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

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

Intra Campus
Out

Hale 114

October 3, 1972

Personnel Office
University of Colorado
Boulder Campus

Gentlemen:

Please send to us, the Taximetrics Laboratory, a current copy of the University's title and pay scale booklet.

Thank you,

David J. Rogers,
Professor of Biology
Director

Intra-campus
out file

HHale 114 x. 8598

MEMORANDUM

25 September 1972

To: Ms. Kruse, Administrative Assistant
Computing Center

From: David J. Rogers, Professor of Biology

RE: Computing Center Accounts

1. As per our conversation by telephone of today, you have opened the follewing accounts for me:

   a) Faculty Research Account, CC number 0556N for the inital amount of $200. (per the letter to Hobart Smith from Rex Kruger of 9/15/72).

   b) Instructional Development, Biology 573, (Taximetrics), cc account number 0557D for $600. (as per telephone coversation with Hobart Smith, 9/25/72).

2. My inital request through Dr. Smith for $1,500. Faculty Resewrch will be presented to the Advisory Committee sometime in October. Although it is not necessary, I will submit a memo to clarify the inital pppposal.

Sept. 13, 1972

Memo to: Ken Boulding

From: D.J. Rogers, Hale 114

Subject: Answers to your survey on the DATA LABORATORY

1. What kinds of data are collected and how?

Kinds of data: (1) /biologic data (both alphabetic and numeric) descriptive of organisms, many groups, but especially of the genus Manihot; (2) statistical data such as census data, OEO data on job opportunities and job openings for migrants and other poor, wind damage data for the city of Boulder, garbage data for the city of Boulder, Office of Research Services data on grant applications and grants in progress; (3) Oceanographic data on physical and biological types of projects, and many others.

How collected: by the most appropriate means, using both direct and remote sensing devices, photographs, questionairs and interviews, etc.

2. What forms of processing, and/or indexing, are used?

I'm not sure what is wanted for this question. We input data to our information retrieval system TAXIR from cards or tape. After the data are read into TAXIR, we can produce indexes, answers to specific queries in any of a very complex number of ways, plot out data on a Calcomp plotter, or sit at a console with a cathode ray tube for on-line inter-active work with the data banks.

Aside from the strictly information retrieval type of activities, we can analyze data for its information content, and relation to other data describing the same objects or concepts, using a computer program called CHARANAL. We also can cluster the data with another computer program with the acronym GRAPH, which arranges objects by their similarity, gives measures of relationships, and plots a graph of the relationships on a pair-wise basis for all the objects compared on a particular study.

3. In what form is the information published or made available to others?

Monographs or scientific papers, or computer listings in response to particular requests for replies on the data banks we possess.

4. How often, by whom, and why is this data presently being used?

Depends on the requirements of each of the users of the data banks. It ranges from daily to yearly. I don't really know how to answer this question.

Sept. 12, 1972

To: D. D. Smith, Operations Manager
Computing Center

From: D.J. Rogers, Taximetrics Lab., Dept. of Biology

Subject: Tapes on file and Authorization

Mr. William Reid, of this laboratory, has my permission to relabel and/or remove all tapes owned by the Taximetrics Lab., in my name, or in Henry Fleming's name, or S. G. Appan's name.

Mr. Gilbert Hersh, of this laboratory also has the same priviledges.

There are, therefore, three valid names of users of these tapes, D.J. Rogers, William Reid, Gilbert Hersh.

A list of the tapes and numbers is attached.

In the future all tapes will be listed under the single name D.J. Rogers

DJR

David J. Rogers
Taximetrics Lab.
Professor of Biology

Attachment: Tape list

out bill

Take

Into comp

Sept. 12, 1972

Dr. E. Rex Krueger
Director, Computing Center
Res. Building 3, Rm 157
University of Colorado
Boulder, Colorado 80302

Dear Dr. Krueger:

Request is made herewith for allocation of $3000 of computer time for the academic year 1972-3 to Dr. David Rogers, whose needs for this period I did not adequately anticipate last year since he was away on a Faculty Fellowship. Computer usage forms a major part of Dr. Roger's activities, both in teaching and research. Indeed, he is giving a seminar this week summarizing some of his recent research. You would be very welcome if you could spare the time. Major grant funds have been available in the past, are not now available but are expected in the future.

The sum requested is intended to fulfill needs in 3 areas:

1. special study by two of Dr. Rogers' students, namely Wm. Reid and Gilbert Hersch, learning the techniques of information management. Estimated need - $1000.

2. a pilot research project for which grant funds will be solicited upon completion of the basic format, on genetic resource data management - an area of expected research for him for some time in the future. Estimated need - $1500.

3. preparation of material to be used next semester in Biol. 573 (Taximetrics). Estimated need - $500.

Your favorable consideration of this request would be greatly appreciated.

Very sincerely,

Hobart M. Smith
Chairman

HMS:ww

cc: Dr. Dave Rogers
Encl.

oct file

HALE 114 x 8598

August 3, 1972

To: Thomas Stewart
Office of Research Services

From: David J. Rogers and Charles C. Slater
Professors and Co-Principal Investigators

RE: AID/CSD 3614 Univsersity Account 1901-38

Please change the above University account from 1901, a Business School series, to 1708 a Department of Biology Series.

This change is requested because:

1. Dr. Slater will be on Leave from the University during this next academic year. Consequently all contract activity will be directed from the offices of Dr. David J. Rogers in the Biology Department.

2. The Biology Department has provided space and other facilities to Dr. Rogers for the execution of the project.

No other aspects of the account/contract are to be changed.

We will be careful to assure that charges made to the 1901 account series will be transfered.

cc. Hobart Smith
cc Charles Slater) mailed

Dec. 22, 1972

Mr. Wayland G. Lilly, Chief
Seed Inspection Section
Colorado Department of Agriculture
1525 Sherman Street
Denver, Colo., 80203

Dear Mr. Lilly:

Thank you for your letter of December 19, commenting on our work with seed bank information systems. We agree that a system would have many applications, and hope that we can build up such a system for all types of needs.

We would be very pleased to have you as an examiner of our system. Gil and I will have information on this shortly after the new year, and I hope he will keep you informed. If he doesn't please call me, and I will try to supply the necessary information. Our number is 443-2211, extension 8598.

Although this may not get into the mails before Christmas, and will not be in your office until after the 25th, let me offer best wishes for a Merry Christmas.

Sincerely,

David J. Rogers
Professor of Biology

December 20, 1972

Dr. Frank F. Willingham, Jr.
Department of Biology
Wake Forest University
Winston-Salem, N.C. 27109

Dear Dr. Willingham,

Thank you for your letter of 5 December. The computer program, "Graph Clustering" is one of a suite of 3 major programs developed in the Taximetrics Laboratory here. The other programs are: TAXIR, a taxonomic information retrieval system, and CHARANAL, a program to analyze the value of taxonomic characters. I enclose reprints describing these programs, and their application.

The programs are available, but we must charge a small fee to cover our costs of running off copies, either tapes or cards, and mailing charges. All the programs are now running on Control Data Corporation 6400 computers, but may be obtained from other institutions with other computing machines. If you would tell me what computing equipment is available to you, I could tell you where the best place to obtain the programs is.

The programs are all in use by taxonomists or ecologists at several institutions, either in tandem, or separately. The number of applications is large, both by zoologists and botanists. We have a number of students who have applied the clustering program particularly to their thesis work. I have two large papers now in press in which the programs were used for monographic studies in the genus Manihot (Euphorbiaceae). One of these, a monograph of the cultivars of Manihot esculenta, goes into great detail in describing the application of the Graph Clustering program, written especially for biologists, not for computerniks. This paper should appear shortly in the Journal Economic Botany. The second paper, a Monograph of Manihot and Manihotoides, is an application of all three major programs to produce a standard botanical, systematic, monograph of 98 species. This work will appear as one of the series, Flora Neotropica, Monograph number 13, which is to be published by Hafner Publishing Co. Both of the above papers are now in galley proof stage, and I am hoping for an early date of appearance.

I hope the above is sufficiently descriptive, and after you have read the reprints, I look forward to hearing from you again.

Sincerely,

David J. Rogers
Professor of Biology

DJR/jlr

Reprints sent to Dr. Willingham, Dept. of Biology, Wake Forest University, Winston-Salem, N.C. 27109 - 12/20/72

The theory of the TAXIR Accessioner
Theoretical and Practical considerations on data structuring for a computerized information retrieval system

A Graph Theory Model for Systematic Biology, with an Example for the Oncidiinae (Orchidaceae)
A Mathematical Model in Graph Theory for Biological Classification
A Taximetric Study of an Angiosperm Family: Generic Delimitation in the Chrysobalanaceae

Taximetric Methods for Delimiting Biological Species
A General Method of Taxonomic Description for a Computed Similarity Measure
An INformation Theory Model for Character Analysis
Application of an INformation Theory Model for Character ANalysis in the genus Arceuthobium (Viscaceae)

Dec. 20, 1972

Dr. H. P. Olmo
Department of Viticulture and Enology
University of California
Davis, California 95616

Dear Dr Olmo:

May I please have a reprint of your paper with Dr. Negi, "Certain Embryological and Biochemical Aspect of Cytokinin, etc." which appeared in the American J. Bot. 59(8): 851-857. 1972? I would also appreciate receiving the two other papers by Dr. Negi and you, cited in the above mentioned papers, namely:

Negi and Olmo, 1971. Induction of sex conversion in male Vitis. Vitis 10: 1-19.

Negi and Olmo, 1971. Conversion and determination of sex in Vitis vinifera L. (sylvestris). Vitis 9: 265-279.

If the Department of Viticulture and Enology maintains a list of publications available on Vitis, I should also like to receive that list.

Sincerely yours,

David J. Rogers
Professor of Biology

Taximetrics Lab.
Dept. of EPO Biology
Univ. of Colorado
Boulder, Colorado 80302
Dec. 20, 1972

Dr. Ilse S. Gottsberger
Depto. Botanica
Botacatu-Sao Paulo, Brasil

Dear Dr. Gottsberger:

I am sorry to report that neither your first letter, nor the specimen of Manihot from the Brazilian Cerrado were ever received. The fact that I was on leave away from my regular position may explain it.

If you care to, I would like to receive any other specimen of Manihot from the cerrado which you may still have.

I am sorry that you have been delayed in your work by the problems of the postal service. But please take great care in wrapping the specimens for mailing--they are generally very brittle plants.

Sincerely,

David J. Rogers
Professor of Biology

Dec. 20, 1972

Dr. John H. Beaman
Dept. of Botany and Plant Pathology
Michigan State University
East Lansing, Michigan 48823

Dear John:

I will do Manihot for FNA. It will be no sweat, there being only two species that get into the US, and the fact that the generic monograph of the genus is now in press for Flora Neotropica.

Having completed my monograph on Manihot, I am now looking into the possibilities of taking up the genus Vitis for my next study of cultivated plants and their relatives. However, I have not yet committed myself to this work, and want to do a little more investigation before saying I'll do the North American species for FNA. If and when I do decide to do the grapes, I'll let you know.

I look forward to receiving the Guidebook for FNA.

Sincerely,

David J. Rogers
Professor of Biology

G U
R C

Gulf Universities Research Consortium

GURC Field Office • NASA/Mississippi Test Facility
Bay St. Louis, Mississippi 39520 • (601) 688-3760

18 December 1972

De. Claek T. Rogerson
Cryptogamic Herbarium
The New York Botanical Garden
Bronx, Newyork 10458

Dear Dr. Rogerson:

As advised by Dr. David J. Rogers I am sending herewith a duplicate of Figure No. 28 of our Flora Neotropica manuscript:

Monograph No. 13. Manihot P.Mill. and Manihotoides, Gen Nov (Euphorbiaceae)- A computer-assisted study
by
David J. Rogers and S.G.Appan

Sincerely,

S.G.Appan
Staff Scientist

Copy to: DR. Rogers

December 29, 1972

Ref.: AGPE - PL 7/40
Dec. 5, 1972

Dr. Jorge Leon:
FAO
Rome, Italy

Dear Jorge:

Sorry not to respond to your letter of Dec. 5, enclosing Snoad's and Seidewitz's abstracts. Sickness and semester ending activities prevented an earlier response.

Snoad's abstract is indeed broad, and would seem not to speak to the problems of documentation, but in my instructions to him, I asked him to give an historical picture of gene bank documentation systems, as well as current problems therewith. That explains why the abstract seems too general. In his full text, however, I think you will see the need for such an approach, to lay the groundwork for the more detailed discussions such as those by Seidewitz and Hersh. If you do not object too strenuously, I should like to leave Snoad's abstract alone.

As far as the English in Seidewitz's, again, I think he communicates, even though his English lacks a little. His concepts are correct, and that is really what we wanted. I reread his abstract (since he had already sent me a copy earlier) and find that unless I rewrote the whole think, I would not really serve any usefull purpose. This sounds somewhat as though I am not acting responsibly, but again, hope that when the full text of his presentation are at hand, they will be much more meaningful.

I do believe that we will have a meaningful presentation overall, and put into place what is desired for documentation in genetic resource centers. Please bear with us on this matter.

We now have data for the pilot project from (1) Ft. Collins, (2) USDA Potato Center at Sturgeon Bay, and (3) from the IPC, Lima. We did not get the data from Scotland, as we had hoped, but do have a fair representation of the types of data from the first three above. The data are now nearing completion in the computer, and results should be forthcoming within a week. I hope you will act as one of the "examiners" of the results, and instructions on this activity will be forthcoming.

With best wishes for a Happy New Year to you and the staff, and to your family.

Sincerely,

December 15, 1972

Dr. Eduardo Feller
Office of International Programs
National Science Foundation
Washington, D.C. 20550

Dear Dr. Feller:

I enclose a very rough preproposal according to your telephone call yesterday. I hope I have included all necessary information.

Please note that the budget is very preliminary--it takes much more time to cost things out properly, and you only have very inaccurate guesses on some of the costs. Since you did not give me any indications of the approximate budget figures I should work towards, I have not felt any restrictions on needs. If you do not find this acceptable, please give me some guidelines on your requirements.

Any remaining questions will be gladly answered.

Sincerely,

David J. Rogers
Professor of Biology

Encl.

Dec. 8, 1972

Dr. Carl Oppenheimer
Univ. of Texas Marine Laboratory
Port Aransas, Texas 78373

Dear Carl:

The last time we were together, we talked a little about a possible seminar some time. Are you still interested?

I have the week of Jan. 15 between semesters, and could come down any time during that week. Is this a convenient period for you? If so, let me know, and I'll give you a topic and abstract.

Looking forward to hearing from you.

Season's greetings!

David J. Rogers

6424

December 8, 1972

Mr. Harry Lubrecht
Hafner Publishing Co. Inc.
866 Third Ave.
New York, N.Y. 10022

Dear Harry,

I neglected to mention in my last letter that you should definitely notify Dr. W.O. Jones, Food Research Institute, Stanford University, Stanford, California 94305 when you are ready to advertise my monograph.

Also if you will have any leaflets advertising it I could probably use a few.

Seasons greetings.

Sincerely,

David J. Rogers
Professor of Biology

DJR/CR

December 8,1972

Mr. D.H.Baldwin
United Fruit Co.
Prudential Center
Boston, Mass. 02199

Dear Mr. Baldwin:

I am building up literature for a course in Tropical Economics Plants and would appreciate receiving any descripive literature available on species of Musa, both the edible and fiber production crops.

Thank you in advance for your assistance.

Sincerely,

David J.Rogers
Professor of Biology

DJR/CR

December 4, 1972

Dr. A.C. Zeven
Institue of Plant Breeding
Agricultural University
Lawickse Allee 166
Wageningen-the Netherlands

Dear Dr. Zeven:

I am sorry to report that no reprints are available for the two papers on Manihot you requested. Perhaps you can get copies of the original symposium report by writing directly to :

Dr. Donald L Plucknett
Kauai Branch Station
College of Tropical Agriculture
University of Hawaii
Kapaa KauaiHawaii 96746

Sincerly,

DJR

Dec. 5, 1972

Dr. B. L. Nestel
International Development Research Center
2192 Riverside Drive
Ottawa, Ontario
Canada

Dear Barry:

I write to inform you of my forthcoming monograph of the genus Manihot, which is to be published as monograph number 13, in the series, Flora Neotropica, by Hafner Publishing Company, Inc. I believe that there will be quite a demand for this publication among tropical people who would not ordinarily have a chance either to get an announcement of the publication, or having the announcement, sufficient budget to purchase it. The retail price is $23.75 (it is a fairly hefty publication, with lots of illustrations), which unfortunately, will be beyond the means of many of our cassava colleagues.

Do you think there is a possibility that, through yours, and the IDRC, some subsidization of the publication would be forthcoming? I am not asking to be the distributing agent, nor even the supplier of names of people. Perhaps through the librarian at CIAT there could be developed a list of people in the tropical areas who might benefit from receiving a copy. Actually, I am not asking for subsidization of the work itself--that has already been taken care of. Perhaps that wasn't clear from the statements above.

I suspect that, if you so desired, you could get a special price from the publisher, if you were to order some considerable number. If you do decide to purchase a number of copies, I would appreciate it if you did not mention to the publisher that I made this recommendation to you.

I only get ten copies of the monograph free, and have to purchase some extra to pay back obligations to many people who helped in one way or another with the monograph. I don't suppose you could help me out with the purchase of extra copies for this purpose, or could you ?

