



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

Statement on harmful and offensive content

The Hunt Institute Archives contains hundreds of thousands of pages of historical content, writing and images, created by thousands of individuals connected to the botanical sciences. Due to the wide range of time and social context in which these materials were created, some of the collections contain material that reflect outdated, biased, offensive and possibly violent views, opinions and actions. The Hunt Institute for Botanical Documentation does not endorse the views expressed in these materials, which are inconsistent with our dedication to creating an inclusive, accessible and anti-discriminatory research environment. Archival records are historical documents, and the Hunt Institute keeps such records unaltered to maintain their integrity and to foster accountability for the actions and views of the collections' creators.

Many of the historical collections in the Hunt Institute Archives contain personal correspondence, notes, recollections and opinions, which may contain language, ideas or stereotypes that are offensive or harmful to others. These collections are maintained as records of the individuals involved and do not reflect the views or values of the Hunt Institute for Botanical Documentation or those of Carnegie Mellon University.

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.

30 April 1969

Dean Kathryn Smith
School of Nursing
C. U. Medical Center
Denver

Dear Miss Smith:

I write to recommend Miss Diana Bradley who is an applicant for the School of Nursing. Miss Bradley has worked for me on the Work-study program since last September, and during this period she had rather broad experience, not only typing but in many other activities such as filing computer records and reprints and simple data recording for our research work in systematic biology. We have found Miss Bradley to be a very good and acceptable person in all connections. She is quiet, pleasant, efficient and dependable. I have no doubt that these qualities will be very useful as she pursues her studies and training in nursing.

I am very happy to recommend her to you.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

30 April 1969

Dr. Billie L. Turner, Chairman
Department of Botany
University of Texas
Austin, Texas 78712

Dear Billie:

I don't know whether you need these receipts for my travel expenses or not, but just in case you do, here they are.

I was very happy with Bob Adams and found him to be a very good Ph.D. candidate. You can be proud of him, I'm sure. I hope that his proximity to us when he moves to Fort Collins will allow continuing dialog on taximetrics.

It was good to see you and Flake, and the others there.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

MEMO TO: Dean William Briggs
FROM: David J. Rogers, Taximetrics Laboratory
DATE: 28 April 1969

Dear Bill:

I can hardly score you for not joining Bill Mayer and me for lunch today. You could very readily assume: "Oh, my God, another pressure group from the idiot department!" Perhaps it is hard for you to believe that we don't want to turn the department into our image, but I assure you that we don't. Neither Bill nor I have anything to win, lose, or draw from that department, and our only desire was to try to explore some useful avenues with respect to the Biology Department.

Both of us sit on the Executive Committee, and we see the most unrealistic attitudes developed there that you can possibly imagine. There may be no way to salvage the department, but both of us think (perhaps optimistically) something might be done, with the right directions.

Maybe something useful could come from an informal lunch - you have to eat anyway, and who knows, we might get somewhere. Let's have a go at it some time in about three weeks. (Between Bill's absence and mine, there won't be a chance any earlier.)

Taximetrics Laboratory

Armory 101

28 April 1969

Dr. Erven Long
Director of Research and Institutional Grants
Agency for International Development
Washington, D. C.

Dear Dr. Long:

Dr. H. F. Robinson was kind enough to recommend that I contact you to see if there is interest in some possible work in the study of the tropical root crop Manihot esculenta (cassava, manioc or tapioca). For some years now I have pursued biological studies with these plants and feel that we are near a point where some practical application of our research can be put to work. There are some detailed researches necessary, however, before we are completely satisfied that this effort will be as useful as it could be.

Since I plan to be in Washington from Tuesday, May 6, through Friday, May 9, I would very much like the opportunity to tell you more about my work and some of my aspirations for continuing. I will call you later this week to discover if you have the opportunity to see me during this period. I look forward to seeing you.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm

28 April 1969

Dr. William A. Weber
Curator of Botany
University Museum
Campus

Dear Bill:

Gerald Arp has asked for a letter of recommendation to you for a job as herbarium assistant. Of all the students I have seen presently on campus, Gerald Arp comes closer to being professionally oriented in systematic botany than of the rest. He has had a long term interest in botany generally and the cacti specifically. He did an excellent job in our course in Taxometrics and his lab problem was concerned with the differentiation of Pediocactus Simpsonii. His grades for some of the more traditional areas may not reflect his intellect but it is to his advantage that he has chosen to disagree with some of the outmoded concepts being taught.

His personality is good and I think you would have an excellent assistant in him. He wants to learn herbarium techniques and I think he already has a pretty good understanding of them, but under your guidance I am sure he will make a top-notch worker.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

MEMO TO: Dr. William A. Weber, Director of the C. U. Herbarium
FROM: Henry S. Fleming
SUBJECT: Gerald Arp
DATE: 28 April 1969

In my association with Gerald Arp I have found him honest and of good character. As a student I have found him intelligent, thorough and logical. He also has finger-dexterity, a necessary attribute in an herbarium.

He is especially strongly motivated to the study of botany. This consideration was uppermost in my mind when I originally sent him to the herbarium so that he could broaden his botanical knowledge and familiarize himself with museum operations.

Taximetrics Laboratory

Armory 101

28 April 1969

Mrs. Ileen Stewart
Biomedical Communications Study Section
National Institutes of Health
Bethesda, Maryland 20014

Dear Ileen:

As you may know, we have developed a powerful information retrieval system called TAXIR. One of the more interesting applications of this system which we are developing at the moment deals with a very complex project at the University of Colorado Medical School, ~~for~~ Dr. I. C. Kaufman and Dr. D. R. Metcalf. In this application we are listed as a sub-unit in a very large program project to study human and primate development correlating CNS and behavioral parameters. I don't believe I misrepresent the feelings of Drs. Kaufman and Metcalf when I say that they are very excited about TAXIR as a backup information retrieval system for their extensive efforts.

Although TAXIR is a working system we know that there are still some needed developments in it, in addition to those already present, and I would like to talk to you about the possibility of a grant to support these developments.

Will you be available sometime during the days Tuesday, May 6, and Friday, May 9? I plan to be in Washington that week and would very much like to tell you about the project and ask you for advice in the feasibility of a continuation for this application. Anyone wise in your office who cares to get a rundown on TAXIR would be very welcome to hear us. I will call you Thursday or Friday of this week to see if you can spare me some time and to arrange for a day.

Looking forward to seeing you.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

P.S.: I am also writing to Dr. Arnold W. Pratt, Director, Division of Computer Research and Technology. Are you and he in the same division?

28 April 1969

Dr. John M. Olive, Director
American Institute of Biological Sciences
3900 Wisconsin Avenue, N.W.
Washington, D. C. 20016

Dear Dr. Olive:

You recently received a copy of a letter from Dr. McNew. This letter to me indicated Dr. McNew's interest in the development of a computerized information retrieval systems. I believe it was also indicated that there is some need for concerted action among AIBS members to impress the various granting agencies with the tremendous need for information retrieval systems.

I know that AIBS is already involved in a number of such activities, for example Flora of North America, but it would seem to me to be useful to establish some sort of steering committee within AIBS where information about information retrieval systems in biology can be rounded up and various applications evaluated.

If at all possible, I would like to come and talk with you on some day between Tuesday, May 5 and Friday, May 9th, when I expect to be in Washington. We, in this laboratory, have indeed developed a powerful information retrieval system and would like to see the biological community take advantage of this generalized system. In as much as the Taximetrics Laboratory has a number of very good specialists in information retrieval we believe that we can provide the biological community expertise at a rate much lower than would be the case if each biological activity had to start from scratch.

Later this week I will call your office to discover if you will have an opportunity to see me on the aforementioned dates.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm

Taximetrics Laboratory

28 April 1969

Armory 101

Dr. Arnold W. Pratt, Director
Division of Computer Research and Technology
National Institutes of Health
Bethesda, Maryland 20014

Dear Dr. Pratt:

Dr. David Metcalf, at the University of Colorado Medical Center, has suggested that I contact you with respect to some efforts in the development of a computerized information retrieval system. Dr. Metcalf is working with Dr. I. Charles Kaufman on a very large program project to study human and primate development along CNS and behavioral parameters, and we as a group in the Taximetrics Laboratory have agreed to support their efforts with parts of an information retrieval system already developed by us. However, we know that the system so far developed does not completely satisfy all the needs for retrieval and we have ideas about development which will make a more powerful overall system. I would very much like to have the opportunity to discuss with you the possible submission of a proposal to develop the additional facets of our system. I

If possible I would like to see you sometime during the week of May 6 through May 9 (Tuesday to Friday) when I will be in Washington. I will call your office later this week to discover if you will have time to let me tell you about our project.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm

28 April 1969

Dr. Robert B. Abel
Office of Sea Grant Programs
National Science Foundation
Washington, D. C. 20550

Dear Dr. Abel:

I would like to have an appointment sometime during the week of May 6, Tuesday, to tell you about a pilot project for information retrieval in oceanography. Dr. Robert Menzies and his colleagues in the biological program at Florida State University and I wish to demonstrate the power and value of a computerized information retrieval system developed here at the University of Colorado, under my direction.

I will have with me the outline of a proposal and would be pleased to talk this project over with you on any day from Tuesday through Friday. I will call your office later this week to discover if it is possible for you to give me some time during this period. Thank you for your time, in advance.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm

April 25, 1969

Holiday Inn
Media, Penn.

Gentlemen:

Will you please reserve me a single room for the night of Monday, May 12. I shall be attending the meeting of the Plant Record Committee of the American Horticulture Society.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm

25 April 1969

Dr. Richard A. Howard
The Arnold Arboretum of Harvard University
The Arborway
Jamaica Plain, Mass. 02130

Dear Dick:

I will be at the meeting on Tuesday, but because of the fact that you had to put it back one day, I will not have Hersh with me. I feel so discouraged about this whole business that I am almost ready to say that I don't have any more to contribute.

However, I will attempt to give my understanding of the situation in some depth to the Record Committee. I do hope that some assistance with travel can be forthcoming because as you know NSF budgets are drying up all over the place, ours included.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

25 April 1969

Miss Margaret A. MacMorris
2985 East College #7
Boulder, Colorado

Dear Miss MacMorris:

I am honored to think that you would like to work in Taximetrics, and would jump at the chance to hire you for the summer if funds were available. Unfortunately because of continuing restrictions for funds from research grants, we are unable to ~~support those~~ support those presently employed.

I hope this unfortunate news does not turn you off from coming in to see us and working with us. Please be sure I am very excited about your interest and capacity and would like to see you become deeply involved with it.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

25 April 1969

Dr. J. Roger Porter
Department of Microbiology
College of Medicine
University of Iowa
Iowa City, Iowa 52241

Dear Dr. Porter:

We have recently been invited by Dr. Gordon to participate in the second Roundtable on Information Problems in the Biological Sciences. Unfortunately we are committed to the International Botanical Congress shortly after the time of this meeting, and our budget does not allow us the opportunity to go to Burlington as well as to Seattle. Therefore I will have to decline the kind offer, and hope that the meeting will indeed be very successful and useful as I am sure it will.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm
CC: Dr. Robert E. Gordon

25 April 1969

Mr. Frank White
Forest Herbarium, Dept. of Forestry
Commonwealth Forestry Institute
University of Oxford
OXFORD, England

Dear Frank:

This is just a note of appreciation for your splendid hospitality. I very thoroughly enjoyed staying with you at your home in Tatston. I also very much appreciate your taking me over to Cambridge.

I have talked to Bisby about the opportunity to borrow some *Crotalaria* material. However, because of time problems, it does not seem profitable to go through the trouble to have them here. If there are any changes, I'll ask Frank to communicate his desires to you directly.

Once again thanks very much for the very pleasant weekend there.

Sincerely,

David J. Rogers

DJR:gm

25 April 1969

Dr. Frans Stafleu
International Bureau for Plant Taxonomy
106 Lange Nieuwstraat
UTRECHT, Nederland

Dear Frans:

This is just a note to thank you for the many courtesies which you gave me. Having a chance to have dinner with you and your wife was a great pleasure, and I will always remember the afternoon seeing the polders and eating smoked eel.

I look forward to seeing you in Seattle. My best regards to your wife.

Sincerely,

David J. Rogers
P

DJR:gm

25 April 1969

Dr. Aristid Lindenmayer
Hubrecht Laboratory
Uppsalalaan 1
UTRECHT, Nederland

Dear Aristid:

This is just a short note to tell you how very much I appreciated your and your wife's hospitality there. It was a real pleasure and very helpful to stay with you, rather than at a hotel.

I will ask my student in leaf plan analysis to read your paper in Theoretical Biology and then to contact you directly. I am sure it will be an interesting interchange. His name is Robert Brill.

As to possible invitations to you for next year or the year after, I am going to have to make some sort of survey of our position to see if there is any way to support your effort with money. At the moment things are not too promising.

