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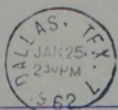
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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.



THIS SIDE OF CARD IS FOR ADDRESS

Mr. Robert Merrill King
Botany Department
University of Texas
Austin 12, Texas

HERBARIUM
Southern Methodist University
DALLAS, TEXAS
25 January 1962

Dear RMK:--

Got home to find the water pipes all frozen, and by the time they thawed out the next freeze arrived and my car wouldn't start. So I didn't really get back to work until today; hence the delay in responding to your requests for reprints. Those from *Wrightia* are nearly exhausted but we still have some spare copies of the 5 numbers of vol. 1, and in appreciation for your efforts on behalf of field botany and Mexican botany I am sending them gratis. (We have no copies of later volumes.) We have a lot of extra copies of no. 2, so I am sending one of those to Powell.. Please explain -- I hate to waste extra postcards the way you people do. I added copies of my *Palafoxia* paper for propaganda purposes.

Frank - Weary

Students of Seaweed Get the Last Laugh--Plus Funds

By Nate Haseltine

Washington Post Staff Writer

NINETEEN YEARS AGO, they laughed at a research team at Clemson University in South Carolina that was testing dried Norwegian seaweed as an additive for crops. But now, everyone seems to be trying to get into the seaweed research act.

This year, the National Science Foundation is providing some \$389,100 in matching federal grants under its Sea Research Program for expanded agricultural research into the seemingly miraculous powers of dried, powdered and liquefied seaweeds and other marine algae. Most of the grants are being matched with similar amounts by states and local universities.

Clemson's Drs. Senn and B. J. Skelton have been awarded a matching grant of \$9,500 to expand their program of "testing extracts and meals of several marine algae for effects on growth and/or development of commercially higher plants."

This expanding research funding contrasts with the original \$1,200 grant given the Clemson investigators by the producing company, the Sea-Born Mineral Division of Skod Co. and the Norwegian Export and Import Co. of Chicago, which furnished the seaweed product used in the initiating research.

The public relations man who inspired the Clemson investigators to accept the initial grant said he was "laughed off the campuses" of almost every other land grant college he approached.

The brown seaweed involved, *Asco-phylum nodosum*, has been shown to turn plant growth off and on by regulating plant metabolism — that is, the

rates at which they take in oxygen and give off carbon dioxide. Used as a soil additive, it is either mixed with or sprayed on ordinary earth. A particular reason why the Clemson investigators were persuaded to take on the research was that South Carolina's soil is not the best in the agricultural United States, having been depleted of many growth-inducing minerals.

The original Clemson researchers included C. B. Garrison, then director of the Clemson Experiment Station and the university's agricultural research; Taze (Tee) L. Senn, presently the director, and research associates John A. Martin, Claude L. Darling and Robert J. Shelton. They started in 1950, and their reported results are now considered hallmarks of plant and crop improvement—the reason why everyone else is getting into the act.

Five-Month Dormancy

SCIENTIFIC REPORTS accumulated since the start of the Clemson trials show that the seaweed meal added to the soil does some amazing tricks to growing plants.

One of the research assistants who joined the Clemson project later, Donald F. Fox, reported in 1959 to the American Society for Horticulture that the sea meal, spread over an acre of Bermuda grass, killed off ail clovers and weeds. He reported that it left only the desired green grass in an almost ungerminating state and that the grass survived a hot summer without need of mowing.

Fox also reported to the same society that seaweed-treated tomato plants an inch and a half tall retained their size, without wilting or growing.

for up to five months. Transplanted to normal soil after such apparent dormancy, they resumed normal growth and bore fruit, he said. Similarly treated plants, accidentally left out and exposed to frost, survived the chilling which killed off untreated (control) tomato plants, Fox reported.

When Clemson's pioneering research scientists set out to evaluate the nutritive values of seaweed for crops, they lacked the scientific equipment avail-



The seaweed.

Students of Seaweed Get the Last Laugh--Plus Funds

ble today and painstakingly built a Rube Goldberg type of contraption called a "Continuous Recording Respirometer System."

Respiratory, or breathing, activity provides a means through which the investigator may study the complex enzymatic processes governing the quality of perishable horticultural products. In the respiration in storage of fruits and plants, the sugars are biologically oxidized to carbon dioxide and water by the living cells.

The scientists could tell by the looks, taste, feel and shelf life of seaweed-promoted products that they fared better than control plants—but such proofs are always open to question. So the scientists spent two years devising the machinery to convince other scientists that their work was valid. They ended up with a device that has a maze-like array of tubing, sample containers, solenoid valves and a dual-channel potentiometric recorder.

"It took us all that time to build it," mused Dr. Senn. "After all, we're plant physiologists, not electrical engineers."

Today, the Clemson horticultural laboratories are equipped with space age electronic gear ranging upward to \$2000 in cost when purchased commercially. These include an atomic absorption spectrophotometer and a recording print-out of a gas chromatograph.

Feeding Race Horses

BECAUSE THEIR INSTITUTION is a land grant college, the Clemson investigators started their research on local crops, chiefly tomatoes and grasses. Since their initial successes, they have branched out to other South Carolina products, such as peaches, ap-

ples, sweet potatoes and okra. In all cases, they found out which concentrations produced the best results in both qualities and storage life. But they still don't know why, other than knowing it is associated with each particular plant's regulation of respiration.

Although almost nothing, scientifically, is known of the sea product's biological effects except that it is inert and harmless, testimonials have been given that meal made from the kelp is a good additive to horse and cattle feeds, producing national champions in both species, and that as an additive to turkey and other poultry feeds, makes for better tasting birds.

One of the testimonials, which await scientific confirmation, is by an Iowa breeder, of Herefords who reported that Algit Norwegian Kelp Meal as an additive helps his cattle to "utilize their feed more efficiently." His breeding farm, he said, this year had five champions, one reserve champion and 24 first-place winners at cattle shows.

Still another testimonial was given by Bill Ballenger, manager and part owner of Virginia's Blue Ridge Farm, who said he raised two racing greats—Sword Dancer (1959 Horse of the Year) and Bowl of Flowers—in pasturage augmented with the Norwegian kelp.

Whether the seaweed adds to human nutritive values is another facet that remains to be studied. The company does sell compressed seaweed pills, in volumes of 500,000 to 700,000 a year, for the mineral values they contain, and this has been the bane of research on seaweed—keeping it out of the food faddist category.

It has been reported that this particular Norwegian kelp contains 60 ele-

ments, 21 amino acids and 12 vitamins. It is not considered a fertilizer because it contains no substantial amounts of nitrogen. The company has tagged it a micro-organism "balancer."

Possible Food Source

IN A SCIENTIFIC report of September, 1961, Dr. Senn noted evidence that "certain marine algae possess antibiotically active substances," but he didn't go as far as to credit these with the plant nutritive activity of this kelp.

The Senn report noted that large metal drums containing virgin South Carolina soil remained unchanged over years, but that other drums filled with soil to which kelp had been added in varying concentrations developed molds on the earth's surface.

For example, his report showed: One barrel with 5 per cent seaweed mixture had aspergillus, neurospora and penicillium growths; 10 and 20 per cent mixtures had mostly penicillium growths, and a 40 per cent mixture showed no mold growth.

In a recent interview, Dr. Senn attributed the growth-promoting factors in brown kelp to auxins, perhaps gibberellin, a plant fungus substance that acts as a growth enhancer. Auxins are plant hormones that promote cell extensions—growth.

Not only Norwegian kelp but also many other seaweed species, including some closer to American shores, need intensive study as a possible major food source to help feed starving populations, Dr. Senn and his colleagues agreed. That is also one reason given by the Sea Resources Research programs financed by the National Science Foundation.

FORMA # 10

AUTO VIAJES INTERNACIONALES, S. A.

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REG. FED. DE CAUSANTES

SUCURSAL MONTERREY

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CED. DE EMPAD. No. 34479

MONTERREY, N.L.

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Preparó

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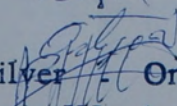
Firma Vendedor IRENE

PAGADO

Received of Robert M. King
40 pesos as
car rental

10 Sept 1969

signed


Silver - Onyx - Pottery
Carved Wood - Leather Goods
Sarapes - Trays - Dolls

IXMIQUILPAN, HIDALGO
KILOMETRO 159 CARRETERA MEXICO-LAREDO

Nombre _____

Dirección _____

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MEXICO, D. F.

Robert M. King

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SI-15

Rev. 11-1-66

SMITHSONIAN INSTITUTION
Authorization of Official Travel
(See Instructions on Reverse)

1. NAME, TITLE, AND UNIT OF PERSON REQUESTING TRAVEL

Robert M. King, Collector
Office of the Chairman
Department of Botany, RMN

FISCAL DIVISION USE

Authorization No.

247

Authorization Date

8/27/69

Appropriation or Fund

2. OFFICIAL STATION

IDENTIFY Washington, D.C.DEPARTING airwayRETURNING airway

3. STATUS OF TRAVELER

☐ SI EMPLOYEE☐ IDENTIFY Collector

4. ACTIVITY CHARGEABLE

300100-100-7331-210-2

5. TRAVEL REQUESTED (ITINERARY, DATES, PURPOSE, AND SPECIAL AUTHORIZATION(S) REQUIRED)

From Washington, D.C. to Mexico City, Mexico D.F., on or about September 6, 1969
and return to Washington, D.C. on or about September 13, 1969.

Purpose: to engage in field collecting for the composite genus Eysenhardtia
in the area of Mexico City (Hidalgo) on September 11, 12, 13, 1969.

(While in Mexico traveler will also attend the Congreso Mexicano de
Botánica y Zoología at no expense to the Smithsonian Institution.
Authority for use of local facilities as required is requested.

6. METHODS OF TRAVEL

- ☐ Common Carrier (Identify) commercial airline
☐ Government-owned Vehicle
☐ Private Vehicle
☐ Other (Identify) _____

7. NUMBER OF TRANSPORTATION REQUEST FORMS (SF-1169) REQUIRED

8. ESTIMATED COSTS (ROUND TO NEAREST DOLLAR)

Transportation any fare constructed Mexico, D.F. \$ 121.00
Per Diem 1 days at \$ 17.00 per day Washington D.C. \$ 17.00
Miscellaneous Expenses \$ 15.00

All expenses incurred in connection with this
travel in excess of \$150.00 will be borne
by the traveler.

TOTAL \$ 153.00

9. SIGNATURE OF REQUESTER

Date _____

10. SIGNATURE AND TITLE OF AUTHORIZING OFFICER

Date _____

Richard Cowan, Director

August 19, 1969

Harold Robinson

\$150 support for collection of cytological material in Mexico.

\$150 is sought to support a field search for cytological, wood, and other material of the composite genus Dyscritothamnus. This genus was described by B.L. Robinson in 1922 and assigned to the tribe Eupatorieae on the basis of the inadequate material then available. As a closing line of his paper B.L. Robinson wrote "Should anyone find further material of this plant, either in field or herbarium, the writer would welcome information of the fact." Unfortunately material did not come to light during B.L. Robinson's lifetime or for many decades after, but about a week ago a specimen appeared in a new exchange lot that came from the Instituto Politecnico Nacional of Mexico. The location given was 5 km al W de Cardonal, Hidalgo, talud de arroyo. The significance of the rediscovery of this plant is greatly increased by our observation that it does not fit the tribe Eupatorieae in which it was originally placed, but that it is a member of the Helenieae-Heliantheae complex. Even with its proper relationships now evident there are problems regarding closest related genera (in at least one character the genus does not fit the presently recognized characteristics of the Helenieae-Heliantheae). We have already written to Dr. Sherwin Carlquist with the hope that he will cooperate with us by studying the wood anatomy of the plant. Dyscritothamnus is not a small plant, the data indicates "arbusto de 6 m de alto".

The timing of my request is to take advantage of the season and also the Congreso Mexicano de Botanica in Monterrey. The present collection was made in November and is in full flowering condition. Early September would be a good time to expect young material suitable for cytological investigation. The Congress itself is Sept. 8-11 and the other collector, Lauro González Quintero, may actually be at the Congress to give information to help in the relocation. That collector has already written a paper describing the general area of the collection. Also, Bob King who would logically make the trip would be able to get some funds from his college to go to the Congress. The set of circumstances will not arise again for at least three years.

