THE UNIVERSITY HERBARIUM

1971

THE UNIVERSITY OF SOUTH FLORIDA • TAMPA

A REPORT AND SUMMARY OF ACTIVITIES FOR 1960-1971 OF THE HERBARIUM

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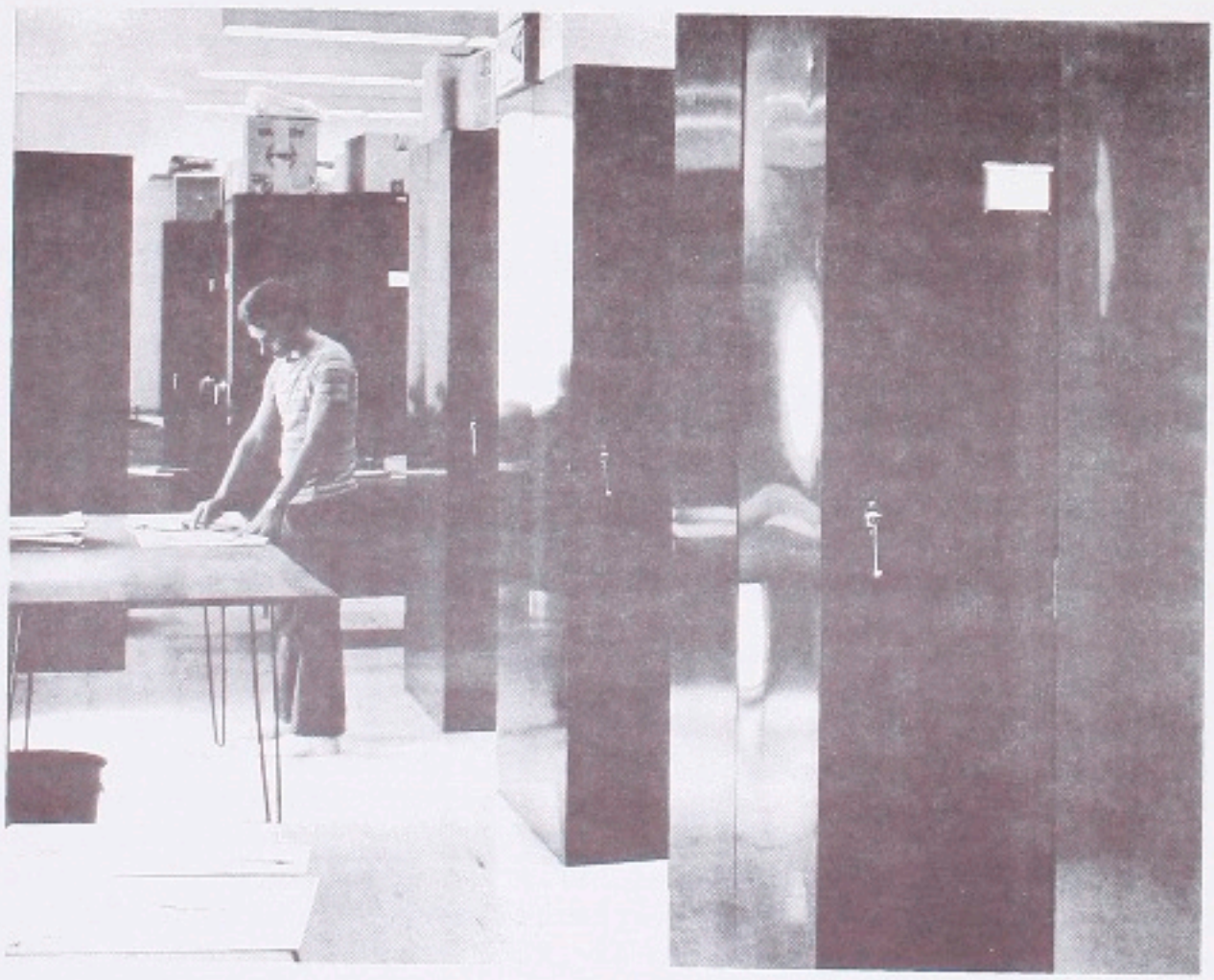

The main case room of the University Herbarium houses the vascular plant collections and library.