I will be pleased to hear from you on the above, and about any other developments of interest concerning cassava.

Sincerely,

David J. Rogers
Professor of Biology.

Dec. 1, 1972

Dr. J. G. Hawkes, Professor
Department of Botany
The University of Birmingham
Brimingham B15 2TT

Dear Jack:

I have your letters of the 15th and22nd November to answer. The most important informations is that I received a copy of the data from Sawyer (and have acknowledged receipt) but I have not received any data from Simmonds. I trust that his data will be coming soon, because we expect to begin working with these data fairly shortly.

We have received acceptance to use the data at Ft. Collins (the National Seed Storage Laboratory) from the director, Dr. Louis Bass. We expect to visit Dr. Bass next week to pick up the data representative of a "general genetic resource center".

We have not established the instructions for the "examiners" yet, but are formulating instructions which will be needed.

We have submitted a requestx to the National Science Foundation for necessary support. I hope this will be successful, even though the funds may come later than we will actually need the money, so that we will operate "on credit" until we do receive funding.

I think I may have already told you that Roger Rowe has been very cooperative, and that we have received 200 assession records from him. Between Rowe's data and Sawyer's we can see that we have a fairly good cross-section of the types of information gathered for one crop, and that these will expose some of the remaining problems (and means of solution).

Our presentations to the forthcoming Technical Conference in Rome, in March, are progessing nicely. We have sent off abstracts to Jorge, with the exception of Lothar Seidowitz's, but I am sure that he will come through. There will be four speakers on Documentation, including Brian Snoad, Lothar, Gil Hersh (my assistant on management and planning) and my own presentation. Hersh and I will talk about the results of the pilot project as a part of our presentation. I hope that everything will be in place by the time of that meeting, but we will be rushed.

Will you please check again with Dr. Simmonds about his data?

Thanks for your much appreciated assistance.

Sincerely,

David J. Rogers
Prof. of Biology

Nov. 30 1972

Dr. Brian Snoad
John Innes Institute
Colney Lane
Norwich, NOR 70F

Dear Brian:

Enclosed are copies of abstracts of my paper, and that of Gil Hersh. I have not received Lothar's abstract yet.

Your abstract came in good time, and is, to my mind, perfectly satisfactory. You might send a copy to Lothar, so that he can fit his work into the pattern.

Thanks for your prompt submission.

Sincerely,

David J. Rogers
Professor of Biology

Encl: 2 Abstracts.

November 30,1972

Dr. Frank Martin
Federal Experimental Sta. USDA
Mayaguez, Puerto Rico 00708

Dear Frank:

Enclosed is the manuscript I threatened to send to you later. I hope it is satisfactory.

Best regards for the Christmas Season.

Sincerely,

David J. Rogers
Professor of Biology

November 22, 1972

Mr. Harry Lubrecht
Hafner Publishing Company
866 Third Avenue
New York, New York 10022

Dear Harry:

Clark Rogerson tells me that I should ask you the cost of copies of my forthcoming work in Flora Neotropica, Monograph #13, Manihot and Manihotoides. Clark tells me also that I will receive about 10 free copies. I will need many more than that to send to people who helped me in development of the work, and will need to know how much they will cost.

Perhaps you cannot give a precise dollar figure at this time, although the whole work is now in galley. If you could give me at least an estimate of costs, I will be pleased. After I hear from you, I will have to find some source of funds to buy the extra copies.

I would guess that there will be more of a demand for this particularly monograph than for some of the others in the same series because this study includes a crop species, Manihot esculenta, which is widely grown around the tropics.

Thanks for you help.

Sincerely,

David J. Rogers
Professor of Biology

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302
DEPARTMENT OF BIOLOGY

November 16,1972

American Institute of Biological Sciences
3900 Wisconsin Avenue
Washington, D.C. 20016

Gentlemen:

Please send me a copy of CBE STYLE MANUAL.

Enclosed is my check for($6.00) six dollars.

Thank you so much.

Sincerely,

David J. Rogers
Professor of Biology

DJR/CR

Enclosed: 1 check

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80302

DEPARTMENT OF BIOLOGY

November 14, 1972

Dr. Richard Mc Williams
Department of Anthropology
Wake Forest University 27587

Dear Dr. Mc Williams:

I was recently informed by Carol Tidwell of the Computer Center at ASU that some members of the ASU Anthropology Department had found some use for a cluster program which we had developed here at the TAXIMETRICS LABORATORY. Upon further inquiry Ms. Sylvia Gaines suggested that you had applied this computer program as apart of your studies for your dissertation.

Since I am interested to know how the system is employed I would be pleased if you could share with me any information on your particular application of the Similarity-Clustering Program, and any publications which you may have, using the program.

Sincerely,

David J. Rogers
Professor of Biology

DJR/CR

P.S. If you know of any other applications of the Similarity-Clustering Program I will be pleased to hear of them.

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80302

DEPARTMENT OF BIOLOGY

November 14, 1972

Mr. L. Douglas Smith
Department of Anthropology
Arizona State University 85281

Dear Mr. Smith:

I was recently informed by Carol Tidwell of the Computer Center at ASU that some members of the ASU Anthropology Department had found some use for a cluster program which we had developed here at the TAXIMETRICS LABORATORY. Upon further inquiry Ms. Sylvia Gaines suggested that you had applied this computer program as a part of your studies for your dissertation.

Since I am interested to know how the system is employed I would be pleased if you could share with me any information on your particular application of the Similarity-Clustering Program, and any publications which you may have. Using the program.

Sincerely,

David J. Rogers
Professor of Biology

DJR/CR

P.S. If you know of any other applications of the Similarity-Clustering Program I will be pleased to hear of them.

Nov. 14, 1972

Dear Clark: Rogerson N.Y. Bot. Garden

Your recent letter told me that I had to contact Harry Lubrecht to find information about additional reprints of the Manihot monograph. However, you did not tell me Lubrecht's address. Could you please let me have it? It will take some arranging for me to finance the additional copies, which will take some time. So, the sooner you tell me, the sooner I can get started on finding the necessary support.

Thanks for your help.

Sincerely,

David J. Rogers
Professor of Biology

Dr. A. H. Pettifor

Nov. 13, 1972

Dear Andrew:

I have your letter and abstract, and appreciate both very much. Harold and I talked last week in Washington about an arrangement which might work, and one which I might make possible. Clearly, I have no funds available to me to put you on in our team, and would have to depend on some outside resources.

As I recall Harold's idea, you were to spend most of your time on some project of interest to his shop, actually spending most of your time in Washington, even though we might assign you here either on a post-doctoral fellowship, or preferrable (because of improved salary) as a research associate. There would have to be some proposal to AID, TA-Nutrition, from us to get this going. But since I don't know what to say in the proposal, would have to depend entirely on your work (and Harold's) both to describe the proposal, and prepare a budget which would allow you to accomplish whatever it is that Harold has in mind. Of course, we would have to process the proposal through our university.

I will be glad to accomodate you and Harold because your work is of sufficient interest to us to see it continued. About the only thing we would like out of such an arrangement is that once in a while you touch base with us, and share with us the results of your efforts. I believe that would put both of us ahead quite a bit.

I am sending a copy of this to Harold, for his personal attention. In the meantime, you might outline what objectives you might have on such an endeavor, so that I am less in the dark about it. I hope we can work something out.

Sincerely,

David J. Rogers
Professor of Biology

cc.: Dr. Harold Rice

November 6, 1972

Dr. L. A. Hunt
Dept. of Crop Science
University of Guelph
Guelph, Ontario
Canada

Dear Dr. Hunt:

This letter replies to yours of Oct. 20, mailed to me at the Food Research Institute, Stanford.

I am surprised that you appeal to me for assistance with live material of Manihot species when the Canadian International Development and Research Centre has so handsomely supported CIAT to accomplish this mission! I have had relatively little contact with their work, but I understand that they have made intensive efforts to bring in living material, and probably have the material, the staff and the money to support such requests as yours. They have, for example, a documentation specialist who should be up-to-date on all such matters.

Unfortunately, I have no funds for support of such efforts, and am, therefore, unable to help you very much. The only living material I have is of one very large species, M. grahami, which occupies all the greenhouse space allotted to me. At the moment, we have cut this plant back severely, and unfortunately, tossed out any extra propagating material. Itwould not be safe to mail this material at this time of the year, anyway, as I am sure you are well aware.

Thank you for your inquiry.

Sincerely,

David J. Rogers
Professor of Biology

cc: Dr. Barry Nestle

Nov. 6, 1972

Dear Jim:

You asked my comments on the origins of Manihot esculenta cultivation, specifically about its MesoAmerican domestication.

Botanically, the most closely related wild species to M. esculenta, M. aesculifolia, has a range which is mostly MesoAmerican. This species shares much in common (morphologically) with the cultigen. Other candidates for near relationship are also found in Mexico. If you're looking for potential candidates as precursors to the cultigen, you look botanically first, and ethnologically second. In South America several species also look very much like the cultigen, but they exist in regions mostly outside the posited centers of domestication. These, I suggest, are very strong reasons for a MesoAmerican origin. One of the most respected ethnobotanists in Latin America, Ephraim Hernandez X., at Chapingo, Mexico, concurs in my hypothesis.

Yuca unfortunately does not lend itself well to archeological remnants. The only possible plant material from archeological digs that has actually been uncovered are in the places I cited. No plant remains have been documented from South America. While I agree that these are late dates, I suggest that this is because of the nature of the plants themselves. In South America, the arguments for various places of earliest domestication are based upon (1) poor classifications and weak knowledge of the genus Manihot, or a broad-ranging knowledge of the cultigen itself, or (2) upon "griddles" found in northern S. America. These two are tenuous arguments at best. An artifact which might have been used to bake the cassabe on could as easily have been used for some other starchy vegetable, of which there are a number of candidates.

My arguments are best bolstered by two publications now in press: one is a monograph of the cultigen, and the other a monograph of the genus, including the cultigen. The first is to appear in the journal Economic Botany, which is long overdue, and the second is to appear in the series, Flora Neotropica, published from the New York Botanical Garden. When these appear, you will have the best available botanical synthesis of the problem that I can put together.

I think that there has been too much armchair speculation on this subject, and not nearly enough digging in the field. For example, one should look very closely at present-day use of the crop by whatever remnant "native" peoples exist. Yucatan has some such people whose way of life is little changed from pre-European contact. But clearly, South America has as much need as any other place. But the field work should be done in teams--a botanist (who might be a plant geographer as well) along with anthropologists and archeologists. A real pragmatic agronomist would help to keep the "pure" types down to earth.

More recently, I have moved greatly by the arguments of Jack Harlan, whose paper in Science on centers and noncenters of origins is a very realistic approach to these hairy problems. I feel that yuca fits well within his arguments. May I recommend his readings to you.

Sincerely,

Nov. 2, 1972

Dr. Peter Rauch
Department of Entomology
Wellman Hall
University of California
Berkeley, Calif. 94720

Dear Peter:

Bill Reid tells me you are doing many interesting things with TAXIR, including something for the forest biome. I am naturally interested in the various applications, and would appreciate knowing where and how you are applying the system. We feel that there should be some sort of "quid pro quod", if for example, you generate some new and useful subroutine for the system, we would like to be able to have it working for us.

I know that there is no established routine for the use of the system--it is not copywrited--but in the same senses that you give credit for published research, where you cite the author for his contribution, we believe that the same should be extended to developers of useful computer programs. The only way I can see this happening with computer programs is to agree to have a print statement which makes recognition of the originator of the system on each page of the printout. Something to the effect that "The TAXIR system was developed at the TAXIMETRICS LAB., UNIV. OF COLORADO." Different wording could be used--this is just a suggestion. I hope it is meaningful to you, because this is the only way we get our Brownie points.

Sincerely,

David J. Rogers
Professor of Biology

copy

November 1,1972

Dr. Slater

Dear Chuck:

Enclosed is a document being forwarded to Rice's office in Washington prior to our trip next week, November 8, 1972. This material will be circulated to people who will attend the meeting. During the meeting itself we will make a specific presentation of the work that we are going to perform in this contradt. At the same time we will offer the possible applications of the nuritional transfer system program to investigate further sources of funds.

What we have tentatively decided to, that is in-shop, is to primarily investigate new areas that can be used as a continuation of the study made in Kinshasa. Gil and Dave are going to do field work in northeast ,Brazil while Jay takes a pass at a few African countries including Nigeria, Ghana, and Keyna which he will do with your collaboration. The direction of the work that will be done in these areas will greatly depend upon the availability of follow-on funds. If other money doesn't seem promising, we will essentially provide a similar study to the one done in Kinshasa. However, we would like to use the Kinshasa study as a building block in the development of a systems model for the fortification programs. We will send you information concrtning this at a future date.

Concerning the field trips, we will determin the dates that they will be made and advise you so that any information sources that might be available in either northeast Brazil or Africa could be forwarded to us before the trips are made. We feel that it is important for Jay to work in the field in Africa if any type of a systems model is going to be developed.

Much more information to follow after the Washington trip. Boulder just had its seasons first snow fall--over a foot next to the foothills-- lools very pretty.

The TAXIMETRICS BUNCH

PS Enclosed also is a copy of Jay's curriculum vitae as per your last letter to him.

Oct. 31, 1972

Dear Henry & Appan:

The enclosed copy of a letter is self-explanatory. I send it to you so that you'll be prepared in case this lady gets in touch with you.

Recently, we mailed a bibliography of lichens which we found in my card file--it is something that you should have, not us. Which reminds me: are you still interested to have a copy of the computer reprint file I have here? If so, how do we manage to get it to you? I haven't been active in keeping it up to date. About all that goes into the file now are those reprints that people voluntarily send me.

I keep getting little bits and pieces of the galley for our paper in Economic Botany, but still haven't got a full galley proof.

I have received a little more than half the galley for the monograph of the genus. Clark hasn't told me when to expect the remaining part.

Appan, what's happening with respect to the copy for the North American species? It has been very quiet from your end!

The Genetic Resource Center pilot project (a copy of which I sent you in August) now seems to be getting active. We have agreements from Dr. Roger Rowe, who is in charge of the USDA potato data at Sturgeon Bay, to send us samples of his data in sufficient quantity to make a good pilot study. His data are already on punched cards, but I do not have his format yet. It looks as though it is all fixed-field, coded type. This will require a conversion to TAXIR format, and we will probably be calling you for help in setting up the ~~writing~~ conversion program. We also have agreement from a guy you remember, Henry, Louis Bass, in the National Seed Storage Lab. in Ft. Collins, to give us samples of his data which will have to be key-punched. Between the potatoes and the Seed Lab., we should have a sample of most kinds of data in a genetic resource center.

No other news at the moment--if you can't write, at least call!

Sinc.

TAXIMETRICS LABORATORY
MEMORANDUM AID/2
October 30, 1972

TO: DR. HAROLD RICE

FROM: DR. DAVID J. ROGERS, P.I. (with concurrence of Charles C. Slater)

RE: CONTRACT csd-3614, "Interregional Utilization - Manioc," in three parts

Part 1. Details the areas to be visited and support requested.

Part 2. Details suggestions for personnel/Agencies to participate in the November 8, 1972, presentation.

Part 3. This is a brief descriptive statement on the scope of the on-going work to be used as background information for presentation participants.

Part One

The experience in Kinshasa, Zaire (June-July, 1971, contract csd-3285) demonstrated (1) the problems we are bound to have in our field work, and (2) the ideal team combination to solve most of these problems.

From this experience, we would like to suggest the following AID support in executing our present contract:

A. We should have an AID assistant - a full program officer (nutrition) - for each of the following countries:

Nigeria, Ghana, Kenya

Brazil (northeastern), Colombia

This AID officer should be strong, energetic and relatively open-minded (somewhat like Jim Purcell). He should have:

(1) a real interest in this area of work;

(2) knowledge of:
  (a) the overall socio-economic system
  (b) the host country government and its programs in germaine areas
  (c) other related US/UN programs in that country.

(3) the ability to get information and appointments with:
  (a) the host country personnel from public and private sectors at relatively high levels who may be important in our work.
  (b) US Program officials at all levels in order for us to explain our work.

(4) ability to assist with our logistic support:
  (a) accomodation
  (b) transportation
  (c) other personnel (see B, below)

We will contact the person designated above in writing several times before we visit. We will make our needs clear, beginning information flow between the AID officer, host country personnel and ourselves before our field trips.

B. We will need an intelligent, reasonably well-educated, bilingual person in the host country who will assist us with:

(1) translation
(2) driving
(3) general cultural information
(4) general social/economic contacts (lower level).
(5) simple research and information gathering.

This person must be able to work well with us and the AID officer. At a minimum, we will need this person during our field trip, but for us to be most effective, we should like to have him before and after our field trip. Charles Alexander of IVS in Zaire provided an ideal model for this work.

Such an individual could be: (a) an AID retainer, (b) a Peace Corps or IVS person, (c) from the host country government program, or (d) a host country national. This individual must be available at a very limited cost. Our budget is very small for in-host country support. It would be good if we could find this person at no cost to our contract, or at best, minimal cost.

We will provide detailed programmed instruction for this person.

C. Other AID assistance, and possible other agency assistance should include:

(1) suggestions on project methods
(2) information on, and introduction to, other personnel operating in the host country in this broad problem area.
(3) information on other available resources for us to execute our work.

