

University of Florida Herbarium (FLAS)
Macroalgae Collection: An Overview

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In 2013 the National Science Foundation funded *The Macroalgal Herbarium Consortium: Accessing 150 Years of Specimen Data to Understand Changes in the Marine/Aquatic Environment*. The Consortium consists of forty-nine herbaria, and the label data and images of specimens held by these herbaria are available to the public and to researchers at **macroalgae.org**.

The University of North Carolina Herbarium (NCU) is a regional hub for the Macroalgal Consortium, so in addition to cataloging our collection, we are also cataloging collections from the University of Florida (FLAS), Louisiana State University (LSU), Texas A&M (TAES), the University of Alabama (UNA), the University of South Carolina (USCH), and the University of North Carolina at Wilmington (WNC).

NCU received the University of Florida (FLAS) macroalgae collections in February, 2015 and Kevan Schoonover (UNC-Chapel Hill undergrad, William Marinello (NCU staff), and Anne Vanarsdall (NCU volunteer) imaged the specimens. The specimens were returned to FLAS on 29 April, 2015. NCU Herbarium staff members Liane Salgado and Carol Ann McCormick completed transcribing label data and georeferencing specimens on 16 June, 2015.

The University of Florida Herbarium (FLAS) curates ca. 470,000 specimens of fungi, lichens, algae, bryophytes, and vascular plants. In 2013 Kent Perkins, FLAS collection manager, estimated the macroalgae collection to be ca. 2,000 specimens.

A total of 3,067 macroalgal specimens were cataloged for the Project. Sometimes multiple specimens (4-6) were mounted on a single herbarium sheet. The presence of multiple specimens on a single sheet was especially prevalent in Trentepohliaceae *Cephaleuros*. Each collection was treated as a separate specimen and assigned a unique barcode and record within **macroalgae.org**. Very few specimens had ever been annotated. It should be noted that updating the nomenclature on specimens was not part of the funded Project, so NCU recorded the taxon as it was on the specimen (or the latest annotation), and did not attempt to update the nomenclature nor to validate the identity of any specimen. Now that the specimens are available on **macroalgae.org** we hope that researchers will borrow, study, and annotate the specimens.

The geographic range of the collection is New World, with the exception of 34 specimens from New Zealand collected in 1950 by J. H. Davis.

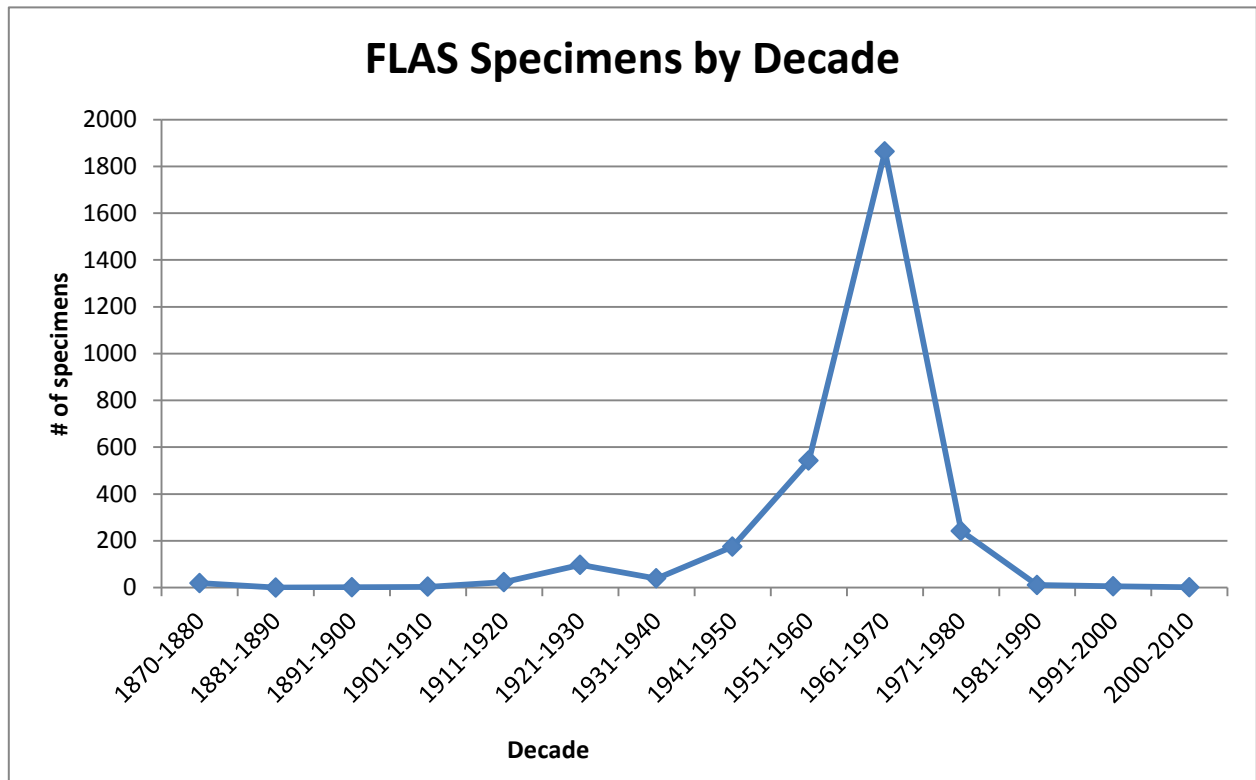
<u>Country</u>	<u># specimens in FLAS collection</u>
United States of America [#]	2,194
Puerto Rico	66
New Zealand	34
Cuba ^{##}	20
Virgin Islands, U.S.	10
The Bahamas	4
Canada	4
Costa Rica	3
Panama	2
Colombia	1
Dominican Republic	1
Guatemala	1
Honduras	1

