Euptilota (Kützing) Kützing, 1849

CERAMIALES, CALLITHAMNIACEAE

Thallus erect to 35 cm, flattened, corticated with rhizoids, branching alternate-distichous from apical cell with oblique alternately right and left divisions. Fertilization leads to carposporophyte with several groups of massed carposporangia and involucre of branched filaments. Tetrasporangia tetrahedrally-divided, terminal on branchlets in upper parts of thallus.

- Guiry, M.D. & Guiry, G.M. 2021. *AlgaeBase*.

Species reported from Sri Lanka

Euptilota fergusonii Cotton, 1907 [Børgesen 1936: 88-90, figs. 9, 10; S. Dixit 1968]
- Silva et al, 1999
- Coppejans et al, 2009

Description of species

Euptilota fergusonii A. D. Cotton, 1907

Type locality Sri Lanka

Morphology Forms erect, plume-like tufts 5-20 cm high that sway with currents. Thallus supple, spreading into fan-shapes consisting of a network of fine axes with hair-like side branches, reminiscent of the venation of an angiosperm leaf. Colour brown with blue & green iridescence underwater; reddish at surface.

Anatomy Main axis approx. 1 mm diameter consisting of a medullary filament of clear, square cells covered by pigmented corticating filaments arranged in arcs in surface view. Determinate laterals alternate, uncorticated, these bearing branchlets from the convex (lower) surface as well as from the concave (upper) surface. In older fronds the terminal cells end in spines. Apical cells oblique, resulting in alternate branching. Indeterminate, corticated branches arise at intervals along the main axis.

Ecology On sublittoral hard substrates, solitary or gregarious. Usually found on rocks, solitary or in small associations (c. 1 m. across). Forms extensive confluent associations on the iron hulls of shipwrecks (at Akurala). Growth appears to be more luxurious in exposed positions with much water movement.

Discussion Type locality “Pantura” (= Panadura). Described from Ferguson’s collection no. 20. Four species of *Euptilota* are described from the Indian Ocean (Silva et al., 1996), one from Sri Lanka. There is probably another species in the island as well (MF unpublished data).

Distribution Gulf of Mannar (Barton, 1903 as Ptilota fergusonii Grunow). Moratuwa, Panadura, Maggona, Akurala, Hikkaduwa, Unawatuna (Fernando unpublished data). Galle (Børgesen, 1936). Coppejans et al remark that it is widely distributed in the western Indian Ocean.

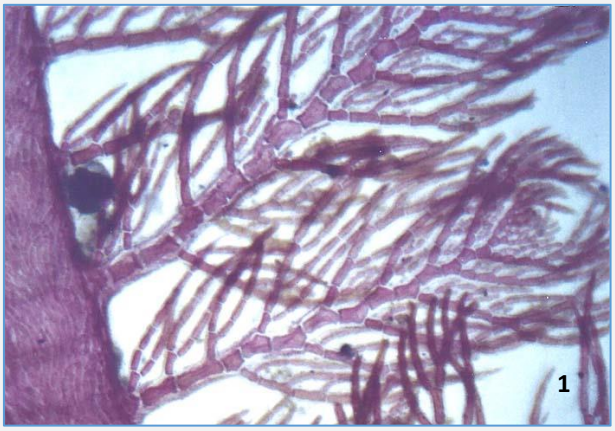
Material examined HMF 120, 24. 1. 1999, Akurala - shipwreck *Earl of Shaftesbury*, 11-12 m, on iron plates and frames. Isolated tufts 5 - 10 cm high, attached by a small discoid holdfast. Underwater brown, iridescent green in sunlight, red out of water. HMF 197, 22. 2. 2000, Moratuwa, Itipandama reef - 10 m, epilithic. A single clump of three thalli. Spines on ultimate branches not found. HMF 301, 19. 1. 2001, Moratuwa, Itipandama reef - 11.6 m, epilithic. Brownish tufts up to 10 cm high, locally common, tufts distant from each other. HMF 353, 12. 2. 1989. Maggona, Tiria gala - 8 m, epilithic. Brown, iridescent tufts up to 20 cm high, waving vigorously with water flow. HMF 354, 23. 1.1994, Akurala - shipwreck *Earl of Shaftesbury*, 14 m, epilithic, on ballast stones within the hulk. Brown, iridescent tufts up to 10 cm high, protected from current.