Part Two

It would be useful for the following people to hear our presentation in Washington, to set in motion the requirements of Part One.

A. State Department

(1) AID
(a) Country Personnel for Nigeria, Kenya, Brazil, Colombia.
(b) Technical assistance personnel from Nutrition, Agriculture, Economic Development/Marketing
(c) Utilization research
(d) University research (Erwin Long)

(2) Embassy contact personnel
Important, if, as in Zaire, the Ambassador should have specific interest in the food/nutrition problems. Assistance (or encouragement) from the Ambassador's office is invaluable.

(3) Peace Corps and/or IVS
To assist on a limited basis using the work we did in Zaire as an excellent example.

B. Other agencies

(1) NIH - at your descretion
(2) USDA " " "
(3) NSF - Economics, for an economic development model.

Any other suggestions you may have, will as usual, be most helpful.

We will present details of our overall objectives, specific objectives, and operational approach at the presentation.

Hopefully, this memo is satisfactory.

University of Colorado
Taximetrics Laboratory
Memorandum - AID/2
10/25/72

General Background for Presentation, Nov. 8, 1972

Contract csd-3614: "Interregional Utilization - Manioc"

In 1972, Dr. Harold Rice, AID TA/Nutrition, Drs. David Rogers and Charles Slater of the University of Colorado, discussed the general problems related to the nutrition of children through 5 years of age in cassava (manioc) dependent, developing countries.

Professor Rogers, long involved in botanical research on cassava, was working on a sub-contract from the University of Georgia, reviewing the present status of knowledge of cassava on a world-wide basis, for AID TA/Agric. Professor Slater had just completed a series of studies for AID in northeast Brazil, Bolivia, and Puerto Rico, on the food marketing systems. In all these areas, cassava (or mandioca in Brazil) is probably the most important staple.

Evidence indicated increased cassava comsumption per capita in many tropical nations undergoing chaotic growth and development spurts. The reasons for this increased trend were not, and are still, not clear. One possible solution to the nutrition problem in cassava dependent cultures seemed to exist. Cassava was already a popular staple, and gaining in use. Could it not be used as a substrate for some fortification/food input change? And, as a widely used food-stuff of great plasticity, could not an intervention point in the cassava food system be found for the successful fortification/food input change?

Rice, Rogers and Slater, working separately, had come to similar conclusions concerning the cassava dependent systems. Thus began an association through an AID contract (csd-3285) to develop a more rigorous understanding of the cassava dependent system; specifically, the nutritional/economic problems of improvement in children's diets; and even more specifically, to develop procedures for the study of the cassava dependent systems with the objective of implementing an intervention system with minimum cost, maximum probability of success and maximum involvement of host country personnel.

The first phase of investigation was done in West Africa, under AID backing. Brief visits were made to Nigeria (Lagos) and Ghana (Accra). Most of the field work was done in Zaire (Kinshasa and Luluaburg).

A basic systems model was developed (in germinal fashion) which integrated the biological aspects of the cassava dependent food system with the corresponding economic aspects. This approach is called the "bionomics" approach. In general this bionomics model integrates critical information to identify potential fortification methods and potential intervention points for a specific cassava dependent area. The model also assists (crudely at this point) in assessing:

(1) the probability of effectiveness of an intervention/fortification pathway.
(2) the cost of this pathway
(3) The various other input/output changes which may occur, and projected costs.
(4) most important lines of agricultural development

In addition to a partial field test of the model, the research team was able to:

(1) extract information from and identify the appropriate personnel in the host country;
(2) discover and evaluate the capacity of several host country research and development institutions to aid in the intervention process;
(3) orient and present their findings to host country decision-makers.

The presentation/orientation program was highly successful, reaching high government levels (some decision-makers wanted to implement a program immediately).

The results of the project were partially reported in "The Bionomics of a Manioc-Dependent Culture, Kinshasa, Zaire" prepared by Slater, Rogers, Hersh and Alexander, and in other informal airgrams and internal reports.

The second phase of this work is to be done under the current contract, (csd-3614). Essentially the work will be:

(1) to continue the development of the bionomics model for cassava dependent systems so that it will be possible to use the model and its output in any cassava dependent area;
(2) to use the previously developed field techniques in several other key areas (northeast Brazil, Colombia, Nigeria, Kenya) to develop information for the model operation;
(3) to construct an orientation/presentation network with host country decision-makers (planners) to assist in understanding possible solution to certain nutritional problems and the expected cost/effectiveness of these solutions.

Specific procedures will be discussed at the briefing session on November 8, 1972. Pre-field trip communication must be set up with each host country through AID. Certain well-defined operations research information techniques will be used to develop communication patterns and information sources prior to field visits.

Field visits will be made once this has been done, and the communication networks will be altered/strengthened for use after the field visits.

The presentation to take place on November 8, 1972 sponsored by AID TA/N (Rice)will dsicuss in detail the concepts, procedural methods and, of course, underlying assumptions briefly covered above.

Oct. 27, 1972

Dear Frank:

In regard to contributions to the Newsletter, are you willing to accept a manuscript of 10 pages length, double spaced? I gave a paper last fall "On some further considerations on the origin of Manihot esculenta" which might be interesting to the readers of the Newsletter. Let me know, and I'll send it in, given your approval.

What about short notices? I am now in the process of reading galley on a Monograph of the genus Manihot, to be published by Flora Neotropica (by Haffner Publishing Co.) and hopefully, the monograph will be in print by the time you are ready to send out the Newsletter. Perhaps it could be mentioned that the work is forthcoming. I have no idea what the price will be, but it isn't the sort of thing that I can send out free reprints off. It will be book-length. As soon as I can find out these pieces of information, I will notify you.

I sent off some comments on the 5th section of the cassava work recently. You may have received it by now.

Sincerely,

David J. Rogers
Professor of Biology

October 26, 1972

Carol Tidwell, Programmer
Computer Center
Arizona State University
Tempe, Arizona 85281

Dear Carol:

In response to your question about conversion of our Similarity-Clustering Program from CDC 6400 to UNIVAC 1100 series, I suggest you contact:

Mr. Henry Fleming
GURC
NASA/MTF
Bay St. Louis, Miss., 39520

I believe that he has recently put this program up on a UNIVAC 1108, but what the availability is, I cannot say. Nor can I say that the program Mr. Fleming has running is still the same as it was on the CDC. Anyway, I am sure that he is willing to tell you what is happening at the NASA Mississippi Test Facility with regard to this program.

I recently had a request for the Similarity-Clustering Program from Dr. John R. Sturgul of the Dept. of Geosciences at the University of Arizona, Tucson. I earlier responded that he could best get the program from people in your department of Zoology. If you don't mind, I will suggest to him that he could get the programs directly from you, rather than going through the Zoology department.

You noted in your letter that the program is now being used by the Department of Anthropology. Is there any way that you could list the applications there, or put me in touch with users in the Anthro Dept? I am always interested in applications of our systems, and would like to keep in touch with as many different applications as possible. Thank you for help.

Sincerely yours,

David J. Rogers
Professor of Biology

October 24, 1972

Dr. Louis Bass, Director
National Seed Storage Laboratory
USDA
Colorado State University
Fort Collins, Colorado 80521

Dear Louis,

You have certainly heard of the many different interests in documentation for genetic resource centers that are stirring all over the world. As you recall, some years ago wewere interested in the system you use for documentation of your accessions. We continue this interest, with particularly renewed vigor because our system, TAXIR, has been put to use in several genetic resource centers, both in this country and abroad.

Two recent international meetings, one in Izmir, Turkey, and the other in Birmingham, England, focussed attention more precisely on documentation of the accessions in genetic resource centers. At the latter meeting, a number of resolutions were accepted, in which our system, TAXIR, was designated as the most useful system for documentation of the data in the centers. It was further resolved, however, that before general acceptance of the system could be developed, there should be a demonstration of the powers and values of the system. I agreed to do a pilot study of documentation, at my own expense, to demonstrate the system.

We have developed an outline for a pilot study, in which we attempt to use extant data in genetic resource centers, at all levels of use of the data, from the moment of collection of the accession through to those levels of trials by plant breeders where quite complex information is recorded. We further designed the pilot study to include data at general genetic resource centers, and data on one specific crop.

It would be very helpful to us if you could share with us some sample of the data gathered in your Laboratory, which is perhaps the best known facility for genetic resources anywhere in the world. We would be pleased, and very much aided, if you would allow us to apply our system, TAXIR, to selected samples of the data in your files, for the purposes of a practical demonstration of the facility of the system.

If you are aggeeable, please let me know, and I will come up to Ft. Collins, at your convenience, to give you a more precise description of our needs. Thank you for your consideration.

Sincerely,

David J. Rogers
Professor of Biology

Oct. 24, 1972

Dear Clark:

I've just finished up the first batch of galleys that you sent, and am ready for the next set. Could please encourage the printer to send me clearer galleys? It is extremely difficult to read the 6 point type, even at best (age is creeping up), and when I get photocopies of the galley, it frequently only partially prints such things as hyphens, semicolons, commas, etc., and the boldface doesn't always appear to be boldface.

I must say the printers have done a very good job, and most of the corrections are those that I should have made in the original ms. Do I get a second set of galleys or page proof?

What are the rules for reprints, or free copies of the finished product? I will need quite a few, just to distribute to those organizations that I am indebted to. For example, each of the loaning herbaria should get a free copy. Aside from obligatory free copies, I want to send out a few more that I feel I owe something, either for service or suggestions. Let me know as soon as possible, because I want to make financial arrangements, and suspect that there will be pretty steep charges for reprints.

Thanks for getting the manuscript going with such dispatch, and with such careful attention to the editting.

Sincerely,

David J. Rogers
Professor of Biology

October 24, 1972

Dr. Frank Martin
Federal Experiment Station
Mayaguez, Puerto Rico 00708

Dear Frank:

Responding to your letter of Sept 15, I have the following comments you may wish to consider for the 5th section of the study "Utilization of Cassava Variability on an International Basis".

The major comments deal with documentation of work, which seems to be excluded entirely from your document. This deals with the business of herbarium samples of the variations to be studied. Over the years, I have attempted to find out which variations were actually used when this or that agronomic trial was made, but almost totally without success. The workers only described their trials with the plants in terms of local cultivar names--no possible way to determine what they were using. I therefore plead with you plant breeders to document what you do, or it will be totally useless. Documentation involved taking specimens of the plant, and giving a description to accompany the specimen, according to the enclosed outline. Just a fragment of the leaf of the plant is not satisfactory--it must be accompanied by descriptions of the whole plant, according to the suggestions I enclose with this letter. This procedure will allow someone in another country to determine whether he has the same or similar plant material, and whether his own work is similar to, or different, from that analysis done in another part of the world.

This basic function is so fundamentally important that I simply cannot understand why it is so seldom done. Are workers afraid to reveal the work they've done, or what? Maybe you plant breeders know something that I do not--maybe you have some procedures for sharing information that I have failed to discover--but if you have, you have kept it well hidden from the literature.

I might say that this is true in nearly every crop that I have looked at--not just cassava. So, something is being left out which should be a standard procedure for any and all workers. Herbarium samples may be scorned by geneticists, because they are dead, and you only work with live material. But if you would use the herbarium sample as a document to show you what is useful to work on, you might not have this scornful attitude. Just because herbarium specimens are generally those things that taxonomists work on should not prevent you from using the best documenting system there is to know something about work done earlier, or to provided a basis of understanding what you did to later generations.

Hopefully, I have made some imprint on your thinking. I will keep trying, even though it seems almost futile to me at the moment.

Sincerely,

Encl.

David J. Rogers

October 23, 1972

Dr. P. R. Rowe
Department of Horticulture
University of Wisconsin
Madison, Wisconsin 53706

Dear Dr. Rowe,

Thank you for your prompt response on cooperative endeavors for a pilot study of data in genetic resource centers. It is a pleasure to hear that you have your data in punch card form, since this makes the job of testing the system very much easier. I assume that the data contained on punch cards is a reflection of the data listed in the tables of the two publications you were kind enough to send.

In the pilot study, we are not attempting to include all the data you have for your accessions, First of all, since I am providing the funds for the test out of my own very limited budget, we cannot afford to take in all the accessions. Secondly, a test of the system does not require a full suite of the data, but rather, a sample of the various kinds of data contained. I should point out, however, that if the test of the system (TAXIR) is successful, and some aggeement is reached that TAXIR can be useful for potato work, then the sample can be easily merged into ongoing work to put all of your data files into the system. This is, the pilot study work need not be later duplicated when the system is adopted. Clearly, adoption of the system is dependent upon yours, (and any other worker's group with appropriate authority) decision. I will not detail how the system can be obtained at this time, but will delay it until such time that it seems more likely that the system can be adopted.

You pointed out that data on precise locality (original site and source of accessions) of the collections is not now generally available. I understand why you had to proceed as you did, but would hasten to add that this is true for many more collections than just those for potato. Since this is true, we feel that a system should be used with whatever available data there are, and that the system should provide the capacity to add on data at a later time, according to your requirements, not according to some arbitrarily enforced system requirement. Therefore, if you find it particularly burdensome to do so, for the purposes of sending data to us, you need not wait to provide all the locational (or precise locality) data before sending them on to us. If you have some punched cards already prepared with precise locality data, fine, but we can use the system either

with, or without the locating information. A test of the system should include all the types of problems faced by you and other potato specialists, and certainly one of the problems is that of missing information. TAXIR has that capability, but it must be demonstrated.

I was not sufficiently clear in my earliest letter regarding the use of the words "primitive cultivars," which reflects my lack of specific knowledge of the work being done by potato specialists. Certainly, wild species which have been gathered together in your collection are valid inclusions in a test of a system. Therefore, in selecting a sample of your data bank for our test, there should be included some of both those items referred to by you as "primitive cultivars" and wild species.

Part of our idea for the pilot study is to have a group of experts, including you, Jack Hawkes, Sawyer, Simmonds, and probably others, to act as "examiners" of the work of the pilot. Would you be willing to be one of those who evaluate the results? We want to give a test of the results by experts, and also to show how the system works to provide workers with desirable output.

To proceed with the pilot, may I ask that you select from your large collection of data some subset, up to approximately 200 accessions, which are vital, important ones in your work. Perhaps you can easily determine which accessions are the most requested by other institutions and potato breeders as a means to guide in the selection of the sample. The sample should include all the data types, from initial collection onward through the various levels of applications. In other words, we should try to represent all the data problems in pilot study.

If you can send a duplicate deck of the data, on cards, that would be very helpful. At the same time, we need to know just how the data are set up on the cards. That is, the fields for each data type, if a fixed-field format is used. If you use a free field format, we will have to know how the cards are to be "read." Hopefully, you have some sort of manual for inputting the data to the cards, and a copy of that will be very necessary to our understanding, so that we can get our maching to "read" the cards.

If any of the above statements are not clearly understood, perhaps a telephone conversation will be necessary to get things cleared up. I will be glad to call you, but if you have FTS available to you, it would be helpful if you call me. If you have FTS service, you can reach the University of Colorado directly on FTS. The number is: 303 499-3151. My extension at the University is 8598.

Once again, thanks for your participation in this project.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR/jr

Oct. 23, 1972 Dr. John R.

Dr. John R. Sturgul
Dept. of Geosciences
University of Arizona
Tucson, Arizona 85721

Dear Dr. Sturgul:

I am sorry to have delayed so long in responding to your request for some of our programs. I have no ideas as to which programs Mr. Estabrook mentioned which might be useful, but suppose that he had in mind our clustering program. This one would, I suggest, be as meaningful as any we have for your interests.

May I suggest that you contact Dr. W. L. Minckley, Department of Zoology, Arizona State University as the most efficient means to get our clustering program, which is usually called "Graph Theory Similarity-Clustering Program". As I understand, several of Dr. Minckley's students have used the program successfully, and since they are much closer geographically to you than I, they might be able to share their knowledge about the programs with you with much more facility. If this source is not productive, please let me know, and I will suggest alternate means to get the program.

Sincerely,

David J. Rogers
Professor of Biology

October 23, 1972

Dr. Lothar Seidewitz
Institut Pflanzenbau FAL
33 Braunschweig
Bundesallee 50
West Germany

Dear Lothar:

I received your letter of 5 October with a great sense of pleasure (and relief)! I feared that something had happened to you, and if that had been true, it would have been very difficult to have a good program on documentation at the forthcoming Technical Conference.

The original group of speakers for Documentation had to be changed. Dr. House decided that he could not contribut to this particular session, and I have attempted to get a replacement for him by asking Dr. Mario Gutierrez of the International Wheat and Maize Center, (Rockefeller) in Mexico if he would present a paper on the experiences with documentation at his organization. He has not yet agreed to participate, but I hope to hear from him soon.

Brian Snoad, of John Innes Institute, has agreed, and his proposed outline is as follows:

Title: The structure, organisation and collection of gene bank data.

1. Introduction based upon Izmir and Birmingham conclusions.
2. Definition of a gene bank.
3. The functions of a gene bank
4. The types of data to be collected; based upon experience with Pisum where the records are far more detailed than would be necessary in a gene bank. Move on to other genera with details of other IR systems and data.
5. Recording methods for field and laboratory which incorporate some degree of standardisation.
6. Computer systems which by their very nature would give some degree of flexibility in order to overcome rigid standardization.
7. Conclusions and predictions regarding an international network of gene banks.