[#] May include International Waters of Gulf of Mexico

^{##} Includes areas of Guantanamo Bay occupied by the United States of America

There are 101 families represented within the FLAS algae collection, with the caveat that many specimens require annotation to reflect current taxonomy and nomenclature. The families with at least 100 specimens are: Gracilariaceae (569); Rhodomelaceae (365); Solieriaceae (276); Caulerpaceae (172); Sargassaceae (160); Dictyotaceae (127); Udotaceae (118); Codiaceae (105); and Halimedaceae (104). There are a total of 428 taxa (including subspecies and varieties) found in the FLAS collection.

The oldest dated specimen in the FLAS collection, *Ptilota serrata* Kutz., was collected at Cape Ann, Massachusetts [United States of America] by D. C. Eaton in September, 1871. The most recent collection, *Chara globularis* Thuill., was collected by Florida Department of Transportation Staff on 9 May 2003 at Macclenny, Baker County, Florida [United States of America].



There are two periods of time from which the majority of FLAS macroalgae specimens date. The first “bump” of specimens occurs between 1921 and 1930. Of those 97 specimens, about 20% are *Cephaleuros*, and it appears that many of these were sent by citizens to the Florida Agricultural Experiment Station for identification or were collected by Agriculture Station staff from farms and nurseries. Ca. 80% of specimens from that decade were collected from “Atlantic coast between Palm Beach and Miami, Florida” by J. B. Spurr, an enterprising collector from Ojus, Miami-Dade County, Florida, who charged \$1 per specimen. All of Spurr’s collections were labelled as “Mounted sea-weed” and were identified by Harold Judson Humm (1912-2000).^{1,2} While Dr. Humm did determine Spurr’s collections, he did not note when he did the determinations nor is Humm’s institution noted on the annotation labels.

The second bump (more accurately described as a peak) in collections is during the years between 1951-1970, when 2,406 specimens were collected. Important collectors during this time include K. DeWitt, Arthur McBride, Charles W. James, Sylvia Alice Taylor Earle, Ronald C. Phillips, Victor G. Springer, Clinton J. Dawes, Jack F. van Breedveld, Parrish, Churchill Bragaw

Grimes, and Joe A. Mountain. Two major projects accounted for the specimens collected: Crystal River and The Hourglass Cruises.

Crystal River specimens

“Federal agencies recommended (in 1968) that Florida Power Corporation cooperate with the Florida Department of Natural Resources in establishing an ecologically oriented program to study effects of heated effluent (Crystal River power plant) on marine algae, invertebrates and fishes. Preliminary results of an algal survey in Gulf of Mexico waters off Crystal River, Florida, will therefore serve as “baseline” data in assessing the possible effects of heated effluent discharge by Florida Power Corporation facilities in that immediate area.”^{7,8} Publications resulting from this work include:

-- Grimes, C. B. (1971) Thermal addition studies of the Crystal River steam electric station. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 11.

-- Grimes, C. B. and J. A. Mountain (1971) Effects of thermal effluent upon marine fishes near the Crystal River steam electric station. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 17.

-- Lyons, W. G., S. P. Cobb, D. K. Camp, J. A. Mountain, T. Savage, L. Lyons and E. A. Joyce, Jr. (1971) Preliminary inventory of marine invertebrates collected near the electric generating plant, Crystal River, Florida, in 1969. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 14.

-- Quick, J. A., Jr., ed. (1971) A preliminary investigation: the effect of elevated temperature on the American oyster *Crassostrea virginica* Gmelin. A symposium. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 15.

-- Steidinger, K. A. and J. F. van Breedveld (1971) Benthic marine algae from waters adjacent to the Crystal River electric power plant (1969 to 1920). Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 16.

<http://share.disl.org/library/Uncategorized2/Professional%20Papers%20Series%20Number%2016%29Benthic%20Marine%20Algae%20From%20Waters%20Adjacent%20to%20the%20Crystal%20River%20Electric%20Power%20Plant.pdf>

-- Mountain, Joe A. (1972) Further thermal addition studies at Crystal River, Florida with an annotated checklist of the marine fishes collected 1969-1971. Florida Department of Natural Resources Marine Research Laboratory Professional Paper Series No. 20.

