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

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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.



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321
November 13, 1969

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

Dear Dr. Rogers:

I hope all has gone well with your group since we last corresponded. We are again interested in using the Taximetrics program, this time several different studies may be run. Therefore, what is the possibility of getting a program that will run on our Utah State University computer, it is an IBM 360 model 44.

In talking with the computer people here, they indicated that if the program was written in Fortran or at least a higher language, they could get it to run with minor adjustments and sorting. Since your people are more familiar with such situations, there may be more problems than we think. Therefore, we would be interested in learning if we can get a copy of your program and what costs and problems may be involved.

Have you any publications on your newer work such as character analysis? I would be interested in anything you may have. We will be looking forward to your reply.

Sincerely yours,

Paul B. Holden
Graduate Research Assistant

PBH:ps

6 September 1968

Mr. Paul Holden
USDI - FWS
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321

Dear Paul:

A little bird at Arizona State said that they have a copy of your finished thesis. If there is an extra copy available, we would be interested in seeing what you finally came forth with.

Our work currently has been with the problems of data storage and retrieval, but it has progressed to the point that we are planning a demonstration for museum curator-types the second week in October.]

Should this be addressed to "Doctor" Holden? Congratulations on your progress.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm



UNITED STATES
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Utah Cooperative Fishery Unit

Utah State University

Logan, Utah 84321

September 13, 1968

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

Dear Dr. Rogers:

Sorry about the delay in sending you a copy of my thesis. We have records of sending one your way early this summer but it must have been lost along the way.

I just returned from Tucson where I presented a paper on my research to the American Fisheries Society. Although I did not have sufficient time to delve into the mechanics of the program, it did get some exposure to fisheries people.

The "little bird" from Arizona State brings to mind several questions that may help my interpretation of the program and its use. Can people get copies of your work to run on their own machines? If not, where can the program be run? I met several people who were very interested in using the taximetrics program at the AFS, primarily from Arizona State and BYU. One of the fellows from Arizona is working on Gila also, therefore, I told him if he had any trouble with the print-out (that is if they use the program) I may be able to arrange a trip down for a few days to help out.

If you have any publications on "how to" papers on the character analysis program, I would appreciate receiving them.

The "Dr." will have to wait for a few years, although I must say it sure sounds nice!

Sincerely,

Paul B. Holden

Paul B. Holden
Research Assistant

PBH/dmp
Enclosure (1)

XNS. POSTCARD - 17 Sept. 1968

Thank you for the copy of your thesis.

Yes, people can get copies of the program, though we suggest strongly that they make an effort to visit us to get full details of how to derive the most benefit from it.

Sincerely



UNITED STATES
DEPARTMENT OF THE INTERIOR
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Utah Cooperative Fishery Unit

Utah State University

Logan, Utah 84321

April 4, 1968

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

Dear Dr. Rogers:

We would appreciate receiving a bill for the January run of the taximetrics program. Available funds and time prohibit use of your character analysis program, at least for the present, so we had better pay this bill before someone else spends the money.

I am quite pleased with the results of the program, I feel it helped me quite a bit. I have arbitrarily considered one group of fish a separate entity based on the program results. This group of fish needs further study, I do not have enough specimens from the right areas presently, therefore, I defined the groups as a certain cluster in the program with no specific characters delimitating it. My thesis is presently in the hands of my committee and should be completed soon. I will send you a copy once it is complete.

I am not sure of the future yet, I hope to continue along the same general lines and may have use for your program again. I would be interested in any new developments your group may come up with so please keep me informed.

Sincerely,

Paul B. Holden
Research Assistant

PBH:dmp

To: Paul B. Holden
Utah Cooperative Fishery Unit
Utah State University

For: Computer Time, University of Colorado

1043.319 seconds on Central Processing
@ \$300 per hour

1142.939 seconds on Peripheral @ \$60 per hour

\$104.80

Consulting fee and Punching time

20.20

\$125.00

19 April 1968

Mr. Paul B. Holden
USDI - FWS
UTah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321

Dear Paul:

Enclosed is the bill for your computer runs. I am glad to know that the program did some good for you, and I hope that we can help in the future. I will be glad to see your theses when you can send me a copy.

The new development here involves the development of a computerized information retrieval system. This IR system will be very useful to workers like yourself who want to keep track of large volumes of data, such as your fish. The first running program should be available late this summer. I think they would profit you and others working in your area to adopt them.

Let us hear from you as you go along.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm



UNITED STATES
DEPARTMENT OF THE INTERIOR
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BUREAU OF SPORT FISHERIES AND WILDLIFE
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321
January 17, 1968

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

Dear Dr. Rogers:

I think for the moment anyway I should finish the graph clustering. Once this is done and I've had time to see what my characters are doing, I could call you and then we could decide how much Charanal might help me.

Therefore, please send the printout immediately and we'll get together on the use of Charanal in a few weeks. It would be possible for me to come over, but it would involve a weekend.

Please send the bill for the run to the Department of Wildlife Resources, Utah State University. This is where the money is at present.

Thank you very much for the help. A botany student here is thinking of using your program. He has probably called you about it, although he had to get his Department's okay first.

Sincerely,

Paul B. Holden
Research Assistant

PBH:dmp

15 January 1968

Mr. Paul B. Holden
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321

Dear Paul: We have a run of graph clustering for you. Whether we send it to you or you come pick it up depends on your decision and that will depend on the next few paragraphs.

But before I get into details about these suggestions, we cannot, without considerable effort, follow your suggestion to run a nodal distance array of the closest 20 objects. We would have to diddle around with the program and we do not care to break into the instructions and rewrite it.

