

# Phycological Trailblazer

## No. 31

### Frank Shipley Collins

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It is fitting to include Frank Shipley Collins (1848-1920) in this series of “phycological trailblazers” because he was an American original, a person who made significant contributions to our understanding of the marine and freshwater algae of North America despite his status as an amateur. Remarkably, although he held down a full-time job as a “ticket clerk” and bookkeeper for the Boston Rubber Shoe Company and by necessity had to carry out his studies on the algae in his spare time or wait till his retirement years, his legacy still stands as highly significant. There are very few individuals who can claim to have left behind such a significant body of work to science and to have done so in their leisure time.

Frank Collins was born in Boston, Mass., 6 Feb., 1848, and both sides of his family could be traced back to Massachusetts colonials of the seventeenth century (Setchell, 1925). His father died when Collins was young, and the family moved to Malden, Mass., where he graduated from high school at the age of 16. His mother and her two sisters were major influences in his education in that at home he had been taught Latin, Greek, French, mathematics, some botany, and even astronomy, all of which contributed to giving him a solid

background that would serve him later in his scientific pursuits. It was his maternal grandfather who dissuaded him from going to Harvard, much to the disappointment of Collins’ mother and his aunts, but encouraged him to start a career in business directly out of high school. After a series of starts and stops, this led him eventually to the employment with the Boston Rubber Shoe Company where he worked for more than 30 years.

A keen intellect led Collins to take up a pursuit of scientific study. He had been exposed to botany through one of his aunts. Setchell’s (1925) account provided the background on

what led Collins to the algae. It was following Collins’ marriage that his wife became acquainted with a Mrs. Maria Bray of Magnolia, MA, whose husband had earlier been a lighthouse keeper on Thatcher Island. Mrs. Bray had taken up the hobby of mounting seaweeds and continued that avocation when she moved to the mainland, with Mrs. Collins helping her collect and mount the seaweeds. These mounted specimens were labeled with the botanical name, as best the ladies could do, and they were sold to tourists. When Mrs. Collins showed these labeled seaweeds to her husband, his attention was quickly captured.

But Collins also soon

recognized that the identifications were “defective” (Setchell, 1925). Collins was soon on the road to his phycological avocation, which would fully consume him.

Setchell (1933) described Collins (Fig. 1) as being “a slender man, of medium height, early gray, but with youthful appearance, roundish face, with broad mustache”, with somewhat a



Fig. 1. Frank S. Collins (from Setchell, 1925)

resemblance to Mark Twain. Collins was the catalyst in producing the monumental exsiccata "Phycotheca Boreali-Americana" [P.B.-A.], along with colleagues Isaac Holden and William A. Setchell. This project spanned a 16-year period (1895-1919) and produced about eighty sets of pressed marine and freshwater algae in a series of fascicles. 46 standard-sized volumes each contained 50 sheets with one or more specimens, while a final six over-sized volumes each contained 25 sheets of specimens. This project involved the handling of more than 200,000 specimens. Of the 80 copies of this exsiccata, 37 were thought to have been distributed to public institutions in the USA (Sayre, 1969). Five of the fascicles were "Algae of Bermuda" distributed by Collins with the Rev. Alpheus Baker Hervey. He enlisted the assistance of collectors scattered around North America as well as in the Caribbean such as a pair of sisters, Mrs. Cora E. Pease and Miss Eloise Butler working on their vacations in Jamaica. Miss Butler was a teacher in the Minneapolis School District. Mrs. G. A. Hall and Miss C. Messina sent him their collections from Florida, while others contributed their collections from the Pacific coast. Fahey & Doty (1955) compiled an index to the taxa included in this exsiccata, and in a preface they provided a history of this set as well as listing the then-known locations of most of the copies. The P.B.-A. was rich with types because Collins and his collaborators described a significant number of new taxa based on specimens distributed in this exsiccata (Collins, 1906b). In the 1920s while still at the University of Pennsylvania, Wm. Randolph Taylor contacted Collins' widow to fill out his incomplete set of the PB-A, and he managed to fill in most of the missing numbers. Later, Albert B. Bernatowicz and Elizabeth M. Fahey made trips to the Collins' family home at Eastham on Cape Cod and met with Collins' son, who generously showed them additional P.B.-A. material stored in a shed on the property (Fahey & Doty, 1955).