UNIVERSITY HERBARIUM STAFF

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Director	Robert W. Long, Ph. D.	Professor of Botany
Honorary Curator	George R. Cooley, D.Sc.	
Curator, Vascular Plants	Olga Lakela, Ph. D.	Research Associate in Botany
Associate Curator, Algae	Clinton J. Dawes, Ph. D.	Associate Professor of Botany
Associate Curator, Fungi, Lichens, and Bryophytes	Diane T. Merner, Ph. D.	Associate Professor of Biological Science
Associate Curator, Vascular Plants; Cultivars	Derek G. Burch, Ph. D.	Associate Professor of Botany
Herbarium assistant and Librarian	Martha G. New, B.A.	

INTRODUCTION

The occasion for this report and summary is the attainment of 100,000 accessioned specimens in the University Herbarium collections.

An herbarium is defined as a collection of plant specimens that usually have been dried and pressed, are arranged in the sequence of an accepted classification, and are available for reference or other scientific study. It is essential in any floristic or monographic study, and is very useful in other kinds of systematic scientific investigations such as anatomical or ecological work. It is an indispensable resource in the study of the vegetation of a particular region. It is also a valuable tool in teaching and other educational activities.

As an institution, the herbarium dates back more than four centuries. Even before that plant specimens had been collected and classified for medicinal, religious, and magical purposes, and as curiosities. In recent times the recognition of the herbarium as an important source of information about plants has resulted in the application of computerized data retrieval systems. Also, the growing realization among scientists that we have but scratched the surface in the general problem of plant resource inventory and in cataloguing the vast diversity in plant life has led to a new recognition of the importance of herbarium research programs.

The first institutional herbarium was founded at the University of Padua in 1545, and today there are nearly 933 with 244 of them in the United States. The University of South Florida Herbarium was planned with the founding of the University in 1956, in cooperation with Dr. John S. Allen, the first President. In fact the Herbarium originated at Chinsegut Hill, Brooksville, Florida in February, 1958, under the patronage of Mr. George R. Cooley a friend of President Allen and long-time student of Florida's flora. When the herbarium was transferred to the University Foundation for administrative purposes in August 1959, it already contained 13,000 mounted and accessioned specimens. The major portion of these had been contributed by Mr. Cooley.

The Herbarium was moved to the new University campus in Tampa in the summer of 1960 just prior to opening for the first class in September. By now the number of specimens amounted to 19,500. Dr. James Ray was appointed the first director of the Herbarium and Dr. Olga Lakela was appointed Research Associate in Botany. The continued rapid growth came about primarily

Dr. Lakela and Dr. Carl Riggs examine the first specimen accessioned by the University Herbarium Sphenostigma coelestinum (Bartr.) R. C. Foster, collected by Dr. John Allen, first President of the University of South Florida, in Bradford county, Florida.

Dr. Carl Riggs, Vice President for Academic Affairs, Dr. Olga Lakela, and Dr. Robert Long examine a copy of the newly published A Flora of Tropical Florida.

through the efforts of botanists on the herbarium staff, expecially Dr. Lakela, who personally added in excess of 10,000 specimens, through the exchange program with other herbaria, and through gifts.

The growth of the Herbarium continues to be based largely on the activities of the herbarium staff and their students. Through field work in Florida, many collections are obtained that are used not only to add to the collections, but also for exchange with institutions desiring Florida material. In the past three years members of the staff have been active in collecting in tropical America, and this has added an important new dimension to the scope of herbarium research. Cryptogamic collections were started in 1965, and today the holdings in algae, fungi, and bryophytes form a significant part of the total herbarium accessions.

THE COLLECTIONS

Algae

The algal collections in the University Herbarium consist of approximately 5000 accessioned specimens of marine algae, mounted or in boxes (calcified forms). This collection includes field collections by Dawes from the California coast, Puget Sound, Cape Cod, Newfoundland, Puerto Rico, Mexico (Baja California), Australia (including the Great Barrier Reef), Ewenietok atoll, and Hawaii. Since emphasis in the study and collection of marine algae has been on tropical forms, the most comprehensive collection is from the West Coast of Florida, and from the Florida Keys.

