

Phycological Trailblazer No. 9 Floretta Allen Curtis

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On the occasion of the 50th anniversary meeting of the Phycological Society of America, it is timely to include the first American in this series of pioneering phycologists. It is appropriate to pay homage to Floretta Allen Curtiss, an adventurous lady who although never publishing a single paper on algae, stands out as a genuine "trailblazer." Her impact on phycology is based on her zeal for collecting and her sharing material with professional phycologists of the day. She was not a mere petticoated wader as was so common in this Victorian period but rather was one sturdy field botanist, who devoted the last two decades of her life to her favorite pursuit, namely, the study of marine algae. According to W. R Taylor (1960, 1964) Floretta Curtiss "collected assiduously" and was "Florida's most indefatigable phycologist." Let us re- trace the events in her life, which led to her becoming such an outstanding figure in the annals of phycology. Much factual and anecdotal information in

this account has been derived from a tribute to Floretta Curtiss written by her son, Allen Hiram Curtiss (1899), shortly after her death. Allen Curtiss depicted his mother's life as being "full of changes, emergencies and troubles."

Floretta Allen was born Dec. 1, 1822, in a log cabin in central New York State. This spot in the then-primeval wilderness had been settled by her father and uncle, who arrived with axes and flintlock guns on their shoulders and who converted the dense forest of maple, beech, and birch into a farm. They got along amicably with the Indians of the area. She spent the first 12 years of her life on this farm, and from early on she took

special delight in the natural world, such as the flower garden. She also appreciated the refinement and culture of people and was taken into the home of James Roosevelt of the distinguished old Nickerbocker family of New York, to be a companion and teacher for his several daughters. This association with the Roosevelts was fortunate because living with these accomplished people instilled in her an appreciation of books, art, and music. She also learned their refined manners and mode of speech, and the experience filled her with aspirations. She received her education

in Rome, New York, and in Ann Arbor, Michigan. It was in Ann Arbor that she was exposed to botany as a study, and it quickly became her favorite subject.



Mrs. Floretta Allen Curtis
(frontispiece of A. H. Curtiss, 1899)

Her mother allowed Floretta to attend select cotillion parties, where she had many admirers among the young gentlemen. The most devoted of them was her future husband, Gaston G. Curtiss, who recently inherited half of the estate of his father, who had been a judge and one of the most prominent and wealthy men in that part of New York State. Soon after she bore a son (Allen), Mrs. Curtiss' health failed (tuberculosis). Other setbacks followed. A second son as well as her only two brothers died. Also, her husband lost his property because of "injudicious management." Floretta nursed her husband through a year-long illness, from which he finally recovered.

With the War Between the States underway, upon learning that an office in the Union Army was promised, Gaston Curtiss raised a squadron of mounted officers from New York and led them to Virginia. Once he arrived in Alexandria, a "southern city" then controlled by the North, however, he found that a new order had been issued prohibiting such appointments other than by promotion. So he embarked on a career in merchandising during the War. He persuaded Floretta to move from their home near Oswego, New York, to Alexandria, where she and teen-aged son Allen arrived just after the Battle of Fredericksburg. Their home was alongside Fort Meyer, close to the sound of cannon practice, the rumble of wagon trains, the shouting of regiments fresh from the North rushing to the front by rail, and bugle calls and band music. She was especially moved by "the plaintive music of fife and drum accompanying the simple funerals of private soldiers." Indeed, Floretta Curtiss was "fully imbued by the spirit of the times" and spent much time visiting the many of the thousands of wounded soldiers lying not only in hospitals but in hotels, churches, and other large buildings. "When one of her soldier friends fell sick, she would visit him in hospital, and, if dying, take his last message"

She frequently visited Washington by ferryboat and was there on the occasion of Lincoln's funeral. It was a very dramatic historical time in which to live but filled with much uncertainty. There was intense suspense following Lee's invasion of Pennsylvania and even more so the day after Lincoln's assassination, with rumors of a widespread conspiracy. All the while, Floretta Curtiss remained as near the "front" as was possible.

