

## NOTES ON PACIFIC COAST MARINE ALGAE. III.

E. YALE DAWSON

The following notes on various Rhodophyceae are intended mainly to clarify certain problems of nomenclature and distribution in connection with the preparation by the author of "A Guide to the Literature and Distribution of the Marine Algae of the Pacific Coast of North America."

*ACROCHAETIUM THURETII* (Bornet) Collins and Hervey var. *agama* (Rosenvinge) comb. nov. *Chantransia Thuretii* (Bornet) Kylin var. *agama* Rosenvinge, Mar. Alg. Denmark 1: 102. 1909. *Rhodochorton Thuretii* (Bornet) Drew var. *agama* Drew, Univ. Calif. Publ. Bot. 14: 171. 1928.

Papenfuss (6, p. 311) in his revision of the *Acrochaetium-Rhodochorton* complex has retained the name *Acrochaetium Thuretii* (Bornet) Collins and Hervey. The variety *agama* deserves, therefore, the present new combination.

*LIAGORA CALIFORNICA* Zeh. This species has been recorded only from the type locality, Santa Catalina Island, California. The following specimens deposited in the Herbarium of the University of California indicate a more extensive range: Point Loma, San Diego County, California, 1875, *Edward Palmer*; Guadalupe Island, Baja California, March 18, 1932, *H. W. Clark*.

*Pterocladia pyramidale* (Gardner) comb. nov. *Gelidium pyramidale* Gardner, Univ. Calif. Publ. Bot. 13: 273. 1927.

Some time after Gardner described this plant from tetrasporic material he discovered specimens bearing cystocarps. In an unpublished note he made the following observations, which have since been independently confirmed by the author and by Dr. C. K. Tseng. "The cystocarps are abundant, usually single and near the outer ends of ultimate pinnules. They are unilateral and open by a single ostiole at the distal end. This necessitates placing the species in the genus *Pterocladia*."

*PIKEA PINNATA* Setchell. Specimens found in beach drift at Coronado, San Diego County, California (*Fork 317* in Herb. Univ. Calif.) extend the known range of this species southward from San Luis Obispo County, California.

De Toni (2) pointed out that the genus *Prionitis* J. Agardh (1851) is invalidated by *Prionitis* Adanson (1763) and proposed the name *Zanardinula* for the algal genus. Both De Toni and Papenfuss (5, p. 342) have made new combinations in this genus. The following are also in order:

*Zanardinula mexicana* (Dawson) comb. nov. *Prionitis mexicana* Dawson, A. Hancock Pac. Exped. 3: 283. 1944.

*Zanardinula guaymasensis* (Dawson) comb. nov. *Prionitis guaymasensis* Dawson, A. Hancock Pac. Exped. 3: 283. 1944.

*Zanardinula kinoensis* (Dawson) comb. nov. *Prionitis kinoensis* Dawson, A. Hancock Pac. Exped. 3: 284. 1944.

*Zanardinula filiformis* (Kylin) Papenfuss var. *delicatula* (Taylor) comb. nov. *Prionitis filiformis* var. *delicatula* Taylor, A. Hancock Pac. Exped. 12: 210. 1945.

*Callocolax globulosis* sp. nov. Frondibus parasiticus, hyalinis, 2 mm. altis, 2-3 mm. latis, irregulariter hemisphaericus, lobatis tuberculaeformibus; cystocarpiis internis, per thallus lobatis sparsis; carposporiis 7-10  $\mu$  diam.; tetrasporangiis ignotis.

Parasitic on *Callophyllis* sp.; external parts from a relatively small, central attachment to the host, colorless, irregularly hemispherical, 2-3 mm. broad, up to 2 mm. high, with crowded, rounded lobes; cystocarps internal, without ostioles, of irregular shape, scattered through the lobed plant body; carpospores 7-10  $\mu$  diam.; tetrasporangia unknown (pl. 8, figs. 3-5).

Type. Growing on a sterile, undescribed species of *Callophyllis* dredged from a depth of twelve meters off Point Loma, San Diego County, California, April 5, 1944, *Martin W. Johnson* (Herbarium of the University of California no. 690149).

The cystocarps of the present species show conclusively that it belongs to the genus *Callocolax* which was first designed to embrace the species *C. neglectus* Schmitz, parasitic on *Callophyllis laciniata* (Hudson) Kützing from the south coast of England. The only other species of this genus known from the Pacific Coast of North America is *Callocolax fungiformis* Kylin (3, p. 35) found growing on *Callophyllis edentata* Kylin near Friday Harbor, Washington. It was described from sterile material, but vegetatively is a much larger plant than *Callocolax globulosis*. Smith (7, p. 153) mentions a *Callocolax* collected in the Monterey region and refers it with reservations to *C. neglectus*. Recently he has written to me: "My material seems to be more or less like your new species."

*Iridophycus californicum* (J. Agardh) comb. nov. *Collinsia californica* J. Agardh, *Analecta Algol.*, Cont. V., 79. 1899. *Iridaea californica* (J. Agardh) Kylin, *Lunds Univ. Årsskr.*, N.F., 37(1): 23. 1941.