As presently planned Bob King would go to the Congress at Monterrey and then head south to Mexico City. The locality, Cardonal, is only a few miles off the main road in Hidalgo. The plan allows two days for a search in the area where the plant has been found. Given the size and distinctiveness of the plant, this time should be sufficient and it is hoped that it will not all be necessary. Bob King would return from Mexico City by air. The \$150 requested here is the minimum amount that is necessary to cover those expenses for which support cannot be obtained elsewhere. It represents a considerable saving from what would be required if this cannot be done in conjunction with the Congress

UNIFORM EXPRESS RECEIPT—NON-NEGOTIABLE—TERMS AND CONDITIONS

UNIFORM EXPRESS RECEIPT—NON-NEGOTIABLE—TERMS AND CONDITIONS

ment, or return to the carrier in consideration of the rate charged for carrying said property, which is dependent upon the value thereof and is based upon an agreed valuation of not exceeding fifty cents per pound for any shipment of not more than one hundred pounds, or fifty cents per cubic foot for any shipment of more than one hundred pounds, for any shipment in excess of 100 pounds, unless a greater value is declared at the time of shipment, the shipper agrees that the carrier will be liable for any shipment of 100 pounds or less, or for more than fifty cents per pound, actual weight, for any shipment weighing more than 100 pounds, unless a greater value is stated and declared by the shipper. The declared value is as stated by the shipper agrees that the value of the shipment is as last above set out and that the liability of the company

b The death, injury, or escape of live freight.
c Loss of money, bullion, bonds, coupons, jewelry, precious stones, valuable papers, or other matter of extraordinary value.

a The act or default of the shipper or owner.
b The nature of the property, or defect or inherent vice

line, riots, strikes, perils of navigation, the hazards or dangers incident to a state of war, or occurrence in customs warehouse.

5. Packages containing fragile articles or articles consisting

has no office, shipments must be marked with the name of the express station at which delivery will be accepted or be marked with forwarding directions if to go beyond the express company's territory.

To Destination Office *21*

8. If any C. O. D. is not paid within thirty days after notice of non-delivery has been mailed to the shipper the company may at its option return the property to the consignor.

10. If the destination specified in this receipt is in a foreign country, the property covered hereby shall, as to transit over ocean routes and by their foreign connections to such destination, be subject to all the terms and conditions of the receipts or bills of lading of ocean carriers as accepted by the company for the

11. The company shall not be liable for any loss, damage, or delay to said shipment over ocean routes and their foreign connections, the destination of which is in a foreign country, occurring outside the boundaries of the United States, which may be occasioned by any such acts, loadings, laws, regulations, or

claims so made against said delivering or issuing carrier shall be deemed to have been made against any carrier which may be liable hereunder. Suits shall be instituted only within two years and one day after the date when notice in writing is given by the carrier to the claimant that the carrier has disallowed the claim.

customs duties, taxes or charges, may be stopped in transit at foreign ports, frontiers or depositories, and there held pending examination, assessments and payments, and such duties and charges, when advanced by the company shall become a lien on the property.

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New York City

Robert Merrill June 26 1961

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SHIPPER'S COLLECT RECEIPT

RAILWAY EXPRESS AGENCY (Form 5082)

Received shipment described hereon, subject to the Classifications and Tariffs in effect on the date hereof, value herein declared by Shipper to be the cost of merchandise, exclusive of "Declared Value" which the Government

	Number	Pieces	Date	Hour

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DECREE Nº 65.057 - OF AUGUST 26, 1969
D.O. August 27, 1969

APPROVES THE REGULATIONS FOR PERMISSION TO CONDUCT SCIENTIFIC EXPEDITIONS IN BRAZIL AND OTHER PROVISIONS

THE PRESIDENT OF THE REPUBLIC, using the powers granted him by art. 83, item II of the Constitution.

DECREES:

Art. 1º - The supervision of Scientific Expeditions in Brazil, entrusted to the National Research Council of Brazil under Decree nº 62.203, of January 31, 1968, shall be governed by the terms of the present Decree.

Art. 2º - For the purposes of the present Decree, a Scientific expedition shall be considered as the displacement of human and material resources to a given geographic area, for a limited period of time, with a view to developing a specific plan to obtain scientific data and knowledge, to confirm or establish theories, thus endowing it with a broader scope than that of simple research to evaluate natural resources.

Art. 3º - The present Decree shall not apply to:

- a) activities governed by Decree nº 63.164, of August 26, 1968, when carried out on the continental shelf, on territorial ocean waters and on interior waterways;
- b) research lying within the monopoly rights of the Union or within the competence of other Agencies and Ministries governed by specific regulation.

Art. 4º - It is the duty of the National Research Council, excepting in the aforesaid restricted cases, to authorize and to supervise scientific expeditions or any other activities involving the exploration, survey, collecting, filming or recording of scientific material, effected by:

- a) foreign institutions or individuals, in an official or private capacity;
- b) foreign religious or philanthropic associations, established in the country;

- c) Brazilian institutions working in collaboration with foreign institutions or individuals;
- d) national private institutions or individuals.

Sole § - Authorization under letters a, b, and c, as well as under letter d, shall be previously submitted to the National Security Council, whenever the expedition areas concerned be considered vital to National Security, or the research involved be considered of interest to National Security.

Art. 59 - Any Government official who ascertains that foreign members of expeditions cleared under the terms of the present Decree are carrying out activities contrary to the national interest, or effecting research legally classified as within the Union Monopoly, shall inform the Ministry of Justice thereof, so that a legal suit for expulsion may be filed, in accordance with the official legislation in force.

Art. 69 - It is the duty of the National Research Council of Brazil, under the terms of Decree nº 62.203, of January 31, 1968:

a) to study the aims of scientific expeditions and correlated activities from the angle of their interest to national research;

- b) to decide as to the integrity and merits of organizations or individuals wishing to carry out scientific expeditions or correlated activities, and as to the convenience, from the point of view of national interest, of granting the permit requested;
- c) to study, with the assistance of the relevant agencies whenever necessary, the aims, routes and plans presented;
- d) to inform the relevant authorities of the decision on the application for permits;
- e) to supervise, directly or by delegation, the activities authorized;
- f) to appoint delegates in the States and Territories, when the supervision cannot be effected under the terms of letter e;
- g) To appoint its representatives to accompany the expeditions governed by article 4;
- h) to withdraw the permit granted, whenever there be a breach of the regulations under this Decree;

- i) to state its opinion and to request that of the Ministries, should the matter be within their jurisdiction, on the exportation of any specific material collected within the national territory;
- j) to advise, and exchange information with the relevant Ministries and official agencies on the results obtained by scientific expeditions.

Art. 79 - Applications for permit shall be addressed:

- a) directly to the National Research Council, when the expedition or activity be proposed by a national organization or individual, by a foreign religious or philanthropic association established in the country, three months before the date for starting the operation;
- b) to the Ministry of Foreign Relations, through diplomatic channels, when the expedition or activity be proposed by a foreign organization or individual, 180 days before the date set for arrival in Brazil.

Art. 89 - Applications for permit to carry out expeditions and other scientific activities, shall contain:

- a) a detailed and precise statement of the purposes thereof;
- b) name, address, nationality and reports on previous activities in the national territory, if any, of the organization or individual responsible for the financial support of the activities proposed;
- c) name, address, nationality and reports on previous activities, in the national territory, if any, of the organization or individual responsible for the carrying out of the activities proposed;
- d) name, "curriculum vitae" and nationality of the person in Brazil responsible for the activities and of the person designated to act for him during any possible absence;
- e) name, address and nationality of the participants;
- f) routes and plans;
- g) type of material to be collected and destination thereof;
- h) detailed inventory of equipment and arms to be carried;
- i) duration of the expedition;

- j) specification of the customs station, chosen from among those listed by the Council, through which the material collected will be exported;
- l) formal statement of intention to abide by the laws in force in this country and by the provisions of this Decree.

Art. 99 - All the information demanded in the previous article together with the decision of the National Research Council thereon shall be included in the documents to be submitted to the authorities mentioned in the sole paragraph of article 4, for appropriate scrutiny.

Art. 10 - In order to obtain extension of a licence period, the interested parties shall apply to the National Research Council to that effect thirty days before the existing licence expires, stating the reasons for their request and presenting a report on the work already carried out.

Sole § - The procedure for extension of the licence period shall be the same as that for obtaining the initial permit.

Art. 11 - The supervision of authorized activities shall be affected by the National Research Council, within the provisions under article 6: items e and f.

§ 1. - Any material held by expeditions or participants thereof, collectors or researchers in disagreement with the provision in the present Decree, or with the limitations established in the licence involved, shall be confiscated.

§ 2. - The material thus seized shall be handed over to an official scientific institution of the National Research Council's choice.

Art. 12 - The exportation of any collected, filmed or recorded material shall depend on the presentation to Customs, port of embarkation or post-office officials of the respective authorization given by the competent Ministry or Agency, based on the scientific pronouncement thereon of the National Research Council.

Sole § - The exportation of any mineral or fossil material collected within the national boundaries shall be controlled by the Ministry of Mines and Energy, in accordance with the legislation in force thereon.

Art. 13 - Prior to the granting of authorization, an appraisal and inventory of the material collected in the national territory shall be made, and the specimens to remain in the country, or to be returned in the course of time, to be added to collections of Brazilian official institutions, shall be specified.

Sole § - The interested parties shall have the right to attend the examination of the material, either personally or through their representatives.

Art. 14 - Holotypes shall be kept in Brazilian official institutions.

Art. 15 - For the purpose of being added to the collection of a national institution named by the National Research Council, the following material shall be delivered to the latter:

- a) representative samples or duplicates of collections obtained;
- b) moulds, copies, photocopies or drawings of scientific material.

Art. 16 - The National Research Council, taking into consideration scientific ethics as well as the cultural interests of Brazil, shall determine, in each and every case, the ultimate destination to be given to unique or rare specimens.

Art. 17 - In case of retention of material in Brazil, the National Research Council may entrust an official institution to decide, in cooperation with those responsible for its collection, on the destination of the same.

Art. 18 - The leaders of the scientific expeditions or correlated activities duly licenced, within 6 months of their departure from this country shall send the National Research Council a detailed report on their work in Brazil.

Art. 19 - The present Decree shall be in force as from the date of its publication, all provisions to the contrary being hereby repealed.

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF BOTANY
BERKELEY 4, CALIFORNIA

27 May 1961

Dr. Robert M. King
Herbarium, Botanical Laboratories
The University of Texas
Austin 12, Texas

Dear Dr. King:

We are very glad to acknowledge receipt of the shipment of 518 plant specimens, primarily from Mexico, mentioned in your letter of May 23. This is beautifully prepared and selected material, and any institution would, I am sure, be happy to receive it.

I was particularly impressed by the very rich representation of Euphorbiaceae, Compositae, and Cactaceae (although I am still trying to isolate and capture a few spicules from my fingers!).

As you know, a number of items were determined only as far as the genus. This does not bother me at all, except that I hope you will think to share any subsequent identifications you receive with us, that our material may be more meaningful to the future researcher and student.

Thank you very much for "cutting us in" on this splendid collection.

Sincerely,

Lincoln Constance
Lincoln Constance
Curator of Seed Plants

andrews
28 June 61

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF BOTANY
BERKELEY 4, CALIFORNIA

1 June 1961

Dr. Robert M. King
Herbarium, Botanical Laboratories
The University of Texas
Austin 12, Texas

Bob, you have been
monitored!

Dear Dr. King:

Thank you for the five additional specimens of Mexican Hydrophyllaceae and Umbelliferae from your recent Mexican travels.

I should identify them as follows:

3842. *Hydrocotyle bonariensis* Lam.

3880. *Nama biflorum* Choisy

3995. *Hydrocotyle bonariensis* Lam.

4033. *Hydrolea spinosa* L.

4114. *Apium leptophyllum* (Pers.) F. Muell.

If you have other material of the *Nama*, you can see that this taxon appears to be as broad and variable as the landscape of Texas, but the binomial I have indicated seems to be where it runs down to in C. L. Hitchcock's and other treatments available to me. No doubt it is evident that I do not know much about this genus. (There are times when I suspect that no one else does, either.)

With best regards,

Sincerely,

Lincoln Constance
Lincoln Constance

answ
28 June 61

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF BOTANY
BERKELEY 4, CALIFORNIA

6 January 1962

Dr. Robert M. King
Department of Botany
University of Texas
Austin 12, Texas

Dear Dr. King:

It's very nice to hear from you and now I can acknowledge also that wonderful postcard view of the Patzcuaro "butterfly-net" fishermen. (I almost came right down to join you, spiritually, that is!)

I shall be very glad to have the specimens for determination of which you speak in your recent letter, and the opportunity to add to our Mexican representation is always most welcome. Miss Annetta Carter, of our Herbarium staff, has just returned from several weeks of field work in the Sierra Giganta, her favorite piece of Baja California.