Best wishes and looking forward to seeing you in Seattle.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

24 April 1969

Senor Torquie Estrata
Department of Technical Cooperation
Special Training Program
Pan American Union
Washington, D. C. 20006

Dear Sir:

I am interested in applying for research support for botanical work in Latin America. May I please have application forms, as well as any descriptive brochures available?

Thank you for your assistance.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

April 23, 1969

Richard F. Johnston
National Science Foundation
Washington, D.C. 20550

Dear Dick,

I have your interesting letter of the 15th to answer, and find that so many ideas are generated that it would be hard to give an adequate response to your questions with anything less than a full-blown research paper.

But, some of the questions asked are easier than others, and I'll give my opinion as best as possible. For the remainder, I'd like to talk to you at length, preferably during the week of May 5, but more precisely on any other day than Monday, when I'll be meeting with Mason Hale at the Smithsonian.

On appropriate persons to contact, I suggest that some of the following members here may be quite useful, though perhaps their names haven't been brought to the fore as experts. For suitability of programs, I have Bob Brill and two assistant programmers who have been deeply involved in IR for museums. For cost/effectiveness of various systems, I recommend Gil Hersh, also on our staff, and I think you may have met him when you were here. For mathematical back-up, George Estabrook. Henry Fleming has as much over-all knowledge of biological computer work for taxonomy as anyone in the country. Outside of our shop, there clearly is Gil Danials of the Hunt Botanical Library, Pittsburgh, Ted Crovallo of Notre Dame, Don Squires of Stony Brook, and Arthur Boughey of Irvine (U. Cal.). Stan Shetler has been the expert for the Smithsonian, but there are so many question marks about him, I'm not sure you'd be happy to include him. Since Bob Sokal and his crew have mostly spent time on NT, their special skills should be included for this aspect. For really good knowledge about computing ability for biology, I think Ken Zabrisky of Bio. Abstracts can't be beat. There are others, but I'm sure you've got the questionnaire out to several people, and they should come up with other names.

With respect to the questionnaire, I think questions 1, 5, and 6 are unanswerable. Question 2 should be reworded to ask "What generalized attitudes have prevented museums from engaging in IRS and ADP?" This rewording seems necessary because most people in museums haven't thought about any of these aspects, much less about national compatibility of systems.

There are other thoughts which occur to me, but as said earlier, they want much more elaboration than I can possibly give here.

In general, I think it will be a good idea for your office and OSIS to be more positively involved in encouraging AIBS to consider taking up

the idea of a permanent committee on IR, and another group which should definitely be urged to work together is the loose association of museum directors. Most of my considerations are with natural history museums, and I think that if you worry about all the other types of museums, you're going to get too large a conglomerate--at this stage of the game.

More later, when I have a chance to talk it over face to face.

Sincerely,

David J. Rogers
Professor
of Biology

22 April 1969

Dr. George W. Nace
Department of Zoology
University of Michigan
Ann Arbor, Michigan 48104

Dear Dr. Nace:

Please pardon our delay in getting this program to you. It took longer than expected to develop the necessary supporting paper.

I hope that the program is clear and satisfactory for inclusion in your grant request. It should be self-supporting. Please feel free to make changes in the general write-up.

In the work-program, reference is made to the setting up of programmed training procedures. This has been suggested by Mr. Hersh in view of your changing and mixed-competence staff. He has had experience in this sort of work. He suggests that if Dr. Hirschfeld is willing to work closely on this it can be accomplished at no extra cost to you. If you wish us to do it without other support, it will cost the extra amount as indicated.

Enclosed is a memo concerning line item support which you will need as minimum with respect to information and operating systems.

Please call if you have any questions - if necessary, a meeting in mid-May might be arranged.

Sincerely,

David J. Rogers
Professor of Biology

DJR:GH:gm

18 April 1969

Dr. I. C. Kaufman
Department of Psychiatry
University of Colorado Medical Center
Denver

Dear Dr. Kaufman:

Enclosed is the Taximetrics Laboratory suggested involvement with the Program for Human and Primate Studies, to be included in your NIH grant.

I hope that there is sufficient information included.

Attached is a memo from Mr. Hersh estimating your line budget needs to accomplish what has been outlined in the enclosed work program.

These are estimated, however; we have little information to make them more than guesses at this time.

Good luck!

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

17 April 1969

Faculty Personnel Office
Colorado State University
Fort Collins, Colo. 80521

Dear Sir:

Do you have still in your files the Curriculum Vitae and publications list for Mr. Henry S. Fleming who was in the Department of Botany and Plant Pathology as an associate professor from Fall 1965 to June 1967?

We are unable to find a copy in our records and would very much appreciate it if you could supply us with a copy, particularly of the bibliography.

Thank you for your help.

Sincerely yours,

(Mrs.) Geneva Metcalf
Administrative Assistant

m

P. S. Would you please refer this letter to the Department of Botany, if they have the records?

14 April 1969

Armory 101

Dr. David J. Rogers
Good Morning, Dear Sir:

Bob just came up and was as panicked as Bob can become because Dr. Löve in his inimitable style was squiring around a dude (who was probably from BSCS) and the two of them were neatly dividing up the Armory. Bob heard Löve say: "Oh, we can move all this junk (referring to Bob's junk) across the hall" Bob was afraid they would do it as théaves in the middle of the night. I don't think they will, but they may try to do something soon, since rumor has it that INSTAAR will move in May or June (Jim Snow's word).

I have given a letter to Dean Crowe (copy enclosed), but this is a matter concerning the Biology Department as well - should we send a copy to Askell?

I forgot to report in my first note of my meeting with Drove but I squared with him and told him that Krueger was a bit up tight - neither he nor Manning have heard anything about it, and will treat such noise from Krueger as just that (noise). Crowe just suggested that we get together with Krueger, as planned, and mend our fences. He is willing to use his good offices to assist us, should we desire.

Bob is off to New York. All else is well. Dr. Barry's proposal is completed and will go to ORS on Tuesday. We are in for \$17,500. Four grants to go this week.

On Thursday I have a conference with Morris Garnsey and will discuss aspects of economic research and the Taximetrics Lab. I think that we might use the Resources for the Future, Inc. (fully funded by the Ford Foundation) as a source for funding for Appan and Manihot. It would be legitimate and interesting. We might even bootleg some of the Taximetrics" staff expenses onto this grant. How would it be if you and Morris were co-principals?

Connie is coming to dinner at our house Wednesday night. I can discuss the land matter with her then.

I've never worked so hard in my life and Genevra has proved to be an excellent grant writer. I think we should process her papers for administrative assistant as soon as you return. (Or at least next after you finish fighting with Ives about Hersh. GM)

~~what I think we'd better do is to her forms through~~

14 April 1969

Dean Lawson Crowe
Graduate School
University of Colorado

Dear Dean Crowe:

The purpose of this letter is to define specifically current space uses and indicate the need for additional space. At this time we occupy and use Rooms 101, 101A, 102, 103, and 104 on the first floor of the Armory Building. In the basement we occupy suite 2 which consists of two rooms.

Due to the growth of staff, the use of new input-output machines (now in our possession) the frequency of visitors to the Laboratory, and the need for more work space, our quarters are not sufficient.

We need one, or better two, additional rooms. We suggest either of the following as possibilities within the Armory: rooms 16 and 17 in the basement, or rooms 115, 116, 118 and 118 which are already set up as director's offices.

If IBS should move, Building #2 would suit our needs perfectly.

We realize that space is tight, but would appreciate any action you could take on this. Please consider this an addendum to our proposal to the Graduate School, submitted on April 8.

Sincerely yours,

Gilbert N. Harsh

GNN:gm

11 April 1969

Dr. William Hirshfeld
Center for Human Growth and Development
The University of Michigan
611 Church Street
Ann Arbor, Michigan 48104

Dear Bill:

Hello!

I haven't time for a long letter now, but something of interest was just called to my attention. With respect to your pattern analysis (frog spots) please see Science, 4 April 1969, no. 3875, page 19, an article entitled "Picture Processing by Computer. Also check out the following reference - it might be very useful.

U. S. Department of Commerce
Clearinghouse for Federal Scientific and
Technical Information
Springfield, Virginia 22152
AD-674025 Optical or Graphic Information Processing

I'll be back to you in the next week or so.

G. N. Hersh

GNH:gm

11 April 1969

Dear Boss:

Have decided to send you a letter which may turn up your thinking process rather than a report to sit on your desk - also I'llbbe gone when you get back, so its's best that you have this information at hand though it's nothing urgent.

I called Joan Maier. She said that Dougherty had returned from Washington. NSF likes the proposal but funds are limited; impossible for new starts through 1970. Further that the implacable Dr. Dougherty visited others, notably Dr. Ruggles of the Council of Library Resources (1025 Connecticut Ave, N.W., Washington 20006) and that this group might be interested in co-funding the project with NSF or other agencies. Dougherty is not in but according to J. Maier is optimistic and has asked his staff to begin formulating a proposal. I hope to meet with Joan Wednesday. They were happy to see that we had reduced our figure below \$100,000. If we can help them tightened the bolts on their heads, something might come of it.

Coincidentally Ed Weiss called us this morning to say slowly and in his inimitable style that a certain Dr. Ruggles had called him asking about the group. Weiss gave a glowing report (or as glowing as Weiss can give). A letter to Ruggles with other information about the group and our staff might be a good idea but these communication are for your office.

Roger Barry's proposal will go in shortly. There is some cost limitation on it and the most we can wrench free for ourselves is \$10,000. It's not a lot but it is enough for some of his needs.

Nothing else today - have a nice weekend, etc. etc.

G. N. Hersh

P.S.: Something else today. Howard Mills called first thing to invite himself for April 25. I said that George would not be back, so he was willing to make it May 2 (arriving the previous evening). He'll be expecting a collect call from you on April 23 as to feasibility. Henry has heard about it, and it's on your calendar. Gil is really keeping things humming.

G. B. Metcalf

11 April 1968

11 April

Kluge

Dr. Arnold Kluge
Museum of Zoology
University of Michigan
Ann Arbor, Michigan 48106

Dear Arnold:

We have received your sales order and are beginning work on
yng descriptors for input we ~~will use across~~
difficulties. First, it is unclear whether you want the code for orders
and families and the names or just the code, or just the names. The
TAXIR system can easily handle names or codes. I understood you were
interested in using codes in your shop. However we are interested in
using names as well. For the initial four hundred items we will include
both, but I think we should clarify your specific needs. Second, for
Mexico and Costa Rica and whatever other countries outside the United
States which are listed, no counties of collection are indicated, and we
will leave this descriptor blank. Third, the field number is assumed to
be the original collectors number. This is treated as a BOOK descriptor,
since it includes more than one state it cannot be treated as an Acces-
sioner descriptor. Again I assume that this was your intention, but if
not please let me know.

Fifth, the comment descriptor will be left open for inclusion at a
later date. The accession number and subspecies name will not be inclu-
ded. We are enclosing a list of the descriptors being used and their
order of entry.

A word about the formation of BOOKS: as you may know, any seven
descriptors may be chosen to be printed in a BOOK. These descriptors
are then arranged in a hierarchical order. The order specification is
completely determined by the user.

You have indicated two BOOKS that you desire - the first according
to increasing item number, but you have not specified what other hierar-
chical listing you may want beneath the item number. Might it be by
collector, genus, species, date of collection? Please specify your desire
on this. The second BOOK will be by family both alphabetically and a
SEPARATE BOOK numerically through both genus and species, but the remaining
four descriptors are at your discretion - you need not use all seven, of
course.

11 April 1969

What other BOOKS might be of interest? Would one on geographical descriptors be of interest? (country of collection, state or province, county, precise locality, genus, species and item number)? While we are making BOOK together, please specify any other order which you may want.

There is something in the wind about funds for museums in NSF.

Be well, happy and regards from Bob.

Sincerely,

Gilbert N. Hersh

GNH:gm
Enc.

4 April 1969

J.F. Shear, Purchasing Agent
The University of Michigan
Central Purchasing
Administrative Services Building
Ann Arbor, Michigan 48104

Dear Mr. J.F. Shear:

Please refer to your Purchase Order number A 93686 dated 3-28-69.

This letter will serve as a corrected invoice for the reimbursement for consultant services and expenses in connection with the setting up of an information system for the Amphibian Facility of the University of Michigan, and supercedes all previous invoices or indications of items due.

For services on March 11, 12 and 13 inclusive (1969):

Plane Fare from Denver- Detroit Round Trip	\$105.00
Per Diem for Mr. Gilbert N. Hersh @ \$20/day	60.00
Per Diem for Mr. William Stage @ \$20./day	40.00
Car rental for three days, inclusive (Coon Brths auto rental)	35.62
Consulting Fees @ \$100.00 per day	no charge
Total due ENH Mr. Gilbert Hersh who has laid out the necessary funds	\$240.62

Thank you.

Sincerely,

David J. Rogers
Professor of Biology and Director

cc: Professor George Nace
Mr. Gilbert Hersh

2 April 1969

Library Chairman
Biology Department

Would it be possible to ask the library to order

Vergleichende Morphologie der Hoheren Pflanzen. Band I:
Begetationsorgane. Teil 3: Wurzel und Wurzelsystemm.