Personally, I find it of historical interest that my predecessor at the University of Michigan, Wm. Randolph Taylor, at the start of his very long career studying the algae, met

Frank Collins near the end of his own career. In the Herbarium Archives are some letters written by Collins to Taylor. There is a 3-page handwritten letter from Collins to WRT discussing freshwater *Chantransias*, which he regarded as "puzzling things". Collins thought that "the great majority of them are stages of *Lemanea*, *Batrachospermum* & the like". He considered *C. macrospora* H.C. Wood to be the asexual stage of a *Batrachospermum* "common

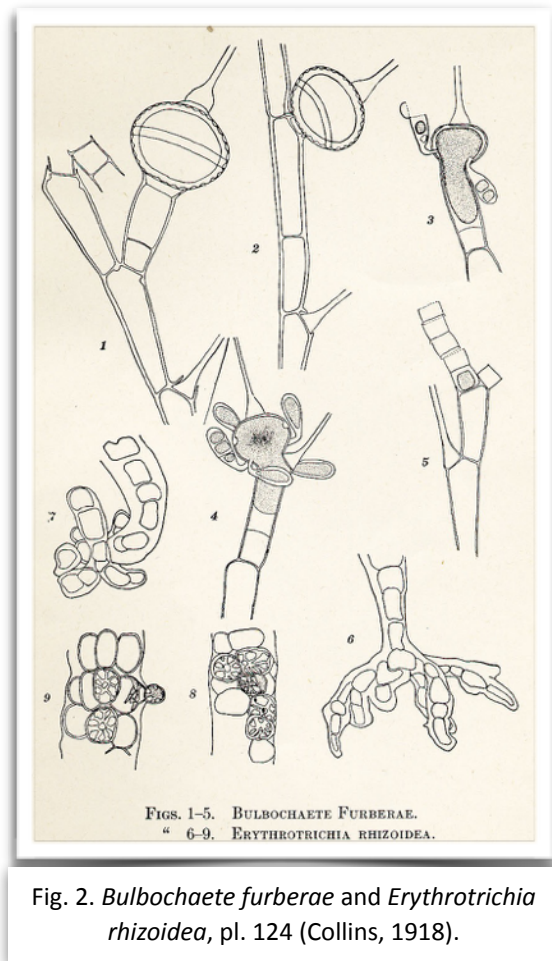


Fig. 2. *Bulbochaete furberae* and *Erythrotrichia rhizoidea*, pl. 124 (Collins, 1918).

from New Jersey south". Collins' advice to the young Taylor: [You] "can do a fine piece of work by locating a colony of *Chantransia* & seeing what comes of it; visiting say once a week, oftener if there seems to be a critical stage, preserving in formalin as good a supply as the amount of the grassy plant will permit each time for later distribution if desirable". He went on to say: "Such work followed up on all stations available would constitute a real addition to our

knowledge". Workers on freshwater reds such as Bob Sheath, Orlando Necchi, and Morgan Vis never saw that message from Collins to Taylor, but they recognized that those same goals were worth pursuing. More recent studies have demonstrated that indeed *Chantransia macrospora* produces the erect *Batrachospermum macrosporum* Montagne stage (Necchi & Zucchi, 1997; Pueschel et al., 2000; Chiasson et al., 2005).

Another item is a postcard dated 1919 in which Collins informs Taylor that he will be arriving by train in Philadelphia the following Thursday morning and that he hoped to divide his time on the visit between the University (of Pennsylvania) and the Academy. Randolph Taylor told me how he met Collins at the station with a hansom cab, a carriage drawn by a single horse.