It just so happens that I have to be in Washington next Friday (January 12th) and I hope to spend most of Saturday (one week hence) at the U. S. National Museum. Could you either alert someone there, or send me a card c/o Morton, Smith, Swallen, or somebody, which would tell me where to look for the unicate of which you speak? If we can't time this effectively, of course they can always send it to me. Indeed, one of my objectives is to pick out some more South American Umbelliferae for my artist to draw, so they will be sending me stuff.

I hope you are enjoying working with the proceeds of your trip, and that the New Year is starting out well with you.

Cordially,

Lincoln Constance
Lincoln Constance

UNIVERSITY OF CALIFORNIA

DEPARTMENT OF BOTANY
BERKELEY 4, CALIFORNIA

10 January 1962

Dr. Robert M. King
Department of Botany
University of Texas
Austin 12, Texas

Dear Dr. King,

A very handsome set of Mexican Umbelliferae, which I should determine as follows: --

- 4698. Enantiophylla Heydeana Coult. & Rose
- 4771. Eryngium Beecheyanum H. & A.
- 4786. Donnellsmithia mexicana (Robins.) M. & C.
- 4862. Eryngium gracile Delar.
- 4909. Donnellsmithia mexicana (Robins.) M. & C.
- 5013. Eryngium globosum Hemsl.
- 5066. E. Beecheyanum H. & A.
- 5074. Arracacia atropurpurea (Lehm.) B. & H.
- 5110. Donnellsmithia mexicana (Robins.) M. & C.
- 5172. Eryngium crassisquamosum Hemsl.
- 5175. Arracacia atropurpurea (Lehm.) B. & H.
- 5192. Eryngium Beecheyanum H. & A.
- 5199. Daucus montanus H. & B.
- 5203. Eryngium monocephalum Cav.

I make no bones about how little we (I) know about Mexican Umbelliferae, and we should be glad for any comments that indicate we're off on the wrong track. Within a few years, I hope to be able to do some field work in Mexico; thus far, the Mexican species are mostly "on paper," and I have doubts about both some of our "lumpings" and the various taxa that have been created by ourselves and others. Certainly, the opportunity to add such fine material as yours to our collections is one way out of the wilderness.

From what I've been hearing about weather elsewhere, I think I should be smarter not to go East tomorrow, but I've got to take the risk.

Sincerely,

dup det

Lincoln Constance

1962



STATE UNIVERSITY COLLEGE OF FORESTRY
AT SYRACUSE UNIVERSITY

January 17, 1962



Mr. Robert M. King
Department of Botany
The University of Texas
Austin 12, Texas

Dear Mr. King:

I have delayed replying to your letter of January 12 in the hope that I would be able to make definite commitments in this letter. We are awaiting reallocation of funds from the Administration for the remainder of the fiscal year and, as yet, no word has been received.

I expect to receive word within the next few weeks and will write to you as soon as I hear. In the event no funds are available, we will have to wait until April 1st. Even though I cannot commit funds officially for next fiscal year, I feel confident in assuring you that they will be available at that time.

I am in hopes, and rather expect, that I will be able to secure funds shortly. We would like to receive all 150 specimens.

Very truly yours,

Harold A. Core

Harold A. Core, Instructor
Wood Products Engineering Dept.

HAC:my



STATE UNIVERSITY COLLEGE OF FORESTRY
AT SYRACUSE UNIVERSITY

February 15, 1962



Mr. Robert King
Department of Botany
The University of Texas
Austin 12, Texas

Dear Mr. King:

In reference to my letter of January 17, I would like to inform you that we have received notification of the reallocation of funds and I have been authorized by my department head to initiate the necessary paper work for the purchase of the wood specimens. I am submitting a requisition for \$150.00 to our business office today. In all probability, you will receive some forms from them in the near future.

If possible, we would like to receive the specimens prior to April 1, in order to stay within our fiscal year. You may ship them collect.

I apologize for the rather long delay in committing funds, but there doesn't seem to be much I can do about it under our budget system.

Very truly yours

Harold A. Core

Harold A. Core, Instructor
Wood Products Engineering Dept.

HAC:my

P.S. Your letter arrived this morning while this one was being typed. I am sending a copy of this to Dr. Stern and will ask him to ship the specimens as soon as possible. We will need some type of bill from you.

In all probability, we would be interested in more specimens this summer.

HAC

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

July 12, 1962

AIR MAIL

Mr. Robert M. King
Smithsonian Institution
Canal Zone Biological Area
Drawer C
Balboa, Canal Zone

Dear Bob:

The air mail package with the preserved material of Swartzia arrived this morning in good condition. I am very grateful for your promptness in sending it. One thing I am curious about, although I do not need an answer immediately; is the preservative a cytological one? Thank you very much also for the letter which preceded the shipment.

There is very little to report from here, except that I am leaving for a three weeks vacation this weekend. We hope that you are enjoying your stay and that all you do will be successful.

With best regards,

Sincerely yours,

Dick

Richard S. Cowan
Associate Curator
Division of Phanerogams

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON 6, D. C.

THE GRADUATE COUNCIL

April 16, 1962

Dear Mr. King:

The committee appointed to consider your application to study under the direction of the Graduate Council has submitted its report to me and recommends that you be accepted for work leading to the General Examination.

Your Consultative Committee, composed of Dr. R. B. Stevens, Chairman, and Drs. L. S. Smith, Kittie Parker, R. S. Sigafoos, Caroline Adams, and R. N. Stewart, has specified the following fields on which your General Examination will be based:

1. Plant Taxonomy (Smith)
2. Compositae (Parker)
3. Plant Ecology (Sigafoos)
4. Plant Morphology (Adams)
5. Plant Cytogenetics (Stewart)

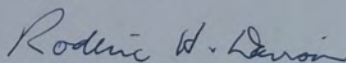
The committee reports that you must register for and complete with a grade of Satisfactory or better the following courses: Geology 128, and Statistics 91. They recommend that you include in your preparation for the General Examination the first courses in taxonomy, ecology, morphology, genetics, and plant physiology; and that you participate in the 200-level seminars each year as appropriate.

The committee further reports that you should take your first language examination in Spanish in January 1963, your second language examination in German in January 1964, and your General Examination as follows: - Part I in Spring 1964; Part II in January 1965, or earlier.

This acceptance is valid for registration for the Fall Semester, 1962-63, September 20-22. Please come to this office to register and my secretary will assist you.

Please feel free to call upon members of your committee and upon this office for any advice or information which you may desire.

Sincerely yours,



Roderic H. Davison,
Acting Dean of the Graduate Council

Mr. Robert M. King
1919 - 35th Place, N. W.
Washington 7, D. C.

YALE UNIVERSITY
SCHOOL OF FORESTRY
NEW HAVEN 11, CONNECTICUT

January 11, 1962

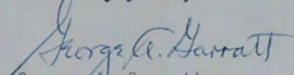
Dr. Robert M. King
Department of Botany
The University of Texas
Austin 12, Texas

Dear Dr. King:

Dr. Berlyn has brought your letter of January 4 to my attention, with reference to the payment of the wood samples you collected during your recent trip to Mexico. We will be pleased to have the total of 150 specimens, and I am asking the University Treasurer's Office to send you a check in the amount of \$150.00 to cover this number.

We will look forward to receiving the specimens after the determinations have been completed.

Sincerely yours,


George A. Garratt
Dean

GAG:bbc

cc: Prof. Berlyn

A PROPOSAL TO THE
NATIONAL SCIENCE FOUNDATION

Submitted by: The Florida State University
Department of Biological Science
Tallahassee, Florida 32306

Principal Investigator: Robert K. Godfrey
Professor and Associate Chairman of Department
(Telephone: 904-599-3135)

Title: Systematic Investigations in eastern North American
Eupatorium (Compositae).

Desired starting date: June 1, 1968

Proposed duration: Three years

Endorsements:

Robert K. Godfrey, Principal Investigator

Robert W. Hull, Chairman
Department of Biological Science

Russell J. Keirs, Director of Sponsored
Research
(Telephone: 904-599-2133)

RATIONALE

Eupatorium (Compositae) is a large genus, comprised of 400-800 species, mostly neotropical, but with some taxa in the temperate regions of both the New and Old Worlds. In the neotropics, estimates of the number of species varies greatly because of diverse interpretations of morphological similarity existing between certain presumed species, varying interpretations of morphological variability in some species groups, and because of differences of opinion as to the setting of generic limits.

Grant (1953) reckons there are 50-70 species in North America north of Mexico. For northeastern North America, 26 species are recognized by Fernald (1950) and 23 by Gleason and Cronquist (1963). Small (1933) recognizes 39 species for the southeastern United States not including exclusively tropical taxa in southernmost Florida. Radford et al (1964) treat 24 species for the Carolinas. Critical examination of interpretations of taxa by the foregoing authors reveals a considerable divergence of opinion as to what the taxa are and what their relationships are. This is largely consequent upon the fact that all published studies to date (in the area encompassed by these treatments) are based for the most part upon herbarium studies, field studies contributing to a much less degree and experimental investigations not at all.

The only systematic investigations in Eupatorium of which I know using techniques other than morphological analysis are those by Baker (see Baker, 1965, and included references) on a restricted number of Western American and tropical American taxa, chromosome counts by Grant (1953), chiefly for eastern American taxa, that of Fryar (1964, unpublished, under my direction, an explanation of which is recounted

briefly below) and biosystematic investigations involving four species in progress at this institution (Clewell and Wooten, personal communication).

In the late 1940's and early 1950's my own floristic field work in the southeastern United States included a great deal of field observation on Eupatorium in the Coastal Plain, the Piedmont, and the southern Appalachian Mountains. This was supplemented by study of a very large sample of herbarium material for the whole of eastern North America. At the time, I prepared a taxonomic revision for the Eupatoria of the area then decided to chuck it because it was based upon analysis of the same morphological criteria as hitherto employed. Thus it was but another person's interpretation when what seemed to be required was an analysis based upon different techniques. Subsequently, other matters were more pressing and until recently no attack was made upon the problem.

The Case of Eupatorium x pinnatifidum Ell., pro sp.

Very briefly, I shall explain the study of Fryar (1964), done under my direction, which exemplifies partially the kind of approach I wish to pursue in eastern North American Eupatoria more generally.

This was a study of hybridization between two perennial species of Eupatorium, E. perfoliatum L., boneset, and E. capillifolium (Lam.) Small, southern dogfennel. The range of the former is the wider but both occur in the Coastal Plain and Piedmont from southern New Jersey to eastern Texas. Often they occur intermixed on certain disturbed sites.

In respect to leaf and inflorescence characteristics, just to take two, the two species are remarkably different. E. perfoliatum has undivided, serrate perfoliate leaves (see fig. 3, plate I) and a definitely cymose inflorescence. E. capillifolium has much divided leaves (see fig. 1, plate I), the upper with narrowly filiform segments, and a very diffuse paniculate inflorescence.

The idea that they might hybridize had never occurred to me until I chanced upon a place where thousands of plants of each were growing together on newly created banks along about 3 miles of recently constructed highway in Taylor County, Florida. Growing amongst the two very distinct kinds of plants were thousands of individuals with intermediate leaves (see fig. 2, plate I) and inflorescences varying from cymose to paniculate. Thus was the idea generated that hybridization had occurred.

Twenty-four of the putative hybrids from the above mentioned assemblage were transferred to a garden plot and grown in isolation. At the proper time achenes were harvested and planted in greenhouse flats.

PLATE I

LOWER CAULINE LEAVES



2



3

Approximately 200 seedling progeny were produced, each eventually transplanted to and grown in pots. One hundred and seventy-eight survived and were analyzed for leaf morphology (amongst other things). From each plant one of the two opposite leaves were taken from the ninth node (above the cotyledonary node) and silhouettes of a leaf from each are shown on the several pages attached. This is a striking array and speaks for itself.

In order further to test the occurrence of this hybridity, we sought and found a place where E. perfoliatum and E. capillifolium were growing intermixed in significant numbers and where we could see no evidence of hybrids present. Large numbers of achenes were collected from each and planted. A control was run wherein achenes were collected from each species in places where each was growing in isolation. In the progeny obtained from the latter no putative hybrids were recovered. In the former, however, 8.9% of the progeny from E. capillifolium corresponded to the putative F_1 hybrid and 0.5% of the progeny from E. perfoliatum corresponded to the F_1 hybrid. The rather large difference in percent is attributed to the fact that the majority of flowers of E. perfoliatum were past anthesis when the majority of those of E. capillifolium were in full anthesis.

It is perhaps worth noting, for reasons which will be apparent below, that last autumn, four years later, the mixed population (with no hybrids evident) for which the progeny test was run and which yielded hybrids, is still going strong (it is mowed every winter) and still no hybrids are present.