[http://research.myfwc.com/engine/download_redirection_process.asp?file=pps020_1359.pdf&objid=28455&dltype=publication]

The Hourglass Cruises

“The Hourglass Cruises were conducted by the Marine Research Laboratory of the Florida Board of Conservation and represent one of the few major systematic biological sampling programs undertaken on the continental shelf of the Gulf of Mexico. The Hourglass Cruises were conducted from August 1965 to November 1967.”⁹ Of particular interest for those examining

algae specimens collected on the Hourglass Cruises that were deposited at FLAS is the map of the collection points found on page 3 of Dawes & van Breedveld, 1969. “A series of monthly cruises from August 1965 through November 1967 of the R/V [Research Vessel] *Hernan Cortez* (Marine Research Laboratory, Florida Board of Conservation) permitted such a study off the coast of Tampa Bay and Fort Myers in depths of water ranging from 6 to 73 meters. This sampling program included trynet and dredge collections of marine plants from 11 stations over a period of 28 months. The list of algae collected at each station and the general list of marine plants presented in this paper will be valuable in establishing and interpreting patterns of benthic algal distribution and seasonality in the eastern Gulf of Mexico. Coupled with the physical data of the cruises, this information contributes to an understanding of the ecology of marine benthic plants of the west coast of Florida.”¹⁰ Whether the algae specimens at FLAS are the only set of specimens or a complete set of specimens from the Hourglass Cruises is not clear. A complete list of all the manuscripts (zoological and botanical) that resulted from the Hourglass Cruises can be found at <http://myfwc.com/research/publications/scientific/hourglass-cruises/>

The two manuscripts most pertinent to the collection of algae at FLAS are:

Joyce, Edwin A., Jr. and Jean Williams (1969) *Memoirs of the Hourglass Cruises, Volume I, Part I: Rationale and pertinent data.* Florida Department of Natural Resources, Marine Research Laboratory.

Dawes, Clinton J. and Jack F. van Breedveld (1969) *Memoirs of the Hourglass Cruises, Volume I, Part II: Benthic Marine Algae.* Florida Department of Natural Resources, Marine Research Laboratory. [<http://aquaticcommons.org/690/1/1.2.pdf>]

Below are some brief biographical sketches of some of the collectors who deposited specimens in FLAS. They are arranged in alphabetical order by last name.

Almodovar, Luis Raul (? – 3 July 1996)

Luis Raul Almodovar earned his doctorate from the University of Florida in 1959 ; his doctoral thesis was entitled “The freshwater and terrestrial Cyanophyta of Puerto Rico.” “Collections of Puerto Rican marine algae have historically been housed in two herbaria on the island. The first of these two, the *Ficoteca Puertorriquena* [DPDB], was established in 1958 and was directed by Manuel Diaz-Piferrer. The second [MSM] was also founded in 1958 by Luis R. Almodovar. [Both] were holdings within the Department of Marine Sciences at the University of Puerto Rico at Mayaguez. The two were officially combined into a single herbarium [by David L. Ballantine and Almodovar] in 1990 and the collection of over 36,000 specimens is now known as the *Herbario Marino Puertorriqueno*.”¹³ Luis R. Almodovar and David L. Ballantine compiled the first complete list of marine benthic algae from Puerto Rico in 1983. FLAS curates nine specimens collected by Luis Almodovar.

Anderson, Charles Lewis (22 September 1827 – 1910)¹⁷

FLAS curates 10 specimens collected by Dr. C. L. Anderson, and these are among the oldest specimens in the collection. Charles Lewis Anderson was born near Salem, Virginia, attended Franklin College in Indiana, and graduated from medical studies at Asbury University in 1852. He practiced medicine in Minnesota and Carson City, Nevada, then moved to Santa Cruz, California in 1864.¹⁸ “The first botanist in California to specialize on the marine algae was Dr. C. L. Anderson, who resided at Santa Cruz from 1866 until his death in 1910. Anderson did more or less collecting on the Monterey Peninsula between 1881 and 1900. During this time he also received algae from several collectors residing on the Peninsula, including the Misses Bayles, Miss Mary J. Westfall, and Mrs. B. C. Winston. Most of the new species collected by Anderson were described by Professor W. G. Farlow of Harvard and by Professor J. G. Agardh of Lund, Sweden. Anderson was associated with Farlow and D. C. Eaton in issuing the first exsiccate of American algae, the *Algae Exsiccatae Americae Borealis*. His chief publication is an annotated list of the marine algae of California in which he specifically designates the algae occurring “100 miles North or South of Monterey.” Anderson’s [phycological] herbarium is now at the New York Botanical Garden.”¹⁵ Anderson was interested in all aspects of natural history and contributed the following chapters to E.S. Harrison’s *History of Santa Cruz County, California* (Pacific Press Co, San Francisco, California, 1891):

Chapter VI: “Geology or the ancient history of Santa Cruz”

