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Notes on Some Marine Algae in Korea

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Three species of marine algae collected from the western coast of Korea were described. Of these, two species *i.e.*, *Hypoglossum geminatum* Okamura and *Sphacelaria radiata* Takamatsu are newly recorded in Korea.

Description

Hypoglossum geminatum Okamura

1909, p.156, 157, pl.32, figs.7-12; 1936, p. 762-763.

Frond minute, about 0.6*cm* high, 250-600 *μm* broad, linear-lanceolate, with corticated midrib, veinless, repeatedly branching in geminate manner by proliferating similar segments from the midrib; margin entire or fimbricated in older portion, with hair-like root fibres; midrib composed of three layers of frond are one-layered, corticated more thickly in lower portion than that in upper portion; tetrasporangia formed on either side of midrib, tetrahedrally divided, about 38 *μm* in diameter, covered with cortical cells.

Habitat: Growing on the oyster shell, in the lower tidal zone.

Material: Sohuksando(August 21, 1982) on the western coast of Korea.

Thalli are delicate, very small and fragile, so it is easy to be damaged, and thalli on the surface of which lots of diatoms were epiphytic grew a little caespitose on the oyster shell. Main blades grow long and young blades which initiated from the central cell of the midrib oblong or lanceolate. We observed some rhizoids coming out, but could not see the fusion of marginal cell that we observed in *H. barbatum*.

There seems to be the part forming the procarp, which is not conspicuous. Sori of tetrasporangia on whose surface cortical cell covered formed on the middle portion of blade and two or three parallel rows of tetrasporangia arranged regularly on each side of midrib.

This specimen well accords with the species that Okamura described in 1909, but we could not observed the cystocarp.

Hypoglossum barbatum Okamura

1901, p.23-24, pl.7; 1936, p.761, fig.365; Hirose, 1957, p.102; Lee, 1980, p.156-158, fig.4.

Frond minute, about 1.5-2.0 *cm* high, about 2.0-2.5 *mm* broad, linear-lanceolate, with not corticated percurrent midrib, veinless, repeatedly branching in geminate manner by proliferating similar segments from midrib; margin entire or fimbricated in old portion, and some rhizoid coming out; fusion of marginal cell formed in fimbricated part; tetraspore formed on either side of midrib, cruciately divided, covered with cortical cell.

Habitat: Growing on shady rocks in the lower tidal zone.

Material: Budo (August 11, 1982) on the western coast of Korea.

Table 1. A comparison of taxonomic characters of two species of *Hypoglossum*

Species	*H. geminatum*	*H. barbatum*
Size of frondl	relatively small (about 0.6*cm*)	relatively large (1.5-2.0*cm*)
Midrib	corticated	not corticated
Fusion of marginal cell	absent	present
Mode of apical cell portion	rather mute	acute
Pattern of tetraspore division	tetrahedrally	cruciately

Thalli are very soft, thin and delicate. Several rhizoids are entangled at the margin of blade, especially at upper portion, and are initiated from the fusion cell forming at the margin of blade.

Sori is formed with one or two rows of tetrasporangia which arranged somewhat irregularly at each side of midrib, and the surface of that is usually corticated except on the midrib.

Hypoglossum geminatum resembles *Hypoglossum barbatum* in external appearance and size(Okamura, 1909). However, the former is distinguished from the latter by the following characters; 1) corticated midrib, 2) fusion of marginal cell, 3) relatively small frond, 4) mode of apical cell portion, and 5) pattern of tetraspore division as mentioned Table 1.

Sphacelaria radiata Takamatsu

1943, p.171-174, pl. Ⅱ, figs.3-4, pl.12, figs. 1-2, text-fig.9; Noda, 1973, p.152; Konno & Noda, 1980, p.37-38, fig.7.

Frond densely caespitose, dark brown, hemispherical radiata, somewhat rigid, about 0.8 *cm* high, basal parts rather thin, irregularly spreaded adhering to host plant; erect filaments broadest at submiddle portion, 55-60 μm thick, gradually attenuating toward the both ends; branches only once from axial filaments, mostly secondly situated, abruptly attenuate at the base; hairs abundantly developed on the erect filaments, apically or laterally situated; propagula developed sparsely at upper portion of erect filaments, dichotomously 1-2 times, each contricted abruptly at its base;segments rather short, about 0.9-1.1 times as long as broad; plurilocular sporangia developed numerously on branches of erect filaments, irregularly situated, from oblong to ellipsoid, 30-70 μm long, 30-45 μm in diam., with one or several celled pedicels, often constricted at middle portion.

Habitat: Epiphytic on *Sargassum serratifolium* in the sublittoral zone, about 5*m* depth.