While these tests were being run, we explored sites in a 300 mile transect across northern Florida into southern Alabama to make observations

bearing on this problem. We have numerous records of the occurrence together of the two species in question, all in sites subject to some disturbance. In most (but not all) instances, search revealed a single or a very few hybrid plants present in mixed populations of the two parents. We have records of a few instances where numerous hybrids were present in mixed populations of the two parents and in each of these instances the site was characterized by marked soil disturbance, i.e., looseness of the soil, as was the case on the roadside where the original large number of hybrids was seen.

Since hybridization between the two species, E. perfoliatum and E. capillifolium, would seem to be taking place so readily, the question arises as to why hybrid progeny are not present in greater numbers whenever the parents are intermixed. One can only presume that "hybrid seeds" are being produced but that they never make it beyond the seed or early seedling stage except where there is an open habitat with loose soil, other things being favorable.

In situations where conditions are favorable (initially) for "hybrid seeds" to grow and where they are present even in large numbers as on "our roadside", why does the process not continue so that introgressed populations are produced or so that the parental types become swamped? The answer seems to be that the available space in the habitat is rather quickly filled, these being robust perennial plants, and that no space remains available for development of plants of succeeding generations. Subsequently plant succession takes place wiping out the entire assemblage. It is apparent that such succession is taking place on "our roadside". This, then, is an instance in which plant succession, in effect,

is, over the long term, a barrier to continuation of the hybrid process and serves to keep the parental types pure.

A result of this investigation on the taxonomic side, is that three of the "species" of Eupatorium appearing in Small (1933) were shown to be hybrids or hybrid derivatives. One of them corresponds closely to dead center of the narrow range of variation of the F_1 individuals; one corresponds to a point in the variation to one side of center of the range of the F_1 individuals; one corresponds to several of the individuals to one side of center of the gamut of variation exhibited by the F_2 's.

In respect to chromosomes, we have verified Grant's (1953) count of $2n=20$ for both species, but we have not as yet analyzed meiotic chromosome behavior.

This rather lengthy (yet still abbreviated) account of hybridization involving some eastern North American Eupatoria is recounted to exemplify in some measure the kind of approach I wish to initiate more broadly. On the basis of cursory observations in the field I think it plausible that a considerable number of the varying interpretations of identities and relationships in the group can be resolved in this general manner.

PROPOSED RESEARCH

It is proposed to expand upon biosystematic investigations of eastern North American Eupatoriums, excluding the Joe-Pye weeds, E. purpureum and allies, and excluding the tropical forms which occur only in southernmost Florida.

As a first step, already commenced, we will search the field at least as far north as North Carolina,* for living plants of those kinds

* All of the kinds with which I anticipate working have sizable populations from North Carolina southward whether or not they occur farther north.

which seem to me to be, on a population basis as determined by some years of experience with Eupatorium, identifiable biological entities of some relatively stable kind. These will be placed in our field plots and/or in greenhouse culture and will form a pool of material for artificial crosses, general analysis, chromosome studies and the like. At the same time, in the field, we will search for the "odd-ball" kinds of plants likely to be useful in interpretive analyses resulting from experimental work.

During the autumn seasons, beginning next autumn, we will search the field for sites where taxa are occurring intermixed and in which on the basis of observations there is some evidence of hybridity or where there is evidence that some introgression may be occurring. Seeds will be collected in quantity and progeny tests run in the greenhouses. The results of such progeny tests may be very useful in interpreting both suspected hybridization in the field and in interpreting results of experimental work.

These are very general statements but may be considered to have significance as a modus operandi in the context of the biosystematic analysis described in the foregoing section.

Some specific problems which occur to me as being suitable initially for intensive investigation are as follows:

- 1) What I choose to call the E. rotundifolium complex including at least E. rotundifolium L., E. pubescens Muhl., E. cordigerum Fern., and E. pilosum Walt. These four have been variously interpreted as four species, one species comprised of two, three or four varieties, etc. Grant (1953) gives the chromosome numbers of E. rotundifolium, E. pubescens, and

E. pilosum as $n=30$ and for E. cordigerum as $n=40$. Interestingly, floristic botanists, e.g., Radford et al (1964), seem reluctant to accord any separate status at all to E. cordigerum. Geographically and physiographically, plants identifiable as E. rotundifolium and E. pilosum appear to have much the widest ranges, ranges which are nearly the same. Plants identifiable as E. cordigerum and E. pubescens have much narrower, nearly mutually exclusive, ranges within the overall ranges of the former two. One of Grant's counts for E. pubescens was $2n=40$; the plant used for the count may (or may not) have been misidentified. In any event, this would seem to be a favorable group for the kind of investigation envisaged.*

2) We have observed on disturbed sites a mixture of plants of E. compositifolium Walt., a dog-fennel type, similar to E. capillifolium in its general aspect, and E. semiserratum DC., a plant in general aspect comparable to E. perfoliatum. E. compositifolium is a plant of well drained coarse sands of longleaf pine ridges or old fields, E. semiserratum of wet sites, commonly on the margins of cypress ponds or depressions. Where they occur together putative hybrids sometimes occur. We are now starting to get material for subjecting this system to the same kinds of tests as for the earlier case described in the section above.

3) E. album L. vs. E. fernaldii Godfrey. E. album is another species of very wide range, in the southeast occurs in a wide variety of habitats on the Coastal Plain, the Piedmont, and in the mountains. In the mountains only there is a variant population, originally described by Fernald as a variety of E. album, later given specific status by me. It is

* I am aware that in Jackson (1966) it is reported that James D. Montgomery, Rutgers University, as of 1962, was engaged in a biosystematic study of the Eupatorium rotundifolium complex. If this study was indeed pursued I am not aware of its having been published. I will not, of course, launch a study of my own on this particular complex until I have checked on the matter. (See note interpolated between this page and the next.)

NOTE:

This note has reference to the footnote on the preceding page and is interpolated because I have heard from Dr. Montgomery via Clewell (personal communication) since the proposal was drafted and typed.

Dr. Montgomery did do a biosystematic study of the E. rotundifolium complex and is preparing a paper for publication. He states in his letter that the study involved E. rotundifolium, E. sessilifolium L.; E. vaseyi Porter and E. pilosum. One does not know from this whether or not the investigation may have involved plants referred to by some as E. cordigerum and E. pubescens. In any event, his work will have a bearing upon what I may choose to do, or not to do, in that particular group and it still remains either to examine Dr. Montgomery's dissertation or the published version.

apparently not recognized at all by Radford et al (1964). I am confident it has some kind of biological identity, population-wise, and I have only a suspicion that it may be a hybrid derivative of E. album and some other species. Grant did not have E. fernaldii material for chromosome examination. It will be interesting, as a start, to make the count and when getting material for that to make field observations for any clues which might lead to further investigation of its affinities on an experimental basis.

4) In the southeastern Coastal Plain there is a very puzzling complex of variation involving what have been called E. recurvans Small, E. mohrii Greene, and E. anomalum Nash (and perhaps other named forms). So far as I know, I am the only one who has ever attributed any taxonomic status to E. mohrii since it was described in 1901. Radford et al (op. cit.) sweep all this question of identities "under the rug of E. recurvans." Grant (op. cit.) using material furnished by me got these chromosome counts: E. recurvans, $2N=20$ and 30 ; E. mohrii, $2N=40$. He did not have E. anomalum. I am inclined to think the latter is an F_1 hybrid with E. mohrii as one of the parents. This suspicion is based upon its sporadic occurrence and its always being present with E. mohrii.

My colleagues, Dr. Margaret Y. Menzel and Dr. Andre F. Clewell, both are much interested in this project. Dr. Menzel has great expertise in cytogenetic procedures and analyses. She is eager to contribute in whatever manner seems feasible. Dr. Clewell has done much work in the cytotaxonomy of Lespedeza, is now engaged in a cytotaxonomic analysis of one Eupatorium group, is interested in joining me on other problems as we get them underway.

who is doing this work?

Dr. Werner Herz of the Florida State University Chemistry faculty, an organic chemist, interested in natural products, has been intensively investigating certain classes of compounds as they occur in members of the Compositae, species of Helenium, Iva, Ambrosia, Parthenium, Mikania, and others. He has just turned to Eupatorium and is beginning an analysis of terpenes in material furnished to him by me from our cultures of E. perfoliatum, E. capillifolium, and the F_1 hybrid between them, E. x pinnatifidum. He became interested in this because of chromatographic patterns the late Ralph Alston got from our material on some preliminary runs. Herz has a colleague in Germany to whom he will furnish extracts for structural analysis of the flavenoids from the same Eupatorium material. Moreover, Herz has expressed strong interest in using other material from our Eupatorium studies as we begin to know what will be especially suitable. We confidently expect the chemical data to be useful to our synthesis.

It is worthy of mention that plants of all of our eastern Eupatoriums, all perennials, are very easily transplanted. For all of them that we have transplanted we have had close to 100% survival and they grow vigorously either in the greenhouse or in the garden plots. Some species begin to bloom in mid-summer, others come into bloom from then until autumn. For the only six species we have tried, by rather simple manipulation we can force them into bloom at any time of year in the greenhouse. Seeds of the same six species germinate readily and quickly immediately after maturation and without a period of dormancy. On the other hand we can hold seeds in a cold room for half a year, at least, perhaps longer.

It is not intended to imply that all the research envisaged in this proposal can be accomplished in three years.

It is hoped that these investigations will help to clarify populational identities in the group in question; that evidence from chromosomes, from crossing experiments, from progeny tests, from analysis of ecological parameters, from interpretation of morphological traits, from chemical data, all will contribute to an understanding of genetic affinities and to understanding of distribution. Whether or not, if some of this is realized, any generalizations of wider applicability may be derived remains to be seen.

FACILITIES

Our Department has fully adequate herbarium facilities, an associated cytology laboratory with excellent optical equipment, and the necessary greenhouse and outdoor garden space conveniently located. Two men are employed by our Department for greenhouse and garden care and maintenance. Their services will be available for general care of our stocks but students will have to be employed specially to make the progeny tests or to make artificial crosses.

CURRENT SUPPORT

I do not have any current grant support and I do not have any other applications pending.

REFERENCES CITED

- Baker, H. G. 1965. Characteristics and modes of origin of weeds. In *The Genetics of Colonizing Species*. Ed. by H. G. Baker and G. Ledyard Stebbins. Academic Press. New York.
- Fryar, William R. 1964. Natural hybridization between two perennial species of *Eupatorium* (Compositae). Unpublished Master's Thesis. Florida State University.
- Gleason, Henry A. and Arthur Cronquist. 1963. *Manual of vascular plants of northeastern United States and adjacent Canada*. D. Van Nostrand Co., Inc. New York.
- Grant, William F. 1953. A cytotaxonomic study in the genus *Eupatorium*. *Am. Jour. Bot.* 40: 729-742.
- Radford, Albert E., Harry E. Ahles and C. Ritchie Bell. 1964. *Guide to the vascular flora of the Carolinas*. The Book Exchange, University of North Carolina. Chapel Hill.
- Small, J. K. 1933. *Manual of the southeastern flora*. University of North Carolina Press. Chapel Hill.

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PERSONAL INFORMATION

ROBERT K. GODFREY

Professor, Curator of Herbarium, Associate Chairman, Department of Biological Science, Florida State University.

Born: 29 August 1911

A.B. Maryville College, Maryville, Tennessee (Biology), 1936.

M.S. North Carolina State College (Plant Ecology), 1938.

M.A. Harvard University (Botany), 1940.

Ph.D. Duke University (Botany), 1952.

Positions:

Assistant Professor of Botany, North Carolina State College, 1947-54.
Botanist, (Plant Explorer in Turkey and South Africa), Plant Introduction Section, U.S.D.A., 1952-53.

Associate Professor of Botany, Florida State University, 1954-59.

Professor of Botany, Florida State University, 1959 -

Acting Head, Department of Biological Science, Florida State University, 1962-63.

Associate Chairman, Department of Biological Science, Florida State University, 1963 -

Section Head, Environmental and Systematic Biology, National Science Foundation, 1966-67 (on leave of absence from FSU).

Society Memberships:

American Association for Advancement of Science (Fellow), American Institute of Biological Sciences, American Society of Plant Taxonomists, Association of Southeastern Biologists, Association for Tropical Biology, Botanical Society of America, Phi Sigma, International Association for Plant Taxonomy, Sigma Xi, Society for the Study of Evolution, Society of Systematic Zoology.

Selected Publications:

Godfrey, R. K. 1952. *Pluchea*, section *Stylimnus*, in North America. Jour. Elisha Mitch. Sci. Soc. 68: 238-271.

Kral, R. and R. K. Godfrey. 1958. Synopsis of the Florida species of *Cacalia*. Quart. Jour. Fla. Acad. Sci. 21: 193-206.

