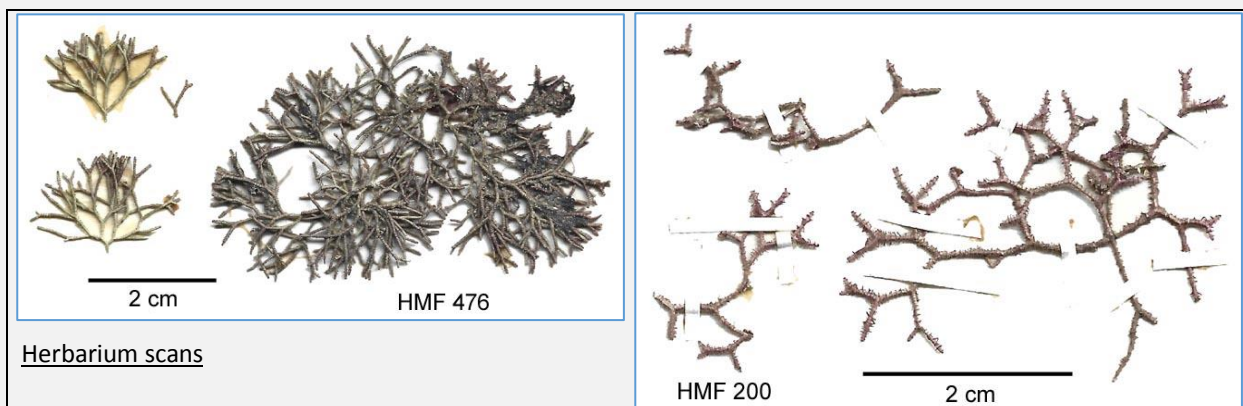
HMF 143, 12.3.1999, Colombo, Pitagala shoal

Left: Image of a fresh specimen showing pigmented, calcified attachment and pigmented photosynthetic filaments emerging from the unpigmented, calcified branch system.

Right: Formalin-seawater preserved specimen showing the habit. The whorls of greenish photosynthetic filaments have lost the red colour due to the preservation fluid used.

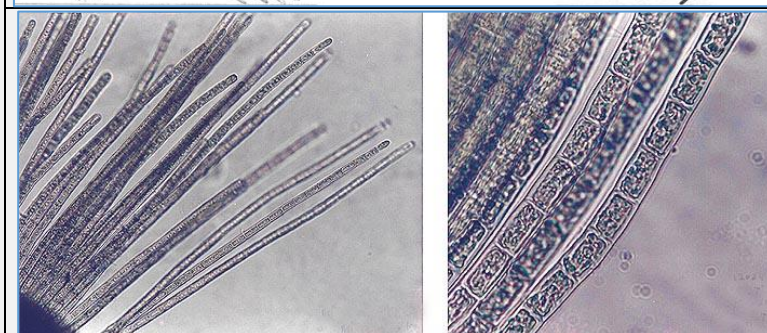


Actinotrichia fragilis: Underwater, at Kattankudy, 23.6.2005 (left); ex-situ image of a clump (right)



Drawing of HMF 143 from Colombo, Pitagala shoal.

- a) Habit, viewed from above.
- b) Distal portion of an axis showing branching angles and whorls of photosynthetic filaments.
- c) Portion of transverse section showing calcified cortex of axis and photosynthetic filaments.
- d) Cells of a filament magnified.



Microscope images of photosynthetic filaments at two magnifications.



BIBLIOGRAPHY

Coppejans, E., Leliaert, F., Dargent, O., Gunasekara, R. and De Clerck, O. 2009. *Sri Lankan Seaweeds, Methodologies and field guide to the dominant species*, ABC Taxa, Vol. 9, Belgian Development Corporation.

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

Guiry, M.D. in Guiry, M.D. & Guiry, G.M. 2021. AlgaeBase. World-wide electronic publication, National University of Ireland, Galway. <http://www.algaebase.org>; searched on 02 March 2021.

Lewmanomont, K. and Ogawa, H., 1995. *Common Seaweeds and Seagrasses of Thailand*. Faculty of Fisheries, Kasetsart University.



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