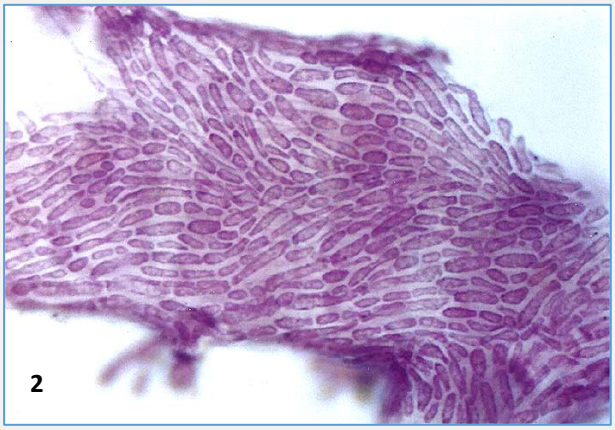
References

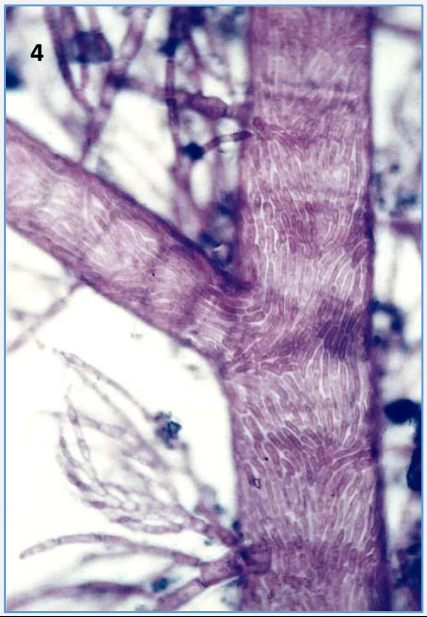
Barton, E.S. 1903: 165-167.
Børgesen, F. 1936:88-90, figs. 9, 10.
Coppejans et al, 2009: 202, Fig. 171
Cotton, A.D. 1907: 262-264 + pl.
Silva et al, 1996: 409.
Guiry, M. D., 2021 AlgaeBase page link –
http://www.algaebase.org/search/species/detail/?species_id=3078

Euptilota fergusonii Cotton, 1907

Herbarium images: Left - HMF 354, 23. 1. 1994. Largest thallus 80 mm high. Right - HMF 120, 24. 1. 1999. Frond 50 mm high.







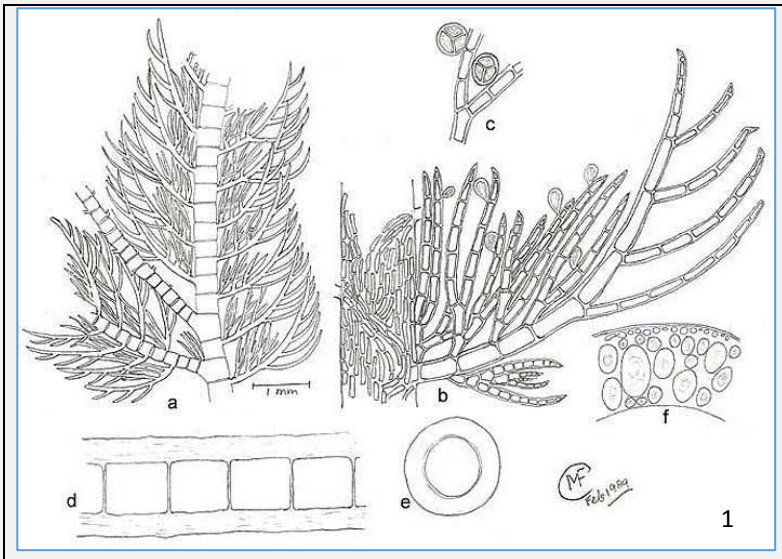
Photomicrographs of *Euptilota fergusonii*

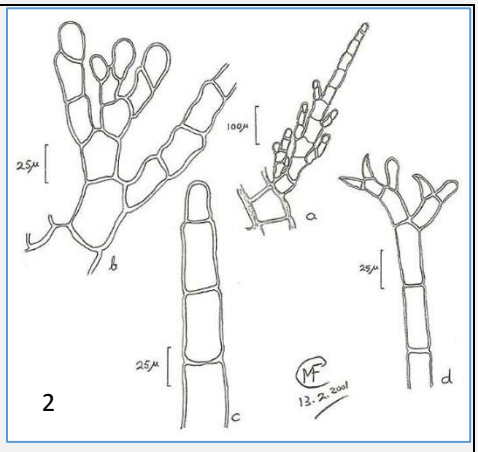
1. Uncorticated determinate laterals and branchlets.

2. Corticating filaments in surface view.

3. Terminal portion of a frond with tetrasporangia arising from laterals.

4. Portion of main axis and a corticated indeterminate branch.





Drawings of HMF 353 & 301

Figure 1 (HMF 353)

a) Portion of a frond showing the basal portions of two indeterminate branches (to left) and a number of feathery determinate branches. Septa of axial medullary cells indicated, the cortical cells not shown.

b) A determinate branch enlarged, showing cortical cells of the main axis and uncorticated branchlets bearing carpospores (?).

c) Portion of an uncorticated branchlet with tetraspores.

d) An optical longitudinal section of a main axis showing square medullary cells and overlying cortex; (e) transverse section of same.

e) A high power view of a transverse section showing cells embedded in amorphous material (the large "cells" are filaments in section).

Figure 2 (HMF 301)

a) A determinate branchlet showing active growth indicated by oblique division; (b) Enlarged view of a portion of the same branchlet showing oblique division at the region of growth.

c) Tip of branchlet that appears to have ceased growth. (d) Tip of branchlet from older part of frond showing terminal spines.

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Barton, E.S. 1903. List of Marine Algae collected by Prof. Herdman, at Ceylon, in 1902, With a note on the fructification of Halimeda, *Ceylon Pearl oyster Fisheries and Marine Biology, Part I*, Supplementary Reports II, pp 163 - 167.

Børgesen, F. 1936. Some marine algae from Ceylon. *Ceylon Journal of Science, Botany* 12: 88 - 90, figs. 9, 10.

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.

Cotton, A.D. 1907. New or little-known marine algae from the east. *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew*: 262-264 + pl.

Guiry, M.D. & Guiry, G.M. 2021. *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. http://www.algaebase.org; searched on 27 February 2021.

Silva PC, PW Basson & RL Moe (1996). *Catalogue of the Benthic Marine Algae of the Indian Ocean*: 409.

MF 16.6.2021.