A number of studies on the taxonomy and ecology of the marine algae of Florida have been published based on collections in the herbarium. These include Dawes et al., 1966; Dawes and Humm, 1969; Dawes and van Breedvelt, 1969; Croley and Dawes, 1970. Two master's theses were completed based on herbarium collections, namely Rhamstine in 1967, and one on the marine algae of the Florida West Coast is now in press.

The algal herbarium has a number of specialized collections of particular groups such as Halimeda, Caulerpa, Gracilaria, Euchema, and Cladosiphon that have been obtained as part of special studies, most of which are still in progress. At the present time there are 15 graduate students carrying on studies in the marine algae under Dawes and Humm. The National Science Foundation has supported the research of the professors and has made possible much of the field work that forms the basis of the herbarium collection.

Fungi, Lichens, and Bryophytes

This part of the University Herbarium was initiated in 1968, and it represents the newest area of interest in the Collections. At the present time there are approximately 350 accessioned specimens of fungi and lichens,

and 300 specimens of Bryophytes. This represents the only such collection on the Florida West Coast, and it is important in the continued study of the plant life of this part of the State. In this region there are represented most of the types of vegetational communities of the State, hence there is considerable diversity of fungi, lichens, mosses, and liverworts. Acquisitions come to this collection chiefly from interested contributors and student collectors. Maintenance of the material, unfortunately, has been only at the level necessary to prevent deterioration, and at present the number of accessioned specimens is not growing commensurate with the growth of the total Herbarium. However, with the expansion of the graduate program and with the addition of courses in field mycology, bryology, and related botanical programs, growth should resume. Associate curator Merner has developed this section of the herbarium despite her heavy commitments in teaching and advising.

A field manual, Mosses of the Tampa Bay Area by Diane Merner, G. Grippenberg, K. L. Tyson was published in 1970. Other publications by the staff in the "Contributions from the Botanical Laboratories" are listed in the back of this report.

Ferns and Gymnosperms

The New World material of the fern collection is one of the best in the total herbarium. The Florida specimens are abundant, and tropical material is well-represented although rarely by more than one or two sheets in each taxon. The identifications are, for the most part, autheticated by an expert in pteridology which makes them valuable for reference purposes. There are a number of specimens collected by Proctor from Jamaica, Alice Cornman's plants from Panama and Costa Rica, and H. H. Smith collections from Colombia. Old World representation is less rich, and few are identified by recognized specialists. They are chiefly of use in representing some of the diversity of the group.

The collection of Gymnosperms is much less satisfactory. The relatively few Florida native species are represented, although not with any quantity of material or consistently with cone-bearing sheets. Other taxa are either missing completely or are present only from cultivated plants. This is an example of one unit of the herbarium that will need particular attention in order to make it adequate for reference purposes.

Angiosperms

In the Monocotyledonae the best represented groups are the grasses, the sedges, and orchids. The Leslie A. Garay collection of orchids includes a notable addition of South American and Old World species. Recent emphasis on collection has centered on acquisition of aquatic species especially the emersed or floating freshwater and marine species, and on members of the aroid family and palm family.

In the Dicotyledonae the best represented groups are the aster, spurge, acanthus, and legume families. Special attention has been given these groups because of the research interests of the staff.

The Angiosperm material is rich in specimens collected in southern pennisular Florida as part of the major research project of the recent past, the preparation of the Flora of Tropical Florida. Plants from Dade, Collier, and Monroe counties are abundant, and in particular from the Florida Keys and the Marco Island area near the Ten-Thousand Islands. The other geographical areas in Florida well represented are the Tampa Bay area of Hillsborough, Pinellas, and Manatee counties, and areas immediately north, such as Pasco, Hernando, and Citrus counties. The local collections formed the basis for the publication The Plants of the Tampa Bay Area, 1970.

Field trips and collecting forays of staff and students have been most important sources of accessioned specimens, but exchange and gift collections have been important. The Jennings collections from the Herbarium of the Carnegie Museum, and fragments of J. K. Small's, of Rugel's, and of Buswell's collections in Florida are part of the University Herbarium.

The second major strength of the Angiosperm collection is in Southeastern United States specimens, particularly from Georgia and the Carolinas. These have been obtained through the exchange program with institutions in those areas. Fair representation for Mississippi, Tennessee, Oklahoma, Texas, and California have been obtained through gift and through exchange, especially in recent years.