Kylin reexamined the two fragments in Agardh's herbarium under the name *Collinsia californica* and states (4, p. 23) that it is not unlikely that they may be the same as the plant described by Setchell and Gardner under the name *Iridophycus sanguineum*.

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PLATE 8. PACIFIC COAST RHODOPHYCEAE. FIGS. 1-2, *Rhodymeniocolax botryoidea*: 1, cystocarpic plant from type collection growing on stipe of *Rhodymenia rhizoides*.  $\times 8$ . 2, transverse sectional diagram of small cystocarpic plant from type collection.  $\times 16$ . FIGS. 3-5, *Callocolax globulosis*: 3, mature, cystocarpic plant from type collection growing on blade of *Callophyllis* sp.  $\times 8$ . 4, transverse sectional diagram of cystocarpic plant in fig. 3.  $\times 16$ . 5, transverse sectional view of lobe "A" of fig. 4, showing several cystocarpic cavities filled with carpospores.  $\times 65$ . FIGS. 6-7, *Rhodymenia pacifica*: 6, terminal portion of blade bearing tetrasporic lobules.  $\times 3$ . 7, transverse sectional view of tetrasporic lobule.  $\times 250$ .

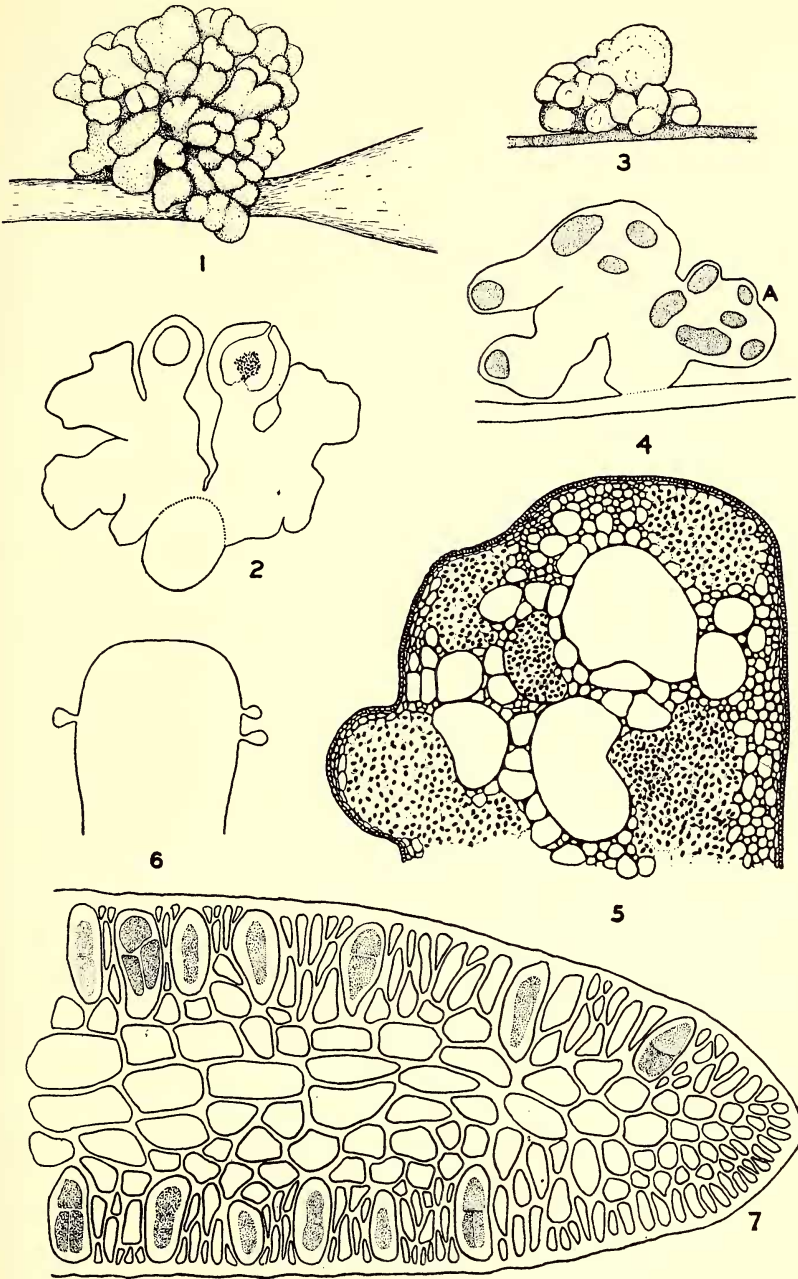


PLATE 8. PACIFIC COAST RHODOPHYCEAE.

Since he was not sufficiently certain, however, to place *I. sanguineum* in synonymy, the older name must be carried on in this new combination until the point can be settled by careful comparison of specimens. The name *Collinsia* is disposed of in any event, as De Toni has pointed out (2) that *Collinsia* J. Agardh (1899) is invalidated by *Collinsia* Nuttall (1817).