William Troll. 729 pages. illus. Reprint of 1943 Berlin ed-
ition. Otto Koeltz, Königstein-Taunus, Germany, 1967
DM 460.

David J. Rogers
Professor of Biology

10 April 1969

Dr. Frans A. Stafleu
International Association for Plant Taxonomy
106 Lange Nieuwstraat
Utrecht, Netherlands

Dear Dr. Stafleu:

Here are the flowcharts (Figures) to go with the paper
by Appan and Rogers, "Taximetric Methods for Delimiting
Biological Species," which Dr. Rogers is bringing to you
by hand.

Sincerely yours,

Genevra Metcalf ~~Metcalf~~
Secretary

m
Enc.

Kluge's stuff has arrived (about 400 salamanders) and we are processing them now. I think a minibook of salamanders, bryophytes and may be Hale's stuff would be interesting to the Systematics Panel in support of the museum grant. We could send this at a later date.

Nace says "Hello" and if all else fails he will attempt to bookleg Hairston's amphibians for TAXIR onto his grant.

Enjoy Paris & love to George.

Gil

10 April 1969

Dear Dave:

I hope you are enjoying yourself - things are popping here.

The proposal to the Graduate School was hand carried to Lawson and he has promised to read it this week. It was a well organized document.

Lawson further comments that he is fully in favor of our becoming an institute. He sees no objections or obstacles from Dr. Manning. He has also reserved the minimum of our present quarters with support of heat, light, and phones for after the expiration of our grant. The aspect of the summer salary for the director caused him to think for a moment and say that it must be discussed with Dr. Manning. He was optimistic.

As for group support after NSF expiration, he said: "As you know, funds are tight, but I think that there is sufficient evidence that you will be able to support yourselves in the near future and that you will be able to provide the university valuable services, so I think you have a good case. He shall present it vigorously to Dr. Manning. Thus the ball is in the court of the big-wigs.

Bob and I have talked with Roger Barry and what he needs from us will be in his hands this afternoon. We're asking for \$20 - 25,000.

I had to call Ed Weiss about the Barry proposal and discovered that joint meetings between the Systematics Panel and OSIS are under way concerning the appropriation of a lot of money for museums. I think your seminar had something to do with it. I pooped up the museum grant and will send a copy to Weiss. It will be finished Friday, and in ORS Monday. Heaven help us"

Weiss also says that other funds are tighter than before - and will still become tighter. He thinks that we should submit a continuation grant, but November 1 would be a good time for funds. If...

McNew will be in on April 11 and we'll talk to him on the phone at that time. Cost of incorporating with special tax advantages \$350-400.

4 April 1969

Dean Lawson Crowe
Graduate School
University of Colorado

Dear Lawson:

We enclose herewith a reworked and hopefully final proposal for the Taximetrics Laboratory. The proposal itself is set up with four ~~set~~wise aspects, and I would like to assign to these aspects the following priorities. We would consider as most significant, first, the recognition of the group. Second priority is that of housing and services. Third priority is the director's summer salary, and fourth, that the university pick up interim funding for the laboratory at the rate of about \$9,000 per month beginning October 1 and continuing through the fall semester (December 31, 1969).

As you know we are working with Dr. Kopelman and Mr. Tom Seewart on a sample data bank in ORS which describes proposals made by various individuals and groups on campus. This is to illustrate the powers of the TAXIR system. We should like to have you consider, however, that by this illustrative means we have no intention of treading on service capacities of other units on campus whose objectives are already established as service units. If at all possible, we would like to be considered as a team whose potential for aiding other service agencies where some particular expertise of ours can be most effectively applied.

We appreciate your consideration of the proposal, and we hope that priority Number 1 can be established in the very near future. The acceptabce of this step, is, of course, a very real advantage for us.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

8 April 1969

Dr. David J. Rogers
American Hotel
Leidsekade 97
Amsterdam, Netherlands

Dear Dave:

Frank has had a note from Dr. Richards. He (Richards) has an engagement in the afternoon of 19 April, but is looking forward to meeting you in the morning of that day. He will have the Manihot specimens out for your perusal.

The steno pool is working full blast on the Grad. School proposal. We had quite an editorial board working it over yesterday.

Hope the "South of France" has been sunny. I'm not sure about the time change, but envision your speech as having been accomplished, and well received by now (9:45 A.M. M.S.T.).

Regards,

Secretary, for the staff.

m

April 7, 1969

Mr. Thomas C. Taveggia
Organizational Behaviour Research Unit
London Graduate School of Business Studies
28 Northumberland Avenue
London WC 2
England

Dear Mr. Taveggia:

We are indeed sorry you will not be able to see Dr. Rogers while he is in England. Your study sounds most interesting, and we would be very happy to discuss it with you next fall, or any time you find it convenient to visit the Taximetrics Laboratory here in Boulder.

If there is anything further we can help you with, please let us know.

Sincerely,

Gilbert N. Hersh
Research Economist

srh

7 April 1969

Dr. H. F. Robinson
Vice Chancellor
244 Washington Street, S. W.
Atlanta, Georgia 30334

Dear Dr. Robinson:

I decided to take the bull by the horns and see what response I might get in writing the enclosed letter. Since talking to you we have more or less decided to put on some kind of an effort to get the Manihot studies into gear. Perhaps as you suggested a series of seminars would be indeed useful and I hope that you would be willing to say some useful words about such a seminar and even suggest the people who should attend.

Thank you for your kindness and consideration.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm
Enc.

3 April 1969

Dr. H. F. Robinson
ViceChancellor
244 Washington Street, S. W.
Altanta, Georgia 30334

Dear Dr. Robinson:

You will recall that during your visit to Boulder we spoke about problems in the study of cassava. I have a problem coming up of a rather pressing nature, and wonder if you can suggest means by which I might solve it. The Indian student Appan whom you met briefly gets his Ph.D. in September this year. To keep him around as a post-doctoral fellow means we need some new funding. We have discovered that the normal channel for post-docs requires citizenship or permanent residence in the United States; neither of which he has. Since he is a very important element in our continuing research, it would be a pity to see him stopped in September.

Can you suggest any foreign aid funds, and name of the administrator of these from which we might lift some small grant to keep this student going? I will be pleased to have your advice. I will also be interested to know of your progress with respect to the survey of cassava problems.

Looking forward to your reply.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

4 April 1969

Dr. Lee A. duBridge
Presidential Science Adviser
The White House
Washington, D. C. 20506

Dear Dr. duBridge:

Over the past few years more and more statements in various authoritative articles have appeared concerning the importance of cassava (*Manihot esculenta*) as a tremendous source of food in the underdeveloped countries of the world. We know that cassava is the world's sixth largest food crop, feeding at least 200 million people (FAO statistics). Also it is possible to discover that very little is known about the plants, the crop, the distribution and marketing systems, and what part the crop can play in overall economic development. (It has greater internal use than merely as a human food source - it is being exported to Europe as a base for composite cattle feed and is an excellent starting source for textile sizing and corrugated cardboard manufacture. In spite of the discussions which have indicated the significance of this crop, nothing seems to be getting done. If one compares what we know today about cassava with, say, corn we will discover that our knowledge is equivalent to what we knew about corn in 1869. What I would like to discover is: what authoritative group in the United States could make a decision that an intensive investigation into improving this crop should be made? I personally have studied this crop and its related species for the last 15 years and have consistently attempted to bring the need for much more work to the attention of various United States agencies as well as those abroad. I have, for example, tried to interest the Rockefeller Foundation, the United Nations through FAO, the U.S. Foreign Aid program, the USDA; all to no avail.

That more food for developing nations is needed is evident. That cassava has a potential to meet some of these needs greater than is now being met is immense, but it is beyond me to discover how we attract the funds necessary to study this crop in all its multitudinous aspects.

I would be happy to find some route to the appropriate individuals who could make a decision, to establish in Puerto Rico, or other suitable tropical area a well-rounded, well-financed study. If, by chance, you can suggest the route to go, I would be pleased to heed your suggestion.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm
CC: H. F. Robinson

4 April 1969

Mr. Lyle W. Phillips, Division Director
Undergraduate Education in Science
National Science Foundation
Washington, D. C. 20550

9/639-5021 A.B.E.S.

Dear Mr. Phillips:

We are returning Dr. Oliver's above-cited proposal, because Mr. Estabrook is in Europe for the month, and unable to meet your deadline.

We regret causing this inconvenience.

Sincerely yours,

(Mrs.) Genevra Metcalf
Secretary

m
Enc.

THE AIMS, SUCCESSES AND SHORTCOMINGS OF NUMERICAL TAXONOMY

1. I honestly shouldn't give this talk --not a numerical taxonomist;
don't know what should or should not be included in the definition.
DEFINITION: A variety of talents in this audience; some mathematically
(or statistically) oriented, others "computerniks," others even
taxonomists. Since each comes with a special vocabulary, I will try
to speak in one best known to me -- taxonomy.
2. Rather, a taxonomist interested in the science; prefer, therefore, to
call myself (or my efforts) taximetrics.
3. This indicates a concern for use of taxonomic rules to guide development
of models and programs.
4. Turns, then, on the role of the taxonomist, his need to provide a clear
understanding of working processes. Description of activities becomes
essential.
5. The 2 kinds of biological work - analysis and synthesis.
Differences between two
Taxonomy, generally of 2nd type -- also evolution and some types of
ecology. What implications here?
6. The parts of taxonomic endeavor.
 - a) "Formal" taxonomy--names, rules for, reporting or results, keys,
lists of species or other taxa.
 - b) Classifications--break down into step-wise process - data gathering,
data analysis, similarity measures, clustering.
Each step requires its own type of rules, math and programming.
 - c) Evolutionary studies

7. Important feature, then, is to put the substantive scientist, with his special knowledge, in a central role, rather than replace.

Historical antecedents and developments

1. Pre-computer - binomial names, dichotomous keys

- a) Telegraphic descriptions, museum storage of specimens, all significant to think about - methods -
Hierarchical, (nested box) organization; non-overlapping sets; partitions
- b) E. Anderson's non-metric methods in introgressive hybrids
Methods of description parallel very closely present procedures for describing input - Simple graphs
- c) Work in biological statistical analysis - much generated by agricultural statisticians
- d) Anthropometric analyses
- e) Work of George Boole, Cantor, Godel, Church, Turing, Von Neumann
in math paved way for use of computing machines

2. Computer-age developments - biology - direct on Taxonomy

Sewall Wright and Genetics input, but not yet coincident

English work - PRA Sneath, bacteriology

Williams and Lambert, ecology (later in Australia)

Jeffrey, statistics - factor analysis

Russians - who knows?

Italian - Capali, Sforza, Silvestri

German - no large role

Belgian

U. S. -Kansas

School started by C. D. Michner

1957 - Michener and Sokal, first to surface

Sokal, with Sneath, developed school of statistically oriented

First use of "numerical taxonomy"

Express purpose: "objectifying the taxonomist - a breathless,
get-with-it, you're dead unless school

Still a nebulous definition of what it includes (or excludes)

Other efforts - ours

Many others now beginning - want to know how

Future Potential

No question that these investigations tend to involve more people

But how well? Depends on kinds of work we're willing to do.

Effects - on biological thought processes and methods

on math itself, as more and more stimuli come from us

on procedures in libraries, museums, etc.

April 1969

TAXIMETRIC LABORATORY
DEPARTMENT OF BIOLOGY
ARMORY 101
UNIVERSITY OF COLORADO
POULDER, COLORADO 80302

April 2, 1969

Dr. Jeanette Blood
Departments of Mathematics, Engineering and Medicine
University of Southern California
Los Angeles, California 90007

Dear Dr. Blood:

On March 3, 1969, I received your letter to me indicating that my paper entitled "The Theory of the TAXIR Accessioner" had been "sent along for publication in Mathematical Biosciences." I would be pleased to learn anything further on its progress toward publication.

Find enclosed an additional copy of the manuscript for your reference.

Very truly yours,

George F. Estabrook
Research Mathematician

srh

April 1, 1969

Dr. George Hopting
Forest Service, U. S. Department of Agriculture
Southeastern Forest Experiment Station
P. O. Box 2570
Asheville, North Carolina 28802

Dear Dr. Hopting:

I will be pleased to join with you at the A.P.S. Literature Retrieval committee, provided we can find some way to meet the costs of transportation, etc. I do not now have in my budget any funds for this trip, but hope that you can suggest some means by which these can be achieved.

With respect to the possibility of a demonstration of our TAXIR system, I want to check out the possibilities of a "live" demonstration through the facilities of the Computing Center at Washington State University, where we have already been doing some collaborative work to support the USDA's Plant Introduction Station, under the direction of Dr. Sam Dietz. What I have to do is to find out if the computing center there is willing to join with us in putting on the demonstration and, if so, what costs will be involved.