Other geographical areas, outside the Southeastern U. S., are less satisfactorily represented. In the past three years, new collections from Mexico, the Caribbean Islands, Central America, and South America have been added largely through the field work of staff and students. Earlier, gift collections, particularly from the Windward Islands, had been the chief holdings from this botanically interesting area of tropical America. The increasing interest of the staff in tropical botany presages an increase in our representation of plants from this part of the world. Also, exchange programs have emphasized the acquisition of tropical American specimens with correspondingly less interest in temperate areas.

Old World areas are represented in the Angiosperm collections, particularly from South Africa, India, Nepal, Europe, New Zealand, and Burma. These specimens have been obtained largely through purchase or gift. Although it is important to have representation of important groups from the Old World in the University Herbarium for teaching and for comparisons, it is not presently the intention of the staff to acquire large holdings from these areas. Limitations on size and on support make it impossible to build a large general herbarium with world-wide holdings in all groups.

THE LIBRARY

The University Herbarium includes a valuable library of approximately 2000 volumes dealing primarily with taxonomic botany. The books are housed with the plant specimens and are therefore readily available for reference purposes in the laboratory. The library is largely the gift of Mr. George R. Cooley, and it includes a number of rare botanical works.

The Herbarium library also includes a fine periodical section with good holdings in 24 taxonomic botanical journals. Current numbers are displayed in the reading room, and back numbers are bound and presently stored in four sections of the library.

Microfiche sets of type collections were purchased recently, together with a microfiche reader. These type collections includes the Linnaean Herbarium, the Vahl Herbarium, and the type collection of Botanicum Hauniense.

The map collection emphasizes particular areas of Florida with topographic reference sets for most of the state.

The library at present is classified according to general subject-matter to facilitate easy access by students and staff. Books are shelved in the following system:

I. Books published prior to 1800
   e.g. Species Plantarum, by Linnaeus, 1753.

II. Plant Lore
   e.g. Herbals, Their Origin and Evolution.

III. Asa Gray's Books
   e.g. The Elements of Botany, 1887

IV. Botanical Subject Headings
   1. Ecology
   2. Dendrology
   3. Botany Textbooks
   4. Systematics
   5. Genetics
   6. Gardening

V. Monographs and Special Papers, arranged according to Dalla Torre and Harms.
   1. Algae through Ferns (Cryptogams)
   2. Cycads through Asters (Phanerogams)

VI. Floras, arranged according to localities
   1. Asia and Australia
   2. Africa
   3. Europe
   4. West Indies and the Caribbean Islands
   5. Latin America
   6. Northeastern North America
   7. Midwestern and Western U.S.
   8. Southeastern U.S.
   9. Florida

The library includes a number of very useful indexes and bibliographic aids specially necessary to taxonomic research. The Index Nominum Genericorum gives bibliographic information on all validly published generic names for all groups of plants. The Gray Herbarium Index, published serially, gives bibliographic information by genus for vascular plant species from the Western Hemisphere. Other important indexes and bibliographies are Index Kewensis, Index to Grass Species, Index to American Botanical Literature, Prodromus Systematis Naturalis Regni Vegetabilis, The Bradley Bibliography, the Silva of North America, and Dictionnarie Descriptif et Synonymique des Genres de Plantes Phanerogames.

The Rare Book Collection includes a number of valuable and unusual volumes that were bought specially for the University Herbarium Library by Mr. Cooley. Some examples of holdings in this section are The Vegetable System, by John Hill, 1759-1775; Rariorum Plantarum Historia by Caroli Clusi, 1501; Collectanea ad Botanicam, Chemiam, et Historiam Naturalem, by Nicolai Josephi Jacquin, 1786-1789; De Fructibus et Seminibus Plantarum, by Josephus Gaertner, 1788-1805; The Anatomy of Plants, by Nehemiah Grew, 1682; Flora Silesiaca, by Heinrich Gottfried and Wilhelm Grafens, 1776-1777; English Botany, vols. 1-39 by James Sowerby, 1790-1843; Arboretum et Fruticetum Britannicum vols. 1-7, by J. C. Loudon, 1838.

Some examples of periodicals received by the University Herbarium are Brittonia, Castanea, Bulletin of the Torrey Botanical Club, Economic Botany, Journal of the Arnold Arboretum, Rhodora, Taxon, Baileya, Contributions from the Gray Herbarium, and others. Important sets of periodicals and reference works include Addisonia, North American Flora, Bulletin of the New York Botanical Garden, Contributions of the U. S. National Herbarium, and Pflanztenreich.

