

Gibsmithia Doty, 1963

GIGARTINALES, DUMONTIACEAE

Digitate clusters of soft, gelatinous lobes, usually atop an erect, cartilaginous, perennial stalk. Stalk and lobes of pseudodichotomous filaments. Filaments of lobes cross-linked by direct cell fusions. Cortical cells bullet-shaped. Hairs present.

There are 7 species names in the AlgaeBase database at present, of which 7 have been flagged as accepted taxonomically.

- 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 29 July 2021.

Species reported from Sri Lanka

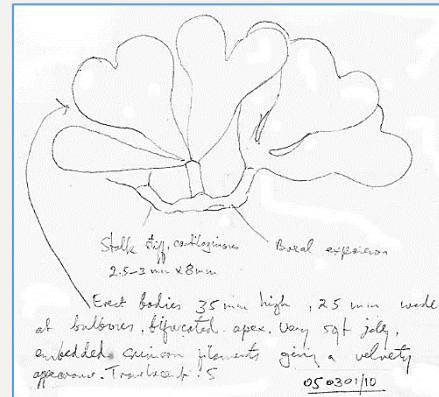
Gibsmithia hawaiiensis Doty, 1963. This article, a new species record.

Description of species

Gibsmithia hawaiiensis Doty, 1963

Morphology Soft, gelatinous, furry ovoid masses in twos and threes diverging from a united base attached to the top of a stiff, cartilaginous, cylindrical stalk or these bases themselves united to form a large clump. Three such stalks arising from a basal expansion collected. Thallus consists of a mass of jelly with embedded crimson filaments that emerge over the whole surface, giving a furry appearance.

Anatomy Microscopy not done. The basal stalks 2.5 - 3 mm thick, 8 mm long. Annulations seen in the herbarium specimen as successive swellings of the basal stalk. The stalks cartilaginous, a number of them arise from a basal expansion. From the stalk arise the terminal branches, branching di- or trichotomously, each expanding rapidly to a club shape, sometimes with a bifurcated apex. The whole structure 35 mm long, 25 mm wide at the bulbous, bifurcated apex. They consist of soft, translucent jelly through which crimson filaments are seen in the interior. These emerge from the surface as free filaments giving a velvety appearance.



Ecology A single collection made at Kandakuliya, 20-22 m, epilithic on stones on a sand bottom.