By the spring of 1865 the war was concluded. Many of the displaced "Yankees," having come to love the climate of Virginia, were now loath to return to the North. Farms were placed on the market at what agents represented to be fabulously low prices. Gaston Curtiss managed to purchase a 350-acre farm 24 miles west of Lynchburg. Son Allen later referred to his father's move as a big mistake in that there was so much resentment against the Yankees. Yet Floretta Curtiss overcame this social ostracism by her gradually forming a circle of congenial acquaintances among the more liberal-minded of the southern ladies, who appreciated her intelligence and culture. Mrs. Curtiss' high regard for them was reciprocated. In 1872, Gaston Curtiss died of a lung disease. Then, in 1874, Floretta Curtiss nursed her ailing mother in New York State through her final illness and remained there through the long winter to tend to her 88-year-old father. In the meantime Allen's position with the U. S. Department of Agriculture took him to Jacksonville, Florida. It was there that he became convinced that Florida possessed many advantages over Virginia as a place of residence. He met with a land owner, who was willing to trade his Florida property for a Virginia farm. It was "an even exchange."

It was in Florida that Floretta Curtiss, essentially in the last two decades of her life, was to turn her interest to psychology and to make such a contribution. Allen recalled how

his mother got interested in marine algae as a result of her "beach combing" near the mouth of the Indian River near their property. This is how he put it: "... in algae she found not only a species of artwork, but a nature study requiring close mental application. There is probably no other order of plants that presents to a student so many doubtful and puzzling forms, and it was through her persistent study of such forms that my mother made so many additions to the knowledge of algae".

Floretta Curtiss' contributions to phycology resulted largely from her interactions with two of the foremost phycologists of that period, J. G. Agardh at the University of Lund in Sweden and William G. Farlow at Harvard University. Even though J. G. Agardh was arguably the leading authority in phycology during the 19th century (Almborn, 1980), he certainly was never a "field man." He relied on the generous largesse of talented phycophiles around the world such as Mrs. Curtiss, or "Domina Curtiss" as he referred to her in his publications (written in Latin). Starting in 1877, Curtiss started corresponding with Farlow (Taylor, 1945). Her interests grew much more serious following an eventful journey she took with her son by sailboat in 1879. At that time much of the east coast of Florida was sparsely populated and mosquito-infested, and to reach towns like Daytona or New Smyrna required a tedious journey by mail wagon or coastal schooner. Floretta displayed her remarkable qualities of courage and endurance in putting up with the amazing hardships of such travel in the simple pursuit of seaweed specimens. Allen thought that perhaps his mother underestimated the difficulties of the undertaking, but she was determined to overcome the obstacles, and she did so. He had purchased a 20-ft. square-rigged sloop, the "Magnolia," and for most of the time on it poor Floretta, who was very subject to

seasickness, lay prostrate in her berth. At last they reached "Mosquito Inlet," and they dropped anchor opposite a house which provided board. After a couple of days for recuperation the Curtisses used the boat for botanical reconnaissance. Floretta would wander ashore, wearing a patent mosquito net over her head. On one occasion she returned minus the net, saying that she had encountered a big diamond-back rattlesnake in her path. They also used a pistol to kill off threatening alligators. The summer of 1879 was spent on this quest for algae, using the sailboat to get around. Sometimes she was well rewarded, but at other times she found little or nothing of interest on the beach. Other times she would be tantalized by seeing rolling waves filled with algae which never came ashore. The coast from Cape Canaveral southward proved to be very rich in rare algae. As Allen put it:

"The lonely grandeur of this region, uninhabited save by bears, deer and other wild animals, was well calculated to stimulate my mother's nerves and cause her to forget fatigue; and she found another stimulus in the hope of finding those treasures of the sea which she so much coveted."