From this, which will be the introductory paper, I hope you can move on to cover the real experiences you have had there in Vökkenrude, both in terms of structuring of data (which you have already done very well) and how it works in your own center. This will be followed by Mario Gutierrez (hopefully) and then Hersh will give a picture of organizational needs for gene bank work to include the documentation, and I will finish by giving an example of the pilot study, which was recommended at the Birmingham meeting.

Please send me an outline of your intended presentation, so that I may have more specific knowledge of the way the symposium is to develop.

Sincerely,

October 23, 1972

Engo. Agrono. Milton de Albuquerque
IPEAN
Caixa Postal, 48
66.000 Belem, Para
Brasil

Dear Milton:

I am finally responding to your letter of 29 July, requesting a copy of the book, "Manioc in Africa" by W. O. Jones. I have ordered a copy of the book, and asked that it be mailed directly to you from the publisher, The Stanford University Press. I am glad to contribute this book because of the outstanding work you have done on Manihot esculenta, and because of all the help you gave me in my work with this important crop.

I have not done much publication of importance recently, but at this moment, I have galley proff of two studies that have been my major work, the classification of the species of the genus Manihot, and another on the classification of the cultivars of Manihot esculenta. It is my hope that it will not be much longer before these two publications are available, and I will be certain that you get copies of them.

Thank you very much for writing. I am always very pleased to hear from you. I trust that it will not be too long before we meet again.

Please give my best regards to all of the fine workers there at IPEAN.

Sincerely yours,

David J. Rogers
Professor of Biology

The University of Birmingham

The University of Birmingham, P.O. Box 363, Birmingham B15 2TT
Telephone 021-472 1301

From: Professor J. G. Hawkes,
Department of Botany.

Dr. D. Rogers,
Dept. of Environmental Population and Organismic Biology,
University of Colorado,
Boulder,
Colorado 80302,
U.S.A.

JGH/DMW 19th October 1972

Dear Dave,

You will see from the xeroxed copy of the letter received from Jorge León (see Pilot Project) that he agrees with my comments and thinks that you should go ahead with the pilot project. Maybe you would like to wait a bit longer until you have had a reply from Otto Frankel but I thought you would like to know Jorge's reaction to my letter and to your report as soon as possible.

I am afraid that in spite of all my efforts on your behalf I have only managed to drum up the princely sum of £20 to help you with your travel expenses to Birmingham in July. You already got the $150 but of course these two amounts do not by any means cover your total expenses. The University is arranging for this money to be sent to you by air mail transfer. I hope you will receive this in due course, but if not please do not hesitate to let me know.

No more for the present except to ask you where you think I should contact the International Potato Centre at Lima and the Commonwealth Potato Collection in Edinburgh at this stage.

Best wishes,

Yours,

Jack

J. G. Hawkes

University of Colorado
Boulder, Colorado 80302
October 19,972

Dr. Jorge Leon, Chief
Crop Ecology & Genetic Resources Unit
FAO
Via delle Terme de Caracalla
00100- Rome
Italy

Dear Jorge:

I enclose herewith the last page of the information I mailed to you yesterday, October 18th. It was inadvertently left out.

Sincerely,

David J. Rogers
Professor of Biology

Oct. 18, 1972

Dear Jorge:

Here, finally, is some copy to use for collecting propagating material for Manihot esculenta . I am sorry that I did not comply with your request much earlier. Unfortunately, your request came just when I was winding things up for my leave of absence, and it got lost in the shuffle.

I do not remember any precise format that you had requested, so the enclosed paper may not cover all the topics you wanted for the proposed handbook. Hopefully, I haven't missed any important criterion. It is clear that people have been moving yuca around for a very long time without any formal instructions, so there really should be no problem in the actual process of propagation.

My real worry is that people will not take the proper precautions to prevent disease transfer. Some of most sophisticated people have been guilty of evading the quarantine requirements, including those at CIAT. The problem, of course, is that yuca has no place in the world where it can be quarantined before intercontinental shipment. I have fitfully proposed that some organization be given responsibility for this activity, but so far, noone has taken up the suggestions.

I know that CIAT does put their latest introductions into a quarantine in Bogota, before transshipment down to Cali, but this is not an effective technique, because they have to raise the plants in greenhouses which are not really adequate for protection.

On another subject, the Technical Conference, I have now heard from Brian Snoad and Lothar Seidowitz, and they are confirmed. As I wrote earlier, H. D. House did not wish to participate, and I have been trying to get a replacement for him. I wrote to Mario Guitierrez at CIMMYT, and had a response from him several days ago. He did not accept, but wanted further information about the nature of the meetings and the objectives of the symposium on documentation. I proved him with as much information as I have, and hopefully, he will accept our invitation. I did not suggest that his travel and expenses would be paid, hoping that Rockefeller can provide him with funds. His discussion would center on experiences they have had at CIMMYT with documentation of their maize and trigo collections.

I have taken your suggestions on the pilot project to heart, and we are now (as you know from Jack Hawkes's letter) bringing in the International Potato Center people, through Sawyer. This will, hopefully, solve the problems. I have recast the proposal for the pilot project, to focuss specifically on the data problems, and only suggesting an organizational structure for ongoing work. Thanks very much for your advice.

Sincerely,

David J. Rogers
Professor of Biology

Encl.

Dept file

Oct. 17, 1972

Dr. Mario Gutierrez G.
Centro Internacional de Mejoramient de Maiz y Trigo
Londres 40
Mexico 6, D.F.

Dear Dr. Gutierrez:

Thank you for your letter of October 5. In response to your request for further information on the Conference, I have the following comments.

I enclose a copy of the scientific topics to be covered at the Conference. This gives some idea of the scope and the types of individuals to be represented. Of course, each of the topics will have a number of speakers, whom I do not know as yet. For the section on Documentation, I have invited, and have acceptance from the following:

1. Dr. Brian Snoad, John Innes Institute
   Topic: The structure, organisation and collection of gene bank data.
2. Dr. Lothar Seidewitz, Institute Pflanzenbau FAL, West Germany
   Topic: EUCARPIA gene bank information systems organization.
3. Yourself, and I would like to suggest your topic to be: Experiences in connection with documentation of CIMMYT gene bank
4. Mr. Gil Hersh, from Univ. of Colorado.
   Topic: Operations research techniques as a guide to effective documentation systems for genetic resource information.
5. D.J. Rogers, address as above,
   Topic: Review of information management systems for genetic resource data.

From the above, you can see the structure which we hope to have for the symposium. It is intended to have a mix of papers on the systems used to handle documentation, as well as actual experiences in data centers. I hope that it will be possible to show the results of using a computerized system TAXIR, in actual use for gene bank type data. What I hope you can do in the program is to relate the way in which you have managed the data from one of the most important gene bank centers in the world.

The structure of the symposium is to present a 20 minute formal paper, with a short period of discussion following your presentation. According to Dr. Leon and Dr. Frankel, the organizers of the Conference, you will have to submit a 500 word summary of your presentation by November 30, 1972, and a full test of your presentation not later than two months before the Conference, (thus, in January). The idea is that the papers are to be published as an outcome of the conference.

I trust that this satisfies your need for information, and that I can have your early acceptance of this invitation to participate. Please let me hear from you as soon as possible.

Sincerely,

David J. Rogers.

Oct. 12, 1972

Dear Carole:

Please forgive me for not sending you the requested information on collections of manioc. Your letter, written on June 26, has just now reached me. It went to about five different places, including England!

The enclosed data form should give you the necessary instructions. In this form, we tried to include all types of data that are pertinent both from the botanical and use standpoint. You may want to extract some of the details, and add other data points of your own. This is just a guide, not an absolute requirement.

Please let me know if this form reaches you, and tell me how you are progressing.

Sincerely,

David J. Rogers
Professor of Biology

Legendre,
Montreal

Oct. 12, 1972

Dear Pierre:

Your letter came at a very good time. By responding to your requirements, I can ask you to share this with Professor Pierre Bhereur in the Dept. of Biological Sciences, who wrote earlier, asking for information about our system, and to which I have not yet replied. Prof. Bhereur got my name from Pierre Dansereau, who may not have known that you would be there, nor that you had worked with me here. Incidentally, it seems to me that since I have addressed this letter to Pierre, without further designation, it could serve all three of you!

The TAXIR system you want is clearly the version now in the hands of Henry and Appan, because it certainly is the most up-to-date, the most efficient, and with the most capacity. However, I know that there have been changes in the concept by which one aquires the system. Since TAXIR is a very expensive piece of software, and since the organization that Henry works for (the Gulf Universities Research Consortium) is not in the public domain, but a private organization, they will require some sort of contract to get the system.

The best thing for you to do would be to write to Henry, and ask him to tell you what procedures are best to get the system he has. Incidentally, he has redesignated the system ENVIR, to reflect their interests more precisely. Henry's address is:

Mr. Henry S. Fleming
Gulf Universities Research Consortium
NASA/MTF
Bay St. Louis, Mississippi 39520

While we are still interested in the system here, we have no funds for continued maintenance or development. Perhaps there will be some forthcoming, but that will be some time in the future. Bill Reid is keeping the system alive, but not doing anything else.

Because I have to do my own secretarial work, I trust that you will contact Prof. Bhereur, and give him the benefit of your knowledge of TAXIR.

Frans Stafleu called me this morning, and told me that galleys for our joint article for Taxon is now being prepared, and that we could expect the article to appear in the November issue.

I have recently been talking to a chap, Tim Brennan, who is interested in our programs for use in studies of juvenile delinquents. I recalled that Ghislaine had used our systems for precisely the same purpose, and I suggested that he (Brennan) should contact Ghislaine. So, if he does, you will know where he got your name from.

Hope everything is well there. We are very busy with a large number of activities, including teaching a course "Plants for Man" to 150 students.

Best Regards,

October 12, 1972

Professeur Pierre Bhereur
Dept. of Sci. Biologique
1200, rue St-Alexandre
Universite du Quebec a Montreal
Montreal 101

Dear Professer Bhereur:

I am sorry not to have responded to your letter of Sept 5 before now. Since there is very little published information on the system, TAXIR, it was difficult to give any precise information.

However, I have just learned that a former student of mine, Dr. Pierre Legendre, is also there at your university, and I have just written him asking him to share with you his knowledge of the system, TAXIR. Dr. Legendre took a seminar from me, in which he learned the operation of the system, but not the programming aspects, which are rather involved.

I trust this arrangement will be satisfactory. It will be much easier for him to give you the descriptions than it would be for me to try to prepare a satisfactory description. I do not have any funds for continued work with the system.

Sincerely yours,

David J. Rogers
Professor of Biology

October 12, 1972

Dr. P. R. Rowe
United States Department of Agriculture
Crops Research Division
University of Wisconsin
Madison, Wisconsin 53706

Dear Dr. Rowe,

Jack Hawkes was kind enough to send me a copy of his letter to you, written September 27. You have been informed, therefore, that I would be writing to you, with a request for your cooperation in providing data for a test of a computerized information storage and retrieval system. The system, TAXIR, has already been employed in a number of genetic resource centers, but, as Jack told you, we need to demonstrate the capacity of the system for all types of data associated with genetic resource centers. Since Jack is very much involved in the establishment of genetic resource centers generally, and also is knowledgeable about the genetic resources of potatoes, it was decided at the Birmingham workshop that a sample of data for potatoes would be one part of a good demonstration of the capacity of the TAXIR system.

Jack recommended that we attempt to work with data from primitive potato stock, not all types. This was decided because most of the work being recommended for general genetic resource centers is to focus on gathering and maintaining primitive materials of all crops. If it is possible for you to supply copies of data you have already gathered for accessions of primitive cultivars of potatoes, such as the general information on locality of collection, local names, ecological data, etc., which is usually collected by plant explorers, and additionally, any data reporting results of screening of the introduced materials, we would be grateful. If the data are already in machine-readable form, this would be ideal, but it is not an absolute essential. We do not need data from many accessions to make a pilot study, but should have a range of variation in the types of data you have. That is, we do not wish to burden you with a very big job of supplying data, but rather satisfactory variations in the types of data collected.

I can provide more precise details of our needs later, if you are willing to help us out with this pilot project. Indications of your willingness to work with us will be very much appreciated. If you can help us out, I will give more information about how the work can proceed.

Sincerely,

David J. Rogers
Professor

DJR/jr

Biology Department
University of Colorado
October 11,1972

Mr. D.G. Coursey
% Trop. Products Institute
56/62 Gray's Inn Road
London, W.C. WCIX 8LU
England

Dear Pat:

I have been holding off doing any writing because unless we hear that we have a publisher and a contract there is not much stimulus to proceed. Do you have any news in that direction?

I have not been sitting idle here while awaiting to hear this news. Catching up after 4years' absence is a non trivial task. I have been working towards finding research funds to support continuing works, both in cassava and in the development of our computer systems.

I will be happy to hear any news from you.

Sincerely,

David J. Rogers,
Professor of Biology

DJR/CR

October 11,1972

Dr. Marcia D. Litwack
Bldg. 37 3A23
National Cancer Institute
Bethesda, Maryland 20014

Dear Marcia:

I did not receive any forms to fill out for the trip expenses for the Miami visit. If I supply the informtion to you, can you carry on, or must I do something special? I forgot to ask while I was there.

Expenses:

Air travel, RT, Denver-Miami $ 264.00
(with intermediate stop in New Orleans)
Ground travel
Boulder-Denver--private car, RT
70 miles
Miami--Airport-motel $5.50
Motel, one night--$ 16.00.
Perdiem--??
Honorarium? Consulting? (Is this all owed?)

Unitl I hear from you, I will not send in the receipts I have.

Enclosed is copy of the preliminary proposal I wrote up. Frankly, I thought Julia would have added to what I said for more detail, but she apparently thought that the document I prepared was sufficient. Let me have the benefit of your thinking on it. Obviously, there will be changes now that we have had a meeting.

I would also be pleased to have any summary statement you care to share with me as a result of our meeting Tuesday.

It was a pleasure to meet with you, Drs. Cooper and Segal. I am much more aware of the overall activities, and problems, thanks to the input from the three of you.

Sincerely,

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80302

Department of Environmental, Population and Organismic Biology

Oct. 11, 1972

Mrs. Julia Morton
Morton Collectania
University of Miami
Coral Gables, Fla.

Dear Julia:

I want to get a few observations down before they go "cold" on me. Forgive the poor typing.

First, it became more apparent to me just how international and how important the Collectanea is than I knew already. Each exposure that I have provides some more of the many facets of the work that you have done so well. Second, I believe that you have very good friends in Drs. Cooper, Segal, and Litwak. The way I read their statements at the meeting, I believe that they truly support you, and do not want to take away from the importance of the Collectanea, bur rather, find ways in which it can be supported adequately. They, too, are groping for the right combination. I think it is clear that Cooper, in his program, cannot be the overall supporting agency, but I think it is also clear that he is willing to spend some of their time trying to locate the proper sources in other agencies to get the inter-agency support you need for the very broad subject of economic botany. I know that you are reluctant, with very good cause, to divulge your own contacts, but I do not think that Cooper, et al would exploit your contacts to your detriment. You must check my feelings on this with Gene Mann.

It was a great pleasure to see how much real support you have from both Mann and Howard Teas. I think both those gentlemen are outstanding, and really want to help out. With that type of backup, you are indded fortunate.

I am not at all certain what Cooper wants to do, but he did want some sort of in-depth analysis of the job to get all your excerpts into computerized retrieval form. That will take time and effort on both your part and mine, and Cooper mentioned that he could put some funds behind it. That indicates to me his sincere desire to help. I also think that such an in-depth examination of the job is a worthwhile thing, not only for me, but for you as well. Sometimes it pays off to back off and reexamine the whole operation, to get a fresh feel for the ongoing development. One of the things that Dr. Segal mentioned was that the Morton Collectanea might become a "node" in a national system for cancer information. It is good that he is thinking in those terms, but I am sure that you will want to look carefully at that idea from the standpoint of where it will take you and the Morton Collectanea. I really do not know what your objectives are for the Collectanea, or for yourself, and I suspect that you will have to do some thinking about this yourself.

Please be assured that I will go along with whatever direction you set--all I am is a very interested bystander at the moment, and very pleased that you considered our TAXIR system as sufficient to meet your needs. Thanks for inviting me in.

Sincerely,

Oct 4/73

Professor J. G. Hawkes
Dept. of Botany
University of Birmingham
P.O. Box 363
Birmingham B15 2TT

Dear Jack:

Thank you for your your very good and well-taken comments on the proposal. I did jump ahead rapidly on the organizational structure, and assumed too much for you. I trust you did note that I did it purely on a tentative basis, so that you could ~~amend or~~ delete as necessary.

Although I accept your criticisms, I feel that in the proposal we should get right down to the technical aspects of the work directly, and follow the ~~technical~~ technical portion with a suggested set of procedures for the larger organization for a global network of information systems. I trust that this will be acceptable. Since we cannot do anything with the larger organization at this stage, all we need to do is to suggest that the system can be embedded in some overall structure. Readers of the proposal would then have at least an idea that we have thought along these lines, but are not ready to try to put it together without proper authorization to do so.

I have not yet written to Dr. Rowe, but will do so shortly. Perhaps I will wait until I have the extra benefit of Otto's and Jorge's criticism. They no doubt have some suggestions. We may be able to complete the most necessary parts of the pilot project, even though we are quite late in starting.

