

## ***Gracilaria idinthakaraiensis* in Rasthacaud coastal water, Kanyakumari district, Tamilnadu, India: a Rediscovery**

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### **ABSTRACT**

*Gracilaria idinthakaraiensis* Umamaheshwara Rao (Gracilariales, Rhodophyta) was reported from the Rasthacaud coastal waters of Kanyakumari district, Tamilnadu, India. The present specimen collection is the second report for the seaweed flora of the world and a new addition to the seaweed flora of Kanyakumari district; this species has been restricted to the southernmost part of the Gulf of Mannar Biosphere Reserve.

**Key words:** *Gracilaria idinthakaraiensis*, Gracilariales, Rasthacaud coast

### **INTRODUCTION**

The genus *Gracilaria* is cosmopolitan in distribution, and has been reported from the arctic, temperate and tropical regions. Greville named the genus *Gracilaria* in 1830, including four species. The genus was classified under the family Sphaerococcaceae by Schmitz in 1889. Kylin created the family Gracilariaceae under the order Gigartinales in 1930, on the basis of the presence of a large fusion cell formed after fertilization, giving rise to gonimoblast filaments (Oza, 1976). Agardh reexamined the genus in 1852, and included 23 species under it. In 1876 and 1901 Agardh re-evaluated the genus and reported 61 species altogether. Since then, studies in various parts of the world have led to the inclusion of about 320 species under this genus, of which 169 species have been accepted taxonomically (Guiry & Guiry, 2013). In India, the genus *Gracilaria* includes ca. 32 species, of which 31 are found in different parts of Tamilnadu coast alone (Rao, 1972; Krishnamurthy & Rajendran, 1986; Krishnamurthy, 1991; Desikachary *et al.*, 1998). Later, Rao (2003) reported three new species of *Gracilaria* (*G. stolonifera*, *G. idinthakaraiensis* and *G. rostrata*) from the Tamilnadu coast and the genus now has 35 species.

During the seaweed collection of the southeastern coast of Tamilnadu, the authors happened to collect specimen of a species of this genus from Rasthacaud coast (08°08'308"N;

77°32'80" E), Tamilnadu. On critical examination, it was identified as *G. idinthakaraiensis* Umamaheshwara Rao. So far this species has been recorded only from the type locality. Perusal of literature reveals that it has not been reported in any of the earlier floristic works elsewhere (Devi *et al.*, 2004; James *et al.*, 2004; Christobel & Jeeva, 2009; Paul & Raja, 2011; Domettila *et al.*, 2012; Satheesh & Wesley, 2012). Hence, the species has been found to have an extended distribution and this is the second report on this species for the seaweed flora of the world. A detailed description and herbarium specimens are provided for easy identification (Figure 1).

***Gracilaria idinthakaraiensis* Umamaheshwara Rao**  
in *Seaweed Res. Utilin.*, 25(1&2): 1-12, 2003.

Plantae foliosae, 8-12 cm altate, 0.75-2.0 cm late e haptero discoideo affixate; thallus breviter stipitatus tenax coriaceus, 1-2-plo dichotome lobatus, 340-450 µm crassus, ad marginum integrus, protuberantionibus, instructus, raroproliferus; cortex 1-2 cellula crassus; cellulae pigmentiferae, 4-8 µm latae, isodiametricae; medulla 4-5 cellulae crassa, cellulae 60-160 µm diometro; cystocarpia tholiformia, parum constricta, filamenta absorbentia superiora et lateralialia, carposporae rotundatae, 10-12 µm in diam, pericarpium 250-290 µm crassum, cum 17-20 stratis cellularum, cellulae 8-12 µm latae,



FLORA OF KANYAKUMARI DIST./  
OTHER COLLECTIONS 3254  
DEPARTMENT OF BOTANY  
SCOTT CHRISTIAN COLLEGE, NAGERCOIL

Coll. No. : ..... Date... 25/12/2011  
Name : *Gracilaria idinthakaraiensis*  
Umamaheshwara Rao  
Local Name & User: .....  
Family : *Gracilariaceae*  
Locality : *Rasthacaud*  
Habitat : *Sublittoral drift plants*  
Photo data : .....  
Description : .....

Associated plants, animals

Collected by: *Domettila*

quadratae, confertim dispositae; tetrasporangia 12  $\mu\text{m}$  lata, 24-28  $\mu\text{m}$  longa, a seriebus cellularum parum elongatarum circumcincta. Plant foliose, 8-12 cm tall, 0.75 to 2.0 cm broad, greenish to brownish red colour, attached by a basal disc; thallus shortly stipitate, tough or leathery, 1-2 times dichotomously lobed, 34-450  $\mu\text{m}$  thick, margins entire, provided with small protuberances or rarely proliferous; cortex one cell layer thick, rarely two cell layer thick, pigmented cortical cells 4-8  $\mu\text{m}$  broad, isodiametric; medulla 4-5 cell thick, with 2 large cells at the centre, cells 60-120  $\mu\text{m}$  in diameter; cystocarps dome shaped, 680-940  $\mu\text{m}$  in diameter; nonrostrate, slightly constricted below, gonimoblast tissue with large cells, absorbing or nutritive filaments upper and lateral, carposporangia in chains, round with dense contents, 10-12  $\mu\text{m}$  in diameter, pericarp 250-290  $\mu\text{m}$  thick, with 17-20 layers of cells, the cells 8-12  $\mu\text{m}$  broad, quadrate, without stellately lobed contents; tetrasporangia scattered, ovoid, 12  $\mu\text{m}$

broad, 24-28  $\mu\text{m}$  long, surrounded by modified cortex with slightly elongated rows of cells.

**Specimen examined:** India, Tamilnadu, Kanyakumari district, Rasthacaud coast (southwest coast), Domettila and Jeeva 3254, 25-6-2011 (Herbarium of Scott Christian College, Nagercoil, Tamilnadu).

**Distribution:** It is endemic to the southeastern coast of Tamilnadu. Umamaheshwara Rao collected this species from Idinthakarai (08°11'993"N; 77°44'680" E) on 19 December 1969, deposited in the Central National Herbarium, Howrah and published this as a new species in the journal *Seaweed Research and Utilization* during 2003. The present collection from Rasthacaud coast indicates its extended distribution, is a rediscovery (collected after 4 decades) and is the second report for the seaweed flora of the world.

**Notes:** The genus *Gracilaria* has been extensively studied, because of its economic importance as an agarophyte (Kain & Destombe, 1991; Raikar *et al.*, 2001; de Almeida *et al.*, 2011).

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