Chapter VII: “The gardens of the seashore”

Chapter VIII: “The fishes of Monterey Bay”

Chapter IX: “Catalogue of flowering plants and ferns of Santa Cruz, California”

Chapter X: “Lists and notes of native and other grasses found growing wild in Santa Cruz County”

Chapter XII: “Our feathered songsters”

“C. L. Anderson’s grass collection is in the Dudley Herbarium [transferred to CAS in 1976]. Many of his plants were sent to Asa Gray, and Dr. Gray named *Arctostaphylos andersonii* for him.”¹⁷ Anderson was a founding member and first Chairman of the Library Association of Santa Cruz which held its first meeting on June 15, 1868.¹⁶

Ballantine, David L. (b. 24 September 1947)

David L. Ballantine earned his B.A. from Long Island University in Brookville, New York in 1969, his M.S. from the University of South Florida in Tampa, Florida in 1973, and his Ph.D. from the University of Puerto Rico, Mayaguez in 1977. He was a faculty member in the Department of Marine Sciences of the University of Puerto Rico, Mayaguez 1979-2012, and is now an Associate in the Botany Department of the United States National Herbarium in Washington, D.C. His research interests include floristics of marine algal flora of the Caribbean, the production of biologically active molecules by red marine algae, and the impacts of algal blooms on seagrass and coral reef habitats. FLAS has only a few specimens collected by or determined by Dr. Ballantine, as MSM is his primary repository.

Brannon, Melvin Amos (1865-1950)

Though the Harvard University Herbaria database of botanists lists Melvin Amos Brannon's specialties as fungi and lichens, FLAS has sixty specimens of algae collected by him between 1943 and 1948. "In 1917 a turning point in the [Beloit] College's life was marked by... the election to the Presidency of Melvin Amos Brannon. Beloit's first two presidents had been ministers; President Brannon was a scientist, a biologist. A Wabash College graduate, Dr. Brannon had done his graduate work at the University of Chicago. He brought not only academic scholarship to his presidency, but administrative experience as well, for he had been Dean of the University of North Dakota, and came to Beloit from the presidency of the University of Idaho... Called to the Chancellorship of the University of Montana in December 1922, on his leave-taking in the summer of 1923, President Brannon left a college refreshed and refurbished in its physical plant and challenged by the changing temper of America and the stresses of the Twenties."¹⁹ Brannon retired to Florida and studied algae. "A famous scientist, former head of 3 universities, spins out his life here [Gainesville, Florida] searching part of an answer to a mystery he says "would take a thousand men a thousand years to solve." He is 82-year-old Dr. Melvin Amos Brannon, world-renown botanist, who for more than 50 years has been delving into the shadowy pathos of basic life – algae... "Algae furnish the food at the base of the pyramid of all organisms," Dr. Brannon explains. "They manufacture the food that is called mucin, a kind of mucus which is predigested food. All these low organisms have to do is absorb it. Then the next group absorbs algae, and the next group that group, and so on up to man." Dr. Brannon, president of the University of Idaho from 1914 to 1917; Beloit College from 1917 to 1923; and chancellor of the University [of Montana] from 1923 to 1933, came [to Gainesville] 10 years ago from a period of research in Europe. He is doing now at the University of Florida what he has been doing for 50 years – trying to find the life history of each specimens, what its effect is on other organisms and, in turn, their effect on it. "If we can discover more about these organisms," he says, "it might help in many ways even in the study of cancer. We might discover more about food and how to prevent its scarcities." Dr. Brannon has the courtesy here of a research worker, as he has in many universities and laboratories the world over. He says he has no hope of immediate grants or help of a staff. What he is doing is on his own time, and he is doing it alone."²⁰ Most of Brannon's algae specimens at FLAS were determined by Francis E. Drouet.

Curtiss, Floretta Anna Allen (1 December 1822 – 3 March 1899)

FLAS curates 15 specimens collected by Floretta Allen Curtiss, who usually signed collections as "Mrs. Curtiss." All are undated, and all were collected in Florida. Michael J. Wynne has written an excellent summary of Floretta Curtiss' life and contributions to phycology in his illuminating "Phycological Trailblazers" series for the Phycological Society of America's newsletter, and this is a short excerpt:

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 by a 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.*²⁵

It should also be noted that Floretta Curtiss was the mother of Allen Hiram Curtiss, botanist and collector of vascular plants in Florida. Allen is buried alongside his mother, Floretta, and his father, Gaston, in Hillside Cemetery, Oswego County, New York. There were no algae specimens in FLAS collected by Allen Hiram Curtiss.

Dawes, Clinton John (?)