RHODYMENIA PACIFICA Kylin, Lunds Univ. Årsskr., N.F., Avd. 2, 21(19): 21. 1925.

This species was described from sterile material collected in the lower littoral at Pacific Grove, California. Reproductive material has not been described. Although the species is not known to occur in the tidal zone in the San Diego region, specimens have been dredged from depths of ten to twelve meters off Point Loma, San Diego County, and have been found in beach drift at La Jolla. In several specimens tetrasporic lobules have been detected occurring marginally; on some, very near the apex of the broadly rounded segment (pl. 8, fig. 6) and on others, from 1 to 3 cm. below the apex. Tetraspores occur over the entire lobule on both sides and cause a nemathelial modification of the outer cell layers (pl. 8, fig. 7). According to this character of the tetrasporic sori, this species should be arranged in the section *Clinophora* of the subgenus *Eurhodymenia* (1, p. 127).

RHODYMENIICOLAX BOTRYOIDEA Setchell, Univ. Calif. Publ. Bot. 10: 394. 1923.

This parasitic red alga has recently come to my attention in connection with its host, *Rhodymenia rhizoides* Dawson (1, p. 146). The host was originally given as *Rhodymenia palmetta*?, and the parasite was only sketchily described in Latin without illustrations. It seems well to present here some illustrations (pl. 8, figs. 1-2) of the type material collected by N. L. Gardner at White's Point, San Pedro, California, in June, 1908. Additional material has been collected in abundance on old specimens of the host found in beach drift at La Jolla, California, throughout the winter and spring of 1944-45.

PLEONOSPORIUM SQUARROSUM Kylin var. OBOVATUM Gardner, Univ. Calif. Publ. Bot. 13: 414. 1927.

The type locality was not given by Gardner with the description of this plant. An examination of the type sheet (*Macoun 168*) in the Herbarium of the University of California reveals that the specimens came from Sidney, Vancouver Island, British Columbia. No date is given.

*Holmesia californica* (Dawson) comb. nov. *Loranthophycus californicus* Dawson, Bull. Torrey Bot. Club 71: 655-657. 1944.

Re-examination of the type specimen of *Loranthophycus californicus* Dawson and comparison with material of *Holmesia capensis* J. Agardh from South Africa in which the tetrasporangia are borne in tiny leaf-like structures on the thallus surface, have

prompted the author to abandon his earlier conclusion that the plant was a parasitic species of the Delesseriaceae. It now seems that what was thought to be a parasitic plant similar in form to *Gonimophyllum* is really the tetrasporic branchlet of the membranous "host," a species of *Holmesia*. Its original assignment to the Membranoptera group, although not as a parasitic member, is maintained. The description given of the "host" may now be considered that of the vegetative characters of *Holmesia californica*.

Scripps Institute of Oceanography,  
La Jolla, California.

#### LITERATURE CITED

1. DAWSON, E. Y. A review of the genus *Rhodymenia* with descriptions of new species. *Allan Hancock Pac. Exped.* 3: 115-181. 1941.
2. DE TONI, J. *Noterelle di nomenclature algologica VII. Primo elenco di Floridee omonime.* Published by the author. Brescia. 1936.
3. KYLIN, H. The marine red algae in the vicinity of the Biological Station at Friday Harbor, Washington. *Lunds Univ. Arsskr., N.F., Avd. 2,* 21(9): 1-87. 1925.
4. ———. Californische Rhodophyceen. *Ibid.* 37(2): 1-51. 1941.
5. PAPENFUSS, G. F. Notes on algal nomenclature. III. Miscellaneous species of Chlorophyceae, Phaeophyceae and Rhodophyceae. *Farlowia* 1: 337-346. 1944.
6. ———. Review of the *Acrochaetium-Rhodochorton* complex of the red algae. *Univ. Calif. Publ. Bot.* 18: 299-334. 1945.
7. SMITH, G. M. Marine algae of the Monterey Peninsula, California. Stanford University. 1944.

## A NEW ASTER FROM YUKON

ARTHUR CRONQUIST

Among some specimens from Yukon recently sent to me for determination by Mr. J. P. Anderson is an *Aster* which seems unlike anything described previously from North America. With the exception of the well-known *Aster alpinus* L. and *A. sibiricus* L., the genus shows little tendency toward circumpolar distribution. There are in fact very few species of *Aster* in the far north. A survey of the more pertinent treatments of Siberian asters, such as those in Ledebour's *Flora Rossica*, Hultén's flora of Kamtchatka, Komarov's key to the plants of the far eastern region of the U.S.S.R., and Onno's revision of certain species supposedly related to *Aster alpinus* (*Bibl. Bot.* 106: 1-83. 1932), reveals nothing that might be considered allied to the plant in question. It seems proper, then, to look to the southward for its relatives. In Rydberg's flora of the Rocky Mountains it would key to *A. campestris* Nutt. Although superficially not unlike smaller forms of that species, it differs strikingly in its lax, herbaceous, equal phyllaries, as contrasted to the firm, chartaceous-based, more or less imbricate phyllaries of *A. campestris*. It also differs in its short simple caudex, instead of creeping rhizomes, as well as in