Robinson, Harold and R. K. Godfrey. 1960. Contribution to the bryophyte flora of Turkey. Revue Bryologique et Lichenologique 29: 244-253.

Godfrey, R. K. 1961. *Liatris provincialis*, sp. nov., (Compositae), endemic in western Florida. Am. Midl. Nat. 66: 466-470.

Adams, Preston and R. K. Godfrey. 1961. Observations on the *Sagittaria subulata* complex. Rhodora 63: 247-266.

Godfrey, R. K. and H. Larry Stripling. 1961. A synopsis of Pinguicula (Lentibulariaceae) in the southeastern United States. Am. Midl. Nat. 66: 395-409.

Godfrey, R. K., Grady W. Reinert and Richard D. Houk. Observations on microsporocarpic material of Azolla caroliniana. Am. Fern Jour. 51: 89-92.

Kurz, Herman and R. K. Godfrey. 1962. Trees of northern Florida, University of Florida Press, Gainesville.

Reinert Grady W. and R. K. Godfrey. 1962. Reappraisal of Utricularia inflata and U. radiata (Lentibulariaceae). Am. Jour. Bot. 49: 213-220.

Godfrey, R. K. and Preston Adams. 1964. The identity of Sagittaria isoetiformis (Alismataceae). Sida 1: 269-273.

— and Andre F. Clewell. 1965. Polygamodioecious Leitneria floridana (Leitneriaceae). Sida 2: 172-173.

Some papers based upon theses or dissertations by students of R. K. Godfrey:

Kral, Robert. 1960. A revision of Asimina and Deeringothamnus (Annonaceae). Brittonia 12: 233-278.

Henderson, Norlan C. 1962. A taxonomic revision of the genus Lycopus (Labiateae). Am. Midl. Nat. 68: 95-138.

Mitchell, Richard S. 1963. Phytogeography and floristic survey of a relic area in the Marianna Lowlands, Florida. Am. Midl. Nat. 69: 328-366.

Dissertations as yet unpublished:

Houk, Richard D. 1966. An experimental taxonomic study of the Sagittaria subulata complex. Doctoral dissertation, the Florida State University.

McDaniel, Sidney. 1966. A taxonomic revision of Sarracenia (Sarraceniaceae). Doctoral dissertation, The Florida State University.

PROPOSED BUDGET

	NSF				FSU			
	1st yr. \$	2nd yr. \$	3rd yr. \$	Total \$	1st yr. \$	2nd yr. \$	3rd yr. \$	Total \$
A. Salaries								
Principal Investigator	--	--	--	--	1,000	1,050	1,102	3,152
5% time, academic years								
100% time, summers	4,444	4,666	4,900	14,010	--	--	--	--
(2/9 of \$20,000 with 5% increment 2nd, 3rd yrs.								
Teacher Retirement, 6.25%	278	292	306	876	63	66	69	198
Research Assistant								
50% time, calendar yrs.	3,000	3,000	3,000	9,000	--	--	--	--
Student Assistant								
Hourly, calendar yrs.	780	780	780	2,340	--	--	--	--
B. Capital Equipment	--	600	--	600	--	--	--	--
Herbarium cases (3)								
C. Expendable Supplies	300	300	300	900	--	--	--	--
Postage, herbarium supplies, greenhouse supplies								
D. Travel	1,500	400	--	1,900	--	--	--	--
Field expenses, 10¢/mile per diem \$10/day								
E. Publication costs	--	--	200	200	--	--	--	--
TOTAL DIRECT COSTS	10,302	10,038	9,486	29,826	1,063	1,116	1,171	3,350
F. Indirect costs	3,753	3,854	3,961	11,568	456	479	503	1,438
(45.63% S/W excl. fringe benefits)								
G. TOTAL ESTIMATED COSTS	14,055	13,892	13,447	41,394	1,519	1,595	1,674	4,788

BUDGET EXPLANATION

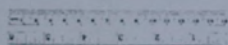
It will be abundantly evident that the past few years have been lean for me research-wise, apart from keeping pace with some graduate students working with me. As of the current academic year, however, we are on nine month contracts and I can count on three summer months free of other duties. Moreover, I have a segment of approximately 15% time during the academic year for research again.

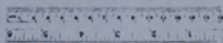
The graduate research assistant is essential for help in analyses, for making artificial crosses, and for chromosome studies. The undergraduate assistant will provide the necessary help in the plots and greenhouse, beyond that supplied by departmental nurserymen, specially for running progeny tests.

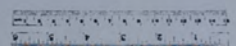
Field expenses are for collecting the necessary living plants, seeds, etc.

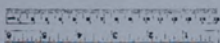
NOTE:

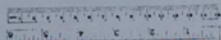
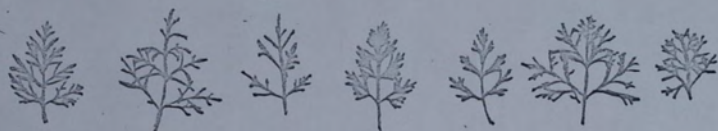
The following five pages show an array of leaf silouettes, originally prepared from photographs of actual leaves and here poorly reproduced by Xerox, from 170 progeny of E. x pinnatifidum. Each leaf was taken from a separate individual plant, from the ninth node above the cotyledonary node. See pp. 3-4.











SMITHSONIAN INSTITUTION
CANAL ZONE BIOLOGICAL AREA

ESTABLISHED BY ACT OF CONGRESS
(FORMERLY BARRO COLORADO ISLAND BIOLOGICAL LABORATORY)

DRAWER C, BALBOA, CANAL ZONE
August 22, 1962

Mr. Robert King
c/o Instituto Interamericano de Ciencias
Agrícolas de la OEA
Turrialba, Costa Rica

Dear Mr. King:

Enclosed is a letter which I opened as per your instructions.
Since it is a personal note, I am sending it to you.

I have not received any instructions yet as to the manner
of mailing the package you left; therefore, it is still in our
office.

I am very sorry that we have not sent the letter of author-
ization, but Dr. Haynham ~~did~~ not wish to take the responsibility
in case of an accident. In this connection, he has asked me to
tell you that he is willing to authorize you \$3.00 per day for 7 days for
a jeep or the equivalent sum of \$21.

I hope that your trip to Costa Rica has been a profitable
and enjoyable one.

Sincerely yours,

Adela Gomez
Adela Gomez
Administrative Officer *ife*

December 29, 1966

AIR FORM

Dr. Satoshi Nakanishi
Biological Laboratory
Faculty of Education
Kobe University
Sumiyoshi-cho
Kobe, Japan

Dear Nakanishi:

Thank you for your letter of December 21.

I am sorry to hear that you have dropped your application. I think you had at least an even chance to get one. However, you can apply in the future when it is more convenient to come.

I have been very busy finishing a popular book on North American lichens. It has taken much time.

Yoshimura was here for two weeks this fall studying Cladonias. Kurokawa leaves at the end of January.

Best wishes for the New Year.

Sincerely yours,

Mason E. Hale
Curator
Division of Cryptogams

MEHale:eps

PAR AVION

航空郵便



Dr. Mason E. Hale

Smithsonian Institution,
Washington, D. C. 20560,
U. S. A.

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Second fold here

First fold here

Digitized by Hunt Institute for Botanical Documentation

差出人住所氏名

Sender's name and address..... Satoshi Nakanishi

Biological Laboratory,

Fac. of Education, Kobe Univ.,

Sumiyoshi-cho, Kobe,

Japan

この郵便物には なにも入れたりはりつけたりすることができません

Nothing may be contained in or attached to this letter.

To open cut here

Dec. 21, 1966

Dr. Mason E. Hale
Smithsonian Institution,
Washington, D. C. 20560
U. S. A.

Dear Dr. Hale:

I recieved the application form for the Postdoctoral Visiting Research Associateship sponsored by the Smithsonian Institution on last month.

I should like to express my thanks for your kind help.

After due careful consideration on various matters, I decided not to apply to the Associateship for 1967-1968.

I am very sorry that I can't profit by your kind offer. It is the main reason that I could not get four Respondents in Japan, who were adequate to my application for the Associateship.

In next year 1967, I will have to manage to hold the Japanese Botanical Meeting at Kobe University, and also to conduct well some troublesome problems risen in retiring the Professor of our Biological Laboratory. So, I won't be able to stay away in next year.

I hope to go to America by my money in or after 1968.

My very best wishes for a good 1967!

Sincerely yours,

Satoshi Nakanishi

Satoshi Nakanishi
Biological Laboratory,
Faculty of Education,
Kobe University,
Sumiyoshi-cho, Kobe,
Japan



INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS DE LA OEA

El Instituto es un organismo especializado de la Organización de los Estados Americanos. Fue establecido por los Gobiernos de las Repúblicas Americanas en 1944 para promover su desarrollo económico y social a través de la educación y la investigación.

OD/11
Centro Tropical de Investigación
y Enseñanza para Graduados

Cable: AGROEA - Turrialba
TURRIALBA, COSTA RICA

Agosto 8, 1962

Señor Robert M. King
Canal Zone Biological Area
Smithsonian Institution
Drawer C
Balboa, Canal Zone
Panamá

Estimado señor King:

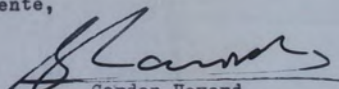
En atención a su carta del 2 de agosto del año en curso, me complace manifestarle que gustosamente recibiremos su visita en este Instituto.

En cuanto a su consulta, me permito comunicarle que aquí disponemos de facilidades de alojamiento al precio de \$1,00 por noche y existe un servicio de cafetería donde se paga al costo.

Aprovecho la oportunidad para recomendarle que al llegar a San José se comunique con nuestra oficina en ésta, directamente con el señor Armando Calzada (teléfonos 6582 - 4956) y una vez en Turrialba se ponga en contacto con el Dr. Eddie Echandi.

De usted muy atentamente,

SACSA
2 cuadras al
Sur del Hotel Mendocino Building
Balmoral


Gordon Havord
Director

2 blocks north
6 blocks east



REPUBLICA DE PANAMA
MINISTERIO DE RELACIONES EXTERIORES

Se hace constar que el señor ROBERT MERRIL KING,
es natural de Estados Unidos de América.

Se solicita a los Inspectores de Migración que le
brinden las facilidades para salir del país, por la
frontera de Costa Rica.

Este documento debe entregarse al Inspector de Mi-
gración cuando el portador salga del país para su envío
al Departamento que lo expidió.

Este Certificado es válido por seis meses.

Pasaporte estadounidense N° B 343781

Alfonso Herrera y Franco
Alfonso Herrera y Franco
Director del Departamento de Migración
y Naturalización.

Panamá, 16 de julio de 1962.

gp.

Mariano Gutierrez
Heredia, Costa Rica

Son of a lawyer. Lives near the Cathedral
in front of a movie yellow house.

Danania, Rep. de Danania
Calle José Domingo Espinosa N° 16

Jorge A. Zambrano

Digitized by Hunt Institute for Botanical Documentation

Jorge A. Zambrano
Calle José Domingo Espinosa N° 16
Danania, Rep. de Danania

Jorge A. Zambrano
Calle José Domingo Espinosa N° 16
Danania, Rep. de Danania

The New York Botanical Garden

BRONX PARK • NEW YORK 58 • NEW YORK • LU 4-8500

6 February 1962

Mr. Robert M. King,
1919 35th Place N.W.,
Washington 7, D.C.

Dear Bob,

Glad to know everything arrived in good shape. The repacking was necessary because some of the packages were overweight. I paid the postage and, as you may have noted from the meter stickers, the total came to nearly \$17, slightly over the \$15 I had allotted. Forget the difference; let's just consider it interest on an amount long overdue!

I'm also glad to know that your initial contacts at the National Herbarium have been favorable. Do remember, though, Bob, that as time passes and your familiarity with the place increases you will undoubtedly find details of procedure and personal idiosyncrasies which will not entirely be to your taste. This happens everywhere; there is no utopia. I would hope that you will find it possible to suppress your criticisms and concentrate on the positive advantages of your present opportunities.

We are glad to know that a set of plants is forthcoming. I should also like to welcome you back for study any time.

We collected about 2200 numbers in Amapá in '61: ca. 300 on the Jarí (ca. 650 were lost) and the rest on the Araguaí, the latter material having just arrived last week. Because of the vacuum left by Egler's death and the troubled political situation in Brazil in recent months, we have decided not to send out an expedition

this year. However, Murça Pires will do 2 - 3 months field work on the Amapá savannahs for us. Meanwhile we are making inroads into the enormous accumulation of material that has piled up from previous expeditions.

Once the Guayana program has reached its conclusion I shall proceed with my plans for work on the Planalto of central Brazil.