In connection with this demonstration, it may be difficult (if not impossible) to set up a remote terminal in Spokane, where the meetings are to be held. If we cannot get a remote terminal setup in Spokane, do you think it would be possible to put on the demonstration in Pullman, at the WSU Computing Center? What would be the problems, if any, from the standpoint of A.P.S.? I must check with Dr. William Walden, Director of WSU Computing Center, to discover his willingness to cooperate, and what arrangements for programs, personnel, etc. will be required.

With respect to the retrieval problem itself, I would like to tell you that we have not yet addressed ourselves to the literature problem, but intend to work on it. Our system so far developed is most capable of retrieving primary biological data, but we have designed the system in packages, or modules, with the idea that expansion to cover other interesting facets of the "total" problem of information retrieval be made possible. I do believe, after some conversations with Fred Wellman, that there is a need for our type of retrieval package, as

Dr. George Hepting
April 1, 1969
Page 2

well as for the literature capacity. Our philosophy has been to work on areas different from the ones that others, like yourself, have been working very hard in. We do have some ideas about a literature retrieval system, however, which are now "on the back burner."

At your suggestion, I am writing to Dr. Graham, and am enclosing a copy of my letter to him, so that you will be aware of what is going on.

Thanks for your letter. I hope that we can work out something.

Sincerely,

David J. Rogers
Professor of Biology

Enclosure 1

cc: Dr. Graham
Dr. Walden

srh

April 2, 1969

Dr. Shirl O. Graham
Department of Plant Pathology
Washington State University
Pullman, Washington 99163

Dear Dr. Graham:

At the suggestion of Dr. George Hepting, I am writing to find out the possibilities of putting on a demonstration of our TAXIR information retrieval system at the A.P.S. meeting in Spokane, this coming August.

Several problems are outstanding, and I hope that you can help in ironing them out. But first, I'll give you a little background which may be helpful in your understanding. TAXIR, mentioned above, is an information retrieval system developed by a team of biologists, mathematicians, and programmers here in the Taximetrics Lab. The system is receptive of a wide range of biological information in the raw data form and is not a retrieval system for literature. We have recently been collaborating with your Computing Center, where Dr. William Walden has been in charge of converting our programs to run on the IBM 360 there. The purpose of this collaboration has been to provide Dr. Sam Dietz with a system he could use for the data gathered in the Plant Introduction Section of USDA under Dr. Dietz' direction. Dr. Dietz and Dr. Cal Konzak have both become fairly well acquainted with TAXIR and can probably tell you something about it.

With this short introduction, let me say that we would like to demonstrate the powers and utility of our system to the plant pathologists. I have met with Dr. Ellis, Dr. Wellman and Dr. Lucas at North Carolina State recently, and they encouraged me to participate in the information retrieval discussions of A.P.S. and to show what our system would do.

We would need to work very closely with the Computing Center there in Pullman in order to put on a "live" demonstration and need close collaboration with the computer people to make the demonstration go.

The first question to answer is whether the Computing Center there is willing to go after this type of work, and to that end, I am

Dr. Shiril O. Graham
April 2, 1969
Page 2

going to contact both Dr. Walden and Dr. Dietz to determine their willingness and interest. If they are agreeable, then we will have to determine whether they expect to be ready by the time of the meetings. Then, and perhaps you can participate in this decision, we need to find out whether the computing center can set up a remote terminal at the meeting site in Spokane. If they are, then we will have to know what the remote terminal facilities are and how they operate, so that we can take full advantage of them with the least amount of difficulty.

If the computing center there cannot provide such remote terminal facilities, then do you think it possible to put on the demonstration in Pullman, and ask that those members of A.P.S. interested in seeing the demonstration get to Pullman for it? This is perhaps the first question to be answered, but it is hard to tell which is first.

One outstanding problem is costs--we had not anticipated putting on such a demonstration and do not, therefore, have anything in our budget for costs and travel. Can you suggest any possible support? I do not expect that there would be large costs, but certainly someone has to pay for computing time, personnel costs for operators, supervisors, etc. We will need about four round-trip tickets from here to Pullman, plus per diem while there.

I hope that I have not over-burdened you with problems and hope that you will be able to give us some sort of answer. Since I will be in Europe during most of this month, there is no immediate rush to answer the letter, and I suspect you will need some time to get the answers anyway. Looking forward to your reply.

Sincerely,

David J. Rogers
Professor of Biology

cc: Dr. Hepting, Asheville, N. C.
Dr. Walden, W.S.U.

srh
Air Mail

April 2, 1969

Dr. William Walden, Director
Computing Center
Washington State University
Pullman, Washington 99163

Dear Bill:

We have been invited by the Committee on Information Retrieval of the American Phytopathological Society to demonstrate TAXIR at their meeting this coming August in Spokane. Clearly, we cannot put on such a demonstration without your full cooperation, and that is what I'm writing to find out about now. The questions are as follows:

1. Do you think TAXIR will be ready some time in advance of August 20?
2. Can you hook up a remote terminal I/O in Spokane, at the A.P.S. meeting place? How much?
3. Are you willing to put on such a demonstration?
4. How much money do you need? Are funds forthcoming in your own budget?
5. Have you sufficient personnel to put the system to work in Spokane?
6. If it were decided to ask A.P.S. members to come to Pullman for a demonstration, could we do it in shop? Do you have CRT hookup?
7. Is Sam Dietz willing to provide some input? Is he willing to do anything for such a demonstration?

I have written to Dr. Shirl Graham in your Department of Plant Pathology, Chairman in charge of local arrangements for A.P.S., and told him that I was writing to you about these problems. You should be hearing from him soon. It will take some real hard work to put over the demonstration, as you're probably well aware. It was no trivial task when we put one on last October, and we had been working on it for some weeks before it happened.

Dr. William Walden
April 2, 1969
Page 2

I'll be out of town until the 23rd, so you've some time to mull this over and come to some decision. I'll be interested to hear from you.

Sincerely,

David J. Rogers
Professor of Biology

cc: Dr. Graham
Dr. Hepting

srh

Air Mail

April 2, 1969

Dr. George McNew, Director
Boyce Thompson Institute
1086 N. Broadway
Yonkers, New York 10700

Dear George:

In March, I visited Drs. Ellis, Lucas and Wellman in North Carolina State at Raleigh and talked to them about their desire to get an information retrieval system going for plant pathology. Since I and my team here at Boulder have developed a system which should have great value for plant pathology, we were trying to decide how we could get together on it. Since the granting agencies seem to want all biologists to get together, as the chemists have, we thought naturally of AIBS, and Dr. Ellis suggested that you might be interested to hear about our system. Because of your long-term interest in plant pathology and your up-coming presidency of AIBS, I would like to have the chance to tell you about our information retrieval system.

Two of my team, the systems analyst, Robert Brill, and the economist, Gilbert Hersh, will be in New York on Wednesday, Thursday and Friday, April 23-25; I thought it might be useful to ask them to come out to see you in Yonkers. I would like to come, too, but since I'll be traveling in Europe then, I can't make it. However, these two men have a better grasp of the total system, called TAXIR, than I have, and can give you a picture of the powers of our system and its potential application to plant pathology.

While such an explanation is not intended to "sell" anything, Dr. Ellis and I thought you might wish to consider an information retrieval system with respect to some of your own interests there, and with respect to getting AIBS interested in standing together to support retrieval systems.

I hope you will have time to listen to Brill and Hersh, and if you can make time during the days mentioned above, drop me a line here. These two will confirm the dates and time.

Sincerely,

David J. Rogers
Professor of Biology

srh
Air Mail

April 1, 1969

Mr. Robert Adams
B.L. 222
Department of Botany
University of Texas
Austin, Texas 78712

Dear Mr. Adams:

I hope that we will meet for your final orals on Tuesday, April 29. I would much prefer that day to Monday.

I enclose my signature on the form and between now and then will give careful examination to your thesis.

Sincerely,

David J. Rogers
Professor of Biology

srh
Air Mail

April 1, 1969

Dr. Robert J. Menzies
Department of Oceanography
Florida State University
Tallahassee, Florida 32300

Dear Bob:

This is just a note to let you know that we are still alive and working, and hope to get the final grant request written this month. I hope to be able to take it with me to Washington when I visit there on the 5th of May. Before it comes to light there, however, I will have a copy in your hands for your approbation.

I have to be out of the country from the 5th to the 23rd, but hopefully, others of my team will be at work on this application.

Sincerely,

David J. Rogers
Professor of Biology

srh
Air Mail

April 1, 1969

Dr. Jorge Leon
Via delle Terme di Caracalla
FAO of the UN
Rome
Italy

Dear Jorge:

I should have contacted you sooner to report my complete failure to secure funds to support my graduate student for collecting trips. It is a tragedy when we are so close to an opportunity to do a good job that we have no way to get money to support any kind of research. I appeal to you to discover if FAO itself would not be willing to at least keep one graduate student alive here and support his travel to collect Manihot in South America.

I do hope that there is some way you can suggest to make funds available for my Indian student.

Best regards,

David J. Rogers
Professor of Biology

srh
Air Mail

April 1, 1969

Dr. John Popenoe, Director
The Fairchild Tropical Garden
10901 Old Cutler Road
Miami, Florida 33156

Dear John:

Here, finally, is a short summary of my talk, "Manihot, Man and Computing Machines." Please feel free to edit this manuscript in any way you see fit.

The Manihot species in Texas, I believe, can come from Dr. Billy Turner, Chairman, Department of Botany, University of Texas. If you care to wait, I will be in Austin toward the end of this month and can lift a root or two at that time.

Sincerely,

David J. Rogers
Professor of Biology

Enc. 1
srh

29 May 1969

Miss Gladys Lytle
Department of Zoology
Arizona State University
Tempe, Arizona 85281

Dear Miss Lytle:

At last! Your deck has been run, printout printed and Skyline graphed. They are being sent off to you in various packages.

Expenses run to \$44.00, itemized on the attached sheet.

We hope that your research progresses successfully to a thesis.

Sincerely,

John W. Wong, Jr.
Programmer

JWW:gm

29 May 1969

Mr. A. Scaife
1 Wallis Gardens
Waterlooville
Portsmouth, U.K.

Dear Sir:

We would be pleased to receive an off-print of your article on "The Effect of a Cassava "Fallow" . . . " which appeared in the East Africa Agriculture and Forest Journal, 33(3), 1968.

Thank you for your courtesy.

David J. Rogers
Professor of Biology

gn

26 May 1969

Dr. John Olive
Director, AIBS
3900 Wisconsin Avenue, N.W.
Washington, D. C. 20016

Dear Dr. Olive:

Enclosed is a copy of a document which I have sent to Lamont Cole. While this is not intended to be complete, I do think that the paper more or less summarizes what I had in mind, and hopefully fits your own ideas for AIBS.

I expect to be here on June 2 and 3 and if you need to call for some enlightenment or enlargement on these ideas, I will be happy to supply further explanations or information. Needless to say I will be happy to know whether there was any action or reaction to this document.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm
Enc.

26 May 1969

Dr. LaMont Cole
Department of Ecology
Cornell University
Ithaca, New York 14850

Frsr Dr. Cole:

Here finally is the document I promised to send you. I hope that it says sufficient to you to be employed by you in the executive committee meeting. If this serves, but you expect to have questions about it during the discussion by the committee, I expect to be here on June 2 - 3 and I will be receptive to any questions from you by telephone.

I hope that something can be done along the lines proposed in this document. Thanks for your consideration.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

26 May 1969

MEMO TO: Dr. Askeff Löve
FROM: D. J. Rogers
SUBJECT: Equipment funds for rental of IBM 026 Keypunch, 115 volt,
Model 1, Type K keyboard (FORTRAN 3475)

Rental	\$60/month
less 10% ed. discount =	54/month
Per year	\$648.00

This should be allowed on the funds from the Graduate School,
because if we encumber the funds available, this effectively spends
the money.

22 May 1969

Dr. R. J. Moore
Plant Research Institute
Canada Department of Agriculture
Ottawa 3, Ontario

Dear Dr. Moore:

Thank you for your letter of May 14. What Dr. Löve meant by the TAXIR system is a computer oriented information retrieval system designed for rapid efficient storage and retrieval of biological data. Dr. Löve should have mentioned that we have put up all the chromosome records which he and his wife incorporated in their book on the Chromosome Numbers of Central and Northwestern European Plant Species, as well as all of the reports given in Ornduff, Index to Plant Chromosome Numbers, 1966-67. This was a test of our system to see if it were useful for information about plant chromosomes. From this test, we are satisfied that we can handle the chromosome reports with facility and rather economically.

TAXIR is a set of computer programs intended to work on large computers and incorporates procedures for manipulating many different types of biological data, one type of which is the information recorded for the index of plant chromosomes.

If you would like more information about TAXIR and its capacities, I strongly recommend that you come and see for yourself. We would be glad to demonstrate the various aspects of the system, and point to some of its advantages.