Material: Hongdo (August 20, 1982) on the western coast of Korea.

This plant was epiphytic on *Sargassum serratifolium*, and it was collected from the sublittoral area, about 5*m* depth.

Reference

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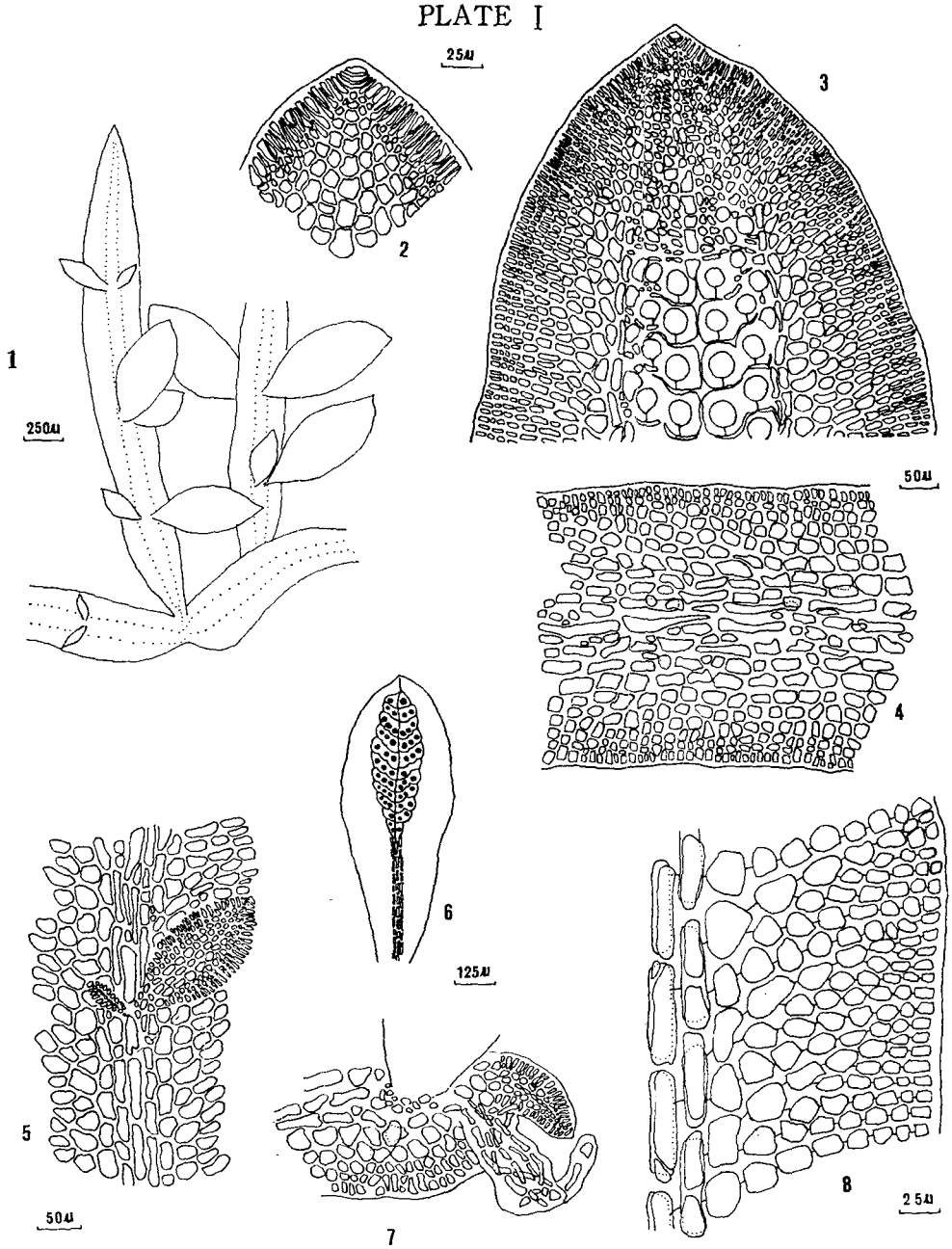
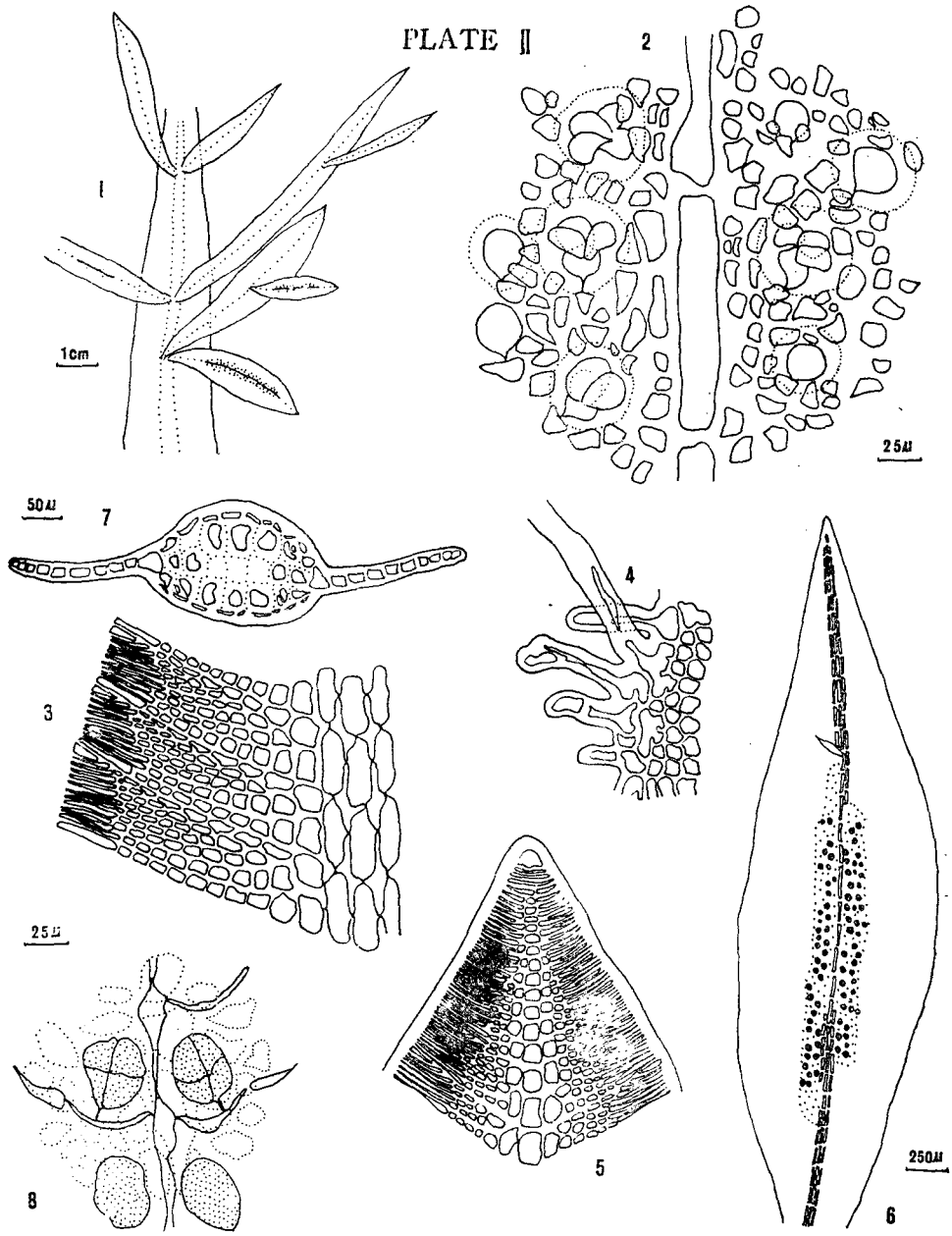
PLATE I