Clinton J. Dawes deposited 811 specimens in FLAS. Most (756) were collected during The Hourglass Cruises (see above) and list Jack B. van Breedveld as co-collector/co-determiner. Fifty-five were collected with Sylvia Earle (then known as Sylvia Earle Taylor) on cruises of the Research Vessel Hernan Cortez. Dawes earned his Ph.D. at the University of California, Los Angeles in 1961 with the thesis *A survey of the cell walls of brown, red, and green algae with light and electron microscopes*. He is Distinguished Research Professor in the Department of Biology, University of South Florida in Tampa and is on the staff of the University of South Florida Herbarium (USF). He and Arthur C. Mathieson co-authored *The Seaweeds of Florida* (2008; University Press of Florida), an illustrated reference to all taxa found in Florida coastal waters. His research interests continue to be the physiological ecology and structure of seaweeds and seagrasses.

DeWitt, K. (?)

Between 1952-1954 K. DeWitt collected 50 specimens, mostly from Cedar Key, Seahorse Key and the Florida State University Coastal and Marine Laboratory at Alligator Point in Franklin County, Florida. I have been unable to find any information about K. DeWitt despite having searched the Florida State University library online catalog, the website for the Florida State University Coastal & Marine Laboratory, the University of Florida library online catalog, and the Seahorse Key Marine Laboratory website.

Earle (Taylor), Sylvia Alice (b. 30 August 1935)

FLAS curates 52 specimens collected by Sylvia Earle. For most specimens, she is listed as “S. E. Taylor,” as they were collected when she was married to fellow marine biologist John Lippincott Taylor (29 October 1932 – 21 September 2010). Dr. Earle returned to using her maiden name upon the end of her first marriage. Sylvia Earle was born in Gibbstown, New Jersey and was educated at Florida State University (B.S. Botany, 1955) and Duke University (Ph.D. Botany, 1966, thesis “Phaeophyta of the Eastern Gulf of Mexico”). From 1979 to 1986 she was the Curator of Phycology at the California Academy of Sciences (CAS). From 1990-

1992 she was the Chief Scientist at the National Oceanic and Atmospheric Administration. In 2009 Dr. Earle won a TED Prize and started Mission Blue which protects marine areas.²⁶

Ellis, Daniel P. (?)

Daniel P. Ellis deposited 35 specimens of algae to FLAS. All were collected in the autumn of 1977 from Levy, Monroe, Sarasota and St. Johns Counties in Florida. No further biographical information about Mr. Ellis could be found.

Grimes, Churchill Bragaw (b. 1945)

Dr. Churchill Bragaw Grimes, who signed all herbarium labels as “C. B. Grimes” or “Grimes,” deposited 471 specimens to FLAS between 1969 and 1971. “Before I went to grad school at University of North Carolina at Chapel Hill I worked for the Florida Department of Natural Resources marine research lab in St. Petersburg doing a study to determine the effects of the Crystal River steam electric power plant on the local biota. We conducted an extensive field sampling program and frequently cooperated with other researchers, including several from University of Florida, which is how these collections got to FLAS.”¹⁴ All the specimens at FLAS were from the Crystal River area on the Levy County/ Citrus County border in Florida. Though collected by Grimes, a zoologist, all were determined by Karen A. Steidinger and/or Jack F. van Breedveld. Grimes earned his B.S. (1967) and M.S. (1971) degrees from Eastern Carolina University in Greenville, North Carolina, then his Ph.D. (1976) in Marine Sciences from the University of North Carolina at Chapel Hill. The title of his doctoral thesis was “Certain aspects of the life history of the vermilion snapper, *Rhomboplites aurorubens* Cuvier from North & South Carolina waters.” His research interests have been fish ecology, fish life histories and population dynamics. Grimes was Assistant then Associate Professor of Marine Fisheries at Rutgers University in New Brunswick, New Jersey from 1977-1984. From 1984-1993 he was Fisheries Ecologist with the National Marine Fisheries Service in Panama City, Florida. In 1998 he retired as the Laboratory Director of the Southwest Fisheries Science Center in Santa Cruz, California.^{4,5} Papers published as a result of his research on the Crystal River project include:

Grimes, C. B. (1971) Thermal addition studies of the Crystal River steam electric station. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 11.

Grimes, C. B. and J. A. Mountain (1971) Effects of thermal effluent upon marine fishes near the Crystal River steam electric station. Florida Department of Natural Resources Marine Research Laboratory, Professional Paper Series No. 17.

Grimes, C. B. (1975) Entrapment of fishes on intake water screens at a steam electric generating station. Ches. Sci. 16(3): 172-77.

Jackson, Curtis R. (?)

Curtis Jackson deposited 17 specimens of algae in FLAS. “On February 7, 1954, the junior

author [Curtis Jackson] had an opportunity to make a small collection of algae from limestone rocks in the surf and below near Phillip's Beach, Guantanamo Bay. Forty-six species were determined [by the senior author, Harold J. Humm] from this collection of which 19... apparently have not been reported previously for Cuba. These bring the total number of species of marine algae known for Cuba to about 195 [in 1955], still less than half the number which may be expected to occur around the shores of the island."⁴⁰ In this manuscript, Humm's affiliation is given as Department of Botany, Duke University and Curtis R. Jackson's is listed as "U.S. Navy."