I understand from Bill Turner that you will be working with Kitty Parker. I would be interested in knowing what project you formulate and what, if any, course work you will be doing. Although my plans are not yet firm, I intend to visit Washington in early spring. Hope to see you then.

Cordially,

Howard
H. S. Irwin,
Research Associate

UNIVERSITY OF ILLINOIS
DEPARTMENT OF BOTANY
URBANA, ILLINOIS

February 7, 1962

Mr. Robert Merrill King
The University of Texas
Austin, 12, Texas

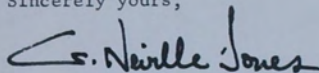
Dear Mr. King:

This is to acknowledge with thanks the duplicate sheet of Tilia mexicana Schlecht. which you have kindly sent me. I am very glad to accept this specimen for the herbarium of the University of Illinois and to have the opportunity of citing it in my forthcoming monograph.

Tom Soderstrom tells me that you may be going to Chiapas this summer and that I might suggest to you that if you are able to find any duplicate specimens of ferns for exchange or sale, I shall be very glad to receive them.

With personal regards, I am

Sincerely yours,



G. Neville Jones
Professor of Botany and
Curator of the Herbarium

GNJ:gk

Sand and Sage Motel

TELEPHONE FE 2-9496 -- U. S. HIGHWAY 80 -- ODESSA, TEXAS

Air Conditioned, TV, Telephone, and Swimming Pool
YOUR HOME ON THE ROAD

Aug 23, 1961

Dear Bob,

In the turmoil of getting
on this trip, I forgot to
write you.

Sorry to inform you
that I can't offer anything
definite on the Mexican
quest. My money is
going entirely too fast.

We hope that you'll
be able to continue
your Mexican work and
hope to be able to
help in some capacity.

Sincerely,

Oliver S. Miller

The Department of Botany
The University of Texas
Austin 12, Texas
December 18, 1961

Dr. Harold E. Moore, Jr.
L. H. Bailey Hortorium
Cornell University
Ithaca, New York

Dear Dr. Moore:

Dr. Turner has shown me some correspondence relating to the position of curator in your herbarium.

I would be very much interested in making application for such a position but would like to know some additional details concerning my responsibilities. I already have a M.S. degree in botany from the University of Michigan where I worked under the direction of Dr. Rogers McVaugh. I would like to continue on and work for a Ph. D. specializing in plant taxonomy. My interests are in the tropics, especially in Compositae, Cactaceae, Loranthaceae, and Palmae.

I wonder if perhaps it would be possible to work as curator in the herbarium part time and also work toward a Ph. D. This past year I have acted as assistant curator in the University of Texas Herbarium. My duties were probably very much the same as would be expected of me at Cornell. I handled all of the exchange and loan records, accessioned material, correspondence and routine determinations.

If you have any suggestions or think of some possible arrangement, I would appreciate hearing from you.

Very sincerely yours,

Robert M. King

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

DEPARTMENT OF BIOLOGICAL SCIENCES
GOLETA, CALIFORNIA

May 5, 1961

Mr. Robert M. King
University of Texas Herbarium
The University of Texas
Austin 12, Texas

Dear Mr. King:

Your specimens have been received and named as follows:

4443. *Quercus crassifolia* H. & B.
4444. *Q. cressipes* H. & B.
4527. Not Fagaceae
4534. *Q. polymorpha* S. & C.
4535. *Q. fusiformis* Small
4543. *Q. canbyi* Trel.
4556. *Q. prinopsis* Trel.
4557. *Q. prinopsis* Trel.
4564. *Q. fusiformis* Small

I am very glad to have this material and hope you will remember my interest in Quercus on the occasion of your future field activity.

Sincerely yours,

C. H. Muller

C. H. Muller
Professor of Botany
Curator of the Herbarium

CHM:ahp

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
UNIVERSITY, CALIFORNIA

DEPARTMENT OF BIOLOGICAL SCIENCES

May 31, 1961

Mr. Robert M. King
The Herbarium
University of Texas
Austin 12, Texas

Dear Mr. King:

✓
Your collection no. 4016 is Quercus oleoides S. & C. I had the privilege of collecting it in precisely the same locality, which happens to be the type locality of the synonymous Q. tropicae Berl.

Sincerely yours,

C. H. Muller

C. H. Muller
Professor of Botany
Curator of the Herbarium

CHM/jef

*answered
6/12/61*

UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS 14

DEPARTMENT OF BOTANY

Jan. 10, 1962

Mr. Robert M. King
Dept. of Botany
University of Texas
Austin 12, Texas

Dear Mr. King:

Thank you for sending me the two additional specimens of Mexican Cirsium. I have studied them but am not entirely satisfied yet as to their identities.

King No. 5130. This undoubtedly belongs to Petrak's sect. Erythrolaena subsect. Conspicua, but I cannot convince myself that it is any of the six or so described species of this subsection. However, I do not have adequate comparison material of all these species. You might send out your duplicates as:

Cirsium conspicuum (Don) Schz. Bip. alliance.

I want to give this group some intensive study later on.

King No. 5213. Cirsium subcoriaceum (Less.) Schz. Bip. The specimen sent has no developed corollas so I can not check to see if the limb of the corollas is split nearly to the base (i.e., in this species the limb which is several times longer than the tube is split into lobes nearly to its juncture with the tube). If any of your specimens have corollas, you can check this feature in a matter of seconds. My determination is made on involucre and foliar characters and these match my reference specimens quite well.

Perhaps Dr. Turner told you that I borrowed all of the Mexican specimens of Cirsium on deposit ~~and~~ at the University of Texas when I visited the department last summer. I am still looking at these.

Sincerely yours,

Gerald B. Ownbey
Gerald B. Ownbey

G.B. Ownbey
UNIVERSITY OF MINNESOTA
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS
MINNEAPOLIS 14
DEPARTMENT OF BOTANY



Mr. Robert M. King
Dept. of Botany
University of Texas
Austin 12, Texas

King and Soderstrom
#4828

ANNOTATION LABEL

Phoradendron reichenbachianum (Seem.) Oliver
Host seems unusual.

DEL WIENS, 19.62

King and Soderstrom
#5072

ANNOTATION LABEL

?? Phoradendron reichenbachianum (Seem.)
basal portion of branch needed for Oliver
final identification to determine
presence of cataphylls.

DEL WIENS, 19.62

King and Soderstrom
#5163

ANNOTATION LABEL

Phoradendron velutinum (DC.) Nutt.

DEL WIENS, 19.62

King and Soderstrom
#5174

ANNOTATION LABEL

Arceuthobium vaginatum (HBK) Eichler

DEL WIENS, 19.62

King & Soderstrom
#4662

ANNOTATION LABEL

Phoradendron carneum Urban

DEL WIENS, 19.62

Monday, July 16, 1962

Dear Bob:

I received a telephone call from Dr. Hodge Friday in which he said the committee had not turned down my proposal, but wanted parts of it re-written and turned in again. He wanted me to send him a letter withdrawing ~~this~~ ^{the} proposal - which I sent him yesterday. In other words, he didn't want any ^{record} ~~record~~ for the proposal on the books, thus the telephone call rather than a letter.

The 2 chief objections were ① they wanted the proposal to run for 2 rather than 3 years; ② they wanted the cytogenetic angle of the proposal de-emphasized and the ~~straight~~ ^{classical} morphological approach emphasized because they felt that Pectis chromosomes ~~were~~ ^{were} not ^{part of the} particularly important to the problem and because neither you nor I were trained to do the cytological work. Altho I had stated that this ^{part of the} work would be done under the direction of Dr. Stewart, I hadn't cited any publications ~~of that nature~~ for him. Since Pectis had been done for the U. Am. Flora by Rydberg & by Asa Gray, they

that my chief contribution to the genus would be ~~to~~ the So. Am. species + that 2 years was enough.

I will now rewrite the same thing + submit it by Sept. 15th. In as much as ^{the} money will not be available from it if granted, which I rather think it will be or they wouldn't have taken the trouble to tell me how to fix it up to make it acceptable) until about Jan. (I'm just guessing at the time but ~~at~~ least it won't be available in time for registration in Sept.). you had better save your money so you will be able to register the first reuester on your own. Since you have all the dope, you will know how much it will take, or if you don't have it there, I could look it up for you.

Both of the reprints - from Sheffs Heiser have come. Wish you were here to drop them a "Thank you" note. I guess Heiser isn't there ^{anymore}.

Drop Dieter a note if you have time. He is looking for one.

It sounds like you had a mighty nice plane ride down there. Hope you can get into the back country. How is the Spanish studying coming?

I wonder which species of Pectis it is growing in the downtown area there? There are at least 5 species in Panama - Pectis bonplandiana, capillaris, elongata, grandiflora, swartziana. Be sure + get some mature seed if possible. Have you been able to send Dr. Turner any birds to count get of many combs? Be sure + send him birds of that Pectis + any other sp. of Pectis you may find.

your friend

Dr. Linda left Wed. driving to Seattle with Jessie Shaw's daughter, Linda, and two other girls. Dr. Cowan left Sat. for 3 weeks vacation with his parents in Florida. Ken left Thurs. for a month in Alaska so Jim all alone + I don't like it at night.

Bob King

July 2, 1962

Dr. Peter H. Raven
Curator and Taxonomist
Rancho Santa Ana Botanic Garden
1500 North College Avenue
Claremont, California

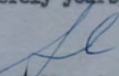
Dear Dr. Raven:

In answer to your letter of June 29th, requesting seeds of Jussiaea natans from Barro Colorado Island, I am pleased to advise you that there is a botanist currently employed in the Canal Zone Biological Area who should be able to secure the material you need.

A copy of your letter and of this reply shall be sent to our Balboa office today, followed by a mounted specimen of Jussiaea natans from the U. S. National Herbarium for reference purposes.

If, by any chance, you do not hear from the Canal Zone in a month's time, please do not hesitate to write again to this office.

Sincerely yours,


Susan Colby, Secretary to
Remington Kellogg
Assistant Secretary

cc: CZBA ✓
Dr. Cowan
SI Files

SColby:sc

L. CARMICHAEL

JUL -2 1962

RANCHO SANTA ANA BOTANIC GARDEN
1500 North College Avenue • Claremont, California

LEX W. LANE
DIRECTOR

PHILIP A. MUNE
DIRECTOR EMERITUS

29th June 1962

Dr. Leonard Carmichael, Secretary
Smithsonian Institution
Washington 25, D. C.

Dear Dr. Carmichael,

I am anxious to obtain seeds of living plants of Jussiaea natans, which grows abundantly in the water at Barro Colorado Island, and hence I am wondering if you could make any suggestion as to who might be there or might be going there and be in a position to obtain some of this plant for me. If a few stems were put in a plastic bag and sent here by air, there would be no difficulty whatever in propagating them, and as I say, it has been collected there so many times that I am sure it must be common locally.

Thank you very much for your kind help in this matter.

Very sincerely,

Peter H. Raven

Peter H. Raven
Curator and Taxonomist

July 16, 1962

Dear Bob,

Heard from Shinner today as follows:

Dear Miss Colby;

Yes, we did indeed receive Mr. King's specimens. There were three cartons, shipped by railway express on May 31. Two reached us the second week in June, the other followed a week later. I still haven't gotten around to opening them, but knowing the quality of his work, I have turned in a purchase order for the lot. It will take 1 or 2 weeks to get to you.

I have taken the liberty of giving Mr. King's address as in care of yourself. Perhaps we might impose on you still further by asking you to mail the invoices with order number as specified by our order department -- no need to try to reach him in Panama. Send these to our Order Department, not to me. I have noted on the requisition that the material has already been received. I also noted that it was a personal order with Mr. King, not with the Smithsonian. I trust they will get it straight this time. I have on occasion had trouble because the check was made out to the department instead of the person.

With many thanks for your trouble,

Sincerely yours,

Lloyd H. Shinnars

Bob -- will take care of this so don't worry about it. Have attached an extra copy of my original letter of inquiry to Shinner.

See
P.S. - Tom is writing to you
today (I think).

July 9, 1962

Dr. Lloyd H. Shinnars
Herbarium
Southern Methodist University
Dallas 5, Texas

Dear Dr. Shinnars:

Prior to his departure for Panama, where he will be employed for the summer by the Smithsonian Institution, Mr. Robert King requested that I ascertain from you whether or not the plants which were forwarded to you earlier in the year have been received. It is my understanding that the specimens were mailed to you several months ago and that Mr. King will want to put a "tracer" on the shipment if it has gone astray.

For your convenience in replying, I shall enclose a franked addressed envelope.