Another of their campsites was at a locality named Melbourne. It was early August by now and the beginning of the hurricane season. There was only one dwelling place, with a single occupant, a "crazy man" named Haddock. The Curtisses considered spending the night there. To camp on shore without a shelter was out of the question because of the dense clouds of mosquitos. After they peeked inside and found the interior "repulsive" and with Haddock appearing "wild-eyed and excited," they opted for getting back into their boat and setting out to sea despite the threat of squalls. Soon they found themselves "between lofty walls of descending rain streaked with lightning." "Time after time the anchor was thrown in vain, and each

time .. it seemed to transform the phosphorescent sea into liquid fire." This experience increased Floretta's aversion to sailing. But the wind abated, the clouds lifted, and the glow of sunset allowed them to reach their next camp. They spent a week at Turkey Creek, getting out to Cape Malabar. They then set sail for the southernmost point of this adventurous summer of botanical collecting, namely, Indian River Narrows. Because the

keepers were to be off on vacation, the Curtisses had an invitation to stay at "House of Refuge No. 1" (Fig. 1), which was maintained as a benefit for those cast ashore by shipwrecks along this "singularly desolate coast." Otherwise, any survivors would die from starvation or mosquito bites. Elsewhere, the Curtisses had found the mosquitos "unendurable," but here they were even worse, swarming everywhere, "accumulating on our backs in such numbers, one layer on top of another, as to make a light-colored fabric appear dark." Floretta stayed inside the house except when collecting algae. Their only neighbor was an old bear-hunter named Estes, who lived in a palmetto-thatched hut. The return of the keepers left the Curtisses free to leave and to start their homeward journey. By this time it was mid-Sept. (1879), the height of the hurricane season, and they found themselves in Eau Gallie. It was decided that Floretta would return on a large boat, with a seemingly competent captain, then about to leave for Titusville. Allen was



Fig. 1. House of Refuge No. 1, near Bethel Creek, Florida.
(From A. Curtiss, 1899)

to sail back on the "Magnolia" a few days later. There was only one other passenger with Floretta. The water was rough when they started and proceeded to worsen. The wind increased to almost a gale, and when they reached Biscayne Bay, the situation had become alarming. For hours, the two passengers feared that the boat would capsize, and when they finally reached safety and stepped on land, Floretta and the other passenger vowed never to travel by

sailboat again. Not long after that voyage the same boat capsized and broke in two.

Allen's work for the State and federal governments involved his traveling thousands of miles along the coast of Florida, and this enabled him to provide his mother with large quantities of "rough-dried" algae, especially from the Keys, which turned out to be quite different from those of the Atlantic coast. Floretta liked receiving these packages because she could work on them at her leisure, and it seemed like magic when she would throw what appeared to be "unsightly rubbish" into a pan of water and they would swell out quickly and resume the natural forms and colors of living seaweeds, like "a resurrection from death to life." Floretta had also interested several ladies into sending her their collections. This allowed her to carry out extensive exchanges with phycologists in other parts of the United States and in foreign countries. In addition to her correspondence with Farlow and J. Agardh, Curtiss communicated with other notable

contemporary phycologists. She carried out exchanges of specimens with Frank Collins, and Mary Booth in New England and with N. L. Dimmick and C. L. Anderson in California. Foreign correspondents included Holmes in England, LeJolis in France, Borgesen in Denmark, Becker in South Africa, Hansen in Jamaica, von Mueller in Australia, and Laing in New Zealand. In this way she was able to assemble an extensive herbarium containing a rich worldwide representation, reflecting these numerous

exchanges. This significant herbarium, known as "Algae Curtissianae," was later bound into eight folio volumes by her son and donated to the United States National Herbarium, or Smithsonian Institution (US), in Washington D.C. Nonetheless, her primary interest remained the algal flora of Florida.

A rather modest home on the St. John's River near Jacksonville was occupied by Mrs. Curtiss from 1876 to 1889 (Curtiss, 1899). The Curtisses (mother and son) sold that first property but retained an acre with 150 feet of river front and on that parcel built a much larger residence called Talleyrand Place (Fig. 2). That was their residence from 1889 and afterwards. In 1895, Allen Curtiss took two trips to Florida, taking in the eastern coast, Biscayne Bay, and the Florida Keys. The rough-dried algae he brought back with him kept his mother occupied for that

winter. Then in April of 1896, the two of them decided to travel to Key West, Florida, which they considered to be one of the best collecting localities in the U. S. They boarded a steamer at "Port Tampa." Floretta was now