James, Charles William (b. 1929)

Charles W. James, whose specimens are all signed "Chas. W. James," deposited 44 specimens in FLAS. All were collected in July & August, 1953 from coastal areas in Carteret County, North Carolina. Most were determined by Hugo Leander Blomquist, Ph.D. of Duke University. Charles W. James earned his Ph.D. at Duke University in 1955 with his thesis, "A revision of the genus *Rhexia* (Melastomataceae)." It seems likely that he participated in a summer course at the Duke Marine Laboratory which is located on Pivers Island, Carteret County, North Carolina and collected algae as a side project.

Joyce, Jr., Edwin Anthony (23 February 1937 – 11 December 2014)

Edwin Joyce deposited 56 phycological specimens in FLAS. Most were collected as part of the Hourglass Cruises, though Indian Bluff Island and Mullet Key (Pinellas County), Marineland (Flagler County), and Venice (Sarasota County) were also frequent collecting locations. Edwin Joyce, Jr. was born in Hampton, Virginia in 1937. He was educated at Butler University (B.A. Biology, 1959) and the University of Florida (M.S. Marine Biology, 1961). He worked for the Florida Board of Conservation in 1961 and continued to work for the state in many capacities for his entire career. In 1972 he became the Bureau Chief of Marine Science & Technology of the Department of Natural Resources, then became the director of the Division of Marine Resources. He retired from the Florida Department of Natural Resources in 1993.²⁷

Kimmel, Joseph J. (?)

Joseph J. Kimmel deposited 50 algal specimens at FLAS, and most are signed "JJK." Kimmel earned his Ph.D. from the Department of Marine Sciences at the University of Puerto Rico, Mayaguez in 1985. The title of his thesis was "A characterization of Puerto Rican fish assemblages." In 1986 he became the Director of Fisheries Research Laboratory CODREMAR [La Corporacion para el Desarrollo y Administracion de los Recursos Marinos, Lacustres y Fluviales de Puerto Rico] in Mayaguez.²³ He retired as Supervisory Fishery Administrator in the National Marine Fisheries Service in December, 2010.²⁴

McBride, Arthur (ca. 1915 – ca. 1949)

FLAS curates 23 specimens collected by "Dr. Arthur McBride." All were collected at Marineland between 1940 and 1953, and all were determined by Dr. H. J. Humm and it seems that the date on the specimens is when Humm determined the specimen, not the actual date of

collection. Arthur F. McBride, the first curator of Marine Studios in Florida, was the first to speculate that dolphins used echolocation.³⁰ “Every time he tried to capture dolphins for an exhibit by driving them toward a net, the animals would stop short of the net and swim away. It didn’t matter whether he tried during day or night, and even in murky water where they could not see the net they would still avoid it.”²⁸ Marineland, originally called “Marine Studios,” was originally to be a facility where marine life could be filmed. It began operations in June, 1938 and bottlenose dolphins were the main attraction. The area, which eventually became the town of Marineland, is south of St. Augustine and straddles the Flagler/St. Johns County line. “Marine Studios through their Research Facility contributed greatly to the understanding of porpoises thanks to Arthur McBride, Forrest Wood and other marine biologists. The staff at Marineland was a “first responder” for hundreds of whale strandings along the southeastern Atlantic Coast during its existence.”²⁹ Arthur McBride was diagnosed with Bright’s Disease (nephritis) in 1949 and died shortly thereafter at age 34.³⁷

Moe, Jr., Martin Andreas (?)

Martin Moe, Jr., “the godfather of marine ornamental fish breeding,” has 53 algae specimens deposited in FLAS. Many were collected as part of the Hourglass Cruises, though other locations throughout Florida are also represented. Moe earned a M.A. in Zoology from the University of South Florida in Tampa. He published his thesis, “Age and growth of the red grouper, *Epinephelus morio* (Valenciennes) from the eastern Gulf of Mexico” in 1967. “Martin A. Moe, Jr. is a retired fisheries biologist and marine fish aquaculturist. His career includes 10 years as a fisheries biologist with the Florida Marine Research Laboratory where his primary research was on the biology of the red grouper in the Gulf of Mexico. Moving into the aquaculture of marine fish, he then developed the basic technology for the culture of pompano and many marine tropical fish – clownfish, gobies, and angelfish, among others. He has authored many scientific papers, popular articles, and books on marine aquaria and marine biology including a basic reference on Florida spiny lobsters. He and his wife, Barbara, founded Aqualife Research Corporation in 1974 and Green Turtle Publications in 1982. He is currently a member of the Florida Keys Sanctuary Advisory Council and an adjunct with Mote Marine Laboratory. His present research is on the culture of the long-spined sea urchin, *Diadema antillarum*, the keystone herbivore of the tropical Atlantic coral reefs, as part of several coral reef ecological restoration projects,”^{31, 32}

Mountain, Joe A. (?)