Within the past year the resources of the Herbarium library have been augmented by the policy change that permits University library holdings in taxonomic botany to be loaned for use in the Herbarium. The University library includes a number of significant and valuable reference works, such as Symbolae Antillanae by Urban that are now shelved in the Herbarium library. This relaxation of policy greatly facilitates the use of all botanical library resources by students and staff.

EXCHANGES, GIFTS AND LOANS

All active, major herbaria maintain exchange programs with other herbaria thereby augmenting their collections through the addition of specimens from other parts of the world. Herbaria regularly, usually on an annual basis, send their duplicate specimens to institutions with which an exchange agreement has been negotiated, and in return receive

sets of specimens from the exchanging herbarium. In this manner plant specimens can be added to the total accession that otherwise could not be obtained.

The University Herbarium maintains active exchange programs with 28 institutions including herbaria in Europe, Africa, Asia, Latin America, and Australia, as well as in North America. Some representatives are Duke, Florida, Florida State, Georgia, Harvard, Smithsonian Institution, New York Botanical Garden, British Museum, Utrecht, Rhodesia, Taiwan, and the University of Mexico. In 1970 the total number of plants received through exchange was 24,870. The University Herbarium has sent out 29,850 to other institutions.

Another important source of material is through gifts. The Herbarium has received a total of 16,293 specimens as gifts, and has sent out 1,476 specimens.

The following is a partial list of those collections which were purchased for the Herbarium or contributed especially through the efforts of Mr. George Cooley:

4,182 orchids, plates and illustrations from the Orchid herbarium of Dr. Leslie A. Garay, Harvard.

275 orchids from the Orchid herbarium of Oakes Ames, Botanical Museum of Harvard.

4,600 plants of the collections of Dr. Norman Russell, from western United States.

1,108 ferns and flowering plants from the Gray Herbarium, Harvard, including plants from Australia, St. Vincent, and the A. S. Pease European collections.

1,847 Burma plants from the collections of Dr. J. Keenan Royal Botanic Garden, Edinburgh, Scotland.

147 Jamaican plants and others from islands of the Lesser Antilles from the collections of Dr. George R. Proctor Kingston, Jamaica.

100 plants from Miss Jeanne H. Goulding, Auckland Institute and Museum, Auckland, New Zealand.

65 plants from Kenya, East Africa.

652 plants from Dr. M. L. Banerji, Kalyani, India.

5,798 plants from the Carnegie Museum including the E. H. Graham collections of Northwestern United States, the J. Wolle collections from Jamaica and the U. S.; 424 plants from the H. H. Smith collections from Colombia; 50 plants from the Isle of Pines and 609 plants from Pennsylvania and 756 from Canada collected by O. E. Jennings; 158 specimens from the western States by

L. E. Henry; 230 Borneo plants, 119 Hawaiian ferns and flowering plants from the Aborn collections, and others.

Loans of specimens are made to other institutions on request for the study of certain groups of staff or by students who are pursuing graduate studies in systematic botany. In recent years the University Herbarium has sent out 65 loans to 26 institutions. Members of the staff have requested and received 58 loans, including 8 transfers of loans, from 31 institutions. A total of 3,473 specimens have been sent on loan, and 5,767 specimens have been received for study purposes.

EDUCATIONAL PROGRAMS

The first course sponsored and supported by the University Herbarium was Botany 312, Systematic Botany, offered for the first time in 1963, with a class of eight students. The offering has been given annually every since, and has grown in size to 40 students with two laboratory sections. At the present time herbarium staff members offer courses not only in systematic botany, but also phycology, mycology, field botany, plant ecology, phytogeography, horticulture, tropical botany and a course for non-specialists entitled "Plants and Man." The demand for field orientated programs has grown continually and the staff attempts to make at least one such course available each quarter.

Since the initiation of graduate work, most staff members have been involved to a considerable extent in graduate education. Much of this effort is in the form of direction and supervision of research of graduate students, and in the presentation of special seminar courses. Graduate course offerings by the staff include Biosystematics, Taxonomy of Flowering Plants, Advanced Phycology, Advanced Tropical Botany, and Graduate Seminar.