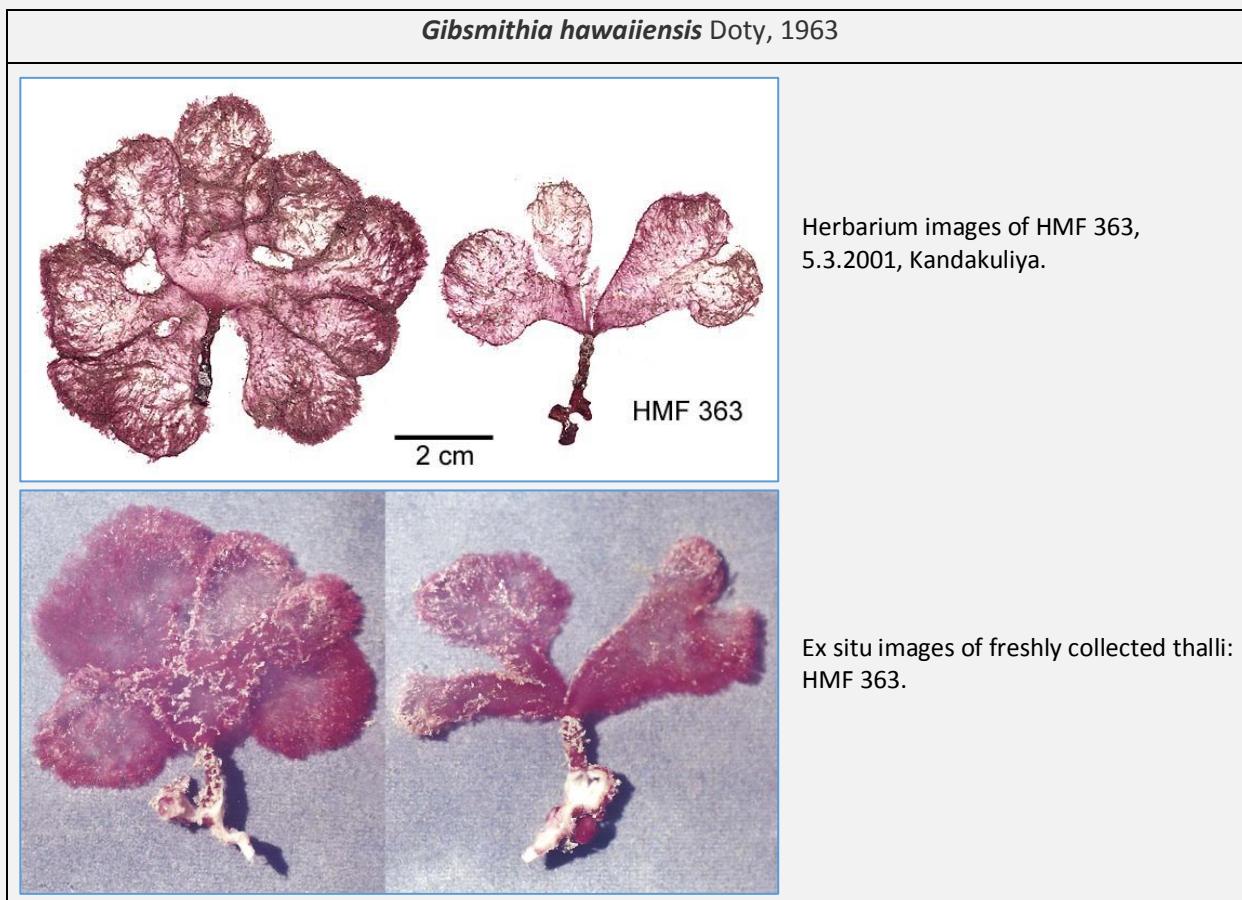
Discussion This collection is referred to *G. hawaiiensis* Doty, based on matching images in AlgaeBase and general agreement with the description of the species. The species is widely distributed in

the Indo-Pacific region, having been reported from South Africa, Tanzania, Seychelles, Indonesia, Philippines, Vietnam, China, Japan, Taiwan, Australia, and numerous Pacific Islands. (AlgaeBase, 2021).

The plants collected agree in general with the description of the external morphology in Doty (1963) as regards general colour and furry appearance resulting from emergent filaments, thickness of 'stems', and annulations of the basal stalks that may branch. The drawings in Doty's paper show club-shaped gelatinous ultimate branches with no mention of the bifurcated apical shapes seen in my specimens, that also have simple club shapes. Many of the images of *G. hawaiiensis* in AlgaeBase show simple club-shaped ultimate branches, but one image from the Palau Islands shows bifurcated club shapes. The dimensions given are of the same order as in my specimens. No attempt was made to examine the Kandakuliya collection microscopically, however, the red coloured emergent filaments were observed.

Material examined

HMF 363, 5.3.2001, Kandakuliya, Diaseris bed (N 8° 14.718' E 79° 40.418'), 20-22 m, epilithic on stones, sand bottom.



References

Doty, M.S. (1963)
 M.D. Guiry in Guiry, M.D. & Guiry, G.M. (2021)

BIBLIOGRAPHY

Doty, M.S. (1963). *Gibsmithia hawaiiensis* gen. n. et sp. n. *Pacific Science* 17(4): 458-465, 17 figs.
<https://img.algaebase.org/pdf/8CCBC95A0c4862855EQtn302E2D0/vol17n4-458-465.pdf>

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 29 July 2021

Gabriel, D., Draisma, S. G. A., Sauvage, T., Schmidt, W. E., Schils, T., Lim, P-L., Harris, D. J., and Fredericq, S., 2016. Multilocus Phylogeny reveals *Gibsmithia hawaiiensis* (Dumontiaceae, Rhodophyta) to be A Species Complex from the Indo-Pacific, with the proposal of *G. eilatensis* sp. nov. *Phytotaxa* 277(1): 1-20.
DOI: 10.11646/phytotaxa.277.1.1