In July, 1971 Joe A. Mountain, B.S. is listed as a Marine Biologist with the Marine Research Laboratory, Florida Dept. of Natural Resources, Division of Marine Resources in St. Petersburg, Florida. He collected 131 specimens of algae between 1967 and 1971, most with C. B. Grimes on the Crystal River project.⁶ He is an author on:
Mountain, Joe A. (1972) Further thermal addition studies at Crystal River, Florida with an annotated checklist of the marine fishes collected 1969-1971. Florida Department of Natural Resources Marine Research Laboratory Professional Paper Series No. 20.

[http://research.myfwc.com/engine/download_redirection_process.asp?file=pps020_1359.pdf&objid=28455&dltype=publication]

Grimes, C. B. and J. A. Mountain (1971) Effects of thermal effluent upon marine fishes near the Crystal River steam electric station. Fla. Dep. Nat. Resour. Mar. Res. Lab., Prof. Pap. Ser. No. 17.

Lyons, W. G., S. P. Cobb, D. K. Camp, J. A. Mountain, T. Savage, L. Lyons and E. A. Joyce, Jr. (1971) Preliminary inventory of marine invertebrates collected near the electric generating plant, Crystal River, Florida, in 1969. Fla. Dept. Nat. Resour. Mar. Res. Lab, Prof. Pap. Ser. No. 14. No other biographical information could be found on Mr. Mountain.

Parrish, Rod (?)

Rod Parrish deposited 360 specimens of algae to FLAS. All were collected in 1969 and were from the Crystal River Project, and they were determined by Karen Steidinger and Jack F. van Breedveld. When asked if he could help with information about Mr. Parrish, Dr. Churchill Grimes replied, "I'm not going to be much help with Rod Parrish. He and I did not overlap very long. He ran the Crystal River Project before I did and I don't remember why he quit the marine lab. I do recall that he was a Florida State University grad and was a member of the FSU circus, something athletic like the trapeze or high wire." An internet search revealed a 1962 press photo entitled "Florida State University – Flying High Circus aerialists including Debbie Ware and Rod Parrish."²¹ "Founded in 1947 by Jack Haskin, the Florida State University "Flying High" Circus is an extra-curricular activity under the Division of Student Affairs. This program was created to integrate men and women when FSU became a co-ed institution [1947] and is still an activity for male and female students to participate in jointly. The only requirement to be a member of the FSU Circus is that one must be a degree-seeking student registered at FSU."²² No current information about Mr. Parrish could be found.

Phillips, Ronald Carl (1932-2005)

Dr. Ronald C. Phillips deposited 167 specimens in FLAS and most labels are signed "R.C. Phillips." He was the co-collector or determiner of another ca. 125 specimens that were collected by Victor G. Springer, K. D. Woodburn, Pfister, Randall, and Kirk. Dr. Phillips earned a B.S. in Biology from Wheaton College in 1954, a M.S. in Botany from Florida State University in 1956 (*The Cyanophyta of Aspalaga County, Florida*), and a Ph.D. in Botany from the University of Washington in 1972 (*The ecological life history of Zostera marina L. in Puget Sound, Washington*). It was during his time with the Florida State Board of Conservation (1957-1961) that he collected most of the specimens that he deposited at FLAS; it is unclear if these specimens were part of a project or were just collected and deposited as an on-going description of the flora of the state. In September, 1961 Phillips took a faculty job in the Botany Department of Seattle Pacific University in Seattle, Washington. He is best known as an authority on the ecology of seagrasses.^{11, 12}

Pierce, Emory Lowe, Jr. (1 May 1913 – 28 August 1977)

E. Lowe Pierce was born and raised in Key West, Florida and earned a B.S. in Biology from

the University of Florida. “He majored in biology at the University, after first attempting chemistry at the urging of his father, who at the time was the Key West city engineer and saw chemistry as a burgeoning field in the 1930s. An early “D” in one of his classes convinced E. Lowe that chemistry was not for him. After graduating he returned to Key West and entered island life. Presumably he lived at home, but he took a job at the Key West Aquarium.”³³ Pierce earned a M.S. from the University of Liverpool, then returned to the University of Florida to earn his Ph.D. The title of his 1941 thesis was “A comparative study of the plankton and chemistry of the water of four aquatic habitats at Welaka, Florida.” During World War II, Pierce worked on developing anti-fouling paint in a Boston shipyard. In 1945 Pierce became a professor of marine biology at the University of Florida in Gainesville. In 1951 Pierce was the founding director of the Seahorse Key Marine Laboratory located on Seahorse Key, a 165 acre island located in Levy County, Florida and part of the Cedar Keys National Wildlife Refuge. Pierce retired from the University of Florida in 1970 and returned to his family home in Key West. The twenty-one algae specimens that Pierce collected and deposited at FLAS all date from 1949 and are from the Cedar Key area.

Presley, Robert F. (?)