The degree of interest and concern for educational matters by the staff is apparent in their involvment in teaching at all levels. The fact that all staff members serve on one or more graduate student supervisory committees is evidence of their concern with this important aspect of university service. Some examples of recent graduate student research in the Herbarium are: "Systematic and genetic studies of the genus Ruellia in Texas"; Ecology and systematics of the marine alga Caulerpa"; "Marine algae of the Florida Keys"; "Ecology of the Shore Hammocks"; "Systematic studies in the genus Justicia"; "Chemosystematic characters of artificial Ruellia hybrids"; "Ecology of the West Indian mahogony"; and "Systematic and ecological studies of the alga Euchoma".

In the years ahead, the Herbarium will continue to perform a leading role in providing educational programs in plant studies. The library and plant collection are indispensable teaching resources for all facets

of field botany and ecology, and they enable the student of plant science to gain insights into the scope of botany that no other similar kind botanical activity can do as well.

RESEARCH AND PUBLICATION

There has been a continuing production of research papers and books by staff members of the Herbarium since 1963. Most of these are part of the publication series initiated then called "Contributions of the botanical laboratories, University of South Florida", and a listing for Herbarium staff is given at the end of this report. It should be pointed out, however, that publication represents only a portion of the scholarly output of the Herbarium. In addition to published papers, all staff members have been involved in the presentation of papers at scientific meetings; presentation of seminars at other universities and institutions; the identification and classification of plant specimens both for the Herbarium and for other members of the science faculty; consultation with faculty, students, and laymen; and, serving on local community committees and boards where their expertise in plant science is brought to bear on practical matters of immediate concern. From this list of activities, one can conclude that research as a form of learning is important to the staff, and one that can be measured in a variety of ways.

The main program in research involving the Herbarium staff in recent years has been the study of the vegetation and ecology of southern pennisular Florida. Floristically, this is the richest part of the State, and the one that is in the greatest danger of serious damage ecologically. A major research project was launched in 1965 whose chief objective was the description of the plant life of this area. The research, involving a number of students over the years, was supported by the National Science Foundation, the Cooley Botanical Research Fund, and the University of South Florida. The results were published as A Flora of Tropical Florida, A Manual of the Seed Plants and Ferns of Southern Pennisular Florida, 956 pp. by the University of Miami Press, in November 1971.

Other research efforts of similar nature have resulted in the publication of The Plants of the Tampa Bay Area, The Marine Algae of the Tampa Bay Area, and The Mosses of the Tampa Bay Area. Now in press is another major publication entitled the Marine Algae of the Florida Gulf Coast. Two additional books are now in preparation and well-along toward completion: The Trees of the Gulf Coast of Pennisular Florida, and Wild Flowers of the Florida Gulf Coast. If is anticipated that these will be completed in 1972.

In addition to floristic studies, staff members are deeply engaged in monographic studies of particular groups of plants. For a number of years evolutionary and genetic investigations of the tropical genus Ruellia and other members of the Acanthaceae have been carried out. These studies have been continuously supported by the National Science Foundation, and have

involved support for a number of undergraduate and graduate students. Essentially, the object of the research is to describe species-relationships by using hybridization tests, chromosome comparisons, and chemosystematic analysis in addition to herbarium and field techniques. The research has involved collecting trips to Central America, Mexico, the Caribbean Islands, and South America. Monographic studies are also being carried out in Chamaesyce and the family Euphorbiaceae. Extensive collections have been made in Mexico, Costa Rica, Puerto Rico, Dominican Republic and other tropical countries in connection with revisionary studies for floristic and monographic contributions.

SUMMARY AND CONCLUSIONS

The University Herbarium has played a central role in the development of botanical education and research at the University of South Florida. Through its development and activities it has sponsored the first botany courses, and from the staff have come the first research publications in the plant sciences. Although the botanical curriculum contains far more now than programs in systematics and ecology, many courses are still centered in the Herbarium and offered by Herbarium staff members.

The research production by the staff continues to be a significant part of the total research of the biological sciences. Through its interest in the floristics of Florida, of Mexico, and of other parts of tropical America, the staff helps train students in tropical botany and introduce them to one of the most dynamic areas of research in plant science. Monographic studies provide training that includes the wide variety of systematic techniques characteristic of biosystematic studies. The combination of floristic and monographic research interests provides a balanced program both in the total research effort of the staff, and in the educational programs for undergraduate and graduate students.