73 years old but showed few indications of her age other than facial wrinkles. As usual, she got very seasick on this voyage. They spent five weeks in Key West; and day after day she tramped to the south beach, with basket or bucket in hand, "with eager interest and the elasticity of a girl." She explored the many tidepools in

which seaweeds would be left by receding tides. She spent much time fishing out Polysiphonias and Dasyas as well as other beautiful and delicate algae. She left Key West feeling well rewarded for the journey. In July of the same year (1896), the Curtisses revisited the Indian River location, 17 years after her first visit. The river had become dotted by towns connected by a railroad, with many hotels and boarding houses, and with long wharves at which steamers docked. They also reached Eau Gallie once again, and by steamer they got to Oceanus, just south of Cape Canaveral. She went beach-combing here and found large and showy specimens of an alga, *Gracilaria curtissiae*, which J. Agardh (1885) had previously named in her honor. So she was very happy and felt successful on this final collecting trip. A few



Fig. 2. "Talleyrand Place", the home on the St. Johns River, Florida, which Mrs. Curtiss occupied after 1889. (From A. Curtiss, 1899)

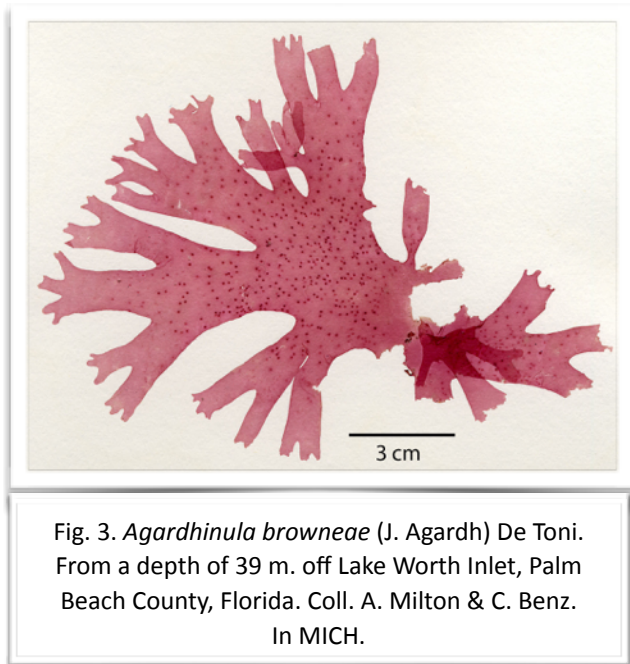


Fig. 3. *Agardhinula browneae* (J. Agardh) De Toni. From a depth of 39 m. off Lake Worth Inlet, Palm Beach County, Florida. Coll. A. Milton & C. Benz. In MICH.

years later after a series of debilitating strokes she passed away on March 3, 1899.

Curtiss had a knack for finding new, rare, or unusual algae. One of her Florida collections was the basis of J. Agardh's (1885) *Callophyllis browneae*, later to be recognized as the rather rare monotypic genus *Agardhinula* (Fig. 3). Curtiss's phycological contributions have been recognized by the naming of species after her. In addition to *Gracilaria curtissiae*, J. Agardh (1885) described *Chrysomenia curtissiae* in her honor. Kylin (1931), however, placed this species in taxonomic synonymy with *Chrysomenia planifrons* (Melvill) Kylin. J. Agardh (1892) also described *Cyclospora curtissiae* as an unusual new genus of Delesseriaceae, with branches bearing tetrasporangia in whorls. Wynne (1985) offered evidence that this species belonged to *Carpoblepharis* of the Ceramiaceae. In a study of the specimens in Curtiss collections now in the Smithsonian, Taylor (1955) recognized three different species of *Microdictyon* from eastern America, one of which he thought to be an undescribed species, *Microdictyon curtissiae*. But Leliaert

(2004) later treated *M. curtissiae* as conspecific with *Phyllodictyon pulcherrimum*. Despite the many hardships and challenges of her tumultuous times, Floretta Curtiss' appreciation of the algae is something to be admired and remembered.

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