Sincerely,

David J. Rogers
Professor of Biology

Buchanan-Hamilton
Dicer Jr

Oct. 5

Dear Charley:

I can supply your request for habits and roots of manioc, but only have a colored slide of the basket, which I don't think would make a very good black and white reproduction.

You might try the Chicago Nat. Hist. Museum--they usually have such things. You might succeed in getting either photo or the actual thing from Dr. Jerry Grant, Director, CIAT, Cali, Colombia. He's got the only big organization in the world doing work on yuca, and he is loaded with scratch.

Can I bill you for costs? I have no source of funds personally.

Sinc.

October 5, 1972

Dr. Poul Søndergaard
Lic. agro. director
Arboretet Pa Milde
University of Bergen
P.O. Box 12, 5014 Bergen,
Norway

Dear Dr. Søndergaard:

Thank you for your recent letter, requesting information on TAXIR. I enclose two publications which help to explain the system, but there is no sufficiently complete publication to supply the needs of all. The enclosed papers are designed merely as introduction to the system.

As you can see, I am no longer associated with the organization to which you addressed your letter. I was only temporarily associated with the Gulf Universities Research Consortium in Mississippi. That organization is the most active group with the system TAXIR, and has the most competent staff to give complete details of the system. Since Gulf Universities Research Consortium is a private organization, it collaborates with others on the basis of contracts. If you were to become sufficiently interested to wish to adopt TAXIR, I suggest you contact either Mr. Ian Miller, or Mr. Henry Fleming, of that organization.

Since TAXIR is a relatively sophisticated system, we recommend strongly that your personnel get training both in the systems (programming) aspects, as well as in the applications (user) aspects. Since installation of any good system represents quite an investment, we think it only logical to follow such a procedure.

If you want more detailed information than that which is sent herewith, may I suggest you contact either of the two gentlemen named above, at the same address as that which you intitially contacted me.

Sincerely yours,

David J. Rogers
Professor of Biology

Encl.

October 4, 1972

Dr. Mervyn D. De Silva
Deputy Director (Planning)
Planning Division
Kachcheri,
Colombo,
SRI LANKA

Dear Dr. DeSilva:

Thank you for your letter of 21 September, requesting information on cassava leaf utilization.

I am sorry to say that I have no more details of modern applications of leaf use for feeding. The note I used to indicate application of cassava leaf was from a publication in 1951, and there, sun-dried leaves were ground, and mixed in varying concentrations with other chicken feed. The results were promising, particularly in mixtures of typical grain feed with 30% of cassava leaf (by weight).

Other, very simple experiments have been performed, but without any real evidence of total effects from use of these leaves.

As you are probably aware, the countries of West Germany and Holland are large importers of dried cassava root, which is mixed with appropriate supplements for animal feeding. An inquiry to the Departments of Agriculture in these countries would probably give you whatever information is available from these countries.

I might suggest you contact the agricultural officer of the Agency for International Development, US Department of State, requesting that he recommend to the technical aid branch of the Agency for International Development that a development program with cassava leaf be instituted. This is one of the most effective means I know to encourage assistance in your problem, which incidentally is almost world-wide.

I expect that there is a representative of AID in Colombo.

Please forgive me for not having any more precise information for you. We need to do much work in this important area.

Sincerely yours,

David J. Rogers
Professor of Biology

Oct. 3, 1972

National Science Foundation
Washington, D.C.

Gentlemen:

May I please have a copy of your announcement number NSF-72-16, which appeared in July, 1972, dealing with an expanded research program for development of a national science computer network?

Sincerely yours,

David J. Rogers
Professor of Biology

Sept. 29, 1972

Sir Otto Frankel
c/o Dr. Jorge Leon
FAO

Dear Otto:

Jorge has written me a personal letter giving indications that the p ilot project is all right, but that it can't be called a pilot project for the global network of genetic resources because it was not fostered by any formal group. This part I understand, and can work with, but there were indications in his letter that something, or somebody, was wrong in trying to use potatoes as one crop in the pilot study. He was not specific, and at this stage, I need some specifics. I don't want to make any political blunders, but I thought it all right to work with Jack Hawkes, and to use USDA Sturgeon Bay potato data. Apparently, somewhere in that circuit, Jorge sees something wrong.

Ok. ~~We~~ had hoped, as you will recall, to get going on the pilot by Sept. 15. Clearly, we have been seriously delayed, and what I had hoped for cannot happen. I had expected to get the pilot project sufficiently completed to give a report on it in March. Please let me know where to go with what! With ~~re~~ respect to the section on documentation for the March Technical Conference, House has said that he didn't know enough to work in this area, and sort of threw cold water on the whole thing anyway. So House is out. I have tried to get a replacement fro him from another Rockefeller organization, CIMMYT, a chap named Mario Gutierez, but he has not responded to my letter. Nor have I heard from Lothar Seidewitz. What the hell's going on? Are there so many jealousies? Fortunately, the most important invited speaker, Brian Snoad, is not only willing, but eager. I have an outline from him. The way it lines up, there are only three of us for documentation: Snoad, Hersh and I. As I see it, we can put on a much better symposium on the subject than we could have with the original list of speakers. However, you may want me to continue to push for more varied representation. Again, I want to know how to handle Cal Konzak, so that he does not feel shut out.

Since you and Jorge are there together, maybe you two can give me some guidlines on both subjects above. It is difficult to know as much about the total picture as you and he together.

Sincerely,

David J. Rogers
Professor of Biology

Sept. 29, 1972

Ref.: AGPE - PL 2/8

Dr. Jorge Leon, Chief
Crop Ecology and Genetic Resources Unit
FAO
Rome

Dear Jorge:

Thank you very much for your letter of Sept 14 with comments on our pilot project proposal. As you saw, I am just working my way into the total picture of the genetic resource centre politics, and apparently haven't made it all the way. As a matter of fact, I was attempting to avoid any overtones of politics, and keep directly on course for the scientific aspects. There are several questions which your letter prompts (which will, of course, be kept confidential) and I need to know the answers in order to keep our efforts out of unfortunate ramifications.

First: Who are the members of the Special Advisory Committee to TAC for genetic resources? Is Jack Hawkes one of those members?

Second: What official or unofficial recognition was there for the Birmingham Workshop?

Third: Should we drop the idea of using potatoes in the pilot project at all? Or, should we try to get machine readable data from the International Potato Centre rather from Sturgeon Bay, USDA?

Fourth: What is the problem--Jack Hawkes, USDA, struggle amongst these and the Int. Pot. Cent.?

Fifth: Can you be the intermediary (or can you help us) get the data from the Int. Pot. Cent.?

Sixth: If not potatoes, what crop should we work on that would be amenable to our efforts, non-controversial, a good demonstration of the workability of the TAXIR system, and the organizational structure proposed?

I did not see any problems in your letter relating to that part of the pilot project dealing with the National Seed Storage Laboratory at Ft. Collins. Is that part still all right?

Your comments are valuable to me--do not hesitate to give me the continued benefit of your criticism.

Sincerely,

David J. Rogers

P.S. I'm working on instructions for collection of Manihot.

Sept. 28, 1972

Dear Ean:

Forgive me for delay in acknowledging receipt of your report, The Urgent Need for Computer Access by the New York Botanical Garden. The report is outstanding in all directions, and does an interesting and clear job of representation of the various systems we have developed.

I trust that by now you have had some reaction to the report, and that the reactions are all favorable. If they are, there certainly must have been a change of climate at the Garden. I am certain that Howard is favorably inclined.

If there is any way that I can help out in further development, let me know. It might be interesting, for example, for me to give a seminar or two about the whole system, either for your managers, or for the staff. I have just given a seminar here called Information Management for Environmental Decision-Making which shows methodology and step-wise procedures from data-gathering through all the manipulations to decision-making. Furthermore, I show how taxonomy has provided a model, and thus, should relate it very nicely for those taxonomists who still need some convincing.

Next Tuesday I go to Miami, to the Morton Collectanea, where the National Cancer Instititute is having a site visit on our proposal to install TAXIR for their work. I can't predict the outcome, of course, but hope that it will be favorable. If so, then you will have some sort of model to follow for applications in your own shop.

Let me know if there is anything further I can do to help.

Sincerely,

David J. Rogers
Professor of Biology

Siodewitz - Braunschweig-Völkenrode West Germany

Sept. 28, 1972

Dear Lothar:

Since you have not responded to my letter of August 8, I wonder if you received my invitation to participate in the March, 1973 Technical Conference on Crop Genetic Resources.

Briefly, I asked if you would prepare a 20 minute paper on documentation as you are using the system in your own institute.

Since time is getting short, I must have a reply as to your willingness to participate. If I do not have a response to this letter, I will assume that you are not interested, and I will have to remove your name from the list of participants.

Sincerely yours,

David J. Rogers
Professor of Biology

Out file

September 28, 1972

Professor V. Taysi
Agricultural and Introduction Centre
P.O. Box 25
Karsiyaka,
Izmir, Turkey

Dear Professor Taysi:

Please forgive my long delay in looking into means by which your activities might be aided through improved computing facilities. I asked many people about the possibilities of obtaining a computing machine of sufficient size for the purposes of your Centre. While many recognized the great significance of the work being done there, almost all dispaired that we could get a donation of sufficient size to actually install and operate such computing equipment.

I finally came up with the idea that perhaps you could achieve the same functions by an alternate organizational procedure. As I understand it, the nearby Agricultural University has a small IBM computing machine, an IBM 1130. Furthermore, there is a much larger computing machine available in Ankara, and IBM 360/65. If this is true, there is a possibility of using both machines to support your work. It is possible to connect the two machines by a telephone line, especially to transmit data back and forth. You could put data into the IBM 1130, have it transmitted by telephone to the IBM 360/65 in Anakara where the data would be processed, and the answers transmitted back to the Izmir machine over the same telephone tie-line. We could get all the necessary computer programs mounted on the Ankara machine, and by appropriate instructions, those programs would serve the same purpose they would if there were a big computing machine in Izmir.

With this idea in mind, I addressed letters to the Director of the IBM World Trade Corporation, a copy of which is enclosed. The response came back from one of the Director's assistants, Dr. Kozak. As you can see by the attached copies, Dr. Kozak forwarded my first letter to a Mr. deLuze, who is the director of IBM in Turkey, at Istanbul. Hopefully, Mr. de Luze will contact you, and you can explain your needs to him.

I have no guarantee that IBM will indeed take up my ideas, and help with the establishment of the connections of the Izmir computer with the Anakara machine, but I do hope that there will be some help for your very important work.

Please forgive me for not being more successful with my attempts to aid in your work. I will continue to keep your needs in mind, and hopefully, eventually, find some answers for your needs.

Sincerely yours,

David J. Rogers
Professor of Biology

Encl.

Sept. 28, 1972

Dr. Brian Snoad
Department of Applied Genetics
John Innes Institute
Colney Lane
Norwich, NOR 70F

Dear Brian:

Thank you for your letter of the 13th. Your outline is excellent, and very comprehensive. The only comment that I have is that you need more than 20 minutes to present it, and, considering the developments, I believe you should have 30 to 40 minutes in which to present it. Even that length of time is very short to fully develop the concepts you have outlined, and I will later see if you may not have more time.

House, who I had on the original schedule, has decided not to participate, saying that he is "just a plant breeder" and not an expert in information retrieval. I have tried to find a suitable replacement for him, specifically a Dr. Mario Gutierez at the Rockfeller International Center for Maize and Wheat, in Mexico City. There has been no reply to my invitation to him.

Nor have I heard from Lothar Seidowitz of Germany. That doesn't sound very promising for the program. However, given your own input, and those that Hersh and I hope to present, I think we can more adequately cover the problems of documentation and information management than can a more diverse group of speakers.

Under these circumstances, I think you should plan to spend more time on your presentation than the orgiginal schedule. I will write to Leon and Frankel of the altered plans.

In August I sent a draft proposal of a pilot project for information management of genetic resources to Jack Hawkes. It followed the resolutions we established at Birmingham. I had hoped to have the project under way by now, but there are apparently some sort of delays caused by political factors of which I am not aware. This is disturbing, because I had hoped to steer clear of any embroilment with extraneous problems. If you have any insights into these problems, such as why are potatoes so hot politically? or, have we exceeded our powers by assuming that the resolutions from the Birmingham Workshop carried some weight? Any comments or information along these lines would be appreciated.

Looking forward to seeing you, and hearing your presentation in March.

Sincerely,

David J. Rogers
Professor of Biology

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80302

Department of Environmental, Population and Organismic Biology

September 26, 1972

Dr. Gary S. Kozak, Manager
Education & Scientific Relations
IBM World Trade Corporation
821 United Nations Plaza
New York, N. Y. 10017

Dear Dr. Kozak,

Thank you for your cordial letter of September 13, concerning computing facilities and systems for a genetic resource center at Izmir, Turkey. I am pleased that you forwarded my letter on to Mr. de Luze in Istanbul. I am not certain that he can, at this moment, be of too much assistance because there is no knowledge in Izmir (by Professor Taysi or anyone else) that I had initiated correspondence with you. I will, with your permission, send copies of my original letter to Mr. Currie, your reply, and copies of this letter to Professor Taysi so that he can respond more intelligently to any inquiries that Mr. de Luze may make.

You aksed for additional information from me, concerning the Agricultural Center itself, and what my connections are. I fear that I do not have exact information on the age of the center, but I think that the Center itself has been existence since the early 1960s, and that part dealing with the genetic resource center since about 1968. It is with the latter part of the Center that I was particularly involved, as a consultant to FAO, which organization helped to establish the genetic resource center in the first place. I know that there are definite plans to make the Izmir installation a regional part of a larger group of genetic resource centers around the world. Izmir is to be responsible for the genetic resources in the whole Near East. At this stage in the development, FAO is not to provide the financial resources for the establishment of a global system (FAO itself has a severely limited budget), but there is an ad hoc committee to the Technical Advisory Committee of the World Bank, which has recommended funding for all the genetic resource centers around the world, including Izmir. Through the World Bank, I am not certain about the timing of events, but it is my understanding that the Technical Advisory Committee (TAC) to the World Bank is to meet on the proposal from the ad hoc committee some time in October, and forward recommendations to the directors of the World Bank early in the coming year. The ad hoc committee is made up of specialists in genetic resources around the world, including several from

this country. The fate of the recommendations is subject, of course, to many influences, and the final outcome dependent on factors which may have nothing to do with the need for such genetic resource centers. One hopeful input in the decision-makingprocess is that several recommendations to establish such conservation activities were passed unanimously at the Stockholm Conference on the Environment last June. Movement toward establishment of centers for maintenance of genetic resources is not entirely new. There has been an active group in the International Biological Program, (IBP) headed by Sir Otto Frankel of Australia, working on the needed concepts and organization for this worthwhile endeavor since the middle 1960s. Several international conferences on the subject have been sponsored jointly by the IBP and the FAO, and a book on the subject of conservation of genetic resources has been published with Sir Otto Frankel and Erna Bennett as the editors. The next Technical Conference on the subject is to be held in Rome, in March 1973, at FAO. I have been asked to organize the documentation and data management aspects of this conference.

My own relations to the Agricultural Center at Izmir was, as indicated earlier, as an FAO consultant on problems of management of the data of genetic resource centers. I have no direct influence on the final choice of computing systems, nor software packages which that institution will adopt. They may use my advice, but certainly there is no obligation to do so. In my own laboratory I, and a staff of mathematicians and programmers, have developed an information storage and retrieval system which has proven to be quite efficient and useful in such biological activities as genetic resource centers represent. In the meetings which we have held in connection with the development of compatible systems for a global network of genetic resource centers, my IR system has gained general acceptability. This does not mean that no other systems will be allowed - we work on the basis of cooperation rather than competition, because of the many variables in requirements and hardware and software configurations available at different centers.

This rather rambling discussion probably leaves many questions unanswered, but I have attempted to give the background and present activities, not only for Izmir, but the setting in which Izmir is definitely an important part. Hopefully I have given you enough background for continued discussions.

Personally, I expect nothing from this endeavor. I do have a few altruistic desires to help others for no compensation, but try do do so in areas of my competence. It seems to me that the Izmir people want to do something, and I feel that with just a little stimulus, even if nothing but demonstration of interest in their activities, will help them.

Sincerely,

David J. Rogers
Professor of Biology

DJR/jr

September 25, 1972

Dr. Lyman Benson, Chairman
Department of Botany
Pomona College
Claremont, California 91711

Dear Dr. Benson,

I write to support Dr. Jerry Arp's application for a position in the Herbarium. Jerry was a student of mine, (and I was his unofficial advisor for most of his graduate work) for three years. He took my undergraduate course in comparative morphology of the angiosperms (a one semester course) but since he was already very well trained in that area, he took extra work in more depth than the regular students. He had several other courses or seminars with me, including my course in taxonomic methods (particularly with respect to classificatory procedures). He is one of those rare students who really educates himself, and the teacher has only a guiding role as to the most efficient means to learn some subject. His knowledge of the Cactaceae is almost encyclopedic, but with it, he is quite humble, and is always willing to learn.

I believe Jerry is totally dedicated to the science of taxonomy, but he has taken sufficient courses in other areas to bolster his knowledge in the appropriate areas. I cannot speak too well for his knowledge of biosystematics, but I think he can hold his own with any other student with his training and experience. Jerry's dedication is largely to the real botany of the organisms. He has considerable breadth of interest in plants, in addition to the cacti, and continually surprises me with information on many different groups. Perhaps the greatest deficiency in Jerry's education is with respect to the historical aspects of taxonomy. But the fault lies with our curriculum, not with him. He probably has some knowledge in the area of the development of various classificatory systems, but whatever he has, he learned by his own reading.