The development of the Herbarium depends on the staff and on the continued support of the Administration of the University. There is no dearth of problems or projects that the staff can profitably engage in that would make full use of the facilities. The areas for immediate work and for early development have been identified as follows:

1. The Vegetation of the Florida Pennisular Gulf Coast. With the completion of the South Florida floristic project, attention has turned now to similar kinds of floristic and ecological studies of the area from Cedar Key, Levy County south to Ft. Myers, Lee County. This province is the natural area of interest for the University Herbarium because of its nearness and because of the considerable importance it has to our local students and to our citizens. The area has never been studied adequately, and the vegetation is only known in part. The rapid changes brought on by urbanization and development have destroyed much of the original plant life, and it is important that a record be made of the existing vegetation. Also, thorough vegetational analysis is necessary before any meaningful terrestrial ecological studies can be made.

The new direction to the floristic studies got under way in 1970, and currently the vegetation of Weeki Wachee Springs area, Hernando county, and the earlier vegetation studies of Mullet Key, Pinellas county constitute the chief projects in this area. General collections in Pinellas county have been carried out, and preliminary field work pursued in the Cedar Key area and Long Boat Key, Sarasota County. The two books in preparation, the Trees of the Gulf Coast of Peninsular Florida, and the Wild Flowers of the Florida Gulf Coast are part of this research effort. It is anticipated that the floristic studies will be central in the activities of the Herbarium for the next ten years.

2. The Botanical Museum. At the present time the Herbarium does not have collections of specimens in liquid or demonstration materials for exhibition. The development of this facility has depended on the availability of space and of programs that would make full use of such a collection. A modest start is planned for the beginning of a botanical museum that would include paleobotanical specimens, specimens in liquid for demonstration, exhibitions of ethnobotanical and historical subjects, poisonous plants, drug plants, food plants, etc. In this area the recently initiated Herbarium of Cultivated Plants would strongly support the Botanical Museum. Education programs, such as the course "Plants and Man", would benefit from the existence of the Museum. Special research projects dealing with plants of economic importance or of particular interest to Man could be initiated with an expanded program that would include a Museum.

3. Center for the Study of Rare and Endemic Plants. One of the early interests of the University Herbarium was in the mapping and collection of plants that are restricted to Florida and are not found anywhere else in the world. Many of these species are also rare, and some are on the edge of extinction because of land development. At the present time it is thought that there may be as many as 300 species of Florida endemics, but there never has been a careful study made of their distribution and relationships. It is important that these species be identified and preserved because many represent relict plants that aid in understanding Florida's vegetation. The preservation of the plants is also of interest since they are unusual in having so narrow a distribution. The conservation of the native plant life of Florida is important to many of the citizens of the State, and this is particularly so in regard to the endemic plants many of which are also unusually attractive.

4. Tropical American Botany. As a natural outgrowth of the interest in South Florida Botany has come the interest in other tropical American regions. Our location permits easy access to the Caribbean, Mexico, Central and South America and makes the University Herbarium a natural center for tropical studies. During the past three years, in particular, field trips and collecting forays have been made by staff members in the American Tropics and the accessions from these areas have grown proportionately. Through exchanges with other herbaria active in this kind of research, additional materials have been obtained. One of the main interests of the Herbarium will be in acquiring significant reference material of tropical plant taxa.

The object will be to make the University Herbarium not only a regional depository for South Florida botany, but also one for West Indian and Caribbean Botany as well.

The four special goals set for the Herbarium are by no means exclusive, nor do they indicate any lessening of interest in the particular educational programs that are sponsored by the Herbarium. Rather, they are stated as general objectives for future development within the total activity of the biological sciences. Obviously the need for continued support and growth in staff is central to the achievement of these goals, but the foundation for success has already been formed.

In conclusion, it can be fairly stated that the growth and development of the University Herbarium has paralleled closely the rapid growth of the University. It has played a central role in the addition of botanical education and research to the curriculum, and continues to be a center for staff-directed work in plant science. The herbarium is truly one of the important information centers on the campus, and its collections, library, and other facilities make it one of significant herbaria in the Southeastern United States.