Sincerely,

David J. Rogers
Professor of Biology

DJR:qjn

May 22, 1969

Access Corp.
4632 Paddock Rd.
Cincinnati, Ohio 45229

Dear Sir:

Please send us information about approximate costs of your System 60. We are interested in looking at your system in respect to retrieving biological information.

Sincerely,

John Wong
Acting Librarian

JW/ms

22 May 1969

Dr. Dennis M. Power
Ornithology Department
Royal Ontario Museum
100 Queen's Park
Toronto 5, Ontario

Dear Dr. Power:

Thank you for your letter of May 13, inquiring about TAXIR. I am sending several descriptive papers which give some ideas about the system, particularly from the user's point of view. We do not have, at the moment, full flow charts, documentation and listings of the several program modules which go to make up the total system. We are in the process of developing a user's manual, and will send this along when it is in shape to send out.

TAXIR, (for TAXonomic Information Retrieval) is a complete system for information management and retrieval. The several integrated programs form a compiler for information retrieval, written in FORTRAN IV, and is available (at the moment) for use on Control Data Corporation 6400 machines. One of the major modules (ACCESSIONER) is now being readied for running on an IBM 360/67, and we hope that the computing center where conversion to IBM equipment is being done (Washington State University, Pullman) will also desire to make conversions of the remaining modules.

The system is designed to allow on-line, interactive operation (including CRT or teletype remote terminals), but does not require it. Either mode is available, because of the variation in needs of the user and his computing center facilities. One of the features of the modules is that the system can act to provide automatic identification of unknowns, but does not produce keys in the same format normally found in printed works.

You will note that I used the word "management" in describing the system. This indicates our concern for the total flow of work required for any IR system, including designs for efficient data capture (pre-machine operations), these integrated with the operating computer programs, several output formats, and cost/effectiveness studies of the total. This last item (cost/effectiveness) is, of course, an extremely important feature which museums must consider, and we have developed procedures (a copy of which is enclosed with the other literature) which allow determination of the actual costs for all aspects of the work, from beginning point onward.

22 May 1969

We in the Taximetrics Laboratory designed TAXIR specifically with museum operations and needs in mind. We have used the integrated team approach to guarantee the most effective system, and believe that we have succeeded in developing programs which fit museum operations. To be certain that we did meet these goals, we have tested the system with a variety of problems from museums, both here at the University of Colorado Museum, as well as those in the University of Michigan Museum of Zoology, some of the Smithsonian's data, and a few others.

Perhaps the above explanations seem rather like an advertising claim, but they are intended, rather, to give you some feeling for what TAXIR is and its potential. To gain a real understanding, however, I would suggest that, if interested, you stop by to see us and get a full-scale description, and see TAXIR in action. If you care to, we will be glad to demonstrate all aspects.

I think you can see that it would be impossible (or impractical) to mount TAXIR on your small machine. As mentioned earlier, the system is designed for a large memory machine, and we're working hard to keep the system in the first half of core of a 65 K, 60 bit word machine. Also noted earlier, the programs are being converted to a large IBM 360. I have no idea of what size of central processor of an IBM 360 is necessary but most of that series should be capable, if you have a good programmer available, to make the conversions.

I hope this answers your questions, and again, we would be glad to show you the system if you have time to come out for a visit. We would suggest at least two days, if you can come.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

21 May 1969

Asst. Dean Jay B. Kopelman
Graduate School
University of Colorado

Dear Dr. Kopelman:

For the period of May 4 - May 9, Dr. David J. Rogers and Mr. Gilbert N. Hersh, both of the Taximetrics Laboratory were in Washington for the purpose of gathering information concerning research support.

A schedule of meetings :

- Monday: Smithsonian Institution, Mason Hale, Richard Cowan, et al. for discussing information retrieval in museums.
Tuesday: N.I.H., Ileen Stewart and Dr. Arnold Pratt, on grant support for information in ^{rel. to} ~~medic~~ ⁱⁿ ~~eric~~ ^{er} health, and related areas.
~~Wednesday~~ National Science Foundation, Richard Johnston of the systematics panel.
Wednesday: AIBS, John Olive, executive director
NSF, Sea Grants, Harold Goodwin
Thursday: AID, Dr. Erwin Long
NSF, OSIS, Gordon Ward concerning museum grants.
Friday: conversation with Dr. Hans Lansburgh, Resources for the Future.

The following costs are attributable to this trip:

Mr. Hersh: air transport, round trip	\$144
6 days per diem @ \$16	96
Dr. Rogers: 5 days per diem @ \$16	80
Total	\$320

Would it be possible for the Office of Research Services to assume the costs indicated? If so, what are the procedures to make the necessary transfer of funds?

Sincerely yours,

Gilbert N. Hersh
Assistant to the Director, Taximetrics

GNH:gm

21 May 1969

Dr. Edward C. Weiss
Director, Special Programs
Office of Scientific Information Services
National Science Foundation
Washington, D. C. 20550

Dear Dr. Weiss:

Thank you for your telephone call of yesterday. With respect to that call I submit the following information: Professor Rogers was requested to come to a colloquium in Marseille, France, 5 - 13 April 1969. He was to address that group on aspects of information retrieval, especially TAXIR. The French government paid for transport from Denver to Marseille and return. He also gave a seminar in Amsterdam, on information retrieval, especially TAXIR, April 14 through 16, 1969, and a seminar in London on the same subject, April 17 - 22, 1969.

We are requesting that the cost of per diem be allowed for this period since the discussions in all cases concerned the TAXIR system and its application. To summarize, the costs involved are the per diem rates allowed by the University of Colorado for foreign travel, based on Department of State Allowances Program, AD BUL 68-42.

Marseilles, 9 days @ \$20	\$180	
Amsterdam, 3 days @ \$19	57	
London, 6 days @ \$20	120	
	<hr/>	
	\$357	Total

The travel budget allowed us in the grant (as subsequently amended) has sufficient funds to cover this expense, no additional funds will be required from NSF for this expense.

We then request a letter of authorization addressed to the Office of Research Services, Ralph Stilson, Chief Accountant, at the University of Colorado, with a copy to us. Thank you.

Sincerely yours,

Gilbert N. Hersh
Assistant to the Director
Taximetrics Laboratory

GNH:gm

May 6, 1969

Dr. Tatiana Sendulsky
Instituto de Botanica
Caixa Postal 4005 - Sao Paulo
Estado de Sao Paulo - Brasil

Dear Dr. Sendulsky,

Thank you for your letter of 6th May. I shall be grateful to receive all the Manihot specimens with the exception of the ones which have been crossed out in the list, enclosed herewith.

Sincerely yours,

David J. Rogers

19 May 1969

MEMO TO: F. Donald Brown
FROM: G. N. Hersh, Administrative Assistant
SUBJECT: Account No. 1708-11

Please refer to our memo of 24 March, 1969, and previous correspondence, concerning the above account.

The charge of \$2.09, reference #JO9937, is for account number 1708-01.

Please note: Account 1708-11 is closed. NO CHARGES SHOULD BE MADE TO THIS ACCOUNT AT ANY TIME.

All charges not to the research account (-48) should be made to account 1708-01, the Department of Biology general fund.

Taximetrics Laboratory

Armory 101

19 May 1969

Donald A. Preece
U. K. Regional Editor
"Statistical Theory and Method Abstracts"
Statistics Department
Rothamsted Experimental Station
Harpenden, Herts., U.K.

Dear Dr. Preece:

Please find enclosed the requested abstracts.

Very truly yours,

George F. Estabrook

GFE gm

19 May 1969

Editorial Department
BioSciences Information Service
2100 Arch Street
Philadelphia, Pa. 19103

Gentlemen:

If BioSciences is to serve as an information retrieval concern it would seem important to get at least some of its information correct. I have twice received an abstract for review sent to the following address: Donald P. Rogers, Taximetrics Lab, etc. Boulder, Colo.

Dr. Donald P. Rogers is in the Department of Botany, University of Illinois, Urbana. Dr. Donald P. Rogers is a mycologist, and therefore should be the recipient of all questions which mycologists are capable of helping you with.

My name is ~~is~~ DAVID J. Rogers. My address is indeed the Taximetrics Laboratory. My speciality and review subject for BioSciences is Economic Botany. I trust that you can get this difference between Donald P. and David J. straightened out.

I am forwarding the last abstract, mistakenly sent back to me, to the correct individual in Illinois.

Sincerely,

David J. Rogers
Professor of Biology

DJR:qm

21
12 May 1969

Dr. Carl Oppenheimer and Dr. Robert Menzies
Department of Oceanography
Florida State University
Tallahassee, Florida 32301

Gentlemen:

Since I am not certain whether Bob is in Hungary or some other such seaport, I address these comments to you equally. On last Wednesday I went with an informal proposal for the pilot study for information retrieval to Mr. Goodwin, assistant to Dr. Abel in the Sea Grant Program. The intelligence that I returned with as far as the necessary elements for success at Sea Grant for the information retrieval project was as follows: Sea Grant proposals are mission oriented; specifically they must have some objectives of direct economic import (new food, new economic wealth, etc.) for their funding. They do not support basic research per se. They said that an information system as an objective for a proposal was certainly within their purview if we documented how this helped to solve some economic problem. Goodwin was very willing to allow that you might show that Isopods or sediment or plankton indicators could have economic significance.

Clearly you gentlemen can indicate the economic significance of the organisms and the other related investigations which were in the original proposal, and I would be loath to put words in your mouth about that. And I hope that I can ask you to line up a set of objectives in which it is indicated the economic significance of these kinds of investigations, specifically how does the information system working on the types of studies indicated bring direct results of benefit to the state of Florida, to the eastern gulf, and to the nation. If we put the objectives in these words we get closer to Sea Grant money than otherwise. I am enclosing a copy of the proposal as we have so far have it written and so that you can see the kind of objectives we went in with as well as the expected significance. These two items clearly do not serve the purposes of Sea Grant. You will notice in our proposal that we put pretty heavy emphasis on Florida State University as a center for information retrieval, and also as a place where your colleagues in GURC can also become trained in the best use of TAKIR. I think that this set of objectives still has merit, but still within the framework of economic and social significance. I hope you can lay on the necessary words and with that send back to me those lists of objectives which turn on Sea Grant.

21 May 1969

Apparently the people in Sea Grant look very favorably on P.S.U.. You have already established a good reputation with them and they consider you a very valid institution on which to spend money. For this reason I think we should go along with their request for the kind of objectives mentioned above.

A preliminary budget is enclosed. Please feel free to change it as needed. Again, your own efforts are needed to get the right dollar figures, as well as ours.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

P. S. Please refer to the proposed budget, subsection 2, "Personnel Benefits." We have calculated the P.S.U. personnel benefits at 6% which is the current rate for the retirement benefit, charged at the University of Colorado. If this is not correct for P.S.U., please make the necessary change.

16 May 1969

Dr. Alan Beetle
Department of Agronomy
University of Wyoming
Laramie, Wyo. 82071

Dear Dr. Beetle:

You will perhaps recall that I wrote last Fall on behalf of a student, Allan Hale, who was to have as a study case in our computer taxonomy course a sample of wheat varieties. Mr. Hale has done a very nice piece of work with the samples which he gathered from the agronomy farm, under the direction of Bob Sackett. Mr. Hale is now coming up to his preliminary examination and we would like to invite you to sit as a visiting member on his committee. Would it be possible for you to come down to Boulder in June (tentatively Thursday, the 12th) to participate in Mr. Hale's preliminary? About all we can offer are travel expenses. Please let me know shortly if this is possible and convenient.

At the same time we will hope to cover some of the ground along Mr. Hale's combining research leading to his Ph.D. dissertation which we think will be a continued interest in the classification of wheat varieties. Looking forward to your acceptance of this invitation, and your visit with us.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

19 May 1969

Dr. Richard A. Howard
The Arnold Arboretum
The Arborway
Jamaica Plain, Mass. 02130

Dear Dick:

Here is a list of my expenses, and the receipts, for the trip to the PRC meeting.

I trust that you will take my announcement of resignation from the PRC to represent some way to "clear the air" for the committee. There did not seem at the time any way to get MacDonald off the AHS back. Very clearly I am deeply interested in AHS getting a good system for their important records. It is obvious to me that the present method of operations will not provide such a system. Therefore, while my resignation still stands, it does not indicate my loss of interest. I learned nothing new from MacDonald this past Tuesday. He is still proceeding as we discovered in March.

I hope that my public announcement will cause some second thoughts on the part of the PRC. I will continue to work with you should you so desire, but I refuse any further contact with MacDonald.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

Expenses for Visit to Plant Records Center Committee
Meeting, Longwood Gardens, May 13, 1969

Air Fare - Denver to Philadelphia and return	235.00
Car rental - Round trip, Boulder to Denver	18.90
" " , Phila. to Media	18.13
Per diem	25.00
	<hr/>
	\$297.03

David J. Rogers
Department of Biology
Taximetrics Laboratory
Armory 101
University of Colorado
Boulder, Colorado 80302

15 May 1969

Mrs. Susan Von Borstel
2711 Virginia Street
Berkeley, California 94709

Dear Susan,

I understand that the gentleman for whom you work is doing cancer research. I believe his name is something like "Snider." Marylu indicated to me that he might be interested in taking advantage of the information storage and retrieval capacities of high speed electronic computers. You no doubt realize that the Taximetrics Lab. has been actively engaged in researching this field of computer technology and we have produced some very interesting and exciting results which may be powerful tools for cancer researchers. I would be pleased if you would do ~~two~~ things for me.