I have always found Jerry to have a pleasant personality, even though first appearances may indicate some rough edges. I attribute this to shyness, not to diffidence. He is certainly a willing worker.

Jerry worked for some time with Bill Weber, whom you know to be one of the most meticulous herbarium curators in the country. Under Bill's guidance, Jerry did very well, as I am sure Bill will attest. As a result, Jerry has gained great experience in herbarium curating which should serve him well there in Pomona.

If I have not covered some aspect of Jerry's training that you need to know, please feel free to write. It should be evident that I think very highly of the young man, and I am sure he can do a good job for you.

Sincerely yours,

David J. Rogers
Professor of Biology

DJR/jr

Biology Dept.
Univ. of Colo.
Boulder, Colo., 80302
Sept. 5, 1972

Dear Otto:

I have your letter of 22nd August, and appreciate the various suggestions and comments. I do hope you have a fine vacation in Greece. On the symposium, I do intend to introduce the seesion on information management, show the interrelations of the various topics, and probably, at the end, summarize the whole thing. Sorry I did not indicate my intentions earlier. So far, none of the invited speakers has responded, but I assume that they will at their convenience. I hope that the dust is settled as far as Cal Konzak is concerned, because I do not want him to feel that it was my personal decision on my part not to include him. Perhaps you and Jorge can decide the most appropriate means to keep him from feeling shut out.

I did indeed receive $150.00 from your limited IBP funds, and appreciate the contribution. I consider the remaining costs for my trip to Birmingham to be my personal contribution to this important endeavor. Don't worry--there are ways to recover!

Sorry to hear that I had given the wrong impressions on TAXIR training, etc., to Lothar Albrecht. The truth is that about two or three month's time, total, is needed, split between a computer programmer to learn the details of the program itself, and a "user" or the substantive scientist to learn the many facets of data structuring, handling, bank-building, and querying systems. I do not know where Albrecht's figure of one year for this training came from.

Also, somehow, Albrecht got the idea that the TAXIR system was so big that it could only be handled on the largest scale computers. There are complex responses to him on this subject, but the simplest reply I can think of is that TAXIR takes up much less space in the computer than any comparable system with which I am familiar (which includes those owned by the large computing machine manufacturers, such as IBM, CDC, UNIVAC, and several others developed at universities around the country). As a matter of fact, we are at present thinking of contracting with a small commercial organization to provide necessary configurations to use "mini" computers with TAXIR. The biggest requirement for TAXIR, or any other information retrieval system, is large memory capacity, attached to relatively unsophisticated central processors, and the minicomputers have such potentials. And they sell at much lower costs than do the computers sold by the big manufacturers. Our figure for storing TAXIR in the computer central memory is about 15,000 32 bit words of memory. Stopping to think of the many functions required of an information retrieval system, you will find that this figure is far lower than one would ordinarily think, and is, as a matter of fact, much smaller in memory requirements than many other computer programs. Furthermore, TAXIR employs a storing system for data that guarantees the most efficient use of storage available in the various types of computing machines.

Again, I do not know where Albrecht got his information, because I do not recall making any other statements than the ones above. It is true, of course, that if one has a computer with only 8, 12, or 16 K memory, there isn't much chance of using that machine for all the requirements of an information retrieval system. But one can prepare tapes of data at small installations and then have these processed at some larger machine in the vicinity. There are, according to a survey produced recently by the Association for Computing Machinery, medium to large-scale computers in every country except the most absolutely primitive, and in these, one can find ways to get processing done in relatively nearby areas. So, even if TAXIR were the memory hog that Albrecht thinks, it still is possible by proper <u>systems</u> approaches, to achieve the same results. Organization is the most important element, and we've done a lot of thinking about this aspect, something that many people do not do.

I had a pleasant visit last week with C. E. (Earl) Jones, the ADP systems offcer from the Department of Agriculture, New South Wales. It was good to talk to hime because of his wide-ranging knowledge of computing systems, their limitations, management, and a pretty good knowledge of information problems with wheat. As I understand it, the Agricultural Department of NSW has been charged with the maintenance of a wheat genetic resources center for all of Australia, and Jones has been asked to provide the necessary computing backup for the center. He had heard of TAXIR from several sources, but did not know of the interests of the international program in TAXIR. He seemed to appreciate the significance of TAXIR, and may decide to contract with us to get TAXIR running in Sydney. If he does, then TAXIR will be available to any user in Australia, and that is the sort of arrangement I want to make--give the system (and training) to one group in a country, and then let the system spread from that group to others in that country.

I hope that by the time you receive this letter, you will have had a chance to see Jack, and find out about our various efforts. We want to get going on the pilot project as soon as possible.

Sincerely,

David J. Rogers

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

DEPARTMENT OF BIOLOGY
DIVISION OF POPULATION STUDIES

TAXIMETRICS LABORATORY

September 12, 1972

Just Letter

D.L. Sessions
E.F. HUTTON COMPANY
1700 Broadway
Denver, Colorado

Dear Mr. Sessions and Mr. Binder:

Ihave been away from my desk for the last week and have not had time to either thank you for your time on 8/30, nor to prepare a summary of our discussion. Mr. Len Matz has recently informed me of your continued interest.

A central Concern to the Hutton Bond Department is the state of the accounting and information systems in most of the local governments to be served. The systems are usually inadequate for control and accountibility purposes with respect to matters concerning Bonds issued by these governments.

Often local governments are aware of this problem, but most often are not prepared to spend the money necessary to update or rebuild their systems. Should Hutton as a perspective underwriter demand that the system be brought up to a set of minimum standards and maintained at those standards, the local government may go to another underwriter of lesser demanding standards.

The problem thenuis to meet the needs of the local government assure the underwriting contract for Hutton and not to comprimise Hutton"s standards.

It was suggested that Hutton might invest in the development of a modular accounting (information) system that would effecivently serve the needs of local governmental untis. This system would be constructed in such a way as to handle all the problems which would arise and yet could be tailored to a specific local government.

The development costs could be met by Hutton, or a Consortium of cooperative underwriters- but the costs should but be top great. The installation of the system would be at the expense of Hutton for any local government application.

By offering such a service to local governments, it is probable that the local government will give its Bond underwriting business to Hutton. It would be for Hutton to dertermine whether it is fiscally possible to recoup these initial costs.

If Hutton determins that it can afford to meet the costs of development and installation in its governmental clients, other non-cost beenfits might be derrived:

a) a large national finance banker should be able to realize considerable public relations payoff from the fact that the banker is assiting in the improvement of goernment on the local (grass roots) level for the well being pf the community.

b) That it will have a better entre into the local community for other apsects of its operations.

Should this conce-t be of interest, we of the TAXIMETRICS Laboratory of the University of Colorado are willing to make a formal proposal for the development of such a system and its installation at various local governments. We have information systems avalaibe which have beeb built here and which have been used by both the University itself (see Tom Stewart, Assistant Director, Office of Research Services, 443-2211, ext. 6221) and at the City of Boulder (see Lawrence Blick, assistant City Manager).

The University has much to offer in such development:

a) It has substancial personnel resources on which to draw the cost of which is often less than external institutions.

b) it has substancial facilities need for development.

c) it too is a public institution- and it would be to Hutton"s benefit to use the University in order to assit other local governmental units.

Should you interest continue, please call me and we can discuss the development of a formal proposal to you. I have discussed this with people in Greelye with respect to the local city government and the county government and here with the city of Boulder. Both groups would be willing to proceed with discussions concerning the development of the system and a relationship with Hutton.

Please call me at 443-2211, extension 8598.

Sincerely,

September 12,1972

Mr. John Wrigley
Chief, Computer Systems Branch
FAO
Via delle Terme di Caracalla,00100-Rome
Italy

Dear Mr. Wrigley,

Enclosed are the two pages which were missing from your copy of the TAXIR documentation. I hope that when Jorge Leon returns from leave that you can ask him to share with you not only the proposal for the Pilot Project but also a statement which explains our position vis a vi TAXIR. This will help you understand the means by which we can share TAXIR.

I can understand that FAO is in a finnancial bind. However, I hope that you can understand that I too am in a finnancial bind. For instance, this institution does not pay postage for this letter and I take it out of my own pocket. My recent trip to Birmingham was largely self finnanced.

The statement in Dr. Leon's office about TAXIR will explain why I can not give out any more listings and documentation of the system.

Sincerely,

David J. Rogers
Professor of Biology

DJR /CR

Sept. 6, 1972

Dear Aristid:

I apologize that I am justing around to responding to your letter of April 7, announcing your expected visit in Boulder, but I was on faculty leave of absence at the time, and unfortunately, your letter did not get forwarded to me. Sorry I missed you. I was really pleased to see your review paper you so kindly sent along--I am impressed, and quite excited to see your modeling of the real world so well done. Congratulations.

I spent my year's leave first in Stanford, working at the Food Research Institute on my first love, Manihot esculenta with another "manioc maniac" preparing a book on the whole area of manioc investigations. We are doing what me called a "state of the art" for manioc. Later, I moved down to a NASA facility near New Orleans, where they are converting the facility to a large environmental center, and where they asked us to put our various computer systems together to back up various environmental endeavors. We have a series of programs, one for information retrieval, on for "character" (in the sense of the biologist--a single basis for comparison defined over a study) analysis, and a third program, for clustering. These programs, together with a number of others, fall into a larger system, called by the acronym INFORM, which means information for resource managment. This was a very interesting activity, and we had absolutely unlimited computing facilities available to us, including several programmers and systems types to help with the dirty work.

Again, sorry I missed you last April. Hope we can manage to get together some time. I may have an opportunity in a year or two for another leave absence which will headquarter me in Rome, with quite a bit of travel involved. That is a project just now in the planning stage, however, and no certainty for actually getting it. If anything comes to fruition, I'll let you know.

Best regards,

David J. Rogers

To Dr. Aristid Lindenmayer
Univ. of Utrecht
Utrecht, Netherlands

September 6, 1972

Mr. R. J. Currie, Director
World Trade Corp.
IBM World Trade Corp.
821 United Nations Plaza
New York, New York 10017

Dear Mr. Currie,

I write for your advice and potential assistance. Last April, I had occasion to visit a recently established and struggling institution, the Agricultural and introduction Centre, at Izmir, Turkey. This institution, partly funded by the Food and Agricultural Organization of the United Nations and partly by the Turkish Government, has as its main mission, the collection and maintenance of ganetic material from the Middle East. The significance of this mission can hardly be overestimated because of the absolute importance to the world's food economy of a "gene bank" of the diverse genetic material of wheat, barley, oats, many vegetable and fruit crops.in this part of the world. Associated with the gene bank are massive amounts of data describing the thousands of different entries, and the personnel of the Centre are doing their best to make a modern retrieval system for these data. It was with this aspect that I was invited to advise, since I have had considerable experience both with the biological side and the systems side of information management systems.

The only equipment available to this Centre for data processing is an IBM 1130 at the nearby Agricultural University. This machine, already near capacity for various other operations, is clearly not designed to handle the large requirements of even a minimal information retrieval system. The only other computing facility of any size available to the Agricultural Centre is over 100 miles away, in Ankara, where I understand they have a 360/65 system. The only configuration I could suggest to them was to use the 1130 in Izmir as an IO device, with a tie line to the 360 in Ankara. But the costs of establishing and maintaining such a connection was much beyone the meager budget the Centre has.

I have no knowledge of the necessary features to make such a system work, and appeal to you for advice and information on the feasibility of such a configuration. Perhaps there could be some better arrangement that I am not familiar with, and some way in which your staff could make the most appropriate recommendations to them.

ber that the personnel at the Izmir Centre have very little training DP work, and need advice at all levels of the ocmputing milieu. They know,however, the requirements from the agricultural side, and are ite sophisticated in this area (given the location and the budget vailable to them).

I write this letter as an initial inquiry, and am wwell aware that much more detailed information would be required before any decision could be arrived at. What I really would like to know is whether you could be interested in helping this institution out, and if so, how.

The Director of the Centre, and his address are:

Professor V. Tayşi
Agricultural and Introduction Centre
P.O. Box 25
Karşıyaka,
Izmir,
Turkey

Thank you for your consideration and time.

Sincerely yours,

David J. Rogers,
Professor of Biology

DJR/jr

Sept. 6, 1972

Dear Henry, Ian, Appan, Luis, Marge, et al.:

I'm saving time and energy by sending this letter to any or all of the above who might be interested.

Enclosed is a copy of the first approximation of a proposal to do a pilot project of gnetic information. This proposal has no precise target--that is, I do not have an agency which is known to want to support it. For that reason, no budget is given, and no precise statement of work to be done. Our first step is to get approval for the ideas contained in the proposal by a group of influential individuals here and abroad. Given that approval, we will then move to the next stage, which is that of procedures and any appropriate budgetting. We are obviously (from the context) interested in doing this project on a shoestring budget, even carrying some of the costs out of whatever money we can scrounge around here.

GURC does not yet have to become involved, because until we have done a pilot study, and then gotten approval from some sufficiently influential body, there will be no money forthcoming that would be interesting to you. However, we hope to continue building toward the time when there will be x much more recognition for the organizational and managment aspects, and where ENVIR (TAXIR) has been shown to do the things wanted by genetic resourse people. These things are down the road a bit.

Since all the genetic resource people know the information retrieval system as TAXIR, I have decided to continue with that acronym until some later date when it might be appropriate to introduce ENVIR. No big thing, but just to let you know my thoughts. Furthermore, we will do whatever processing with TAXIR as it stands here, without attempting updating or modifying. I think the extant system will hack it for a limited data set, even though we might want to think of such important features as "merge data banks".

On another subject, I have not forgotten about the brochure which you have written which gives a thumb-nail sketch of the INFORM system. I read it through rapidly at first, and had some uneasiness about what was said, but then went back and read more carefully to try to discover what bothered me on first reading. I still have not pin-pointed what it was that first bothered me, but I did get the fealing that the brochure got a little bogged down when discussing the Megasystem structure (p. 5& 6). I don't have any really good suggestions for improvement, however, so better not criticise too much. On page 11, under CONFIGURATIONS, there are some inappropriate heirarchies: botany and zoology are mere branches of biology, whereas taxonomy and ecology are both subdisciplines of both botany and zoology. Genetic resources is a thrid hierarchical level under genetics, a discipline of both botany and zoology. If you are going to display this page as prominently as you have, you don't want to display some misconceptions of these. On page 17, as a formatting problem, both CHARACTER ANALYSIS and CLUSTERING seem to be subsystems under ENVIR, which isn't quite what you want to say. Check spelling of "statics" in 3rd paragraph from top, 5th line of that paragraph. Somehow, as I read the brochure, I am confused of the relationship between MEGASYSTEM, INFORM, and the other parts that go to make it up. I don't think it is clear to the reader just what the megasystem is, if it is different from the inform system, and if

the other segments are INFORM parts or MEGASYSTEMS parts. Again, it is mostly a formatting problem. One last thing, and that deals with TGHDA, which sort of seems to be tacked on the end, rather than an integral part of the whole. Maybe a block diagram with flows could help clear up the matter.

Things are beginning to settle down here finally. Classes began last week, and for me, this is a sort of organizing force around which I can begin to structure activities with more precision. Up untill that time, I was trying to get all the papers and books and letters and things caught up, and fortunately Connie decided to work with me so that between us, things are in pretty good shape now. We have a small contract from AID which pays for a few things, and will pay for a trip to Brazil at Christmastime, to continue the kind of work I was doing over in Africa, along with Chuck Slater and Gil Hersh. Gil, as you know, is back in school, this time trying to get a doctorate of business management, but with a very interdisciplinary program under Chuck, Ken Boulding and me. We have a little money to give Bill Reid, if Bill can find time to work with us. He is, however, in the final part of writing up his thesis, which is a time-consuming operation.

Let me hear, once in a while, about things there. Henry, did you get in touch with the National Cancer Institute lady whose name I gave you? Can she work it so that you can come over to Miami on Oct. 10? Give me a call when you know something about that.

The best to all of you,

Regards

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

DEPARTMENT OF BIOLOGY
DIVISION OF POPULATION STUDIES

TAXIMETRICS LABORATORY
DEPARTMENT OF BIOLOGY
UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302
HALE 114-(303) 443-2211 X 8529

out

8/28/72

Dr. Charles Breitenbach
Agriculture Specialist
TA/AGR
AID
State

Dear Dr. Breitenbach:

Thank you for your response to Dr. Owusu. We will refer only the most essential requests for information to you in the future. By the way, could you reserve for us a copy or two of the report- we only received one.

I understand that Georgia gave their final presentation last week. How did it go? Have you any idea as to what will be done with cassava next? We have some suggestions which we made to Dr. Rice which we should like you to see.

I expect that we will be in Washington and at AID sometime in October, might we drop in to see you?

Again, I thank you for your time and assistance.

Sincerely,

David J. Rogers,
Professor of Biology

DJR:ng

August 25, 1972

Dr. Howard Scott Gentry
Plant Science Research Division,
Agricultural Research Service,
USDA
Beltsville, Md.

Dear Dr. Gentry:

This is to give belated acknowledgement and thanks for your fine monographic study on The Agave Family in Sonora. I have been away for the past year on a leave absence, and this explains the delaying of my letter to you.