Little can be found about Robert F. Presley, whose name is usually simply “Presley” on FLAS specimens, other than that he had a B.S. and studied larval fishes at the Florida Board of Conservation, Division of Salt Water Fisheries in 1968. The twenty-seven algae specimens collected by him (or by him, along with Edwin A. Joyce, Jr. and/or Martin A. Moe, Jr.) and deposited in FLAS date from 1965-1966, were collected on the Hourglass Cruises, and were determined by Jack F. van Breedveld.

Smith, G. B. (?)

Nothing is known about G. B. Smith other than that s/he collected 46 specimens of algae in 1969 from Manatee, Monroe, Pinellas, and Sarasota Counties. No specimens at FLAS contain a clue as to the collector’s full name.

Springer, Victor Gruschka (b. 2 June 1928)

Victor Springer was the primary or associated collector on 170 algae specimens deposited in FLAS. The specimens were collected between 1958 and 1961, and most were collected with or determined by Ronald C. Phillips. Victor Gruschka Springer was born in Jacksonville, Florida.³⁵ He studied Biology at Emory University in Atlanta and earned a B. A. in 1948. He earned a M.S. in Botany at the University of Miami (1954), then in 1957 earned his Ph.D. in Zoology at the University of Texas at Austin with his thesis “Systematics and zoogeography of the Clinid fishes of the subtribe Labrisomini Hubbs.” He is Senior Scientist Emeritus, Division of Fishes at the Smithsonian National Museum of Natural History, and continues to study the classification, evolution and biogeography of fishes.³⁶

Spurr, J. B. (?)

FLAS appears to be the only herbarium curating botanical specimens collected by J. B. Spurr,

and none of the labels contain Spurr's full first or middle name. The labels consistently read "Mounted sea-weed. Atlantic coast between Palm Beach and Miami, Florida. 1926, J. B. Spurr. Collector, Ojus, Florida." A search of the 1930 and 1940 United States Censuses reveals a John B. Spurr, born ca. 1866, white male, widowed, head of household, lived in Fulford, Dade County, Florida (1930) and in North Miami Beach, Dade County, Florida (1940). According to the North Miami Beach, Florida city website, North Miami Beach was once known as Fulford and Ojus was a small community about a mile from Fulford.³ It seems very likely that J. B. Spurr of Ojus is John B. Spurr of Fulford/North Miami Beach. According to census data, Mr. Spurr was born in England, was educated through the 6th grade, immigrated to the United States in 1924, and worked as a newspaper reporter. How John Spurr became interested in algae is unclear, and it may have been simply a short-term business opportunity. Searches of the Atlas of Florida Vascular Plants, serneportal.org, mycoportal.org, lichenportal.org, and bryophyteportal.org revealed no other botanical specimens collected by J. B. Spurr.

Steidinger, Karen A. (b. 1938)

Dr. Steidinger is listed as the collector on only a handful of specimens curated at FLAS, but she and Jacques van Breedveld identified more than 650 specimens collected for the Crystal River project. Steidinger started working at the Florida Marine Research Institute as a laboratory technician in 1963. She earned her B. A. in Zoology at the University of South Florida in 1968, then earned a M.A. in Marine Science in 1971 and a Ph.D. in Biology in 1979 from that same institution. She stepped down as Chief of Marine Research at the Florida Marine Research Institute in St. Petersburg in 1993 to focus on her research on dinoflagellates and harmful algae. *Karenia brevis* (Davis) G. Hansen et Moestrup, a dinoflagellate that causes "red tides" along the Gulf Coast of the United States, is named in her honor. Since 2005 Dr. Steidinger has been a specialist on harmful algae with the Florida Institute of Oceanography at the University of South Florida. "My work centers around developing guides to the identification of harmful algae and methods for their analysis. It also includes completing research and manuscripts on dinoflagellate or phytoplankton systematics and ecology... I am an instructor on national and international harmful algae workshops or courses, concentrating on unarmored and armored dinoflagellates in marine waters. There are over 50 HAB [harmful algae bloom] dinoflagellates in the Gulf of Mexico and my work concentrates on those that are associated with red tides that cause shellfish poisonings."³⁹

van Breedveld, Jacques "Jack" F. (?)

Jacques F. van Breedveld, who usually signed his name "JvB," deposited over 871 specimens of algae in FLAS. He was involved in both the Crystal River Project and the Hourglass Cruises. "Jack was Dutch and had dual Netherlands/United States citizenship," says his colleague Dr. Karen Steidinger. "He had a wife and two children in the Netherlands. Jack served in the Dutch navy [during World War II] in the Pacific and was outside of Pearl Harbor when it was bombed. Jack and I started work as laboratory technicians at the Florida Board of

Conservation's Marine Laboratory about the same time in 1963. He had advanced education beyond high school which was probably equivalent to a Bachelor's degree here in the U.S. Jack worked on various botany and chemistry projects while at the Laboratory, including seagrasses and macroalgae."³⁸ Publications authored by van Breedveld include:

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Dawes, Clinton J. and Jack F. van Breedveld (1969) "Benthic marine algae." *Memoirs of the Hourglass Cruises* volume 1 (2).

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