1. Send me, at the above address, the name, address, title and professional affiliation of your boss.
2. Mention to him that the Taximetrics Lab exists and would be interested in initiating a dialogue with him on the topic if he himself is interested.

Thank you. Give my regards to Káath.

George F. Estabrook

GFE:m

MEMO TO: Ralph Stilson, ORS
FROM: Gil Hersh, for David J. Rogers
RE: Account #1708-48
DATE: 14 May 1969

1. Regarding your memo of 5-2-69 please be informed that we anticipate the expenditure of the total amount of the unexpended balance indicated in the March 1969 Project Director's Statement, during April, May and June.
2. We do have a deferred unexpended authorization; no more than \$500 of which should be spent for fiscal year 1969, the balance of which is to be spent for 1970 (after July 1, 1969).
3. With respect to the per diem travel advance for Dr. Rogers; in Europe: a letter has been sent to NSF requesting authorization and we are awaiting the reply.

14 May 1969

Dr. Edward C. Weiss, Program Director
Special Projects Program
Office of Scientific Information Service
National Science Foundation
Washington, D. C. 20550

Dear Dr. Weiss:

It was good to see you last week, and I want to thank you for the information that you were able to give us as well as the encouragement.

I have a business matter with reference to grant GN 656. The French government invited Dr. Rogers to participate in an international colloquium on "The Use of Computers in Archeology.." in Marseille, on the 6 - 12 of April 1969, to present a paper on what is being done in biology with computers and information retrieval in the United States. The French government provided transportation but the per diem expenses were left to the participants. Subsequently Dr. Rogers presented a paper to a seminar of the Dutch Academy of Science in Amsterdam and met with the Office for Scientific and Technical Information in London, returning home on April 22.

We would like to charge this per diem expense against our grant in the amount of \$380. May we please have written authorization?

Sincerely yours,

Gilbert N. Hersh
Administrative Assistant

GNH:gm

14 May 1969

U.S.A.F. Air Photography & Charting Service
8900 South Broadway
St. Louis, Mo. 63125

Gentlemen:

Could we please have a price listing for the World
Aeronautical charts for Mexico and Central America
(Series WAC, scale 1:1,000,000)?

We are interested in #471, 472, 520, 521, 522,
588, 589, 590, 643, 644, 645, 709, 710, 711,
768, and 769.

An order form, or instructions for obtaining these
charts, would be appreciated. Thank you very much.

Sincerely yours,

S. G. Appan
Research Assistant

SGA:gm

13 May 1969

Dr. Richard B. Walker
Coordinator of Demonstrations, IBC
Botany Department
University of Washington
Seattle, Washington 98105

Dear Dr. Walker:

I must apologize for not having replied to your letter. Instead I sent the abstract form to G. W. Fischer requesting 30 square feet of bench and 30 to 40 square feet of posting space.

You are quite correct in your opinion that we were discouraged by Dr. Bevan's reply. We thank you for your kind offer to use the G.E. but since some significant parts of our information retrieval program, TAXIR, is in machine language some reprogramming would be necessary. This would not be trivial in time or effort. For example, W.S.U. at Pullman is in the process of rewriting it for the IBM 360 and the estimate of three month's programming time seems to be correct. The best solution in regard to the Congress is to demonstrate by illustrating the botanical input and printed results at a bench, and to be at hand to answer inquiries. Four of us from the Taximetrics Laboratory will be on hand.

I apologize again and thank you for your efforts in our behalf. TAXIR at present is working on a CDC 6400 here at the University of Colorado, so if you decide you want it at the University of Washington it should be a simple matter to adapt it to your new installation.

Sincerely yours,

Henry S. Fleming
Research Biologist

P.S. We have just received in this morning's mail a communication from you addressed to D. J. Rogers, confirming our bench and poster space. Display boards 4' x 10' will be adequate. I am sorry if two names have caused confusion, but I likely listed Rogers first in the abstract, since he heads the Taximetrics Laboratory.

HSP:gm

12 May 1969

Mr. Kennedy B. Schmertz, Director
Foreign Currency Program
Smithsonian Institution
Washington, D. C. 20560

Dear Mr. Schmertz:

We have a set of research and development programs in botany and agriculture, concerning Manihot esculenta (manioc, cassava etc.) which we believe to be significant for Indian nationals, and for food development in India.

We would be pleased to hear how we might put ourselves in a position where we could fund these efforts through the Foreign Currency Program. I will be pleased to have any information, application forms, directions, etc., which will allow us to apply.

Thank you for your efforts.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

12 May 1969

Dr. Erven Long
Director of Research and Institutional Grants
Agency for International Development
Washington, D. C. 20000

Dear Dr. Long:

It was a pleasure to discuss cassava with you and the other gentlemen present last week. I trust that you will communicate our interests in collaboration to Dr. Robinson, so that we may put our knowledge and abilities to work on the survey.

I will also be pleased if you can suggest ways by which I can keep my graduate student going in the interim period. Mr. Appan will actually finish his Ph.D. thesis and degree work this summer, and will be ready for some sort of post-doctoral position to finish up the work he has so capably started during his pre-doctoral period. He could very capably work on the various aspects of the documentation and summarization of the problems, and potentials, of the crop, if Dr. Robinson cared to put him to work on it.

Thank you for your considerations. I hope we can be of service.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

5 May 1969

Dr. John Popenoe, Director
The Fairchild Tropical Garden
10901 Old Cutler Road
Miami, Florida 33156

Dear John:

A cutting from the University of Texas M Walkerae
went off to you via Air Parcel Post on Thursday. I
would expect that you would have it planted by now,
but in any event, expect it.

Can you publish the paper without a photo? I don't
know when I can get one?

Sincerely,

David J. Rogers
Professor of Biology

DJR:GM

2 May 1969

Prof. Asbjørn Herteig
Historisk Museum
Middlaldersamlingen
Bugarden, Bryggen
BERGEN, Norway

Dear Professor Herteig:

It was a pleasure to make your acquaintance at the recent meetings in Marseilles. Let me thank you for the very warm reception I received from your staff in Bergen. We held many delightful and informative discussions on mathematics, archeology and the TAXIR system of the Taximetrics Laboratory, Boulder, Colorado.

I am sending separately several documents relating to TAXIR. These are all we presently have available. As I explained to your staff, we are presently working on more complete descriptions and documentation and these documents will be made available to you as soon as they are ready. In particular, some of the more technical information sought by the personnel of the U.B. computer center is not yet ready for distribution. The enclosed preprint (Estabrook and Brill) will probably be of most interest to the computer staff.

I should like to extend my special thanks to Per Solberg for his generosity as guide and translator.

Best wishes for your continued research progress.

Very truly yours,

George F. Estabrook
Research Biomathematician III

GFE:gm

1 May 1969

Dr. George McNew
Boyce Thompson Institute
1086 N. Broadway
Yonkers, New York 10700

Dear George:

Thank you very much for your time given to the fellows from my lab. I am very sorry that I couldn't be there myself, but I hope that you may have some better understanding of the way we operate and of the potential for using our system in biology.

I also appreciate your letter to John Olive. I hope to be able to go in and see him this coming week. My general conversation with him will be toward the establishment of some committee for advice to biologists in the use of computers in information retrieval. Hopefully AIBS can be a clearing house and aid for those sections of AIBS which care to get a general system going. I will not try to sell him our own TAXIR system, but will at least let him know that we have generated one which should be examined for its merits.

Thanks again for your time and effort for my staff members.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

25 June 1969

Dr. S. M. Dietz
USDA - ARS - Plant Introduction Sta.
Johnson Hall 59
Washington State University
Pullman, Wash. 99163

Dear Sam:

A small matter in connection with the demonstration -
We need four beds, cheap, for about two days before the
demonstration and perhaps one day after for a total of four
days.

Since we are operating on practically no money, I hope
you can find some arrangement so we get by with the least
amount. Clearly, fancy hotel or motel rooms are not indica-
ted. If you have trouble with arrangements on this score,
just tell us so.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

24 June 1969

Mr. Gary Godsey
Rocky Mountain forest and Range Expt. Station
240 West Prospect
Fort Collins, Colo. 80531

Dear Gary:

I think I found your bug. I am enclosing to you all the materials you sent me. Turn to the source listing, overlay SORT. Make the corrections you see there and run Hawksworth's data again. I am not sure, but I think that will clear it up. Please let me know if it fails.

In addition, if you make the corrections shown in overlay GRASH, the overflow of the table INTCON (which often occurs in large studies) will cease to be a fatal error. Clustering will continue to the end, but no more connectedness information will be printed.

I hope this proves helpful. Call on me again if you need my help.

Sincerely,

Robert C. Brill

RCB:gm

23 June 1969

Mr. Ronald E. Somerly
Department of Entomology
School of Agridultural Sciences
University of California
Riverside, California 92502

Dear Mr. Somerly:

I am sorry to have delayed in answering your inquiry about your desire to do a study using our Graph Theory Model. However, the important issue, namely the invoice against your purchase order, was sent to your administrator. Both were delayed inasmuch as you have the wrong address for our lab. Please note that we are now in Boulder, not Fort Collins.

Let us know when you are ready to run.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

18 June 1969

Superintendent of Documents
U. S. Government Printing Office
Washington, D. C. 20402

Dear Sir:

Have you any publication which lists and defines all the federal departments, bureaus, agencies, etc?

If such a document is available, may we please have the necessary information for ordering it.

Thank you.

Sincerely yours,

Gilbert N. Hersh
Assistant to the Director

GNH:gm

18 June 1969

Dr. Miles, Director
Computing Center
Florida State University
Tallahassee, Florida 32307

Dear Dr. Miles:

Dr. Robert Menzies has posed your questions concerning the TAXIR system and the intended collaboration of the Taximetrics group with the Sea Grant group at F.S.U. The following should provide the information that you have requested.

The computing system at the University of Colorado is a CDC 6400 operating on SCOPE 3.1. The rate schedule for computer use is enclosed.

The TAXIR system will not make use of the systems disk, nor is it intended that space on the disk will be necessary. Data will be on tape.

\$7,500.00 is included in the F.S.U. budget schedule for computing time. From our extensive experience in the use of the TAXIR system we can say that this will more than cover computing expenses, given the problems posed in the text of the proposal.

If you have any other questions, you can send them directly to us and we shall promptly answer them.

Sincerely,

David J. Rogers
Professor of Biology
Director of the Taximetrics Laboratory

DJR:gm

Enc.

CC: Dr. Johnson, Dean and
Director of Research
Dr. Menzies, Professor and
Coordinator of Sea Grant Project

17 June 1969

Mrs. Ruth W. Lancetti
Technical Information Officer
Agriculture and Rural Development Service
Office of War on Hunger
Agency for International Development
Department of State
Washington, D. C. 20523

Dear Mrs. Lancetti:

We received yesterday a copy of a letter to Mr. Walter P. Naquin, Jr. of Wailuku, Maui, which you kindly sent us. Unfortunately a copy of the original request to you did not accompany your carbon. If you would be kind enough to send a copy of the request, we will be happy to aid however we may.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

17 June 1969

Dr. Erven Long
Director of Research and Institutional Grants
Agency for International Development
Department of State
Washington, D. C. 20523

Dear Dr. Long:

In keeping with the suggestion in the pamphlet "Centrally Funded Research" I enclose herewith a general statement of a project before making a formal proposal submission. While I have made most of my professional endeavor into the study of cassava, I have also had an opportunity to observe during my field work other important agricultural features. Some of these are summarized in the ideas for a proposal included. As you may know, we have developed some very sophisticated computer aided techniques to help correlate information about crop plants. We would like to see these programs put to work in the service of AID.

I believe that in addition to providing a valuable primary service for agriculture in the underdeveloped countries that we can at the same time demonstrate for other workers the value of computer aided systems.

I will be very pleased to have your reaction to the ideas presented in the enclosed statement. Please let me know if it is useful to expand these ideas into a full proposal. Thank you for your consideration.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

17 June 1969

Mr. H. L. Goodwin
Office of Sea Grant Programs
National Science Foundation
Washington, D. C. 20550

Dear Mr. Goodwin:

Do you have a list of "Grants Awarded" for Sea
Grant for the year 1967-68?

We would appreciate receiving a copy if such is
available?

Sincerely yours,

G. N. Hersh
Assistant to the Director

GNH:qm

17 June 1969

National Science Foundation
Washington
D. C. 20550

Gentlemen:

Would please send me a copy of "Grants Awarded,"
1967-68?