Sincerely yours,

Susan Colby, Secretary to
Remington Kellogg
Assistant Secretary

Enclosure

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

May 3, 1961

Mr. Robert M. King
The University of Texas
Austin 12, Texas

Dear Mr. King:

After writing you I tried your bromels and begonias and found them quite easy except for one begonia which may be new. The list is as follows:

- 4147 Tillandsia deppeana Steud. var. deppeana
4191 Tillandsia fasciculata Sw.
4196 Tillandsia recurvata (L.) L.
4235 Begonia nelumbiifolia Schlecht. & Cham.
4281 Tillandsia schiedeana Steud.
4286 Tillandsia schiedeana Steud.
4287 Aechmea mexicana Baker
4315 Begonia franconis Liebm.
4333 Begonia
4411 Tillandsia dasyliiriifolia Baker
4415 Tillandsia dasyliiriifolia Baker
4440 Pitcairnia ringens Kl. ex Lk., Kl. & Otto
4442 Tillandsia usneoides (L.) L.
4460 Tillandsia recurvata (L.) L.
4533 Tillandsia recurvata (L.) L.

Sincerely yours,

Lyman B. Smith

Lyman B. Smith
Curator
Division of Phanerogams

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

June 8, 1961

Mr. Robert Merrill King
Department of Botany
University of Texas
Austin 12, Texas

Dear Mr. King:

The four specimens you sent me recently are:

- 3836 *Tillandsia recurvata* L.
3851 *Begonia franconis* Liebm.
3903 *Tillandsia schiedeana* Steud.
4031 *Tillandsia polystachia* L.

Sincerely yours,

Lyman B. Smith

Lyman B. Smith
Curator
Division of Phanerogams

answered
June 19, 1961

Determinations of grasses, 12 Jan. 1961 : King and Soderstrom colls., Michoacán

- 4905 Elyonurus tripsacoides Humb. & Bonpl.
 31 Eragrostis maypurensis (H.B.K.) Steud.
 5014 Bromus laciniaatus Beal
~~5178~~ Bromus exaltatus Bernh.
 4780 Bromus cernuus Swallen
 Described in 1958. We have only 6 specimens, from Jalisco and Michoacán. A very good find.
- 4751a Muhlenbergia tenella (H.B.K.) Trin.
 This was just a single plant that got mixed in with 4751.
- 4587 Muhlenbergia implicata (H.B.K.) Kunth
 5181 Bromus sp. nov.
 4808 Muhlenbergia tenella (H.B.K.) Trin.
 4833 Zeugites smilacifolia Scribn.
 5177 Trisetum deyeuxioides (H.B.K.) Kunth
 4585 Aristida adscensionis L.
 5071 Aristida schiedeana Trin. & Rupr.
 4796 Aristida hintoni Hitchc.
 New record for Michoacán. We have 5 specimens of this species described in N. Amer. Flora (1935): 3 Hinton colls. from Mexico state and 1 from Guerrero, and 1 Matuda coll. from Mexico state. We picked it up twice.
- 4888 Aristida hintoni Hitchc. (see above notes)
 4748 Aristida orcuttiana Vasey
 5106 Agrostis thyrsgera Mez
 New record for Michoacán. We have several specimens from Mexico state, 1 from Morelos. A rare species.
- 5166 Agrostis perennans (Walt.) Tuckerm.
 5015 Agrostis semiverticillata (Forsk.) C. Christ
 5151 Stipa virescens H.B.K.
 5132 Stipa virescens H.B.K.
 5159 Peyritschia koelerioides (Peyr.) Fourn.
 New record for Michoacán. An uncommon species. Monotypic (I think, however, it may belong to Trisetum rather than remain generically distinct, but that will wait for my revision of Trisetum which I'm working on now -- Central Amer. species)
- 4910 Aristida orizabensis Fourn.
 4619 Aristida ternipes Cav.
 4618 Pereilema crinitum Presl
 4778 Paspalum jaliscanum Chase
 We have only 5 specimens of this, 1 from Michoacán
- 4715 Paspalum squamulatum Fourn.
 5016 Paspalum tenellum Willd.
 5057 Paspalum squamulatum Fourn.
 4603 Paspalum hartwegianum Benth.

Determinations of Lyman B. Smith, 12 January 1962. King and Soderstrom colls.
Michoacán, Mexico

5133	<i>Tillandsia prodigiosa</i> (Lem.) Baker
4896	<i>Tillandsia prodigiosa</i> (Lem.) Baker
4819	<i>Tillandsia schiedeana</i> Steud.
5635	<i>Tillandsia chaetophylla</i> Mez
27	<i>Tillandsia caput-medusae</i> E. Morr.
4851	<i>Tillandsia fasciculata</i> Sw. var. <i>fasciculata</i>
4952	<i>Tillandsia fasciculata</i> Sw. var. <i>venosispica</i>
4869	<i>Pitcairnia micheliana</i> André
4963	<i>Begonia</i> n. sp.? aff. <i>extranea</i> S. & S. flowers needed
4726	<i>Begonia monoptera</i> Link & Otto
4758	<i>Begonia gracilis</i> H.B.K.
5201	<i>Begonia gracilis</i> H.B.K.

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Incidentally, change the spelling on no. 5017 to *Zeugites smilacifolia* Scribn.
I wrote it erroneously as *smilacinifolia*. Hope it has not already
been typed.

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

February 11, 1961

Dr. Robert M. King
Curator
Herbarium
University of Texas
Austin 12, Texas

Dear Dr. King:

I am sorry to have been so remiss in answering your letter of January 23, 1961 and your postal card of February 6, 1961. I have been away from my desk for a rather long period and have only recently returned to answer my awaiting correspondence.

I appreciate the list of identifications included in your letter of January 23rd and your concern about the quality of samples supplied. In this regard I can say that the material which we received from you and Mr. Diboll was quite satisfactory and that we would be pleased to receive similar material any time in the future.

I was somewhat concerned, however, with the names on the list; that is, the proofreading was apparently rather casual and the resulting errors somewhat disturbing to me. It was necessary for me to check carefully each entry. I would call to your attention as examples Nos. 2685, 2763 and 2782. In the future, I would appreciate it if you could arrange for a more careful proofreading of lists. I do not mean to be ungrateful, but having to proofread a list from a taxonomist necessarily increases my work, and decreases the accuracy of our records.

As I have suggested above I would appreciate any wood samples you may be able to collect for us in the future. However, my situation here has certain drawbacks over my position at Yale: namely, that I cannot easily supply you with funds for collection in advance. However, if I know how much you will charge for a given collection, I can usually arrange for payment after the samples have been received. This is one of the peculiarities of Government finances.

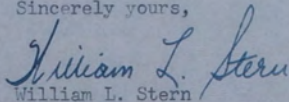
Yes, Mr. Diboll included two specimens the numbers of which do not appear on your list; however, I have been able to get the

Dr. Robert M. King, February 11, 1961, page 2

determination of No. 2461 from our herbarium records. I would appreciate the determination for No. 3113 which I cannot obtain here. In examining your list and comparing it with my specimens I find the following numbers still lack identifications: 2662, 2668, 2731, 2753, 2760, 2849, 2874, 2876, 2877, 2884, 2894, 2896, 2908, 2959, 3034, 3250, 3259. At your convenience, I would appreciate names for these numbers when they are available.

Please accept my best wishes for a successful collecting trip in Mexico. I hope you receive this letter before you return to Texas.

Sincerely yours,

A handwritten signature in cursive script that reads "William L. Stern". The signature is written in dark ink and is positioned above the printed name and title.

William L. Stern
Curator
Division of Woods

May 2, 1961

Dr. William L. Stern
Division of Woods
United States National Museum
Smithsonian Institution
Washington 25, D. C.

Dear Dr. Stern:

Under separate cover, last week I sent you a carton containing 219 samples of wood. Voucher specimens of these samples will be sent on exchange from the Herbarium of the University of Texas to the United States National Herbarium.

The price that I am asking for this wood is one dollar per sample or \$219.00 in all.

Regarding sample No. 3735--I believe that the number must be 2735. Your description fits very well for the genus Cridoscolus. I hope to be able to send you complete determinations soon.

Very sincerely,

Robert M. King
Curator

RMK:bh

May 4, 1961

Dr. William L. Stern
Division of Woods
United States National Herbarium
Smithsonian Institution
Washington 25, D. C.

Dear Dr. Stern:

Enclosed please find a list of determinations for the rest of the wood samples sent to you in 1960. Voucher specimens of these numbers will soon be sent on exchange to the U. S. National Herbarium.

Very sincerely,

Robert M. King
Curator

RMK:bh
Enclosure

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

June 30, 1961

Dr. Robert M. King
The New York Botanical Garden
Bronx Park
New York 58, New York

Dear Dr. King:

I am very pleased to know that you are willing to wait for payment on the last group of woods sent us from Mexico. However, as I explained in my letter of June 14, I cannot enter a requisition for a purchase order until funds become available. This will not occur until after September 1st of this year. So, you will probably find the order waiting for you on your return from Brazil. I wish you a very successful trip and know that you are fortunate to be able to work with my good friend Bassett Maguire.

Sincerely yours,

William L. Stern

William L. Stern
Curator
Division of Woods

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

January 19, 1962

Mr. Robert M. King
Herbarium
University of Texas
Austin 12, Texas

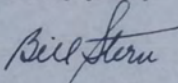
Dear Mr. King,

I have been meaning to write to you concerning the 219 specimens which you sent here last May. Tom mentioned this to me the other day, and it served to spur my memory. Accordingly, I spoke with Dr. Swallen today and we were able to scrape up about \$100. I realize that this is considerably less than you originally requested but I hope under the circumstances that you will be willing to accept this amount. Perhaps I can make up the remainder in "good will."

In order to facilitate paying you, will you please send me a bill in triplicate for these 219 specimens at 50 cents per specimen to make \$109.50. As soon as I receive this, I will submit it to Dr. Swallen for payment. As with some of the governmental forms, it will take some time before you are paid, but you will certainly receive your money.

Tom told me that you will be staying at his home for part of his absence in British Guiana. I will look forward to meeting you and to become better acquainted with you.

Sincerely yours,



William L. Stern
Curator
Division of Woods

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON 25, D. C.

January 24, 1962

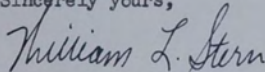
Mr. Robert M. King
Herbarium
University of Texas
Austin 12, Texas

Dear Mr. King,

This date I am submitting your bill for specimens to the Smithsonian Institution for payment. Since the Treasurer of the United States will be responsible for sending your check to you, I doubt very much whether it will be possible for you to obtain this check during your visit here. Also, as I explained in my letter, it takes some time before relevant papers go through channels.

I have taken the liberty of altering your bill somewhat, and I am enclosing a copy herein. I am sorry I failed to explain that the bill should not be made out to me for payment, rather to the Smithsonian Institution. I am sure that everything will work out satisfactorily.

Sincerely yours,



William L. Stern
Curator
Division of Woods

Enclosure

UNIVERSITY OF



HERBARIUM

B. L. TURNER
DIRECTOR

THE UNIVERSITY OF TEXAS
BOTANICAL LABORATORIES

B. C. THARP
DIRECTOR EMERITUS

June 5, 1961

Mr. Robert Merrill King
New York Botanical Garden
Bronx Park
New York 58, New York

Dear Bob:

Enclosed please find three letters with identifications. I opened these because they were addressed to the Herbarium and obviously contained information pertinent to your collections. I hope you forgive the intrusion. I have copied off the data so don't bother to send the letters or info back.

Also you will be pleased to know that the express company picked up your baggage as indicated on the enclosed slip. Mr. Ellison and I spent an hectic afternoon trying to get all of your stuff in the duffle bag. I never believed that such a small container could hold so much. I suppose you know you left your Mexican sombrero in your office, so I will hang it on the wall in remembrance of our famous Mexican collector, Robert Merrill King. If you will send the Mexican record back, I will even play a tune for you every Monday afternoon during siesta time.

I hope you are situated well and that your "sportman's affliction" has now been brought under control.

Please give my regards to Howard--I intend to get a letter off to him soon. Remember to write when you can.

Most sincerely,

Bill
B. L. Turner

BLT:bb

Enclosures

P.S. The fourth floor seems somewhat empty without Señor del Rey.

B.L.T.

also - just phoned Field Museum - They will exchange the
phototypes on a sheet for sheet basis - wonderful!!

UNIVERSITY OF



HERBARIUM

B. L. TURNER
DIRECTOR

THE UNIVERSITY OF TEXAS
BOTANICAL LABORATORIES

B. C. THARP
DIRECTOR EMERITUS

June 8, 1962

Dear Bob,

I sent your camera + slides off ^{thru} via
Express Collect such as you suggested - I looked
through your desk carefully + sent everything
of value.