Not only is the work of great scientific merit, but it is also beautifully published.

Thank you for including me to receive a copy.

Sincerely yours,

David J. Rogers
Professor of Biology

August 25, 1972

W. A. Williams
Department of Agronomy and Range Science
University of California
Davis, California 95616

Dear Dr. Williams

Terribly sorry not to have responded to your request for reprints sooner, but I have been away a year's leave of absence.

The particular reprint you requested was not made. It appeared in the "Tropical Root and Tuber Crops Tomorrow," Vol. 1, August 1970. You might get it by writing to:

Donald L. Plucknett, Editor
Professor of Agronomy
College of Tropical Agriculture
University of Hawaii,
Honolulu, Hawaii

Under separate cover sending a few reprints.

Sincerely,

David Rogers,
Professor of Biology

DR/jr

August 25, 1972

Dr. Frank G. Hawksworth
Rocky Mountain Forest and Range Experiment Station
USDA
Ft. Collins, Colorado 80521

Dear Frank:

Thank you very much for sending an authographed copy of your magnificent monograph on Arceuthobium. It arrived some time ago, but since I have been on leave of absence this past year, I have just now gotten around to acknowledging its receipt.

Not only is the monograph an outstanding piece of scientific research, it is also beautifully presented. The Forest Service should be congratulated.

I am proud to have had a small part in the work. I know you have many projected efforts continuing work with the dwarf mistletoes, but I would like to hear the directions you are taking, and also to know if there are any ways in which we might contribute help with the computing systems.

You know, of course, about our information retrieval system, TAXIR, but you may not have heard of our continuing effort with it. Henry Fleming and Appan, my former staff members, are now working permanently for the Gulf Universities Research Consortium, under contracts to NASA, at the Mississippi Test Facility, Bay St. Louis, Miss. 39520. There, they have continued development of TAXIR into a much more flexible and useful system, and have redesignated the system ENVIR, to reflect their present applications to the many problems of environmental information retrieval. They also have our character analysic program and the graph clustering program working in tandem with ENVIR, as we had originally hoped to fit them all together.

We have also recently established TAXIR as the system of choice for world genetic resource centers, an international organization, and are at present forging a pilot program for genetic resource centers.

My monograph of Manihot is now complete, and is to be published by Flora Neotropica, as Monograph number 13. I should be receiving galley on that fairly shortly. The Monograph of Manihot esculenta is also complete, and has been the hands of the editors of Economic Botany for 16 months--I cannot seem to get them moving to get it out, and am quite frustrated by their slowness.

I do look forward to seeing you again, once the fall semester gets under way. Do give me a call. My new extension at the University is 8589.

Sincerely,

August 21, 1972

Dr. W. O. Jones
Food Research Institute
Stanford University
Stanford, Calif. 94305

Dear Bill:

My friend in Belem, Milton Albuquerque, has asked me to get him a copy of your Africa book. If you will instruct the Stanford Press to send him one, and send the bill to me, I will appreciate it.

His address: Engo. Agrono. Milton de Albuquerque
Instituto de Pesquisa Agropecuaria do Norte- IPEAN
Caixa Postal, 48
66.000 Belem, Para
Brasil

For your library, you might ask Charles if he has received the following:

Universidad Nacional del Nordeste
Facultad de Agronomia y Veterinaria
La Mandioca (Manihot esculenta, Crantz) No. 14
Segunda Part: Capitulo IX-XII.
Junio de 1972
Authors: Antonio E. Henain and Hector M. Cenoz.

I know that Charles was having some problem in getting the earlier parts of the above publication. My copy just arrived.

No more news from Pat Coursey--I suppose we'll hear if and when the publisher makes up his (their) mind.

We're slowly settling in here in Boulder--our semester begins next week. Son John just got married last Saturday, and we're just about back to normal from that event. Had the house full of inlaws and other relations.

Best regards to you and Kay, and hello to Helen.

Sincerely,

David J. Rogers

P. S. My New phone at the office, if you need it is: (303) 443-2211, extension 8598.

August 21, 1972

See Copy in:
TAXIV: Project / Wheat
Earl Jones
Australia

Mr. E. E. Jones

Dear Mr. Jones:

In response to your letter of 1 August, I expect to be here both the 30th and 31st of August, and will welcome your visit. My schedule on Wednesday is free from 1030 onwards, and free for your visit any time Thursday.

My office is in Hale Hall, Room 11h, on the northeast corner of the main campus of the University. My telephone is: Area code 303, h43-2211, extension 8598, in case you wish to call from Ft. Collins.

I am sending a copy to Ft. Collins, in the event you do not receive this in Dr. Craddock's office.

Sincerely,

David J. Rogers
Professor of Biology

Policy Statement on TAXIR Availability

This is a rough draft [illegible] sent to Jack [illegible], Otto Frenzel and [illegible] August 15/72

~~Dear Frank~~ ~~(or whomever)~~

The following statement indicates

~~I write to clarify some issues~~ about the availability and restrictions on the computing system, TAXIR. I want to be certain that there are no misunderstandings

First, an historical account, to give some perspective. She more/fundamental ideas for TAXIR were conceived over a period of a few years, starting in the early 1960's in New York, and later, in Colorado. I received a grant from the National Science Foundation in 1967, for a period of two years, during which time the major ideas were brought together, and the ~~early~~ initial version of TAXIR established. By 1970, the funds from the National Science Foundation were expended, and we were no longer funded from Federal or other governmental agencies to continue the development of the information retrieval system. The team of biologists, programmers and mathematician who had developed the initial version of TAXIR was disbanded, while some of my staff members turned to other projects where we did have funding. We were barely able to keep the information retrieval system alive, except the individuals in the former team, who took the system as we had it, with them. Some of them have developed the system further, and I have no controll over their developments or applications, nor can there be any possible conflict of interest, nor claims that ~~the systems that~~ these individuals ~~now possess~~ must give the system they now possess to anyone because it is in the public domain. This is true because any developments made by the individuals were not funded by any public money and are, therefore, at the discretion of the individual to apply or withhold as ~~they~~ he sees fit. I do keep a copy of the initial version of TAXIR, but since I am not funded for this purpose, I cannot give the program away, unless someone is willing to enter into a contract to pay the costs of getting the program out of storage, and either running off a list of the program, or provide a tape.

We were fortunate that two of my former staff, who were no longer financed by my funds, were able to get employment with the Gulf Universities Research Consortium, which had a contract from the Mississippi Test Facility of NASA to

take over the initial versions of TAXIR, and build it into a more efficient operating system under the acronym ENVIR. [redacted] This version is greatly modified from the initial [redacted] TAXIR, and does not fall under my jurisdiction, but is under the direction of the Gulf Universities Consortium. Since I worked for a few months as project coordinator for the development of portions of ENVIR (amongst several other important programs) I am familiar with that development, but again, am not in charge. This version is properly in the domain of all the 21 universities that make up the Consortium.

It is clear that I have a continuing interest in the development of TAXIR as a tool for the work of ~~the genetic conservation centres~~ appropriate scientific disciplines and organizations. To accomplish this, I have a small working group, again not funded for purposes of TAXIR, but which keeps up with any developments we can, and to which we add our own updated versions when possible. None of this is under government sponsorship and is, therefore, not in the public domain.

Lest it appear that the above statements are in contradiction to my often stated position, let me assure you that this is not the case. I, as a scientist, am greatly concerned that my products [redacted] be put to use in the cause of scientific advancement, and to that end, I make my version available to anyone with whom there is a chance to work effectively. ~~I have indicated this to the assembled members of the Workshop on Information Systems for Genetic Resources, held at the University of Birmingham, July 3 and 4, 1972.~~ I am deeply concerned, however, that the system be appropriately applied, and to that end, ask that users receive ~~intensive~~ similar training in the proper application of a large and complex system. Since I am not funded to provide such training, it is my hope to enter into contract with those who would use the system, or that the prospective user enter into a similar contract with the Gulf Universities Research Consortium where it is possible

stem propriety and brsqle.

Another concern of mine with respect to the use of TAXIR is that there are many concepts in addition to those dealing specifically with the computer program where training is necessary to make the most appropriate use of the system. Few people have looked more deeply into this aspect than I, and those who now work with ENVIR, namely Mr. Henry Fleming and Dr. S. G. Appan, who are employees of GURC. I know that there are many different ways to construct data so that all of the value of the information may be extracted. The nature of the descriptors for TAXIR, the varying ways in which one may instruct the system to store and retrieve the data, the structure of data banks, and the efficient management of these are items of great significance, not normally recognized by most scientists. We encourage potential users to again enter into some sort of contract to be given the most efficient training in these aspects.

Neither of the above types of training must be followed, but it is my experience that without the formal training, most people do not get full benifit from the systems, and under these circumstances, may tend to criticize the system, rather than themselves.

To reiterate: The present version of TAXIR which is in my hands is not the same version that was developed with public money, and the version that was developed with public money is available to those who can pay the costs to have that version copied. I will make my later version available to those who have legitimate problems, at cost, without compensation to me. I urge those that would use the system be properly trained in both the data handling aspects and the computer program aspects. I believe this to be in the proper scientific spirit, and it should not be misunderstood that I am trying to make a financial profit from the sale of the system. As a Professor of Biology at the University of Colorado, I am not obligated by any regulation or law to provide service other than that required by the University. In the spirit of science, I offer these services where they will be most effective.

Lest it appear that this letter is an attempt to derive funds for the forthcoming development of the pilot study, let me set your mind at rest. I have a graduate student who will be assigned to test some of the ideas of the pilot study, using TAXIR, at no cost to anyone other than my own funds. If, in the future, we are successful in attracting appropriate financial support, then I will expect these funds to be used in part for those of our activities which are clearly identified as work for the development of the genetic resource centre information management system.

NATIONAL SCIENCE FOUNDATION

PROPOSAL RATING SHEET

Proposal No.: B3B0034
Investigator: BOCK, Carl E.
Institution: U Colorado
Please return to: General Ecology
If possible by: 8/14

Reviewer: David J. Rogers
Taximetrics Laboratory
Department of Biology
University of Colorado
Boulder, Colorado 80302

Comments (Continue on additional sheet if necessary)

This reviewer's comments are directed to the methods to be employed in this proposal, not to the substantive content.

The characteristics of the TAXIR system and a brief summary of the system, developed under my direction, is attached to provide an overview of the system's capability and applicability to this proposal. The software programs for TAXIR have been flow-charted and documented, and may be seen by anyone who has need to examine them for the sake of this proposal, if appropriate arrangements have been made.

Programming back-up and continued maintenance and development of the computer systems for TAXIR are guaranteed by the Taximetrics Laboratory. No computing system is ever "complete" and new means to improve the services of TAXIR are constantly under development. Therefore the Principal Investigator of this proposal will be continuously supported by the staff of the Taximetrics Laboratory.

TAXIR is a tested system, with several different biological and wider environmental applications now in a production phase, as follows:

TAXIR data banks of the genus Manihot, including specimen and bibliographic data. Data banks of the cultivars of the cultivated species, Manihot esculenta are also maintained in production.

TAXIR is the information system chosen by the Regional Plant Introduction Station, USDA, Pullman, Washington for accessions of new crops, under the direction of Dr. Sam Dietz.

TAXIR, under the new acronym ENVIR, is the system of choice by the Gulf Universities Research Consortium, Mississippi Test Facility, Bay St. Louis, Miss. The applications are in biological, chemical and physical oceanographic studies and data are being incorporated into TAXIR (ENVIR) banks, particularly under the direction of Dr. Robert Menzies, Dept. of Oceanography, Florida State University, and Dr. Carl Oppenheimer, Director of the Marine Station of the University of Texas, Port Aransas, Tex. The data banks are equivalent, or larger than the total data bank for the Christmas Bird Count.

TAXIR has been designated as the information system for world Genetic Resource Centres, under the auspices of FAO and IBP. Two genectic resource centers, one in Bari, Italy, and one in Brauschweig, West Germany, are already using the TAXIR system.

TAXIR is the information system [illegible] the Amphibian Facility, Department of Zoology, University of Michigan, directed by Dr. George Naco.

OVERALL RATING
☒ EXCELLENT
☐ VERY GOOD
☐ GOOD
☐ FAIR
☐ POOR

Signature of Reviewer: David J. Rogers Date: August 21, 1972

Other suggested reviewers (optional):

NSF Form 173, January 1968

"Reviewers' comments are solicited and received in confidence by the National Science Foundation, an agency of the U.S. Government, and will be given maximum protection from disclosure permitted under applicable laws, including 5 U.S.C. 522 (The Freedom of Information Act)."

One of the graduate students to be named in this project, Mr. Larry Lepthien, was trained in both the programming and application aspects of TAIR in this Laboratory. Such training is an absolute essential to be certain that the complex programs and the various means of data structuring are most efficiently applied. Mr. Lepthien has participated in a pilot project which tested the TAIR system as a means of information retrieval of the Christmas Bird Count data. The favorable results of the test led to the presentation of this proposal.

As indicated in this proposal, one of the most time-consuming aspects of any information system is that of data recording. The system proposed for data capture from the Christmas Bird Counts is as efficient and accurate as possible, both from time and accuracy standpoints. However, one of the areas of development in the Taximetrics Lab. is that dealing with this process, and where new techniques can be employed, they will be incorporated in this study (among several others). It should be pointed out that once the data are in machine-readable format, they need never again be copied by hand or keypunched, and can be used over and over again at electronic speeds. Use of graduate students and undergraduate assistants in this project insures relatively inexpensive labor costs, and at the same time, provides valuable training and experience in modern methods of data handling.

August 9, 1972

Dr. L. R. House
Arid Lands Agricultural Development Program
Ford Foundation
P.O. Box 2379
Beirut, Lebanon

Dear Dr. House,

I have the pleasure to invite you to participate in a half-day symposium on documentation at the FAO/IBP Technical Conference on Crop Genetic Resources, to be held March 12-16, 1973, in Rome. I enclose a proposed outline of speakers and topics for the symposium, which has been approved both by Dr. Jorge Leon (FAO) and Sir Otto Frankel (CSIRO, Australia), the organizers and directors of the Conference.

We believe that, at previous conferences in Rome, Izmir, and Birmingham, England, sufficient aggeement was reached on the types of information, the methods of information handling, and the computer systems, to make it possible to set forth a unified system for information management of genetic resources at the next Rome conference. This belief leads me to suggest the enclosed outline as a means to indicate that we have reached a final stage for international cooperation on the information management. Inasmuch as negotiations are going forward presently to attract funds from the World Bank for a series of gene banks to be established in the major centers of agricultural origin, it would seem to be useful to indicate that we have done our work in developing the necessary systems, and are ready to apply our knowledge and methods to the large problem of information which will be associated with each of the proposed international gene bank centers.

I have suggested that you be included in the half-day symposium because of your experience with information systems, especially with sorghum and millet, which you described so well at the Izmir conference last April. If you are willing to participate, you are asked to present a formal paper in 25 minutes, with approximately 5 minutes for discussion at the end. With the speakers listed, we can cover most of the necessary ground for all information management problems, though certainly not in exhaustive detail. Your discussion will be valualbe as one with practical experience in an area not covered by the other speakers.

If you accept, you are expected to submit an abstract of no more than 500 words to FAO by November 30. IBP has undertaken to publish selected conference papers as one of its "synthesis" volumes. Mnnuscripts should

be supplied by the author not later than two months prior to the commencement of the conference.

I will appreciate early acceptance of this invitation, and look forward to your reply. Further details of the program will be forthcoming when I have heard more from Dr. Leon in FAO.

Sincerely,

David J. Rogers
Proffssor
Dept. of Biology

DJR:wsn

out file

University of Colorado
Department of Biology
Hale 114
Boulder, Colorado 80303
USA

8 August 1972

S| K| OWUSU
Nyankpala Agricultural College
Box 347 Tamale
Ghana

Dear Dr. Owusu:

We have received your letter of July 26, 1972. I am sorry to say that it would be impossible to send you all we have on CASSAVA as it comprises over fifteen filing cabinets of information.

I suggest that you contact the following people and ask that they send you a copy of

"A Literature Review and Research Recommendations on Cassava", AID Contract Number csd/2497, March, 1972.

This a good review on cassava as of 1971. It should provide a good bibliography and the names of people you might contact throughout the world.

I would also suggest that you get intouch with the Federal Food Research Institute in Accra.

For the mmma above book write to:

Dr. Kelley, Chief
Technical Assitance Bureau/ Agriculture
Agency for International Development
Department of State
Washington, D.C. 20523
USA

I will send them a copy of this letter.

Sincerely,

David J. Rogers,
Professor of Biology

cc: Dr. Kelley

UNIVERSITY OF COLORADO
BOULDER, COLORADO 80302

Department of Environmental, Population and Organismic Biology
Hale 114 x 8598

out file

8 August 1972

Dear Dr. Kelley:

I have received a request for information on CASSAVA from a young man in Ghana. I have suggest that he contact you for a copy of the University Georgia report.

We have been busy on aspects of CASSAVA and have been doing some work with and for Marty Forman and Harold Rice. Some of thsi work updates some of the items in the Georgia report. I hope we can get a chance to discuss this sometime in the near future.

I am enclosing a reply to Mr. Owusu, and if you shouldhave the time, you might send him a copy before he requests it.

My regards to Dr. Bightenbach and others on your staff.