Thank you for your courtesy.

Sincerely yours,

G. N. Hersh
Assistant to the Director

GMHNgmH

17 June 1969

Honeywell, Inc.
P. O. Box 54257
Terminal Annex Station
Los Angeles, Calif. 90054

Gentlemen:

Please refer to Invoice # S041EW300, University of Colorado Purchasing Department, Regent Hall 122, Boulder, Colorado, System Number S23R9X. (A copy of your invoice enclosed for reference.)

Please send all invoices to University of Colorado Purchasing Department, Regent Hall 122, for the account of the Taxinetrics Laboratory, Armory 101.

Please include our purchase order number on your billing. Failure to do so can delay remittance by as much as six weeks, for which we can not be held responsible.

Yours truly,

G. N. Hersh
Assistant to the Director

GNNH:gm
CC: Purchasing
Office of Research Services

17 June 1969

Mr. Phil Ellis
Purchasing
University of California
Riverside, Calif. 92502

Dear Mr. Ellis:

As per the memo from Mr. U. L. Riggs, Department of Entomology, enclosed is an invoice for computer time and consultation against Purchase Order #R-33710-8 for Mr. Somerby.

Please send the remittance as per our invoice to Account #1708-48, Taximetrics Laboratory, University of Colorado.

Sincerely yours,

G. N. Hersh
Assistant to the Director

GNH:gm
CC: Mr. U.L. Riggs

17 June 1969

Dr. Nicholas Jardine
King's College Research Centre
Cambridge CB2 1ST
England

Dear Dr. Jardine:

Thank you very much for the invitation to your seminar in September, entitled "Mathematical and Theoretical Aspects of Numerical Taxonomy. Unfortunately the date of the seminar coincides with the beginning of our Fall Term, and I cannot personally attend.

May I, however, suggest as a substitute Mr. Frank Bisby, whose address after July 15 will be St. John's College, Oxford OX1 3JP. Mr. Bisby has one year to complete his doctoral work in Oxford under Mr. Frank White at the Forest Herbarium. He has for the past seven months been working at our laboratories to learn our methods and philosophy. I find him a very able, indeed brilliant student, and believe that he would contribute nicely to the seminar. In addition to his work with us, he has had a good experience in normal non-numerical methods in taxonomy and therefore brings a balance to discussions. I trust that you will see fit to offer him an invitation.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm
CC to F. Bisby

MEMO

TO: Dr. David J. Rogers, Director
FROM: Gilbert N. Hersh, Systems Analyst
REFERENCE: Garbage, City of Boulder

June 13, 1969

Discussion with Andy Brisco in order to do the garbage study of 900-1000 questionnaires approximately 20 descriptors only, following statements were made:

- A. Consulting time for design; George Estabrook/Van Dyke: 4 man hrs.
- B. Hersh/Estabrook; Operations design: 2 man hrs. ea.
- C. Estabrook; TAXIR use training: 2 man days.
- D. Input time; machine and operator: 2 man weeks @ \$125.00 per/week.
- E. Magnetic tape: \$30.00
- F. Computing time: \$70.00

All Taximetrics Lab consulting at \$100.00 a day. Project not to begin before July 1 and to be completed within a month after acceptance. Total cost \$650.00.

Computer time to \$70.00 to be billed directly to the City of Boulder.

16 June 1969

Dr. R. Curt Johnson
Department of Chemical Engineering
University of Colorado

Dear Curt:

Enclosed is a copy of a training grant I mentioned to you over the phone. If you find any ideas herein for something similar here I would be happy to know about it. Jane Bock has expressed some interest but has not yet seen the proposal. If you would like to have a session to talk about a possible training program here I would be happy to participate.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

16 June 1969

Dean Lawson Crowe
Graduate School
University of Colorado

Dear Lawson:

The other day in our conversation we mentioned that we should get some outside readings on the matter of the Taximetrics Laboratory. With your permission I would like to proceed to gather a number of statements from people with whom we have collaborated so that they will be immediately available for yours and Dr. Mannings perusal.

I will ask that each of the respondents direct their comments to you.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

June 13, 1969

Mr. Tom Stewart
University of Colorado
ORS
Boulder, Colorado 80302

Dear Tom:

I am securing information on short term support for a field collection trip by Dr. S.G. Appan who is working under me.

Dr. Appan has just completed his thesis and will soon complete his formal doctorate requirements. He is an expert in the field of the Biology of tropical foods, especially Manihot.

Funds are needed for a collecting trip thru Mexico by car or 4-wheel drive vehicle. It is estimated that at least 8,000 miles will be driven for a period of not less than 60 days. The support needed should not come to more than \$1,500.00.

Seeds will be collected for the purpose of testing them in field stations to develop hybrids to feed hundreds of millions of people in the tropical areas of the world.

Any aid you could give us would be greatly appreciated, including suggestions of any other foundations, other than federal, that might be interested in giving support to a short term adventure of this nature.

Sincerely,

Gilbert N. Hersh

GNH/mjs

June 13, 1969

Mr. Edward C. Weiss
Program Director
Special Projects Program
National Science Foundation
Washington, D. C. 20550

Dear Mr. Weiss:

Mr. Richard See's Letter of October 26, 1967, authorized Dr. David J. Rogers' summer salary (two months, pro-rated on the basis of his salary of appointment) to be paid for 1967 and 1968. The proper amount of funds to cover this cost was transferred to the salary for Principal Investigator's account.

We have used our funds prudently over the past two years and have sufficient funds remaining in our grant account to complete our work after the June 30, 1969, termination date. There are sufficient funds in the salary account to completely cover the cost of a summer salary for Dr. Rogers (\$1,888.88 x 2). There are also funds available in the category "Personnel Benefits" to cover the 7% TIAA costs on the above salary (\$3,777.76), \$264.44.

We request this transfer in order to finish our work during this grace period. No additional funds are being sought for this specific grant to cover this cost.

If acceptable, an authorization to the University of Colorado Office of Research Services' Chief Accountant, Mr. Ralph Stilson, would be appreciated.

Sincerely,

Gilbert N. Hersh
Systems Analyst

erh
Air Mail

June 12, 1969

Mr. Gerhard Stoltenberg
Minister for Scientific Research
Federal Republic of West Germany
Bonn, West Germany

Dear Mr. Stoltenberg:

In the American journal, Science, a recent article described the scientific activities of West Germany, indicating that your government is interested in international scientific collaboration. I would like to explore the real interest you have in developing scientific research in underdeveloped countries. There is a great need for investigation, research and development of food crops in nearly every tropical country of the world, and very small effort is presently being expended on crops little known to temperate-zone people but which feed millions of people in the countries of lesser economic stability, most of which are in the tropics.

I, personally, have long been an investigator into problems of scientific, modern, food production in tropical countries, and feel that the only way in which the tropical countries can become self-sufficient is through the aid of methods and skills which exist in the West, particularly in the temperate zones. The tropical countries urgently need all the possible assistance we can give, and I wonder if West Germany is interested in contributing to such worthy endeavors.

If there is any interest in West Germany to sponsor a truly international program of scientific investigation in the tropics, I would be pleased to learn about it. If you have any publications which describe support possibilities for the areas of investigation I mentioned, I will be pleased to have them.

Sincerely,

David J. Rogers
Professor of Biology

Air Mail

srh

6 June 1969

Mr. Larry Blick
City of Boulder
Municipal Building
Boulder, Colorado 80302

Dear Mr. Blick:

We have carefully reviewed the wind damage questionnaires, and work has begun in entering the information on tape.

The list of descriptors being used is enclosed. The brackets on the left indicate which descriptors are found in each questionnaire question block.

It is our understanding that we will provide the following services:

1. Consultation necessary to set up the Define Items from the questionnaire.
2. To record the data found on the questionnaires on magnetic tape in TAXIR Define Item format.
3. To verify the data once on tape against the data on the questionnaires.
4. To build an Accessioner with the given data.
5. To instruct your personnel in the querying of the system, and run a sufficient number of queries to get the feel of the TAXIR system, and to get essential information from the raw data.
6. To provide a cost analysis of the project.

We further understand that there should be about 800-1000 questionnaires for processing and that we should have the verified data on tape within five weeks.

All consulting and training services are provided at no cost. Not more than \$750.00 will be charged for recording the data and using the University of Colorado computer for initial querying.

Memorandum of Agreement

2.

6 June 1969

The Taximetrics Laboratory has the right to use information about this project.

If you are in agreement with this understanding of the project, please sign and return the enclosed copy as it will serve as a memorandum of agreement.

Sincerely yours,

Gilbert N. Hersh
Assistant to the Director

GNH:gm
Enc. 2

Accepted, Larry Blick

Date

6 June 1969

Dr. Frank W. Blair
Department of Zoology
University of Texas
Austin, Texas 78712

Dear Frank:

You probably remember that I spoke to the Executive Committee of IBP in early February, at which time I asked for a "hunting license" to go to various groups at work in IBP. The idea was that we had developed an information retrieval system, TAXIR, and would like to see it employed, if the system fit the needs of the workers.

So far I have not done any hunting with the license you folks were kind enough to issue me at the February meeting, not from the lack of interest, but because I have had to devote full time since then to the business of keeping my group supplied with funds (plus a few academic chores, of course). Although we aren't completely out of the woods yet, I think I can at least see the pathway, and can now go on with the interesting business I wanted to start earlier.

I note that the Analysis of Ecosystems group has hired Robert M. Ellis, of Travelers' Research, Inc., as their director of planning and analysis. I don't know exactly the role of Traveler's in the Ecosystems operations, but suspect that a large part of the Traveler's work will be with integration of the information gathered by the different subprograms. If this is indeed the work to be done, it falls into a category of information management, which obviously includes computer-assisted programs for data formatting, storage and retrieval. Further, if my diagnosis of this situation is correct, then we in the Taximetrics Laboratory may be able to provide similar services.

It is our basic purpose to assist scientific investigators with their research problems, especially in the area of data evaluation, synthesis, storage and retrieval. (Please see the enclosed exposition for a complete explanation.)

Our computer assisted systems are operational and flexible; we may be able to serve your project needs. We have discovered that extensive person-to-person dialogs are necessary to determine how we can be of service, and at what cost.

We are particularly interested in the types of data which are being gathered in your program, and I would like the opportunity to talk with you about potential collaboration.

Sincerely yours,

David J. Rogers

6 June 1969

Dr. Richard Bellman
Editor, Mathematical Biosciences
University of Southern California
Los Angeles, California 90007

To the Editor:

Concerning Mathematical Bioscience, 3, 371-381, J. A. Hendrickson, Jr., "Clustering in Numerical Cladistics: A Minimum-Length Directed Tree Problem":

1. The paper concerns primarily the mathematics of the problem as virtually no biological discussion is made. This would be acceptable except that of the very interesting mathematical problem he discusses only the special case of 4 OTU's, presents only trivial results which have been well known for some time, and does not even make a suggestion of how his approach might be profitably generalized to the original problem.

2. In his discussion, he observes that the problem is difficult and that existing computer programs fail, in general, to find answers. The problem has, however, been solved, and in more generality than formulated in this paper, to the point where a deterministic computer algorithm exists for finding all most parsimonious trees for an arbitrary number of OTU's and characters (J. Theoret. Biol. 21, 421-438, 1968).

The appearance of this paper calls into serious question the validity of the review procedures for the Journal of Mathematical Biosciences.

Very truly yours,

George F. Estabrook
Research Mathematician

GFE:gm

4 June 1969

Mr. Bob Benn
U. S. Army Engineering Waterway Expt. Station
P. O. Box 631
Vicksburg, Miss. 39180

Dear Mr. Benn:

I have just checked with our computer group and discovered that they have a heavy commitment of time and energy for the next month although that's a hopeful date. I am sure that this means that there is no possible opportunity to get the conversion of the program you want in any reasonable time. ✓

I do have a suggestion. Not too long ago a private consulting organization, Barss, Reitzel and Associated, 134 Mt. Auburn Street, Cambridge, Mass. 02138, converted the Graph Theory Clustering model to an IBM 360 system there in Cambridge. I believe that if you correspond with these gentlemen they will be willing (probably for some funds) to let you have their version. Since our time and energy are much devoted to the development of new systems we would be hard pressed under any circumstances to help you convert this from the CDC 6400 to an IBM 360.

If some of your scientific workers have need for such a program with relationship to ecological studies, we might be interested to help them run their data through our system here.

I am sorry to give you this relatively bleak picture, but I am sure you can understand the difficulty we face at the moment, particularly with very short funds and with other developments of much higher priority.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

6 June 1969

Mr. Robert Benn
U. S. Army Engineering Waterway Expt. Station
P.O.Box 631
Vicksburg, Miss. 39108

Dear Mr. Benn:

In reviewing my letter of 4 June and after further discussion among my staff, it appears we may have misinterpreted the scope of your scientists' research needs. Due to work loads we cannot aid you in conversion of the program for use on the IBM; however, this is not the crux of a potential collaboration.