Now comes the paragraph on the decision you make whether you pick up the graph clustering here or we send it there. In the last paragraph of your letter you asked about the character analysis program. To date we have not written up a set of instructions "How to Read the Printout" as we did for the graph clustering. There are several reasons for not having done so, but the most critical is that the complexity of the thing prevented us from writing less than a chapter of a book to explain it. "Charanal" is a very useful thing for you to have and I would suggest that if it is at all possible you come down here for a day or two to get instruction on its use. We think you would find it useful. If you can find time and money to do so, then I would suggest that you leave the printout of graph clustering here and pick it up at the same time you get a run of Charanal. If you cannot make it, then we will send off the graph clustering to you very soon. I would not think it feasible to give you a run on Charanal without the necessary explanation.

Let me know what you want to do.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm



UNITED STATES
DEPARTMENT OF THE INTERIOR
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BUREAU OF SPORT FISHERIES AND WILDLIFE

Utah Cooperative Fishery Unit

Utah State University

Logan, Utah 84321

January 10, 1968

Dr. Dave Rogers
Taximetrics Laboratory
Biology Department
University of Colorado
Boulder, Colorado 80302

Dear Dr. Rogers:

If you have not already received my data cards, they should arrive shortly. I hope everything works out okay this run.

As I indicated in an earlier letter, there were more problems than just the overflow of the internal connections table. Certain pairs were not clustered when they should have been. It more or less just left them out. I am wondering if possibly the printer skipped some lines. This problem occurred in the R table of new connections. Should this table have data in every line, or does it occasionally skip a line between data lines? In other words is it single spaced throughout or does it occasionally go to double-spacing?

I am afraid I have several pairs left out that I have not caught. This may not be as serious as it seems though.

Also I would like to make a suggestion based on my sub-graphing of the printout I have. I believe a nodal distance array table of the closest 20 objects would be considerably more useful than 10. In my data where I have 300 objects yet only 3 main clusters, the nearest 20 would be most useful.

Also we are interested in your character analysis program. If you could possibly explain its function and use, and give an estimated cost for my data; we would appreciate receiving this information.

Thank you for your time and trouble.

Sincerely,

Paul B. Holden

Paul B. Holden
Research Assistant

PBH:dmp

*Carl L. B. ...
now for the.*

DEC 29 1967

Ans / Postcard
1/5/68

December 26, 1967

Dear Dr. Rogers,

George may have told you of the trouble I had ~~of~~ in running my data with your program. The program quit after 7 levels for the external Connections table exceeded the 1500 limit at that point. George mentioned you had run into this trouble also and were in the process of correcting it.

I have begun to graph out the data and have run into some more problems. At level 4, $C = .89$ ---, several pairs were included under the R which did not connect to any members in the main cluster. In other words at this level I have on the printout what appeared to be two clusters where only one was indicated. On going back over the ~~the~~ listing of all the S values, I found connections at $C = .89$ --- which clustered all the objects, but which were not printed in printout. I also found several pairs which should have joined the cluster earlier, level 2, $C = .947$.., but which were not indicated at that level. I can see no apparent reason for this for

Therefore I am assuming that something must be wrong with the program I used.

I will continue to work with what I have, but cannot be sure that all objects are clustered at a certain level that should be. As I discussed with George, I'll have you run my data again once you have your program capable of handling this amount of data. I used Dr. Morris's copy of the program at CSU, seems rather funny that it ran so well for them, although they were using much less data.

If you would care to see my printout, I could send it to you. I'll probably be back in Logan (I'm in Wisconsin presently) by January 3. I'll be looking forward to hearing from you for this is the only thing holding up my thesis at the present time.

Hope you are having an enjoyable holiday.

Sincerely,

Paul Holden

2 October 1967

Mr. Paul B. Holden
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321

Dear Paul,

Glad to hear you are going. I strongly recommend that you get in touch with Dr. Meredith Morris at the Rocky Mountain Experiment Station, Colorado State University, Fort Collins 80521. Dr. Morris has our program, and he can run it on the CSU computer. Ask him if he is willing to run your data and the method of operating (that is, how do you set up a charge account between you and him?).

This is your best bet. Failing Morris's cooperation, try Dr. George A. Van Dyne, Fisheries and Wildlife Biology at CSU. Both Van Dyne and Morris have the program and instructions for running it, so no sweat, except for them. Perhaps Dr. Behnke can get a free run for you. I recommend this route. However, if you hit a snag let me know and we will run your objects for \$100. Good luck to you.

Sincerely,

David J. Rogers
Professor of Biology

DJR:gm

SEP 29 1967



~~UNITED STATES~~
~~DEPARTMENT OF THE INTERIOR~~
FISH AND WILDLIFE SERVICE
~~BUREAU OF SPORT FISHERIES AND WILDLIFE~~
Utah Cooperative Fishery Unit
Utah State University
Logan, Utah 84321
September 27, 1967

Dr. David Rogers
Taximetrics Laboratory
Department of Biology
University of Colorado
Boulder, Colorado

Dear Dr. Rogers:

I am nearing the end of data collection for my project and plan to use your taximetrics program soon. I am punching my own cards and should be done by the end of October. I will have approximately 300 cards; using 19 characters.

I have no money allocated for my research and therefore would appreciate a cost estimate so we will know how much we'll need. Would it be cheaper to run it at CSU or here at Utah State? We have an IBM 360-Model 44 and an IBM 1620.

I hope your new home is living up to your expectations, say hello to everyone for me.

Sincerely,

Paul B. Holden

Paul B. Holden
NDEA Fellow - Research

PBH:dmp