Sincerely,

Dave

David J. Rogers
Professor of Biology

Dr. Omer Kelley
TA/A
AID
State

encl.

UNIVERSITY OF COLORADO

BOULDER, COLORADO 80302

Department of Environmental, Population and Organismic Biology

August 7, 1972

Dr. Brian Snoad
Department of Applied Genetics
John Innes Institute
Norwich

also Lothar Seidewitz

Dear Brian:

I have been invited by Sir Otto Frankel and Jorge Leon to organize the 7th Section, Documentation, of the FAO/IBP Technical Conference on Crop Genetic Resources to be held in Rome 12 - 16 March, 1973. It is my pleasure to invite you to participate in a half-day symposium in Section 7, Documentation.

As you know, we reached substantial agreement on methods for information retrieval for genetic resources at Izmir and Birmingham. It is my hope that we can round out these agreements by discussions along the lines suggested in the enclosed outline. Restrictions in both time and money prevent longer discussion periods or the inclusion of more speakers.

I have invited you to participate in this symposium because of your long and valued experience with the problems of information management systems, and because I think you can do the best job of presentation in the area of the title I have suggested. The combined presentations should establish the definitive set of procedures for international cooperation in information management, and possibly, at the same time, present a blueprint for those in other agricultural endeavors to follow. The titles in the proposed outline are only tentative and suggestive, and I trust that you will not feel that you must use the suggested title. Any suggestion you care to make, if you decide to participate, will be welcome. Please keep in mind the objectives of the symposium, and the conference as a whole. I believe the major objectives to be: (1) we are agreed on the methods of information management (including the computer systems already developed) and (2) the type of information to be gathered at all levels of gene bank operation are substantially understood, and further, (3) we are ready to proceed in the international network of gene banks.

As I understand, either FAO or IBP will support your travel and daily expenses, but I do not have details at the moment. Nor do I have a schedule of times, and cannot tell you the day or time of the documentation session.

If you could prepare for about 25 minutes of formal presentation, with about 5 minutes for discussion, we should have ample time for completion of the session, and a review of the whole information managment system. Authors will be required to supply an abstract of not more than 500 words in their own language, and FAO will prepare translations. Abstracts must be received at FAO not later than 30 November 1972. IBP has undertaken to publish selected conference papers as one of its "synthesis" volumes. Manuscripts should be supplied by authors not later than two months prior to the commencement of the conference.

I hope that you will be able to participate next March, and look forward to an early, affirmative response.

Sincerely,

Dave

David J. Rogers

Encl.: Outline of presentations

mfile

cent file

Dr. Jorge Leon, Chief
Crop Ecology and Genetic Resources Unit
FAO
Via delle Terme di Caracalla,
00100- Rome
Italy

7 August 1972

Dear Dr. Leon:

I am Dave Rogers' research associate, and together we are still trying to work out some of the Cassava mysteries.

One such came up the other day. We came across an interesting paper by Ichsan El Rawi (Djakarta, 1959). It is an original manuscript entitled "Hydrocyanic Acid in Cassava".

The paper has some interesting ideas and interpertations, and we find that it has not been cited in some of the better work on this topic.

Ichsan El Rawi has listed himself on the paper as a "FAO Nutritional Biochemist." We seek your assistance in:

1) confirming the fact that he was a FAO Nutritional Biochemist and,
2) locating him at the present time.

Thank you for your time and assistance.

Sincerely,

Gil Harsh
Senior systems consultant
Department of Biology (Hale 114)
University of Colorado
Boulder, Colorado 80302
USA

August 3, 1972

Dr. Howard Irwin
The New York Botanical Garden
Bronx, New York 10458

Dear Howard:

This is a sort of rambling type of letter, without very much substance, but one I've wanted to write for some time.

First, it was a pleasure to have Ian Prance (I don't remember the right combination of letters to spell his first name properly) at the same meetings with me in England, both at the Workshop on data systems for a world gene bank network, and later at Kew, where he and I shared the seminar in the Keeper's room. I feel that he may have learned something at the Workshop which will be profitable for NYBG in the long run, if not immediately, and he certainly gave more prestige to my presentation on TAXIR at Kew not only because he is a bona fide Oxonian English botanist, but also a member in good standing in botanical garden circles.

Hesslop-Harrison seems to be moving things in a more rapid manner than did his predessor towards modernity at Kew, but he and his staff are still in a very early stage, and probably won't move as fast as you can, at least as far as various EDP procedures are concerned. Their bureaucracy make keep them using English computing machines even though there are several more powerful US machines available in London. That will hold them back, if they don't want to spend money converting such computer programs as ours to their own hardware.

While I was working down in Mississippi, I discovered that a number of the larger contractors to NASA, such as Lockheed, are employing botanists to help them get "ground-truth" for satellite and high-flying airplane pictures of the earth. The contractors seem not to have any idea about what kind of botanist they really should have, and some of the people they have hired are, at best, second-best. There is no knowledge amongst the engineers of these companies that botanic gardens contain the most precise knowledge and skills for getting "ground-truth" data to check out their sensory devices. I made a little headway with one engineering, who took my place down at Mississippi. My feeble attempt to do this is contained in the enclosed writing which was to be used in one of the reports of GURC to NASA. This one guy was receptive, probably because I gave him quite a few drinks of Scotch in advance, and because I worked with him for a few weeks before leaving. I somehow feel that botanic institutions should try to get connected through contract or subcontract to the NASA contractors for work on determining just exactly what they see on the ground. Even if the BGs don't get involved, these engineering types are going to go ahead on their own, which will be money very poorly spent.

I don't know exactly how botanic gardens could work with such contracting types. I do know that most botanists are reluctant to work under any contracting agreement, where they must guarantee some sort of result. But if botanic gardens and botanists want to have their influence felt in decision-making, somehow they must get to where the action is, and this is one route that I suggest.

I am really looking forward to Ian's report on his findings for NYBG, and hope that you can share it with me. I, and the people at GURC, could stand an objective look at our systems, and it is clear that we cannot be objective about our own systems. For that matter, it is difficult for us to be objective about other, competing systems. There is so much jargon and salesmanship associated with the systems that it is difficult to slice through to the real value of one system or another. I am sure you have encountered this, and we appreciated the chance to tell Ian about our systems for this, amongst other reasons. Maybe he will see the systems in their true light.

Now that I have finished the generic monograph of Manihot, and have written a pretty thorough study of the one cultivated species, I have one more large publication to make before I call it quits on Manihot. The one more large publication is a general book on M. esculenta, in the style of the World Crop Series. I am already into that work in collaboration with two others, Bill Jones of Stanford Food Research Institute, and Pat Coursey of the Tropical Products Institute in London. When this work is done--we project its completion in about a year's time--I will be looking about for another economic group to tackle from the taxonomic point of view. I am just a bit tired of tropical type crops, and am casting about for an interesting temperate zone group. At the moment, I'm sort of interested in the Vitaceae. What do you think of that family from the standpoint of taxonomic problems? I think the product of the vine would be more desirable to sample than a starchy root.

The family is coming along--how well remains to be seen. The two oldest are through with their bachelor's degrees, and the youngest will finish high school this coming year. The older boy, John, is getting married on the 19th of this month, and probably will go on for graduate work. Marilyn is working in San Francisco, and seems to belong to the women's lib group, as far as marriage is concerned. At least, she hasn't shown too much interest in marriage yet, but I refuse to predict when that attitude will change. Richard, the youngest, has been away in Europe on a camping trip all summer, so Connie and I have had respite from children type problems for some time. I must admit that it's rather nice, at least for a while.

Best regard to you and family.

Sincerely,

Copy

aug 3/72

Professor J.G. Hawkes
Dept. of Botany
Univ. of Birmingham
PO Box 363
Birmingham B 15 2 TT,
England

Dear Jack,

Thank you for the $150 check from IBP.

You may not know that I am co-chairman of the local committee for next years International Congress of Systematic & Evolutionary Biology. I have, therefore, your request for the ~~Special Interest group~~ for the Solanaceae. I hope that you and D'Arcy will continue the organization of your interst.

Let me repeat at this time my invitation to you and Barabara to stay with Connie and me during the Congress.

Sincerely,

David J. Rogers
Professor of Biology

Aug 3/72

Dr. E. B. Worthington
International Biological Programme
Central Office
77 Marylebone Road
London NWI 5HB
England

Dear Dr. Worthington:

I enclose receipt for U.S. $150.

Thank you for your assistance.

Sincerely,

David J. Rogers
Professor of Biology

HALE 114 out file 3 Augsut 1972

Dr. Jerome Manar
Coordinator of Swine Programs
CIAT
AA67, 13, Cali, Colombia

Dear Dr. Maner:

Dr. Charles Slater who attended the Third Meeting on Fortification of Mandioca Products (Rio, March 13, 1972) was kind enough to give me a copy of the Proceedings.

Unfortunately the paper is sketchy and I would appreciate your sending me a copy of your formal presentation, "The Value of Nitrogen Fraction in Cassava and the Effects of HCN in metabolitic Functions."

Further, the Proceedings breifly mention other matters of interest to me. Could you shed any papers or currently available working notes on "llanera"- a cassava variety reported to have a 6% protein by crdue analysis. Do you have an amino acid profile on the protein extract?

The problem of cassava "bitterness or sweetness" is unsettling- do you have any data on the nitrogen fraction of specimens otherwise classified as bitter and sweet? I should appreciate anything you may have, or can you suggest anyone who might be toying with this problem.

Thank you for your time and cooperation, I look forward to your response.

Sincerely,

Gilbert N. Hersh
Research Associate for

David J. Rogers,
Professor of Biology

out bill

HALE 114

August 3, 1972

Achmad Djaeni Sodiatmma
Wismarini,
Polonia 84,
Djakarta, INDONESIA

Dear Doctor:

I have been reading the Proceedings of the Third Meeting onf Fortification of Mandioca Products held in Brazil in March, 1972. The Proceedings, which are far from complete make little bxt freference to your comments ontthe use of cassava in Indonesia.

You, no doubt, have a paper or working papers on the use of cassava in Indonesia- amounts, processing techniques, fermentation, etc. Would you be kind enough to send me what you have have.

We are in the process of compiling a World Directory of persons involved in cassava research and would like to have comments by you on your field of interests and thw work you are currenlly doing. Your earliest reply is appreciated.

Sincerely,

David J. Rogers,
Professor of Biology

HALE 114 x 8598

August 3, 1972

Dr. Peter Chase
Department of Pediatrics
Unicersity of Colorado
Medical School

Dr. Chase:

Dr. Rogers and I are back in one shop from our wanderings around the country for the past two years. We are no ready to continue the work on CASSAVA.

Our first project will be a systems review of the problems of toxicity in the food portions. The basic broblem is that of micro-quantities of HCN, mostly as a cyogenic glucoside residual from a more toxic root. These micro-quantities have been reported to be as high as 25ppm, there is little food product with less than 0.5-1ppm.

It has been suggested by a research group in Nigeria (Ibaden, University of Ibaden, Department of Biochemistry) that these low concentrations cause continuous nervous deterioration, and imperfect nervous tissue development in children. The problem then is acute.

The second problem we eacounter is with the fermentation process used to prepare the root for use as a table food. Does this process yield higher food values, or does it introduce other toxic products?

At the moment we have little good data. What you have will be of use as an indicator around which a stronger series of hypotheses can be built. These hypotehses will provide for experimental justifications which we hope AID will fund.

Please send the raw data to us as soon as possible. We will interpert it and set up some working papers which we will then disauss with you and Jock Cobb.

Cordially,

Gil Hersh
Research Consultant, Taximetrics Laboratory

July 19,1972

Dr. James Sharp,President,GURC
1611 Tremont
Galveston, Texas 77550

Dear Jim,

Much as I would like to keep the enclosed check I don't really think I should because I got paid up to the end of June. If by chance you can use this same money for travel, I'd rather have it available for those occasions when you feel would have some justifiably related GURC business.

My recent trip to England was very successful in terms of spreading the word on ENVIR (but known to most people still as TAXIR). The main effort made in England was for a workshop of mostly European and English speaking scientists where we decided that ENVIR was the system of choice for information associated with world genetic resources. ENVIR got a clear vote of confidence over any other system. The genetic people are working towards the establishment of gene banks at 10 strategic locations around the world. Their efforts were given a substantial boost by several resolutions made by the Stockholm UN Conference on the Environment. The FAO had submitted the resolutions in the first place, and the "Gene bank people" are either members of FAO or have close ties with FAO. Hopefully a proposal to the World Bank, which is to put before them in October of this year will be accepted by the World Bank, and the funds for a pilot project should be forthcoming next year. Chances are good that I will be pretty deeply involved with the whole operation.

It is my anticipation that: (1) if the World Bank gives the money, and (2) if I am indeed involved, I will push for a contract or subcontract to GURC to provide the expertise on ENVIR.

More news on this whenever it seems appropriate. In the meantime good luck and lets keep things going.

Sincerely,

David J. Rogers
Professor of Biology

DJR/CR

Encl. check to David Rogers in amount of $811.75

G.U.R.C., Bldg 1100, Rm B313
Mississippi Test Facility (NASA)
Bay St. Louis, Miss. 39520
Feb. 20, 1972

Dear Wayne:

I'm on a sabbatical this year, so your letter had trouble catching up with me. I spent the 1st part at Stanford, and the last part here, working up an integrated information management system for environmental studies. I'm also doing this atm home, so there will be plenty of typos in the letter.

Unfortunately, I don't have all my past records with me, so I can' give you all the various applications of our Taximetrics programs. My memory is poor on names, and that doesn't help.

I'm sure you have checked with Estabrook, who is now at U. Mich., Zoology Museum. I don't know what he's done since he left my lab. You certainly will have checked the journal Taxon for some of the good papers in it. I have one in press there now, written with Pierre Legendre. You probably ought to write Pierre because he has several papers either in press or in ms. His address:

Dr. Pierre Legendre
Institute of Genetics
University of Lund
Sölvegatan 29
S-223 62 Lund, Sweden

Also check with Mr. Homer Metcalf, Dept of Plant & Soil Science, Montana St. U., Bozeman, to find the status of his thesis on a monograph of Iris missouriensis, being done for Claremont Graduate School, Rancho Santa Anna Botanic Garden. There are several theses in the mill in Boulder, Dept. of Biology, where taximetric programs of one sort or the other are being used. Write to Mr. Bill Reid, and Mr. Larry Lepthein, both Dept. Biology, for their status. Both are high-powered ecology types. Also write to Jerry Arp, same address--his thesis should be out soon, and is an application in cactus taxonomy.

On the west coast, at Berkeley, Dept. of Entomology, a chap whose last name escapes me, but you may know because of his interest in computer-aided taxonomy. All I can remember is that he is "eter". He should have some publications out by now, some of which applied our clustering program.

I append a list of things you may not have seen because of their place of publication. Please keep me on your mailing list, so that I can get a copy of your output.

Sincerely,

David J. Rogers
Program Coordinator

Publications from or with D.J. Rogers

1969. Manihot, man and computing machines. Bull. Fairchild Tropical Gard. 24: 11-13

1969. A computer-aided morphological classification of Manihot esculenta Crantz in Proc. Int. Symp. Trop. Root Crops. Vol. 1. 57-78. Publ. Univ. Coll. West Indies, St. Augustine Trinidad.

1969. Gompter Techniques in Systematics--Disc. in Proc. Intern. symp. on Syst. Bio. Ed. C.G. Sibley, Natl. Acad. Sci. Publ. #1692. pp. 605-608.

1969. Prance, G.T., D.J.Rogers and F. White. A taximetric study of ~~aha~~ an angiosperm family: generic delimitation in the Chrysobalanaceae. New Phytol. 68: 1203-1234.

1970. Arp, G. and D.J.Rogers. A computer-aided classification of the varieties of Pediocactus simpsonii (Engelm.) B. & R. Cactus and Succulent Jour. 42: 40-43.

1970. The past, present, and future of numerical taxonomy. in Biosystematiek. Ed. F.A. Stafleu. pp. 96-103 (in Dutch).

1970. Theoretical and Practical considerations on data structuring for a computerized information retrieval system. in Archeologie et Calcalateurs. pp. 147-159. Marseille.

1971. A classification of Manihot esculenta using the information-carrying content of a character as a measure of its classi--ficatory rank. with Henry Fleming. Proc. Second Int. Symp. on Trop. Root Crops. Vol. 1. pp. 79-82. Univ. of Hawaii, Honolulu.

1972. In press, with Henry Fleming. A monograph of Manihot esculenta Econ. Bot. Vol.__, 1st issue.

1972. In press, with S.G. Appan. A monograph of Manihot. Flora Neotropica monograph #13, New York Botanical Garden.

NOTE These last three are applications of our computer systems, and they should be included in any report on our computer work.

Also, a couple of papers by different authors:

1970. Bisby, F.A., The evaluation and selection of characters in Angiosperm taxonomy: an example from Crotolaria. New Phytol. 69: 1149-1160.

~~1972.~~ 1971. Stearn, W.T. A survey of the tropical genera Oplonia and Psilanthele (Acanthaceae). Bull. Br. Mus.(Nat. Hist). Botany. 4(7): 261-323.

October 25, 1972

To: Members of Graduate Council

From David J. Rogers, Dept. of EPO Biology

I should like to apply for funds to pay for 100 reprints of the article detailed in the enclosed reprint request. I have no grant funds nor funds from the Department of EPO Biology.