Overall it is our purpose to assist the individual investigator with his specific research problem. We do not attempt to force his work with an extant solution.

It must be emphasized that the Graph Program without consultation may not provide what is desired.

Thus we would be very interested in a dialog with your researchers to define their needs and to determine how we might serve them.

As I previously indicated, if we can be of assistance, we would be interested to help them run their data through our computer center here. The picture here looks less bleak, and we look forward to hearing from you about possible collaboration.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

6 June 1969

Dr. Robert Schneider
Animal Neoplasm Registry
Department of Public Health
2151 Berkeley Way
Berkeley, Calif. 94704

Dear Dr. Schneider:

Susan Van Borstel, your present employee and my former student, advises me that your present research and the recent efforts of the Taximetrics Laboratory may be such that a mutually interesting and profitable collaboration might occur. If this seems interesting to you, as it does to us, I feel the appropriate way to begin is to find out a little more about each other.

The Taximetrics Laboratory is an interdisciplinary research group embracing the fields of biology, mathematics, economics, computer science and others. The primary concern of the Taximetrics Lab is the research and development of mathematical models and computer applications which meet the specific needs of biological and medical scientists. For this reason, collaborative dialogue with other scientists, such as yourself, is absolutely fundamental to our work. At the same time, such collaboration can provide you with new methods and facilities for furthering your own research objectives.

Our current collaborators include curators of biological and other natural scientific research collections, oceanographers, primate behavior scientists, USDA plant introduction researchers, and scientists interested in propagating frogs of certain genetic specificity for use as laboratory research animals.

Please find enclosed a brief prepared exposition. This will explain in more detail who we are and what we are trying to do. I would be interested to hear in detail about your current efforts.

Very truly yours,

George P. Extabrook
Research Mathematician

GPE:gm

5 June 1969

Dr. Morris Garnsey
Department of Economics
University of Colorado

Dear Morris:

I (in concert with members of this team) have been thinking rather intensively about your invitation to join the upcoming seminar. As I promised, I'm now trying to write down some of my ideas about the seminar and how I (and we) might best participate in it.

Let me tell you first that I am very enthusiastic about the ideas you proposed for the seminar. The type of work, where most of the thoughts and information are qualitative, are (or possibly are) very close to the types of concepts and things we have had to work with in taxometrics. Most of the working ideas are held intuitively by the knowledgeable person, and there has not been a chance to speak of these ideas in terms of a mathematical model. This does not indicate that the ideas are not powerful, but rather that to work with these ideas, for some pragmatic effort or for someone to actually employ the ideas, is very difficult.

To generate some theory of man-environment relationships is excellent and I concur in the need for such, but we (in taxometrics) always go further, to discover the thinking rules by which one gets to the theory. If we can discover these rules, then it is more likely that some mathematics may be applied which will tell us whether we have the necessary and sufficient conditions to meet the objectives which also need careful statement. If, further, we can reword the rules mathematically, we are in a better position to generate practical algorithms and computer programs to aid us in manipulating data gathered for meeting some precise objectives.

It is with respect to these ideas that I asked you during our lunch whether Ken Boulding was willing to join in the rather difficult task imposed by the above. We would not want him to think us nosy, pushy, naive, rude, or any other undesirable descriptive adjective, just because we want to get down inside his thinking apparatus to work out the rules. We have had experience in the past where some knowledgeable individual was offended when we asked "How do you know this?" when all we really wanted was some statement which told us how, in context of his own discipline, he could get to some positive statement. If Dr. Boulding finds such an exploration objectionable, then we would not want to subject him to our exploratory methods, nor to take up time which we could put to work somewhere else.

We also have a desire in this shop for some practical output from the theoretical work. We always try to go from the theoretical to the practical, albeit not 100% successfully. But because of our bent in this direction, I wonder how you (and others in the seminar) would react to an idea that we want to do an actual investigation on regional economic study which we have already been discussing in this lab. We thought that the seminar members could act as a sort of advisory, consultative, idea-producing group as we go about the design of a regional study, and then, with some actual data, we could give a test of the theoretical output from the seminar. Just how we would interact with members of the seminar in this type of effort is not known to us, but we hope that somehow such an effort can be meaningful for all concerned.

I hope you can talk these ideas over with Ken Boulding, and any others whom you consider to be involved, and if you like, we can all sit down informally to get our ideas out into more meaningful form. However, I hope you will take this memo as confidential between you and me. I hope you can translate some of these ideas in your own language to Dr. Boulding, but I feel certain that we would not be well understood if he read this paper.

5 June 1969

Admissions and Records

Missy Richards registered for independent studies
Biology 491, but was incorrectly placed in Biology 691.

Please waive the fee for processing the necessary
forms to correct this mistake.

David J. Rogers
Professor of Biology

DJR:gm

4 June 1969

Roger Wise
TRW Systems Group
One Space Group
Redondo Beach, Calif. 90278

Dear Mr. Wise:

Please send me information concerning the cost and capabilities of your GIM package. We would be interested to see if such a package might be relevant to biomedical data bases.

Sincerely yours,

John W. Wong
Acting Librarian

JWW:gm

Dr. M. L. Magoon, Director
Central Tuber Crops Research Institute
Vazuthacaud
Trivandrum-10
Kerala, India

Dear Dr. Magoon:

Considerable time has elapsed since I had the pleasure of meeting you at the Root Crops Symposium at Trinidad. Though we had no direct correspondence during this period I keep myself informed of the excellent work you and your team continue to do through Appan. Mr. Pusey of the Tropical Products Institute, who visited you last year, had some very nice words to say about the work being carried out under your guidance.

Appan has been doing excellent work here, and it has been a pleasure guiding his research in Manihot. As you know he has been engaged in delimiting and defining closed gene pools (biological species) of Manihot, by the application of Taximetric methodologies, employing electronic data processing equipment. As has been abundantly proved in several cultivated crops, natural interbreeding populations representing wild species of Manihot, are a potential source of donor parents of desirable genes, which could very profitably be utilised in an interspecific breeding program aimed at improving the genetic constitution of M. esculenta genotypes. Extracting and incorporating alien wild genes has become a profusely rewarding aspect of any crop improvement program, especially since the outcome of elegant modern plant breeding techniques which make even widely distant crosses possible. This can play a significant role in cassava improvement program too (Fig. 1), but unfortunately it has been largely neglected, despite the fact that the approximately 200 wild species of Manihot represent a rich, practically unexplored, and unexploited reservoir of valuable genetic material. Interspecific cassava improvement program may be flowcharted for sequential implementation as shown in Figure 2. The basic requirement is to delimit and recognise closed gene pools. We have completed the delimitation of the Mexican and Central American segment of the genus (Figure 3). I want Appan to continue and complete the delimitation of the South American segment of the genus also. Simultaneously, we intend to continue investigations of the Mexican and Central gene pools, along the lines indicated in Figure 2. As the investigations outlined are of immense magnitude in terms of time, personnel, talent, facilities, etc. we are considering possible collaborations.

3 June 1969

I would appreciate having your view about collaborative work with possible financial support ~~from~~ PL 480 funds. The Smithsonian information sheet on PL 480 funds for India says, "the problems of performing research under our programs in India are manifold, though not insuperable." But I would rather rely upon first hand information from you regarding the pros and cons involved. May I request you to let me know (1) whether you will be in a position to undertake collaborative work, and (2) the difficulties, if any, which we may have to face in initiating this collaborative effort.

In February, I was at the Fairchild Tropical Garden, Miami, Florida, having been invited to give the annual Fairchild lecture, and I had the pleasure of discussing Manihot work with Dr. Popenoe, the Director. He is very enthusiastic about work along these lines especially possible interspecific hybridization aimed at increasing the protein content and reducing the prussic acid. He has already initiated some work. If necessary, a tripartite collaborative effort with you, Dr. Popenoe, and me may be worked out.

I hope to send Appan to Mexico in August-September this year, to undertake field studies. This would be an ideal opportunity to collect seeds of all the Manihot species which have been delimited so far (Fig. 3). Would you be interested to raise the wild Mexican seedlings and maintain them in advance of the official initiation of the PL 480 scheme? With best regards.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

3 June 1969

Dr. Richard A. Howard
The Arnold Arboretum
The Arborway
Jamaica Plain, Mass. 02130

Dear Dick:

In thinking over the various activities so far with regard to the PRC, I still think that resignation from that committee is the only route to go. However, I do not wish to let you and the American Horticulture Society down, and since that is the case would like to recommend that my position be as a consultant on information systems for AHS. This might be a more useful relationship. I frankly do not see that the committee as presently constituted has much of a chance to be objective about MacDonald's operations. Very clearly, MacDonald has sold Russ Siebert and, very clearly, Russ Siebert wields a big stick with all the money he has available. Since money speaks so loudly the members of the committee have little choice but to accept what Russ Siebert wants. I do not think, however, that the American Horticulture Society is quite so much under Pass's thumb and that the AHS needs an independent look at the various types of retrieval systems. Therefore I believe that if I could serve in the role of consultant to AHS, something better could be achieved. If you agree to this type of relationship, then I will write to Fred Galle with this suggestion.

I did indeed have to make a special trip to Philadelphia for this meeting. I had been in Washington the week before, and had originally planned to spend the weekend in Washington and then go to Philadelphia. However, since the meeting was on Tuesday I simply could not stay away the long weekend because of obvious academic commitments here. Therefore I must submit a bill for a special trip. I am sending the bill from the travel agency which handled my ticket but am requesting only the Denver-Philadelphia round trip fare inasmuch as I did return via Ithaca. I am sorry to have to add this burden but feel that I have to.

I look forward to your response to my idea.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

22 May 1969

Dr. Alan Beetle
Department of Agronomy
University of Wyoming
Laramie, Wyoming 82071

Dear Dr. Beetle:

Allan Hale's preliminary examination is now scheduled for June 6, at 10:00 A.M. in my office in the Armory Building on University Avenue.

I hope this is convenient for you.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

2 June 1969

Dr. George Cowgill
Department of Anthropology
Brandeis University
Waltham, Mass. 02154

Bear George:

Please find enclosed some of our latest papers. I hope they are useful to you. You may also be interested in a writing which appeared in the book *Evolutionary Biology*, Dobzhansky et al, ed., Appleton, Century, Crofts, 1969, entitled "Use of Computers in Studies of Taxonomy and Evolution," of which we have no more offprints for circulation.

Very truly yours,

George F. Estabrook
Research Mathematician

GFE:gm

2 June 1969

Dr. Jeanette Blood
Department of Mathematics, Engineering and Medicine
University of Southern California
Los Angeles, Calif. 90007

Dear Dr. Blood:

I am enquiring after the progress of a manuscript of mine entitled, "The Theory of the TAXIR Accessioner," which was submitted for publication in "Mathematical Biosciences" in February 1969. On March 3, I received from you a letter which said: 'We received your paper entitled "The Theory of The TAXIR Accessioner," and have sent it along for publication in Mathematical Biosciences.'

I have heard nothing since that date. Any information as to the status of this paper would be appreciated.

Very truly yours,

George F. Estabrook
Research Mathematician

GFE:gm

2 June 1969

Dr. Schneider
Animal Neoplasm Registry
Department of Public Health
2151 Berkeley Way
Berkeley, Calif. 94704

Dear Dr. Schneider:

Susan Van Borstel, your present employee and my former student, advises me that your present research and the recent efforts of the Taximetrics Laboratory may be such that a mutually interesting and profitable collaboration might occur. If this seems interesting to you, as it does to us, I feel the appropriate way to begin is to find out a little more about each other.

The Taximetrics Lab is an interdisciplinary research group embracing the fields of biology, mathematics, economics, computer science and others. Our recent endeavors have been to make modern computer technology, through the rigors of mathematical thought processes, immediately useful to the biological and medical scientist for the purpose of understanding his research area more thoroughly. In developing these methodologies we have always preferred to work closely with the scientists whose specific problems are being addressed. Our current collaborators include curators of biological and other natural scientific research collections, oceanographers, primate behavioral scientists, USDA plant introduction researchers, and scientists interested in propagating frogs of certain genetic specificity for use as laboratory research animals.

The primary concern of the Taximetrics Lab. is the research and development of mathematical models and computer applications which meet the specific needs of biological and medical scientists. For this reason, collaborative dialogue with other scientists, such as yourself, is absolutely fundamental to our work. At the same time, such collaboration can provide you with new methods and facilities for furthering your own research objectives.

Please find enclosed a brief prepared exposition. This will explain in more detail who we are and what we are trying to do. I look forward to hearing from you soon.

Very truly yours,

George F. Estabrook
Research Mathematician

2 Junio 1969

Dra. Maevia N. Correa
Curadora del Herbario de Plantas Indigenas
Instituto de Botanica Agricola, CNIA
Castelar, Argentina

Dear Dra. Correa:

This is to acknowledge receipt of all the specimens
as per the enclosed list. They have been received in good
order, and we thank you for sending them.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR:gm