Hypoglossum geminatum Okamura

Fig. 1. Portion of thallus showing mode of branching.
Fig. 2. Surface-view of the terminal portion showing arrangement of cells.
Fig. 3. Portion of thallus developing the tetrasporangial sorus.
Fig. 4. Surface view of thallus with corticated midrib.
Fig. 5. Portion of the surface of thallus showing a geminate proliferation.
Fig. 6. Portion of thallus showing tetrasporic sorus.
Fig. 7. Portion of thallus with hair-like root fibers.
Fig. 8. Margin of thallus showing development of branching.

PLATE II



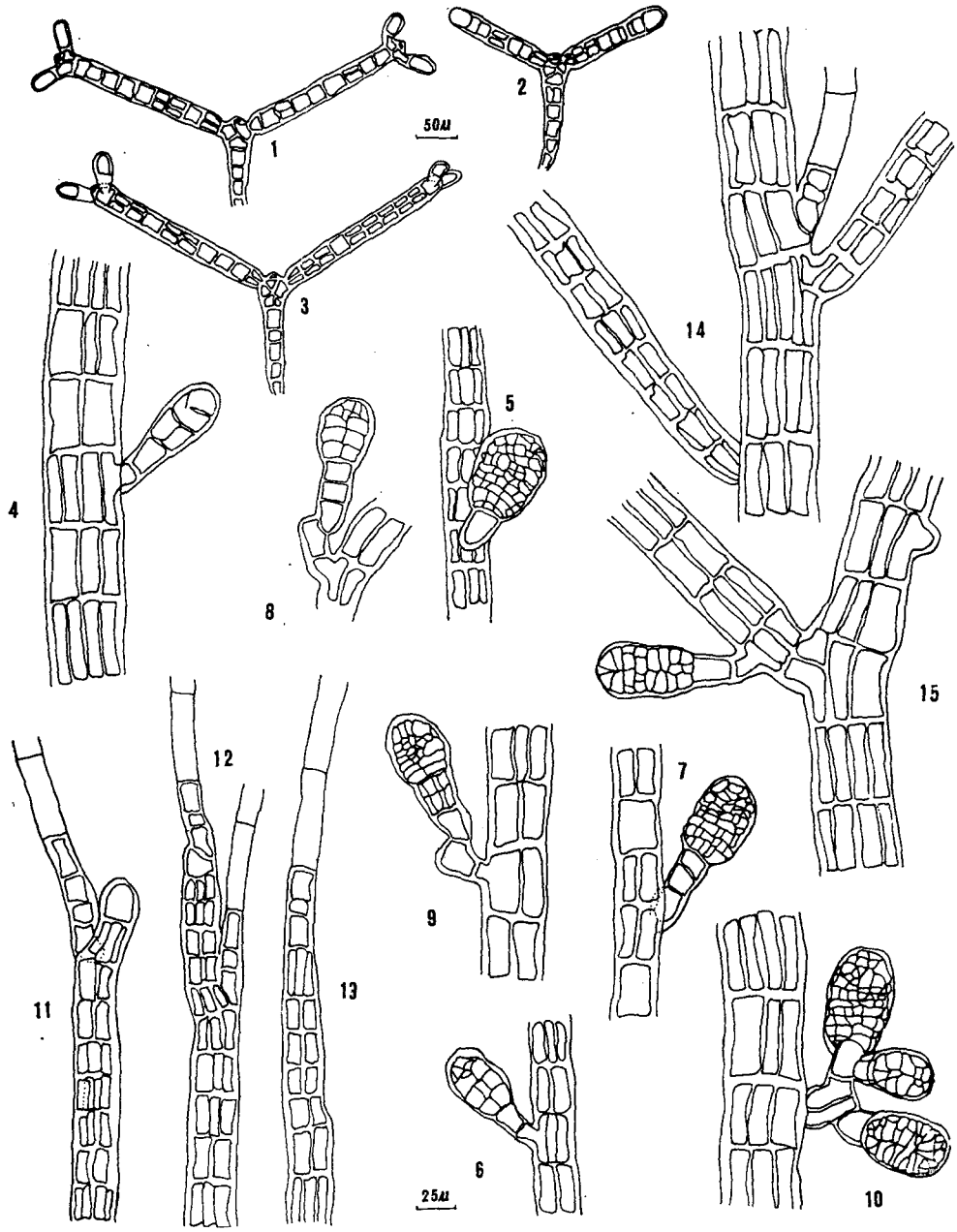
Hypoglossum barbatum Okamura

Fig. 1. Portion of tetrasporic plant showing superficial position of tetrasporangia.
Fig. 2. Surface view of thallus showing suferficial position of tetrasporangia.
Fig. 3. Margin of thallus showing early stage in development of branching.
Fig. 4. Margin of thallus showing development of rhizoids.
Fig. 5. Apices of thallus-segments.
Fig. 6 Portion of thallus showing tetrasporic sorus..

Hypoglossum geminatum Okamura

Fig. 7. Transverse section of thallus.
Fig. 8. Portion of thallus developing the tetrasporangial sorus.

PLATE Ⅲ



Sphacelaria radiata Takamatsu

Figs. 1— 3. Propagula, primary ones with two rays constricted strongly at the base.
Figs. 4— 7. Plurilocular sporangia with single pedicel.
Figs. 8—10. Pluriloular sporangia with ramified pedicel.
Figs. 11—12. Lateral hair with long pedicel.
Fig. 13. Terminal portion of erect filament with apical hair.
Figs. 14—15. Middle portion of erect filaments with branches and hairs.

韓國產 海藻 三種에 대한 註解

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韓國 西海岸에서 채집된 *Hypoglossum barbatum* Okamura, *H. geminatum* Okmura 그리고 *Sphacelaria radiata* Takamatsu의 3種에 대한 形態的 記載를 하였고, 이중 *H. geminatum*과 *S. radiata*, 2 種은 韓國 海藻相에 처음 追加된다.