**Scytosiphon gracilis** Kogame (1998: 39)

**Holotype:** SAP 059720 (collected on 1 February 1990).

**Type locality:** Ohma, Aomori Prefecture, Japan.

**Distribution:** Japan (Kogame 1998), Korea (Cho et al. 2001; Cho et al. 2002) and Mexico (this paper).

**Japanese name:** Usukayamo.

**Korean name:** Ganeunmiyeoksil.

**Specimens examined:** Playa Saldamando, Baja California, Mexico (Raul Aguilar Rosas & Luis E. Aguilar Rosas, CMMEX 4438, 31.I.2003).

The brown alga **Scytosiphon gracilis** Kogame was initially described from Japan by Kogame (1998), and it was subsequently reported only from Korea (Cho et al. 2001, 2002). In this study we report the occurrence of this species in Mexican waters (eastern Pacific Ocean). The identification was based on a morphological revision and a comparison of the plastid-encoded RuBisCO spacer sequences determined for Korean and Mexican algal material. Thalli were collected from the intertidal zone of Saldamando Beach, Baja California, in January 2003. The vegetative structure, as well as habitat and geographic distribution of the species are described. Reproductive structures were not found in our specimens. The poor presence/absence of *S. gracilis* in previous floristic studies of the area could be due to its small size and low frequency.

**Key Words:** Brown algae, Pacific Mexico, RuBisCO spacer region, *Scytosiphon gracilis*, Scytosiphonaceae
The following observations were based on field collected plants and molecular analysis (plastid-encoded RuBisCO spacer sequences). Plants have many clustered, erect thalli that grow on rocks in the upper and middle intertidal zones of moderately exposed or sheltered areas. They are flattened, unbranched, hollow, twisted in the upper part, up to 10 cm tall and 1-1.2 mm wide (Fig. 2), and yellowish-brown in color. Thalli consist of a cortex composed of 1-3 layers of small, angular to rectangular, pigmented cells and a medulla composed of 2-3 layers of large colorless cells. In cross-section, medullary cells were round to oval, 25-34 x 24-42 µm in size. Thalli attached to substrate with rhizoidal filaments arising from the outer cortical cells near the base of the thallus. Phaeophycean hairs were solitary or grouped on the surface. Reproductive structures were not found in the specimens examined.

The genus *Scytosiphon* is distinguished by cylindrical to compressed hollow thalli, sori with unicellular paraphyses and abundant phaeophycean hairs (Kogame 1998), and currently includes seven species: *S. canaliculatus* (Setchell and Gardner) Kogame, *S. complanatus* (Rosenvinge) Doty, *S. crispus* Skottsberg, *S. dotyi* Wynne, *S. gracilis* Kogame, *S. lomentaria* (Lyngbye) Link and *S. tenellus* Kogame (Kogame 1998; Cho *et al.* 2002). Prior to this study, only *S. dotyi* and *S. lomentaria* have been reported for the Pacific coast of Mexico (Abbott and Hollenberg 1976; Aguilar-Rosas 1982; Stewart and Stewart 1984; Aguilar-Rosas and Aguilar-Rosas 1994).
Our specimens of *S. gracilis* from Baja California fit the descriptions of this species from Japan (Kogame 1998) and Korea (Cho et al. 2002). Moreover, the DNA extraction and sequencing results for *S. gracilis* from Baja California are identical to the sequences shown by Cho et al. (2001) for Korean samples (BP = 100) (Fig. 3). The maximum-likelihood analysis revealed the close relationship between *S. gracilis* and *Petalonia zosterifolia* (Reinke) Kuntze (BP = 74); however, these two species differ in the structure of the thallus and the presence/absence of paraphyses (Cho et al. 2002). Overall topology of the other members of Scytosiphonaceae was similar to those of Kogame et al. (1999) and Cho et al. (2001). Detailed discussion about the phylogenetic relationship at the genus level is beyond of this study.

*Scytosiphon gracilis* may be a winter-spring species at Saldamando Beach, as in Japan (Kogame 1998) and Korea (Cho et al. 2002). Until now, *S. gracilis* has been reported only from Japan and Korea, but the population found in Mexican waters extends its distribution to the eastern Pacific Ocean. Detailed field collections may extend the areas of distribution along the Baja California coastline. Due the active shipping between Asia and Mexico and the proximity of study area to Ensenada port, the occurrence of *S. gracilis* on the Pacific coast of Mexico suggests a recent introduction (Hommersand 1972).

ACKNOWLEDGEMENTS

We thank David Garbary for valuable suggestions and comments on the manuscript. This work was supported by Faculty of Marine Science and Institute of Oceanographic Research of the Autonomous University of Baja California, under the program Cytological study of brown algae (4067-322) and the monitoring program of Herbarium CMMEX, and by the Marine and Extreme Genome Research Center Program (program leader: Dr. S.J. Kim), Ministry of Maritime Affairs & Fisheries, Korea, to S. M. Boo.

REFERENCES


Received 6 February 2006
Accepted 25 February 2006