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Glad that you liked N.Y. right off -

Especially your kind comment regarding Macquie -
"Better to expect hell + get purgatory than vice
versa" [a quote from my childhood!]

Give my regards to everyone. Have you met
Conquist yet?

We should be able to handle the loads!

answered
6/12/61 Bill T.

HAROLD N. MOLDENKE, PH.D.

Director of the Trailside Museum
Watchung Reservation
Supervisor of Nature Activities
Union County, N. J., Park Commission

FORMERLY CURATOR
NEW YORK BOTANICAL GARDEN

MAILING ADDRESS:
15 GLENBROOK AVENUE
YONKERS 5, N. Y.

June 16, 1961

Dr. Robert Merrill King,
The Herbarium,
University of Texas,
Austin 12, Texas:

Dear Dr. King:

The parcel, presumably from you, with two unmounted specimens of
your Mexican collection arrived safely. I assume that I may keep the specimens,
for which please accept my thanks. My determinations are

3891 -- *Lantana velutina* Mart. & Gal.

3983 -- *Verbena cameronensis* L. I. Davis

With all best wishes, I am,

Very sincerely yours,

Harold N. Moldenke

Bob, I have already recorded these! I have
been working on *A. melampodium* paper. Did you
ever get all *A.* references together? We got a
count on *M. Kunthianum* from your last trip.
Try to get *M. campyloctenium* in S. Am. Hope you
are getting well.

answered
June 24, 1961

my best
Bill T.

UNIVERSITY OF



HERBARIUM

B. L. TURNER
DIRECTOR

THE UNIVERSITY OF TEXAS
BOTANICAL LABORATORIES

B. C. THARP
DIRECTOR EMERITUS

June 21, 1961

Mr. Robert Merrill King
The New York Botanical Garden
Bronx Park
New York 58, New York

Dear Bob:

I am trying to finish the Melanpodium paper, at least to the point where I will just have to add a few counts as these are obtained.

You never did turn in to me your project and I have spent this past week about 8 hours a day putting together all of the miscellaneous references, etc. I have been able to identify one additional species from your Guatemalan collection which I previously thought might be new. This is M. brachyglossum Smith.

Enclosed you will find four cards with species names, journals of which we do not have in this library. Would you please have these photo-copied there and send these to me right away so that I can be sure of our nomenclature.

Probably the most important Melanpodium for you to get in South America is M. camphorotum, apparently a common weed there.

I think there are still two undescribed species in your Mexican collection, one from Oaxaca and the other from Guatemala. However, the four names enclosed here may prove to be critical in this connection.

My warmest regards,

Bill T.
B. L. Turner

BLT:bh
Enclosures

THE UNIVERSITY OF TEXAS
AUSTIN 12

THE DEPARTMENT OF BOTANY

March 26, 1962

Mr. Robert M. King
1919 35th, N. W.
Washington 7, D. C.

Dear Bob:

Sorry to be so late in replying to your last letter. As you know, this is spring time and Baptisia season. I do want to thank you for the several identifications. I wasn't too impressed with the identification of Calea trichotoma. I saw a type at MBG and it doesn't match. I notice Blake identified some of our material which also does not match. I still think it is undescribed. Please express my thanks to Dr. Parker for checking several of the plants. I will send Erigerons to Dr. Cronquist as you have suggested. I just thought you could do this identification at the U.S. National Herbarium. I believe I could use Mexican names and work backwards in spite of mixed collections (the joy of working in a big herbarium is that of straightening out the mixed folders, not checking plants against an infallible system!).

You can see that I am my usual self again, please make any excuses for me that might be needed.

I am sorry that Dr. Parker might have felt any hurt as a result of my not giving credit to her in one of the earlier papers. As I recall, most of the material that she identified I had already identified but she did help in the nomenclature of 1 or 2 of the species. I should have acknowledged her, but I apparently felt that the omission was not significant--of course, perhaps she did not appreciate the fact that her identifications were really for the most part substantiations of my own and besides when I finally did publish, I did not follow several of her suggestions and I thought this might be unethical to ascribe to her identifications with which she might not agree. Anyway, no use to belabor such trivial things. I will just mend my ways in the future, knowing her sensitivity to incidents of this nature. I think you now have all your labels and chromosome tags. As soon as we get your labels back, we can mount up the lot. Regarding your trip to Mexico this summer, I think I will be able to supply you with 800 vials, plus the necessary collecting fluids. Presumably, you will take your collecting gear, presses, etc. from there

Mr. Robert M. King

-2-

March 26, 1962

inasmuch as Mike Powell will be in the field using our gear, as will Dr. Alston and myself on Baptisias in the southeast and also Dr. M. Johnston.

Give me any specific questions and you know you will get straight answers. I must say how delighted I have been that you found the kind of environment in Washington that you have long dreamed of. I hope you develop into one of the foremost botanical collections and broadly trained systematists of that area (or any area). I think if you could remain on at Smithsonian, it would be a nice thing both for them and you.

Most sincerely yours,

Bill T.
B. L. Turner

BLT:bh

THE UNIVERSITY OF TEXAS
AUSTIN 12

THE DEPARTMENT OF BOTANY

July 18, 1962

Mr. Robert M. King
Canal Zone Biological Area
Drawer "C" Babboa
Cana Zone *l*

Dear Bob:

ix
I am sorry to be always on the go, but this explains my tardy reply to your most recent letters. I am glad that you arrived in the Canal area and that your work is going well. Also received the bill for two gross bottles. Do you want me to send my share in check form there, or do you want to wait until you return to the U.S.?

Only today the large bottles arrived which you had requested, but I suppose it is too late to get them in the mail for your work there.

I will let you know as soon as your material arrives and, of course, will keep you up-to-date on counts made, etc.

Warmest regards,

Bill
B. L. Turner

BLT/psk

UNIVERSITY OF



HERBARIUM

B. L. TURNER
DIRECTOR

THE UNIVERSITY OF TEXAS
BOTANICAL LABORATORIES

B. C. THARP
DIRECTOR EMERITUS

July 30, 1962

Dr. Robert M. King
Smithsonian Institution
Canal Zone Biological Area
Drawer C, Balboa, Canal Zone

Dear Bob:

I have been out of town for about a week, but the day I left, a shipment from you arrived. This was received on July 22nd, the same day that you wrote your most recent letter.

To answer some of your questions, Mike has not been to Mexico as yet. We hope to get down there together for about 10 days in September, but it might be that I can't. However, I am sure he will make the trip somehow.

I am glad you mentioned the 95% alcohol. We will compare quality on your loads. Lots.

Some news will probably worry you, but I hope not. I received word from NSF that the Pectis proposal was withdrawn. Perhaps, you will have heard from Dr. Parker by now. I would imagine that the problem involved that of ~~many~~ and not rejection per se (I thought the budget somewhat exorbitant for the scope of the study--this proposal was about \$17,000 more than my study on the tribe Helenieae, and that included the monograph of at least 4 genera, this being as you know only a part-time project of mine) ~~so I would say don't worry~~. Probably the withdrawal will permit an opportunity to give a more realistic appraisal of the budget, *anyway don't worry about it*

With warmest regards,

Bill

B. L. Turner

BLT:ce

P.S.: I hope to send more chromosome counts this week. Did you not get my last letter along these lines?

~~Sincerely,~~

B. L. T.

P.S. we have a new secretary who is slow at dictation - i did not
worry to do it over - so you see you must be
afraid
Bill

UNIVERSITY OF COLORADO

BOULDER, COLORADO

January 12, 1962

DEPARTMENT OF BIOLOGY

Mr. Robert M. King
Department of Botany
University of Texas
Austin 12, Texas

Dear Mr. King:

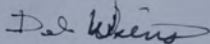
Thank you very much for the specimens of Phoradendron and Arceuthobium. They arrived in good condition; however, they are very fragile, and good stiff cardboards with lots of padding gives you a better chance of them coming through in good shape.

I can give you names for all of the things you sent. The Arceuthobium looks a little strange to me, but supposedly there is only one species, A. vaginatum, in Mexico, so for the present we can call it that anyway. I think Arceuthobium could use a little more study down there.

Your subsequent counts in Psittacanthus make me feel a little better, although I was pretty certain of the figures I counted. That seems like it might be a rather interesting problem to follow up. It would be nice to have someone else do some more cytology on Phoradendron. I fix in standard 3:1, absolute alcohol and acetic acid, respectively. Knowing the right age is the problem, and one that is very hard to explain. Your local mistletoe, which incidentally I believe is P. tomentosum and comes up from Mexico, should be blooming about now. In general they undergo meiosis about two months before anthesis. The inflorescence is sort of an indeterminate spike with younger flowers originating from what is probably a basal meristem, so even if it is later in the season, the younger flowers at the bottom may still be OK for meiosis. I do not use mitotic figures. Once you find the right stage they are quite simple work because of their very large size, and they stain beautifully in regular acetocarmine. The mistletoes on the oaks which occur in the Davis, Chisos, mountains bloom toward the end of summer, and meiosis ought to be occurring in July. This mistletoe I am calling P. villosum subsp. coryae.

Do you know Robert Vines? I think his treatment of Phoradendron is rather poor. I have been meaning to write to him, but cannot seem to find an address anywhere.

Yours truly,



Del Wiens
Instructor in Biology

DW/ds

5174 *Arceuthobium vaginatum*
(H.B.K.) Eichler

4662 *Phorodendron carneum* Urban

5163 *Phorodendron velutinum* (DC.) Nutt.

4828 *Phorodendron reichenbachianum*
(Seem.) Oliver

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all day. det Del Wiens 1962

DE PAUW UNIVERSITY
GREENCASTLE, INDIANA

May 4, 1961

Dear Dr. King:

I have had opportunity of examining the plants you sent the other day and come up with the following names:

4231 = *Piper schiedeana* Steud. [form with leaves glabrous beneath]

4234 = *Piper udimontanum* C.DC.

4265 = " "

4268 = *Peperomia glabella* (Sw.) A. Dietr. Probably. It differs in minor characters from those of the WI and S.Am.

4272 = *Piper auritum* H.B.K. form? It agrees with the exception of greater degree of pubescence and somewhat less rounded sinus. It may not be this but I have been unable to match it better with anything else.

4289 = *Piper aduncum* L.

4295 = *Piper schiedeana* Steud.

4296 = same as no. 4272.

4332 = I have not been able to match this. It falls in the *Peperomia elongata* - *macrostachya* complex but differs in somewhat pubescent leaves and longer petioles. It might be undescribed but I do not know the Mexicans well enough to be certain at this point.

4355 = *Peperomia glabella* (Sw.) A. Dietr. Probably, although the dotting is red instead of black.

4429 = *Peperomia rotundifolia* (L.) H.B.K.

I hope the above may be of some value to you. I am sorry that I have to be uncertain with some. The Mexican species are sadly in need of working as there is no key covering them. The Guatemalan paper by Standley is inadequate so far as Mexico is concerned and deCandolle's key in the Trees & Shrubs of Mexico is practically unworkable, and, furthermore, it covers only the Pipers. Eventually, I hope to get around to the job.

Sincerely,

T.G. Yunker.

(T.G. Yunker).

Thanks for the specimens.

DEPAUW UNIVERSITY
GREENCASTLE, INDIANA

June 2, 1961

Dr. R. M. King
University of Texas
Austin, Texas.

Dear Dr. King:

Again !!

(#4136)

The Piper specimen which you recently sent, I believe
to be P. commutatum Steud. It matches very well with what
I take to be this species.

Sincerely yours,

T.G. Yunker

(T.G. Yunker).

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answered
6/12/61

DEPAUW UNIVERSITY
GREENCASTLE, INDIANA

Jan. 6, 1962

Dr. Robert M. King
Austin, Texas.

Dear Prof. King:

I have examined the material you recently sent and
come up with the following determinations:

4697 = *Peperomia galioides* HBK
5197 = " "

I can see little if any difference between these
specimens and those from the WI or South America.

4834 = *Peperomia tuberosa* Opiz vel aff. I have not seen
the type of this species but your specimen fits the descrip-
tion well.

5093 = *Piper uhdei* C.DC. (?) The only spike present is
too immature to show fruit characters but otherwise it seems
to be this species.

4929 = *Piper abalientatum* Frel.
5214 = *Cuscuta nitraeformis* Engelm.

5053 = " *tinctoria* Mart.

4838 = " "

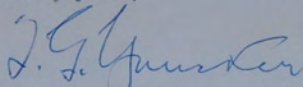
4780 = " *costaricensis* Yun.

4716 = " sp. Too immature to identify

I will check the unicate whenever it shows up. Thanks
for the duplicates.

With best wishes for a great 1962, I am,

Sincerely yours,


(T.G. Yuncker).