Robert W. Long,
Director

SELECTED PUBLICATIONS BY THE HERBARIUM STAFF AND STUDENTS

CONTRIBUTOR	NAME OF ARTICLE	PUBLICATION	DATE
Olga Lakela	Occurrence of Species of *Polycarpaea* Lam. (Caryophyllaceae) in North America	Rhodora, Vol. 64, No. 758 pp. 179-182	April-June, 1962
Olga Lakela	Annotation of North America *Polycarpaea*	Rhodora, Vol. 65, No. 761 pp. 35-44	January-March, 1963
Olga Lakela	The Identity of *Bumelia lacuum* Small	Rhodora, Vol. 65, No. 763 pp. 280-282	July-September, 1963
Olga Lakela	*Centrosema Floridanum* (Britton) Lakela, Comb. Nov. (Leguminosae).	Sida, Vol. 1 No. 3 pg. 182	December, 1963
Olga Lakela	*Dicerandra immaculata* sp. nov. Lakela	Sida, Vol. 1 No. 3 pp. 273-281	December, 1963
Robert W. Long	Cytogenetic Investigations of Artificial *Helianthus giganteus* X *H. salicifolius*	Ohio Journal of Science, Vol. 63, No. 6 pp. 273-281	November, 1963
Robert W. Long	Mass Collections of *Ruellia* in Florida	American Philosophical Society (Yearbook) 1963 - pp. 338-341	January-December, 1963
Knut Norstog	Culture of Small Barley Embryos on Defined Media	Science, Vol. 142 No. 3600 pp. 1655-6	27 December 1963
Olga Lakela	Systematic Status of *Ammopursus Ohlingerae* (Compositae)	Sida, Vol. 1 No. 4 pp. 240-247	June, 1964
Robert W. Long	Biosystematic Investigations in South Florida Populations of *Ruellia* (Acanthaceae)	American Journal of Botany, Vol. 51 No. 8 pp. 842-852	September, 1964
Olga Lakela	Fewer Florida Rarities: Changing Flora of Pineola Grotto, Citrus County	Sida, Vol. 1 No. 6 pp. 299-305	October, 1964

Robert W. Long	Aberrant Microgametogenesis and Pollen Tube Growth in Polycarpaea nebulosa (Caryophyllaceae)	Bulletin of the Torrey Botanical Club, Vol. 92 No. 1 pp. 46-50	January-February, 1965
Olga Lakela & Frank C. Craighead	Annotated Checklist of the Vascular Plants of Collier, Dade, and Monroe Counties, Florida	Published by Fairchild Tropical Garden & University of Miami Press Coral Gables, Fla.	1965 - Price - $2.00
Robert W. Long	Biosystematics of the Helianthus Nuttallii Complex (Compositae)	Brittonia, Vol. 18 No. 1 pp. 64-79	January-March, 1966
Wendell Wall & Robert W. Long	Megasporogenesis and Embryo Sac Development in Ruellia caroliniensis (Acanthaceae)	Bulletin of the Torrey Botanical Club, Vol. 92 No. 5 pp. 372-377	September-October, 1965
Olga Lakela	The Extended Distribution of Eragrostis tracyi from Sanibel Island, Florida	Rhodora, Vol. 67 No. 771 pp. 312-313	July-September, 1965
Robert W. Long	Artificial Interspecific Hybridization in Ruellia (Acanthaceae)	American Journal of Botany, Vol. 53 No. 9 pp. 917-927	October, 1966
Robert W. Long	The Artificial Intersectional Hybrid of the Tropical Species Ruellia brittoniana X Ruellia occidentalis and its taxonomic Significance	Bulletin of the Torrey, Botanical Club Vol. 93 No. 3 pp. 181-187	May-June, 1966
Robert W. Long	Observations Regarding the Occurrence and Relationships of Ruellia lorentziana (Acanthaceae) in Southern Florida	Rhodora, Vol. 68 No. 776 pp. 432-434	October-December, 1966
C. J. Dawes, Sylvia A. Earle, F. Carol Croley	The Offshore Benthic Flora of the Southwest Coast of Florida	The Bulletin of Marine Science, Vol. 17 No. 1 pp. 211-231	March, 1967
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