That seems an interesting link with the past. So what were Collins' major contributions and achievements? He was a broadly attuned worker, with interests in both freshwater and marine species (Fig. 2) microscopic and macroscopic forms. He demonstrated an in-depth knowledge of the green algae and produced regional monographic treatments on

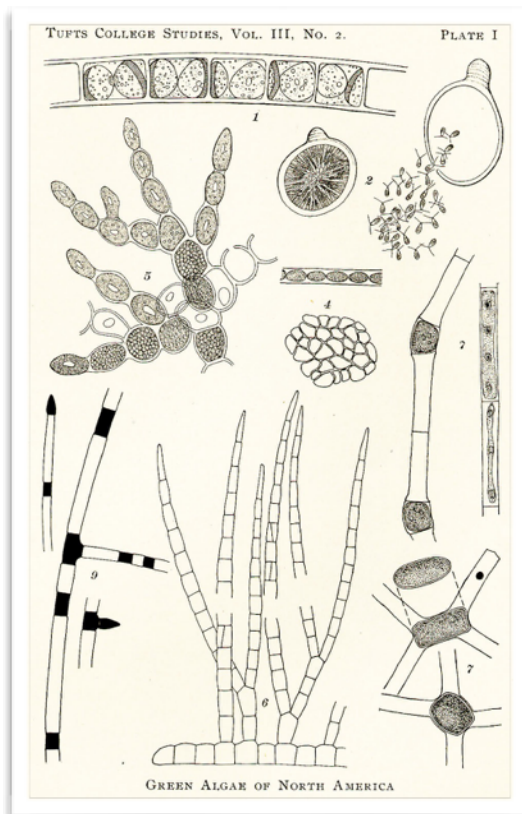


Fig. 3. Plate 1 of "The green algae of North America" (Collins, 1912).

*Cladophora* (1902, 1909a), *Monostroma* (1909b), and the Ulvaceae (1903a), culminating this work with his "The Green Algae of North America" (1909c, 1918b, Fig. 3). He teamed up with Marshall Howe to produce a detailed account of *Halymenia* (Collins & Howe, 1916) (Fig. 4). Although he was a recognized authority on the algal flora of New England, his interests extended well beyond that region to include the marine algae of Jamaica (1901c). He wrote a flora of the algae (freshwater and marine) of Bermuda with Hervey in 1917. For a 7-year-period (1911-1917) Collins and his co-author Hervey spent more than half this time in Bermuda "collecting

in practically all parts of the islands and in all months except June". Although it is clear that Collins certainly took much pleasure in being out

in the field and collecting, he was more than happy also to work up collections made by others. He had the talent to work up collections sent to him from Vancouver Island (1913), the Chincha Islands of Chile (1915), and China (1919). His treatment of the algae of the Arctic Circle and the Bering Sea was published posthumously (1927). After his death his



Fig. 4. *Halymenia pseudofloresii* Collins & M. Howe. Bermuda. Coll. C. Schneider 08-24-4 (in MICH).

personal herbarium was purchased by Dr. Nathaniel L. Britton, Director of the New York Botanical Garden, which is where it now resides (Setchell, 1925).

Collins has been honored to have his surname used for generic names: *Collinsiella* by Setchell & Gardner (1903) and *Collinsiellopsis* by Chihara (1967), both assigned to the green algal family Collinsiellaceae. J. Agardh's (1899) *Collinsia*, however, was a later homonym and thus illegitimate. Woelkerling (1975) has provided a very useful compilation of all of the names of algal taxa that were included in Collins' publications, that is, with citations of which publication(s) and on what pages. As Woelkerling pointed out, the great majority of Collins' papers dealt with the algae of New England.

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- \_\_\_\_\_. 1905b. Phycological notes of the late Isaac Holden —I. *Rhodora* 7: 168-172.
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**Michael J. Wynne**  
**University of Michigan, Ann Arbor**